Lewis and Clark County:

GROWTH POLICY

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I:
INTRODUCTION
History of the Growth Policy

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 (BOCC) adopted a more specific area plan for Lincoln and the Upper Blackfoot Valley, 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: based on common geography, school districts, fire protection districts, and general senses of community.

These area plans are for:

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

The areas of Lincoln and the City of East Helena have independent Growth Policies; therefore, those areas are not included in this document.

In 1999, the Montana Legislature adopted new requirements for the comprehensive plan for a city or county mandated by statute. The ~~words~~ term "Growth Policy" replaced "Comprehensive Plan."

In 1999, the County updated the County Comprehensive Plan and adopted the Lewis and Clark County Growth Policy. Soon after adoption, the County Commissioners reevaluated and modified the Growth Policy. In 2004, the County Commissioners adopted a revised Growth Policy.

The Growth Policy identifies the physical, demographic, housing, public facilities, natural resources and economic conditions that define where the County is now. By analyzing current conditions and their relationship to the functioning of the County, the Growth Policy can better predict how the County will change in the future. Such a perspective enables decision-makers to establish the necessary principles, criteria and policies to form logical strategies to prepare for the future.

The Growth Policy is a reference document to ~~help~~ assist in the decision-making process. This planning document provides information and guidance to aid staff and commissioners in serving the public. The time-frame for the Growth Policy is through 2030. The Growth Policy will be periodically evaluated and modified to assure the

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document remains current in efficiently and logically addressing the future needs of County residents.

Common Areas of Interest

Lewis and Clark County residents, through a 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:

- Maintaining the traditional character, appearance, functions, and lifestyles of the County's rural communities and areas.
- Providing efficient access and mobility for County residents that supports existing and future land use patterns.
- Supporting quality natural systems. Urban/suburban development should not adversely affect wetlands, streams, wildlife habitat, water quality and natural resource activities.
- Supporting attractive, well-designed, livable urban communities ~~should be supported by~~ through quality services and facilities; providing a range of housing choices; ~~should not unduly encroach on rural lands~~ preserving rural character; and being sensitive to existing ambiance.
- 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. The Growth Policy must have flexibility to adapt to changing conditions, and the Growth Policy must always reflect the long term priorities and goals of the people living and working in Lewis and Clark County.

Planning Context

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Future development and planning in the County will happen simultaneously on several different levels. Federal and state agencies will prepare management plans to address such things as the management of public lands, wildlife and wildlife habitats, agricultural, forest management, water resources, and environmental protection. On the county level, countywide plans, neighborhood plans, area plans, subdivision review and zoning will guide development. Cities and towns plan for their own futures in concert with the County. Property owners' land use decisions will also contribute in the future development of the county.

The Growth Policy should work toward coordinating the goals and objectives of the various government entities and individual property owners to provide applicable planning policies that are consistent with those management plans 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 views of the majority of residents. Internally, there are also coordination issues. Providers of ~~W~~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.

Application

The BOCC must statutorily follow the requirements outlined for growth policies in the MCA. listed in the section below. The Growth Policy will also be utilized by County officials and the BOCC as they develop ~~the~~ annual budgets, 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

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The requirements the Legislature has ~~defined~~ established for growth policies are as follows:

76-1-601. Growth policy -- contents. (1) A growth policy may cover all or part of the jurisdictional area.

(2) The extent to which a growth policy addresses the elements listed in subsection (3) is at the full discretion of the governing body.

(3) 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;

(viii) sand and gravel resources; and

(ix) 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 (3)(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

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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);

(i) a statement explaining how public hearings regarding proposed subdivisions will be conducted; and

(j) an evaluation of the potential for fire and wildland fire in the jurisdictional area, including whether or not there is a need to:

(i) delineate the wildland-urban interface; and

(ii) adopt regulations requiring:

(A) defensible space around structures;

(B) adequate ingress and egress to and from structures and developments to facilitate fire suppression activities; and

(C) adequate water supply for fire protection.

(4) 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) establish an infrastructure plan that, at a minimum, includes:

(i) projections, in maps and text, of the jurisdiction's growth in population and number of residential, commercial, and industrial units over the next 20 years;

(ii) for a city, a determination regarding if and how much of the city's growth is likely to take place outside of the city's existing jurisdictional area over the next 20 years and a plan of how the city will coordinate infrastructure planning with the county or counties where growth is likely to take place;

(iii) for a county, a plan of how the county will coordinate infrastructure planning with each of the cities that project growth outside of city boundaries and into the county's jurisdictional area over the next 20 years;

(iv) for cities, a land use map showing where projected growth will be guided and at what densities within city boundaries;

(v) for cities and counties, a land use map that designates infrastructure planning areas adjacent to cities showing where projected growth will be guided and at what densities;

(vi) using maps and text, a description of existing and future public facilities necessary to efficiently serve projected development and densities within infrastructure planning areas, including, whenever feasible, extending interconnected municipal street networks, sidewalks, trail systems, public transit facilities, and other municipal public facilities throughout the infrastructure planning area. For the purposes of this subsection (4)(c)(vi), public facilities include but are not limited to drinking water treatment and distribution facilities, sewer systems, wastewater treatment facilities, solid waste disposal facilities, parks and open space, schools, public access areas, roads, highways, bridges, and facilities for fire protection, law enforcement, and emergency services;

(vii) a description of proposed land use management techniques and incentives that

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will be adopted to promote development within cities and in an infrastructure planning area, including land use management techniques and incentives that address issues of housing affordability;

(viii) a description of how and where projected development inside municipal boundaries for cities and inside designated joint infrastructure planning areas for cities and counties could adversely impact:

(A) threatened or endangered wildlife and critical wildlife habitat and corridors;

(B) water available to agricultural water users and facilities;

(C) the ability of public facilities, including schools, to safely and efficiently service current residents and future growth;

(D) a local government's ability to provide adequate local services, including but not limited to emergency, fire, and police protection;

(E) the safety of people and property due to threats to public health and safety, including but not limited to wildfire, flooding, erosion, water pollution, hazardous wildlife interactions, and traffic hazards;

(F) natural resources, including but not limited to forest lands, mineral resources, sand and gravel resources, streams, rivers, lakes, wetlands, and ground water; and

(G) agricultural lands and agricultural production; and

(ix) a description of measures, including land use management techniques and incentives, that will be adopted to avoid, significantly reduce, or mitigate the adverse impacts identified under subsection (4)(c)(viii).

(5) 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; amd. Sec. 4, Ch. 599, L. 2003; amd. Sec. 1, Ch. 443, L. 2007; amd. Sec. 2, Ch. 455, L. 2007; amd. Sec. 2, Ch. 446, L. 2009.

76-1-604. Adoption, revision, or rejection of growth policy. (1) The governing body shall adopt a resolution of intention to adopt, adopt with revisions, or reject the proposed growth policy.

(2) If the governing body adopts a resolution of intention to adopt a growth policy, the governing body may submit to the qualified electors of the area covered by the growth policy proposed by the governing body at the next primary or general election or at a special election the referendum question of whether or not the growth policy should be adopted. A special election must be held in conjunction with a regular or primary election.

(3) A governing body may:

(a) revise an adopted growth policy following the procedures in this chapter for adoption of a proposed growth policy; or

(b) repeal a growth policy by resolution.

(4) The qualified electors of the area covered by the growth policy may by initiative or referendum adopt, revise, or repeal a growth policy under this section. A petition for initiative or referendum must contain the signatures of 15% of the qualified electors of the area covered by the growth policy.

(5) A master plan adopted pursuant to this chapter before October 1, 1999, may be

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repealed following the procedures in this section for repeal of a growth policy.

(6) Until October 1, 2006, a master plan that was adopted pursuant to this chapter before October 1, 1999, may be revised following the procedures in this chapter for revision of a growth policy.

(7) Except as otherwise provided in this section, the provisions of Title 7, chapter 5, part 1, apply to an initiative or referendum under this section.

History: En. Sec. 40, Ch. 246, L. 1957; amd. Sec. 15, Ch. 247, L. 1963; R.C.M. 1947, 11-3840(part); amd. Sec. 1, Ch. 541, L. 1981; amd. Sec. 68, Ch. 387, L. 1995; amd. Sec. 11, Ch. 582, L. 1999; amd. Sec. 1, Ch. 87, L. 2003; amd. Sec. 6, Ch. 599, L. 2003.

76-1-605. Use of adopted growth policy. (1) Subject to subsection (2), after adoption of a growth policy, the governing body within the area covered by the growth policy pursuant to 76-1-601 must be guided by and give consideration to the general policy and pattern of development set out in the growth policy in the:

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

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

(c) adoption of zoning ordinances or resolutions.

(2) (a) A growth policy is not a regulatory document and does not confer any authority to regulate that is not otherwise specifically authorized by law or regulations adopted pursuant to the law.

(b) A governing body may not withhold, deny, or impose conditions on any land use approval or other authority to act based solely on compliance with a growth policy adopted pursuant to this chapter.

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; amd. Sec. 1, Ch. 527, L. 2001; amd. Sec. 7, Ch. 599, L. 2003.

76-1-606. Effect of growth policy on subdivision regulations. 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 demographic trends provide important background information for the County to study and analyze current and future needs during the Growth Policy planning process. In order to plan effectively, the County must have a basic understanding of both population and economic factors, and how they may impact the County now and in the future.

Analysis of population characteristics and trends will:

- Identify current population counts, age compositions, household sizes and other factors;
- Identify where populations growth is occurring;
- Project where public improvements will be needed in the future;
- Identify the future direction and magnitude of population trends;
- Identify current and future land ownership patterns;
- ~~Identify trends in population, age compositions, household sizes and other factors;~~
- ~~Identify goals, policies and implementation strategies to prepare for future needs for the changing population; and~~
- ~~Identify the level of demand for land development, capital improvements, and utility extensions~~.
- Identify the level of demand for land development, capital improvements and utility extensions, and
- Identify goals, policies and implementation strategies to prepare for future needs for the changing population..

Analysis of economic characteristics and trends analysis will:

- Identify where people work and what jobs are available;
- Quantify the importance of local business and services in the County;
- Predict where public improvements will be needed for business in the future;
- Identify future trends in economic development; and
- Identify goals, policies and implementation strategies to prepare for future needs for economic development in the County.

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

- The County population has increased significantly in the last 30 years and that trend is expected to continue for at least the next 20 years. (**Staff note: Planning Board recommended "significantly" be removed, Staff recommends keeping it.)**

- The Helena Valley continues to constitute the largest percentage of County

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population and growth. The majority of the growth is occurring in the unincorporated areas within the Helena Valley.

- With the exception of Lincoln (approx. pop: 1,100), the unincorporated communities – Augusta, Wolf Creek and Craig - within the County comprise a small percentage of the overall county population. Population growth within these areas, however, may eventually warrant individual plans for some of these areas, similar to the plan developed for the Lincoln area.

- 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~~ older population, with a number of important implications for the workforce, healthcare system, and other areas of life.

- The U.S. Census 2010 population count for the County was 63,395, up from 55,716 in 2000 census, a 13.8 percent increase.

- According to data from the Montana Department of Labor & Industry (Sept. 2010), the County's economy is predominantly based on the government (39.4%) and service sectors (59.3%).

- Approximately 6~~58~~ percent of ~~the adults~~ persons 25 years and older in Lewis and Clark County have received some training beyond high school, and ~~more than 41~~ approximately 44 percent of the population has attained a college or technical degree, according to the U.S. Census ~~2005-2007~~ 2008-2010 American Community Survey.

- Unemployment in the County has consistently remained lower than that of the entire state of Montana and the United States ~~as a whole~~, as a result of federal, state, county and municipal government jobs. In November of 2011, the unemployment rates for the County, Montana and the United States were 5.3, 7.6 and 8.6 percent, respectively.

- When examining the four-county area of Broadwater, Jefferson, Meagher and Lewis and Clark Counties, Lewis and Clark County 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 four decades, the economies of southern Lewis and Clark County, northern and central Jefferson County, and central and western Broadwater County. have been increasingly interlinked in a multi-county economic and demographic region. A growing portion of the workforce in Lewis and Clark County 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

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and Clark County, but the location of that housing and its relationship to existing infrastructure influences the fiscal impact the development will have on local government and the provision of local and emergency services.

History of Lewis and Clark County

~~**(Staff note: the Historic Preservation Officer provided a historical narrative to replace the above text.)**~~

The area that is now known as Lewis and Clark County was created as Edgerton County in 1864, as part of the Montana Territory. In 1868, the county was renamed Lewis and Clark County. Covering over 3,000 square miles, the County includes such landforms and features, as the Rocky Mountain Front, the Continental Divide, the Big Belt Mountains, the Over-thrust Region and the Upper Missouri River Valley.

Humans have inhabited what is present-day Lewis and Clark County since before recorded time. Inhabitants were drawn by the area's rich natural resources, abundant native animals and plants, valleys, prairies, mountains, streams and lakes. For millennia, native people lived in small groups, hunting game and gathering native plants for sustenance.

The County contains segments of two major overland routes: the Old North Trail, which was a trade route connecting Canada with the southwestern United States, and the "River Road to the Buffalo," used by mountain-dwelling tribes to access the buffalo herds on the prairies. The introduction of the horse in the late 1700s profoundly changed the Native American culture, complementing existing life ways and creating new aspects of cultural practices, warfare and hunting.

In 1805, the Lewis and Clark Expedition visited what is now the County, and Lewis and his party passed through the Blackfoot River Valley and the Lincoln area on their return trip in 1806. The Lewis and Clark Expedition was a catalyst for a booming fur trade during the early 19th century.

The first settlement in present-day Lewis and Clark County occurred around 1840 in the area of Canyon Creek, consisting of fur trappers, their Native American wives and children.

From 1858to 1862, the Mullan Road was constructed, linking Fort Benton with Walla Walla, Washington Territory. The road was constructed west to east, entering present-day Lewis and Clark County at Mullan Pass, west and north of Helena, proceeded northeast to Silver Creek and then passed over the highlands west of the Little Prickly Pear Canyon to emerge near the Missouri River, south of Great Falls. From there, the Mullan Road continued onward to the head of steamboat navigation at Fort Benton. The Mullan Road was used by travelers to access the mining regions in Idaho and southern Montana.

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The discovery of gold and silver deposits on Silver Creek, about 15 miles northwest of Helena, resulted in mining camp of Silver, later called Silver City, and it was the first permanent settlement in the county. From 1862 to 1865 Silver City was the seat of local government until voters selected Helena for the county seat.

In 1864, the discovery of rich placer gold deposits along Last Chance Gulch resulted in the community that became Helena. In addition to the placer deposits in the Gulch, rich quartz lodes were found nearby. Located on the main wagon road from Fort Benton to points south, Helena became a commercial distribution point for the area. In 1875, Helena became the territorial capital and won the state capital election in 1894. Helena was the financial, political and cultural center of Montana.

Development occurred throughout Lewis and Clark County between 1868 and 1893, fueled largely by gold and silver mining. Placer mining operations gave way to powerful hydraulic mining operations that rapidly reduced natural streambeds. Lode mining tapped the rich ore found in the extruded stock and dikes of the Boulder Batholith and the Big Belt Mountains. The regions around Unionville, Rimini, Marysville, and York and, to a lesser degree, Lincoln, were peppered with mining shafts and adits. Mills operated at several localities in the County.

As early as 1866, overland transportation into the area had been advanced by the Kingston and Gillette toll road up Prickly Pear Canyon. The Northern Pacific Railroad arrived in Helena in 1883, and the Great Northern Railroad arrived in Helena in 1887. Rail lines quickly extended away from their main tracks and wove up narrow canyons to serve outlying regions.

In 1868, the first homestead entry in the territory was filed in the Helena land office. Ranches developed in the county's central and northern plains, feeding the expanding population and shipping wool, mutton and beef to urban markets by the trainload. They were soon joined by increasing numbers of small operations as public land offerings and railroad land grant sales attracted homesteaders. Communities like Wolf Creek, Augusta, Gilman, Craig and Canyon Creek served the farmers and ranchers. Lincoln, in the meantime, developed a logging industry and later became a favored summer resort.

The national "silver panic" of 1893 ended the county's accelerated development. Virtually all silver mines closed, affecting the Rimini area and places west of Marysville . Gold mining was still vital in places like Marysville's Drumlummon Mine and Spring Hill, south of Helena, but the industry was much reduced. Agriculture became the county's main industry.

The early 20th century heralded unprecedented impacts on the land, culture and lifestyles, fostered by rapid technological advances and tempered by global economic stress and war. Large institutions were created to respond to and harness these forces of change. In Lewis and Clark County, federal government agencies, the Forest Service, the Bureau of Land Management and the Bureau of Reclamation took on significant roles in administering unsettled and abandoned lands. The public works

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programs during the Great Depression accelerated major irrigation developments, road building and similar public works of lasting influence.

The first half of the 20th century saw small electrical generating dams on the Missouri River, followed by large water management and irrigation projects on the Missouri and Sun rivers. Agricultural production was influenced by federal controls during the Depression and later by crop support programs. Nonetheless, agricultural areas declined in population as production margins narrowed and mechanization reduced human labor.

During World War II, Fort Harrison supported combat training teams for the First Special Service Force and dogsled teams units stationed at Camp Rimini. In the closing decades of the 20th century, Fort Harrison expanded as a post, as the headquarters of the Montana National Guard.

America's economic prowess and status as a world leader in the late 20th century energized life in Lewis and Clark County.. Expanded federal and state governmental programs exerted broad influence on rural development and infused the Helena Valley's economy with new residents and wealth. Suburban growth ballooned, sprawling into the Helena Valley, the surrounding hills and reaching far out into the county. Ranch and farm lands were taken out of production and developed for suburban residential use. The county benefitted greatly when a segment of Interstate 15 passed through Helena and Lewis and Clark County. Tourism in the County has been enhanced by the lure of its recreational, scenic, and historical attributes.

At the end of the first decade of the 21st century, Lewis and Clark County saw expansion rather than decline, even in tough economic times. One trend of the decade was increased annexation of County property into the cities of Helena and East Helena. Property owners and subdivisions sought annexation to connect to city water and sewer services. This trend will likely continue into the foreseeable future and, as a result, the county and municipal governments will continue to work together closely to achieve mutual goals in these urban growth areas.

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 Policy 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

Over time, the social, economic and cultural needs of the county change, and, as population changes occur in Lewis and Clark County, the character of the population,

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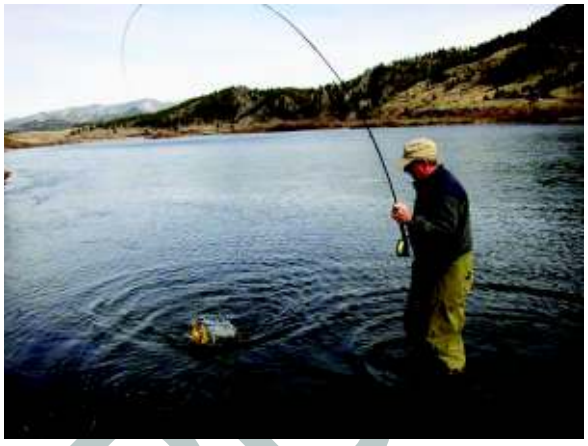
both in size and composition will be altered according to birth, death and migration patterns. These changes determine the types of land use issues that should be addressed. This section examines population trends in Lewis and Clark County. Through the analysis of these trends, population projections are made. It is crucial that these forecasts be reviewed and updated according to actual demographic changes to ensure 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 doubled between 1960 and 2010 (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 1,200 new jobs in state government between 1970 and 1977, and a 30 percent increase in total employment during this period. In-migration resulted in a 70 percent population gain in the 1970s, which 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 in the 1970s was also higher than ~~that of~~ two other rapidly growing urban Montana counties, Missoula and Yellowstone.

Table 2.1: Population Trends: Montana and Lewis and Clark County

Decade	**1950**	**1960**	**1970**	**1980**	**1990**	**2000**	**2010**
L&C Co.	24,540	28,006	33,281	43,.039	47,495	55,716	63,395
Montana	594.024	674,767	694,409	786,690	790,065	902,195	989,415

Source: U.S. Bureau of the Census

Figure 2.1

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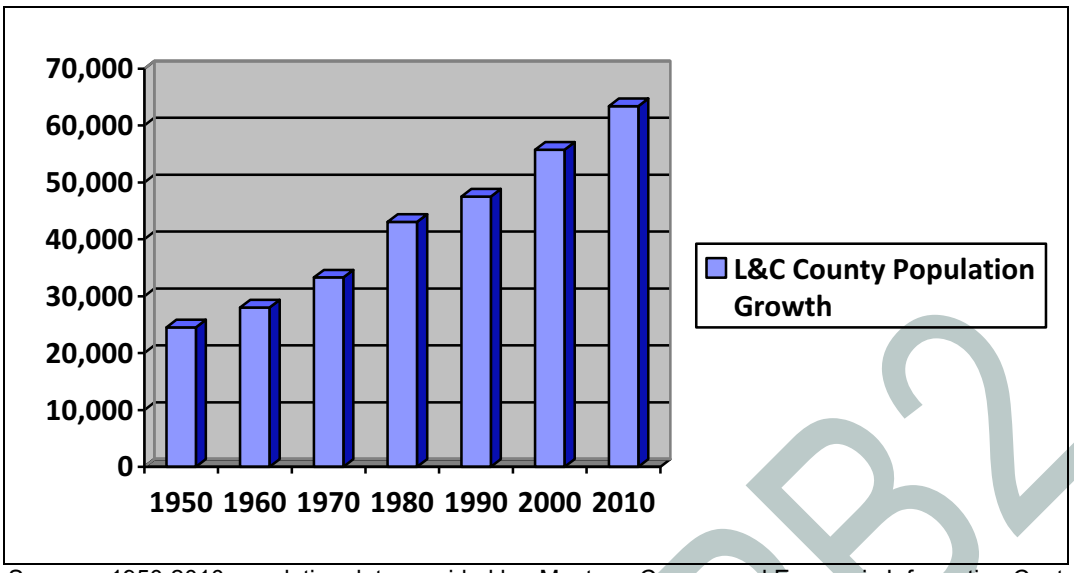

Sources: 1950-2010 population data provided by Montana Census and Economic Information Center (U.S. Census data).

Between 1980 and 1990, Lewis and Clark County's population increased approximately 9.3 percent. During this decade, the County, like the State , experienced an economic downturn, resulting in an out-migration in the late 1980s. During the 1980s, 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. Montana's population grew by about 13 percent between 1990 and 2000, which was a 1.3 percent average 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, but slowed to 3.7 percent between 1995 and 2000.

The population in Lewis and Clark County grew even more rapidly than the State as a whole during the 1990s, increasing by 17.3 percent between 1990 and 2000, for a total of 55,716 people, which was a 1.7 percent annual growth rate. In both the State and the County, the most rapid growth occurred during the first half of the decade: the growth rate was 11.1 percent between 1990 and 1995, but dropped to 5.6 percent between 1995 and 2000 in the County.

During the first half of the 1990s, Montana's population increased at one of the fastest rates seen in twenty-five years. However, while the western part of the state, including Lewis and Clark County, experienced the strongest growth in the early 1990s; many counties in the eastern part of the state had stable or declining populations.

Between Census 2000 and Census 2010, Montana's population grew to 989,415 (a 9.7 percent increase). During this period, the County's population grew to 63,395 (a 13.8 percent increase), the city of East Helena experienced a 20.8 percent growth rate and the City of Helena grew by 9.3 percent. (Source: U.S. Census 2010)

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Table 2.2 POPULATION TRENDS AND PROJECTIONS: Lewis and Clark County, Helena, East Helena, Rest of Lewis & Clark County and Montana

Decade	L&C County	City of Helena	City of East Helena	Rest of County	Montana
2000	55,716	25,780	1,642	28,294	902,195
2010	63,640	28,182	2,056	33,403	968,598
2020	69,187	34,510	2,626	33,572	1,033,880
2030	80,591	39,268	3,483	36,908	1,113,669

Source: U.S. Census and City of Helena Growth Policy 2011

Population projections prepared by the City of Helena estimated that the County's population will grow approximately 26.6 percent by 2030. The City of Helena has a projected population growth of 42.6 percent, while the City of East Helena's population is expected to increase by 69.4 percent. The unincorporated areas of the County are expected to grow 10.5 percent in population. The state of Montana is projected to experience a 15 percent growth in population.

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 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 2.3 shows the approximate geographic distribution of the County's population based upon 1980-2010 Census Data.

Table 2.3 POPULATION IN HELENA VALLEY

Place	1980	1990	2000	2010
Helena	23,938	24,609	25,780	28,190
East Helena	1,647	1,538	1,642	1,984
Helena Valley Northeast CDP	NA	1,585	2,995	2,122
Helena Valley Northwest CDP	NA	1,215	2,082	3,422
Helena Valley Southeast CDP	NA	4,601	7,141	8,227
Helena Valley West Central CDP	NA	6,327	6,983	7,883
Helena West Side CDP	NA	1,847	1,711	1,637
Other unincorporated areas	13,278 *	1,201 **	NA	NA

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Total Helena Valley	38,863	42,883	47,461	54,398

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

Figure 2.2

Census Designated Places (CDPs) 2010

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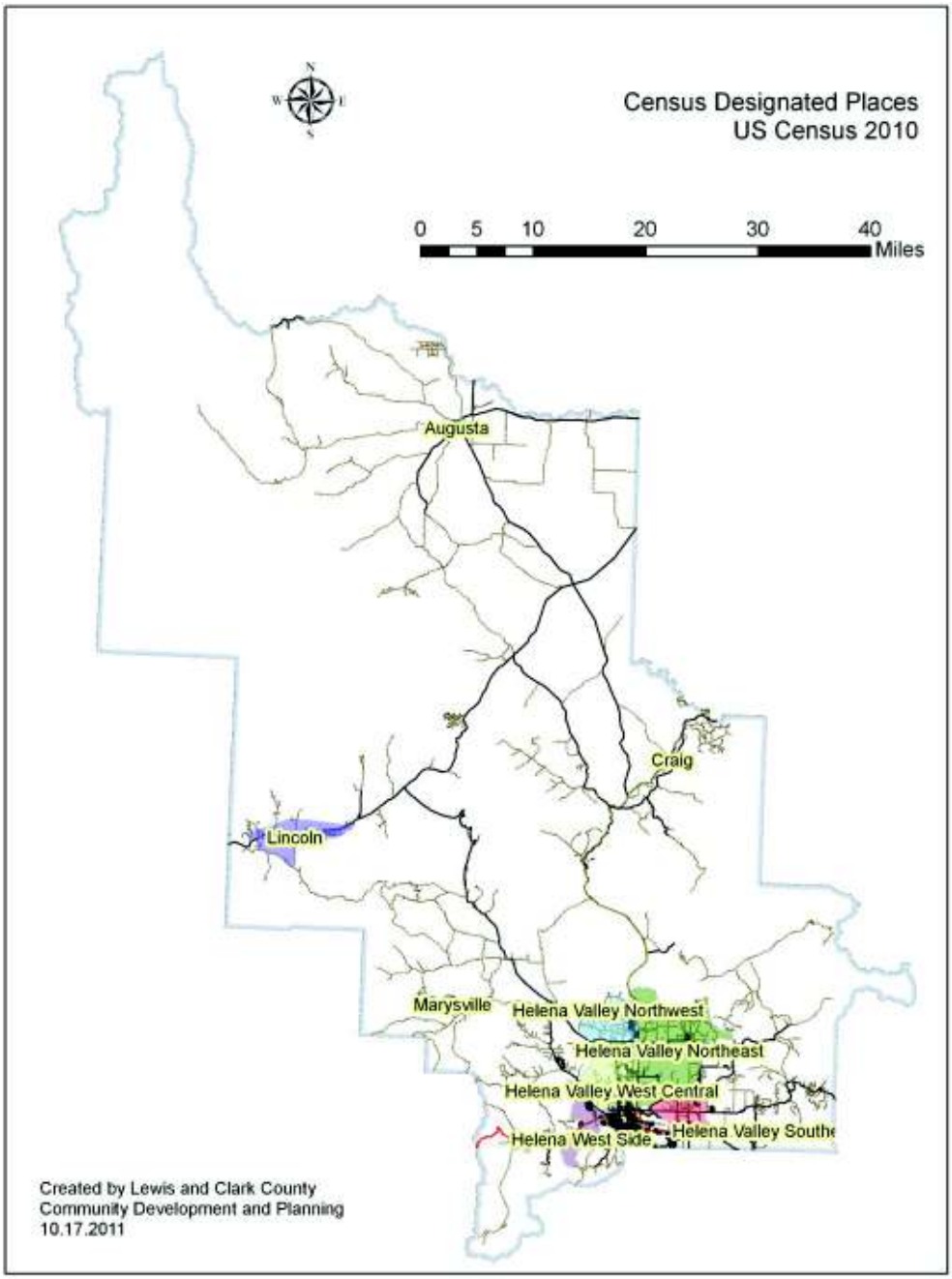

The aggregate population of the entire Helena Valley in 1990 was 42,883, approximately 39 percent of which was located outside the incorporated cities of Helena and East Helena. This represented an approximate increase of 4,000 persons in the Helena Valley in the 1980s, which was 90 percent of all County-wide 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 Census Designated Places (CDP) 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.

This pattern of rapid population growth in the Helena Valley slowed between 2000 and 2010. For example, between 2000 and 2010, the five Helena Valley Census Designated Places (CDP) collectively increased by nearly 21 percent.

Between 2000 and 2010, Helena and East Helena grew by 9.3 and 220.8 percent, respectively. From 2000 to 2010 the percentage of the total Helena Valley population residing in the incorporated areas of Helena and East Helena decreased from 57.8 percent in 2000, to 55.5 percent in 2010.

While Helena and East Helena 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 2.4). The aggregate population of these unincorporated communities comprises approximately 3.7 percent of the overall county population.

Table 2.4 Estimated Population in Selected Unincorporated Communities (2010)

Community	Population
Augusta	309 +
Canyon Creek	92 *
Craig	43 +
Fort Harrison	170***
Lincoln	1,013 +
Marysville	80 +
Rimini	94 *
Unionville	258 *
Wolf Creek	172 *
York	113*
Total	2,344

Note: Source: US Census data
* Estimates made by number of residential address points within one-mile radius and multiplying by average household size (2.47 persons)

*** Fort Harrison data
\+ 2010 Census Designated Place

Figure 2.3: Communities in Lewis and Clark County

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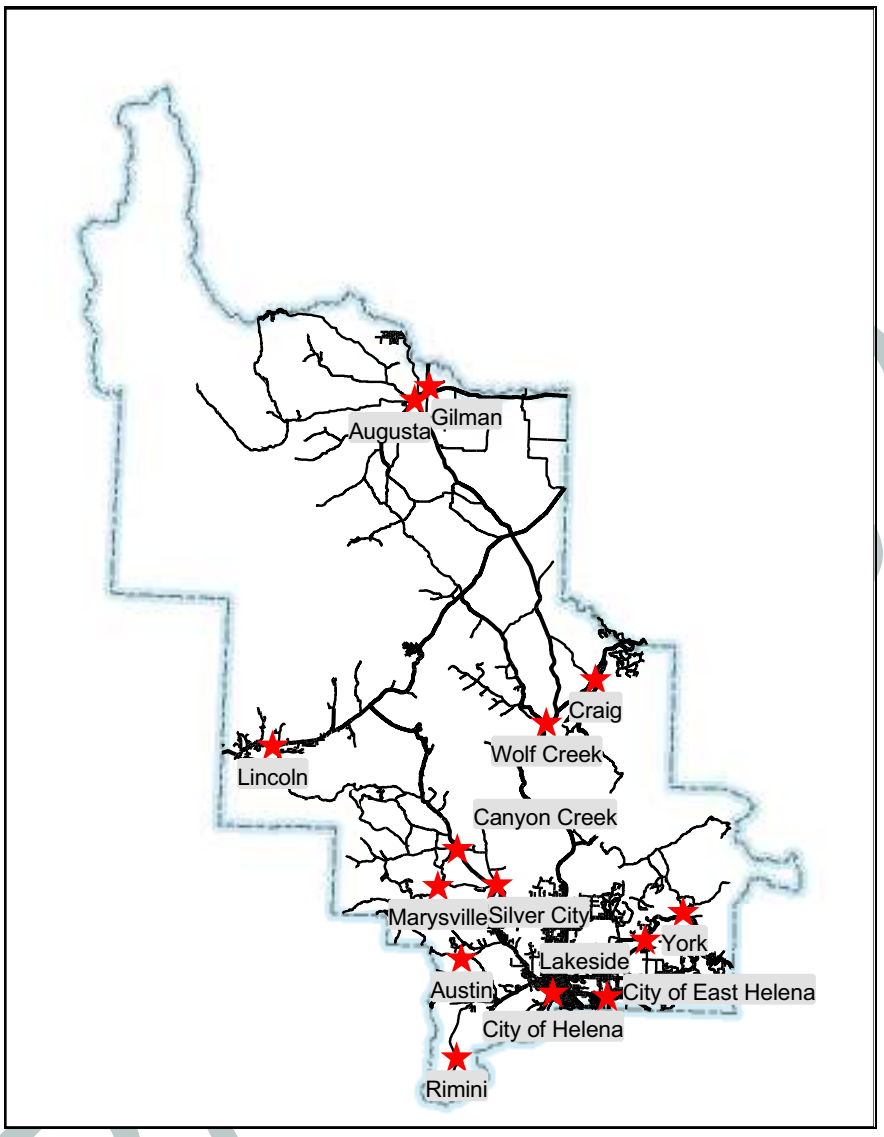

Age Distribution

As the population of the County changes over time, the composition of the population by age also changes. The age composition 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 composition should 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 toward senior health care 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 2.5 shows population by age and sex for years 1980, 1990, 2000 and 2010 for Lewis and Clark County. Between 1980 and 1990, the County experienced a decrease

of young adults. 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 rise in the median age over the four decades reflects the trend of an older population and the in-migration of the middle-aged and retired persons.

TABLE 2.5 POPULATION OF LEWIS AND CLARK COUNTY BY AGE AND SEX: 1980-2010

	1980		1990		2000		2010	
Age	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**
0-4	1,757	1,646	1,734	1,750	1,761	1,674	2,025	1,923
5-9	1,671	1,644	2,072	1,906	1,975	1,898	2,051	1,939
10-14	1,806	1,662	1,871	1,773	2,145	2,088	2,101	1,909
15-19	2,142	2,011	1,662	1,684	2,185	2,114	2,089	2,045
20-24	1,798	2,055	1,232	1,353	1,612	1,595	1,909	1,938
25-29	2,060	2,158	1,581	1,780	1,415	1,496	1,962	1,901
30-34	1,949	1,878	1,942	2,144	1,657	1,697	1,848	1,849
35-39	1,388	1,398	2,229	2,303	2,145	2,276	1,740	1,797
40-44	1,102	1,165	2,043	1,941	2,336	2,537	1,897	1,984
45-49	964	1,007	1,475	1,396	2,518	2,547	2,395	2,507
50-54	964	975	1,158	1,174	2,208	2,064	2,502	2,776
55-59	945	998	964	965	1,535	1,517	2,585	2,661
60-64	829	943	904	947	1,120	1,114	2,209	2,096
65-69	686	791	830	913	876	949	1,513	1,470
70-74	472	572	623	814	724	882	962	998
75-79	273	457	420	651	581	776	624	778
80-84	151	268	275	402	360	610	464	681
85+	126	328	164	420	243	532	424	843
Sub-Total	21,083	21,956	23,179	24,316	27,396	28,366	31,300	32,095
Med. Age	30		34		38		40.9	

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

Between 1990 and 2000, the trend toward an older population in Lewis and Clark County continued, with the median age rising from 34 to 38. Census 2010 showed that the median age has risen to 40.9 years of age, demonstrating that the trend toward an aging population is expected to continue. Since the 1980s every age category over 44 has increased in number.

The rising median age of population, throughout the nation, Montana and Lewis and Clark County will present challenges for planning for the future.

Trends the County will likely see in the coming 20 years include:

- Baby Boomers, those born between 1946 and 1964, living with their young adult children , and/or grandchildren, and/ or their own parents, possibly with several generations living under the same roof.

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- Baby Boomers moving into the County, in order to live closer to their adult children, grandchildren or parents.
- Retirees living seasonally in the County and living part of the year in other states or abroad.
- Increased need for more health care services and social services geared to senior citizens.
- Increased need for expanded transit services for senior citizens throughout in the County, especially in population centers, like the Helena Valley.

Racial Composition of the Population

Lewis and Clark County is racially homogenous as compared to many areas of the United States. According to U.S. Census 2010 data, 97.3 percent of the County's population were , including 56 percent who were born in Montana. According to 2010 census data, ~~overwhelmingly~~ the native-born population is classified as being 94 percent white . The current racial composition of the Lewis and Clark County population is as follows:

Table: 2.7 ETHNICITY AND RACE IN LEWIS AND CLARK COUNTY

Census	**1990**		**2000**		**2010**	
Total Population	47,495		55,716		63,395	
	Pop.	**%**	**Pop.**	**%**	**Pop.**	**%**
White	45,991	96.8	53,046	95.2	59,605	94.0
Native American	1,059	2.23	1,137	2.0	1,335	2.1
Black or African American	69	0.14	111	0.2	217	0.3
Asian or Pacific Islander	242	0.05	315	0.6	398	.6
Some other race	710	.78	1,107	2.0	288	0.5
Two or more races					1,552	2.4

Source: 1990, 2000 and 2010 U.S. Census Bureau

As the U.S. Census data in Table 2.7 indicates, Lewis and Clark County's population over the past twenty years has remained relatively homogeneous in terms of ethnicity and race. However, the data also shows that the County is becoming more ethnically and racially diverse. According to the U.S. Census 2010 , 1.7 percent of the people living in the County in were foreign-born and approximately six percent of the population is not white.

According to the 2008-2010 American Community Survey, among people five years or older living in the County, 4.5 percent spoke a language other than English at home. Of

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those speaking a language other than English at home, 40 percent spoke Spanish and 60 percent spoke another language.

Table 2.8 shows that in addition to Lewis and Clark County becoming more ethnically, culturally, and racially diverse, the population in the County is also becoming more multi-racial and multi-ethnic. The 1990 Census data does not include information on multi-racial and multi-ethnic persons in Lewis and Clark County. Data from Census 2000 and 2010 Population Estimates indicate that the percentage of persons identifying themselves as being of mixed race or ethnicity is increasing, while the population of persons identifying themselves as being of one race has slightly decreased.

Table 2.8 MULTI-ETHNICITY AND RACE IN LEWIS AND CLARK COUNTY

Census	**1990**		**2000**		**2010**	
Total Population	47.495		55,716		63,395	
	Population	**%**	**Population**	**%**	**Population**	**%**
One race	NA	NA	54,818	98.4	61,843	97.6
Two or more races	NA	NA	898	1.6	1,552	2.4
Hispanic origin (of any race)	576	1.21	843	1.5	1,582	2.5

Source: U.S. Census Bureau: 1990 Census, Census 2000 and 2010 Population Estimates

The U.S. Census Bureau does not classify Hispanics and Latinos as a separate racial category and includes them within the above categories. According to 2010 Census data, Hispanic or Latino (of any race) make up 2.5 percent of the County population. Since 1990, the population of persons identified as Hispanic and the percentage of the population has more than doubled.

Household and Family Sizes

Average household and family sizes have fluctuated over the last thirty years. In the 1980 census the average household size in Lewis and Clark County was 2.6 persons. The average household size in the County decreased to 2.38 persons in Census 2000, and the 2010 Census reported that average household size decreased to 2.3 persons. Table 2.9 shows that this pattern is similar to trends seen on the state and national level.

Beginning with Census 2000, the Census Bureau also tracked average family size. Average family size in the County has decreased slightly since the 2000 Census.

The meaning of what is a family continues to evolve. In the United States and the County, more families include multiple generations of the same family living under one

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roof, as adult children take longer to leave home during uncertain economic times, grandparents care for grandchildren and adult children help care for their senior parents as well as their own children. As of 2008, 49 million Americans, or 16.1 percent of the total U.S. population, lived in a household that contained at least two adult generations or a grandparent and at least one other generation, according to a Pew Research Center analysis of Census data.

Table 2.9 Comparison of Household and Family Sizes in the Nation, State and County

	Lewis & Clark County		Montana		United States	
	Household	Family	Household	Family	Household	Family
1990	2.47	NA	2.53	NA	2.63	NA
2000	2.38	2.95	2.44	2.99	2.59	3.14
2010	2.30	2.87	2.35	2.91	2.58	3.14

Source: U.S. Census Bureau

These are population trends that are expected to affect Lewis and Clark County in the future:

- People will live longer (75 years for men and 81 for women, according to the County Health Department, June 18, 2009 press release).
- Families within the County living under the same roof will be increasingly multi-generational, with some heads of households living with their aged parents as well as their young and adult children; and
- Households will become more demographically diverse, as the meaning of "family" and "household" continue to change.

In 1990, approximately 11 percent of the population lived alone, a figure that had increased to 12 percent by 2000. Approximately 31 percent of the population lived in a one-person household in 2010, according to Census data. The 2008-2010 American Community Survey estimated that 10.9 percent of the population 65 years or over lived alone. 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.

Issues (Challenges), Goals and Policies: Demographics

(Staff note: The Planning Board would like to substitute the word "issues" for "challenges." Staff prefers to keep the original word)

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

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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~~ CHALLENGE A Demographic trends in Montana and Lewis and Clark County indicate the median age of residents will continue to increase. An older population will have less need for schools and youth sports facilities in parks. An older population will have increased need for accessible and affordable health care, recreational facilities geared for older populations, public transportation and assisted living facilities.

Goal 1 Promote parkland and recreational uses throughout the County that serves youth, adult and senior populations.

Goal 2 Provide incentive to improve public transportation for all throughout the Helena Valley.

Goal 3 Provide opportunities to provide accessible and affordable health care throughout the County.

Policy 1 Encourage zoning that will permit single-family residential areas to allow apartments for seniors and those in need of assistance for independent living.

Policy 2. Create incentives for developers to build independent and assisted living residential developments near existing infrastructure and public transit routes.

~~ISSUE~~ CHALLENGE B School-aged children in the Helena Valley often are bused to schools within the City of Helena because of overcrowding in schools outside the city.

Goal 4 Promote the construction of schools where there is a concentration of families with school-aged children.

Policy 3. Encourage the acquisition of land needed for school locations through land donation, purchase by public funds and use of county land.

Economics

Population change is directly related to economic trends. Economic vitality and the County's natural splendor and recreational opportunities help encourage population

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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 present economic characteristics, such as employment and income statistics. Such information can be used by a community to analyze the local economy's potential for growth and assess the ability to stimulate investment. Analysis of economic trends can help direct community leaders where to improve local services and infrastructure to expand current business as well as attract new business to the County.

Employment Overview

According to the Montana Department of Labor & Industry, in October 2011 civilian labor force in the County was 36,034, with 33,685 employed persons and 1,833 persons unemployed. 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, excludings those not seeking employment and those serving in the armed forces.

The unemployment rate in Lewis and Clark County decreased from a twenty-year high of 6.8 percent 1985, to 4.0 percent in 2000, prior to the start of the recent national recession. Unemployment statistics from 2000 to 2008 show that despite tough economic times, Lewis and Clark County has lower unemployment rates than the state and the nation. According to the Montana Department of Labor & Industry, in November 2011, the state unemployment rate was 7.6 percent, but the County's unemployment rate was 5.2 percent.

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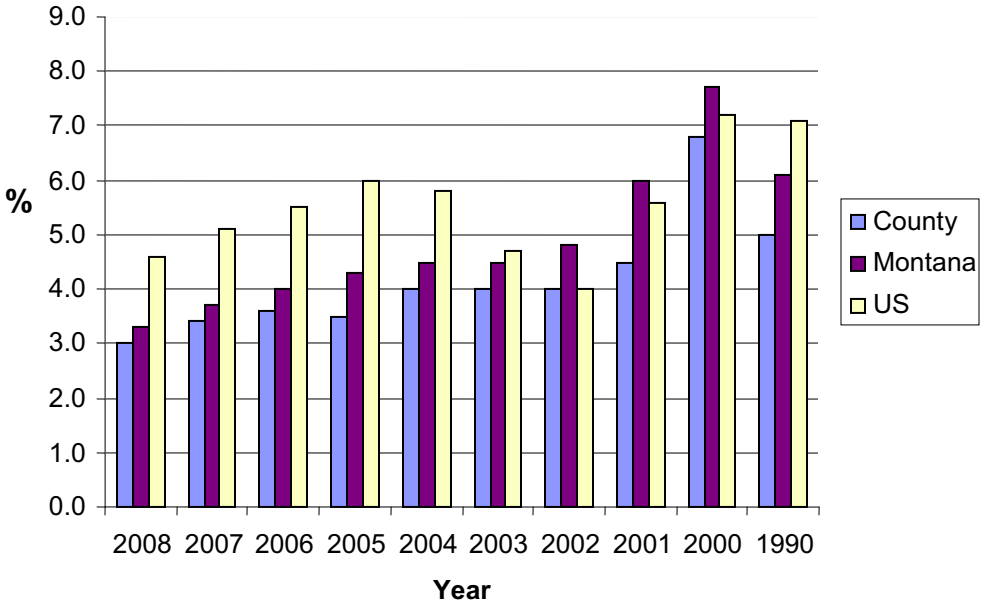
Figure 2.4 Unemployment Comparison for the U.S., Montana and Lewis & Clark County



Source: Montana Dept. of Labor and Industry, Research and Analysis Bureau, U.S. Bureau of Labor Statistics*

The County's economy since the 1980s is predominantly based on government employment and the services sector. The 2008-2011 American Community Survey reported local, state, and federal government agencies employed 9,113 persons (approx. 28% of the employed work force); the services category included 16,719 employees (51.7%); and the retail sector had 3164 employees (9.8%).

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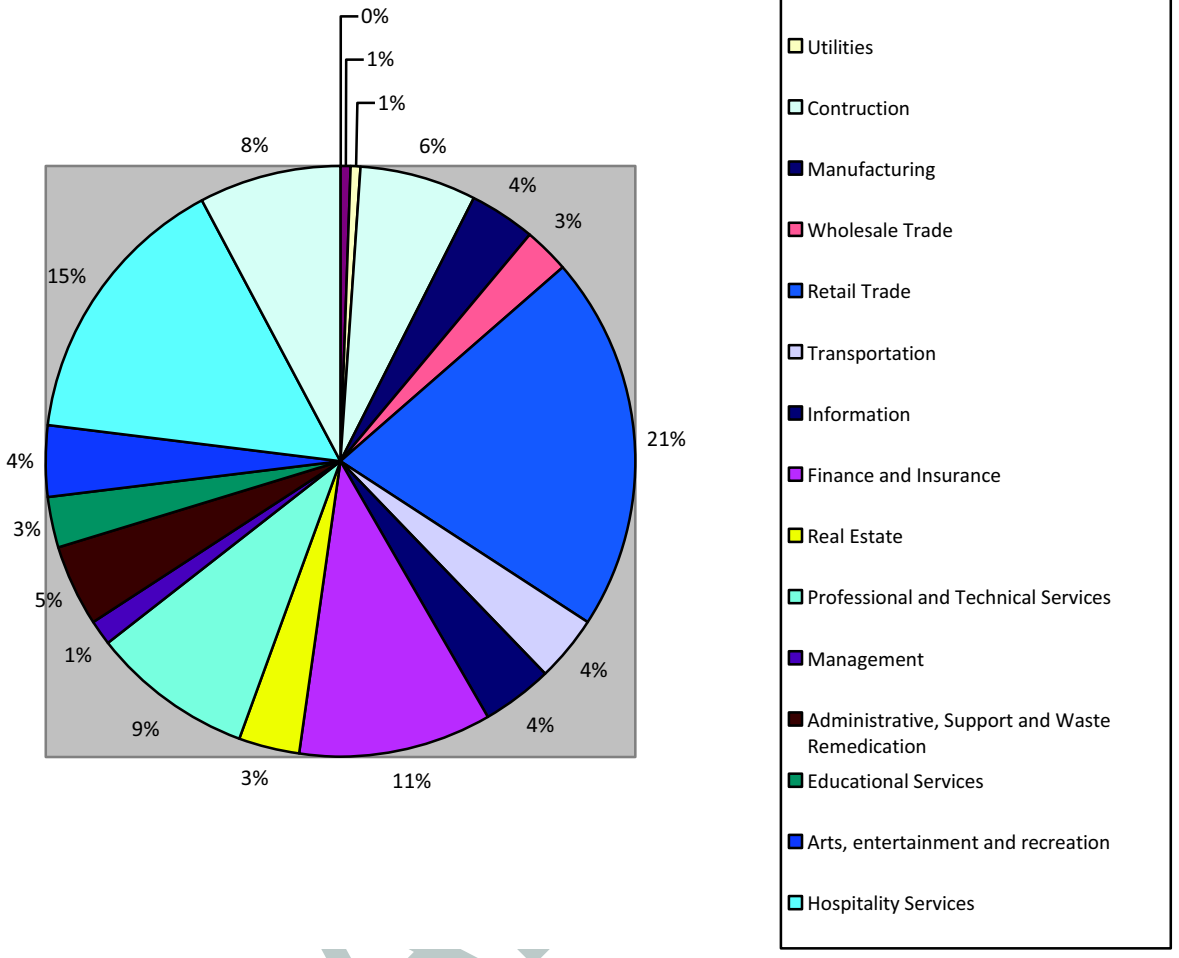
CHART 2.11: Major Industries: 2009
(Lewis & Clark County, Total Jobs)



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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: salaries paid to construction workers and fees paid to architects, home designers and engineers go into the local economy to purchase goods and services; businesses catering to the building industry sell materials and services to the building industries and local government benefits from taxes. 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.

InJune 2011, the Montana Association of Realtors and the Bureau of Business and Economic Research, University of Montana, prepared a report - *Housing Affordability and Montana's Real Estate Markets*. The report stated the legacy of the nation's recession is likely to result in a relatively long period of tepid growth. The County experienced a decline during one year only – 2010. The report stated the growth rate is expected to slow to one percent a year until 2014, as opposed to the three to five percent growth before the recession.

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).

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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.

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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 natural resources, utilities, and manufacturing jobs have decreased. The County is working on expanding incentives to retain current businesses or recruit new ones.

According to the Pacific Northwest Regional Economic Analysis Project, Lewis and Clark County' s total personal income increased sixteen-fold between 1969 and 2007, from $126,399,000 to $2,190,568,000, when measured in 2007 dollars. Lewis and Clark County's rise in real total personal income over 1969-2007 outpaced both the national (233.4%), and the state increases (199.8%) in real total personal income.

As defined by the U.S. Bureau of Economic Analysis, total personal income is the income received by persons from all income sources and is a key value in calculating per capita income.

On average Lewis and Clark County's real total personal income grew at a rate of 3.54% annually between 1969 and 2007. During the 1970s, the County's annual total personal income growth rate averaged 5.25%. It averaged 1.46% during the 1980s, and 4.05% between 2000 and 2007.

Table 2.13: Total Personal Income Growth: Average Annual Percent Change

	1969-2007	1970-79	1980-89	1990-99	2000-2007
Lewis & Clark County	3.54%	5.25%	1.46%	3.51%	4.05%
Montana	2.98%	4.41%	1.05%	2.71%	3.93%
United States	3.15%	3.64%	3.14%	3.03%	2.71%

Source: Pacific Northwest Regional Economic Analysis Project

Per-capita income is the total personal income of an area divided by its resident population. Per-capita income is the most commonly-used indicator for evaluating the economic performance of a local economy. It is also used as a barometer for quantifying the economic performance of an area over time. Since 1969, the County has seen fluctuations in per-capita income as compared to Montana and the United

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States. With the exception of the 1980s, the County has had higher per capita income than the nation, but the State has performed better in this regard.

Table 2.14: Per Capita Income Growth: Average Annual Percent Change

	1969-2007	1970-79	1980-89	1990-99	2000-2007
Lewis & Clark County	1.91%	2.56%	0.37%	1.93%	2.98%
Montana	2.11%	3.08%	0.91%	1.54%	3.11%
United States	2.06%	2.51%	2.17%	1.77%	1.73%

Source: Pacific Northwest Regional Economic Analysis Project

According to the U.S. Department of Commerce Bureau of Economic Analysis, in 2009 Lewis and Clark County had a per capita personal income (PCPI) of $38,777, which was the seventh highest in the state. The County's PCPI was 111 percent of the state average ($34,828) and 98 percent of the national average ($39,635). Between the years 1999 and 2009 the average annual growth rate of PCPI for the County and the State was 4.7 percent, while the annual PCPI growth rate for the nation was 3.4 percent.

Table 2.15 Personal Income (Per-capita) In Montana and Lewis and Clark County 1970-2009

	State of MT	% of U.S. Avg.	L&C. Co.	% of U.S. Avg.
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%
2000	$23,470	77%	$26,147	86%
2001	$25,314	81%	$27,569	89%
2002	$25,685	82%	$28,222	90%
2003	$27,000	83%	$29,264	91%
2004	$28,616	84%	$30,508	90%
2005	$30,144	85%	$31,743	90%
2006	$32,177	86%	$34,863	92%
2007	$33,927	85%	$37,031	94%
2008	$34,622	86%	$38,243	95%
2009	$35,068	88%	$38,771	98%

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

Lewis and Clark County has a lower poverty rate than the state. According the 2010 U.S. Census, Lewis and Clark County had 10.1percent of its population living below the

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poverty line, compared with 15.0 percent for the State. According to the 2009 Lewis and Clark County Health Profile, the County had 13 percent of its children living below the poverty line, compared with 19 percent for the entire state. According to the same profile, the County had 6 percent of persons over the age of 65 living below the poverty line, compared with 9 percent for the entire state.

Table 2.16: Poverty Rates for L& C County, Montana and United States 2009

	Lewis & Clark County	Montana	United States
Percentage of persons below the poverty line	10.1%	15.0%	14.3%

Source: 2010 U.S. Census QuickFacts

Education

Education can act as an indicator of the type of work and level of income available in a community. The educational status of Lewis and Clark County residents has risen over the last ten years. According to the U.S. Census 2008-2010 American Community Survey, 97.6 percent of the adult population at least 25 years of age in Lewis and Clark County has at least graduated from high school, and six percent were dropouts. Approximately 33 percent had attained a bachelors degree or higher.

The total school enrollment in Lewis and Clark County was 14,829 in 2008-2010. Nursery school enrollment was 578 and kindergarten to 12th grade enrollment was 10,419 children. College or graduate school enrollment was 3,832.

Approximately 68 percent of the adults in Lewis and Clark County have received some training beyond high school, and more than 35 percent of the population has attained a college degree, according to the 2008-2010 American Community Survey.

Table 2.17: Education Status in 2008-2010 (Persons 25 Years and Over: in Lewis and Clark County

	Lewis and Clark County	Percentage
Persons (over 25 and older)	42.512	100%
Some high school, no diploma	2,312	5.4%
High school diploma	11,301	26.6%
Some College, Associate's degree	13,711	32.2
Bachelor's degree or higher	15,188	35.7

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Source: U.S. Census: 2006-2008 American Community Survey

~~Issues~~ Challenges, 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~~ CHALLENGE A Trade, retail business, agriculture mining, forestry 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 natura- 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.

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~~ISSUE~~ CHALLENGE B The recreation and tourism industries present 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 Encourage the securing of public access to federal, state and local recreational lands.

Policy 4.5 Maintain and protect historic areas which are a significant tourism attraction.

Policy 4.6 Foster preservation and conservation by supporting the efforts of the Historic Preservation Commission and other similar organizations**.**

Policy 4.7 Promote recreational activities compatiable with the rural, scenic and outdoor character of County residents, such as hiking, camping, hunting fishing and mountain biking.

~~ISSUE~~ CHALLENGE 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 **Ensure i**ndustrial lands d have access to arterial roads and adequate basic services (for example water, sewer, fire, and police).

Policy 5.3 **Ensure impacts on the natural environment are mitigated during industrial development.**

Policy 5.4 **Ensure i**ndustrial development is not dependent on a natural resource is located in or near urban or suburban areas.

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Policy 5.5 **Ensure i**nfrastructure investments are directed to areas identified for planned industrial expansion.

~~ISSUE~~ CHALLENGE 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.

~~ISSUE~~ CHALLENGE E Health Care and Service Needs for residents of Lewis and Clark County

Goal 7 Assist in the provision of quality health care services and other needed services to all of residents of the County.

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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 not covered by its own growth policy. These five planning areas include the following: Augusta; Canyon Creek and Marysville; Canyon Ferry and York; the Helena Valley; and Wolf Creek and Craig. The Lincoln Planning Area is excluded because it is covered in the Lincoln Growth Policy.

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 preferred areas for future development. Other maps for each section depict environmental characteristics, population, service information, and other data.

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 described 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 and 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 the Blackfoot Tribe who were protecting their area from infringement. At this time that the cattle industry got started in the Augusta area. Cattlemen with large herds controlled huge areas of land under the 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 open range grazing. From then on, the ranchers had to adjust to barbed wire, closed areas, winter-feeding, and competition from growing numbers of homesteaders in the area.

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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 changed 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 said that Augusta became "the most moral town in the state," having three churches and no standing saloons or dance halls. In the 1920s 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 1920s, 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 further encouraged in 1908 when the Bureau of Reclamation (BOR) built the 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 stimulated 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 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.

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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, the community feels more a part of the Great Falls, which is 54 miles, and Choteau trade areas. Because the town of Augusta is not incorporated, public services must be provided by the County government.

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 an average of 10 to 12 inches of precipitation annually, 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. The average temperatures in the Augusta in January range between 16 and 34 degrees, with an average temperature of about 25 degrees. The average temperatures for July in the Augusta area range between 56 and 91 degrees, with an average temperature of about 74 degrees.

Hydrographic conditions

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.

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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 bighorn sheep can be found along the rocky ridges of the Front. Mountain lion, black bear, grizzly 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 Flyway, 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.

The Sun River Wildlife Management Area is administered by the Montana Department of Fish, Wildlife and Parks (FWP) approximately three and one half miles (3.5) northwest of Augusta. The area serves “to maintain and enhance habitat diversity and quality for elk and other wildlife species currently utilizing the WMA, and to provide hunting and wildlife viewing opportunities.” (fwp.mt.gov)

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As part of the Montana Fluvial Arctic Grayling Restoration Plan, FWP, in cooperation with the Forest Service, have introduced river-dwelling fluvial arctic grayling into the North and South Forks of the Sun River above Gibson Reservoir.

Wildlife is considered in depth in Chapter V, Natural Resources.

Population and Population Trends

Census figures for the Augusta Census Division indicate 185 persons resided in the area in 2010. This is different from previous census due to the fact that the measured area was changed. In the 1990 census, the Augusta population was 834 because the larger vicinity was included. That is no longer the case. There is a designated CDP for Augusta. According to the census.gov website, "CDP is the abbreviation for Census Designated Place, a statistical entity defined for each decennial census according to Census Bureau guidelines, comprising a densely settled concentration of population that is not within an incorporated place, but is locally identified by a name."

Geographic area	Population	Housing Units
Augusta CDP, Lewis and Clark County	185	127

(From census.gov - Census 2010)

Land Ownership

The Augusta Planning Area encompasses 1,277 square miles. Public lands comprise 819 square miles or 64% of the planning area. In the western section of the Augusta Planning Area National Forest covers 673 square miles, this is 52% of the planning area, and includes part of the Bob Marshall Wilderness Area. In addition, more than 50 square miles is held in conservations easements. There is a large conservation easement, administered by the Montana Land Alliance, on a private ranch along the Sun River. FWP manages a conservation easement on the Willow Creek Reservoir.

Area Economy

Since the 1990 census, agriculture has decreased as the primary economic base for the Augusta area. Education and social services account for 23% of employment. Tourism and recreational services, such as outfitting, is the second largest employment category. Construction is the third largest employer while agriculture has dropped to fourth. 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.

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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 include 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.

Table 3.1

County Maintained Roads in Augusta Planning Area

ROAD NAME	ROAD CLASS.	ROADSURFACE	MILEAGE
Allen Rd.	local access	gravel	1.6
Augusta Clemmons Rd.	local access	gravel	2.45
Augusta Ranger Station Rd.	minor collector	gravel	15.8
Black Rock	local access	gravel	5.5
Bob Thomas Rd.	local access	gravel	3
Camp Walker Rd.	local access	gravel	3.9
Chisolm Barrett	local access	gravel	4.2

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Dearborn Canyon Rd.	local access	gravel	5.7
Dry Creek	local access	gravel	11.7
Elk Creek	local access	gravel	5.7
Flat Creek	minor collector	gravel	10.8
Long Butte Rd.	local access	gravel	6.7
Simms Creek Rd.	local access	gravel	4.0
Skyline Rd.	local access	gravel	7.2
Smith Creek Rd.	local access	gravel	11.0
Sun River Rd.	minor collector	asphalt and gravel	19.0
Swallow Canyon Rd.	local access	gravel	4.3
Van Eman Rd.	local access	gravel	3.0
Warden Rd.	local access	gravel	8.1

Non-motorized transportation

Cyclists from the area, around the state and the country, take advantage of the views and relatively light traffic to enjoy this area. Organized rides bring tourists and create economic opportunities.

Non-motorized transportation must be considered as road users. Additions of shoulders or other non-motorized friendly infrastructure would be beneficial for safety.

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; FWP 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 (USFWS), game wardens, with law enforcement responsibilities on Federal lands.

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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

The Augusta Planning Area has four fire services agencies. The town site of Augusta is served by the Augusta Rural Fire Department, a volunteer agency. The remainder of the planning area is covered by the Augusta, Lewis and Clark, and Wolf Creek – Craig Fire Service Areas (FSAs). A fire service area is covered by contracted services for fire and emergency response equipment, personnel, facilities and maintenance. Generally the contracted volunteer fire department responds to a call, although sometimes the department specified in a mutual aid agreement responds if they can reach it faster. Most of the FSA's in Lewis and Clark County have one paid position to administer and coordinate the day-to-day activities. The volunteers often receive training and supplies through the FSA funds, but are not paid for their service.

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

Health Services

Augusta is 54 miles from Great Falls and 76 miles from Helena where the closest major hospitals are located. Augusta is served by an ambulance service. The Augusta Public Health Nurse from the City-County Health Department is also available.

Water Supply and Wastewater Disposal

Wastewater 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 un-permitted 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.

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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.

Utilities

Electric 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, Natural gas is available within the Augusta town site and east along Highway 21, and at the Milford Colony.

Education

The Augusta School District (SD #45) provides elementary, secondary and high school education in a school located within the town site; serve most of the school students within the planning area. The Auchard Creek School District (#27) has a small elementary school, maintained by The Hutterites Milford Colony. The Wolf Creek School District (SD#9) 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. The Augusta town site is divided into approximately 300 lots, typically less than 0.25 acre in size. 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. Many of the town's housing units occupy more than one lot.

Outside of the town site 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.

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In 1972, approximately 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 2000s has been limited to a few scattered parcels, collectively creating 32 lots. Augusta area residents have expressed interest in providing additional lots adjacent to the town site.

Commercial Development Patterns

Commercial development within the Augusta Planning Area is largely located within the town site of Augusta. There is an Augusta Chamber of Commerce that has member businesses including four (4) bars and restaurants, two general stores, a campground, bulk distributors, automotive repair shops, a salon, other independent service entrepreneurs as well as several outfitters...

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 Recreation

The County's 2009 Parks and Recreation Plan identifies three park parcels in the Augusta area. The town site of Augusta has one established county park. Pings Park is located on Main Street. This small park is landscaped and contains several picnic tables. Its primary benefit is to provide a seating area along Main Street.

With support from the community, Augusta town site would be a good area for further park development in the planning area. Provisions for future park needs will be planned as needed and approved by the City-County Parks Board.

In addition, a small lot in the Gilman town site was deeded to the county. However, much of the platted town site has not been developed.

There are several recreation sites in Augusta 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 Augusta Planning Area is defined by open spaces. Rolling grasslands and sparse development dominate the eastern half of the planning area. The grasslands end

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abruptly at Rocky Mountain Front, which rises dramatically out of the plains. This provides stunning vistas in nearly every direction.

In 2008, the residents of Lewis and Clark County voted in favor of a $10 million open space bond. The bond is intended to "protect drinking water sources and ground water quality; protect water quality in and along rivers and streams; conserve working farm, ranch and forest lands; protect wildlife areas; preserve open lands and natural areas; provide for recreation; and manage growth and development." (Bond language 2008)

An Open Space Advisory Committee works with the County Commission to evaluate and recommend projects for the Open Space bond funding.

The Augusta Planning Area also 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.

Cyclists take advantage of the beautiful views and relatively light traffic to ride in the Augusta area. In fact, many organized rides that bring in out of town visitors are held every summer through the area. Non-motorized use must be considered as a transportation issue rather than solely a recreation issue.

Agricultural Uses

Agriculture dominates the Augusta Planning Area, although it is no longer the primary economic base. The predominant use of private land is cattle grazing. 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

Limited job opportunities and distance from commercial amenities has served to discourage new persons from moving into the area. Population increases have been 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 are also likely to increase. Recreational and seasonal land uses will place unique demands on local services due to seasonal population increases.

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High groundwater and floodplain in the Augusta town site present challenges for the town site's ability to expand. In 2011, Elk Creek flooded over US Highway 287 on the south side of Augusta. (Photos courtesy of KXLH.com)

Augusta Planning Area Priorities

The following issues were identified through a public listening session in 2011, and the work of the Lewis and Clark County Planning and Community Development staff. 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 believe the priority for the short-term is a continued and increased focus on the provision of basic services. In the public listening session 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.

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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 and 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 Piegan wives who had friendly connections to the Blackfoot Indians.

The valley of the Little Prickly Pear contained all the elements for comfortable living for the early settlers. The cottonwood bottoms provided shelter and fuel for heat, along with abundant 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.

The general area had been inhabited by fur traders and others since the 1840s, making it one of the oldest white settlements in Montana. When the Mullan Road was constructed in 1858, a stage stop was located in the general vicinity of the present Silver City. Local trappers and traders naturally migrated to this place and, along with squatters on the public lands, formed a loose settlement called Mud Creek, a name similar to “Softbed Creek” found on Mullan’s map of the area. The name was changed upon the death of a venerable local woman, Mrs. Silver.

By March of 1858, Silver City had 108 inhabitants and many gold claims lined the upper slopes of the creek. Lack of water limited success, however, and upon hearing of the strike at Last Chance Gulch miners largely abandoned Silver Creek.

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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 shop, several stores, a saloon, and a Catholic Church at the head of Little Prickly Pear Creek.

Nearby Helena challenged the county commission. In May of 1865 Governor Edgerton sent the Edgerton County Commission packing and appointed fresh people from Helena. In September of that year an election was held throughout the county to choose the county seat. Helena was chosen.

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 1876, Thomas Cruse discovered the "Drumlummon" vein of gold and the town of Marysville was born. Marysville was named after Mary Ralston, the first female resident of the new gold mining town. Marysville was the leading gold producer during the late 1800s.

The Goldsil Mining Company, east of Marysville, operated from the 1970s to 1980. A 1987 investigation documented elevated levels of cyanide and metals in soils, groundwater and surface water. The EPA referred the clean-up to the DEQ Abandoned Mine Reclamation Bureau.

In March 2009, RX Exploration Inc., a Canadian mining company specializing in reexamining inactive gold mines within North America, was given permission by the Montana Department of Environmental Quality to re-start the Drumlummon Mine. The company installed a water treatment system at the mine. The Charly Vein is producing gold and silver ore. RX Exploration reports that as of June 2010, the Charly Vein had produced 2,478 tons of mineralized material, containing an estimated 2,451 ounces of gold and 57,456 ounces of silver. RX Exploration is also developing the D-Block mineralized zone of the mine and it is being sampled. In May 2010, RX Exploration leased 1,000 tons per day milling facility in Philipsburg to optimize metallurgical recovery. Today, the communities of Canyon Creek, Marysville, and Silver City have returned for the most part to the pre-gold boom character. Improvements on the Marysville Road, Great Divide Snowsports, located above Marysville, and the reopening of the Drumlummon Mine improve the possibilities of future growth in the Marysville area. Development, in the planning area, except for the Marysville town site, is scattered and rural in character.

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Existing Conditions

Physical Conditions

The Canyon Creek and 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 and 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 and 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 and 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 southwest and wind gusts can exceed 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 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.

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Hydrography

The headwaters of Little Prickly Pear Creek, Canyon Creek and Silver Creek stream networks are located within the Canyon Creek and 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.

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.

Gravelly Range Lake is 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 and Marysville Planning Area contains a diversity of geological units.

The Canyon Creek and 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 (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 appears to extend 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

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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 to 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 and 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.

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 provide avenues for groundwater recharge by precipitation runoff and irrigation. The fractures also act as conduits for contamination, such as wastewater effluent and improperly applied or disposed of chemicals. 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 dry, rolling sagebrush and 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.

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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 antelope, 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. According to the Endangered Species Act, sensitive species 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. Sandhill Cranes are not endangered or "of concern" according to **Natural Resource Information System** (NRIS).

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 Forest Service manages approximately 36 percent or 68,333 acres in the western third of the planning area, adjacent to the Continental Divide. The BLM 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 economy of the planning area is principally dependent upon employment opportunities in Helena. Most area residents commute to Helena . While a majority of the land use in the area is agricultural, most of the agricultural operators are dependent upon other non-agricultural employment to supplement their income. Limited service sector income is generated from the operation of the, the bar and restaurant in Marysville, and seasonally at the Great Divide Ski area. Limited mining sector income is generated by sand and gravel operations and the Drumlummon Mine.

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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 Canyon Creek was improved and resurfaced in the summer of 2011. The Marysville Road was upgraded in 2009.

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: County Maintained Roads, Canyon Creek and Marysville Planning Area

ROAD NAME	ROAD CLASS.	ROAD SURFACE	MILEAGE
Duffy Lane	rural minor collector	gravel	2.89
Little Prickly Pear Creek Rd.	rural minor collector	gravel	9.16
Long Gulch Rd.	rural minor collector	gravel	0.5
Marsh Creek Rd.	rural minor collector	gravel	1.18
Marysville Rd.	rural minor collector	chip sealed	6
Stemple Pass Rd.	rural minor collector	gravel	22.7

Non-motorized transportation

Cyclists from the area, around the state and the country ride take advantage of the views and relatively light traffic to enjoy this area. Organized rides bring tourists and create economic opportunities.

Non-motorized transportation must be considered as road users. Additions of shoulders or other non-motorized friendly infrastructure would be beneficial for safety.

Public Facilities and Services

Law Enforcement

Law enforcement within the Canyon Creek and Marysville Planning Area is a cooperative effort of three agencies: the Lewis and Clark County Sheriff's Department, which has primary responsibility; the Montana Highway Patrol, which is responsible for

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law enforcement on Lincoln Road; and FWP 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 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. 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 the 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 Fire Services Area, which is housed on the Lewis and Clark County shop complex on Cooney Drive in Helena. By Montana statute, the Lewis and Clark County Fire Services Area 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 Fire Services Area, wildland fire protection is provided by an interagency team consisting of personnel from the Forest Service, DNRC, BLM 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..

Water Supply

There are no public or 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.

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Wastewater Disposal
There are no public sewer facilities located in the planning area. Residents use individual wastewater systems in the form of septic tanks.

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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.

The Scratch Gravel Solid Waste District includes residents living in the greater Helena Valley, Canyon Creek and Marysville. Residents pay an annual assessment on their tax bill for disposal of their solid waste. The annual assessment does not include any collection service. Residents must self-haul their waste to the City of Helena Transfer Station at 1975 N. Benton Avenue, Helena, MT. Canyon Creek and Marysville residents may self-haul their waste to the solid waste container site on the Marysville Road.

Utilities

Electrical power is currently provided to the planning area by NorthWestern Energy (previously Montana Power). CenturyLink 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 (LincTel). Internet connectivity is via LincTel or satellite providers. There is no cell phone coverage in most of the area.

Education

The Canyon Creek and Marysville Planning Area and the Birdseye and Austin areas are located within School 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.

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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 School District #4. Placement of the tuition students is at the receiving district's discretion. Generally, students from School District #4 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

The Canyon Creek and Marysville Planning Area is a rural residential area, with large ranches as well as small mining claims throughout.

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 increased in recent years, as 23 new lots have been created through subdivision review since 2000.

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 deteriorating condition. 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 and bar is located at the intersection of Birdseye Road and Lincoln Road, however, it is currently not operating. The Marysville House Restaurant and Bar is the only commercial activity within the town site.

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The Great Divide ski area is the largest commercial enterprise within the planning area. The ski area operates a lodge and restaurant, ski lifts and approximately 60 trails for downhill skiing and snowboarding on private and BLM property.; Additional ski trails and lifts were added in 2001.

In March 2009, the Drumlummon Mine was given permission by the Montana Department of Environmental Quality to explore the possibility of re-opening the Marysville site. The mine re-opened in 2009. (More on page III-15).

Public or Governmental Uses

A majority of the western portion of the planning area is managed by the 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. 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 Recreation

The 2009 Lewis and Clark County Parks, Recreation and Open Space Plan, does not identify any parkland or proposed acquisition or improvements within the planning area.

There is no county park land in the Canyon Creek – Marysville Planning Area. However, development has been increasing in the area since the late 1990s, particularly along Birdseye Road near Silver City. Provisions for future park needs will be planned as needed and approved by the City-County Parks Board.

Individual recreational activities abound because of the area's rural character and the large amount of public lands in the planning area. The 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.

In 2008, the residents of Lewis and Clark County approved a $10 million open space bond. The bond is intended to "protect drinking water sources and ground water quality; protect water quality in and along rivers and streams; conserve working farm, ranch and forest lands; protect wildlife areas; preserve open lands and natural areas; provide for recreation; and manage growth and development." (Bond language 2008)

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An Open Space Advisory Committee works with the County Commission to evaluate and recommend projects for the Open Space bond funding.

Cyclists take advantage of the beautiful views and relatively light traffic to ride in the Canyon Creek and Marysville area. Non-motorized use must be considered as a transportation issue rather than solely a recreation issue.

Agricultural Uses

Historically, livestock grazing and hay production have been the major land use in the planning area.

Canyon Creek and Marysville Planning Area Priorities

The following issues were identified through a public listening session for the planning area. They represent the issues that have been emphasized in the forum 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 and Marysville planning area.

Citizens of the Canyon Creek and 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 and 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.

B. Provide adequate fire protection.

Action Items

- Work to ensure the Canyon Creek and Marysville area has adequate fire protection.

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- 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 and 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.
- Consider appointing an Agricultural Representative or Conservation District 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 and Marysville planning area to meet minimum design guidelines and criteria.

Action Items

- Develop 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:
    - Consider distance from services when reviewing rural subdivisions.
    - Ensure that the cost of developing and maintaining roads to serve new developments is covered by the developer and 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,

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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 and Marysville area.
- Maintain Drumlummon Mine so as to not affect neighboring property owners.
- Support mine reclamation.

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

J. Support continued efforts for rural addressing.

Marysville Sub-area Concerns

- 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.

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- Preserve cattle grazing rights.
- 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.
- Consider distance from services when reviewing rural subdivisions.

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 for 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.
- Consider distance from services when reviewing rural subdivisions.

Prickly Pear Road Sub-area Concerns

- Many of the roads in this area are impacted by logging and mining equipment and fall hunting traffic. Because of this, speed and maintenance are constant issues.

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- Continue to support the rural addressing system.
- Preserve existing development density patterns while keeping an agricultural aspect.
- Maintain aesthetics of the area rather than encourage development.

Canyon Ferry and York Planning Area

Introduction

The earliest documentation of the Canyon Ferry and 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 and York area has undergone significant change since the Lewis and Clark expedition 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 downstream in 1918. The present Canyon Ferry Dam, a 50-MW facility operated by the BOR, 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 and 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 and Meagher and Broadwater County lines on the east; the Lewis and Clark and Broadwater County lines on the south; the Spokane

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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) in the Big Belt Mountains.

Climate

The climate of the planning area is classified as a modified continental climate; it is influenced by Pacific Ocean air masses, the drainage of cooler air from the surrounding mountains, and the protection afforded by the surrounding mountains. The average annual temperature is 44 degrees and the annual precipitation 12 to 13 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 wind speeds 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.

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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, which can be toxic to livestock and other animals..

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. In 2006, the EPA set the arsenic standard for drinking water at .010 parts per million (10 parts per billion).
Numerous perennial streams, such as Trout Creek, Magpie Creek, Soup Creek and Beaver Creek, 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 during that time. These creeks do provide important spawning areas for the various species of fish.

Geology

Considerable geologic activity occurred along the Missouri River in the Canyon Ferry and 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

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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 Faault is present to the north of the Eldorado thrust fault 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 and 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.

Rabbit crazyweed, which is found in the planning area, is listed by the Montana Natural Heritage Program as a Plant Species of Concern (2006) It is typically found on the northwest shore of Canyon Ferry Lake, in the coniferous forest vegetative group.

Wildlife and Habitat

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The Canyon Ferry and 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 past years, the Hauser Lake area has been a major congregating point from October to December for migrating Bald Eagles. However the declining population of kokanee salmon in the lake has reduced the number of bald eagles congregating at the lake in the fall and winter.

Human development has the potential to displace many of the species found within the planning areaand 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 and human conflicts.

Chapter V, Natural Resources, goes into more depth about Wildlife and Habitat.

Land Ownership

Of the 151,014 acres within the planning area, the federal government owns approximately 80 percent of the land. The Forest Service, which controls over 109,169 acres or approximately 72 percent of the area is the largest property owner. The BLM 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.

In 1998, Senate Bill 1913 allowed the federal BOR to sell the leased cabin sites on Canyon Ferry Reservoir to private owners.

Area Economy

The economy of the Canyon Ferry and 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.
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

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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.

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 small economic base. There is occasional logging and several small sapphire mines in the area. The York Bar and Store is the anchor business and draws customers from the surrounding area. There are other small businesses in the area as well.

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. However, many go to the York area for camping , hiking or hunting.

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). It extends from the eastern city limits of Helena to the Broadwater County line and is paved to the Broadwater County line.
Two gravel surface roads maintained by the BOR 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 Campground. 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 BOR because it serves the most heavily-used day use areas.

Jimtown Road, a gravel-surfaced, countymaintained 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. There were 147average daily trips on Jimtown Road in 2009.

During the summer months, the average daily trip generation on Canyon Ferry Road and the intersecting roads increases dramatically. The increased traffic generation

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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 paved 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). Also, Nelson Road provides access to numerous 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.

Table 3.3: County Maintained Roads--Canyon Ferry and York Planning Area

ROAD NAME	MAINTENANCE RESPONSIBILITY	ROAD CLASSIFICATION	ROAD SURFACE
Beaver Creek Road	US Forest Service	recreation	gravel
Jimtown Road	L&C County	rural minor collector	gravel
Nelson Road	L&C County	rural minor collector	gravel
York Road	L&C County	rural minor collector	paved and gravel

Non-motorized transportation

Cyclists from the area, around the state and the country ride take advantage of the views and relatively light traffic to enjoy this area. Organized rides bring tourists and create economic opportunities.

Non-motorized transportation must be considered as road users. Additions of shoulders or other non-motorized friendly infrastructure would be beneficial for safety.

Public Facilities and Services

Law Enforcement

Law enforcement within the Canyon Ferry and York 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 Canyon Ferry Road and York Road; FWP game wardens, whose primary responsibility is to enforce fish, game and boating regulations and to assist

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other law enforcement officials as needed; and the Forest Service, which 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 Tri Lakes Fire Service Area. The York Fire Service Area provides protection in the northern portion of the area.

The fire service areas are funded by assessments on structures that have an assessed value of 50 dollars or more. Volunteers for each of the 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 Forest Service, DNRC, BLM, 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 has been significantly impacted by wildfire, 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 and York Planning Area is located within the Scratchgravel Refuse District, which is operated by the Lewis and Clark County Publics Works Department.

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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 and 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 gpm.) vary greatly.

In 2009, two water and sewer district petitions were filed with the county requesting creation of districts on the east side and west side of Canyon Ferry Lake. The West Canyon Ferry County Water and Sewer District petition failed and the East Canyon Ferry County Water and Sewer District passed. The new East Canyon Ferry County Water & Sewer District Board has been elected.

Wastewater Disposal

Aside from the community wastewater treatment system at Canyon Ferry Village, wastewater 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 and 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 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 buses 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 Jimtown Road. In the York area, school buses travel as far as the intersection of York and Nelson Roads to pick up students, stopping at Jimtown Road and various private drives.

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Utilities

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

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 BOR 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-- FWP. 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 BOR 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

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Department and the Montana Department of Environmental Quality. The lot sizes do not meet the current state minimum lotsize 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 (S. 1913). This Act allowed the sale of the Canyon Ferry lease cabin sites to private individuals. The Act required 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.

Ten percent of the proceeds from the sale of the cabin site were designated to 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 Montana Fish and Wildlife Conservation Trust. The Trust provides 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. Lots were sold from 2002 until 2005. Over $14 million was generated by the land sales and put into the Montana Fish and Wildlife Conservation Trust.

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 is one RV park at Kim's Marina on Canyon Ferry Lake.

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.

There has been subdivision development is the area. Specifically, Canyon Ferry Crossing to the northeast of the lake consists of lots from two to 17 acres. The subdivision accommodates large homes with views of the lake.

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In the York and 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. Many existing homes are located in a floodplain associated with Trout Creek. Trout Creek was mapped in 2002 by the Federal Emergency Management Agency (FEMA). An updated map is scheduled to be adopted by June 2012.

In addition, 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 20 and 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 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 include: an engine repair and maintenance

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shop, a mini-warehouse and boat storage area, a cabinet making shop, and a light industrial manufacturing shop, all located along the northeast shore of the lake.

The US Department of the Interior has published a plan, titled the Canyon Ferry Reservoir Shoreline Management Plan. According to the website, the plan will "provide balanced, practical, and relevant guidance for addressing public use, adjacent landowner concerns, and resource protection on the federally-owned shoreline of Canyon Ferry Reservoir." (http://www.usbr.gov/canyonferry)

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 megawatts of electricity and is operated by the BOR. 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 nonrecreational 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 BOR 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 occupied Forest Service land. In 2005 the community of York, with the assistance of Lewis and Clark County, obtained community ownership of these parcels.

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Parks and Recreation

The Canyon Ferry and Missouri River corridor offers a full breadth of water related recreational activities, including sailing and sail boarding to fishing, motor boating and swimming. Camping, picnicking and passive forms of recreation such as bird watching are also 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 recreation area 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 in the planning area 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.

In 2008, the residents of Lewis and Clark County voted to approve a $10 million open space bond. The bond is intended to "protect drinking water sources and ground water quality; protect water quality in and along rivers and streams; conserve working farm, ranch and forest lands; protect wildlife areas; preserve open lands and natural areas; provide for recreation; and manage growth and development." (Bond language 2008)

An Open Space Advisory Committee works with the County Commission to evaluate and recommend projects for the Open Space bond funding.

Cyclists take advantage of the beautiful views and relatively light traffic to ride in this area. Non-motorized use must be considered as a transportation issue rather than solely a recreation issue.

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

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Facilities	White Earth	Silos (3)	Riverside	Jo Bonner	Indian Road	Hellgate	Goose Bay	Fish Hawk	Court Sheriff	Cottonwood	Confederate	Chinamen's Gulch	**Campgrounds**	Shannon	Sandy Beach	Overlook	Orchard	Mahogany Cove (1)	Lorelei	Lewis and Clark	Crittendon	Chalet (2)	Cemetery Island (1)	Cave Bay	**Day-use areas**	Total
Campgrounds																										
Campsites, Marked		52	38			72			49			45														256
Campsites, Unmarked	38	11		28	32	27	43	5		8	16							3								211
Dumpsters	2	3	2			5			2			3										1				18
Fee Area	Y	Y	Y	Y		Y			Y			Y										Y				
Fire rings and grills	47	63	25	29	18	96		1	49			45														376
Garbage cans		10		9	4	7								2								4				36
Host on Site	Y	Y	Y	Y		Y			Y			Y														
Open during Winter	Y	Y		Y	Y	Y	Y	Y	Y	Y	Y	Y		Y		Y	Y		Y	Y	Y			Y		
Picnic tables	36	68	36	28	21	94	9		49	1		45						2								386
Shelters		2	3			8																				13
Stay Limit (Days)	14	14	14	14	14	14	14	14	14	14	14	14						14								
Trailers and Motor Homes	Y	Y	Y	Y	Y	Y	Y		Y		Y	Y										Y				
Picnic Sites																										
Fire rings and grills		2				7													2	2		3		1		17
Group picnic sites		1				2																1				4
Picnic shelters																2				2						4
Picnic sites			1			10		5	2					8	3	14	7		6	10	15	1		3		85
Picnic tables		5	3			18			1							2	7		5	5		6	3	3		58
Boating and swimming																										
Boat docks	1	2	1	1		2						1		1												9
Designated beaches				1		1						1					1		1	1						6
Dirt surface boat ramps		1		1			1					1														4
Surfaced boat ramps	1	3	1			2								1												8
Undesignated beaches	3	4	1			3	5				2			1	1			1		1	2	1	2	1		28

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(Source: Bureau of Reclamation, 2011)

Agricultural Uses

Livestock grazing is the predominant agricultural activity that occurs within the planning area on both private and public lands. The two (2) principal operators in this area are the Running W Cattle Company, and the Sieben Livestock Company. 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 Creek, Pikes Gulch, 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.

Canyon Ferry and York Planning Area Priorities

The following issues were identified through public workshops, 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 and Canyon Ferry Planning Area, and were developed by people living in the area.

Citizens of the York and 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 and 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.
- Continue to work with the County Weed Advisor.
- Apply for weed grants to help eradicate noxious weeds in the area.

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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.
- Consider historic preservation when possible.

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

Action Items

- Resurface York Road from the York Bar to Vigilante Campground.
- Upgrade or resurface Nelson Road.
- Upgrade or resurface Jimtown Road.

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 and up to Vigilante Campground.
- 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

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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.

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

Action Items

- Area needs a pay phone or emergency call box for emergencies due to lack of cellular service in the area.
- 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.
- Pursue installation of repeater on Hogback Mountain.
- Ensure that the batteries at the Canyon Ferry emergency radio are charged.

H. Preserve agricultural and ranching, lands.

Action Items

- Establish minimum lot sizes within agricultural lands.
- Explore the use of cluster subdivisions where residential development occurs in rural and agricultural areas.
- Maintain public input during “hard rock” land changes such as gold mines.

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 and recreational site development is appropriate.

J. Better community services should be encouraged.

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Action Items

- 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.
- Continue to develop the Welch Museum.
- Create better access opportunities to log for diseased trees in the area.

Helena Valley Planning Area

Introduction

Native American tribes, particularly the Little Shell and Salish, occupied the Helena Valley before settlement by Euro-Americans began. The first exploration by Euro-Americans 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 traveled 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 European and American visitors to the area were fur trappers and traders. Prior to the influx of Euro-Americans, the area was controlled primarily by the Piegan Blackfoot Indians, a group that belonged to the larger Blackfoot Confederacy.

From 1858 to 1860, Lt. John Mullan of the U.S. Army directed the construction of a military wagon road from Fort Walla Walla, Washington Territory to Fort Benton 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 south 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

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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 more than 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 and Virginia City, Helena rapidly developed into one of the leading commercial emporiums of the Montana Territory. By 1875, Helena had eclipsed Virginia City in size, population, and influence and was voted the Territory's capital.

The town site 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 that 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.

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The real impetus to develop the community of East Helena was the 1888 construction of the Helena and Livingston Smelter, which became 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 home to many of the plant employees; many of whom 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. The flood of 2011 inundated parts of East Helena. 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 existing today. In June 1916, the Montana National Guard was notified by the War Department to mobilize to guard the U.S. and 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

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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 soldiers, support and combat service support units. Numerous major improvements and increased training facilities were completed at Fort Harrison in 2001.

In 2011, a 24-bed facility opened at Fort Harrison. The facility will provide care to veterans who need acute psychiatric care and residential rehabilitation for post traumatic stress disorder or substance abuse.

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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 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 3,650-4,000 feet. The mountains along the Continental Divide reach elevations of approximately 6,000-8,000 feet. The North Hills form a drainage divide (ranging between 4,700-5,200 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 benchlands are present in the eastern part of the area, culminating in the Spokane Hills (4,600-5,600 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 (5,365 feet), Skihi Peak (6,583 feet), Black Mountain (7,149 feet), Colorado Mountain (7,217 feet), and Red Mountain (8,150 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 5,253 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.

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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, as part of the No Wake Lake subdivision.

Two water bodies are associated with the former 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).

The headwaters of Prickly Pear Creek is 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 and 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

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boundaries have been mapped by FEMA (1985) downstream of the Rimini Road and 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 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: When descending 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 nonirrigated 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.

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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.

By 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, the Montana Power Company 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 BOR 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 BOR. 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.

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Existing Conditions: The physical components of the current irrigation system include the canal, which is "31.7 miles long, with 10.2 miles unlined and 21.5 miles lined. At mile 11, the canal discharges into a 10,451-acre-foot-capacity regulating reservoir. The lateral system is 64.8 miles long, which includes 51.9 miles unlined, 12.7 miles lined, and 0.2 mile of pipe. The drainage system is 56.5 miles long, including 26.6 miles of open drains and 29.9 miles of pipe drains." (www.usbr.gov)

In 2004, the Helena Valley Irrigation District had over 15,000 acres in long-term contracts and 1,500 on temporary water service contracts.

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.

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 children and dogs. The HVID encourages the County to seriously consider the issue of public safety when reviewing proposed developments adjacent to its facilities.

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 USGS, has a high potential for additional severe earthquakes. iThe 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.

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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, 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.

According to a report by Dr. James Johnson

According to the 2007 Census of Agriculutre (conducted every five years by the U.S. Department of Agriculture), between 2002 and 2007, there was a six percent increase in the number of farms in the County, from 635 to 675. The number of acres in farms increased from 841,826 to 971,240 acres, an increase of 15 percent. The average size a farm in the County increased from 1,326 to 1,439 acres, an increase of nine percent. The market value of products sold in the County went from approximately $32.3 million (2002) to approximately $22.6 million (2007). The average market value of products sold increased from $35,628 to $47,837, an increase of 34 percent.

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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 nonagricultural 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, nonirrigated grazing or nonirrigated 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.

One goal of the 2008 Open Space bond is to “conserve working farm, ranch and forest lands.” In 2011, 260 acres of open grazing property was put under conservation easement using the Open Lands program.

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.

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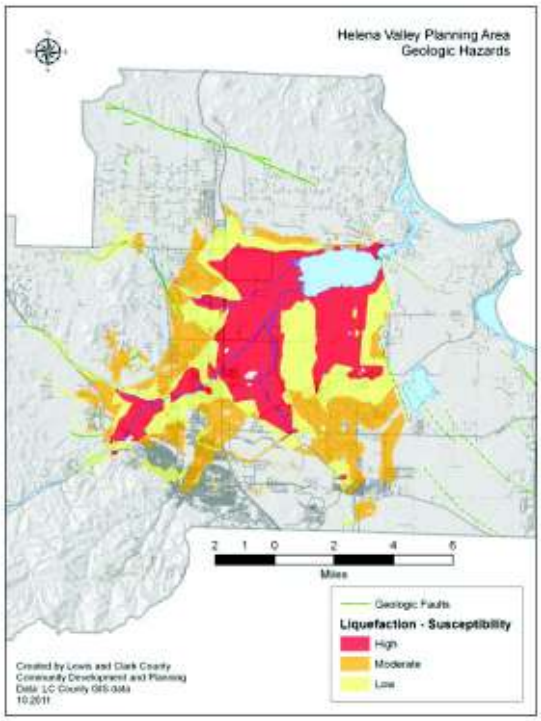

The Helena Valley is located within the Intermountain Seismic Belt, a seismically active zone associated with major geologic fault structures. The Helena area has a long history of seismic activity; the earliest recorded earthquake was in 1869, and the most severe recorded earthquakes occurred in 1935 (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.

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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.

In 2007, an emergency interim zoning district was created by the Board of County Commissioners to address the groundwater conditions in the Helena Valley. The interim zoning district dissolved by statute after a two year period. Single family, on-site wastewater treatment systems continue to be the predominant systems when building new construction. However, the Lewis and Clark County Board of County Commissioners approved the formation of a Septic Maintenance District (SMD). This district will "allow for the regular maintenance and inspection of septic systems to promote the health and safety of residents in Lewis and Clark County." (http://www.co.lewis-clark.mt.us)

The bedrock aquifer systems are complex due to the variety of rock types and the degree of fracture and faulting. In general, groundwater flow in bedrock aquifer systems 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 overwithdrawal of groundwater.

The County is presently cooperating with the USGS 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 and 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

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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.

The Mountain Pine Bark Beetle epidemic has affected much of the forested area around the Helena Valley and the county. The Forest Service, the City of Helena, private contractors and homeowners are thinning the dead and diseased trees.

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 (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 bighorn sheep are not usually found in the planning area, although they have been observed to the north around the Sleeping Giant formation and the York-Nelson area.

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. 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. 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 rough-leggeded hawks, red-tailed hawks, marsh hawks, ferruginous hawks, golden eagles, and peregrine falcons.

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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 significant periods of growth.

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. Numerous ranchettes (5-25 acres) have been established in the areas of Birdseye, Sweeney Creek, Colorado Gulch, the Helena Valley, North Hills, 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 north 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. TheForest 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 BLM (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.

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Area Economy

The Helena Valley, including the City of Helena, is the economic hub of Lewis and Clark County. According to the 2010 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, such as Boeing Helena, generally supports higher wages. Median household income in Lewis and Clark County in 2000 was $41,994. In 2009, the median household income was $52,317, an increase of 20%, according to the US Census.

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 part of the National Highway System, and is maintained by the Montana Department of Transportation (MDT). Two interchanges at Capitol and at Cedar Streetserve the urban area, and one interchange, Lincoln Road, serves the north part of the area. An additional interchange at Custer Street has long been in the planning stages. Construction began on the interchange in 2011.

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.

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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 individuals.

The Greater Helena Area Transportation Plan was updated in 2004. This document was a collaboration of the City of Helena and Lewis and Clark County. This document provides guidance for addressing the transportation needs of the planning area, including non-motorized transportation.

The Helena Area Regional Airport is located within the City of Helena in the south-central part of the planning area. Several passenger airlines operate at this time. 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, which 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. This rail bed is used infrequently and subsequently has become a storage line for empty cars.

Non-motorized transportation

Cyclists from the area, around the state and the country take advantage of the views and relatively light traffic to enjoy this area. Organized rides bring tourists and create economic opportunities.

Non-motorized transportation must be considered as road users. Additions of shoulders or other non-motorized friendly infrastructure would be beneficial for safety.

Public Facilities and Services

Law enforcement within the Helena Valley Planning Area is provided by several agencies. The municipalities of Helena and East Helena each maintain a police forces that respond within its jurisdiction. 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.

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Game wardens for FWP 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 Forest Service, the (BLM), or the BOR.

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.

The FY2010 adopted budget allocates approximately $9 million for the operation of the Sheriff's Department. This includes 75 employees, 58 vehicles, County Detention Center, DARE, Search and Rescue and other duties of the department.

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 Fire Service Area. Due to State and Federal ownership in the region, these entities also provide response to wildland 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

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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 for services. The District has one station centrally located at the intersection of Blue Cloud Road and Highway 12 West.

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 for services. The District has one station centrally located near the intersection of Eagle Ridge Road and the Birdseye Road.
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 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.

The East Valley Fire District provides structural and wildfire protection to approximately 33 square miles in the central part of the planning area. Properties within the District are presently assessed a tax levy 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 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 (6) square mile area in the southeast portion of the planning area. Properties within the District are presently assessed a tax levy) for services. The District has one station centrally located in the Eastgate Subdivision.

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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 Fire Service Area is charged with responding to wildland 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 Forest Service, BLM, and the DNRC. Response may include personnel and equipment from these agenciesas well as the Lewis and Clark County Fire Service Area 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. The Rocky Mountain Emergency Services Training Center offers certifications for aircraft emergency response training.

The Helena area has witnessed a number of wildfires that have destroyed property and affected wildlife habitat, scenic resources, and air quality, including the Lakeside Fire in 2010. The Helena Valley has also experienced numerous smaller wildfires, but were contained quickly by the local fire services. 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.

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Emergency Medical Services

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 majority of calls to the West Helena Valley Fire Department are to emergency medical situations. 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.

There are several locations in the West Helena Valley where older subdivision development provided for individual wells and or individual wastewater treatment

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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 (8) 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 i during the summer. The Missouri River Water Treatment Plant processes four mgd, or about 30 percent of the maximum daily use The City of Helena maintains 219 miles of water transmission lines. In 2008, the Water Treatment Division produced a total of 1.9 billion gallons of water with a maximum production of 12.7million gallons on a single day. (2009 Annual Water Quality Report of the City of Helena.)

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 and groundwater that is piped into the community system. This system meets 100 percent of the average daily demand) 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.

Wastewater Disposal

Wastewater treatment in the planning area is provided by central treatment systems and individual on-site treatment systems While the majority of the wastewater in unincorporated Lewis and Clark County is processed with individual septic systems, there remain a few lagoons. Unfortunately, two large subdivisions have had failing lagoon systems. The Montana Department of Environmental Quality filed a complaint in 2006 against the owner of the failing lagoons. In 2007, a sewer district was formed to address the lagoon.

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In July 2008, the Lewis and Clark County Commissioners approved the final implementation plan for a septic system maintenance program in Lewis and Clark County. The program will allow for the regular maintenance and inspection of septic systems to promote the health and safety of residents in Lewis and Clark County. The Septic Maintenance District (SMD) was approved 2011. This district will "allow for the regular maintenance and inspection of septic systems to promote the health and safety of residents in Lewis and Clark County." (http:www.co.lewis-clark.mt.us)

The City of Helena operates a mechanical treatment plant located on Custer Avenue, which treats the municipal wastewater. The City of Helena completed expansion and redesign of the wastewater treatment plant in 2001, including the addition of collection distribution capabilities.
The City of East Helena wastewater treatment facility was completed in 2003 to replace the old lagoon system. The new system helps minimize ammonia discharges to Prickly Pear Creek. The plant has advanced secondary treatment as well. The City's wastewater treatment plant has adequate capacity for an average daily flow of 435,000 gallons-per-day.

Solid Waste

The majority of the Helena Valley Planning Area is included in Scratchgravel Landfill District.

The Scratchgravel Solid Waste District includes residents living in the greater Helena Valley, Canyon Creek and Marysville. Residents pay an annual assessment on their tax bill for disposal of their solid waste. The annual assessment does not include any collection service. Residents must self-haul their waste to the City of Helena Transfer Station at 1975 N. Benton Avenue, Helena, MT. Canyon Creek and Marysville residents may self-haul their waste to the solid waste container site on the Marysville Road.

All local waste received at the landfill is routed through the City of Helena transfer station. The Lewis and Clark County landfill accepts municipal waste (class II), construction waste(class IV), and some special waste. All real property with improvements valued over $5,000 and all mobile homes within the District are assessed an annual fee.
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 solid waste to the transfer station, or contract with a local collection firm for such service.

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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. Helena Recycling, LLC, a private firm, began doing curb side recycling in 2008.

Lawn clippings, leaves and branches are accepted at the Helena Transfer station for composting.

Utilities

Electrical power is generated in the planning area by PPL Montana. Hauser Dam has a generating capacity of 19 megawatts, which is the energy capacity for over 14,000 households. Holter Dam has a capacity of 48 megawatts or over 36,000 households. (pplmontana.com)

Several major transmission lines cross the eastern half of the area. These range from 69-100 KV, and are operated by NorthWestern Energy. Generally, there are no major capacity constraints in the system; however, some rural locations may have specific distribution constraints. The recent growth 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. CenturyLink has historically been the principal provider for “land line” phone service. Several cellular companies serve the area, as well. Several communications towers have been sighted in the area, some of which have been controversial due to visual and or other impacts. Telephone service is also available through the cable provider, Bresnan Communications.

Natural gas is distributed in the planning area by NorthWestern Energy. The extent of the distribution system is generally confined to the Helena Valley.

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.

Education

There are three elementary school districts within the planning area: District #1 (Helena), District #4 (Canyon Creek), and District #9 (East Helena). All the districts are included in the Helena High School District.

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District #1 has the largest student population of 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 5Fifth Grade curricula. There are two middle schools and three high schools in District #1. Project for Alternative Learning, or PAL, is an alternative style high school for students that are not successful in a traditional learning environment.

School transportation is an important factor in the planning area. Title 20, Chapter 10, MCA requires districts 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

Between 2000 and 2009, over 11,000 addresses were assigned in the Helena Valley, of which more than 10,000 are residential addresses. That figure includes both single family and multi-family uses. The remaining are commercial, private not-for profit businesses, or public buildings.

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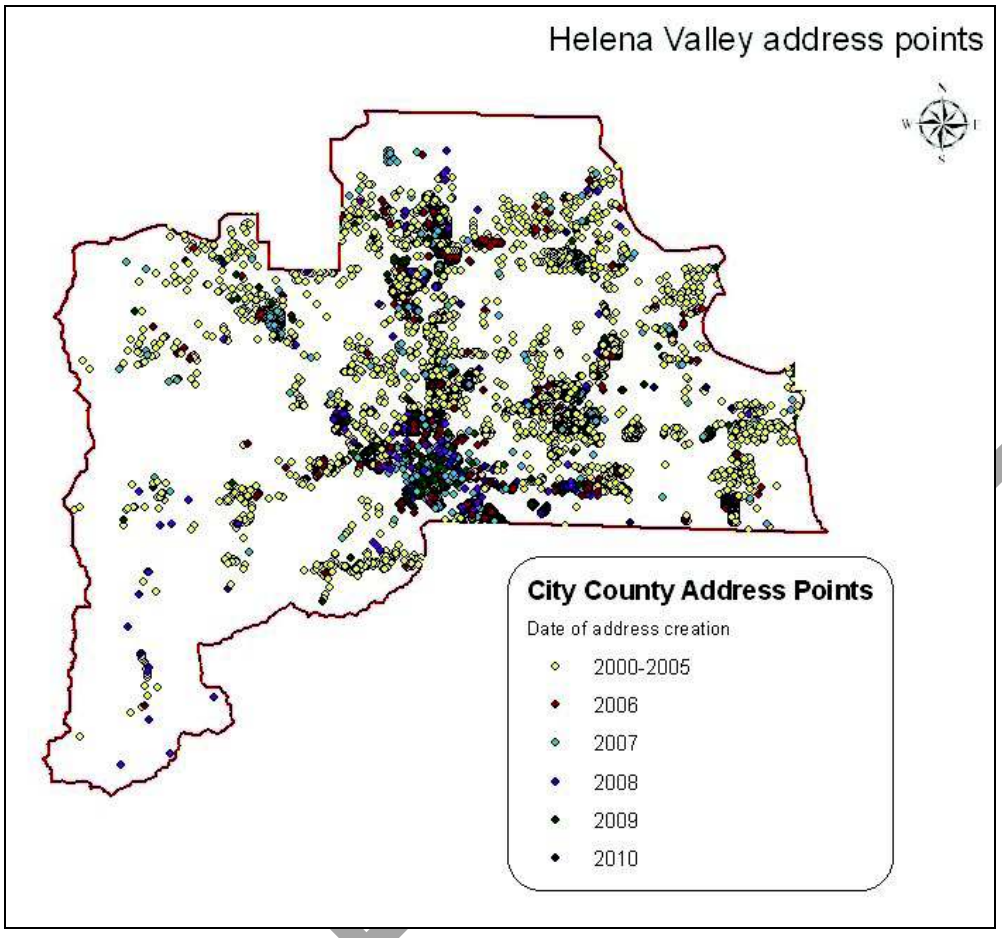

Residential development in the Valley is a mixture of housing styles that includes both manufactured homes and on-site built construction. Most of the development consists of single-family dwellings. A majority of the residential lots located outside the City of Helena are served by individual wells and on-site wastewater treatment systems.

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

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east of the City limits.

The city of Helena addresses annexation in the city growth policy. It states, "Give priority for future extension of services and annexations to property located within the Urban Standards Boundary area. ." The plan identifies areas on the west, east, and north sides of the city.

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 extensive retail business expansion, as has the area near the Washington Street and Custer Avenue intersection. The Custer Interchange, currently under construction, will support this expansion pattern.

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 and convenience stores, a grocery store, bars, and restaurants.

Employment payrolls are indicative of the existing commercial base in the planning area. According to 2009 estimated data from the US Census, professional occupations, including governmental jobs, account for 39 percent of the jobs in the planning area. Sales and office occupations are 27 percent and service jobs are approximately 17%.

The relative stability of jobs in the government sector helps cushion the Helena area against rapid declines in employment, but also makes rapid growth less likely during times of expansion. However, the current recession is cutting into the government sector. Open positions are being unfilled or cut and new positions are not being created. State employees have been under a pay freeze since 2010.

Helena has seen an expansion in regional health care services, including many new services at St. Peters Hospital, the construction of retirement complexes, and extended care facilities. A 2009 Occupational Survey, conducted by the Montana Business Assistance Connection, demonstrates that the engineering and educational sectors are projected to grow while construction and manufacturing will, in all probability, decline.

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Industrial Development Patterns

The principal industrial developments within the planning area include 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.

2008 data - US Census Bureau, LED OnTheMap Origin-Destination Database

Parks and Recreation

Lewis and Clark County acquires park land as required by the Montana Code Annotated (76-3, MCA) during the subdivision process. A subdivider may plan a park within the area of the subdivision or pay a percentage of the value of the undeveloped land as defined by 76-3-62, MCA1.

The county holds deeded park land. However, there is no parks department. Therefore, the park lands are administered by the Public Works Department with partnership from the Weed Department and the planning office. The Lewis and Clark County Fairgrounds has its own Board of Trustees and Master Plan. Upgrades at the Fairgrounds include a new Exhibition building, a newly paved parking lot and removal of the old horse track.

Currently, the county has approximately 208.2 acres of lands dedicated for parkland, excluding the fairgrounds. Of that amount, approximately 86.2 acres have been developed into parks. The remainder of county park lands consists of small tracts that have remained undeveloped. The Lewis and Clark County Fairgrounds is 159.8 acres. In addition, the county cooperates with the Helena School District on development and maintenance at Sierra Park, 31.5 acres, and Warren Community Park, 10.6. Parkland adjacent to the Jim Darcy School will also be developed in the future.

A new Parks and Recreation plan was adopted in 2009. The goals of that plan focus on need based development of parks within the planning areas of the county. If an existing park is close enough to a proposed subdivision that the new residents of that subdivision can use it, then the Board of County Commissioners may request the cash in lieu of park land option. If, however, there are no parks in the vicinity of the proposed subdivision, then the following goal addresses the park land requirement:

> "Recommend approval to the County Commission Board of usable neighborhood parks during the subdivision process. If recommended by the BOCC, a maintenance district shall be formed for that land dedication at such time as the park is developed."

FWP manages two (2) parks, one (1) fishing access and one (1) wildlife management area in the Helena Valley Planning Area. Spring Meadow State Park, Black Sandy

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campground, the Lake Helena wildlife area and the York Bridge fishing access are FWP concerns.

The United States operates several federal recreation sites in the Helena Valley such as the Helena Regulating Reservoir, Scratchgravel Hills and the White Sandy campground on Lake Hauser.

In 2008, the residents of Lewis and Clark County voted in favor of a $10 million open space bond. The bond is intended to "protect drinking water sources and ground water quality; protect water quality in and along rivers and streams; conserve working farm, ranch and forest lands; protect wildlife areas; preserve open lands and natural areas; provide for recreation; and manage growth and development." (Bond language 2008)

An Open Space Advisory Committee works with the County Commission to evaluate and recommend projects for the Open Space bond funding.

Cyclists take advantage of the beautiful views and relatively light traffic to ride throughout the county. Non-motorized use must be considered as a transportation issue rather than solely a recreation issue.

Population Growth and Future Land Use Needs

As discussed 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 63,395 persons in 2010, more than 2.5 times 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.

Table 2.1 from Chapter II:
POPULATION TRENDS: MONTANA AND LEWIS AND CLARK COUNTY

	1950	1960	1970	1980	1990	2000	2010
L&C County	24,540	28,006	33,281	43,039	47,495	55,716	63,325
Montana	594,024	674,767	694,409	786,690	799,065	902,195	989,415

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 Much of the growth has been in unincorporated portions of the Valley, outside the boundaries of Helena and East Helena.

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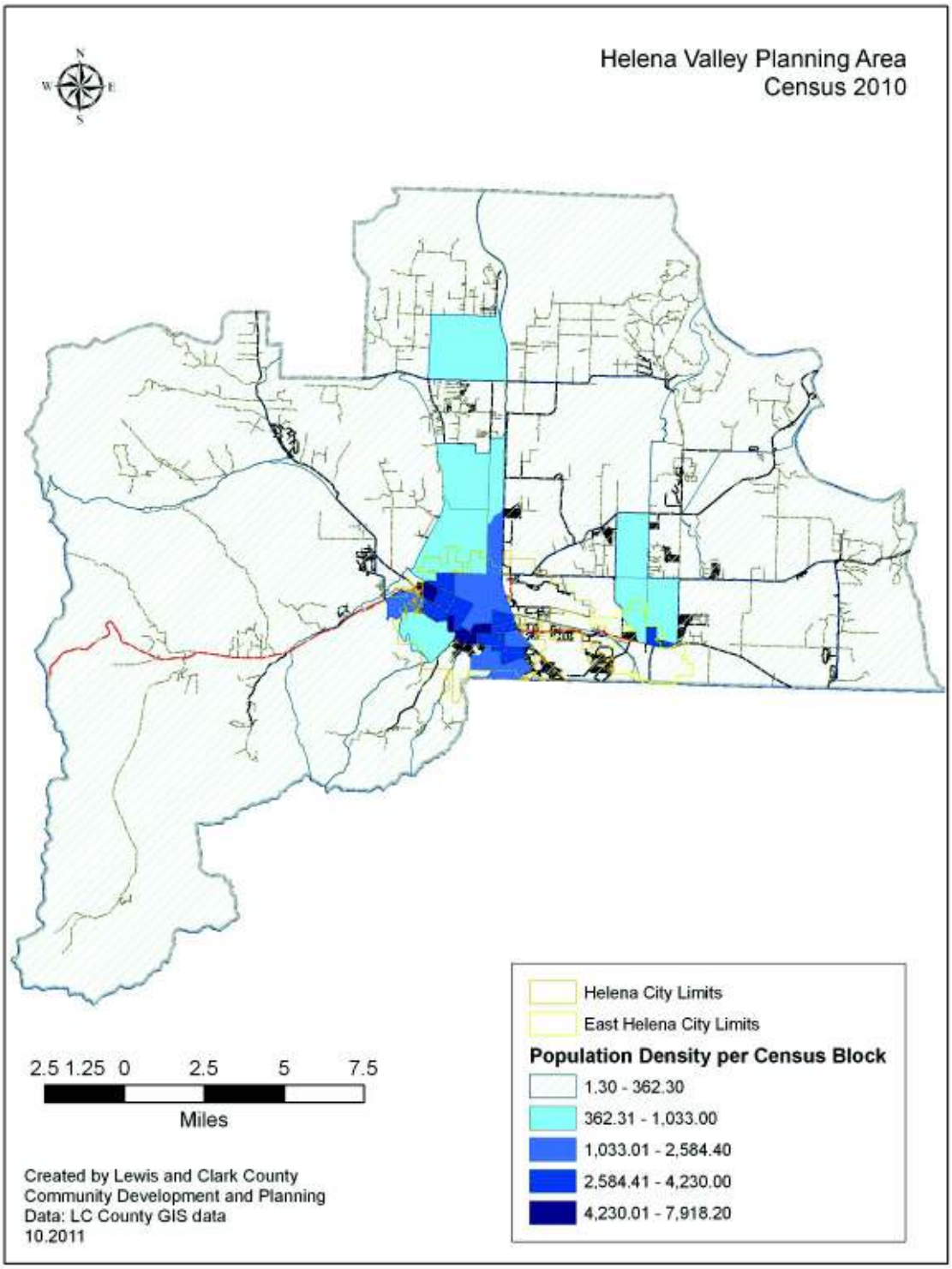
Helena Valley Planning Area
Census 2010
N
W
E
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Helena City Limits
East Helena City Limits
Population Density per Census Block
1.30 - 362.30
362.31 - 1,033.00
1,033.01 - 2,584.40
2,584.41 - 4,230.00
4,230.01 - 7,918.20
2.5 1.25 0 2.5 5 7.5
Miles
Created by Lewis and Clark County
Community Development and Planning
Data: LC County GIS data
10.2011

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 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 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 Urban Standards Boundary Plan map and policies contained in this section of the Growth Policy (see Appendix F). The Urban Standards Boundary Plan Map was developed by the Lewis and Clark County Department of Community Development and Planning.

Future land use plans acknowledge that some existing development patterns and infrastructure have been committed for development, though they may have some environmental, service, or other constraints. Future Land Use Plan would also reflect 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 urban standards 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 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.

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Urban Standards Areas

Three Urban Standards 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 Standards designation was previously included within the Class I Preferred Development Areas of the 1989 County Comprehensive Pan. 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 conservative due to deficiencies in infrastructure. However, recent improvements related to its capital facilities plans may alter this policy. The City of East Helena formed a city planning board in 2009.

Near West Valley Urban Standards Area: 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. This area encompasses the unincorporated area of the upper west side and lower west side of Helena, extending north and south adjacent to Highway 12 West to the Broadwater Athletic Club on Old Broadwater Lane.

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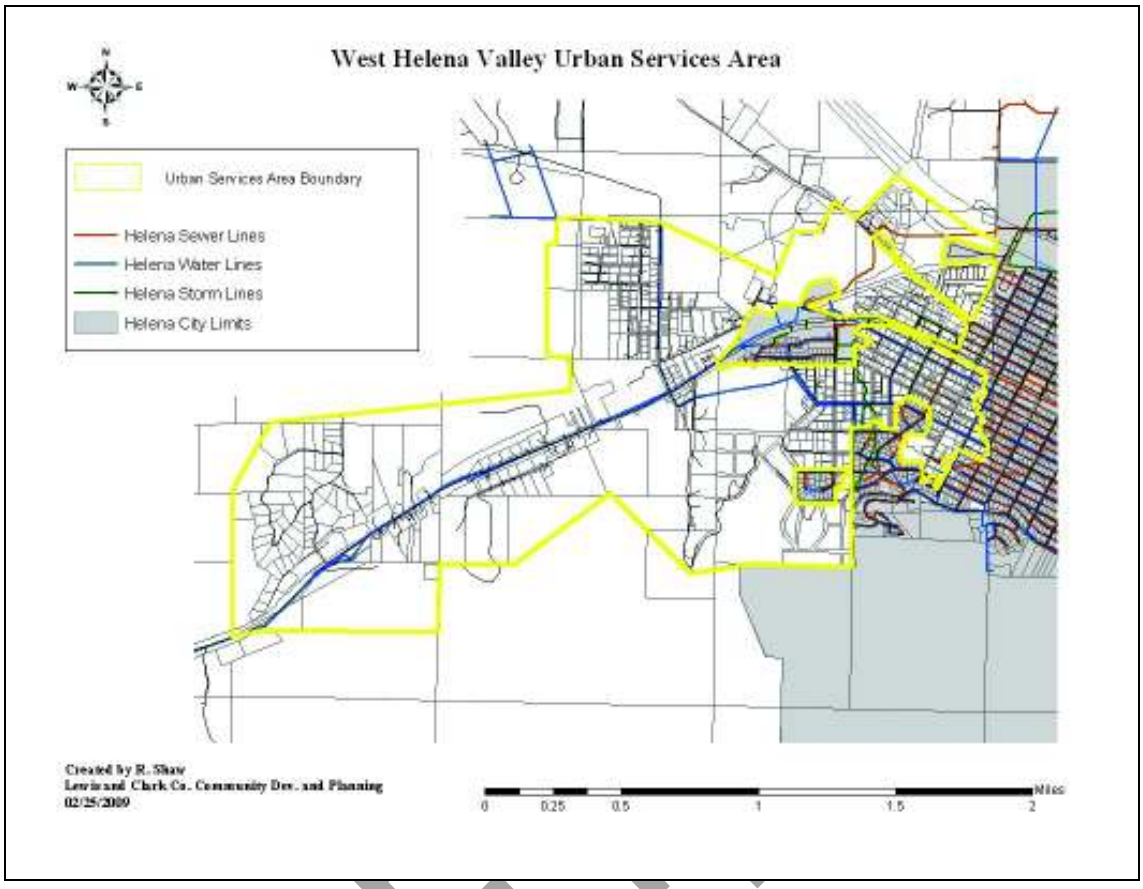

The City of Helena wastewater lines have expanded westward since 2004 near Broadwater Avenue. Given the proximity to existing wastewater lines, the west side of Helena outside of the city limits can easily be serviced for higher density housing and development. However, wastewater lines would need considerable extension to encompass the Highway 12 West area.

The City of Helena water main from the Ten Mile Water treatment plant flows adjacent to Highway 12 West. Given the proximity to the existing main and other water lines, the west side of Helena outside of the city limits as well as the Highway 12 West corridor can easily be serviced for higher density housing and 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. The Near West Valley Urban Standards Area is served by the Westside Fire Service Area, which is a contract with the City of Helena Fire Department and the Baxendale Fire District. The Lewis and Clark County Sheriff's Department has jurisdiction in the entire area. There is infrastructure for storm drainage in the area.

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The west side that is in the City of Helena is zoned for low and medium residential uses as well as office and light industrial adjacent to the Euclid Ave corridor. The county parcels in this area also are zoned for low density residential uses.

The US Highway 12 West corridor is not zoned. Currently, the land uses are low-density residential with commercial adjacent to the highway. All parcels should conform to any adjacent zoning for continuity and city annexation purposes as standards are provided.

The Southeast Helena Valley Urban Standards Area: The area southeast of Helena east of Interstate 15 is presently used for rangeland and dry land farming. However, the City of Helena has been annexing in the area. The Mountain View Meadows Subdivision will encompass most of this Urban Service Area and will ultimately be annexed into the City of Helena. See map.

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Water, wastewater and stormwater infrastructure exists surrounding the unincorporated areas of the Southeast Helena Valley Urban Standards Area.

Several transportation upgrades are identified in the Greater Helena Area Transportation Plan, the Eastside Loop Road and the Eastside Frontage Road, both linking from the South Helena interchange.

Southeast Helena Valley Urban Standards Area is served by the East Helena Valley Fire District. The Lewis and Clark County Sheriff's Department has jurisdiction in the entire area.

The City of Helena has many zoning areas along the west boundary of the Southeast Helena Urban Standards Area. They include commercial, public institution land, residential land, residential/office and high-density residential zones. There is no county zoning in the area or adjacent to the area.

Currently, the land uses are low- density residential and agricultural. All parcels should conform to any adjacent zoning for continuity and city annexation purposes as Standards are provided.

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

The designation of these eastside areas as Urban Standards Areas anticipates the planned extension of central services to address 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.

***Near-North Valley Urban Standards Area*:** The area is comprised of the unincorporated areas just north of the City of Helena boundaries. It includes areas of higher density development as well as many Special Zoning Districts. The City of Helena has expanded northward. This area has few environmental constraints, and is within City of Helena planned service areas for water supply and wastewater treatment.

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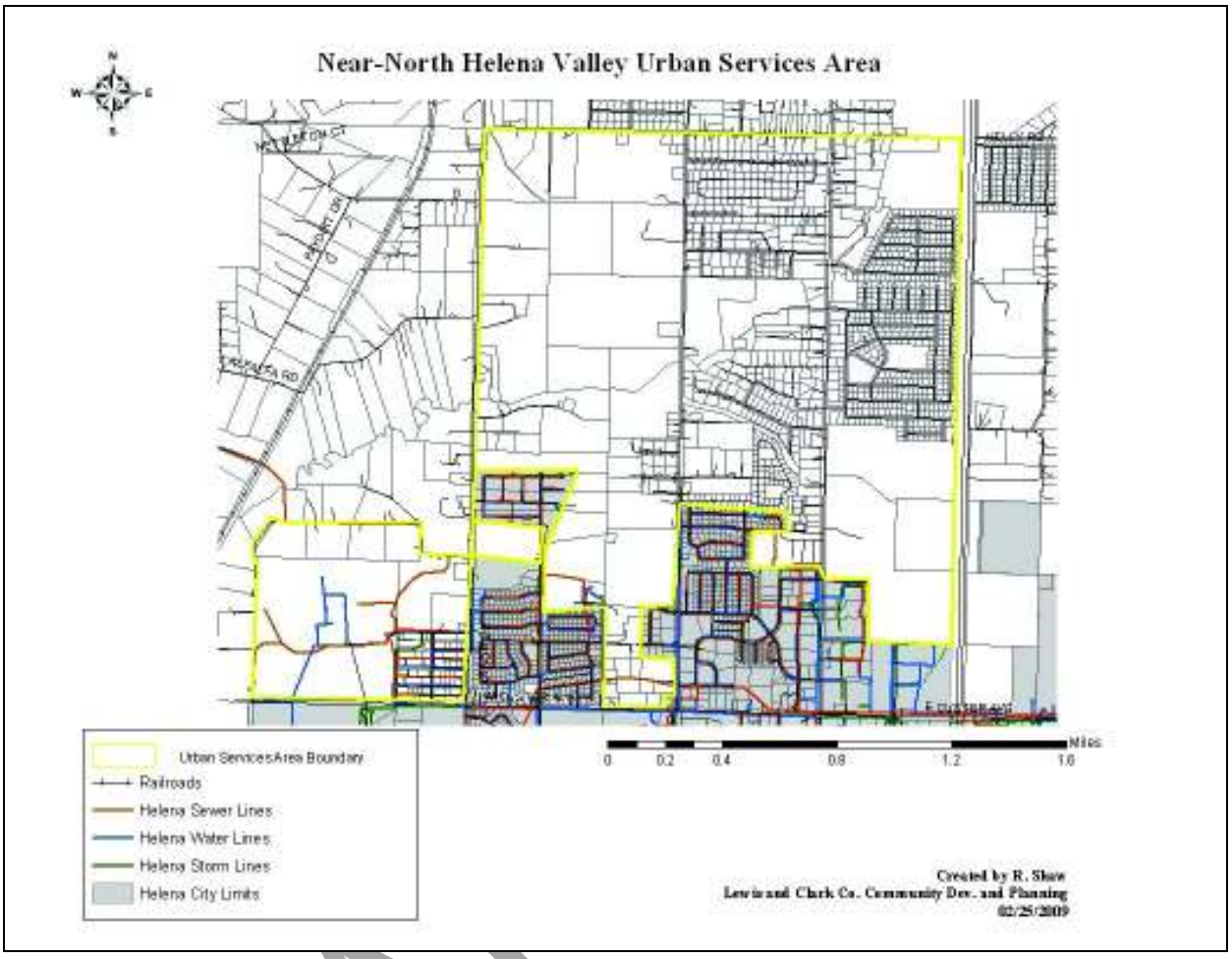

Municipal water lines are within and adjacent to the southern portion of the Near-North Valley Urban Standards Area. In addition, there are several higher density county subdivisions that may be better served by urban standards in the future.

A major wastewater transmission line has been installed in the western portion of this area, and sewer service has been extended to Fort Harrison. Other municipal wastewater lines are within and adjacent to the southern portion of the Near-North Valley Urban s Area**.** In addition, there are several higher density county subdivisions that may be better served by urban standards in the future. For example, the Tenmile Mile Creek subdivision is within this Urban Standards area and is in need of better wastewater treatment.

Stormwater infrastructure has been developed in many of the same areas as the water and wastewater infrastructure. Therefore, the same assumption may be made. Municipal solid waste service may be necessary as the Near-North Valley Urban Standards Area develops further.

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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.

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. Fire, police and emergency services are all in close proximity. However, jurisdictional issues may arise as areas are annexed.

The designation of this north side area as an Urban Standards 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. The completion of the Custer Avenue interchange will have impacts to the congestion of the area, as well.

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 and regional commercial area and will continue as such.

Suburban Areas

Three Suburban Areas are identified. These areas contain existing low-density development and community services such as schools, parks, fire protection, , and commercial. Additional infill development could be accommodated.

Public investment would not be focused in these areas until necessitated by additional development. 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 Suburban Areas to plan for future neighborhood commercial center 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.

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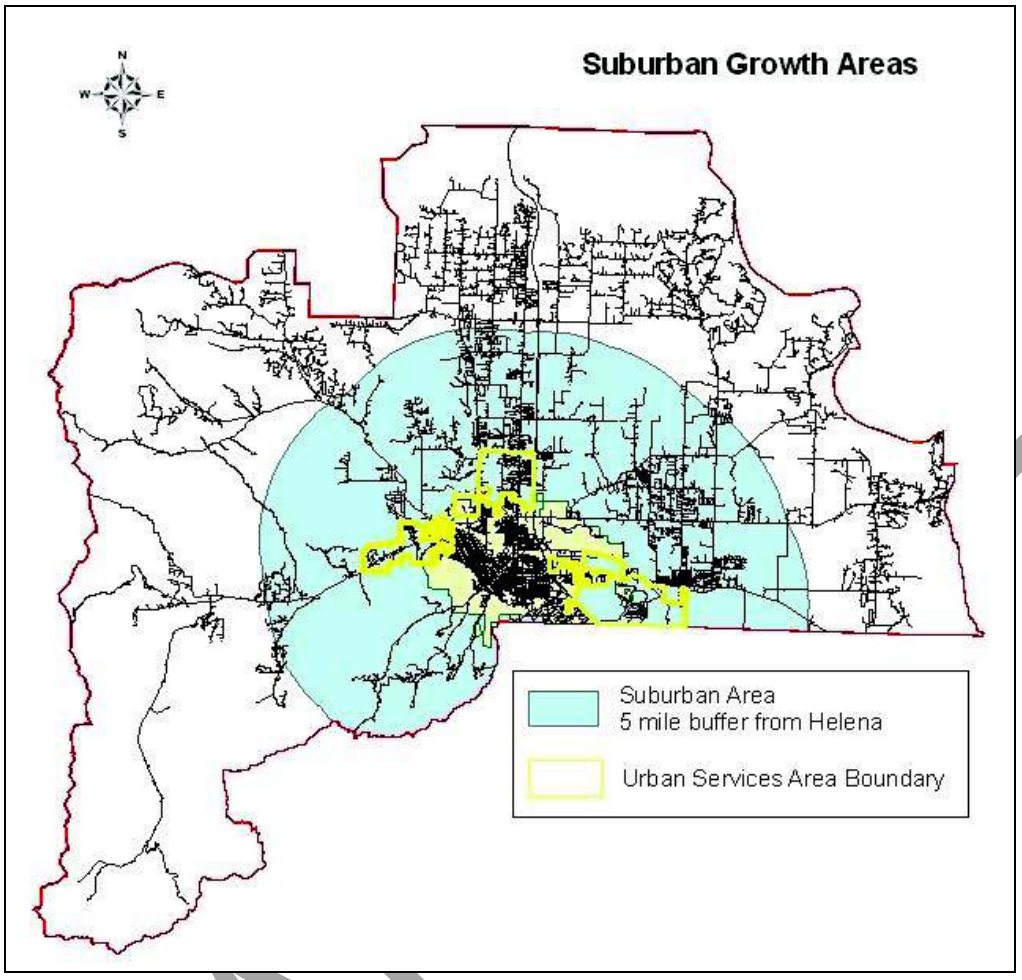

West Valley Suburban Area This area is located in the West Helena Valley in a buffer of five miles from the City of Helena. The West Valley Suburban Area includes the Grizzly Gulch and Unionville loop, north and south of US Highway 12 West to Colorado Gulch Road on the west and Birdseye Road on the north.

The area has low-density residential and agriculture uses currently. In the gulches, natural esource harvesting continues to be viable, including forestry and mining. Evidence of the historic uses is present.

There are undeveloped areas with potential for low density infill development. The City of Helena Ten Mile water main lies adjacent to US Highway 12 West. However, municipal wastewater treatment services are not available at this time. There is a corridor of 100 year floodplain along Ten Mile Creek. For these reasons, the area is not suited to higher urban densities.

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The designation of this West Valley area as a Suburban 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: 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.

Northwest Valley Suburban Area: This area is located in the northwest valley and is bordered by Silver Creek and John G. Mine Road on the north, Birdseye Road on the west, Country Club Road on the south and Interstate 15 on the east. The Near North Urban Standards area has been previously reviewed. Therefore, it will not be considered as part of the Suburban area. (See above.) The north and west boundaries reflect agricultural lands, low-density residential developments (ranchettes), and or public lands. The east boundary is Interstate 15.

Some environmental constraints exist in the area, such as 100-year floodplain and groundwater quality issues that will need to be addressed. 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.

Tenmile Creek is in the southern part of the area and has been identified as a corridor for flooding and riparian habitat.

There is a municipal wastewater line in the southern portion of the area near Birdseye Road that services Fort Harrison.

The nature of Birdseye Road has constrained some development in the area. Water availability has also been cited by residents in the area as a constraint.

North Montana Avenue traverses the area and provides connection to the City of Helena. Safety and capacity improvements for the southern section are scheduled, such as the Custer Avenue interchange. and Related traffic generation would require additional 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.

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The area is desirable as suburban residential due to the proximity to town, hills and views. It is appropriate for individual wastewater and well systems where environmental restrictions can be mitigated.

***North Hills Suburban Area*:** The North Hills Suburban Area is unique in that it is greater than five miles from the City of Helena boundaries. 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 nonresidential development is also present. A portion of the area is zoned for residential use. The area is within the West 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 in the area), additional development to the north should be limited unless or until an alternate water supply is established.

A draft Environmental Assessment (EA) 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 hydro geologic 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).

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Designation of the North Hills as a Suburban 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.

***Northeast Valley Suburban Area*:** The boundaries of this suburban area are Sierra Road on the north, Interstate 15 on the west, York Road on the south and Prickly Pear Creek on the east. Currently, this area contains some of the largest agricultural operations still operating in the Valley. Suburban density development is still sparse and generally near the Interstate.

North of York Road, irrigated agricultural lands, possible environmental constraints and natural resource values may limit development potential. Groundwater studies in the area conclude that nutrients are leaching into the Lake Helena watershed from septic, agriculture and non-point sources. It is an issue that the Board of Commission for Lewis and Clark County has been attempting to address.

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. Rossiter Elementary School and Warren Elementary School are both adjacent to this area; however, there are no schools in the Northeast Valley Suburban Area.

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.

Groundwater and floodplains are critical issue in the accommodation of additional development. Municipal services have been proposed for the area. Because of the groundwater, water and wastewater will be better served with public or municipal systems. Suburban densities may be appropriate with services that guarantee the environmental health of the area.

Wildlife habitat is also of concern as Ten Mile Creek and Prickly Pear Creek flow in the area. Corridors along the creek beds should be preserved.

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The designation of the Northeast Valley area as a Suburban 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, protection of groundwater resources, and establishment of a community park facility.

***The Southeast Valley*:** This area is bordered by York Road on the north. The eastern boundary approximates the boundary between rural-residential and urban services 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 concentrations related to the ASARCO Smelter facility. 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, and ranchette density), a small commercial hub (Wylie Drive and Canyon Ferry Road), two sand and 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, the Warren Community Park and the Eastgate subdivision park.

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.

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The designation of the Southeast Valley area as a Suburban 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

Fort Harrison and the ASARCO Smelting Facility are identified as Special Use Areas. These areas are so unique that they require 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. 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. The smelter smoke stacks were demolished in August 2008.

East Helena Institutional Controls: The United States EPA defines institutional controls as "non-engineering instruments, such as administrative and legal controls, that help to minimize the potential for human exposure to contamination and protect the integrity of the remedy." (East Helena Institutional Controls Program (ICP) Implementation Plan)

The goals of the ICP are:

1. Protect public health and the cleanup actions;
2. Accommodate various land uses, development, zoning, and property exchange;
3. Minimize inconvenience and cost to property owners and local governments;
4. Utilize, to the maximum extent practicable, existing and applicable governmental processes, local expertise, and local agencies; and
5. Gain assurance for long-term funding for ICP implementation.

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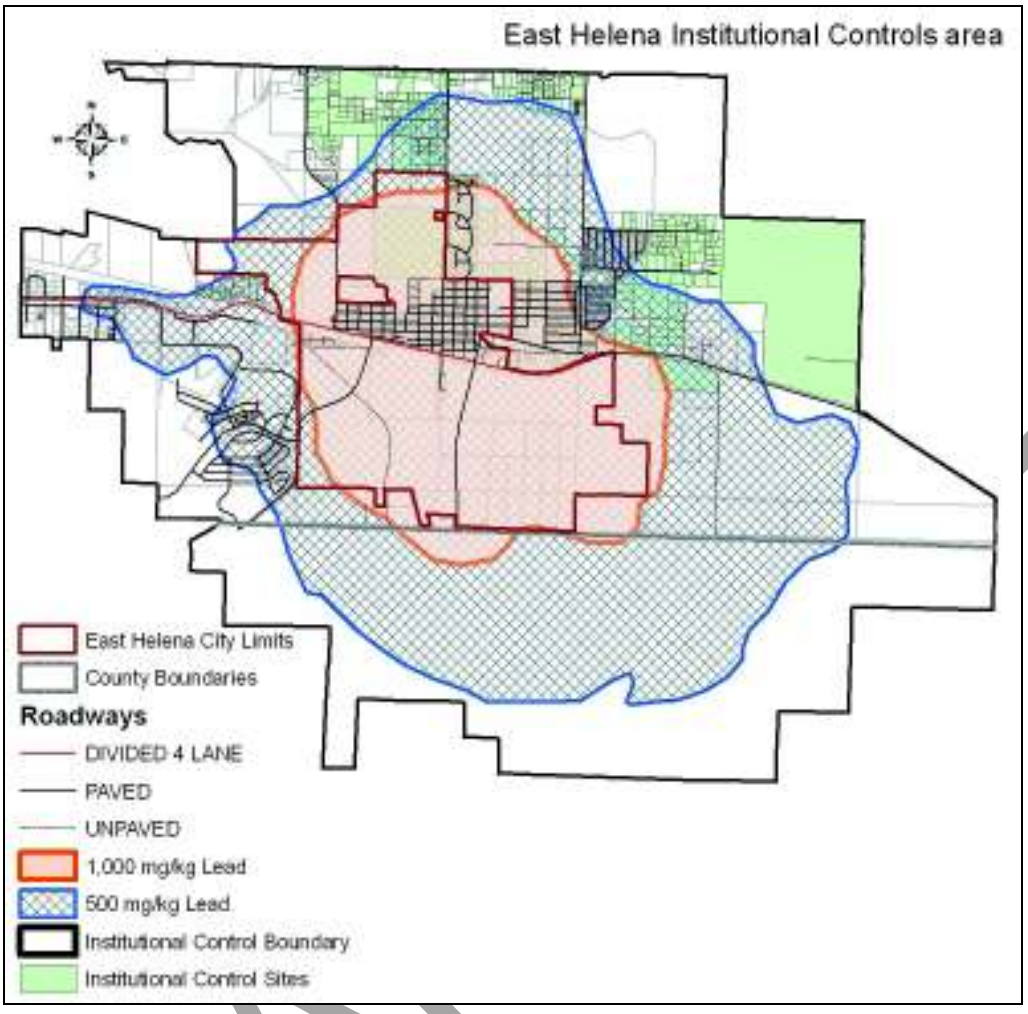

Balance of Helena Valley Planning Area

Development outside of identified Urban Services 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.

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Impacts on Housing Needs

The Urban Standards Boundary Plan map 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 designated urban areas and suburban areas needs to be self-sufficient. Meaning that the homeowners or other entity would provide and maintain any private roadway systems as needed to access the public roadway network, and provide on-site water and wastewater systems.

Affordable and particularly assisted and subsidized housing will be most feasible in the incorporated cities where higher densities and higher level of services are available, including transportation options. In the unincorporated portions of the Helena Valley, affordable and assisted housing will be most feasible in the Urban Service Areas and Suburban 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).

Impacts on Employment Trends

The adoption of Suburban Areas with their valley centers would provide economic opportunity outside of incorporated areas. The increased residential development in Suburban 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 and service errands, and there will be nearby employment opportunities for those who live outside the city limits.

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Impacts 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 Suburban 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 Urban Standards Boundary Plan Map does not prohibit development outside of Urban Areas and Suburban Areas, it does identify constraints on such 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.

Impacts on Agricultural Land

The amount of land being utilized for agriculture in Lewis and Clark County increased from 2002 to 2007, according to the Montana Census of Agriculture. According to the 2007 Census of Agriculture, the amount of acreage in farms in Lewis and Clark County increased 15 percent between 2002 to 2007, from 841,826 acres to 971,240 acres. The average farm size in the county increased nine percent during the same period, from 1,326 acres to 1,439 acres, while the number of full-time farms increased six percent. The majority of farms are between 10 and 50 acres and consist of pasture land. (Source: *USDA, Montana Agricultural Statistics Service, 2007.*)

The loss of agricultural lands has both negative and positive consequences. As agricultural lands are developed, agricultural values are lost as well as large amounts of open space and wildlife habitat. Agricultural lands may 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. Agricultural soils are generally suited to establishing on-site water wells and on-site wastewater treatment systems than other types of soils. In addition, those who are “land rich” may be planning on development to help them in retirement.

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Analysis of Facility Impacts

Impact on Ability to Provide Capital Facilities

There is limited capital available in the County budget to provide services to residents of unincorporated Lewis and Clark County. Therefore, investment of county capital facility improvements should be coordinated with the City of Helena by identifying projects within Urban Services Areas, particularly transportation infrastructure. The County and the City can coordinate for service extension and 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 Services 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 Suburban 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 improvement investment would be improved level of service for a greater number of residents who choose to live within the Urban Services Areas and suburban areas, and a lower level of service for those who chose to live in the outlying areas.

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.

In 2004, the Greater Helena Area Transportation Plan was updated. The County and City jointly hired the firm Robert Peccia and Associates to prepare the plan. Below are examples for improvements as well as two projected services maps.

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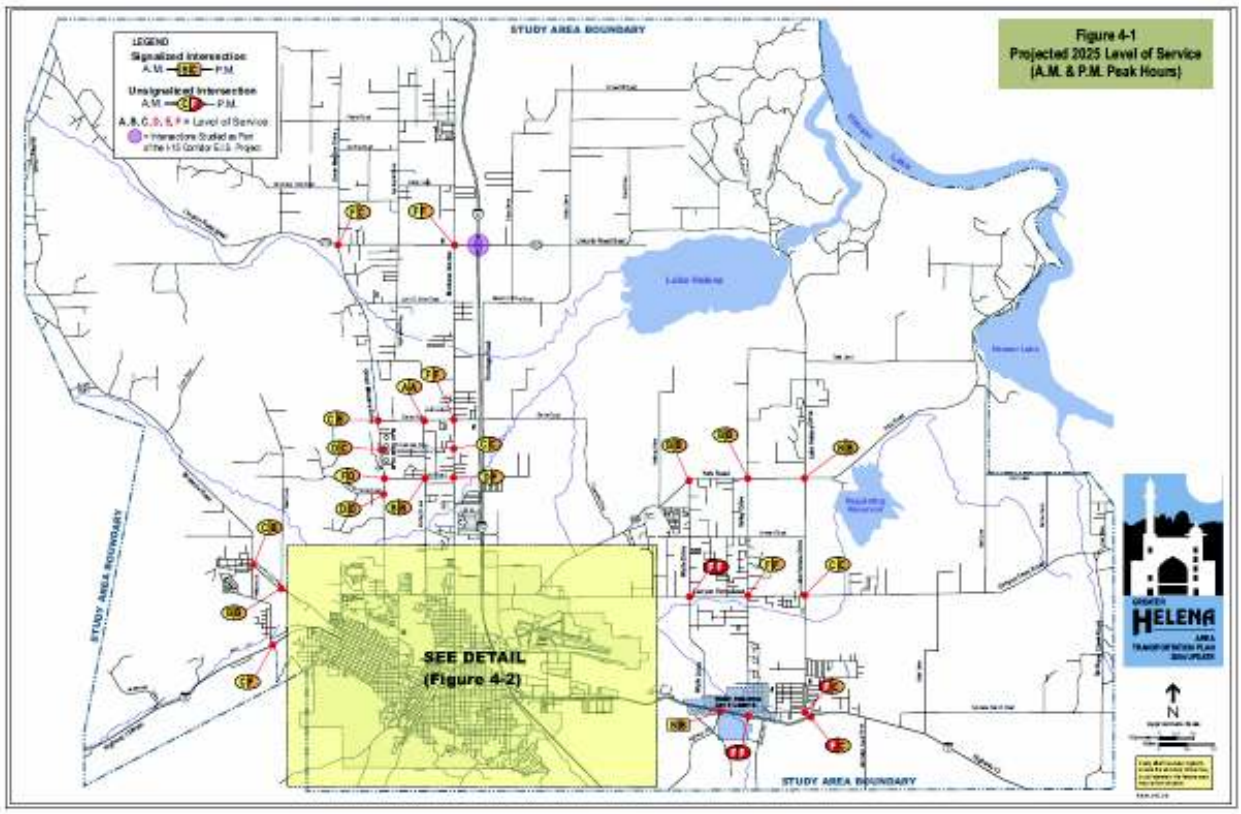
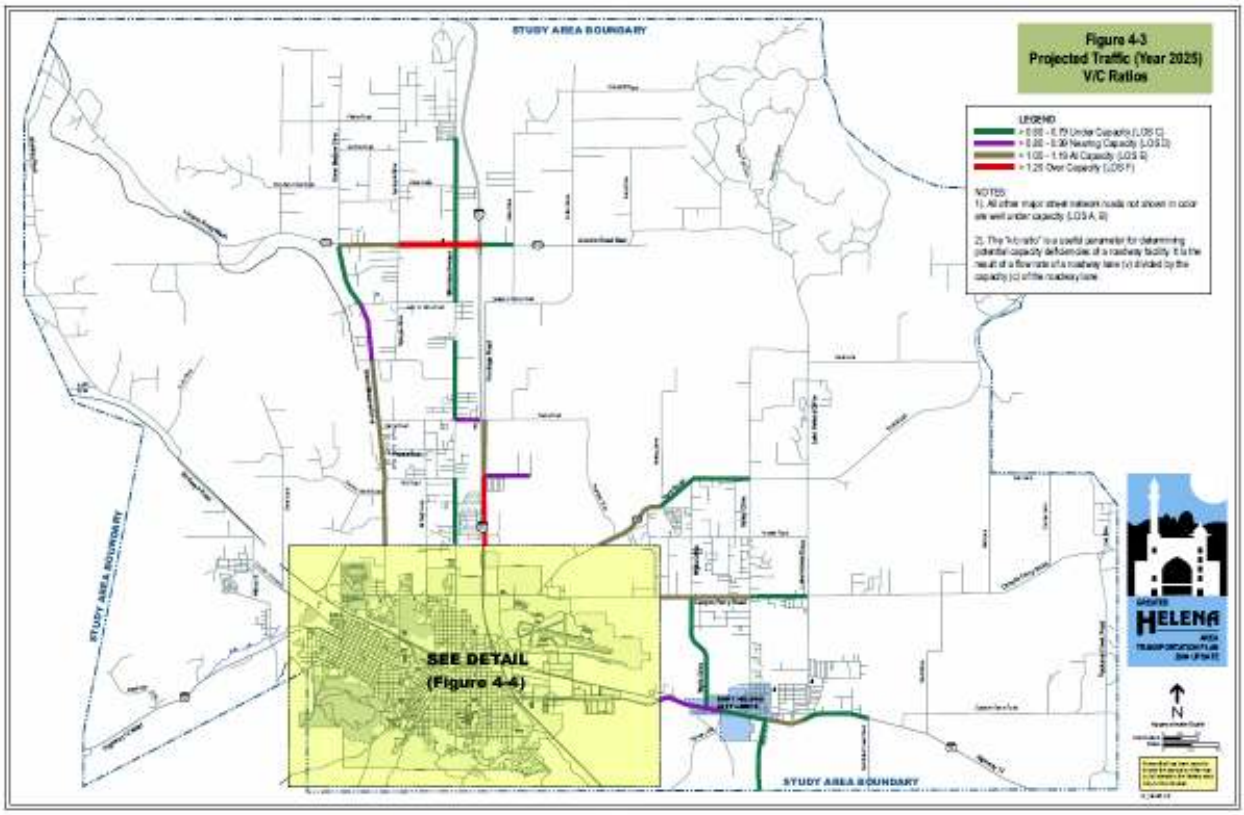
- US Highway 12 West: Install corridor lighting on the segment of US Highway 12 West, from where the current corridor lighting ends, west to the intersection with Old Broadwater Lane.

- York Road and Valley Drive: It is recommended that an intersection light be placed at this intersection to increase visibility. Additionally, "INTERSECTION AHEAD" warning signs should be used on all four legs of this intersection.

- Howard Road (Valley Drive to Lake Helena Drive): It is recommended that this segment of Howard Road be marked with centerline striping and shoulder paint (it is currently paved). Additionally, a new segment of Howard Road should be constructed that continues east to intersect Lake Helena Drive.





Future transportation system improvements are needed in the Urban Services Areas and Suburban Areas. Funding transportation improvements is difficult. The Board of County Commission is seeking solutions.

The Greater Helena Transportation Plan also addresses public transportation and non-motorized transportation. Public transportation routes need to be planned to serve the emerging Suburban 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.

Non-motorized transportation

Cyclists from the area, around the state and the country ride take advantage of the views and relatively light traffic to enjoy this area. Organized rides bring tourists and create tourist opportunities.

Non-motorized transportation must be considered as road users. Additions of shoulders or other non-motorized friendly infrastructure would be beneficial for safety.

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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 Suburban Areas. The 2009 Lewis and Clark County Parks and Recreation plan focuses on need based development of parks within the planning areas of the county.

A Description of Implementation Options

The following are recommended actions or strategies to implement the Urban Standards Boundary Plan for the Helena Valley Planning Area.

Develop Sub-area Plans for Each of the Suburban Areas

These sub-area plans would identify the mix of land uses anticipated for each Suburban Area, identify preferred park locations 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 and the City of East Helena

Inter-local agreements between the City and County should specify roles, responsibilities, appropriate development design standards, and mechanisms for infrastructure funding.

Work with Existing Utility Providers to Plan for Service Expansion in Suburban 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 Suburban Areas

Certain corridor extensions and connections will be necessary to support infill development in Suburban Areas. These improvements should be prioritized for funding and built into future year transportation improvement programs as the County budget allows.

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Identify Urban Service Areas Adjacent to the City of East Helena

Urban Service Areas adjacent to East Helena, where municipal infrastructure could be extended should be identified. The City of East Helena adopted its own Growth Policy. "The East Helena Planning Area encompasses about 7,250 acres (11.3 square miles) and includes the incorporated city limits of East Helena and lands near the city within Lewis and Clark County. The boundaries of the East Helena Planning Area are as follows:

- **North Boundary** - Canyon Ferry Road
- **South Boundary** - Lewis & Clark County and Jefferson County Line
- **East Boundary** - McClellan Creek Road south of U.S. Highway 12 and mid-section lines of Sections 21, 28 and 33, T-10-N, R-2-West in the area north of U.S. Highway 12.
- **West Boundary** - West section lines of Sections 24, 25, and 36, Township-10-North, Range-3-West and the west section line of Section 1, Township-9-North, Range-3-West. Also a portion of Section 26 in Township-10-North, Range-3-West (Seaver Parkland Lamping Field area).

The East Helena Planning Area established for this Growth Policy is shown below in **Figure 1-1**.

Figure 1-1: East Helena Planning Area from the East Helena Growth Policy

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Establish Future Land Use Plan Evaluation and Update Process

The areas defined in the Helena Valley Planning Area as Urban Services Areas and Suburban Areas have been discussed in previous section. The boundaries are not absolute and may change as development patterns change. Therefore, review of the area borders will be necessary with each Growth Policy revision.

As development pressures spread beyond the Helena Valley Planning Area, continued dialogue with residents in outlying planning areas will be important. At the time of this Growth Policy update, the Helena Valley Planning Area is the only planning area where growth areas are defined. When warranted, these same definitions can be applied to the other planning areas in Lewis and Clark County.

Helena Valley Planning Area Priorities

The following issues were identified through a public listening session. They represent the issues that have been emphasized in the forum as short-term priorities (five years) 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 having 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) and should be designated as Suburban 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 taxpayers of providing services to an inefficient development pattern.
- Encourage subdivision design in the Suburban 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 or where constraints can be properly mitigated.

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Discourage development in areas that have development constraints, such as areas with steep slopes, critical wildlife corridors, wildlife habitat, poor ground water quantity and quality),

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, including non-motorized transportation.

Action Items

- Develop a prioritized maintenance plan, related to the Transportation Plan, with funding sources identified.
- Support non-motorized transportation as a transportation tool.
- Support alternatives to single-occupancy transportation.
- 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

- Require that pedestrian and bicycle needs are addressed when planning and designing new roads.
- Require improvement and dedication of bikeways and pedestrian paths through developing areas.
- Provide widened shoulders where possible to accommodate pedestrians and 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 and 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 and open space systems in Helena, and East Helena and Lewis and Clark County.

E. Encourage the continuation of viable farming and ranching opportunities.

Action Items

- Support applications to the Open Lands program that preserve farm, ranch and forest lands.

F. Work to reduce conflicts between agricultural and residential uses.

Action Items

- Require a buffer between residential and agricultural uses during the

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subdivision process.

- 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 and farm land and from other animals.

G. Preserve access to public and recreational lands.

Action Items

- Use the Lewis and Clark County Parks and Recreation, Plan and Open Lands program to guide the siting and developing new accesses to public lands and recreation lands.
- Identify, protect, maintain, and 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).
- 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 such as non-motorized options in the transportation network.
- Encourage the use of alternative cleaner burning fuels.
- Work to mitigate dust from traffic on dirt and gravel roads.

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- Develop and implement transportation demand management (TDM) strategies pursuant to the Greater Helena Area Transportation 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 Suburban 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 and 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 other 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 neighborhoods.
- Provide for integration of individual subdivisions through transportation linkages.
- Encourage the preservation and enhancement of neighborhoods in existing residential areas.

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- 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 Suburban 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 rather than 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 and 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.

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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 and Craig Planning Area

Introduction

Native Americans, historically, the Blackfoot and other tribes, followed trails through the Wolf Creek and Craig 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 trails were used by trappers and traders trying to capture their piece of the flourishing fur trade. These trails would later become roads. 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 Fort Walla Walla in 1862, 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.

The advent of the railroads brought many railroad employees and many settlers. The railroad also brought the ability for cattle and sheep ranchers, already established in the area, to easily ship their livestock to market. Far back before Euro-Americansettlement, the area had vibrated with the hoofbeats of deer, elk, antelope, and buffalo.

Large-scale raising of livestock was limited in the 1860s due to Indian raids and the lack of suitable breeding stock. In the early 1870s, the new settlers of the area began to realize that there may be fortunes 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.

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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 open range grazing. From then on, the ranchers had to adjust to barbed wire, areas closed to grazing, 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 began to thrive with the building 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. The railroad spurred the growth of the two towns with additional shops, stores, saloons, hotels and stockyards. Craig experienced damage when the Hauser Lake Dam collapsed in April 1908, but the Craig Bridge withstood the flood.

The construction of Holter Dam (1916-18) had a very real impact on the economy and growth of both communities, as well. 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.

I-15 was constructed through the area in the late 1950's, adjacent to the Missouri River. The Interstate enabled residents of Wolf Creek and Craig easier access to the cities of Great Falls and Helena, although parts of Wolf Creek were displaced by the construction.

Existing Conditions

Physical Conditions

The Wolf Creek and Craig Planning Area is located between 15 and 35 miles north of Helena. It 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).

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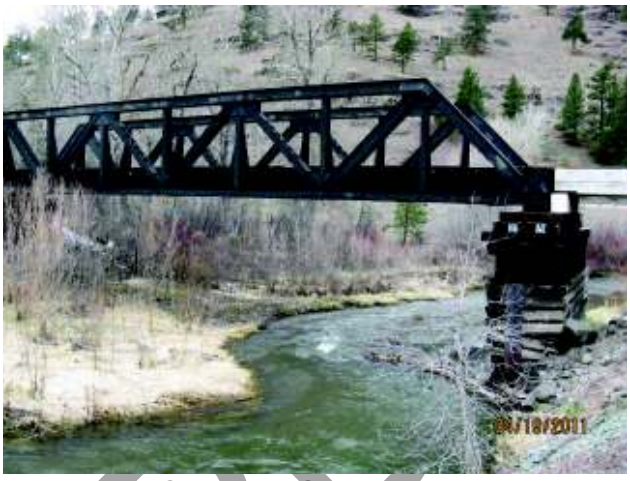
Topography

Topography of the planning area varies from low riparian lands along the Missouri River to the high mountains along the Continental Divide. There are 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.

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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 and 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 of elk are located north and west 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 Chevallier Road and several pockets spread throughout the area. Mountain goats and bighorn 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 are also 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.

The fisheries of the Missouri River and its drainage are important to the economy and place of the area.

Population and Population Trends

The population of the area increased in the early 2000s. 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. The area is attractive for year-round living due to the recreational amenities and rural lifestyle, therefore, additional development in the area can be expected.

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Land Ownership

Over 70% of the planning area is privately-owned. 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 and Craig provide concentrations of small private parcels with a mixture of residential and commercial development.

Public land constitutes a smaller portion of the Wolf Creek and Craig Planning Area than is found in the other rural areas of the county. The 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 BLM 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.

Approximately one percent (1%) of the area within the planning area is comprised of water bodies.

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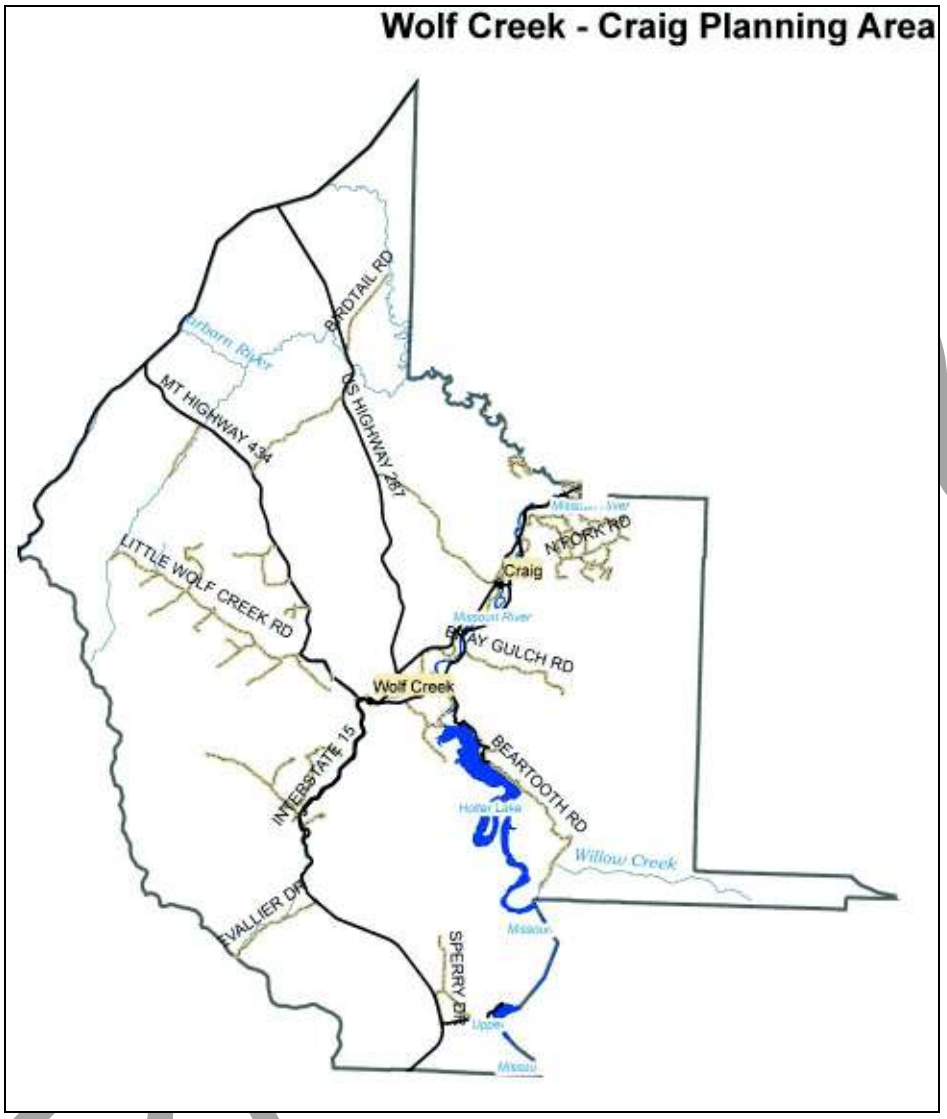

Area Economy

Cattle ranching has traditionally served as the economic base for the Wolf Creek and 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, as well. Several guide and outfitter services are located in the Wolf Creek and Craig areas. The planning area includes the Missouri River, which is world renowned for trout fishing. Holter Lake provides numerous recreational activities and attracts summer home residents. According to statistics from the Montana Office of Tourism, there are nine businesses related to guiding and outfitting in Wolf Creek and Craig.

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. Recreation Road, which travels along the Missouri River and the Little Prickly Pear Creek through the Wolf Creek Canyon, serves as a recreation, and local 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.

Beartooth Road serves residences and recreational activities along the eastern shore of Holter Lake. A Rural Improvement District was created to fund improvement and maintenance costs of the road. 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 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 maintenance activity.

Table 3.5
County Maintained Roads in the Wolf Creek and Craig Planning Area

ROAD NAME	ROAD CLASS.	ROADSURFACE	MILEAGE
Birdtail Road	local access	gravel	4.9
Craig River Road	local access	gravel	6.68
Deadman Coulee Road	local access	gravel	5.04
Highway 434	arterial	chip-sealed.	8.94
Little Wolf Creek	local access	gravel	7.31
Ox Bow Road	local access	gravel	1.62
Rock Creek Loop Road	local access	gravel	1.72
Seven Mile Road	local access	gravel	7.0

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Chevallier Dr	local access	gravel	4.93
Beartooth Road	local access and recreation	chip-sealed gravel	3.15

Non-motorized transportation

Cyclists from the area, around the state and the country ride take advantage of the views and relatively light traffic to enjoy this area. Organized rides bring tourists and create economic opportunities. The One Helena Hundred ride takes place every July. Riders come from many places to be able to ride along the Missouri River on the Recreation Road.

Non-motorized transportation must be considered as road users. Additions of shoulders or other non-motorized friendly infrastructure would be beneficial for safety.

PUBLIC FACILITIES AND SERVICES

Law Enforcement

Law enforcement within the Wolf Creek and Craig Planning Area is a cooperative effort of three agencies: the Lewis and Clark County Sheriff's Department, which has primary responsibility; the Montana Highway Patrol, which is responsible for law enforcement on Interstate 15 and U.S. Highways 287 and 200; and 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 an assessment based upon a property tax assessment. Volunteers for each of the 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 and Craig.

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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 of the Forest Service, Department of State Lands, BLM, the Lewis and Clark Volunteer Fire Department, and the local volunteer fire departments.

Water Supply and Wastewater Disposal

There are no public sewer or water facilities located in the planning area. However, water and sewer districts have been formed in Wolf Creek and Craig. In 2007, a study was conducted about the feasibility of constructing a public wastewater system for the Wolf Creek and Craig area. It was found that it would be more economically feasible if each area created its own wastewater facility rather than trying to tie them together. In 2009, the Wolf Creek water and sewer district was awarded grant and appropriation funds to design and build a wastewater facility for the area.

Solid Waste

The Wolf Creek and 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 and the Vigilante Electric Cooperative. Natural Gas is not available in the planning area.

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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 include approximately 30 and 45 single-family residences respectively. Outside of the town sites, residential development tends to be rural. With the exception of the Missouri River Corridor, residences are 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. 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. A number of seasonal sites are located via water access only. This has been problematic, particularly for fire protection. One home was destroyed in October 2011. Emergency personnel had to access the property by boat, slowing the response.

Numerous parcels, most greater than 20 acres in size, created through exemptions in the Subdivision and Platting Act have seen significant development during the 2000s. 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.

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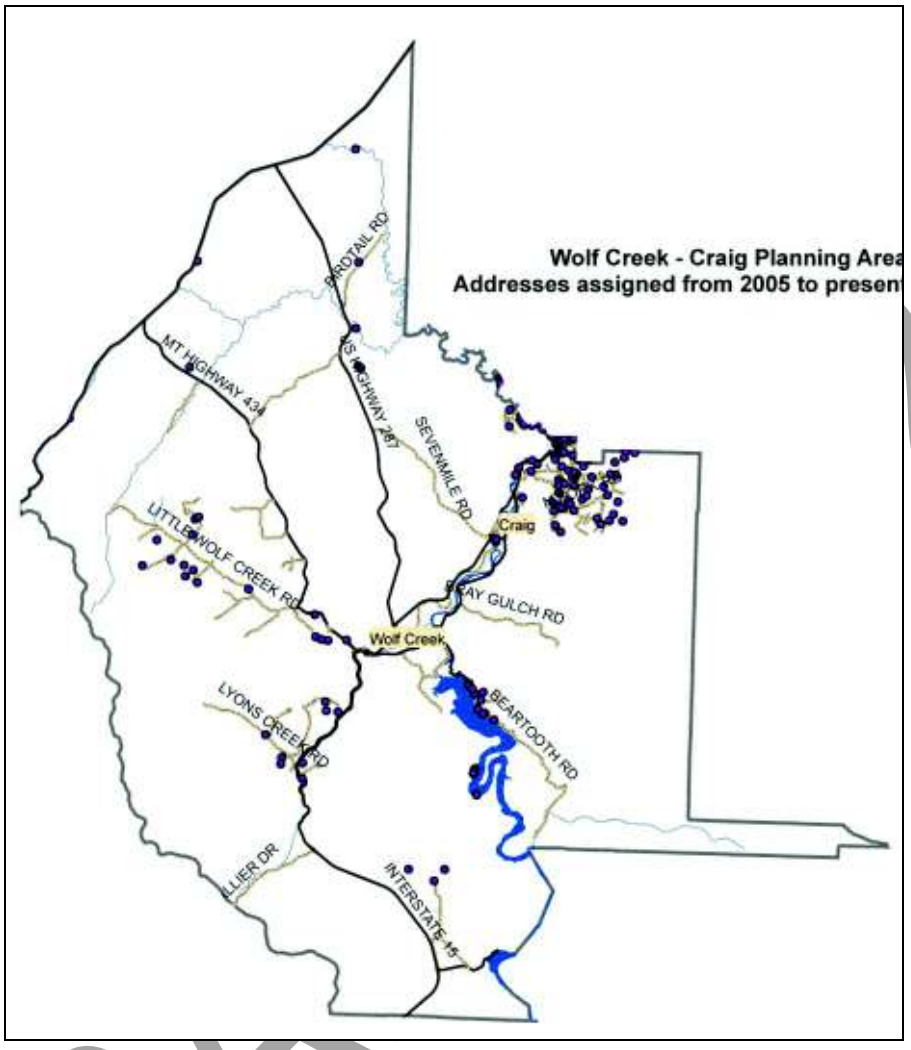

Commercial and Industrial Development Pattern

Commercial development within the planning area is primarily limited to the town sites of Wolf Creek, and Craig, and the Holter Lake area. Wolf Creek includes two restaurants-bars, , a gas station with and convenience store, and several recreational outfitters and guide services.

Commercial services at Holter Lake include public campgrounds, a public marina, one private marina, a public boat launch and a summer restaurant accessible by boat.

Commercial development in Craig includes a convenience store, two bar-and restaurants, and several 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 Recreation

There is one undeveloped piece of county parkland in the planning area. Because of its location along the bank of the Missouri River, the Lewis and Clark Commission may be interested in working with FWP for administration of the property.

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.

Public campgrounds, recreational and fishing access areas in the and Wolf Creek - Craig Planning Area include Holter Lake, Coulter, Departure Point, Lodgepole, Meriweather, Stickney Creek, and many others.

Open Lands and Conservation Easements

The Lewis and Clark County Voluntary Agricultural Land Conservation Program identifies significant open lands 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, Highway 434, the Recreation Road, and Interstate 15 provide travelers with outstanding views of the rural open lands. 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 lands nature of the planning area.

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In 2008, the voters passed a $10 million Open Space Bond in order to preserve quality open lands in the county. There are no county funded conservation easements in the planning area at this time. However, other agencies and land trusts, such as the Montana Land Reliance and FWP hold easements. There is over 70,000 acres held under conservation easement in the planning area.

Cyclists take advantage of the beautiful views and relatively light traffic to ride in the Recreation Road. In fact, many organized rides that bring in out-of-town visitors are held every summer through the area. Non-motorized use must be considered as a transportation issue rather than solely a recreation issue.

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

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 would create more demand for public services.

and Wolf Creek - Craig Planning Area Priorities

The following issues were identified through a public listening session, and the work of the Lewis and Clark County Planning and Community Development staff. 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 and 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 and Craig Planning Area:

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A. Improve maintenance of County roads throughout the area.

Action Items

- Develop a prioritized maintenance plan connected to specific funding sources.
- 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 farmlands in the Wolf Creek and Craig Planning Area and determine which lands should be preserved over the long term.
- Support identification of prime farmlands in the Wolf Creek and 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 use. 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 and Craig Planning 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 and Craig Planning Area has adequate police protection.
- Develop a process to attract more volunteers.
- Develop a joint purchase agreement for new equipment.
- Continue to work with state agencies for surplus 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.

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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 and Growth Policy and can be obtained by contacting the Lewis and Clark County Development office at (406) 447-8373.

County-wide Land Use Challenges, Goals and Policies

Introduction and Purposes

It is generally understood that land 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

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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 also to 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 farmland.

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/residential-interface areas.) Many people 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.

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Challenges 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 suburban areas.

Policy 1.2 Level of Service and 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 non-productive 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 suburban 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.

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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 suburban lands or non-productive 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.

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IV:

HOUSING

Existing Conditions

Introduction

The primary goals of the housing chapter are to identify the current and future housing needs for Lewis and Clark County, and sustain a combination of low, moderate, and high-income households throughout the County. The housing chapter contains information on existing conditions and an analysis of housing needs within the County. The primary resources for the information contained in this chapter are the State of Montana Consolidated Plan's Montana Housing Needs Assessment (Dec. 2009), the Helena Area Needs Assessment (Draft 2010) and Census 2010.

Existing Housing Stock

The availability of housing affordable to homeowners and renters alike is a crucial component of the County's economy and its livability. The housing stock in the County increased by approximately 230 percent between 1970 and 2009. 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. Between 2000 and 2006, the County, like most of Montana and the United States, experienced a housing boom, as a result of easy- to-obtain home loans and the low interest home loans. Nationally, housing prices peaked in early 2005, and started to decline in 2006. In late 2007, the national economy soured, and the nation entered into a severe recession. The housing market in Helena and Lewis and Clark County suffered. The price of single-family homes in the County peaked in 2007 and declined in 2008.

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Table 4.1: GROWTH IN HOUSING UNITS IN LEWIS AND CLARK COUNTY, 1970-2009		
Year	Number of Units	Increase, Previous Decade
1970	12,359	- - -
1980	18,571	50%
1990	21,412	15%
2000	25,672	20%
2010	30,180	17.5%
Source: U.S. Census Bureau		

The Housing Affordability and Montana Real Estate Market report (Bureau of Business and Economic Research, University of Montana, 2010) showed steep declines in residential building activity in every major real estate market except Helena in 2009. While the sale of new and existing houses continued to decline in 2009, the declines were less than in 2008. Two markets - Missoula and Lewis and Clark County – saw small gains in sales.

Table 4.2 Residential Home Sales, Lewis & Clark County 2004-2010				
Year	Residential Sales	Median Price	Percent Change	Days on Market
2004	650	$137,500	0%	86
2005	964	$161,200	17.2%	94
2006	923	$195,000	21.0%	95
2007	839	$205,900	5.6%	96
2008	671	$203,000	-1.4%	122
2009	690	$195,000	-3.9%	124
2010	698	$200,000	2.6%	126
Source: Helena Multiple Listing Service				

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Projected Housing Needs

According to the Montana Department of Commerce, "Montana Housing Needs Assessment" projections, the total household formation in the County is expected to increase by 8,980 households between 2010 and 2030, an estimated increase of 34 percent. During this period, renter households are expected to increase by approximately 134 households annually or 2,698 households by 2030. Owner-occupied households are expected to increase by 314 households annually, or 6,282 by 2030.

The Montana Housing Needs Assessment also stated that in addition to the need for more housing over the next twenty years, unmet housing needs must be addressed throughout the state and county. Among these unmet housing needs are: overcrowding, cost burden of housing, and incomplete kitchen, plumbing and electrical facilities. In Lewis & Clark County, cost burden was the most common unmet housing need cited in this study.

In the year 2010, an estimated 2,911 renter households and 4,263 owner households had unmet housing needs. Approximately 508 (17.4 percent) of the total renter households and 21 percent of owner households in need are senior households.

By 2030 an estimated 3,915 of renter households and 5,734 owner households will have unmet housing needs. By 2030 approximately 17.5 percent of the projected renter households and 21 percent of projected owner households in need will be elderly households.

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 4.3). According to the U.S. Census 2006-2008 American Community Survey, approximately 31 percent of housing units in the County are multi-family units, a greater proportion of multi-family housing than in the state (approximately 16 percent). 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 or near the cities of Helena and East Helena.

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Table 4.3: Housing Units Types: Montana and Lewis & Clark County 2008-2010							
	Single units	2 units	3or 4 units	5 or more	Mobile Homes	Other	Total
Lewis & Clark County	20,620	961	1,694 2,060	2,424	3,784	0	29,849
Percentage of Housing Stock	69.1%	3.2%	6.9%	8.2%	12.7%	0%	~100%
State of Montana	343,975	17,154	21,641	40,267	55,075	395	478,507
Percentage of Housing Stock	71.9	3.6%	4.5%	8.5	11.5	0.1%	~ 100%
Source: Selected Housing Characteristics: 2005-2009, U.S. Census							

In the Helena Area Needs Assessment, respondents indicated that the most needed type of housing in the Helena area are apartments for the elderly or disabled persons, two and three bedroom apartments, and houses under 1,500 sq. ft. The needs assessment also predicts more demand for energy efficient housing, smaller homes, more accessible and one-story homes for aging baby boomers and more special needs population housing in the future.

Age of Housing

As Table 4.4. illustrates, the housing stock in Lewis and Clark County is slightly newer than that in Montana. Approximately 70percent of the housing stock in Lewis and Clark County was built after 1959, while statewide, 66 percent was built after this date.

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Table 4.4 Age of Housing Structures				
	Lewis & Clark		Montana	
	Estimate	Percentage	Estimate	Percentage
Total housing units	**29,849**	~99.9%	478,507	~99.9%
Built 2005 or later	2,206	7.4%	24,532	5.1
Built 2000 to 2004	2,588	8.7%	38,247	8%
Built 1990 to1999	4,365	14.6%	71,663	15%
Built1980 to 1989	3,399	11.4%	56,845	11.9%
Built1970 to 1979	6,490	21.7%	90,607	18.9%
Built 1960 to 1969	2,487	8.3%	42,215	8.8%
Built 1950 to 1959	1,986	6.7%	48,995	10.2%
Built 1940 to 1949	1,275	4.3%	28,660	6%
Built 1939 or earlier	5,053	16.9%	76,743	16%
Source: 2008-2010 American Community Survey , U.S. Census				

The Helena Area Housing Needs Assessment pointed out that both homeowners and renters participating in their survey expressed a need for housing repairs for existing dwellings. Weatherization/insulation and plumbing repair were the top two repairs cited in the survey. Also mentioned were handicap access, unsafe wiring, asbestos, lead paint and radon mitigation, furnace repair or replacement, roof repairs, painting, interior and exterior wall repairs and cracked foundations.

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 2.3 in 2009. Some of the factors contributing to this trend include families having fewer children, an increase in the number of single parent households, increasing longevity, and out-migration to other states for better paying jobs.

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Table 4.5: Persons Per Household in Lewis and Clark County	
Year	**Persons per Household**
2010	2.30
2000	2.38
1990	2.22
1980	2.48
1970	2.96
Source: U.S. Census Bureau	

According to 2010 Census data, 62.6 percent of the total households in the County were composed of families; 26.6 percent of all households had children under 18 years of age and 21.5 percent of households included one of more persons 65 years or older. Persons living alone comprised 30.7 percent of households.

Table 4.6: Selected Social Characteristics in Lewis & Clark County 2010		
HOUSEHOLDS BY TYPE	**Estimate**	**Percentage**
Total households	26,694	100%
Family households (families)	16,705	62.6%
With own children under 18 years	7,094	26.6%
Husband-wife family	13,076	49.0%
With own children under 18 years	4,795	18.0%
Male householder, no wife present, family	1,112	4.2%
With own children under 18 years	679	2.5%
Female householder, no husband, family	2,517	9.4%
With own children, under 18 years	1,620	6.1%
Non-family households	9,989	37.4%
Householder living alone	8,206	30.7%
65 years and over	2,758	10.2%
Households with one or more people under 18 years	6,635	28.2%
Households with one or more people 65 years and over	5,071	21.5%
Average household size	2.3	(X)
Average family size	3.15	(X)
Source: U.S. Census 2010		

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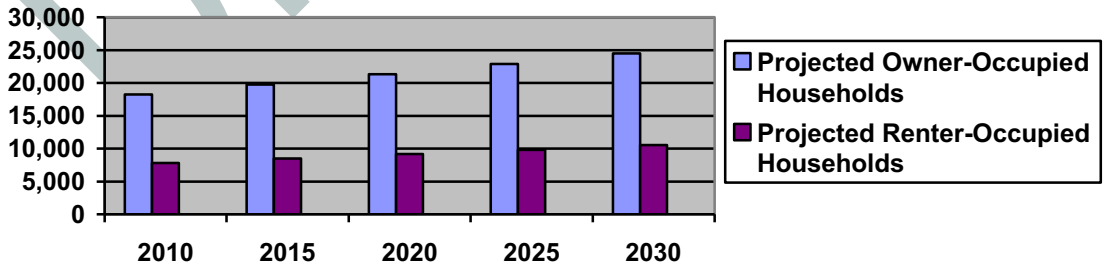
Home Ownership Rates/Vacancy Rates

According to the U.S. Census 2010, approximately 69 percent of the County's population lived in owner-occupied housing, while 31 percent of the population lived in rental properties during that time period.

Table: 4.7: Selected Housing Characteristics for Lewis & Clark County, 2010		
Housing Occupancy Estimates and Percentages		
	Estimate	Percentage
Total Housing Units	30,180	(X)
Occupied Housing Units	26,694	88.4%
Vacant Housing Units	3,486	11.6%
Homeowner vacancy rate		0.6%
Rental vacancy rate		4.1%
Owner-occupied housing units		
Estimated units	26,694	69.2
Average household size	2.41	
Renter-occupied housing units		
Estimated units	8,217	30.8
Average household size	2.05	
Source: U.S. Census 2010		

Figure 4.1: Projected Owner and Renter Households - 2010-2030



Source: MT Dept. of Commerce Housing Needs Assessment 2009

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Table 4.8 Projected Occupied Households 2000-2030 for Lewis & Clark County and Montana								
	2000		2010		2020		2030	
	L&C	MT	L&C	MT	L&C	MT	L&C	MT
Total Occupied	22,850	358,667	26,050	396,100	30470	440,640	35,030	491,060
Total Owner-occupied	15,984	247,700	18,222	273,028	21,314	303,602	24,504	338,294
Total Renter-occupied	6,886	110,967	7,828	123,072	9,156	137,038	10,526	152,766
Source: Mt Dept. of Commerce Housing Needs Assessment Dec. 2009								

Housing Affordability and Need

Affordable housing can be seen as an investment in the growth and stability of our families and communities. The availability of safe and affordable housing has a profound impact of people's lives. Access to safe, secure, comfortable and affordable housing, whether owned or rented, allows individuals and families to create homes – the places where they can raise their families, pursue their successes, and contribute to the growth and well-being of their communities. Affordable housing offers many benefits for business, the community and residents.

Business benefits from adequate affordable housing located near jobs, schools, and businesses by:

- Providing housing for the diverse local workforce required to support a community, such as retail workers, day care workers, police officers, firefighters, teachers, and nurses;
- Allowing low to moderate income residents to spend less on housing, thereby freeing more of the income to be spent on local goods and services, which in turn provides increased local employment opportunities; and
- Allowing workers who might otherwise have to commute longer distances to find affordable housing to spend less time commuting to and from work and have fewer absences due to inclement weather.

The community benefits from adequate affordable housing located near jobs, schools and

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businesses by:

- Permitting people with special needs and seniors to afford to live independently near family and needed services;
- Increasing development densities, which reduces the cost of providing public services, such as emergency services, utilities and other infrastructure; and
- Giving a competitive advantage for attracting companies considering locating or expanding their business.

Families and households benefit from adequate affordable housing located near jobs, schools and businesses by:

- creating stable and safe environments to build strong relationships;
- ensuring that families' housing costs are not so high that they cannot afford to meet basic living expenses, educational and health needs; and
- providing opportunities for people to remain in the community in which they have lived for a long time and to live close to their families, friends and needed services during life changes, such as divorce, retirement and convalescence from long-term illness or injury.

Respondents and focus group participants to the Helena Area Housing Needs Assessment listed housing affordability as the number one issue. In 2008, based on the definition of cost burden, the median cost to own a home exceeded the household income for one-half of the households in the Helena area.

The Needs Assessment indicated that there is a shortage of rental units overall and especially affordable rental units for low to middle income households.

Definition of Housing Affordability

Across the State of Montana, a major concern for many residents is the lack of affordable housing. It is increasingly difficult for the average citizen to afford a new home. According to an article, "Housing Affordability and Montana's Real Estate Markets," published in the summer of 2009, in the *Montana Business Quarterly*, housing prices in the state during the last 20 years have surged ahead much faster than per capita income. In the last 20 years, while the median price for a home has increased by 96 percent, per capita income of Montanans rose only by 26 percent.

Housing is typically deemed affordable if either the monthly rent, or mortgage, principal and interest, is not more than 30 percent of a household's monthly income. The affordable rental and purchase costs are determined by looking at the HUD Community Development

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Block Grant (CDBG) program's definitions of low and moderate-income households.

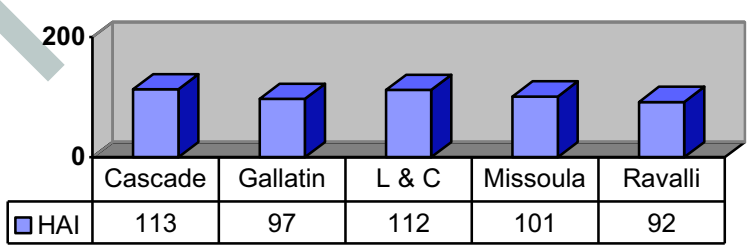
The CDBG defines "low" and "moderate" income based on the household size and percentage of median household income. For example, low-income households are those households earning less than 50 percent of the median income. Moderate-income households are defined as those households earning between 50 percent and 80 percent of median income. For Lewis and Clark County, this is equal to $24,100 to $38,560 per year

Table 4.9: Montana 2011 HUD Income Limits

Household Size	1 person	2 person	3 person	4 person
Extremely low income	$14,500	$16,550	$18,600	$20,650
Low Income				
Moderate Income	$36,700	$41,900	$47,150	$52,400
Source: Montana Department of Commerce 2009 HUD Income Limits				

The Housing Affordability Index (HAI) measures whether a family earning the median income for an area qualifies for a typical loan on a median-priced home. An index value over 100 means the typical family qualifies for a loan on a typical home. Conversely, an index value under 100 indicates the typical family will not qualify for loan. Values for the computation come from Multiple Listing Services, Federal Housing Finance Board and the U. S. Census Bureau. As Figure 4.2 shows, Lewis & Clark County and Cascade County are counties where housing are more affordable than Gallatin, Missoula and Ravalli counties. Figure 4.3 shows that Lewis & Clark County has a lower percentage of homeowners paying more than 30 percent of household income on housing than do homeowners in Flathead, Gallatin, and Missoula Counties.

Figure 4.2: Housing Affordability Index in Selected Montana Counties 2007-2010



Source: Bureau of Business and Economic Research, University of Montana

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Figure 4.3: Housing Affordability Index: Lewis & Clark County 2007-2010

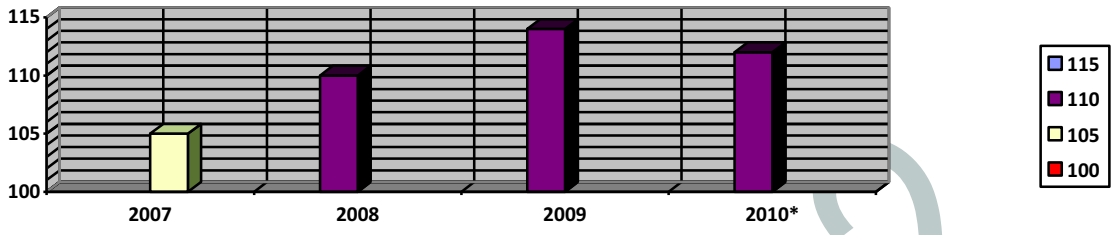
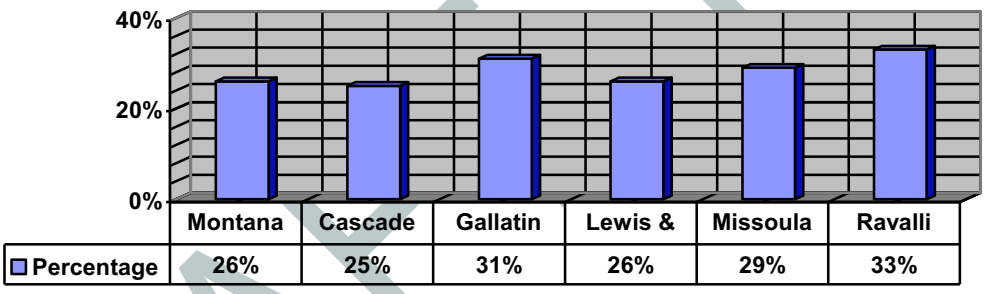


Figure 4.3: Percentage of Homeowners Paying More Than 30 Percent of Income For Housing, 2007



Source: U.S. Census Bureau, American Community Survey, 2005-2007

Data collected for the "Housing Affordability and Montana's Real Estate Markets" article shows the median household income for Lewis and Clark County residents is above the state median income but below the national median income. Nearly one in four households had income five or more times the Federal Poverty Level.

In 2010, according to the U.S. Census, the County had 5.6 percent of families in the County were living below the poverty level, in Montana, 10 percent of families lived below the poverty level, while 11.3 percent of families in the United States lived below the poverty level.

Affordable Housing for Purchase

In June 2010, the Montana Department of Commerce released "The White Paper –

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Housing in Montana." In this document, it was estimated that in 2008 the median household income (MHI) in Lewis & Clark County was $49,959. The median home cost in the County in 2008 was $186,500, however the home cost affordable to a MHI household was $176,171.

Table: 4.10 Owner-Occupied Housing: Estimated Monthly Owner Costs (2008-2010) for Lewis and Clark County and Montana

	Lewis & Clark County		Montana	
	Estimate	Percent	Estimate	Percent
Owner-occupied Units	19,732	100%	278,967	100.0%
Housing Units with a mortgage	12,823	66.2%	162,467	58.2%
Housing Units without a mortgage	6,549	33.8%	116,500	41.8%
Selected Monthly Owner Costs				
Estimated Housing Units with a mortgage				
	Lewis & Clark County		Montana	
Total units	12,823	Percent	162,467	Percent
Less than $300	0	0.0%	655	0.4%
$300 to $499	335	2.6%	5,279	3.2%
$500 to $699	1,032	8.0%	13,692	8.4%
$700 to $999	1,995	15.6%	34,621	21.3%
$1,000 to $1,499	4,669	36.4%	54,247	33.4%
$1,500 to $1,999	3,099	24.2%	30,400	18.7%
2,000 or more	1,693	13.2%	23,573	14.5%
Median (dollars)	$1,323	(X)	$1,230	(X)
Estimated Housing Units without a mortgage				
	Lewis & Clark County		Montana	
Total Units	6,549	Percent	116,500	Percent
Less than $100	60	0.9%	2,079	1.8%

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$100 to $199	492	7.5%	10,954	9.4%
$200 to $299	1,081	16.5%	25,355	21.8%
$300 to $399	2,101	32.1%	31,778	27.3
$400 or more	2,815	43.0%	46,334	39.8%
Median (dollars)	$375	(X)	$362	(X)
Source: Selected Housing Characteristics: 2008-2010, U.S. Census				

Affordable Rental Housing

In June 2010, the Montana Department of Commerce released the White Paper – Housing in Montana. In this document, it was estimated that the percentage of median renter income ($29,547) to rent a two-bedroom apartment in Lewis and Clark County in 2008 was 25.4 percent. For a senior on a fixed income ($13,753) to rent a one-bedroom apartment in the County in 2008 would spend 43.7 percent of the median renter income.

Table 4.11: Renter-Occupied Housing: Estimated Monthly Owner Costs (2008-2010) for Lewis and Clark County and Montana				
Gross Rent				
	Lewis & Clark County		**Montana**	
Occupied units paying rent	**6,591**		**112,124**	
	Estimate	Percent	Estimate	Percent
Less than $200	139	2.1%	3,798	3.4%
$200 to $299	221	3.4%	5,364	4.8%
$300 to $499	1,020	15.5%	23,696	21.1%
$500 to $749	2,616	39.7%	40,958	36.5%
$750 to $999	1,004	15.2%	22,493	20.1%
$1,000 to $1,499	1,315	20.0%	12,200	10.9%

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$1,500 or more	276	4.2%	3,595	3.2%
Median (dollars)	$677	(X)	$639	(X)
No rent paid	369	(X)	13,525	(X)
Source: Selected Housing Characteristics: 2008-2010 U.S. Census				

Table 4.12: Selected Estimated Monthly Costs as a Percentage of Household Income (SMOCAPI) for Lewis & Clark County

	Estimate	Percentage
Housing Units with a mortgage (excluding units where SMOCAPI cannot be computed)	12,823	X
Less than 20 percent	4,610	36.0%
20.0 to 24.9 percent	2,381	18.6%
25.0 to 29.9 percent	1,714	13.4%
30.0 to 34.9 percent	1,218	9.5%
35.0 percent or more	2,900	22.6%
Not computed	0	X
Estumated Gross Rent as a Percentage of Household Income (GRAPI)		

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Occupied units paying rent (excluding units where GRAPI cannot be computed	6,562	
Less than 15.0 percent	644	9,8%
15.0 to 19.9 percent	851	13.0%
20.0 to 24.9 percent	1,067	16.3%
25.0 to 29.9 percent	855	13.0%
30.0 to 34.9 percent	701	10.7%
35.0 percent or more	2,444	37.2%
Not computed	398	
Source: Selected Housing Characteristics 2008-2010, U.S. Census		

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Emergency Shelters/Homeless

The Montana Coalition for the Homeless defines homelessness as, "Without safe, permanent and stable housing or at risk of losing housing." According to the 2010 Helena Area Housing Needs Assessment, the 2010 Montana Homeless Survey provides homeless data across the state. Lewis & Clark County in located in District VIIII, which also services Jefferson and Broadwater Counties. Helena has the largest concentration of homeless persons and homeless services. As indicated on Table 4.13, the homeless population has increased annually.

Table 4.13: Homeless Population in District VIII					
2005	2006	2007	2008	2009	2010
171	315	353	232	368	429

Source: MT Dept. of Public Health & Human Services, http://www.mthomeless.org/

Two organizations dealing with homelessness in Lewis & Clark County are the Helena Action Coalition on Homelessness (HATCH) and the Montana Continuum of Care (MT CoC). HATCH is a coalition of community organizations and individuals working on issues and initiatives to address homelessness. MT CoC is a statewide partnership of homeless service providers, non-profit organizations, and local and state governments that address homelessness issues throughout the state.

Table 4.14: Shelters in Helena

Name	Type	Target Population	No. of Beds
Gods Love	Emergency	Single male/female	38
Montana Youth Home- Margaret Stewart	Emergency	Youth- Boys	8
Friendship Center	Emergency	Family/children	18
Gods Love	Transition	Family	38
Montana Youth Homes – Jan Shaw	Transition	Youth-Girls	8
Florence Crittendon	Transition	Youth Male/Female	8
Montana Veterans Foundation – Willis Cruse Home	Transition	Veteran	7
YWCA	Transition	Women & Children	8

Source: Montana Continuum of Care, 2010

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. According to the 2008-2010 American Community Survey, 23.6 percent of households in the County included one or more people 65 years or older. People 62 years and older made up 13.8 percent of the population, a percentage that will continue to increase as the median age in the County continues to rise. 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 to 3,814 in 2010 and an approximately 138 percent increase between 1980 and 2008. The median age during the same period has increased from 28.9 in 1980, to 35.1 in 1990, to 38.0 in 2000, to 40.9 in 2010, reflecting the aging of the population and the in-migration of retirees.

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.

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Housing for the Mentally Ill with Special Needs

Housing services provided by the Montana State Mental Health Division (Residential Services) include 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).

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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 Challenges, Goals, and Policies

~~ISSUE~~ CHALLENGE A Not all county residents can find affordable housing.

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

Policy 1.1 Work with the public private and non-profit sectorsto provide adequate and diverse housing opportunities for all residents, regardless of income levels, racial and ethnic origin or sexual orientation.

Policy 1.2 Encourage the location of various types of housing with regard to proximity of employment, and access to transportation and services.

Policy 1.3 Create incentives for the development of affordable housing throughout the County.

Policy 1.4 Participate in periodic analyses to determine immediate and long-range

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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, assisted living facilities and facilities for other special populations, should be equitably distributed throughout the county.

Policy 1.7 Encourage preservation, rehabilitation, and redevelopment of historic structures and historic areas.

Policy 1.8 Encourage mixed-use development in the vicinity of incorporated cities, unincorporated urban area and community centers..

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

Policy 1.10 Work with the County's Grant Coordinator and others to access available public and private funding for affordable housing and related infrastructure.

Policy 1.11 Encourage safe, sanitary and affordable housing throughout the County through supporting programs that will assist homeowners and landlords in weatherizing, insulating, and repairing properties in need of repair and maintenance.

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V:
NATURAL ENVIRONMENT

Existing Conditions

Introduction

ARTICLE IX of the Constitution of the State of Montana states, "Protection and improvement. (1) The state and each person shall maintain and improve a clean and healthful environment in Montana for present and future generations." Montanans are proud of the natural environment in which they live. It gives Montana its unique sense of place.

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 formed granite 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 watercourses 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 highest mountains experience 60 inches or more. Peak river flows usually occur in late May to 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.

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Air Quality

Local Air Quality Program History

Air quality in the Lewis and Clark County Air Quality District (see map), which includes Helena, is monitored year around as part of the City-County Health Department air quality program.

In 1979, the Lewis and Clark City-County Health Department started receiving numerous complaints from residents and physicians about the levels of wood smoke in the valley and increasing upper respiratory problems during winter months. Beginning in 1980, the Health Department located air samplers in Helena and the Helena Valley, and began a public education program on wood burning and how it affected winter air quality.

The Health Department continued to operate the air samplers and began forecasting air quality from November 1 through March 1 each year. This is the time period most likely to experience poor air quality due to winter, cold air inversions and the heavy use of wood stoves. By 2000, summer forest fire smoke had surpassed winter wood burning as a major source of poor air quality days.

In 1984, a Health Department Survey indicated that 45% of the Helena Valley population used wood burning stoves for heating. Air pollutions levels continued to increase and during the 1984-1985 season, Helena experienced 14 consecutive poor air quality days. In response the Health Department proposed implementation of an air quality control ordinance. Citizen petitions were circulated and the public supported the program 3 to 1.

With overwhelming citizen support, the Lewis and Clark County Clean Outdoor Air Ordinance was adopted in January 1, 1986. The ordinance prohibited operation of any wood stove during poor air quality episodes and limited the opacity of smoke released from wood stoves. It also limited the idling of diesel engines during poor episodes and provided for extensive public outreach and education. Finally, an enforcement provision allowed the Health Department to issue tickets for violators of the ordinance.

Revisions to the ordinance have occurred since its inception in 1986, although it remains essentially the same. The ordinance was rewritten to reflect new Environmental Protection Agency air quality standards, and the new ordinance became effective in 2011.

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EPA Air Quality Criteria Pollutants of Concern in Helena

The federal Clean Air Act of 1970 defined six criteria pollutants and established ambient concentration limits for each of them to protect public health. EPA has periodically revised the original concentration limits and methods of measurement for each pollutant as their health effects became better understood. The six criteria pollutants are:

- Carbon monoxide (CO)
- Nitrogen dioxide (NO2)
- Ozone (O3)
- Sulfur dioxide (SO2)
- Particulate matter (PM10 and PM 2.5)
- Lead (Pb)

When an area does not meet the air quality standard for one of the criteria pollutants, it may be subject to the formal rule-making process which designates it as non-attainment. The Clean Air Act further classify ozone, carbon monoxide, and some particulate matter non-attainment areas based on the magnitude of an area's problem. Non-attainment classifications may be used to specify what air pollution reduction measures an area must adopt, and when the area must reach attainment.

Carbon monoxide - ~~is~~ A colorless, odorless and tasteless gas that is highly toxic to humans and animals. Carbon monoxide poisoning is the most common type of fatal air poisoning in many countries. It combines with hemoglobin to produce carboxyhemoglobin, which is ineffective for delivering oxygen to bodily tissues. This condition is known as anoxemia. Concentrations as low as 667 ppm may cause up to 50% of the body's hemoglobin to convert to carboxyhemoglobin. In the United States, the Occupational Safety and Health Administration (OSHA) limits long-term workplace exposure levels above 50 ppm.

Nitrogen oxides or **NOx**, -- This group of highly reactive gases contain nitrogen and oxygen in varying amounts. Many of the nitrogen oxides are colorless and odorless. However, one common pollutant, nitrogen dioxide (NO2) along with particles in the air can often be seen as a reddish-brown layer over many urban areas. NOx - is one of the main ingredients involved in the formation of ground-level ozone, which can trigger serious respiratory problems.

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Nitrogen oxides in the atmosphere may:

- react to form nitrate particles, acid aerosols as well as NO2, which also cause respiratory problems.
- contribute to formation of acid rain.
- contribute to nutrient overload that deteriorates water quality.
- contribute to atmospheric particles, causing visibility impairment.
- react with other chemicals in the air to form toxic chemicals.
- contribute to global warming.

NOx and the pollutants formed from NOx can be transported over long distances, following the pattern of prevailing winds in the U.S. This means that problems associated with NOx are not confined to areas where NOx are emitted. Therefore, controlling NOx is often most effective if done from a regional perspective, rather than focusing on sources in one local area.

Ozone -- While ozone in the upper atmosphere is beneficial to life by shielding the earth from harmful ultraviolet radiation from the sun, high concentrations of ozone at ground level are a major health and environmental concern. Ozone is a photochemical oxidant and the major component of smog. Ground-level ozone can be harmful to human health and vegetation and is created in part by pollution from man-made and natural sources. Because ground-level ozone accumulates in or near metropolitan areas during certain summer weather conditions, it can expose large numbers of people to unhealthy ozone concentrations. Ozone is a strong irritant to the lungs and airways and can cause chest pain that can be mistaken for heart attack. Ozone may aggravate existing lung diseases and may result in emergency room and hospital admissions. Ground-level ozone forms in the atmosphere as a result of a series of complex chemical reactions between oxides of nitrogen (NOx) and hydrocarbons. Sources of NOx and hydrocarbons include motor vehicle exhaust, industrial emissions, gasoline vapors and chemical solvents.

Mitigation measures to reduce ground-level ozone are:

- Reducing idling time for automobiles, by timing and coordinating stop lights.
- Providing more non-motorized transportation routes (bike and pedestrian paths).
- Encouraging more public transit options.

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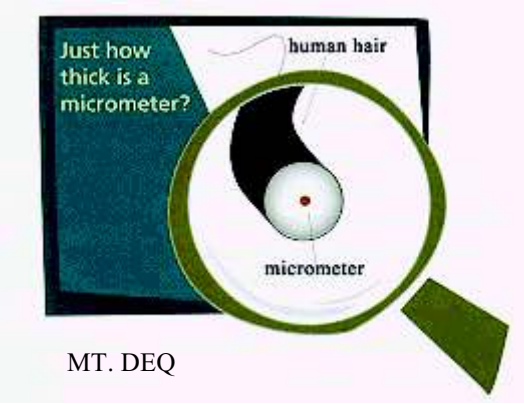
Sulfur Dioxide (SO2) – Ambient sulfur dioxide results largely from stationary sources such as coal and oil combustion, steel mills, refineries, pulp and paper mills and from non-ferrous smelters. High concentrations of sulfur dioxide affect breathing and may aggravate existing respiratory and cardiovascular disease. Sensitive populations include asthmatics, individuals with bronchitis or emphysema, children and the elderly. Sulfur dioxide is also a primary contributor to acid deposition, or acid rain, which causes acidification of lakes and streams and can damage trees, crops, historic buildings and statues. In addition, sulfur compounds in the air contribute to visibility impairment in large areas of the country and are especially noticeable in national parks. Sulfur dioxide in Lewis and Clark County was primarily associated with the Asarco lead smelter during its operation. Since the closure of the smelter in 2001, sulfur dioxide emissions dropped from 10,767 pounds in 2001 to 197 pounds in 2002. Monitoring was discontinued after 2002 (EPA Air Data www.epa.gov 6/30/2009). Remaining sources are primarily fuel combustion sources.



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Particulate Matter (PM) – Particulate matter in the air is a mixture of solids and liquid droplets that vary in size. Some particles - those less than 10 micrometers in diameter (PM 10) -tend to pose the greatest health concern because they can pass through the nose and throat and get deep into the lungs. Ten micrometers in diameter is just a fraction of the diameter of a single human hair. Particles larger than 10 micrometers do not usually reach the lungs, but they can irritate the eyes, nose and throat.

Very small particles with diameters less than 2.5 micrometers are called "fine particles" or PM 2.5. They are produced when fuels, such as coal, oil, diesel or wood, are burned. Fine particles come from fuel used in everything from power plants to wood stoves to internal combustion engines. These particles are even produced from construction equipment, agricultural burning and forest fires.

"Coarse" dust particles range in size from 2.5 to 10 micrometers in diameter. Particles of this size are produced during the crushing or grinding of rock and gravel, and by vehicles traveling on paved or unpaved roads stirring up dust.

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PM 2.5 is of greater concern because it is small enough to move deep into the lungs, causing increased risk of bronchitis, asthma attacks, heart attack and stroke. On days when the PM2.5 is high, more people are admitted to the hospital for respiratory and cardiovascular problems. Studies conducted world-wide have shown a consistent, increased risk for cardiovascular illness in relation to both short-term and long-term exposure to PM 2.5. In recognition of the health risk, EPA tightened the PM2.5 standard from 65 micrograms per meter cubed (ug/m3) to 35 ug/m3 in December 2006.

Mitigation remedies include:

- Reducing number of car trips
- Requiring wood-burning fireplaces and stoves meet low emission standards.
- Avoid using gas-powered lawn and garden equipment
- Avoid burning leaves, trash and other material
- Practice fire-fuel reduction

Lead (Pb) – Lead is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been motor vehicles (such as cars and trucks) and industrial sources. As a result of EPA's regulatory efforts to remove lead from gasoline, emissions of lead from the transportation sector dramatically declined by 95 percent between 1980 and 1999, and levels of lead in the air decreased by 94 percent between 1980 and 1999. Today, the highest levels of lead in air are usually found near lead smelters, like the Asarco smelter in East Helena. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufacturers. Since the closure of the smelter in East Helena, lead compound emissions dropped from 18,340 pounds per year in 1999, to 464 in 2002. (EPA Air Data www.epa.gov 6/30/2009)

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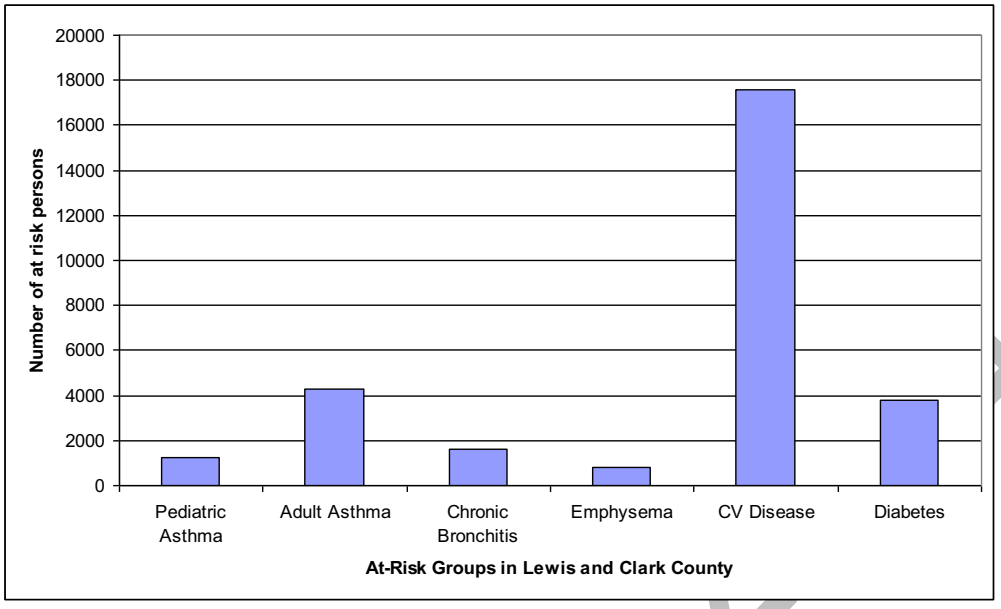
Graph 5.1



Certain groups are especially vulnerable to the effects of air pollution, such as: infants, older adults and people with lung diseases like asthma.

Data taken from the American Lung Association's "State of the Air 2009" report

Table 5.2

	At-Risk Individuals in L&C COUNTY	Percentage
Pediatric Asthma	**1,240**	**2.07%**
Adult Asthma	**4,288**	**7.15%**
Chronic Bronchitis	**1,633**	**2.72%**
Emphysema	**834**	**1.39%**
Cardiovascular Disease	**17,568**	**29.28%**
Diabetes	**3,819**	**6.37%**

See: http://www.stateoftheair.org/

Lead (Pb) – Lead is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been motor vehicles (such as cars and trucks) and industrial sources. As a result of EPA's regulatory efforts to remove lead from gasoline, emissions of lead from the transportation sector dramatically declined by 95 percent between 1980 and 1999, and levels of lead in the air decreased by 94 percent between 1980 and 1999. Today, the

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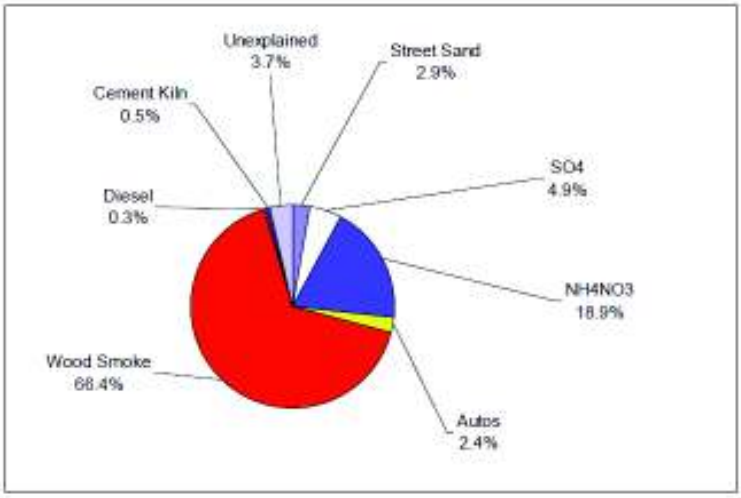
highest levels of lead in air are usually found near lead smelters, like the former Asarco smelter in East Helena. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufacturers.

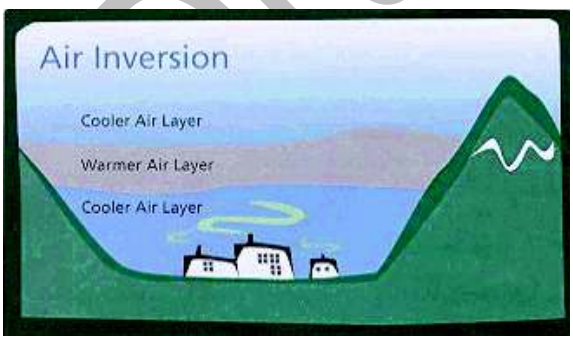
Local Monitoring – The Health Department operates one continuous air quality monitoring station in cooperation with the Montana Department of Environmental Quality (DEQ).

Local Sources (CMB) - In 2008 DEQ contracted with the University of Montana, Center for Environmental Health to conduct a source apportionment study for PM2.5 during the winter of 2007-2008. The goal of the study was to identify the major emission sources of PM2.5. During the study period, PM2.5 averaged 9 ug/m3, with a high measurement of 46 ug/m3 on January 25, 2008.

As illustrated in the graph below, wood smoke was the major source of PM2.5 at 66.4%. Other sources include ammonium nitrate (NH4NO3) and sulfate (SO4).



Helena, Montana 2008 Source Contributions Estimates.



Courtesy of Montana Department of Environmental Quality

Winter air quality in the Helena valley is dominated by the effects of frequent air inversions, which can trap pollutants like wood smoke under air masses of different temperatures. The Health Department monitors air quality conditions closely during the period from November 1 to March 1 and enforces no-burning rules during poor air quality episodes.

Table 5.3
AIR QUALITY IN THE HELENA VALLEY

Fiscal Year	Good Days	Watch Days	Poor Days	Poor Days due to Forest Fire
2010	330	24	11	
2009	361	4	0	
2008	350	8	8	
2007	332	28	5	5
2006	363	2	0	
2005	362	1	2	
2004[1]	347	13	5	

[1]Air quality monitoring is 365 days per year

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.

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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 and public health, and safety due to slope instability are most prevalent in mountainous areas. Localized hazards may occur anywhere within the planning area. 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 mud. This category is unstable for development due to possible 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: This category has areas greater than 15 percent slope that are underlain by bedrock units susceptible to land sliding but not underlain by landslide deposits.

- Unstable: This category has areas of any slope that are underlain by or immediately adjacent to landslide deposits.

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Earthquakes

The Montana Bureau of Mines and Geology indicates that earthquakes have always occurred in Montana. 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 northern 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.

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The magnitude of and earthquake, as measured on the Richter Scale, reflects the energy release of an earthquake. An earthquake's intensity is ranked from I to XII on the the Modified Mercalli Scale. An earthquake rated as a I would not be felt except by very few people under especially favorable circumstances. And intensity rating of XII would result in total destruction.

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

Liquefaction also occurs if certain geologic and hydrogeologic conditions exist: Water-saturated sediments transform 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, the Silver Creek area, 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.

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).

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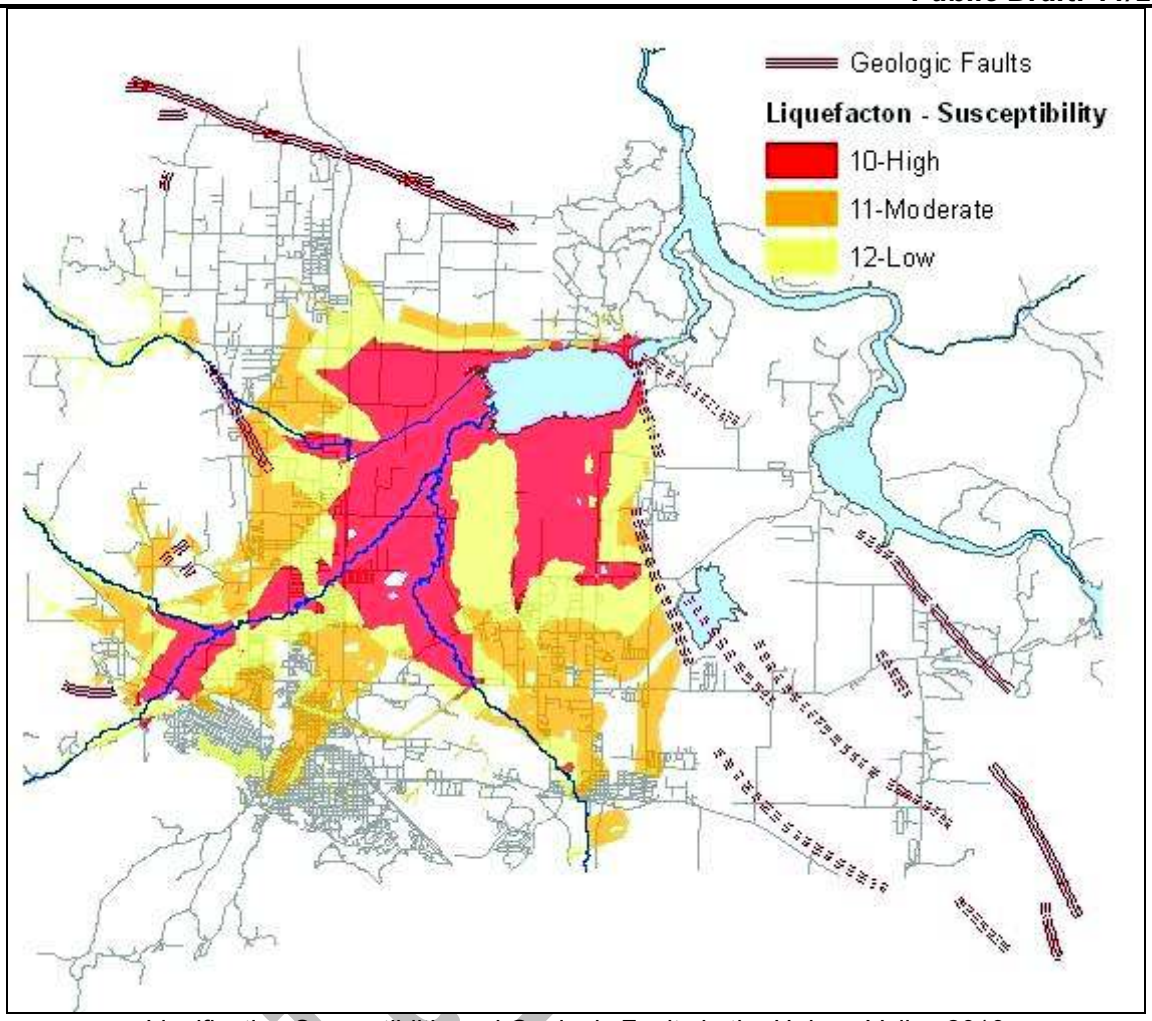

Liquification Susceptibiltiy and Geologic Faults in the Helena Valley 2010

SAND AND GRAVEL RESOURCES

The mining of sand and gravel in Lewis and Clark County, especially in the Helena Valley, is an important economic activity essential to the County's residential and commercial growth. Sand and gravel are essential raw materials needed by the construction industry. Sand and gravel operations employ workers, who contribute to the local economy. The construction and maintenance of the County's roadways and bridges depend on an on-going supply of these materials.

While sand and gravel operations are essential to the County's future growth, these extractive operations can cause concerns and nuisances for neighboring property owners. Increased noise, dust, early or late operating hours, visual impacts, and increased heavy vehicle traffic may adversely impact adjoining properties and cause damage to roads. Sand and gravel operations can spread noxious weeds to other areas of the county if proper measures are not taken. The removal of sand and gravel may affect local groundwater flow.

State law limits local government's ability to regulate sand and gravel operations. The governing body should carefully consider the impacts of the proposed resource extraction on: water quality, agricultural land, and neighboring residential development.

Zoning that requires conditional use permits for sand and gravel operations is one method that the County can use to mitigate adverse impacts on neighbors. Zoning may specifically prohibit sand and gravel extraction in those zoning districts where residents want no such operations.

The County needs to find ways to ensure the continued extraction of sand and gravel resources to meet the needs of a growing population, while also protecting natural resources and the health and safety of area resident and visitors.

Sand and gravel typically are found in river valleys, where the water table is high, and in alluvial floodplains along streams and in glacial deposits. Mapping of these resources is difficult without extensive geological surveying. The County has prepared maps that identifies where known sand and gravel resources are found. These maps are located in Appendix ? of the Growth Policy.

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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, which is the highest potential designation. Homes in Zone 1 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 in-home 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

The Constitution of the State of Montana, Article IX, Section 3: "All surface, underground, flood, and atmospheric waters within the boundaries of the state are the property of the state for the use of its people and are subject to appropriation for beneficial uses as provided by law." In addition, the Montana Water Use Act was passed in 1973, creating a centralized water rights process and records system.

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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 encompasses eight watersheds: The Middle and South Forks of the Flathead, Blackfoot, Upper Clark Fork, Sun, Smith, Upper Missouri/Dearborn, and Upper Missouri, 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).

Middle Fork Flathead Watershed

The 1,137 square miles of this watershed include 33 rivers and streams, and 96 lakes. Potential sources of impairment include natural contamination sources and silviculture.

Smith Watershed

The 1,997 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 1,684 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 1,981 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 spans the distance from Butte to Missoula. The area around Milltown Dam, near Missoula, was flooded in 1908 with mining contaminants. In 1983, the Milltown Dam area was listed as an EPA Superfund Site as well as four other areas on the Upper Clark Fork. In 2010, the Milltown Dam was removed and surrounding riparian area was rebuilt.

In 2011, Governor Schweitzer signed a plan to spend $116.5 million fixing Clark Fork River Basin pollution damage. The Missoulian newspaper reported that this “clears the way for communities from Butte to Missoula to restore or replace lands damaged by a century's worth of toxic waste from Anaconda Co. smelters and mines.”

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,

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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. The Prickly Pear Creek watershed, temperatures have been modified by point source pollution, riparian degradation and changes to the flow pattern. The Tenmile Creek watershed 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 37 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.

A good source of information is The Montana Department of Environmental Quality's report, "Water Quality Restoration Plan TMDLs for the Lake Helena Planning Area Volume II (PDF 0.24MB) August 2006" can be accessed on the website: www.deq.state.mt.us.

Montana Water Planning/Permits

At the time of passage of the 1973 Montana Water Rights Act, all water users using more than 100 gallons per minute had to get a water rights permit from the Department of Natural Resources. Below 100 gpm was exempted from the process. The Montana State Legislature changed the definition in 1991 to 35 gpm.

The Water Resource Act was originally passed in 1967 to address state wide water management goals. The Montana State Water Plan is the result of the Act. The current Montana State Water Plan handbook was published in 1993 and most recently evaluated in 2003 by the Department of Natural Resources. The Montana Water Plan states that groundwater appropriations may adversely affect surface water flows or uses. The Water Plan recommends that watershed groups be formed to perform four

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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 challenging issues. Not only are the physical and chemical characteristics of the surface water important, but also essential are best land use practices adjacent to the streams. Land-use practices that help maintain soils, terrestrial and riparian vegetation, and steam channel stability are good for healthy 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).

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

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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. FWP 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 DNRC administer this permit.

Pollution problems in Montana's waterways are nothing new. Montana's efforts to reduce water pollution 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. In 1997, the Legislature established a Total Daily Maximum Loading (TMDL) program.

TMDL can be described as a “water quality improvement plan” and refers to a strategy to return a water body to compliance with the water quality standards and therefore fully supporting of its designated uses. 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. 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

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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.

DEQ's reports can be accessed on the website. The reports goes into detail about specific watershed TMDLs.

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 nitrates may be higher in groundwater than in surface water.

The Safe Drinking Water Act (SDWA) of the EPA establishes a level of 10 mg/L as the maximum amount of nitrate allowed in a public water system. (EPA 1974, 1986, 1996)
In Lewis and Clark County, the average nitrates level in groundwater is 2.36 mg/L. However, the range varies from 0.01 to 51.95 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 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 depend 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. Once contamination occurs, it cannot be easily reversedand can have long terms effects for the residents.

Overview of Aquifer Types

Aquifers in Lewis and Clark County are divided into four categories: bedrock, tertiary basin fill, glacial, and alluvial.

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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 Era metasedimentary rock; Paleozoic and Mesozoic Era 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 non-porous; 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 era 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 ages. The

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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 of year. Some stream segments 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 depth to groundwater and concentrated human populations in the valleys, alluvial aquifers may be susceptible to contamination.

Groundwater-Surfacewater Interaction

The primary potable water source for Lincoln, Wolf Creek, Craig, Augusta and the Helena Valley are unconfined alluvial aquifers. The aquifers are present as valley fill materials near streams and rivers, with surface and ground water in communication as a combined system. The aquifers are generally composed of highly permeable, coarse-grained deposits which may allow rapid infiltration of surface contaminants. This property classifies these types of aquifers as highly vulnerable to contamination from surface sources. The groundwater resources in the Helena Valley, contiguous to the greater Helena urban area have historically served the most people, and consequently have been the focus of more studies than other areas. Consequently, there is significantly more data characterizing the ground water systems in the Helena area than for other parts of Lewis and Clark County.

While the City of Helena obtains potable water from outside of the Helena Valley, groundwater provides the sole source of drinking water for approximately 55 percent of the Helena Valley residents not served by the Helena Public Water Supply. The Helena Valley alluvial aquifer provides water through more than 5,000 domestic wells and an

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approximately 72 public water supplies. Protection of public water supply source aquifers and ecologic preservation of wetlands and the health of surface water bodies represent the primary purpose for management planning for protection of local water resources.

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. Unconsolidated surface deposits in the Helena Valley are of Quaternary age, which is the geologic period of the last 2,000,000 years. Where the major streams enter the valley at the northwest (Silver Creek), southwest (Tenmile Creek) and southeastern (Prickly Pear Creek) margins, the deposits are generally poorly sorted with boulder to cobble size gravels found within a matrix of sandy silts and clays. The central part of the valley is comprised of finer grained alluvium and lakebed deposits overlying older Tertiary valley fill material. The total depth of the valley-fill, composed of both Quaternary and Tertiary deposits, exceeds 6,000 feet near the basin interior and thins toward the margins. The surficial Quaternary alluvial deposits are generally not cemented or compacted (USGS 1992). The 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 USGS 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 study reported a median nitrate concentration of 1.2 mg/L in samples collected from approximately one hundred wells across the valley. The report concluded that some correlation exists between septic system density and elevated nitrate concentrations. 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, as all surface and ground water discharge from the valley through Lake Helena to Hauser Lake. The study identified a tendency for a downward vertical gradient across the majority of the valley. The Montana Source Water Protection Program (DEQ, 1999) classifies unconfined aquifers in areas with a downward vertical gradient and as most susceptible to potential contamination from surface sources. Further, the relative susceptibility of the aquifer to contamination is greater in areas with coarse soils and shallow ground water.

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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.

The *Framework Water Quality Restoration Plan and TMDLs for the Lake Helena Watershed Planning Area, Volumes I and II* (EPA, 2006) presents the water quality restoration plan for the Lake Helena Watershed Planning Area. The restoration plan identifies 24 impaired water bodies within the watershed area. The restoration plan sets TMDLs for 17 stream segments totaling 121 stream miles that have excess quantities of sediment and 6 stream segments totaling 41 stream miles and water quality targets for 1,600 lake acres impaired from both nitrogen and phosphorus nutrient enrichment. The restoration plan identifies the source of elevated nitrates and phosphorus (nutrients) from both point and non-point sources as the primary cause of impairment in these streams. The non-point sources include ground water recharge to surface water, and thus require planning for controlling nutrient levels in ground water.

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.

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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. In addition, the Montana DEQ periodically monitors for pesticides and nitrates. The last such study for the Helena was conducted 2006.

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.

- While the majority of Class IV injection wells (dry sumps receiving liquid industrial and shop wastes) have been closed as required by law, some may still be located throughout Helena and the Helena Valley. Class V injection wells, used for storm water management by providing a conduit for infiltration into the subsurface, are also present in the area. Both types of injection wells, or sumps, provide a direct pathway for harmful petroleum and chemical products to enter aquifer waters.

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- The City of Helena landfill and the Scratchgravel landfill have both been determined through ground water sampling programs as the source of volatile organic contaminants in the aquifer. Two other landfills, a private landfillsouthwest of East Helena and a former operationin the Valley center lie directly above aquifer waters may contain potential contaminant sources.

- 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 non-municipal 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. At least one lagoon is known to be leaking into the aquifer.

- Continuing development requires the use of community or individual on-site wastewater treatment facilities which discharge treated effluent directly into near surface soils.

- 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 Management Strategy:
Protection of Groundwater and Surface Water

Expansion of residential and industrial development in the Helena Valley with urban growth results in increasing pressure on water supply sources. Increased withdrawal from the aquifer may result in long-term depletion of the ground water resource when

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pumping and extraction exceed recharge. Further, urbanization exposes local aquifers to ever-increasing numbers of contaminant sources; most notably individual and public or multi-user on-site wastewater treatment systems.

There are nine large non-municipal 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.

On-site wastewater treatment systems as well as other onsite or alternative public or multi-user wastewater treatment systems can be the most practical and cost-effective way to treat household wastewater, assuming they are properly installed and maintained. Without proper management, however, systems can fail, polluting water resources and threatening public health. Systems need periodic maintenance, including tank pumping. A Septic Maintenance District was developed in 2009 to provide incentives and support for proper operation of onsite wastewater treatment systems.

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 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.

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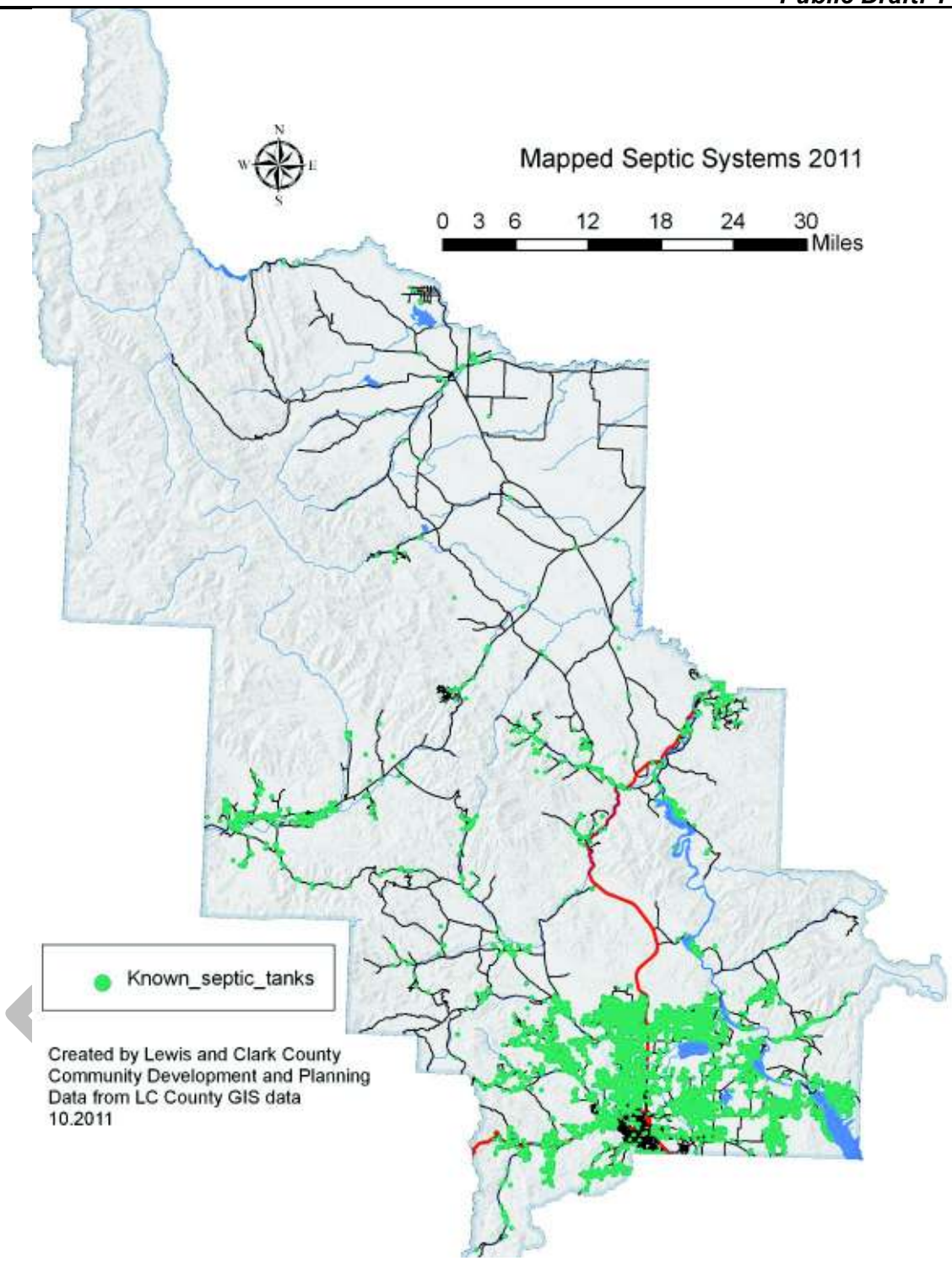
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The Department of Environmental Quality issued a report in 2006 that outlined the various community wastewater systems in the Helena Valley. Of these, four subdivision have systems that do not require permitting. Three subdivisions operate soundly while the remaining one does not. According to the report, "It is assumed that 25 percent of the flow is discharged to the subsurface with concentrations typical of "stabilization pond effluent" and that 75 percent of the effluent is discharged to the subsurface at "after sedimentation" concentrations" (Framework Water Quality Restoration Plan and Total Maximum Daily Loads (TMDLs) for the Lake Helena Watershed Planning Area: Volume II – Final Report).

The Voluntary National Guidelines for Management of Onsite and Clustered (Decentralized) Wastewater Treatment Systems, 2003,notes that use of individual multi-user wastewater 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, "many of the systems in use are improperly managed and do not provide the level of treatment necessary to adequately protect public health and surface and ground water quality." 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..

In 2011, the Lewis and Clark County Board of Health and County Commissioners adopted a septic maintenance program to deal with the protection of the Lake Helena Watershed from failing systems in the valley. The Board of County Commissioners have been pro-active in finding measures to protect the groundwater in the region.

County Inventory of On-Site Wastewater Treatment Systems

Introduction

In 2007, Lewis and Clark County was awarded a grant from the Environmental Protection Agency to facilitate the development of a septic maintenance district.

The Lewis and Clark City-County Health Department has issued permits and maintained a database for septic system permits since 1973. As of the beginning of 2008, there were approximately 10,300 permitted septic systems recorded. Estimates

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of the number of unpermitted systems, including systems installed prior to 1973 and illegally installed systems, is thought to be an additional 2000 to 2500.

Approximately 40% of the permitted septic systems in Lewis and Clark County are twenty years old or older. Some of the older subdivisions in the Helena Valley have septic systems that are 30+ years old, some of which may be near the end of their useful life. However, a properly installed and *maintained* system can remain in service over an extended timeframe, postponing the cost and inconvenience of constructing a replacement system.

The Board of County Commissioners recommended approval of the Septic Maintenance District Plan to the Lewis and Clark County Board of Health. The Board of Health approved amendments to the Onsite Wastewater Treatment Regulations. A new section was adopted for the regular reporting of septic system operation and maintenance in Lewis and Clark County.

Green Meadow Controlled Groundwater Area

The Area was originally established by the Department of Natural Resources and Conservation on April 11, 2008. In April 2010, a two year extension was announced by the DNRC and extended the Green Meadow Temporary Controlled Ground Water Area to April 11, 2012. The boundary of the Green Meadow Temporary Controlled Ground Water Area is generally described as all aquifers beneath the area south of Silver Creek and north of Sevenmile Creek between Green Meadow Drive and the western edge of the Scratchgravel Hills.

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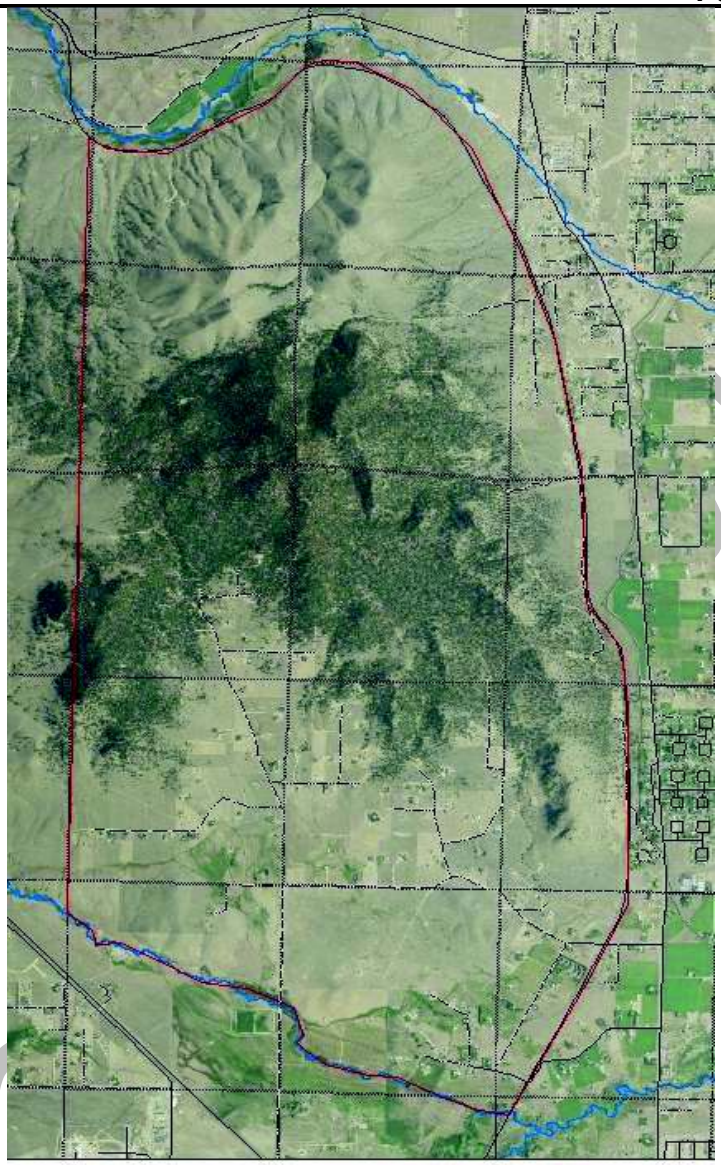

Green Meadow Controlled Groundwater Area

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 FWP, 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, 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, is a dynamic process, in which the science has evolved. Components such as soil texture, slope, drainage density, vegetation, and land use practices constantly interact and adjust to one another, maintaining 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.

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Stormwater retention has become a heightened issue as the Helena Valley continues to be subdivided at urban densities. County Subdivision Regulations require a grading and drainage plan any time there are surface improvements made in a subdivision.

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 poorly designed drainages, undersized culverts and roadside ditches, and increasingly impervious surface areas. A storm water plan is becoming critically important 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, February 1996 and early 2011.. Major generally occurs along the Blackfoot River near Lincoln, Elk Creek near Augusta, the Dearborn River near Wolf Creek and both the Tenmile and Prickly Pear Creeks in the Helena Valley. 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 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. During each of the flood periods, 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 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. 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. In 2005, in partnership with FEMA, the Montana DNRC agreed to update the flood maps digitally. Adopted maps are available on the FEMA website.

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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 depicted on FEMA maps. Construction of permanent structures is possible within the floodway fringe, but only after the issuance of a Floodplain Development Permit. The permit may require flood proofing or other mitigation measures.

Wetlands

The United States Fish and Wildlife Service (USFWS) define wetlands as:

> ***"Wetlands.*** *Wetlands are 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 purposes of this classification, wetlands must have one or more of the following three attributes: (1) at least periodically, the land supports predominantly hydrophytes (plants specifically adapted to live in wetlands); (2) the substrate is predominantly undrained hydric (wetland) soil; and (3) the substrate is nonsoil and is saturated with water or covered by shallow water at some time during the growing season of each year."*

The USFWS's classification system groups wetlands in five systems: Marine, Estuarine, Riverine, Lacustrine, and Palustrine.

The Riverine, Lacustrine, and Palustrine types of wetland groups 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 non-persistent 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

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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:

- 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.

Section 404 of the Clean Water Act is the primary federal regulatory program covering wetlands. 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). USFWS are given an advisory and commenting role in the 404 process. FWP and DEQ, Water Quality Bureau are the lead State agencies dealing with wetlands.

From 1998 until approximately 2006, the Helena Wetlands Community Partnership worked to gather information about Helena area wetlands. The Partnership published the *Wetland Resources Assessment, Helena Valley, Montana: a Wetlands Community Partnership* project report in 2001.

Additionally, the Montana Department of Environmental Quality (DEQ) has a wetlands program. DEQ staff is active on the Montana Watershed Council to deal with wetland

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issues statewide. Working with other state agencies and interested public, the Montana Watershed Council's goal is no net loss of wetlands in the State of Montana.

There are active watershed groups throughout Lewis and Clark County. These include the Blackfoot Challenge, the Lake Helena Watershed Group, the Missouri River Conservation Districts Council, the Upper Clark Fork River Basin Steering Committee and the Upper Tenmile Steering Group. These groups identify issues and projects within the watersheds. The Lake Helena Watershed Group has these goals:

- Enhance or maintain water quality and quantity within the basin with consideration of physical, chemical, and biological parameters.
- Promote action plans that benefit drought management, flood management, and overall watershed health.
- Provide educational opportunities for both the public and stakeholders regarding watershed issues.

Rare, Threatened, or Sensitive Plant Species

The Montana Natural Heritage Program identified 26 Species of Concern and -two Potential Species of Concern in Lewis and Clark County. Most of the identified species are associated with wetlands or transitional wetland areas.

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. Whitebark pine is important for wildlife such as grizzly bears and red squirrels. The USGS website (http://www.nrmsc.usgs.gov) states that completed "research demonstrating the importance of red squirrels and whitebark pine seeds to bears in the Greater Yellowstone Ecosystem (GYE) and document[s] the critical role of over-wintered nut caches to bear behavior and nutrition".

Rough fescue, Idaho fescue, bluebunch wheatgrass and big sagebrush are the dominant species in the mountain grasslands and shrublands. 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.

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

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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 sedges are the major habitat types in wet meadows. Willow, red alder, bog birch or red osier dogwood community types dominate wet shrublands.

In Lewis and Clark County, as well as other parts of Montana, there is an epidemic of the mountain pine bark beetle. The beetle is killing lodgepole pines at a startling rate. The City of Helena has staff to address the problem on the city-owned lands. The Open Lands Fuel Removal Plan states:

> "Tree Removal: The proposed treatment of these lands will involve the harvest (removal) of all mountain pine beetle infested trees with the exception of those beetle-killed trees retained for wildlife habitat (snag trees); combined with the thinning of live, un-infested trees on an approximated 15-20 foot tree crown to tree crown spacing. Addition forest fuels modification work will involve the pruning of lower limbs to a height of 6 feet on those trees 20 feet tall and greater and a pruning to a height equal to 1/3 of the total tree height on those trees less than 20 feet in total height."

The county does not have a comparable plan.

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

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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 32 weeds as noxious and two regulated plants. 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 Noxious Weed List

Effective: January 2010 Priority 1A These weeds are not present in Montana. Management criteria will require eradication if detected; education; and prevention.	Yellow starthistle (*Centaurea solstitialis*)
Priority 1B These weeds have limited presence in Montana. Management criteria will require eradication or containment and education.	Dyer's woad (*Isatis tinctoria*) Flowering rush (*Butomus umbellatus*) Japanese knotweed complex (*Polygonum spp.*) Purple loosestrife (*Lythrum spp*.) Rush skeletonweed (*Chondrilla juncea*) Eurasian watermilfoil (*Myriophyllum spicatum*) Scotch broom (*Cytisus scoparius*) Curlyleaf pondweed (*Potamogeton crispus*)
Priority 2A These weeds are common in isolated areas of Montana. Management criteria will require eradication or containment where less abundant. **Management shall be prioritized by local weed districts.**	Tansy ragwort (*Senecio jacobaea*) Meadow hawkweed complex (*Hieracium spp*.) Orange hawkweed (*Hieracium aurantiacum*) Tall buttercup (*Ranunculus acris*) Perennial pepperweed (*Lepidium latifolium*) Yellowflag iris (*Iris pseudacorus*) Blueweed (*Echium vulgare*) Hoary alyssum (*Berteroa incana*)

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Priority 2B These weeds are abundant in Montana and widespread in many counties. Management criteria will require eradication or containment where less abundant. **Management shall be prioritized by local weed districts.**	Canada thistle (*Cirsium arvense*) Field bindweed (*Convolvulus arvensis*) Leafy spurge (*Euphorbia esula*) Whitetop (*Cardaria draba*) Russian kapweed (*Centaurea repens*) Spotted knapweed (*Centaurea stoebe* or *maculosa*) Diffuse knapweed (*Centaurea diffusa*) Dalmatian toadflax (*Linaria dalmatica*) St. Johnswort (*Hypericum perforatum*) Sulfur cinquefoil (*Potentilla recta*) Common tansy (*Tanacetum vulgare*) Oxeye daisy (*Chrysanthemum leucanthemum or Leucanthemum vulgare*) Houndstongue (*Cynoglossum officinale*) Yellow toadflax (*Linaria vulgaris*) Saltcedar (*Tamarix spp.*)
Priority 3 Regulated Plants: (NOT MONTANA LISTED NOXIOUS WEEDS) These regulated plants have the potential to have significant negative impacts. The plant may not be intentionally spread or sold other than as a contaminant in agricultural products. The state recommends research, education and prevention to minimize the spread of the regulated plant.	Cheatgrass (*Bromus tectorum*) Hydrilla (*Hydrilla verticillata*)

Fortunately, in Lewis and Clark County there are only three (3) weeds that are listed as noxious. Common Burdock, Common Mullein, Black Henbane were adopted by the County Commissioners by resolution, in addition to the state wide list, as county noxious weeds.

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

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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 herbicide applications 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, as a 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 ignition sources make this possible. The 1988 Warm

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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 Bucksnort (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.

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).

Lewis and Clark County risks several wildfires every year. A fuel hazard map has been developed by the County, which depicts the fire risk of the county. In 2006, at the time the fuel risk map was developed, almost 2,700 homes were in the high and severe fire risk areas with a value of $395,834,352. (2006 Fuel Hazard map) There are certainly more than that now. In addition, the map was created before the Pine Bark Beetle epidemic, which has increased the fire hazard considerably.

In 2011, there were three active wildfires in Lewis and Clark County in the national forest and four (4) smaller wildfires around the area. All were contained by firefighters working under cooperative agreements in the county.

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 (WRI). The WRI 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 WRI exists anywhere that structures are located close to natural vegetation and where a fire can spread from vegetation to structures, or vice versa. A WRI 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

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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.

Fighting wildland fires in Lewis and Clark County is primarily the responsibility of the USDA Forest Service and 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 department's 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.

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Large mammals include elk, moose, mule deer, antelope, black bear and grizzly 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, badger and raccoon. Large predators consist of wolves, coyote, mountain lion, lynx and bobcat. Detailed information about calving or wintering ranges for wildlife may be obtained by contacting FWP.

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 for raptors. 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.
Of the species found in the County, USFWS and the Forest Service have identified the species listed in table 5.5 as being threatened, endangered or sensitive species.

Table 5.5

Common Name	Designation
Gray Wolf	SENSITIVE
Townsend's Big-eared Bat	SENSITIVE
Black-tailed Prairie Dog	SENSITIVE
Spotted Bat	SENSITIVE
Wolverine	SENSITIVE
Fisher	SENSITIVE
Northern Bog Lemming	SENSITIVE
Trumpeter Swan	SENSITIVE
Peregrine Falcon	SENSITIVE
Common Loon	SENSITIVE
Harlequin Duck	SENSITIVE
Flammulated Owl	SENSITIVE
Black-backed Woodpecker	SENSITIVE
Western Toad	SENSITIVE
Great Plains Toad	SENSITIVE
Plains Spadefoot	SENSITIVE

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Westslope Cutthroat Trout	**SENSITIVE**
Canada Lynx	**THREATENED**
Grizzly Bear	**THREATENED**
Bald Eagle	**THREATENED**
Bull Trout	**THREATENED**
Plant Species	
Upward-lobed Moonwort	**SENSITIVE**
English Sundew	**SENSITIVE**
Linear-leaved Sundew	**SENSITIVE**
Lackschewitz' Fleabane	**SENSITIVE**
Missoula Phlox	**SENSITIVE**
Austin's Knotweed	**SENSITIVE**
Round-leaved Orchis	**SENSITIVE**
Sparrow's-egg Lady's-slipper	**SENSITIVE**
Beaked Spikerush	**SENSITIVE**
Water Bulrush	**SENSITIVE**
Scorpidium moss	**SENSITIVE**

(Montana Natural Heritage Program)

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, increase wildlife/human conflicts. 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 harassing or preying on wildlife, or and predators injuring or killing pets.

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.

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- 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 food outside overnight.
- Garbage should be stored inside and disposed of frequently. Even in closed containers, garbage attracts wildlife, particularly bears and skunks.
- Use native plants for landscaping. Non-native plants are particularly prone to wildlife use.
- Fence /net gardens.
- Learn to share with wildlife.

(Source: FWP, Helena Area Resource Office (HARO), 2002.)

Lewis and Clark County has an Open Lands program to assist land trusts and other agencies to secure conservation easements in the county. One of the goals of the Open Lands bond measure is to protect wildlife and wildlife habitat.

Unexploded Ordnance (UXO)

Beginning in 1948, military training using live ammunition was conducted in the Helena Valley. The live-fire training continued into the 1950s. As development occurred in the north hills area of the Valley, the Lewis and Clark Sheriff's office responded to approximately 200 emergency calls concerning UXO.

The Montana Army National Guard began to research ways to deal with the UXO in the mid-1990s. Partnering with non-military consultants, a public awareness campaign was established in 2008. Using high tech instruments, UXO was tracked and cleared on over 1,500 acres in the north hills area of the Helena Valley.

Clearance of unexploded ordnance is a continuing project.

EPA National Priority List

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. Listing on the NPL makes a site eligible to receive federal

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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 parties 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 was in operation beginning in 1888. The eighty-acre smelter site is still generally referred to as the ASARCO facility, formally known as the American Smelting and Refining Company. Prior to suspending operations in 2001, the smelter recovered lead, zinc, and other metals from ores concentrates using pyromertallurgical processes. The smelting process resulted in the airborne release of heavy metals, which were deposited over East Helena and the surrounding areas. The area is listed as an EPA Superfund site. The site is currently being managed by the Montana Environmental Trust Group.

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. In 1975, 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

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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, requiring that residential yards be remediated if soil lead concentrations were found to exceed 1,000 micrograms-per-kilogram (mg/kg). Subsequent soil removal actions have occurred in residential yards, parks, road, alleys and road aprons with elevated lead concentrations.

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 K & 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.

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 continues to investigate 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. All long-term remediated sites have maintained relatively stable "background" lead concentrations.

In August 2009, the smelter smoke stacks were demolished. The East Helena Smelter Operable Unit 2 Record of Decision was signed on September 17, 2009, and documents the cleanup decision for residential soils and undeveloped lands at the East Helena Superfund site. The East Helena Superfund site includes a lead smelter that operated from 1888 until 2001, the town of East Helena, several residential subdivisions, and surrounding rural agricultural lands. For more than 100 years, the byproducts of the lead and zinc smelting operations has resulted in lead, arsenic,

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copper, zinc, cadmium, and some 15 other hazardous substances polluting the soil, surface water and ground water of the Helena Valley. ASARCO shut the plant down on April 4, 2001. Public access to the smelter is restricted.

About 1,800 to 2,000 people live within one and one half miles of the smelter complex and most of the residential properties within that area were, until a yard cleanup began in 1991, contaminated with lead above health-based concentrations. Approximately 180-200 residential yards and several hundred acres of undeveloped lands remain contaminated with lead to this day. Most of the area's residences are hooked up to a municipal or community water supply system.

Asarco, the principal potentially responsible party, has cooperated with the Environmental Protection Agency (EPA) in cleanups both on the plant site and in the adjoining community of East Helena.

Upper Tenmile Creek Watershed

The Upper Tenmile Creek Watershed is also an EPA Superfund Site 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.

The Upper Tenmile Creek Watershed is one of two municipal water sources for the City of Helena. The watershed has many stakeholders, including landowners, local communities, local and state government, special interest groups, and federal agencies. Therefore, this area is of great importance for the public welfare of the area. The EPA identified 150 individual mine sites within the watershed boundary, of which 70 have been prioritized for cleanup. Many of these mine features are above the five City of Helena drinking water intakes which supply over 70 percent of the city's water. (EPA.gov)

The EPA describes the Superfund project:

> The Upper Tenmile Creek Mining Area Superfund site has received $6.45 million through the American Recovery and Reinvestment Act (ARRA). EPA has contracted to remove mining waste from Rimini Road, where residents have the potential to be exposed. Removal of waste from Rimini Road will also prevent future erosion and distribution of wastes via the adjacent Tenmile Creek. A contract is also in place to dispose of waste and construct final cover over a portion of the Luttrell Repository. (EPA.gov)

Efforts to develop a protection plan in the event of a wildfire in the Upper Tenmile Creek Watershed began in October 2008. An advisory committee was created by the City of Helena. The committee was composed of city and county staff as well as representatives from conservation and recreation groups, the USDA Forest Service, and Department of Natural Resources management. The advisory committee forwarded its recommendations to the City Commission in June 2009.

Some of the recommendations were as follows:

- Post-project roads will not be improved or their width expanded, with the exception of improvements designed to improve water quality.
- Treatment methods are to be designed to cause the least soil disturbance possible and to minimize spread of noxious weeds.
- Confirmed/Supported Forest Service proposal to conserve wind-firm species (trees most likely to survive a strong wind event).
- Targeted fuels removal should minimize vegetative cover disturbance.
- Contour felling will be practiced to reduce sediment delivered from above mitigation zone.

History of the project area

The Upper Tenmile Creek Mining Area site is located in the Rimini Mining District, southwest of Helena. It consists of abandoned and inactive hard rock mine sites that produced gold, lead, zinc, and copper. Mining began in the Rimini Mining District before 1870 and continued through the 1920s. Little mining has been performed in the Rimini Mining District since the early 1930s.

The site boundary includes the drainage basin of Tenmile Creek upstream of the Helena Water Treatment Plant and includes tributaries that supply water to the plant's five intake pipelines. EPA staff is coordinating with other state and federal agencies by addressing Clean Water Act problems related to mining wastes in the watershed that have been identified by the state. Tenmile Creek is the state's top priority for a Total Maximum Daily Load (TMDL) allocation.

EPA added the Upper Tenmile Creek Mining Area to the Superfund National Priorities List on October 22, 1999, due to mining waste problems in the 53 square mile watershed. The small historic mining community of Rimini is located within the Superfund Site boundaries. Contaminants of concern are heavy metals, primarily lead, copper and zinc, as well as arsenic. These contaminants pose potential risks to public health and the environment. (EPA.gov)

Table 5.6

Abandoned Hardrock Mines Priority Site Status for the Upper Tenmile Watershed

Rank	Site Name	Ownership Status
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 Mill site	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 Abandoned Mine Reclamation (AMR) program of the Montana DEQ reclaimed four mine sites following the prioritization, including the Lower Tenmile, Little Lilly, Kelly, and Tenmile Mine sites (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. Forest Service, City of Helena, Basin Creek Mine, FWP, Lewis and Clark Conservation District,

Department of Environmental Quality, Environmental Protection Agency, USGS, 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 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 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.

Natural Environment Challenges, Goals, and Policies

(Staff note: "Issues" changed to "challenges" by Planning Board. Staff prefers to keep "Issues")

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.

CHALLENGE 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 improvement 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 1.10 Examine the cumulative effects of development on floodplains, floodways, levels of flood activity, and potential property damage.

Policy 1.11 Conserve working farms, ranches and forest lands.

CHALLENGE 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 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 2.12 Define the role on-site wastewater treatment systems play in groundwater and surface water interactions by continuing to inventory 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 2.15 Protect water quality in and along rivers and streams.

CHALLENGE 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 based on FWP recommendations

CHALLENGE 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.

Policy 4.2 Provide for recreation while conserving open space.

CHALLENGE 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.

CHALLENGE 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.

CHALLENGE 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.

Policy 7.5 Promote preservation and conservation by supporting the efforts of the Historic Preservation Commission and other similar organizations.

CHALLENGE H The mining of sand and gravel in Lewis and Clark County is an important economic activity essential to the County's residential and commercial growth.

Goal 8 Encourage continued sand and gravel operations throughout the County, while protecting the property rights of neighboring properties and protecting roads in the County.

Policy 8.1 Adopt zoning, a conditional use process and/or development standards to

ensure the continued supply of needed sand and gravel for construction, while protecting the property rights of the affected property owners.

Policy 8.2 Consider methods to identify and evaluate impacts on roads in the County being impacted by sand and gravel operations, and methods for mitigating these impacts.

VI:

TRANSPORTATION

Existing Conditions

Introduction

The ability to effectively 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 (2004 update) is the principal transportation document for the Greater Helena Planning Area. It includes the City of Helena and most of the Helena Valley. The Transportation Development Plan for 2005-2025 (prepared for the City of Helena, Lewis and Clark County, Montana Department of Transportation (MDT) and the Federal Highways Administration) describes transportation planning efforts and transportation infrastructure improvements over the next twenty years in the Greater 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 over the next 20 years, as described in Chapter 2. The anticipated growth will result in increases 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 will new and improved existing roads affect growth through the next twenty years?
- How will 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 most important for those industries especially dependent upon transportation?
- What transportation issues are important to the general public?
- What are the transportation-related values and the goals of the community?
- What policies should be formulated to meet these goals and values?

Transportation Issues

Safety

The residents of Lewis and Clark County deserve safe transportation systems. Vehicular and pedestrian 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. Management of congestion is important to preserve and improve safety in the face of a growing population and increasing traffic volumes. Adequate road maintenance is another safety issue because poorly maintained roads, particularly during inclement weather, contribute significantly to the number of accidents.

Maintenance

Maintenance of county roads is a critical issue to county residents. 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.

Dearborn Bridge

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 has successfully pursued funding for bridge replacement through the Treasure State Endowment Program; since 1995, 75 bridges and culverts have been repaired or replaced. Public and private partnerships or resource pooling may be used in the future to offset the high costs associated with maintaining roadways.

Alternative Modes

Transportation improvements have emphasized the movement of motorized vehicles since the 1950's. Alternative modes, such as bicycling and walking, have not been stressed to a great extent. This emphasis has resulted in a transportation system and land use patterns largely centered on 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.

North Coast Hiawatha passenger rail line operated through the southern part of Montana, stopping in Helena, from 1971 until its discontinuance in 1979. A feasibility study about re-starting the route was conducted by Amtrak in 2008. At this time, there are no plans to restore service.

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 reducing demands on the system (i.e., the number of trips taken) through a variety of transportation demand management (TDM) programs. Many larger communities have had 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.

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

MDT, the City of Helena, and Lewis and Clark County cooperatively 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 counts varies annually depending upon budget constraints and the need for data. In 2009, 139 total counts were conducted; 117 regular sites, 20 MDT sites and two "Special" site locations. Counts since 2007 have indicated a general increase (8 to 14 percent) in traffic volumes. This trend is expected to continue. The largest factor affecting traffic volumes within the County is roadway construction projects. Large roadway construction projects require a variety of closures and delays which shifts traffic to other roads within the area.

Funding

Lewis and Clark County generates revenues for road construction, improvements and maintenance through a variety of funding mechanisms. The primary funding sources include: the Road Fund, Bridge Fund and Special Revenue Funds.

The Road Fund provides for construction, maintenance, and repair of county all roads outside the corporate limits of the cities of Helena and East Helena. Revenues for this fund come from intergovernmental transfers (i.e. State gasoline tax apportionment taxes and motor vehicle taxes), and a mill levy assessed against county residents living outside of city corporate boundaries. Lewis and Clark's County's State gasoline apportionments is approximately $263,000 per year. County Road Fund monies are primarily used for maintenance with little allocation for new construction.

The Bridge Fund provides financing for engineering services, capital outlays and necessary maintenance for bridges on all off-system and secondary routes within the county. These monies are generated through intergovernmental fund transfers (i.e. vehicle licenses and fees) and a county-wide mill levy. There is a taxable limit of four mills for this fund.

Special Revenue Funds may be used by the County to budget and distribute revenues legally restricted to a specific purpose. Several such funds that benefit the transportation system include:

- Capital Improvements Fund
- RID's
- Special Bond Funds
- General Obligation (G.O.) Bonds
- Private Funding Source and Alternatives
- Development Financing
- Cost Sharing Transportation Corporations
- Road Districts
- Private Donations
- Impact Fees
- Tax Increment Financing
- Multi-jurisdictional Service Districts
- Local Improvement Districts

In 2007, Lewis and Clark County and the City of Helena jointly initiated an Impact Fee Study. The Commissions appointed an Impact Fee Advisory Committee, consisting of citizens with different professional backgrounds. The committee worked with the Impact Fee Consultant, City and County staffs to draft recommendations regarding the possible adoption and implantation of Impact Fee Ordinances. The Committee's recommendations were forwarded to both the County and City Commissions in May, 2010. Both Commissions are considering the Committee's recommendations.

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. 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			
		RIGHT- OF- WAY WIDTH (in feet)	
Road Classification	Number of Lanes	Existing Code *(if applicable)*	National Daily Traffic Average
Interstates/Freeway	4+	Varies	30,000+
U.S. Hwys/State	4-7	80	20,000+
Arterials (major/minor)	2-5	80	8,000-20,000
Collector (major/minor)	2-4	60 - 80	1,200-8,000
Local Acc. Streets	2	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 and State Routes

U.S. Highways and 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 at Garrison.

Arterials (major and minor)

The greatest portion of through travel occurs on arterials. 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 to maintain efficient traffic flow. While the predominant function of arterials is the movement of through traffic, they provide considerable local traffic that originates from, or is destined, to points along the travel corridor.

The County's arterials generally carry from 2,000 vehicles per day to as many as 25,000 vehicles per day. In 2010, Montana Avenue, an arterial in the West Valley, averaged from 7,300 Annual Average Daily Trip (AADT), south of Sierra Road to 19,330 AADT north of Custer Avenue. Canyon Ferry Road, a State of Montana highway, underwent a major upgrade in 2009 and 2010. In 2010, Canyon Ferry Drive, east of Wylie Drive had 6,900 AADT..

The Custer Avenue Interchange onto Interstate 15 is currently under construction, with an anticipated completion date of January 2013..

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 localaccess 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. In 2011 McHugh Drive averaged about 3,760 vehicles per day (at Custer Avenue) and Wylie Drive averaged from 839 vehicles per day (at York Road) to 5,120 vehicles per day (at East Helena).

Marysville Road and Sun Canyon Road are rural collectors that have undergone upgrades since 2008.

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.

Streets that are created during subdivision review are dedicated to the County and maintained by a local Rural Improvement District.

Other Elements of the Transportation System

Bridge Facilities

There are 181 bridges in Lewis and Clark County. Lewis and Clark County is responsible for maintaining ninety bridges (22 minor bridges and 68 major bridges). Bridges known as major structures (clear spans greater than 20 feet) are inspected biennially by the Montana Department of Transportation. However, detailed inspection of minor structures (clear spans less than 20 feet) are not conducted on a regular basis by MDT or the County Public Works Department. In 2008, 22 bridges were inspected, evaluated and inventoried. Each component of the bridges was evaluated individually

and assigned a rating of new, good, fair, poor or critical. The majority are generally in fair to good condition, but several structures were identified as in need of immediate repair. Overall, 23 bridges need some type of work ((2008) 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 the repairs or replacement has been completed. The County submits applications to upgrade bridges within the County.

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. Construction traffic accounts for wear on the county road ways.

The new “mega-loads” are also affecting highway and road maintenance. These are immense loads that are generally equipment for oil production. Montana roadways are being utilized to bring mega-loads to Billings and to Alberta, Canada.

Recreational vehicle travel, another type of heavy vehicle traffic, tends to be seasonal with greatest volume of traffic in the summer and smaller “shoulder seasons” in the spring and fall. Recreational vehicle traffic in the County frequent the recreational and camping facilities along the Missouri, Blackfoot and other streams, and Hauser, Canyon Ferry, Holter, and Helena lakes. Roads in the County also provide through traffic to recreational sites along the Rocky Mountain Front, Glacier and Yellowstone National Parks as well as other locations.

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 Helena Area Transportation Council (HATC) meets at the Neighborhood Center, the second Tuesday of each month at 1:30 p.m.

Bus Service

The public bus system in the Helena area is known as the Helena Area Transit System (HATS). HATS was established in 1979 and is owned and operated by the City of Helena. The fleet consists of buses and trolleys. The entire fleet is equipped with wheelchair lifts and two-way radios, all vehicles comply with ADA regulations. HATS offers a checkpoint bus, a trolley bus, an East Helena Valley bus and a Curb-to-Curb bus. HATS operates Monday through Friday, excluding holidays. In 2010, the City build the HATS system a new transit facility located on North Montana Avenue. It opened in 2011.

The checkpoint bus is a set route bus that runs every hour with various checkpoint stops within the City of Helena. No call is required for services, but the system does permit minor deviations to meet passenger demands.

The East Valley bus service functions as a commuter bus service from the East Valley, Eastgate, East Helena, Capital Hill Mall and downtown Helena. The service began in 2006 and averages 1,000 trips per month and represents approximately 12 percent of the total ridership for HATS. HATS provides service Monday through Friday from 7:00 a.m. to 6:00 p.m. The East Valley bus is permitted to deviate up to two blocks off the route to serve passenger needs. Roundtrip fares are established at $1.00; however if a transfer to a checkpoint service is needed, passengers are required to pay that additional charge.

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.

First Student Inc. is a contract school bus service which provides contracted school bus services to Helena School District #1 and Trinity School District #4.

Rimrock Trailways is an intercity and interstate bus transportation provider headquartered in Billings, Montana. Six buses per day pass through Helena: There are two northbound, two southbound, one eastbound, and one westbound arrivals and departures per day. Rimrock Trailways shares office and operation space with HATS. HATS does perform some administrative functions for Rimrock.

Car service

The one 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 hoteland airport shuttle and wheelchair accessibility. Capital Taxi maintains a fleet of six cars and one wheelchair-equipped van; only five cars are in service on a regular basis, except for peak winter time. Four cars run during weekday afternoons. Capital Taxi averages approximately 160 to 175 trips per day.

There are a variety of rental car options in the County at both the airport as well as in Helena.

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.

Rocky Mountain Development Council Inc. (RMDC) is a Community Action Agency created under the Economic Opportunity Act of 1964 has been providing transportation services for their senior clientele since 1986. The RMDC bus picks up clients Monday through Friday at their residence and takes them to and from various functions. RMDC also operates the Head Start Bus program, with buses hired by the City of Helena to transport pre-school children Monday through Friday during the school year.
Spring Meadow Resources is an agency that serves adults with developmental disabilities, provides client transportation to Spring Meadow Resource Day Care Center and Helena Industries as well as shopping, recreation, social activities and medical providers.

West Mont Habilitation Services Inc is an agency of West Mont, provides transportation for persons with developmental disabilities, who live in group homes or who attend day-training workshops. Transportation services also provide West Mont's clients access to work, social functions, medical and recreationaland shopping opportunities in the Helena Area. Transportation is available on demand, 24 hours per day, seven days a week. West Mont Habilitation Services also utilizes HATS buses.

Non-motorized Transportation

There are several separated bicycleand pedestrian facilities in the unincorporated section of Lewis and Clark County. These have been built using the Community Transportation Enhancement Program (CTEP). The CTEP program is funded through the Federal Highway Administration and administered by the Montana Department of Transportation.

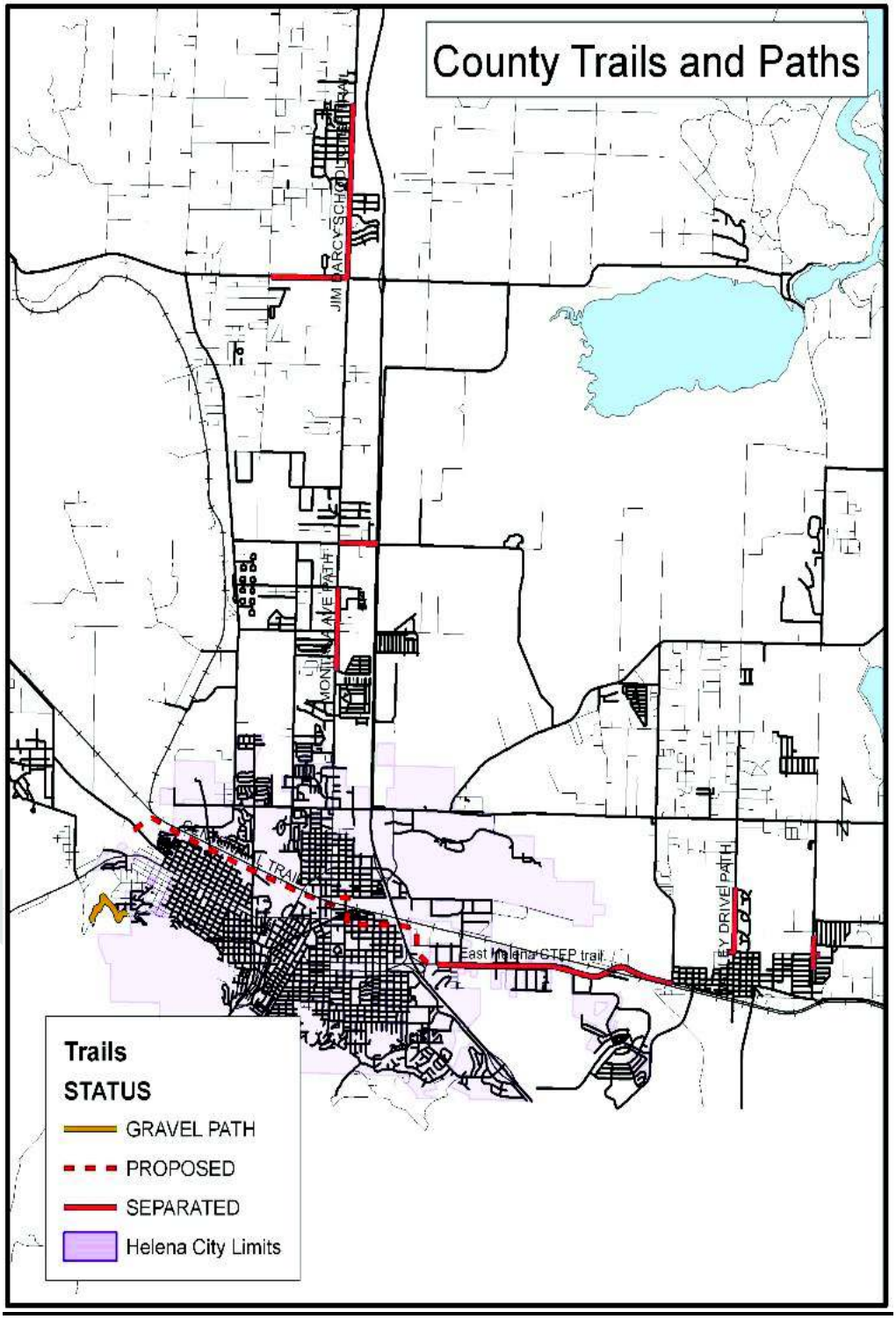
Newly constructed secondary roads include paved shoulders (8 feet) that also function as bicycleand pedestrian facilities. These are all in the Helena Valley and include:

- Green Meadow Drive, from Custer Avenue to Sierra Road (~3 miles).
- York Road, from Birkland Drive to Tizer Drive (~1 mile).
- Canyon Ferry Road, from York Road to Lake Helena Drive (approximately 5.5 miles)

In addition, the Helena Bike Club, in conjunction with County Public Works and MDT have installed "Share the Road" signs along corridors that bicyclists use. Green Meadow Drive, Birdseye Road and the Frontage Road are examples of roads with this signage.

In 2009, a feasibility study was conducted by the MDT on a non-motorized route from Great Falls to Helena. The findings discussed the geographical concerns as well as administrative issues. The final report is available on the MDT website.

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 Helena Area Transportation Plan Update 2004 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 andand or design considerations for bicycle and pedestrian movement.


County Trails and Paths
JIM DARCY SCHOOL TRAIL
MONTANA AVE PATH
East Helena STEP trail
VALLEY DRIVE PATH
Trails
STATUS
GRAVEL PATH
PROPOSED
SEPARATED
Helena City Limits

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 Transportation Services

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. According to MLR, there are between 25 to 30 trains per day that travel on the east-west line.

The Burlington Northern-Santa Fe Railroad (BNSF) owns 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 historically served 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 north of Helena.

Air Transportation Services

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The Helena Area Regional Airport (HARA) is located in the northeast portion of the City of Helena and is governed by the Airport Authority Board. The Board is comprised of seven members that establishes rules and operating procedures by which the airport operates. The City of Helena appoints three members and the County appoints three members. The seventh member is a joint Cityand County appointment. The Airport director is responsible for the daily operation and management of the airport.

The airport authority receives no local tax funding or mills, but does receive Federal and State funds for approved Airport Improvement Projects as approved by the Federal Aviation Administration.

Commercial air passenger service is provided by the following:

- Delta Connection - the primary carrier - operates jet flights to their Salt Lake City hub and the Minneapolis International Airport.
- Horizon Airlines offers daily round trip flights to their Seattle hub using regional jets.
- United Express offers one flight a day to and from Denver.

Seven daily flights arrive and depart from the Helena Regional Airport (HRA). There are five additional flights that operate weekly or semi-weekly.

The Montana National Guard operates one of the largest National Guard helicopter facility in the United States on the north side of the Airport. In addition, the Helena Regional Airport Authority (HARA) 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, includes a structural training building, a two mile driving course, a hazardous materials cleanup site, and several other training activities.

The HARA completed runway improvements in 2000, and completed an update of its long-range facility plan. The HARA has acquired all lands necessary for runway clear zones, and acquired adjacent lands for development and expansion of airport-related activities. A layout shows runway expansion of approximately 1,200 feet on Runway 27.

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

The Level of service (LOS) is a designation that describes a range of operating conditions on a particular type of facility. Knowing a LOS creates a framework for infrastructure planning. The 2000 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 2000 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 (2000).

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 = 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. Operational LOS rates a roadway in terms of how its characteristics compare with those necessary for it to function as intended. Conditional LOS rates a roadway in terms of how its physical characteristics compare to those of an ideal facility.

Transportation Challenges, 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.

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

Goal 1 Maintain and improve the conditional 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 and 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 and 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.

CHALLENGE 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.

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

CHALLENGE 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 Update the Helena Valley Transportation Plan as necessary to ensure that development goals are supported.

Policy 3.2 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 MDT.

Policy 3.3 Require traffic impact studies to determine the need for additional or improved roads, or for traffic signals at major intersections.

Policy 3.4 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 3.5 An east-west transportation by-pass corridor should be established.

Policy 3.6 As resources allow, identify and provide access for non-motorized 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.

CHALLENGE D: Non-motorized travel in the county should be accomodated, 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 pedestriansand 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.

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VII:

IMPLEMENTATION STRATEGY

Introduction

The Lewis and Clark County Growth Policy establishes a vision to ensure the county will continue to be 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. The Growth Policy aims to establish predictable policies to foster development and economic growth, maintain wildlife, water, agricultural lands, efficient services and rural lifestyle. 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 in this chapter:

- **GOALS & 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 art culture and social life, and excellent schools and services;**

  b. **Spending public funds effectively;**

  c. **Maintaining and expanding 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. **Growing in an environmentally sound manner;**

g. Preserving rural areas, agricultural lands, natural resources, and ecologically fragile areas for future generations; and

h. Support working with economic development organizations and other economic development organizations to diversify the economy.

Lewis and Clark County's Planning Framework

Four levels of planning are useful to carry out the Growth Policy as shown in the following table:

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 and sub-Planning Area Plans and /or Zoning 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; Helena Westside Infrastructure 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; Helena Area Transportation Plan

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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 and provide 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 Standards , Suburban, 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, zoning districts, CIP program, subdivision regulations, and through service and inter-local agreements with the cities and the 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 provide 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 and zoning.**

The Lewis and Clark County Growth Policy provide policy guidance for interactions between the County and surrounding areas outside of the County's jurisdiction. It encourages cooperation between the County and the municipalities in the County and surrounding Counties to work on joint issues together.

- **IMPLEMENTATION STRATEGY: The County should work with municipalities in the County, surrounding Counties, and state and federal agencies to find**

solutions to joint problems. This can be accomplished through many means, such as inter-local agreements.

Planning Area Plans

Planning Area Plans focus the policy direction of the Growth Policy to a smaller geographic area, such as the Lincoln Planning 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, suburban or rural area designations. The purpose of the plans is to identify areas where public utilities will logically be extended, identify preferred land use designations, suggest any areas set aside for parks and open space and any other special designations**

  The Planning Areas are an element of the Lewis and Clark County Growth Policy, and the Plan's policies and implementation strategies shall be consistent with the Growth Policy. 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 Planning Area;

  b. Any Planning Area specific land uses and 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; and

f. Identification of all necessary implementation measures needed to carry out the Plan.

Helena Valley Development Areas

Future land use plans should 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 urban-level 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 are identified in the Helena Valley land use section of the plan: urban standards, suburban and rural.

- **IMPLEMENTATION STRATEGY: Design and improvement standards, subdivision regulations and zoning regulations for urban, suburban and rural areas will be developed in a manner which is practical for the public to use and understand, and will be combined in one document for convenient cross-referencing. Where appropriate, the county and residents will work together to create zoning districts with urban densities.**

Urban Standards Areas

Urban Standards 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. These are the areas where 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:

a. Areas to be annexed into the cities within the next 20 years where the city can provide services;

b. Regional issues and services where Lewis and Clark County will be responsible;

c. Local issues and services where Helena and East Helena will be responsible;

d. Defining the responsibility for providing local services, including transferring responsibility from the County to the city;

e. A funding strategy for local and regional services;

f. 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;

g. Defining incentives and regulations to implement a-f above; and

h. Developing transportation corridor maps for projected growth within the Urban Standards Areas.

- **IMPLEMENTATION STRATEGY: Lewis and Clark County will ~~work~~ collaborate *(Staff note: The Planning Board suggested using the word "collaborate." Staff points out that the word "collaborate" has positive and negative connotations to be considered.)* with the cities to identify where expansion of services may take place in the next twenty years. These areas are to be considered Urban Standards 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 Standards 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 Standards Areas, and establishing partnerships between the County, cities, and other service providers for the needed improvements;

  b. Providing reciprocal notification and holding public meetings in coordination with monthly joint City-County work sessions to review of development proposals in the Urban Standards Areas;

c. Giving cities, to the extent possible, the opportunity to be the designated sewer or water providers within the potential Urban Standards Areas;

d. Modifying improvement standards, where appropriate, for County roads, parks, lot and building design to be compatible with urban-level standards;

e. Encouraging 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; and

g. 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. will be valued partners with the County, cities and special zoning districts in this process.

Within the Urban Standards Areas, 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.

- **<u>IMPLEMENTATION STRATEGY:</u> 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 UrbanStandards 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; and

b. Design and improvement standards should be developed to promote urban density development, provide for integration of new subdivisions into the municipal service areas, and encourage contiguous growth.

Suburban Areas

Suburban Areas are those areas that may be suitable for urban development over a longer term. Suburban 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 for resubdivision at urban-level standards in the future.

The areas in the Helena Valley (denoted in brown on the map) have been designated as the Suburban Growth Areas. The majority of commercial and industrial uses should be encouraged to locate within the Urban Standards Area of the ounty, wherever feasible. Commercial nodes have been identified at the intersection of major arterials within the Suburban 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~~ Suburban Areas:**

  a. Design and improvement standards will be developed that permit low density subdivisions to be retrofitted 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; and

c. Design and improvement standards will be developed to provide for the sustainability of new subdivisions.

- **IMPLEMENTATION STRATEGY: The County will work with the residents to create zoning regulations for suburban areas that are consistent with this Growth Policy and addresses issues, such as development densities, acceptable land uses and public health, safety, and general welfare.**

Rural Areas

Rural areas contain development that is lower in density and intensity of use, requiring minimal infrastructure. They should be 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 mechanism for maintenance 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 sustainability of new subdivisions, minimizing adverse impacts on agriculture, local services, the natural environment, wildlife, water quality and quantity and public health and safety; and

  b. Concepts of cluster development will be provided to further minimize adverse impacts.

- **IMPLEMENTATION STRATEGY: The County will work with the residents to create zoning regulations for rural areas that are consistent with this Growth Policy and addresses issues, such as development densities, acceptable land uses and public health, safety, and general welfare.**

Neighborhood/Rural Community Planning

Neighborhood and Rural Community planning will address issues of concern to individual communities, specific geographic areas, or neighborhoods that meet specified criteria. These Neighborhood Plans 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 creation of more specific zoning requirements. The plan is 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 the tools used to implement the plan. The relationship between a neighborhood plan and a 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 of implementation.

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. Language that providing for periodical modification and updates, which should be considered every five years;

i. Preparation in concurrence with the neighborhood residents and property owners in the affected area; and

j. Lewis and Clark County working with local citizens on the Neighborhood Plans and identifying appropriate funding in the development, review, and implementation of these plans.

Service Area Planning

Lewis and Clark County may create Service Planning Areas designed to concentrate the County's limited funds and/or staff by designating higher priority areas for spending. Such an area 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 may pertain to specific area. Examples of county-wide service area plans are the Disaster and Hazard Mitigation Plan and the Lewis and Clark County Park and Recreation Plan. Other Service Area plans are detailed capital improvements plans and may include specific fire districts, school districts or water and sewer districts.

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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 the Capital Improvement Plan), 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 into cities to obtain higher levels of services. Cities and special purpose districts are the providers of most local services. Different levels of service require different levels of funding. The citizens will be valued partners in determining the level of service.

- **IMPLEMENTATION STRATEGY: Lewis and Clark County should initiate a joint planning process with cities and special purpose districts to address issues and deficiencies relating to water, sewer and/or transportation. The County ~~that~~ will:**

  a. **Involve relevant jurisdictions, special purpose districts and/or local service providers; and**

  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; and**

  c. **Finding a source of funding available for the project.**

- **IMPLEMENTATION STRATEGY: Lewis and Clark County should work together 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, adopted Plans, and Neighborhood Plans;**

b. **Define required service levels for the Urban Standards, Suburban, 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; and**

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 pursue the availability of additional funding sources.**

- **IMPLEMENTATON STRATEGY: The Work Plan for the transportation issues should include the following:**

a. **Reviewing and amending Design Standards for Subdivision Codes;**

b. **Developing a Capital Improvements Program for all county-owned transportation facilities (including roads and bridges);**

c. **Establishing a process to assure that planned transportation projects are coordinated between the County, incorporated cities, and neighboring counties. Engag~~i~~ing the Transportation Coordinating Committee and MDT to help ensure equitable distribution of costs;**

d. **Establishing an interconnected corridor map for future roads within Urban Standards Areas; and**

e. **Establishing a process to restrict direct access to arterials to protect capacity and restrict strip development, working with MDT as appropriate;**

f. Coordinating with school districts for input on transportation issues.

- **IMPLEMENTATION STRATEGY: Lewis and Clark County should encourage recycling throughout the county by:**

  a. Coordinating with established organizations already providing recycling services; and

  b. Expanding recycling services offered through the current solid waste services.

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 Standards Area that encourages adequate space for a broad range of housing and business development. Incentives to help housing and business developments may include (but are not necessarily ~~be~~ limited to):**

  a. Coordinating with cities to inventory those portions of the Urban Standards Area with in-fill opportunities. New development in these in-fill areas might be promoted by allowing for more flexible standards, the phasing of improvements, and other possible incentives;

  b. Creating density bonuses for site design that provide public benefits for affordable housing, land conservation, open space, etc;

  c. Creating incentives that lower financial risks, including assisting developers in securing funding for traditional neighborhood designs, cluster developments, affordable housing, and other development innovations;

  d. Pursuing detailed infrastructure planning for each area, based on adopted facility plans, including overall design and opportunities for phased development;

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e. Securing acquisition right-of-way and of alignments for major infrastructure, including arterial and collector roads, water lines, wastewater collection outfall lines, natural drainages, utility easements, stormwater retention and detention facilities, and parks and open space;

f. Developing public-private cooperation for funding the installation of major infrastructure improvements in accordance with adopted facility plans;

g. Working with landowners within each Urban Standards Area to develop a Neighborhood Plan that is consistent with 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; and

h. Encouraging zoning districts for all Urban Standards Areas and streamlining 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 Suburban Areas, but should pursue preliminary infrastructure planning for each area including, but not limited to the following:**

a. Pursuing implementation of a Helena Valley wastewater treatment facility plan to protect quality of groundwater supply;

b. Pursuing a study of the Helena Valley groundwater, in order to protect quality of groundwater supply;

c. Implementing of the Lewis and Clark County Parks and Recreation Plan to acquire, develop, and maintain such facilities;

d. Establishing of special districts for the improvement and maintenance of the road networks;

e. Securing the alignments for arterial and collector roads;

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f. Where there is local support, working with the landowners within each Suburban Area to develop a Neighborhood Plan consistent with this Growth Policy; and

g. Continuing implementation of a wastewater treatment system maintenance program, in cooperation with the County Environmental Health Department, for residents of the county.

- **IMPLEMENTATION STRATEGY: Lewis and Clark County should not provide direct incentives for development in the Rural Area, but with local support, work with the landowners within the Rural Areas to develop Neighborhood Plans and zoning consistent with this Growth Policy.**

Zoning Districts

Zoning is the designation of land by the residents and local government for specific uses and densities. Other applications may include lot coverage, building height, setback and bulk requirements, density, and separation of incompatible uses. Zoning may also require onsite improvements (such as sidewalks, parking lots and spaces, signage and landscaping), 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: Zoning districts, zoning regulations, zone classifications, any proposed development standards, and any zoning maps will be consistent with the Growth Policy. The County should:**

a. Work with the landowners and other appropriate parties, within the Urban Standards, Suburban and Rural Areas, any Planning Area, or sub-area, where there is local support, to develop zoning to implement adopted neighborhood plans, development patterns or other land use plans; and

b. Develop minimum development standards to promote the public health, safety and general welfare, and to protect natural resources and public investments, consistent with this County 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, and adopted development patterns, development standards or adopted regulations. 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 in order that title or possession of the parcels may be sold, rented, leased or otherwise conveyed. Subdivision review is a key part of the development process, designed to evaluate environmental impacts and ensure 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 intended to mitigate adverse impacts and meet statutory requirements (e.g., zoning, drainage, road improvement standards, and mitigation of offsite 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, conditionally approve, or deny proposed subdivisions, based on the proposed subdivision's conformance 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, Sub-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 consistently with underlying land characteristics and existing development.**

- **IMPLEMENTATION STRATEGY: The boundaries for the Urban, Suburban, and Rural Growth Areas should be reconsidered or for any necessary adjustments, in conjunction with the periodic review.**

- **IMPLEMENTATION STRATEGY: The County should establish development standards and level of service standards for all large new commercial, industrial, and office developments.**

Permitting

One of the goals of the County is the provision of appropriate safeguards for public health and safety, environmental protection, while providing residents with prompt and effective development review. 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. The County should:**

  a. **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. **Develop and maintain a centralized database of land use permits which will be made accessible to all agencies and the public; and**

  c. **Develop a single umbrella permit process that incorporates all relevant land use permits.**

Community Involvement

Planning Area, Sub-Area and Neighborhood Plans focus on smaller, more defined neighborhoods and begin with community involvement. 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 minimum residential density standards 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, suburban 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

The Growth Policy contains many goals and objectives for the County's future; how will the County progress toward meeting them? How should 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 quickly. Benchmarks allow the prioritization of public resources to meet the goals or the modification of the goals, if desired outcomes are not achieved. Benchmarks work well with public participation during the planning cycle, as residents 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, suburban, and rural areas; density; permit processing; housing costs; natural resources; public health and safety; water use; sanitation, solid waste; transportation; open space, cultural resources; air quality; surface and ground water quality; drainage, noxious weed control, wetlands; wildlife habitat; rural; and industrial lands;**

  c. **Establishes a process that utilizing data collection, monitoring and regular reports to measure key indicators and benchmarks. The Board of County Commissioners will be responsible for adopting the benchmarks; and**

  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 five 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.**

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- **IMPLEMENTATION STRATEGY: Any necessary changes to development regulations, modification to capital improvements programs, Planning Area Plans, Sub-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 statutes.**

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, sub-area, 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. Coordinate the timely provision of necessary public facilities and services;

j. Encourage creativity and diversity in meeting County goals and policies;

k. Coordinate 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 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

o. Base regulatory decisions wholly on the applicable criteria and code requirements; and

p. Make development requirements readily accessible and easy to understand to the public through up-to date codes, technical assistance materials and other relevant documents.

76-1-601 (~~2~~3)(h)(i), MCA Definitions Of Criteria in 76-3-608(3)(a)

For the purposes of complying with the provisions of 76-1-601 (3)(h)(i); 76-1-601 (3)(h)(ii), and 76-1-601 (3)(i), MCA 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 impacts, 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, cultural or aesthetic significance.

Wildlife

Living things, which are neither human nor domesticated living in a natural, undomesticated condition.

Wildlife Habitat

Areas of land and water that supports specific wildlife or groups of wildlife.

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: floodplains, steep or unstable slopes, groundwater contamination, access limitations, physical hazards, radon potential, and liquefaction.

76-1-601 (~~2~~3)(h)(ii), MCA 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 76-3-608 (3)(a), MCA,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.

76-1-601 (3)(i) MCA 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.

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Implementation Plans

Specific implementation strategies have been developed for the following policies from the Natural Resources chapter of the Lewis and Clark County Growth Policy, 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.
  - 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 Geographic Information System (GIS) system. This inventory shall be part of a continuing county-wide inventory and assessment of threats to groundwater.
  - 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.

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- 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;

- 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; and

- 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 rights-of-way, accesses and other areas where the public 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; and
- Control the spread of noxious weeds on subdivided land throughout the County.

ACTION PLAN

1) DEVELOPMENT PERMIT SYSTEM

ACTION ITEM DETAILS: Develop and adopt a Development Permit System designed to implement the Lewis and Clark Growth Policy. 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: adequate water quality and quantity; legal and physical access; adequate fire and police protection; road construction and maintenance; adequate open space and recreation; environmental issues; site design; and the possibility of higher density in areas of expected growth.

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START YEAR: 2012

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 *AND IMPROVEMENT* STANDARDS

ACTION ITEM DETAILS: Review and update Design and Improvements Standards for Subdivision Regulations on a periodic basis.

START YEAR: Ongoing

LEAD AGENCY: CDP

PARTNERS: BOCC, Planning Board, the public,

3) CAPITAL IMPROVEMENTS PROGRAM

ACTION ITEM DETAILS: Develop a 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.

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START YEAR: 2012

LEAD AGENCY: Fire Districts and Fire Service Areas

PARTNERS: CDP, Admin/Finance, Rural Fire Council

5) INTERGOVERNMENTAL AGREEMENTS

ACTION ITEM DETAILS: Develop and 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 suburban and urban settings.

START YEAR: 2011

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: Ongoing

LEAD AGENCY: CDP

PARTNERS: Residents and local community groups, Planning Board and the BOCC.

7) AFFORDABLE HOUSING

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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, economic development organizations, 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: 2011

LEAD AGENCY: CDP

PARTNERS: Planning Board, Public Works, Environmental Health, and BOCC

9) COUNTY-WIDE SEWER MAINTENANCE PROGRAM

ACTION ITEM DETAILS: Continue the 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: Ongoing

LEAD AGENCY: BOCC and CDP

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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 Lewis and Clark County Parks 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.

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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: CDP

PARTNERS: Public Works, Transportation Coordinating Committee, BOCC, Helena, East Helena, and 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

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15) 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 Standards 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 Suburban Areas (including standards under the Planning Area Plans and any Neighborhood Plans). Upon completion of the Suburban 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: Ongoing

LEAD AGENCY: CDP

PARTNERS: BOCC, Planning Board, business owners, the public

16) 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: Economic development organizations

PARTNERS: CDP, BOCC, Chambers of Commerce, Montana Department of Commerce, local entrepreneurs, community leaders

17) NOXIOUS WEEDS

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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.

18) SOLID WASTE/RECYCLING

ACTION ITEM DETAILS: Support efforts to improve recycling and solid waste collection and disposal to help mitigate impacts of solid waste on the community and the environment.

START YEAR: Ongoing

LEAD AGENCY: County Solid Waste District

PARTNERS: CDP, residents, BOCC, East Helena, Helena, and local community groups.

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VIII:

DEFINITIONS

Whenever the following words phrases or acronyms appear in this Growth Policy, they shall have the meaning assigned to them by these definitions. When not inconsistent with the context, words used in the present tense shall include the future; the singular shall include the plural, and the plural, the singular; the word "shall" is always mandatory, and the word "may" indicates use of discretion in making decisions.

Words not defined below but appearing elsewhere in the Growth Policy will carry the definition used in the latest edition of the Merriam-Webster Dictionary.

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AFFORDABLE HOUSING: Housing meeting the needs of low to moderate income households because the monthly rent or mortgage principal and interest is not more than 30 percent of a household's monthly income.

AGRICULTURAL USE: Any land use that provides economically viable production of crops, livestock or timber, as defined in Sections 41-2-103 and 81-8-701, MCA. Examples include but are not limited to: hay production, market gardening, dairy operations, ranching, apiculture, livestock and poultry operations, and timber operations.

AGRICULTURAL WATER USERS FACILITIES: Those facilities that provide water for agricultural land or that provide water for the production of agricultural product, including but not limited to ditches, pipes and head gates.

ANNEXATION: The process by which land in an unincorporated area ~~can~~ becomes part of a nearby or adjacent municipality.

APPROACH: The point where a 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.

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: A structure, including its projections and extensions, constructed for support, shelter, or enclosure of persons, animals, chattels or property of any kind,

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 or PROGRAM (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.

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CAPITAL IMPROVEMENT INVESTMENT: Funds provided to build, expand, or otherwise improve major public facilities (see definition of capital improvements plan).

CDBG PROGRAM: Community Development Block Grant Program of the U.S. Department of Housing and Urban Development (HUD).

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 remains 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 CENTER: A concentration of commercial uses, typically at major intersections, that may share access, parking, and landscaping.

COMMERCIAL USE: Any business, retail trade, or service activity.

COMMUNITY CENTER: A hub in a rural area that may provide, but is not limited to commercial, educational and emergency services, and may be served by or intended to be served by centralized wastewater and water systems.

COMMUNITY PARK: Land with full public access intended to provide recreation opportunities beyond those supplied by neighborhood parks. Community parks are larger in scale than neighborhood parks and may require a minimum of 15 acres, as outlined in the Lewis and Clark County Parks and Recreation Plan.

COMPREHENSIVE PLAN: Now statutorily defined as a "Growth Policy" and including the components outlined in 76-1-601 MCA.

CONSERVATION EASEMENT: An easement or restriction, running with the land and assignable, whereby an owner of land voluntarily relinquishes to the holder of such easement or restriction any or all rights to construct improvements upon the land or to substantially alter the natural character of the land or to permit the construction of improvements upon the land or the substantial alteration of the natural character of the land, except as this right is expressly reserved in the instruments evidencing the

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easement or restriction as defined by Sections 76-6-101 through 76-6-110 and sections 201 through 212, MCA.

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."

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.

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: The division of a parcel of land into two or more parcels: the construction, reconstruction, conversion, structural alteration, relocation, or enlargement of any structure; any mining, excavation, landfill or land disturbance, and any use or extension of the use of land.

DEVELOPMENT RIGHT: The right to own or develop one residence or commercial operation per parcel of land without approval of the Board of County Commissioners.

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.

DWELLING UNIT: Any building or portion thereof providing complete, independent and permanent living facilities for one family. Also called: DWELLING.

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.

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, non-profit organizations.

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.

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ENVIRONMENTAL ASSESSMENT (EA): An EA is a document that describes impacts on the environment as a result of a proposed action.

FAMILY: As defined by the U.S. Census Bureau, a family is a group of two of more people (one of whom is the householder) related by birth, marriage or adoption and residing together.

FEMA: Federal Emergency Management Agency.

FERC: Federal Energy Regulatory Commission.

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.

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).

FUTURE LAND USE MAP: A map delineating the desired arrangement of general classes of land uses such as residential, commercial, industrial, etc. The future land use map serves as a guide for future land use decisions. This map should be comparatively general in contrast to the more specific land use classification map. The boundaries between land use classifications are intended to be flexibly interpreted in order to accommodate comparatively minor zoning map amendments without corresponding Land Use Map amendments.

FWP: Montana Department of Fish, Wildlife and Parks.

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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.

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 POLICY: As defined in Section 76-1-103, MCA, a Growth Policy means and is synonymous with a comprehensive plan, or master plan, which meets the requirements of Section 76-1-601, MCA.

GUIDELINES: General statements of policy direction around which specific details may be later established.

HOUSEHOLD: As defined by the U.S. Census Bureau, a household is all the people who occupy a housing unit, including related family members and all unrelated people, if any, who share the housing unit.
HRA: Helena Regional Airport.

HRAA: Helena Regional Airport Authority.

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.

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. Also called: NON-RESIDENTIAL USE.

INDUSTRY: Those fields of economic activity including wholesale trade; forestry, mining; construction; manufacturing; transportation; communication; electric, gas, and sanitary services; and fishing, hunting, and trapping

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.

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 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.

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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).

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LOT: A single parcel of land, shown as an individual unit of ownership on the most recent plat of record, or a group of such parcels which are held in single or common ownership or control, and upon which a particular land use is carried on or conducted.

MCA: Montana Codes Annotated (State of Montana statutes).

MDPHHS: Montana Department of Health and Human Services.

MDT: Montana Department of Transportation.

MEMORANDUM OF UNDERSTANDING (MOU): A document that expresses mutual accord on an issue between the county and a municipality, corporation, or individual.

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.

MITIGATE: To ameliorate, alleviate, or avoid to the extent reasonably feasible.

MIXED-USE: Properties or areas where various complementary and integrated uses, such as office, commercial, institutional, and residential, are combined in a single building, on a single site, or at a community center with significant functional interrelationships and a coherent physical design. A "single site" may include contiguous properties.

MOBILE HOME: As defined in 61-1-501, MCA, "'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

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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."

MUNICIPALITY: An incorporated city or town.

NATURAL ENVIRONMENT: The physical conditions that exist within a given area, including land, air, water, mineral, flora, fauna, noise, and objects of historic, cultural, or aesthetic significance.

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).

OPEN SPACE: Any parcel of land that is essentially unimproved. Such land may or may not be under a conservation easement and may or may not be accessible to the public.

ORDINANCE: A statute or regulation.

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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.

PLANNING AREA: One of the six geographic areas of the County described in the Growth Policy. The characteristics of a Planning Area define it in terms of its geography, geology, watershed, history, development pattern, and economic activities.

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. Also known as the Consolidated City County Planning Board..

PLAT: A graphic representation of a subdivision showing the division of land into lots, parcels, blocks, streets, and alleys, and other divisions and dedications.

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.

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 LAND: Any land used for governmental or quasi-governmental purposes and under the jurisdiction of a county, state or federal entity.

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 HEALTH AND SAFETY: The existing or projected conditions that relate to potential danger, risk or injury to the community including but not limited to: floodplains, steep or unstable slopes, groundwater contamination, access limitations, physical hazards, radon potential, and liquefaction.

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.

REGULATION: That which is required, unless an explicit exception is made.

RESIDENTIAL USE: Any land use that provides for living space.

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.

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 found in the less-densely-areas of the county. Development is often dependent on a natural resource economy (farming, ranching and mining). Rural residential development is typically single-family residential uses on large lots. Rural development may occur in areas where most public services are distant from development.
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SERVICE AREA: The land area within which a County or other jurisdiction is committed to providing public services.

SETBACK: The horizontal distance from the ordinary high-water mark within which structures and uses are not allowed.

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SINGLE FAMILY DWELLING: A dwelling used for residential occupancy by one household.

STANDARD: something established for use as a rule or basis of comparison in measuring quantity, quality, value, etc.

STATE: The State of Montana

SUB-AREA: A geographic area within any of the County Planning Areas, which may be defined by a physical description, or designated by common zip code(s) or census tract, or other parameter(s). A sub-area may be created by the County and the residents of the sub-area to create neighborhood plans and to establish development standards, zoning, or other regulatory mechanisms.

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].

TMDL: The total amount of a pollutant, per day, (including a margin of safety) that a water body may receive from any source (point, non-point, or natural background) without exceeding the state water quality standards.

TOWN SITE: An unincorporated community consisting of a surveyed tract or tracts of land laid out with streets and subdivided into lots.

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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.

URBAN AREAS: Urban areas are those areas where ~~city~~ municipal services to support residential, commercial, industrial, educational and institutional development are most likely to be extended over the next twenty to twenty-five years.

URBAN DEVELOPMENT: Development activities that may be based on single family, multi-family, mixed-use, commercial, educational and institutional uses. Urban development is located in municipalities, surrounding environs connected to municipal services, and community centers. These are areas where municipal or public wastewater and domestic water systems, and other infrastructure are present and available for future development.

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 STANDARDS AREA: A district, established by a Memorandum of Understanding and defined in an adopted plan that defines the geographical limit of municipal storm and sanitary sewer services, domestic water systems, streets, fire, emergency medical and police services, public, transit services and other public facilities and services.

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.

VIEWSHED: The landscape or topography visible from a particular viewing point. or along a transportation corridor, especially that having aesthetic value.

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.

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WATERSHED: An area of land above a body of water or watercourse that partially surrounds it and contributes water from precipitation and/or other sources through a network of drainage pathways, both underground and on the surface, to a common point. Also called: a drainage basin or catchment area or basin.

WETLAND: An area that is inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and, under normal circumstances, does support vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

WILDLAND/ RESIDENTIAL INTERFACE: Borders of forest and/or woodland areas being settled by people desiring to live in rural, wooded settings.

WILDLIFE: Living things, which are neither human nor domesticated living in a natural, undomesticated condition.

WILDLIFE HABITAT: Area of land and water that support specific wildlife or groups of wildlife.

ZONING: A regulatory tool available to local governments to determine permitted land uses and that may also governs building placement, building height, lot size, building setbacks, parking, landscaping and bulk requirements.

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APPENDIX A

Helena/Lewis and Clark County Historic Preservation Commission Action Items

"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.

Chapter II: DEMOGRAPHICS AND ECONOMICS

ECONOMIC DEVELOPMENT

~~ISSUE~~ CHALLENGE B The recreation and tourism industries present an economic opportunity for the County.

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

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

Action A **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**

Action B **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 property
  - Encourage localities to regulate for historic property protection.
- **Restoration Techniques and Public Support Techniques:** Encourage and support grant and funding efforts relating to site visitation and promotion
- The HPC will examine the prospect of accepting Heritage Tourism responsibilities under newly-created legislation.
  - The County attorney will be asked to examine the statute and advise the HPC on an approach.

Policy 4.5 **Maintain and protect historic area which are a significant tourism attraction**

Action C **The Helena/Lewis and Clark Historic Preservation Commission WILL:**

- **Educational Techniques:** Facilitate heritage property use for tourism purposes while keeping historical integrity intact.
- **Economic Techniques:** Exploit commercial interests and guide them toward historic property use.

- **Regulatory Techniques:** Encourage the establishment of revenue sources which support the tourism industry as it relates to historic preservation.
- **Restoration Techniques:** Make historical preservation 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.
- The HPC will examine the prospect of accepting Heritage Tourism responsibilities under newly-created legislation.
    - The County attorney will be asked to examine the statute and advise the HPC on an approach.

Policy 4.6 Foster preservation and conservation by supporting the efforts of the Historic Preservation Commission and other similar organizations.

Action D The Helena/Lewis and Clark Historic Preservation Commission WILL:

ACTION 19 The Helena/Lewis and Clark Historic Preservation Commission WILL:

- Work with other county entities to factor historic preservation information into decisions affecting our rural heritage.
- Work with the Helena Indian Alliance on heritage issues.

Chapter IV: HOUSING

~~ISSUE~~ CHALLENGE A Not all county residents can find affordable housing.

Policy 1.7 Encourage preservation, rehabilitation and redevelopment of the historic structures and historic areas.

ACTION E THE HELENA/LEWIS AND CLARK HISTORIC PRESERVATION COMMISSION WILL:

- **Educational Techniques:** Provide Information on Historic rehabilitation 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 rehabilitation for housing program in Great Falls.

- **Public Support Techniques:** Examine local housing systems to determine existing and developing communication links with housing entities in the City and County.
- **Regulatory Techniques:** Enact a policy or procedure to involve Historic Preservation in building housing in the county.

Chapter V: NATURAL ENVIRONMENT

~~ISSUE~~ CHALLENGE 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.**

Policy 7.1 **Inventory historic and prehistoric resources.**

Action F ***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 culturally and historically 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.
- Collect Information for and Maintain the Lewis and Clark County Historic Resource Inventory.
  - Establish this as an ongoing objective.
  - Establish an inventory format that is accessible to city-county personnel and the general public.
- 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 of Historic Places
- Utilize opportunities for University assistance.
- Initiate negotiations with the City and the County to establish HPC Formal Involvement in Existing Procedures which relate to development. Include in these discussions with City Parks to apply Standard Historic Preservation Techniques (as under Goal 7) for historic resources on Open Space and parkland.
  - Relate subsequent changes to impacts on Inventory Sites.

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

ACTION G 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.

ACTION H: 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.

- Work with the Lewis & Clark Library to highlight available historic preservation information.
  - Consider reinstitution of a special historic preservation section
  - Consider keyword assignments to preservation related information
- Offer specific publications on historic preservation to the libraries around the county
  - Copies of the secretary's standards and guidelines for historic preservation projects
  - Copies of the Preservation Briefs publications
- Request a special appropriation for essential historic preservation publications for libraries in the annual budget.

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

ACTION I The Helena/Lewis and Clark Historic Preservation Commission WILL:

- Work with transportation planners to enhance motorized and non-motorized transportation's impact on and compatibility with historic districts and neighborhoods.

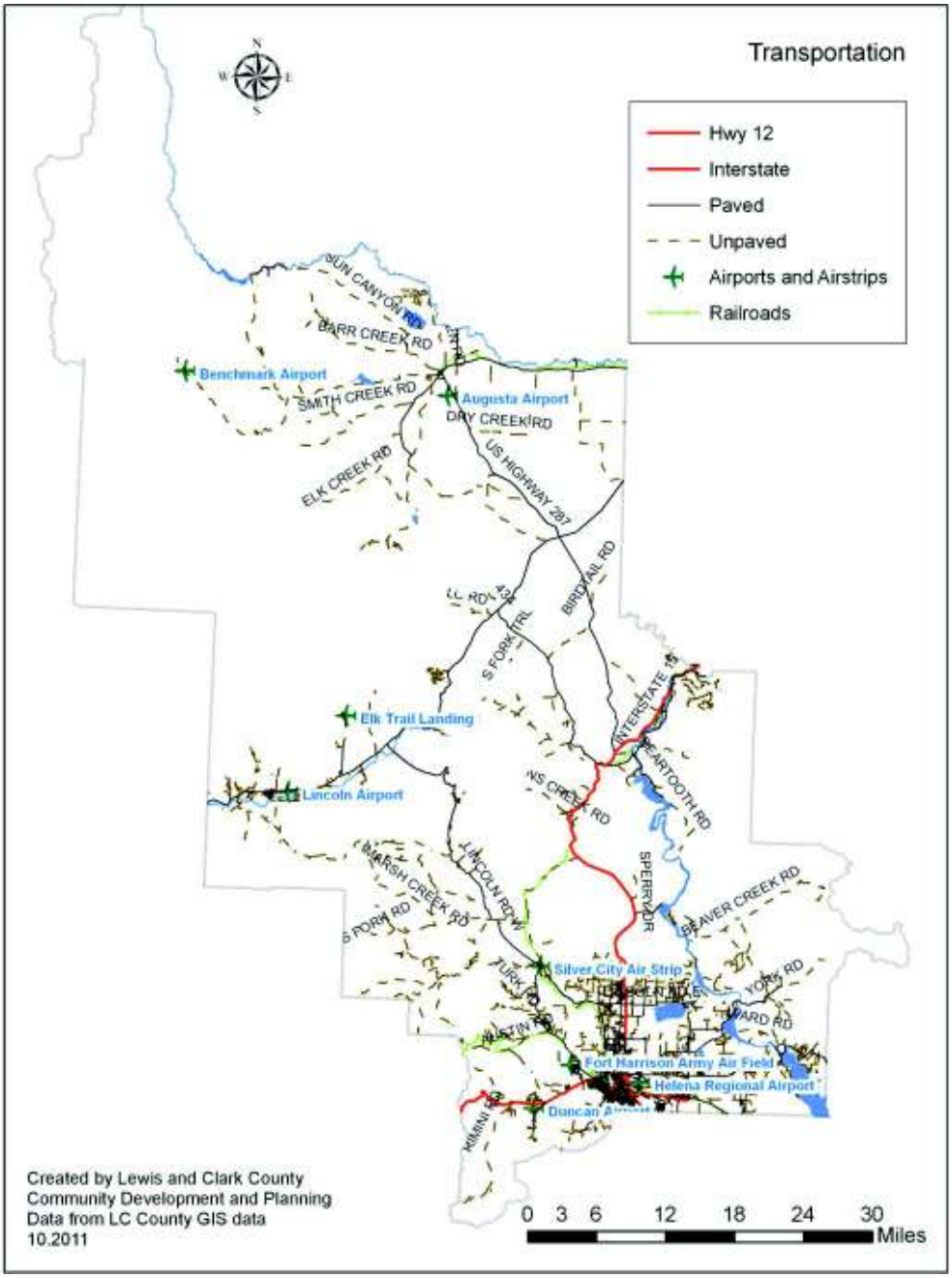
Policy 7.5 Promote preservation and conservation by supporting the efforts of the Historic Preservation Commission and other similar organizations.

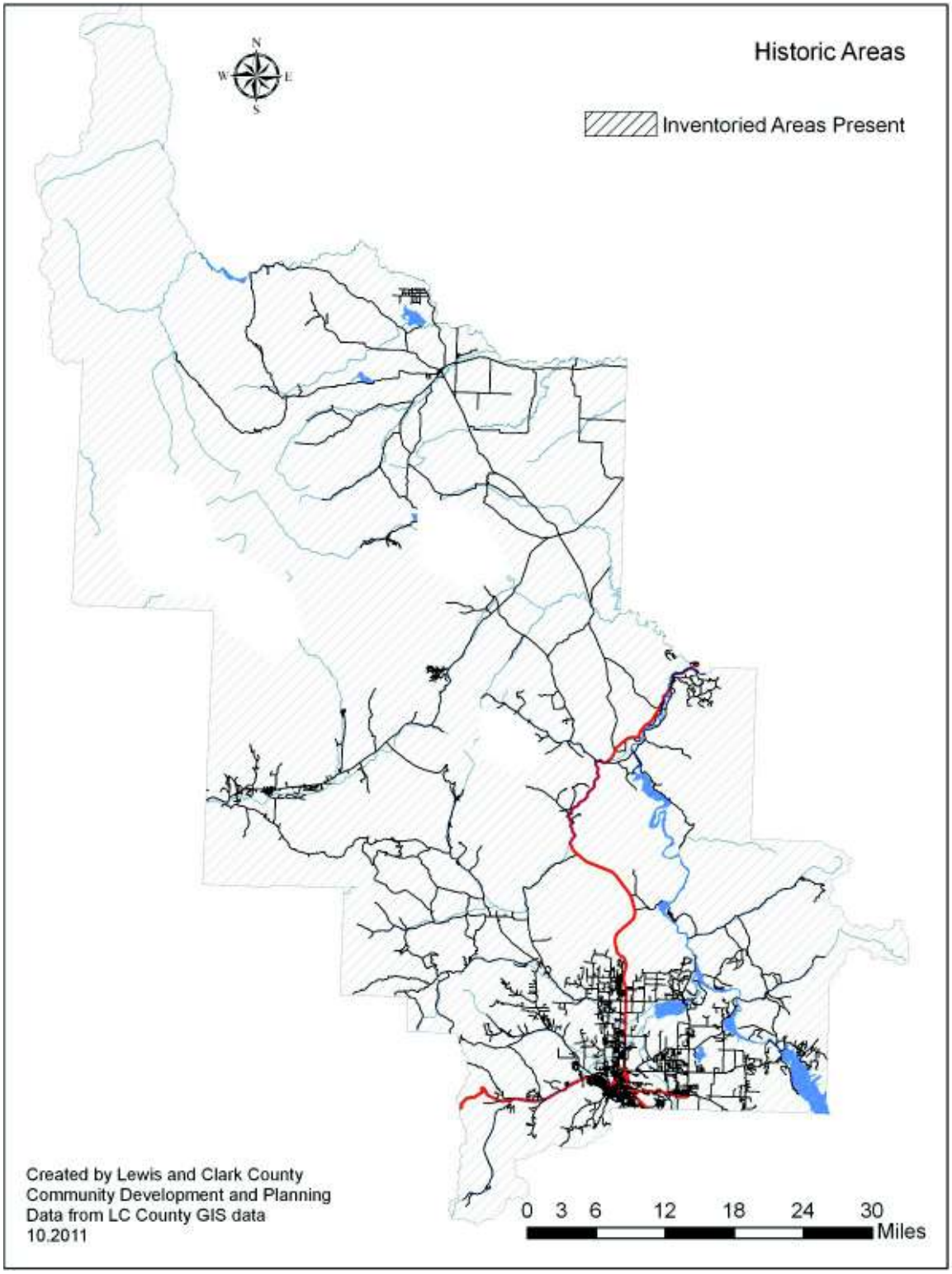
ACTION J THE HELENA/LEWIS AND CLARK COUNTY HISTORIC PRESERVATION COMMISSION WILL:

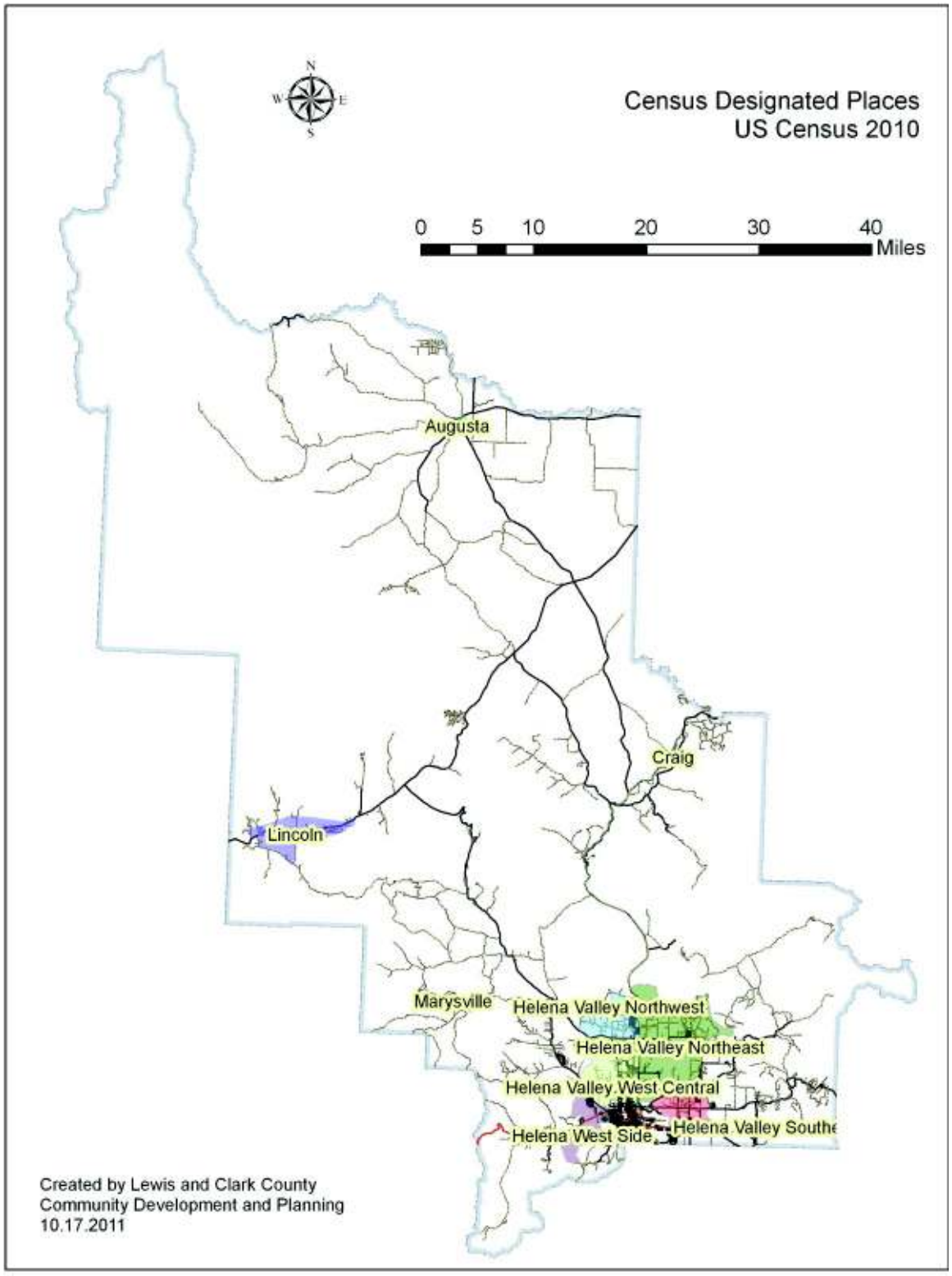
- Report to the City and County Commissions monthly.
  - Prepare a very brief illustrated handout for such sessions.
    - Have a model of this procedure at the November HPC meeting.
  - Appear at Commission as invited and if not present the information at Public Comment times.
  - Revolve the task to various HPC members to allow the Commissions to become familiar with them.

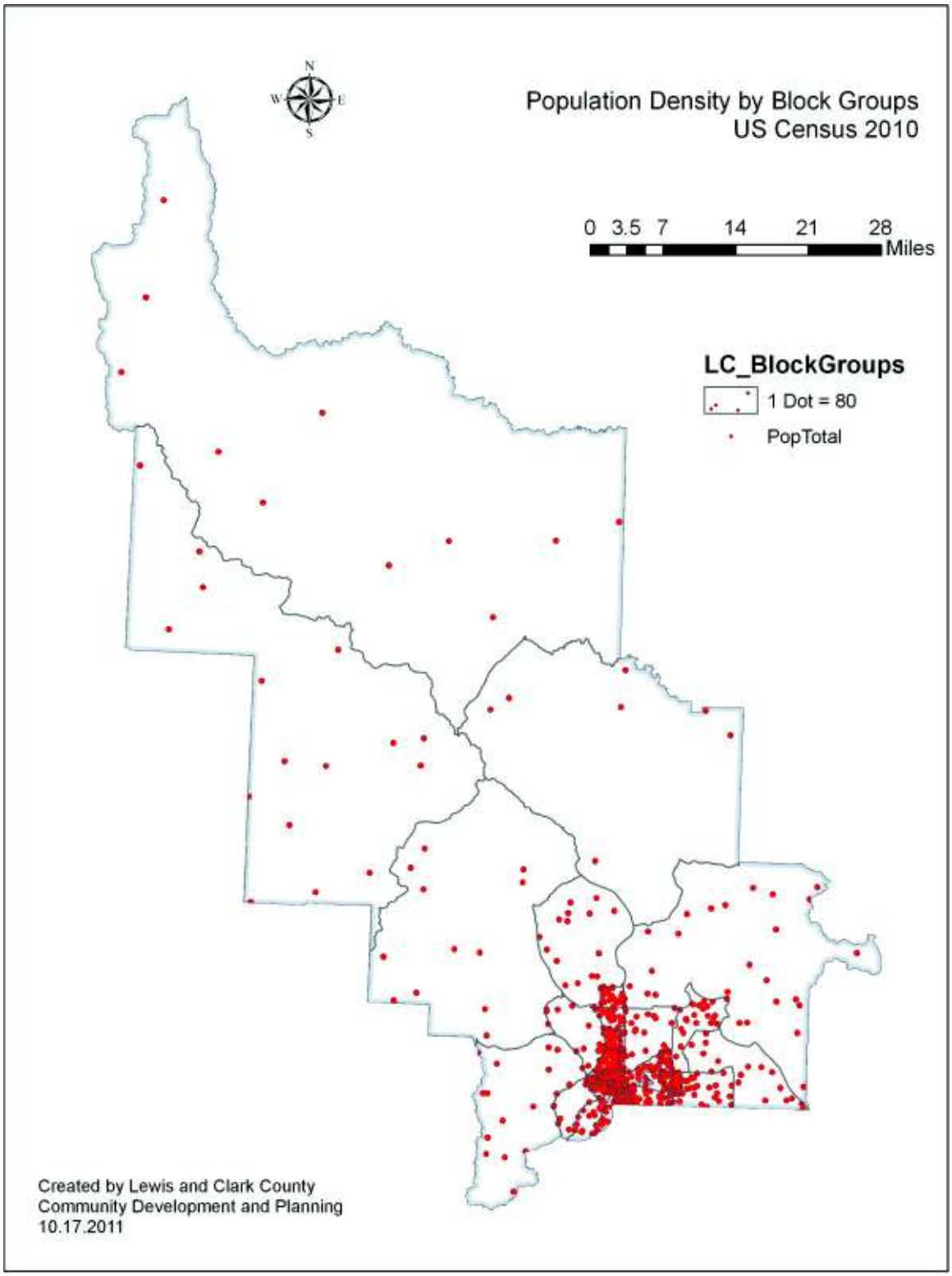
APPENDIX B

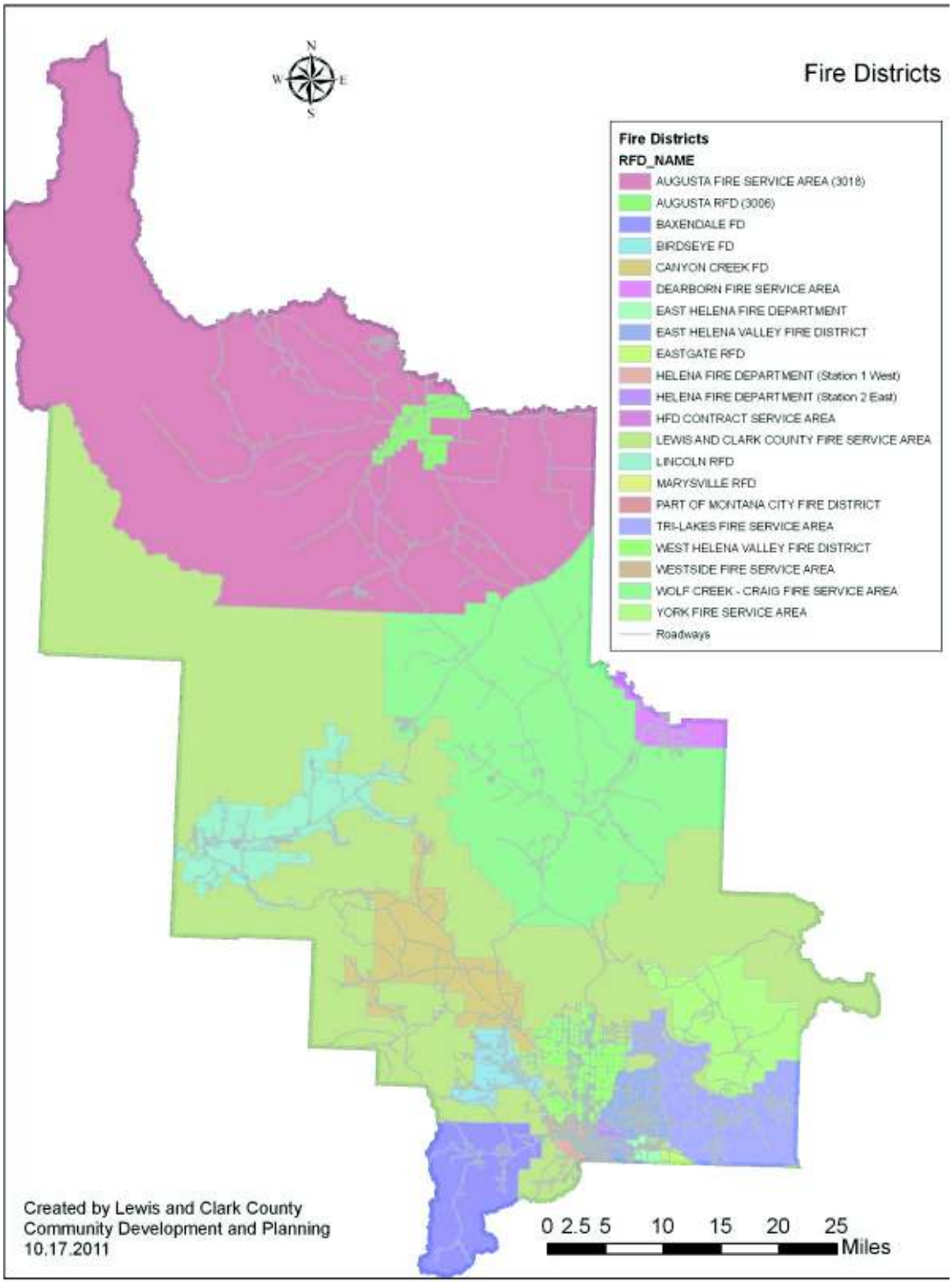
COUNTY-WIDE MAPS

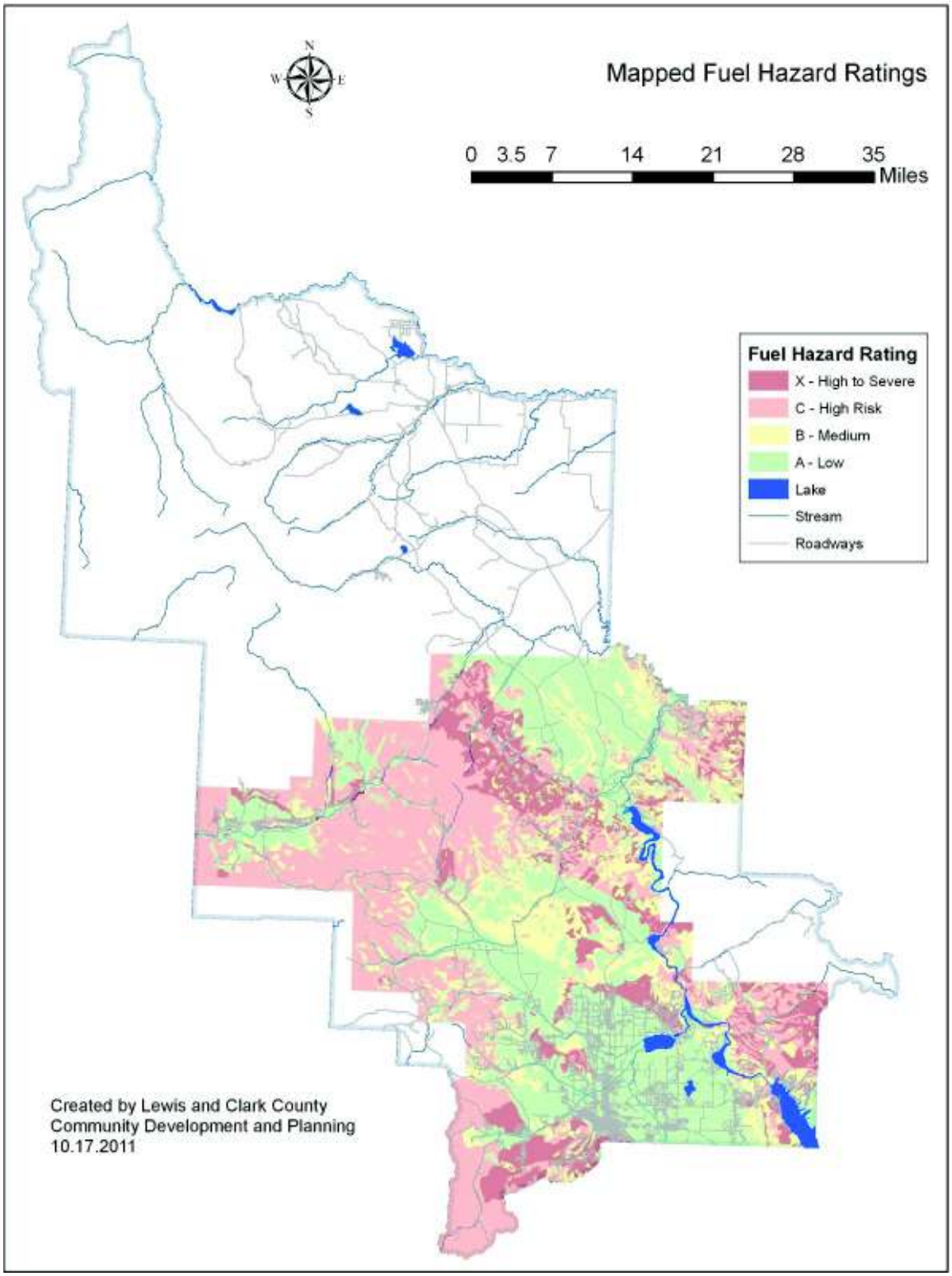


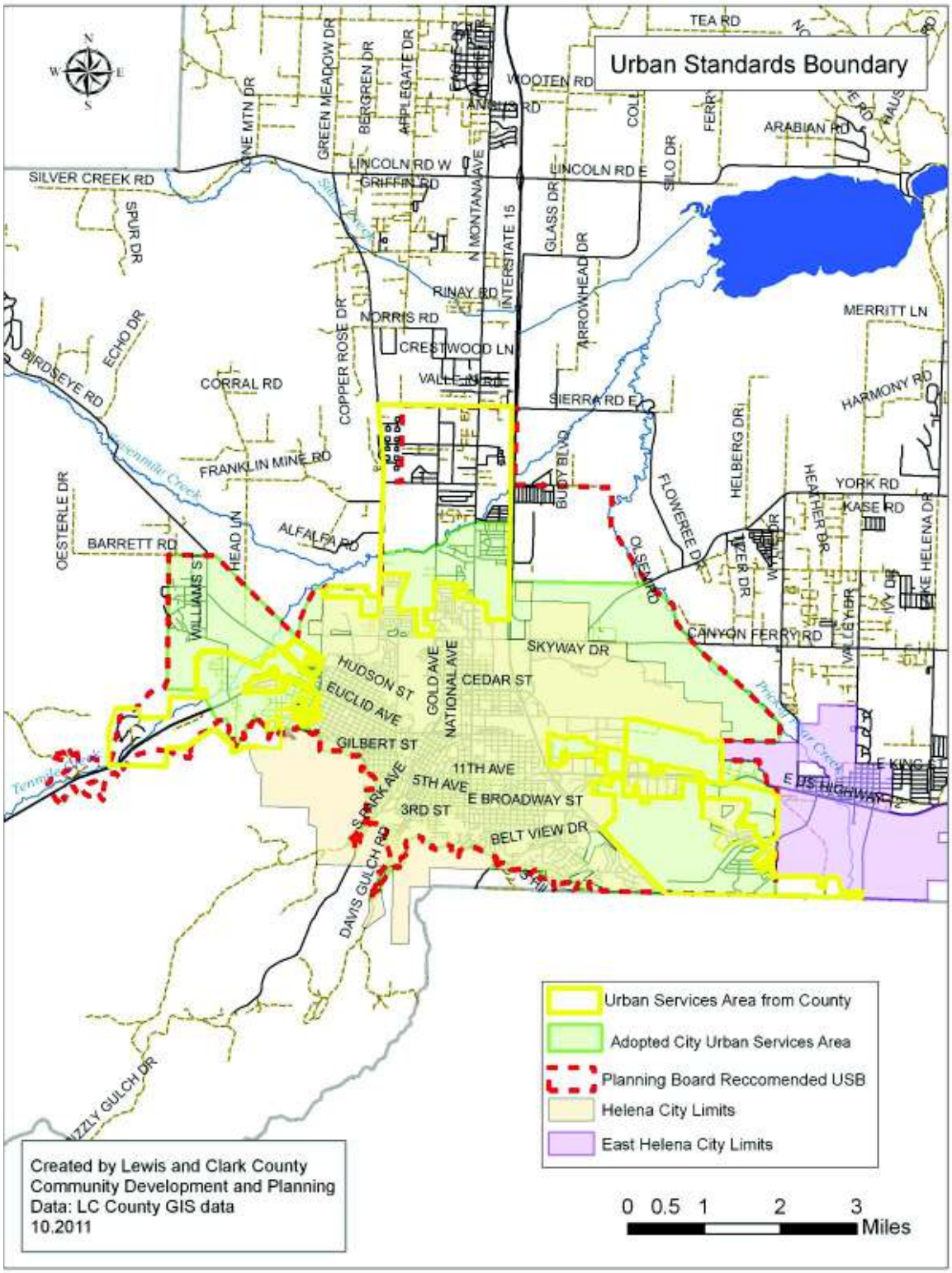

Historic Areas
Inventoried Areas Present
N
W
E
S
Created by Lewis and Clark County
Community Development and Planning
Data from LC County GIS data
10.2011
0 3 6 12 18 24 30
Miles


N
W
E
S
Census Designated Places
US Census 2010
0 5 10 20 30 40
Miles
Augusta
Craig
Lincoln
Marysville
Helena Valley Northwest
Helena Valley Northeast
Helena Valley West Central
Helena West Side
Helena Valley Southe
Created by Lewis and Clark County
Community Development and Planning
10.17.2011

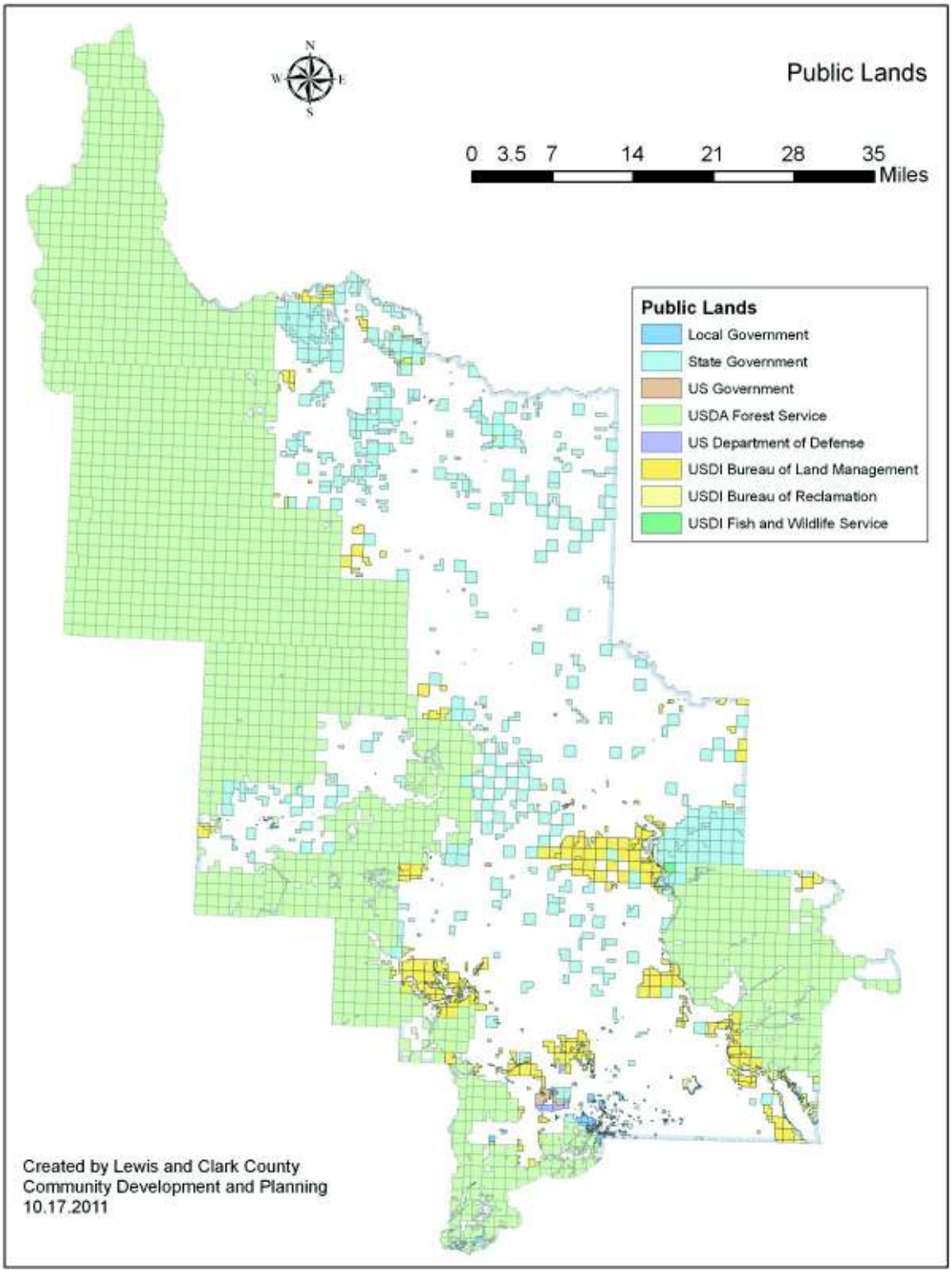

N
W
E
S
Population Density by Block Groups
US Census 2010
0 3.5 7 14 21 28
Miles
LC_BlockGroups
1 Dot = 80
PopTotal
Created by Lewis and Clark County
Community Development and Planning
10.17.2011

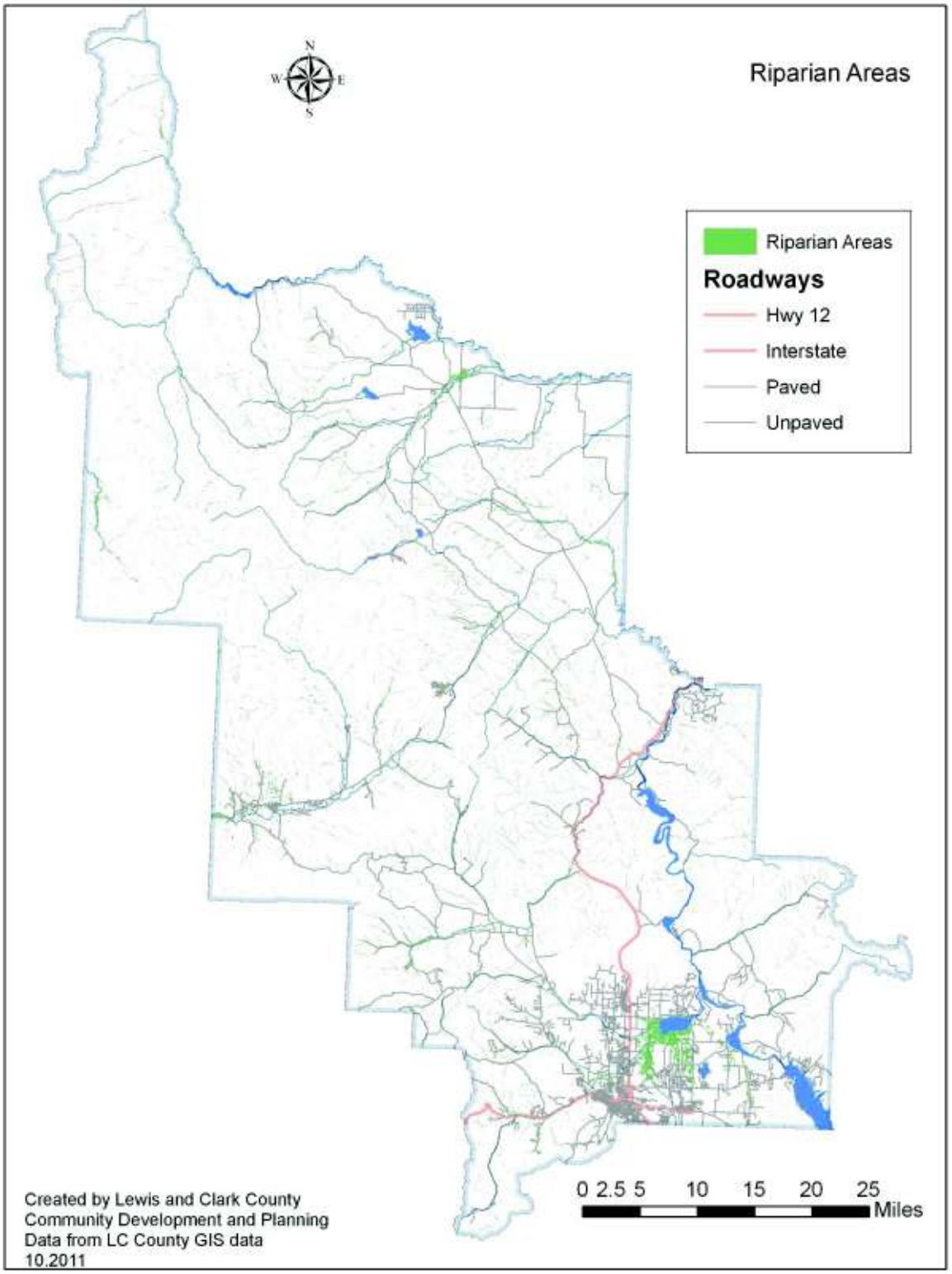

Fire Districts
N
W
E
S
Fire Districts
RFD_NAME
AUGUSTA FIRE SERVICE AREA (3018)
AUGUSTA RFD (3006)
BAXENDALE FD
BIRDSEYE FD
CANYON CREEK FD
DEARBORN FIRE SERVICE AREA
EAST HELENA FIRE DEPARTMENT
EAST HELENA VALLEY FIRE DISTRICT
EASTGATE RFD
HELENA FIRE DEPARTMENT (Station 1 West)
HELENA FIRE DEPARTMENT (Station 2 East)
HFD CONTRACT SERVICE AREA
LEWIS AND CLARK COUNTY FIRE SERVICE AREA
LINCOLN RFD
MARYSVILLE RFD
PART OF MONTANA CITY FIRE DISTRICT
TRI-LAKES FIRE SERVICE AREA
WEST HELENA VALLEY FIRE DISTRICT
WESTSIDE FIRE SERVICE AREA
WOLF CREEK - CRAIG FIRE SERVICE AREA
YORK FIRE SERVICE AREA
Roadways
Created by Lewis and Clark County
Community Development and Planning
10.17.2011
0 2.5 5 10 15 20 25
Miles

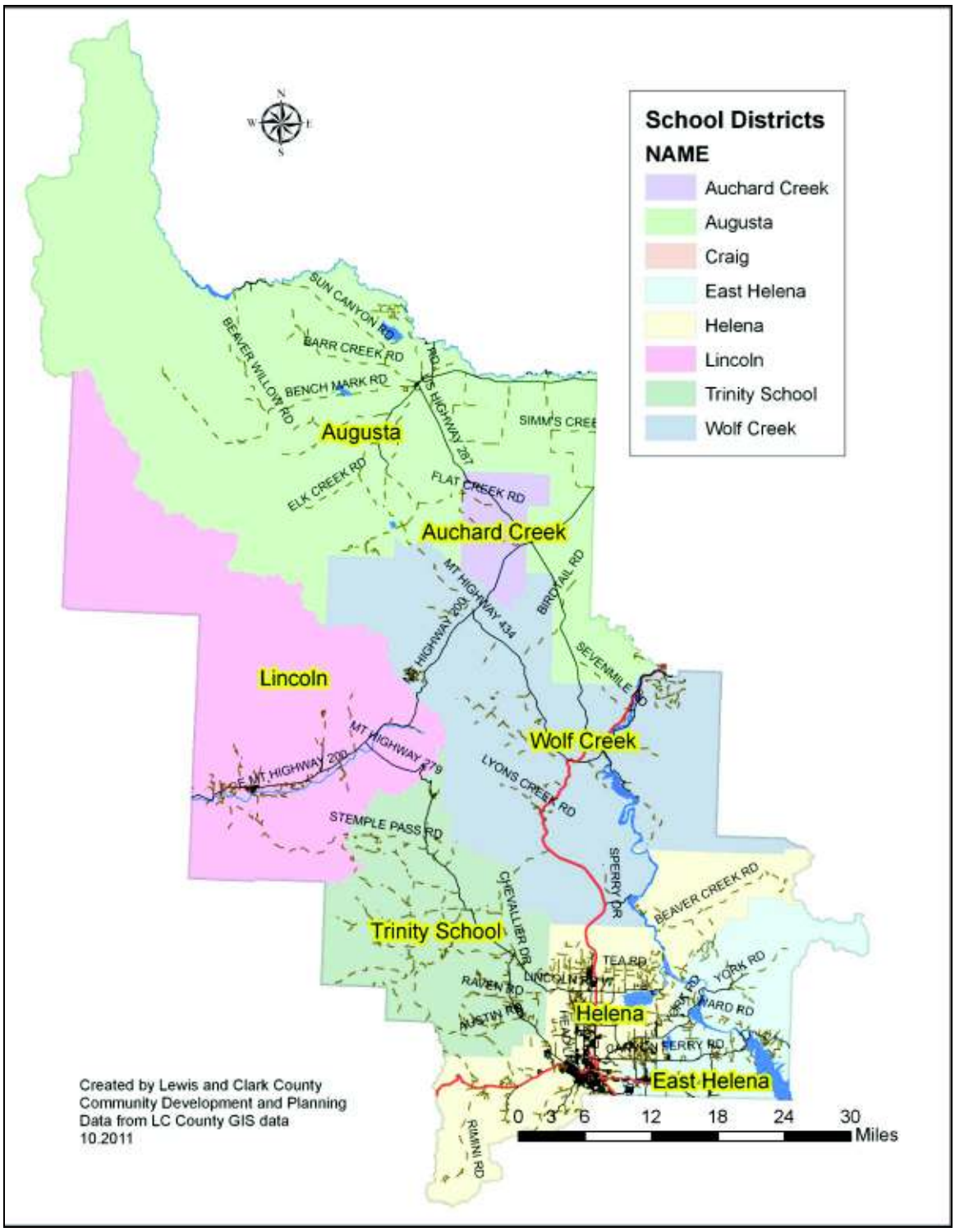

Mapped Fuel Hazard Ratings
N
W
E
S
0 3.5 7 14 21 28 35
Miles
Fuel Hazard Rating
X - High to Severe
C - High Risk
B - Medium
A - Low
Lake
Stream
Roadways
Created by Lewis and Clark County
Community Development and Planning
10.17.2011

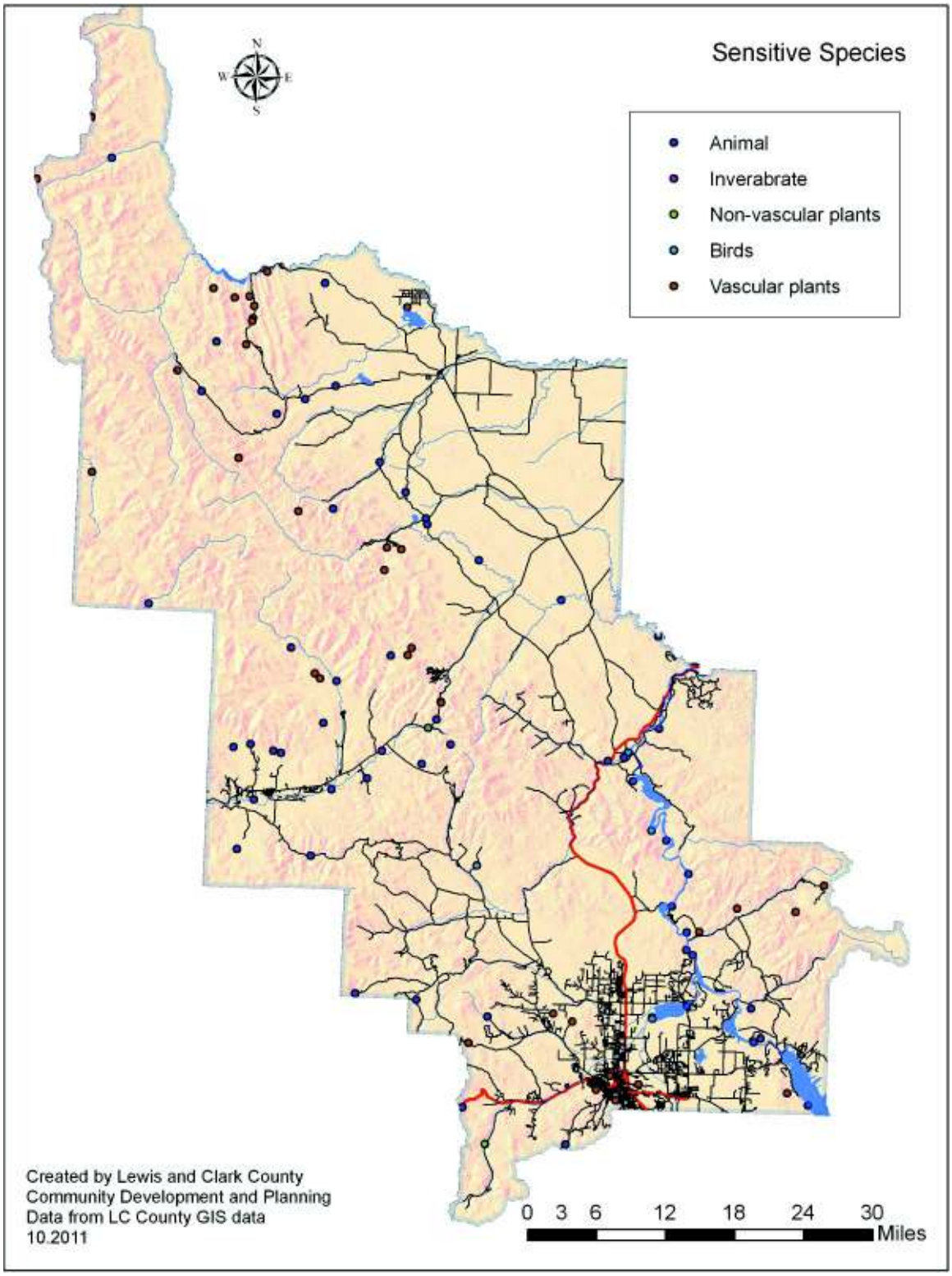

Urban Standards Boundary
TEA RD
WOOTEN RD
ARABIAN RD
LONE MTN DR
GREEN MEADOW DR
BERGREN DR
APPLEGATE DR
LINCOLN RD W
LINCOLN RD E
SILVER CREEK RD
GRIFFIN RD
SPUR DR
N MONTANA AVE
INTERSTATE 15
GLASS DR
SILO DR
ARROWHEAD DR
RINAY RD
NORRIS RD
CRESTWOOD LN
MERRITT LN
ECHO DR
BIRDSEYE RD
CORRAL RD
COPPER ROSE DR
SIERRA RD E
HARMONY RD
FRANKLIN MINE RD
BUDDY BLVD
HELBERG DR
YORK RD
KASE RD
OESTERLE DR
BARRETT RD
HEAD LN
ALFALFA RD
FLOWEREE DR
OLSEMO
WILLIAMS ST
CANYON FERRY RD
SKYWAY DR
HUDSON ST
GOLD AVE
NATIONAL AVE
CEDAR ST
EUCLID AVE
GILBERT ST
11TH AVE
5TH AVE
E BROADWAY ST
3RD ST
BELT VIEW DR
DAVIS GULCH RD
E KING
Urban Services Area from County
Adopted City Urban Services Area
Planning Board Reccomended USB
Helena City Limits
East Helena City Limits
Created by Lewis and Clark County
Community Development and Planning
Data: LC County GIS data
10.2011
0 0.5 1 2 3
Miles

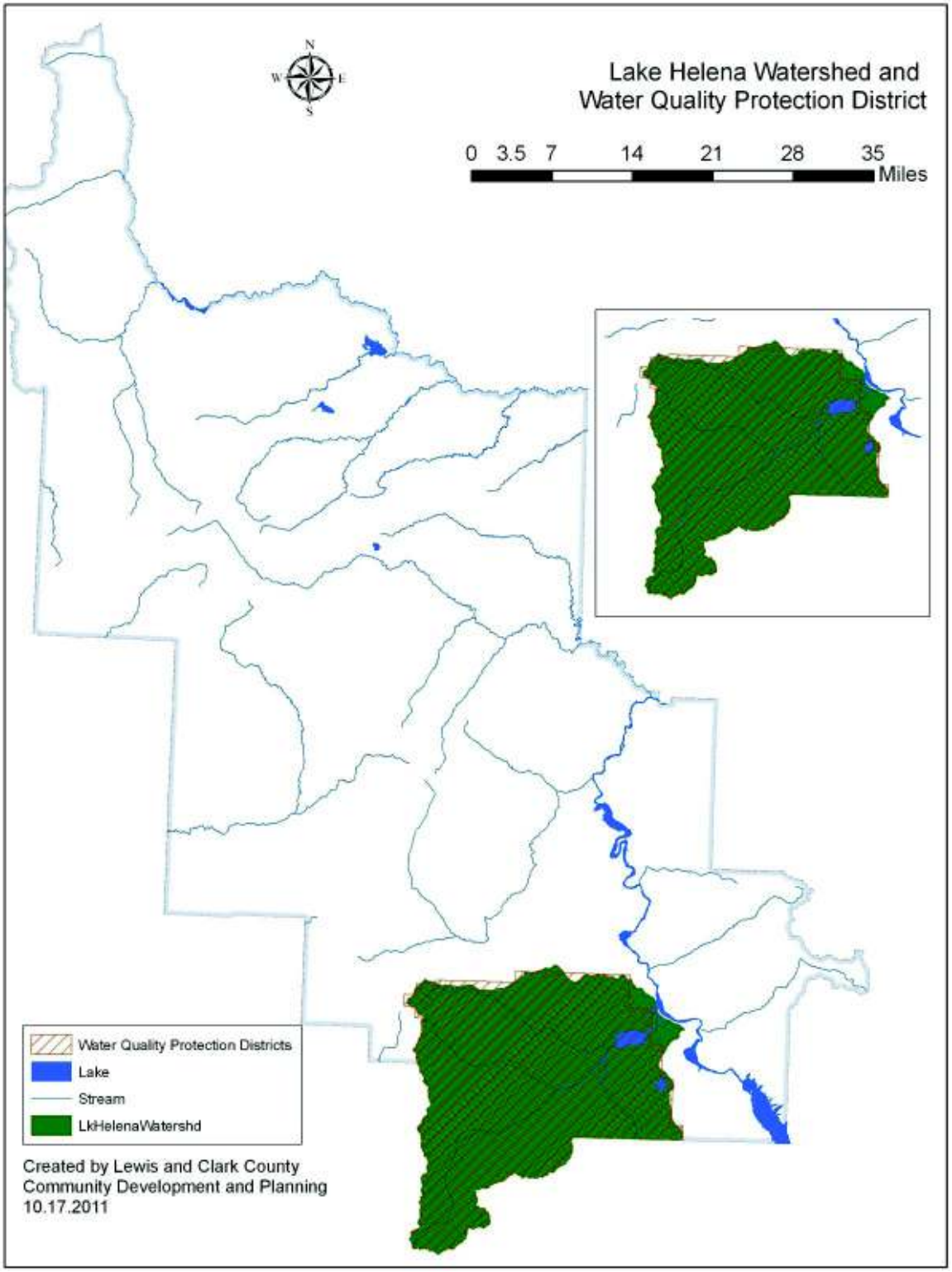
Planning_Areas
Augusta
Canyon Ferry
Craig-Wolf Creek
Helena Valley
Lincoln
Marysville - Canyon Creek
N
S
W
E
SUN CANYON RD
BARR CREEK RD
BEAVER WILLOW RD
BENCH MARK RD
Augusta
ELK CREEK RD
FLAT CREEK RD
MT HIGHWAY 287
MT HIGHWAY 43
LC RD
BIRD TAIL RD
S FORK TRL
Lincoln
MT HIGHWAY 200
Craig-Wolf Creek
INTERSTATE 15
BEARTOOTH RD
STEMPLE PASS RD
SPERRY DR
BEAVER CREEK RD
Marysville - Canyon Creek
LINCOLN RD
Canyon Ferry
TEA RD
RAMON RD
AUSTIN RD
Helena Valley
CANYON FERRY RD
HIGHWAY 12
KIMINI RD
Created by Lewis and Clark County
Community Development and Planning
Data from LC County GIS data
10.2011
0 3 6 12 18 24 30
Miles


Public Lands
N
W
E
S
0 3.5 7 14 21 28 35
Miles
Public Lands
Local Government
State Government
US Government
USDA Forest Service
US Department of Defense
USDI Bureau of Land Management
USDI Bureau of Reclamation
USDI Fish and Wildlife Service
Created by Lewis and Clark County
Community Development and Planning
10.17.2011

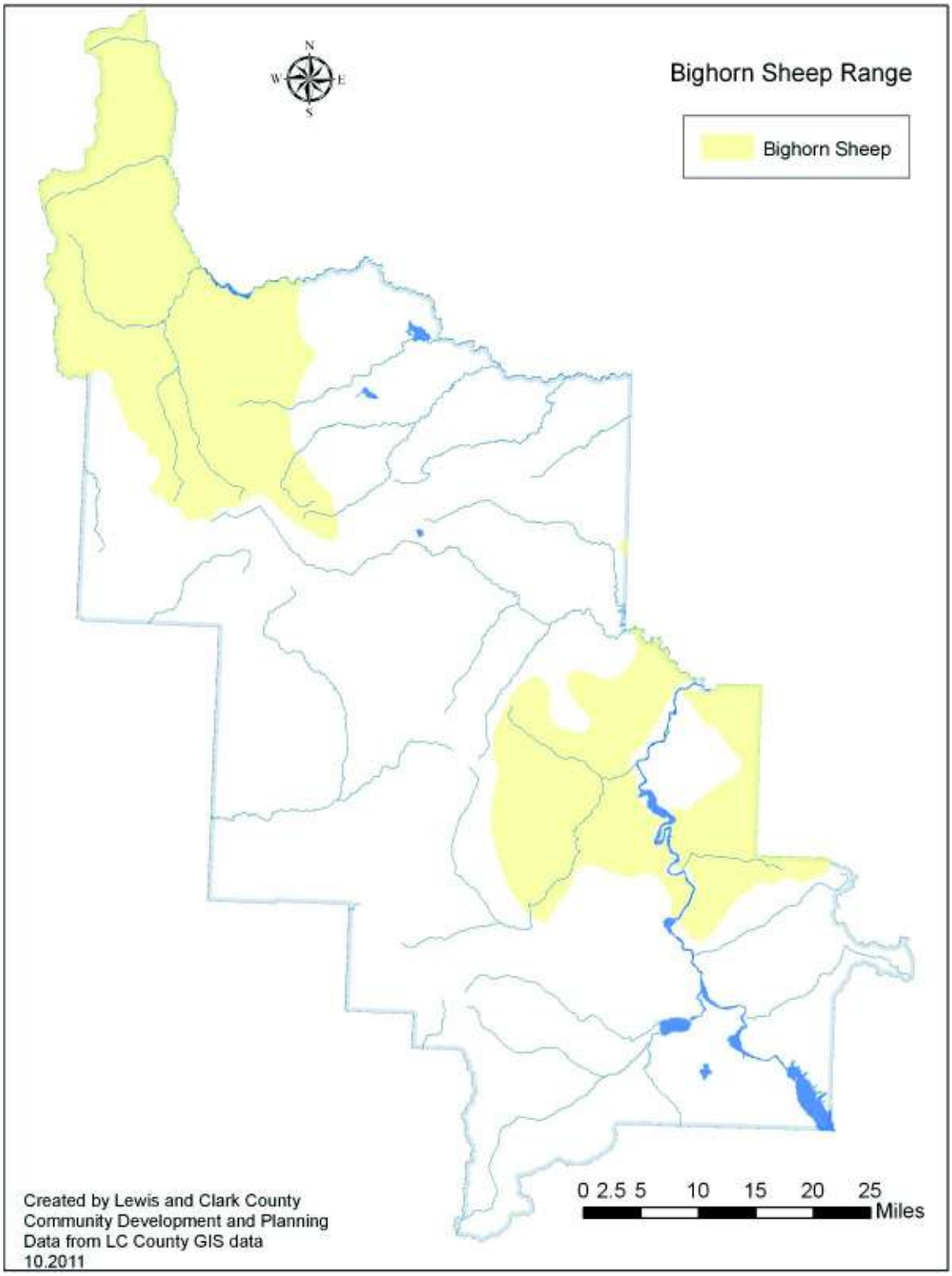

Riparian Areas
N
W
E
S
Riparian Areas
Roadways
Hwy 12
Interstate
Paved
Unpaved
0 2.5 5 10 15 20 25
Miles
Created by Lewis and Clark County
Community Development and Planning
Data from LC County GIS data
10.2011

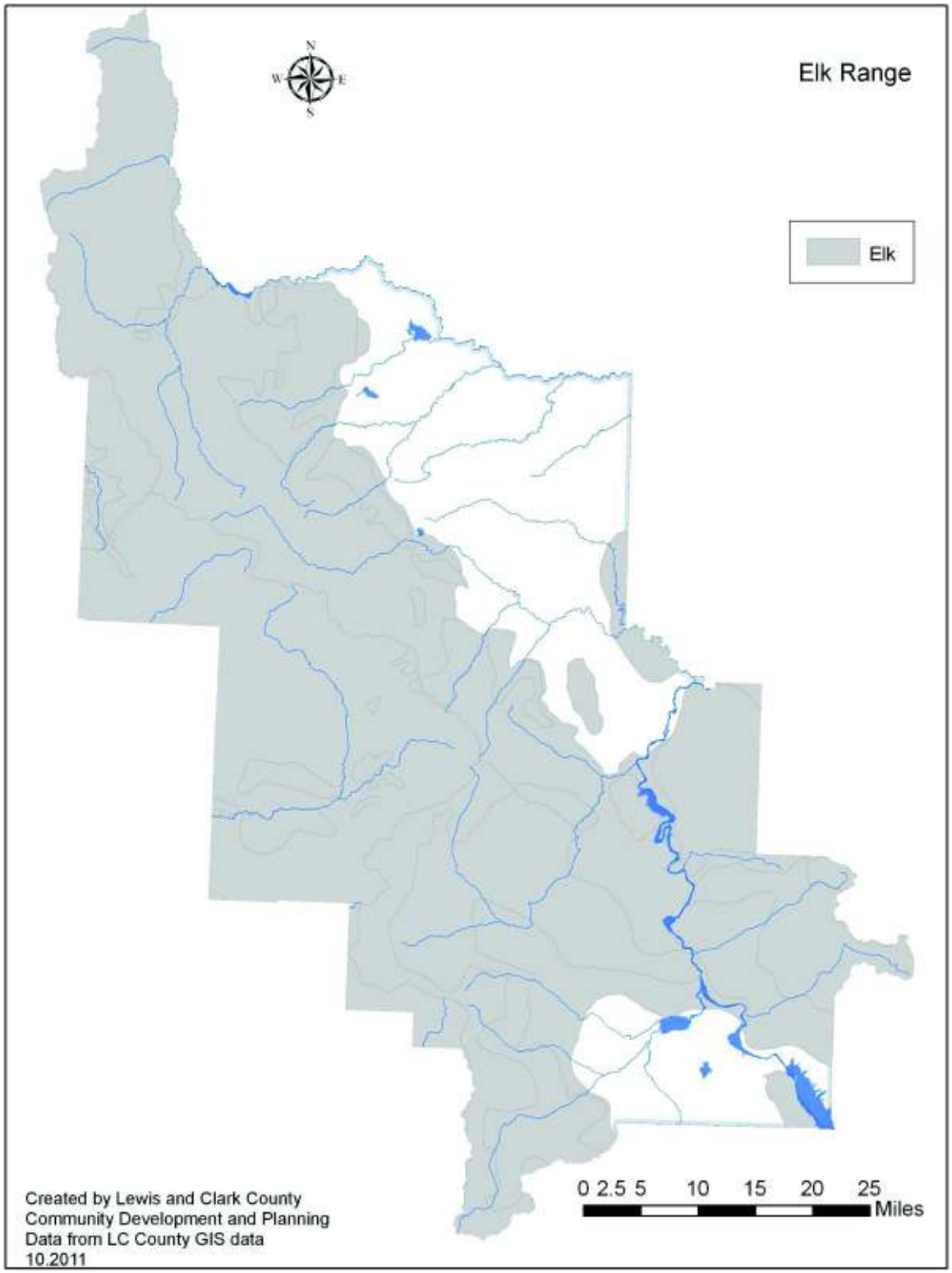

School Districts
NAME
Auchard Creek
Augusta
Craig
East Helena
Helena
Lincoln
Trinity School
Wolf Creek
Augusta
Auchard Creek
Lincoln
Wolf Creek
Trinity School
Helena
East Helena
SUN CANYON RD
BARR CREEK RD
BENCH MARK RD
BEAVER WILLOW RD
ELK CREEK RD
FLAT CREEK RD
MT HIGHWAY 287
SIMM'S CREE
MT HIGHWAY 434
HIGHWAY 200
BIRDTAIL RD
SEVENMILE
MT HIGHWAY 279
MT HIGHWAY 200
STEMPLE PASS RD
LYONS CREEK RD
SPERRY DR
CHEVALLIER DR
BEAVER CREEK RD
TEA RD
YORK RD
RAVEN RD
AUSTIN RD
CARROLL BERRY RD
RIMINI RD
0 3 6 12 18 24 30
Miles
Created by Lewis and Clark County
Community Development and Planning
Data from LC County GIS data
10.2011

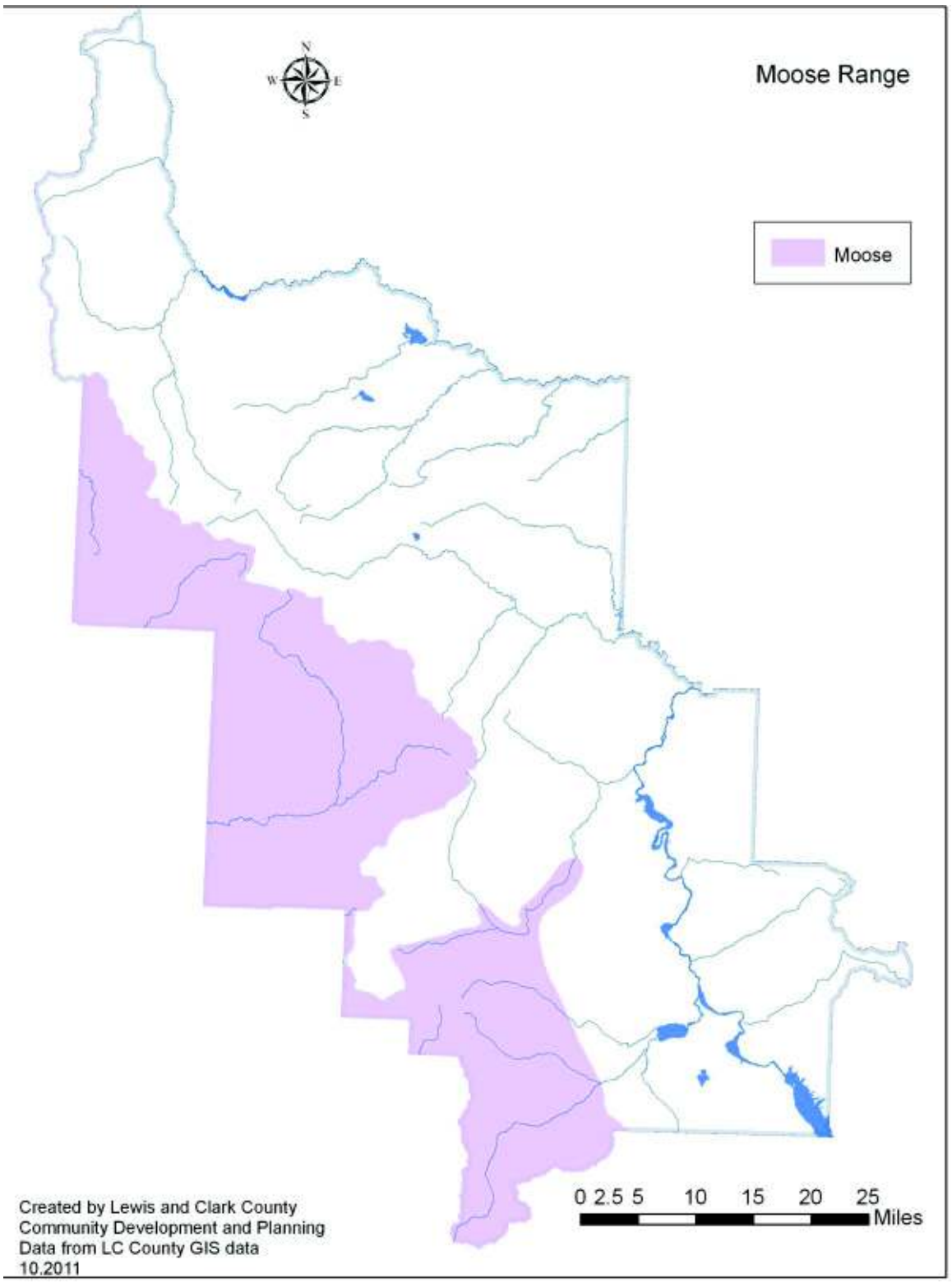

Sensitive Species
Animal
Inverabrate
Non-vascular plants
Birds
Vascular plants
N
W
E
S
Created by Lewis and Clark County
Community Development and Planning
Data from LC County GIS data
10.2011
0 3 6 12 18 24 30
Miles

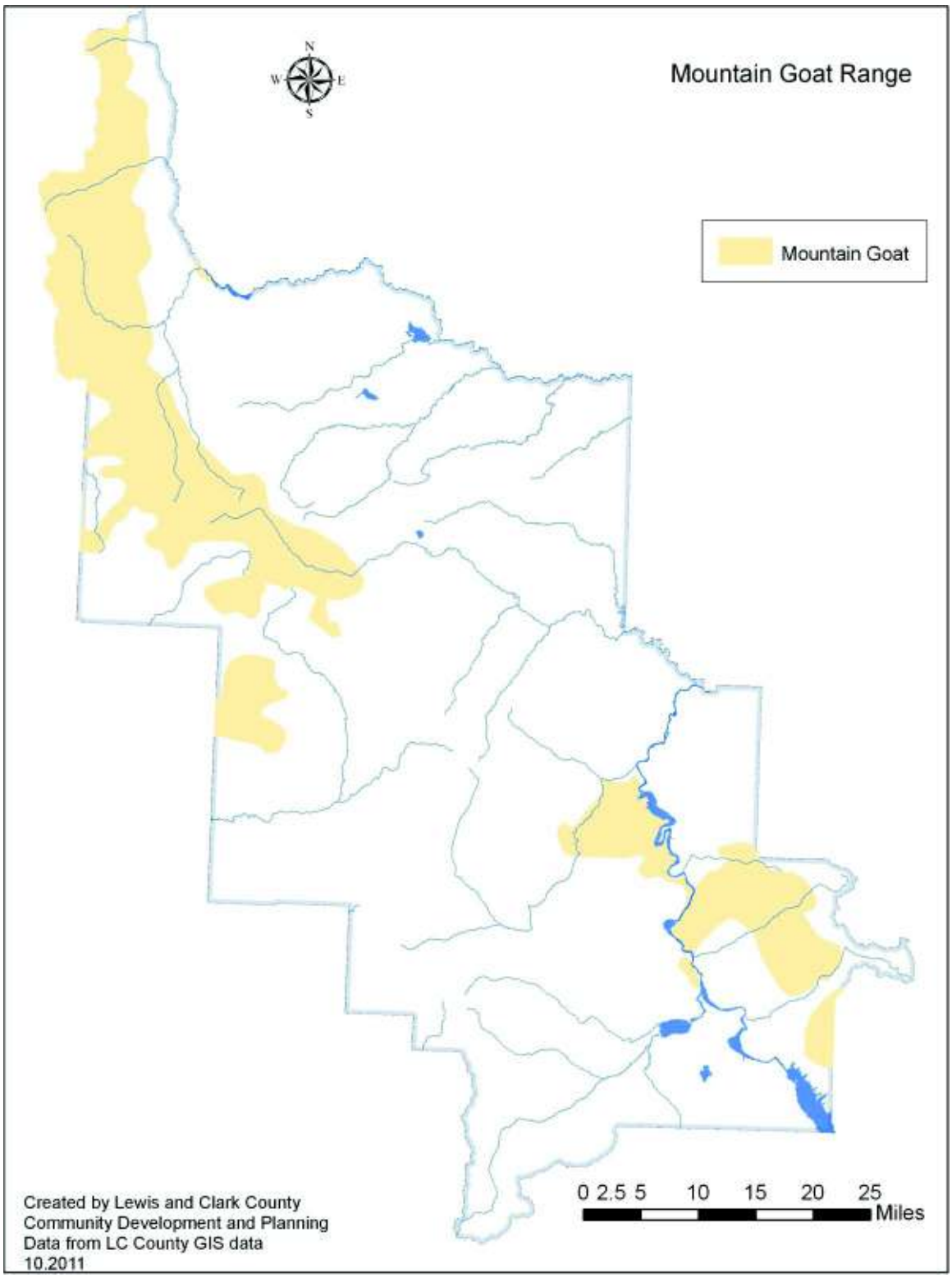


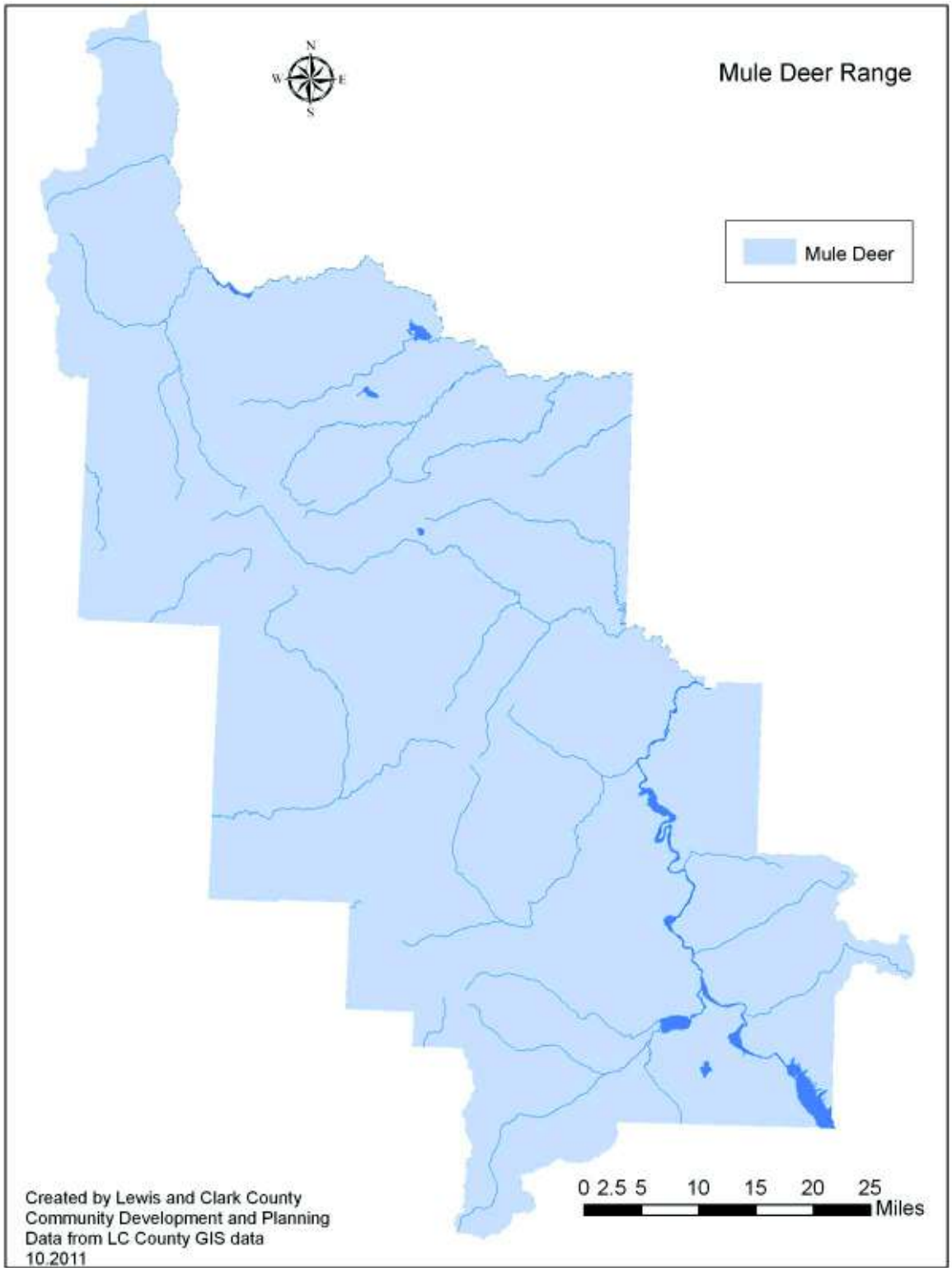
LEWIS AND CLARK COUNTY WILDLIFE MAPS

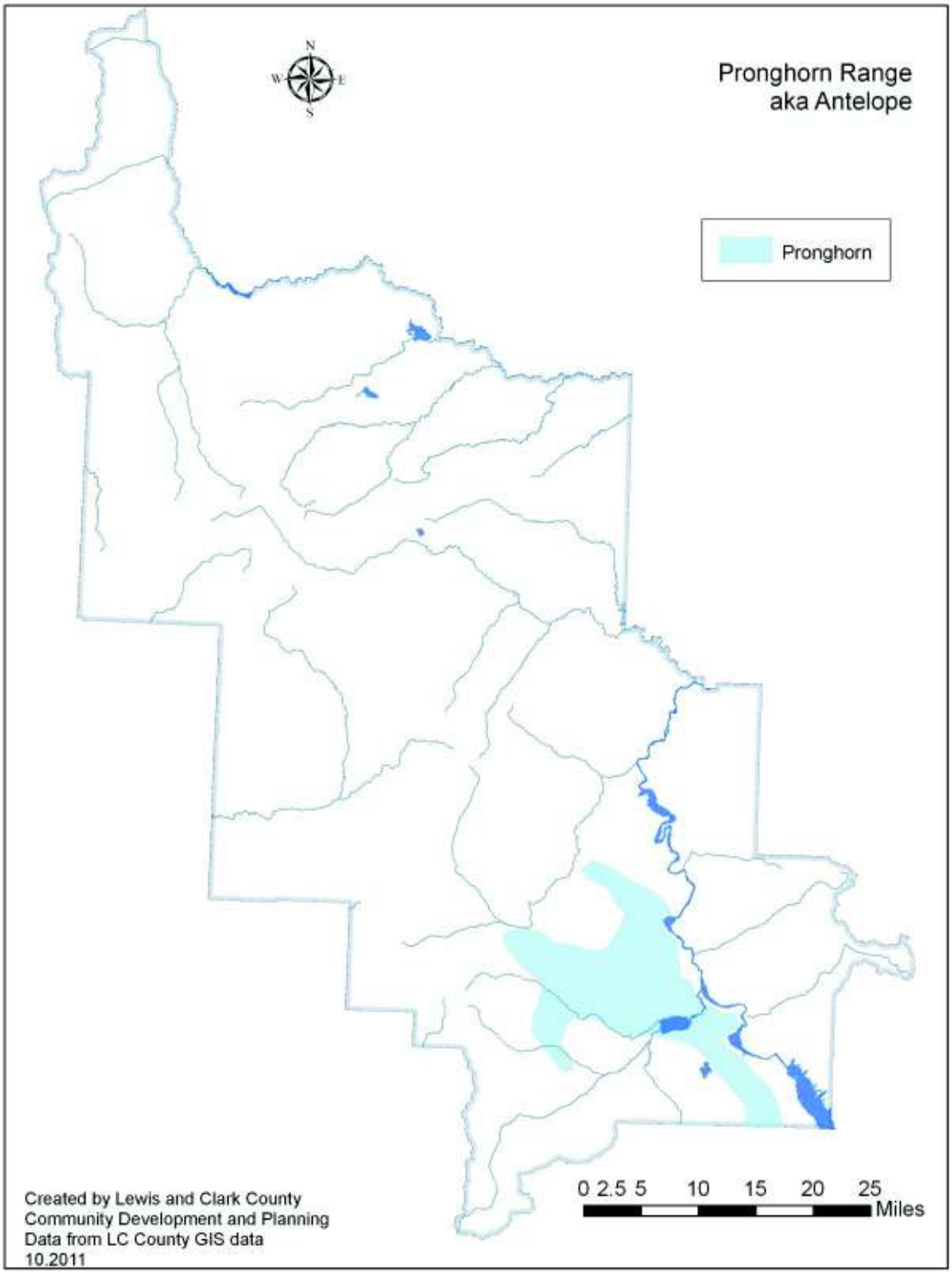

Bighorn Sheep Range
Bighorn Sheep
N
W
E
S
0 2.5 5 10 15 20 25
Miles
Created by Lewis and Clark County
Community Development and Planning
Data from LC County GIS data
10.2011

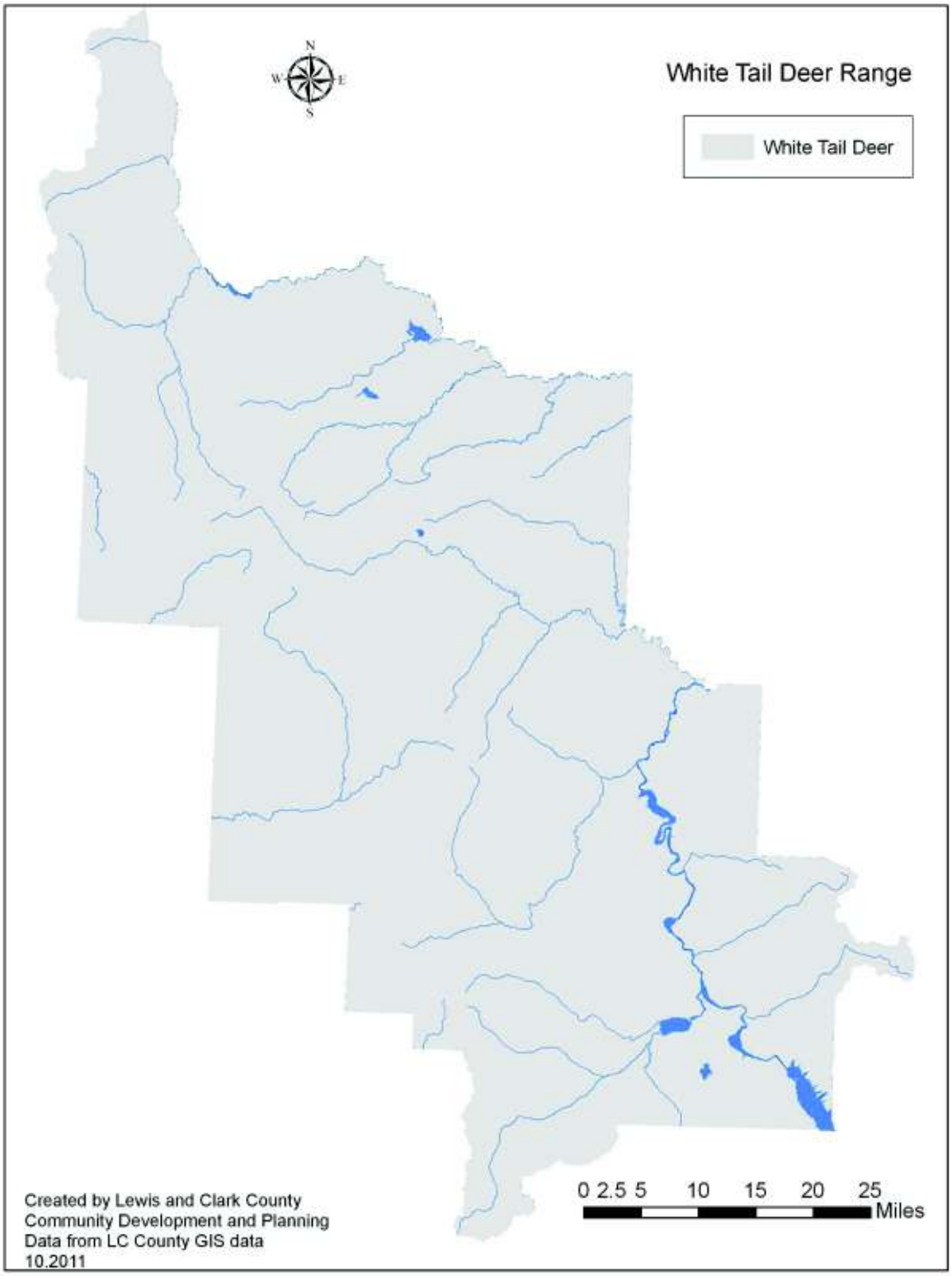

Elk Range
Elk
N
W
E
S
0 2.5 5 10 15 20 25
Miles
Created by Lewis and Clark County
Community Development and Planning
Data from LC County GIS data
10.2011


Moose Range
Moose
N
W
E
S
0 2.5 5 10 15 20 25
Miles
Created by Lewis and Clark County
Community Development and Planning
Data from LC County GIS data
10.2011


Mountain Goat Range
N
W
E
S
Mountain Goat
0 2.5 5 10 15 20 25
Miles
Created by Lewis and Clark County
Community Development and Planning
Data from LC County GIS data
10.2011

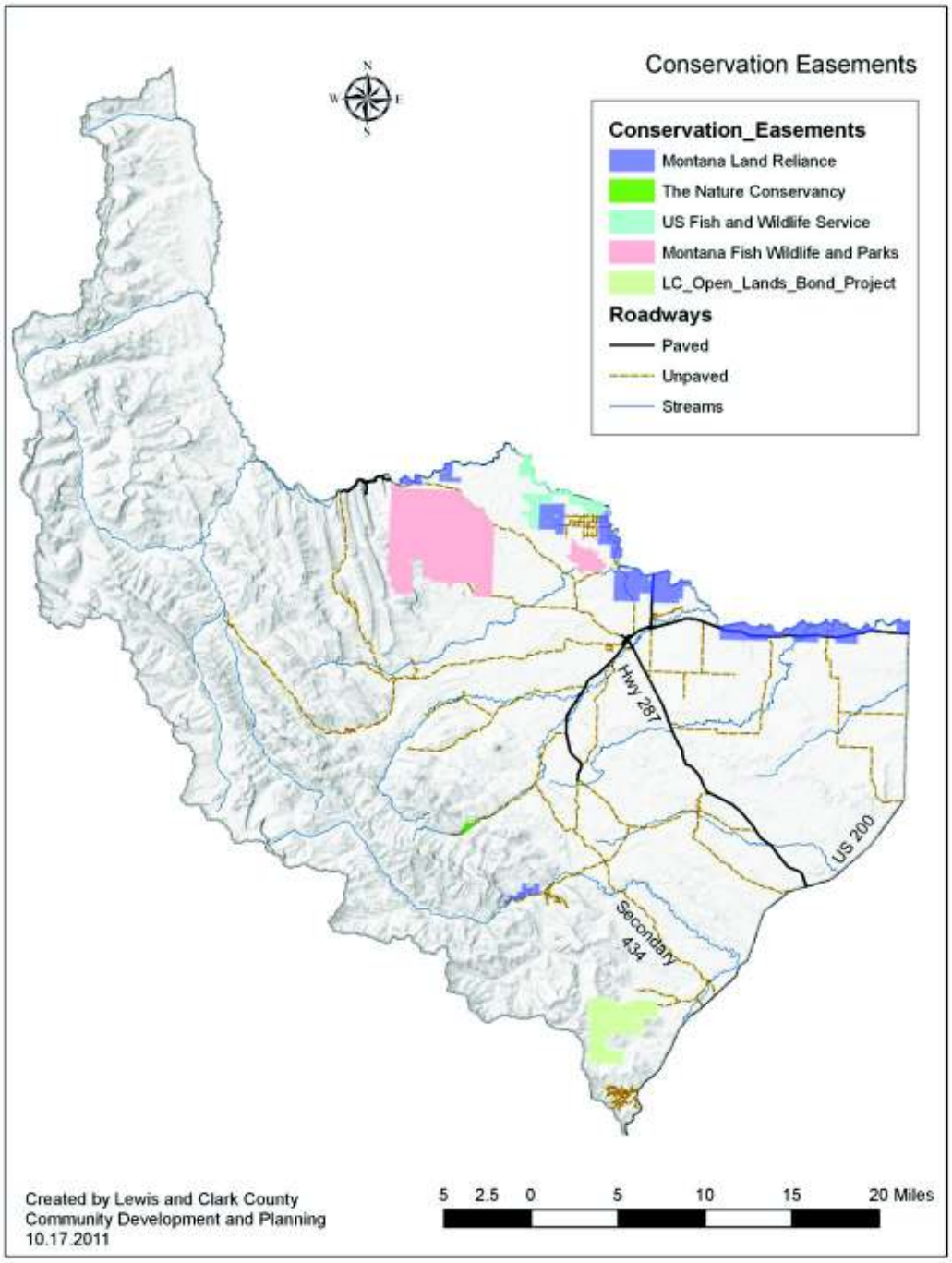

N
W
E
S
Mule Deer Range
Mule Deer
0 2.5 5 10 15 20 25
Miles
Created by Lewis and Clark County
Community Development and Planning
Data from LC County GIS data
10.2011

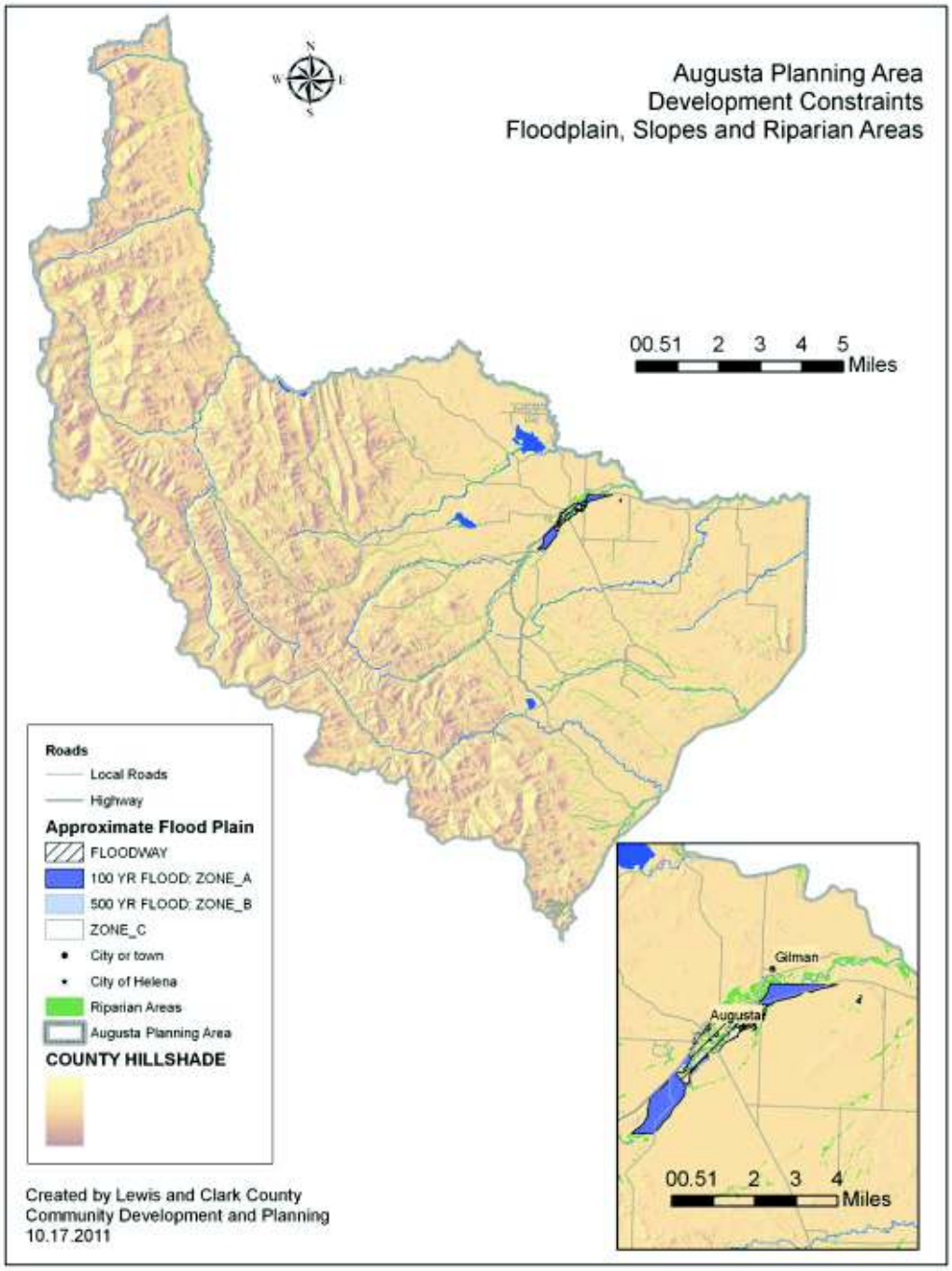

N
W
E
S
Pronghorn Range
aka Antelope
Pronghorn
0 2.5 5 10 15 20 25
Miles
Created by Lewis and Clark County
Community Development and Planning
Data from LC County GIS data
10.2011

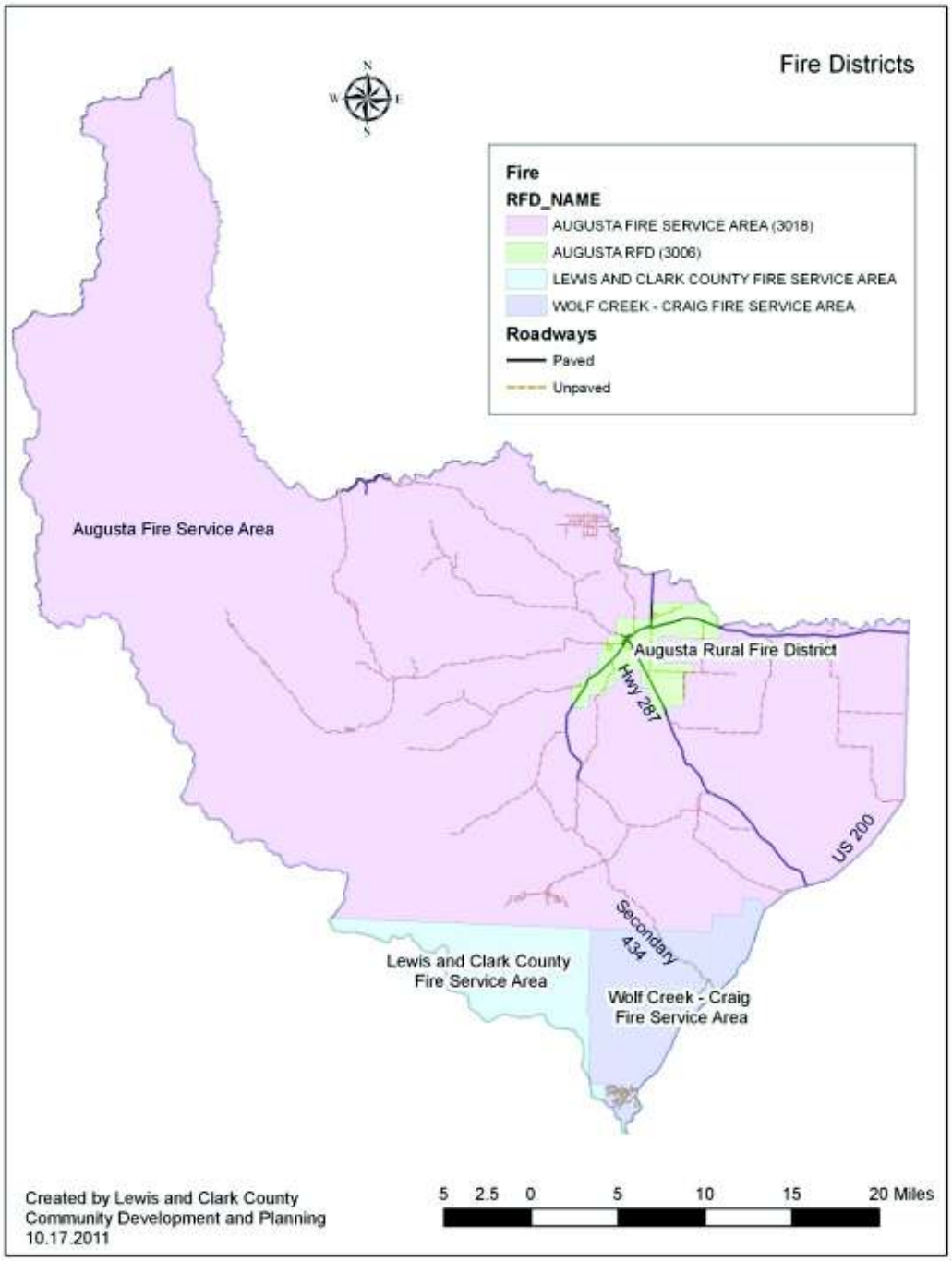

White Tail Deer Range
White Tail Deer
N
W
E
S
0 2.5 5 10 15 20 25
Miles
Created by Lewis and Clark County
Community Development and Planning
Data from LC County GIS data
10.2011

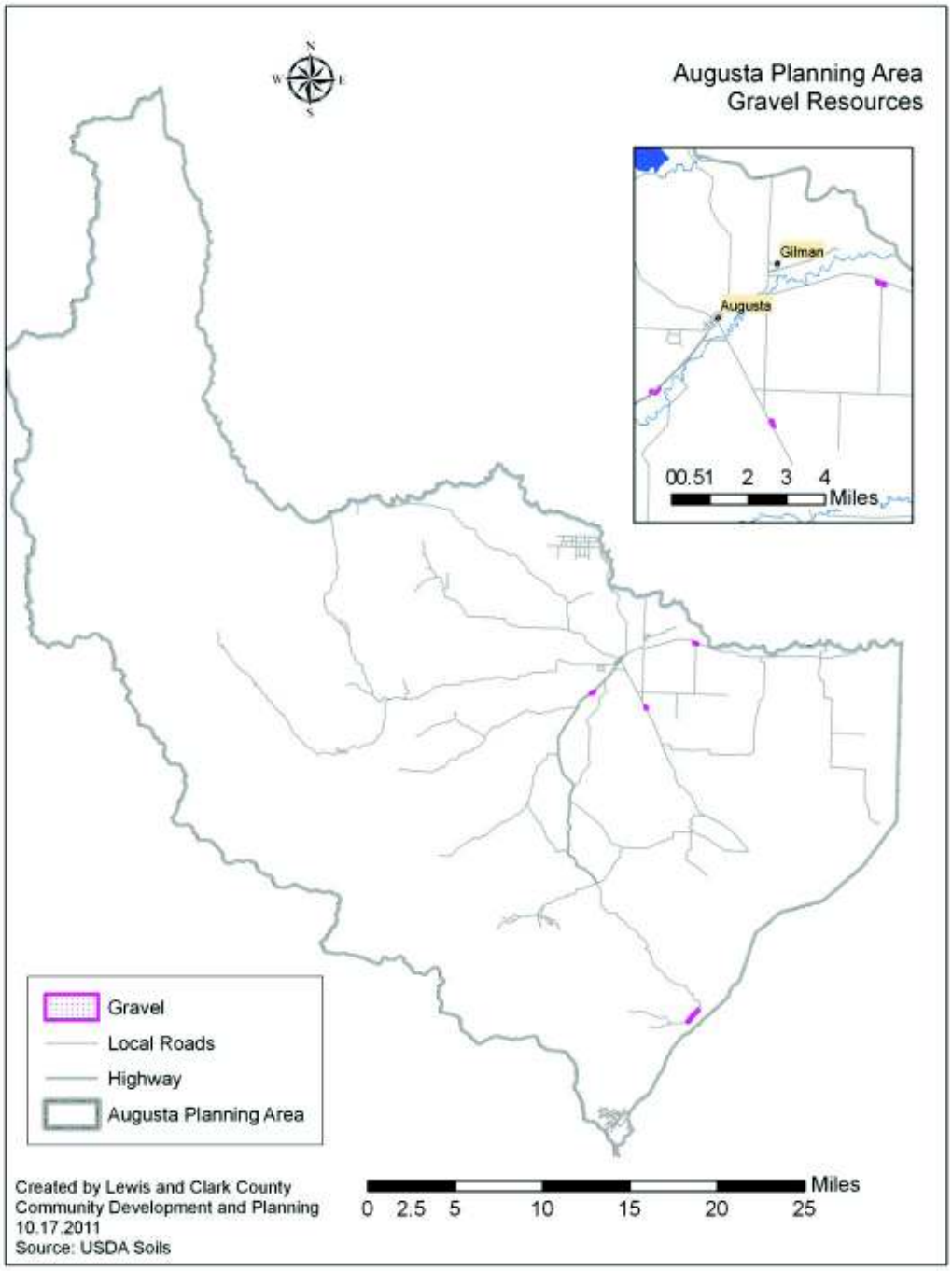
APPENDIX C

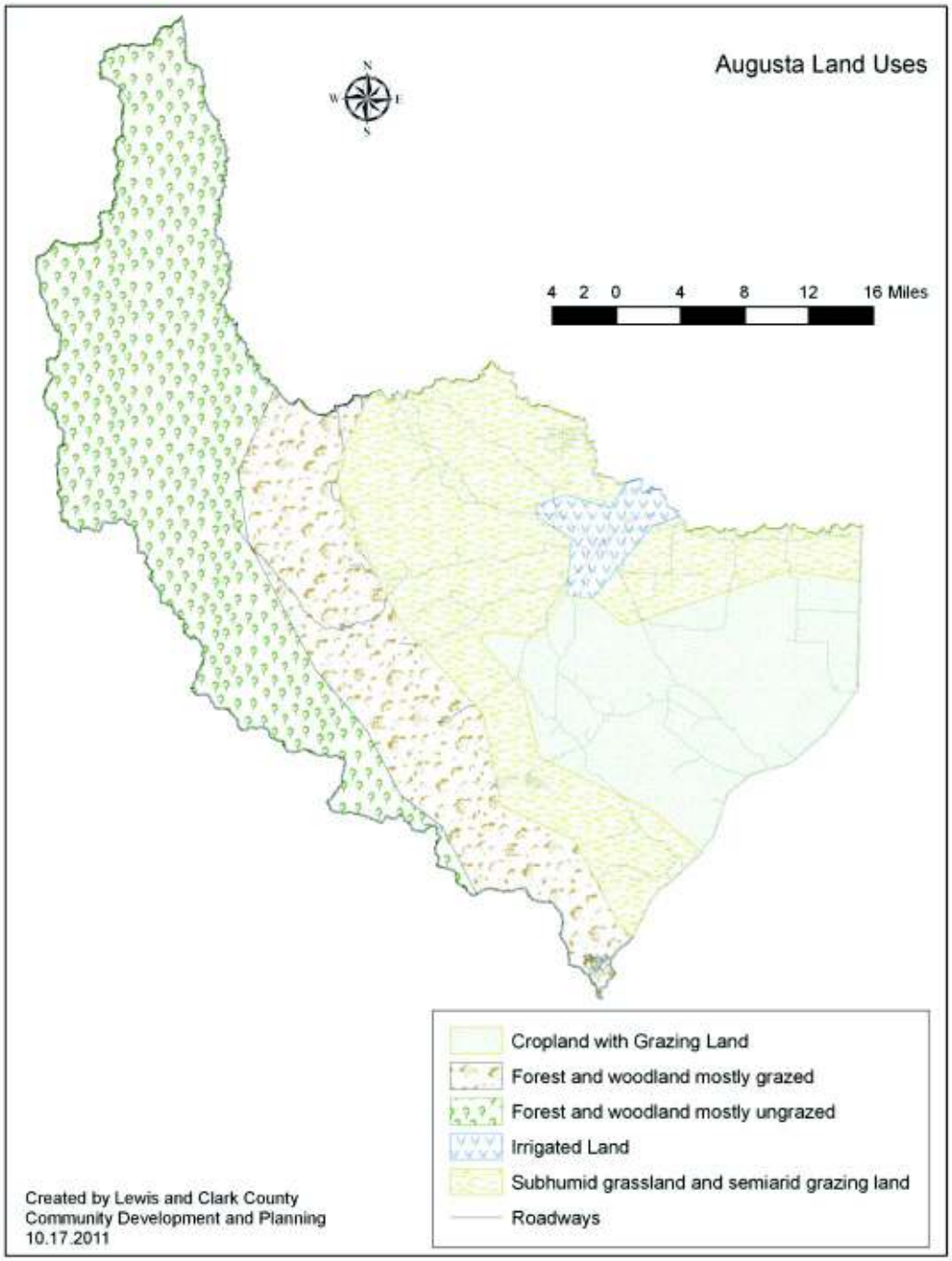
AUGUSTA PLANNING AREA

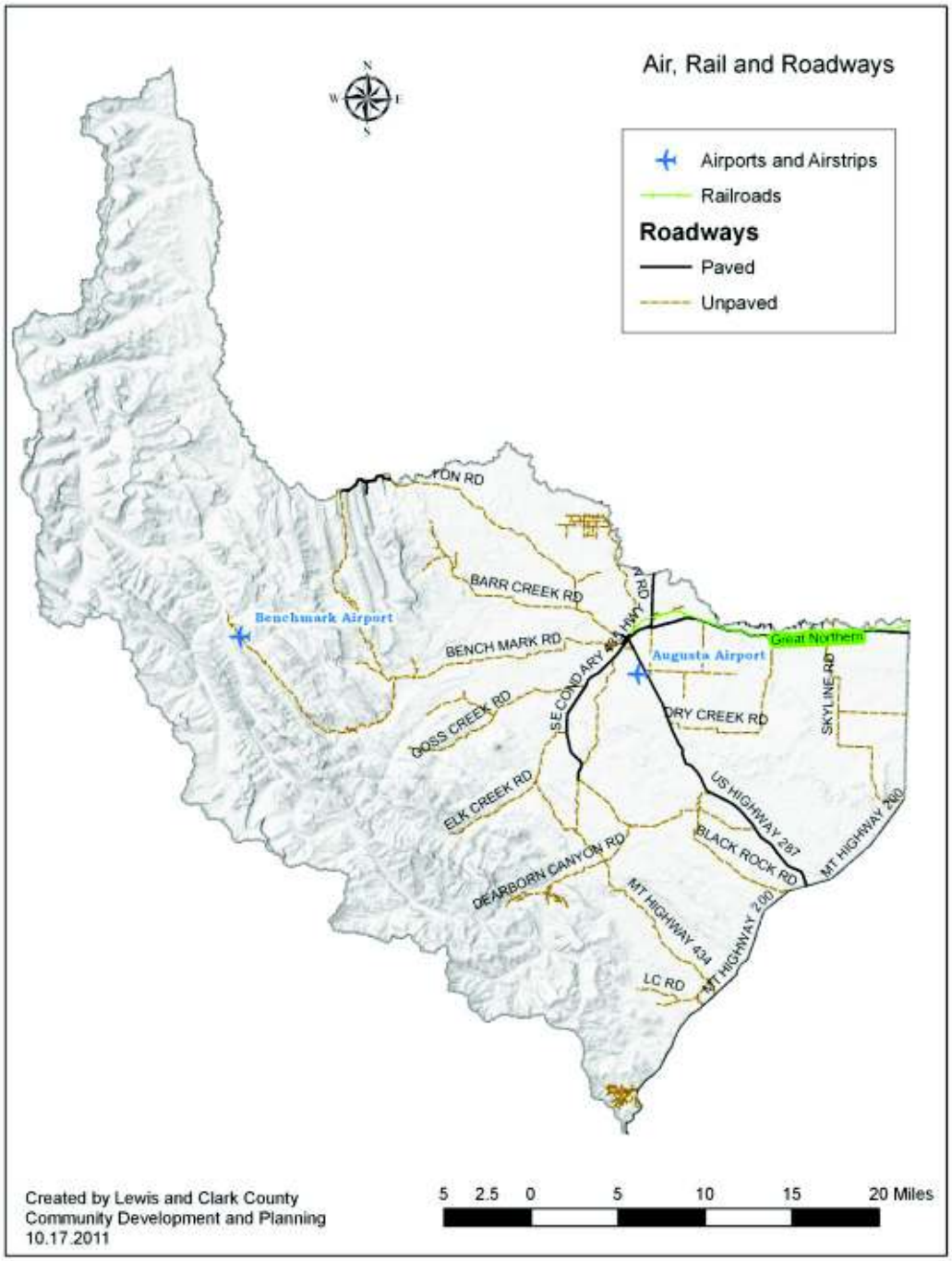



Augusta Planning Area
Development Constraints
Floodplain, Slopes and Riparian Areas
00.51 2 3 4 5
Miles
Roads
Local Roads
Highway
Approximate Flood Plain
FLOODWAY
100 YR FLOOD: ZONE_A
500 YR FLOOD: ZONE_B
ZONE_C
City or town
City of Helena
Riparian Areas
Augusta Planning Area
COUNTY HILLSHADE
Gilman
Augusta
00.51 2 3 4
Miles
Created by Lewis and Clark County
Community Development and Planning
10.17.2011


Fire Districts
N
W
E
S
Fire
RFD_NAME
AUGUSTA FIRE SERVICE AREA (3018)
AUGUSTA RFD (3006)
LEWIS AND CLARK COUNTY FIRE SERVICE AREA
WOLF CREEK - CRAIG FIRE SERVICE AREA
Roadways
Paved
Unpaved
Augusta Fire Service Area
Augusta Rural Fire District
Hwy 287
US 200
Secondary 434
Lewis and Clark County Fire Service Area
Wolf Creek - Craig Fire Service Area
Created by Lewis and Clark County Community Development and Planning 10.17.2011
5 2.5 0 5 10 15 20 Miles

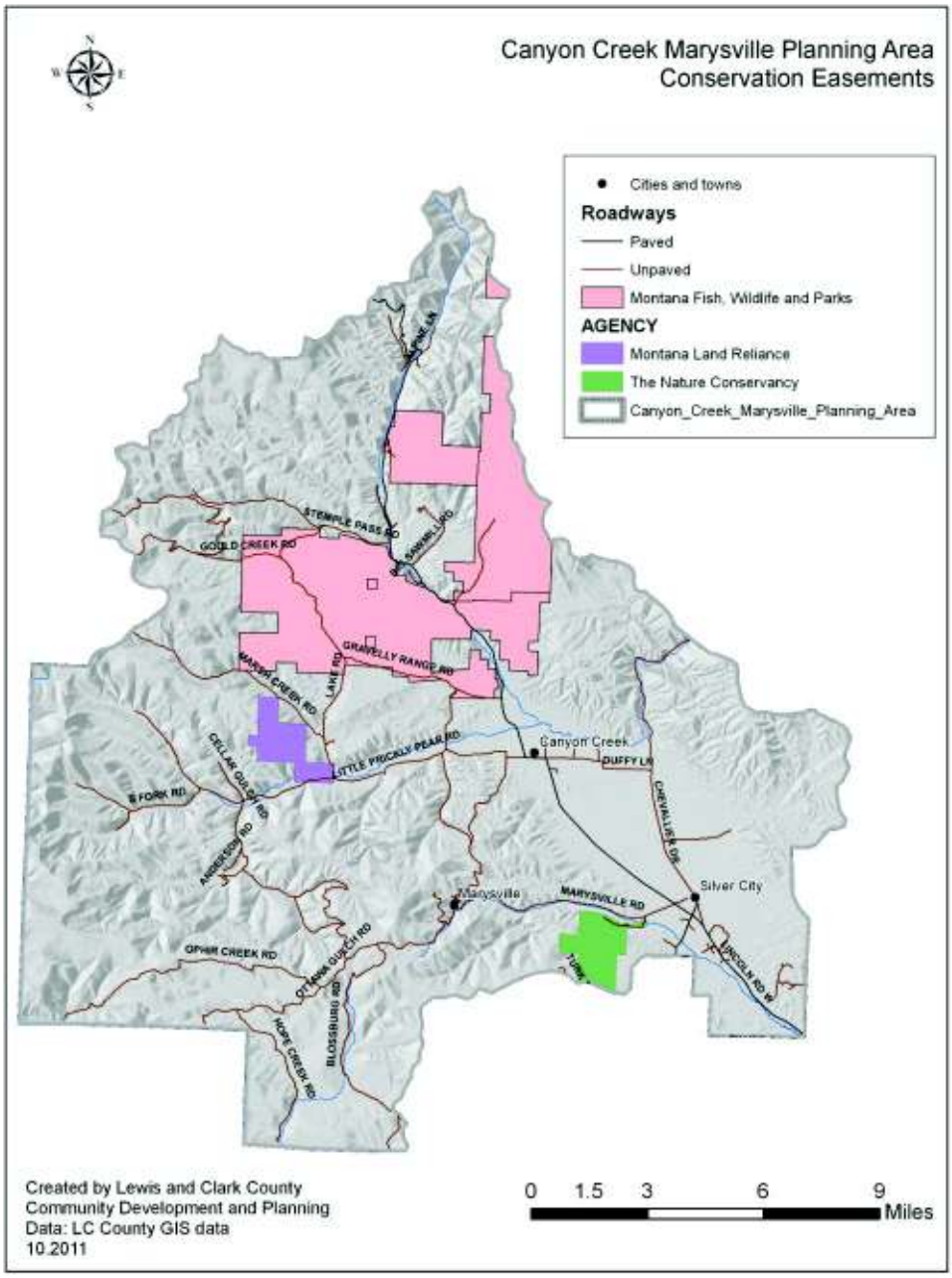

Augusta Planning Area
Gravel Resources
Gilman
Augusta
00.51 2 3 4
Miles
Gravel
Local Roads
Highway
Augusta Planning Area
Created by Lewis and Clark County
Community Development and Planning
10.17.2011
Source: USDA Soils
0 2.5 5 10 15 20 25
Miles

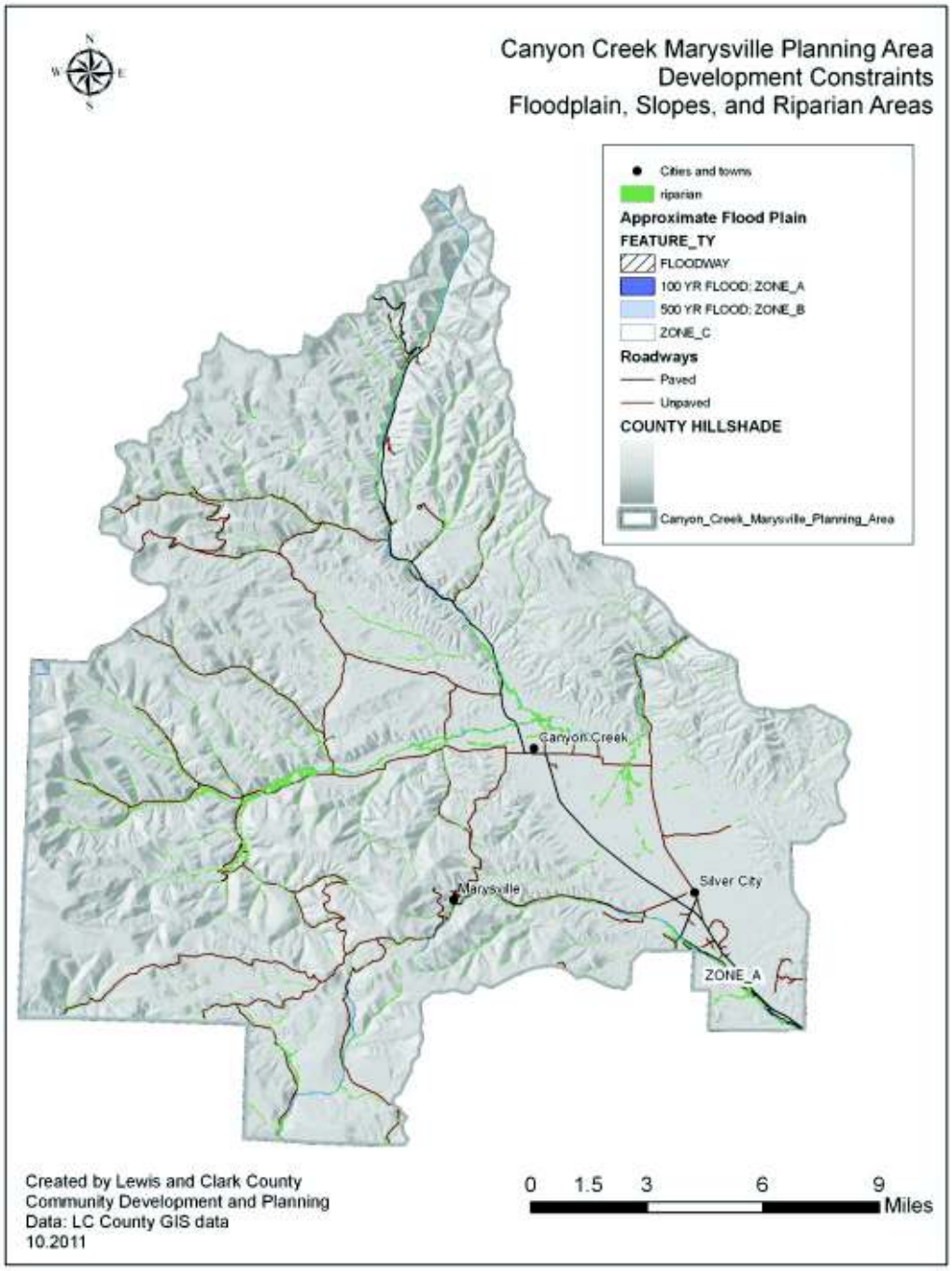

Augusta Land Uses
N
W
E
S
4 2 0 4 8 12 16 Miles
Cropland with Grazing Land
Forest and woodland mostly grazed
Forest and woodland mostly ungrazed
Irrigated Land
Subhumid grassland and semiarid grazing land
Roadways
Created by Lewis and Clark County
Community Development and Planning
10.17.2011

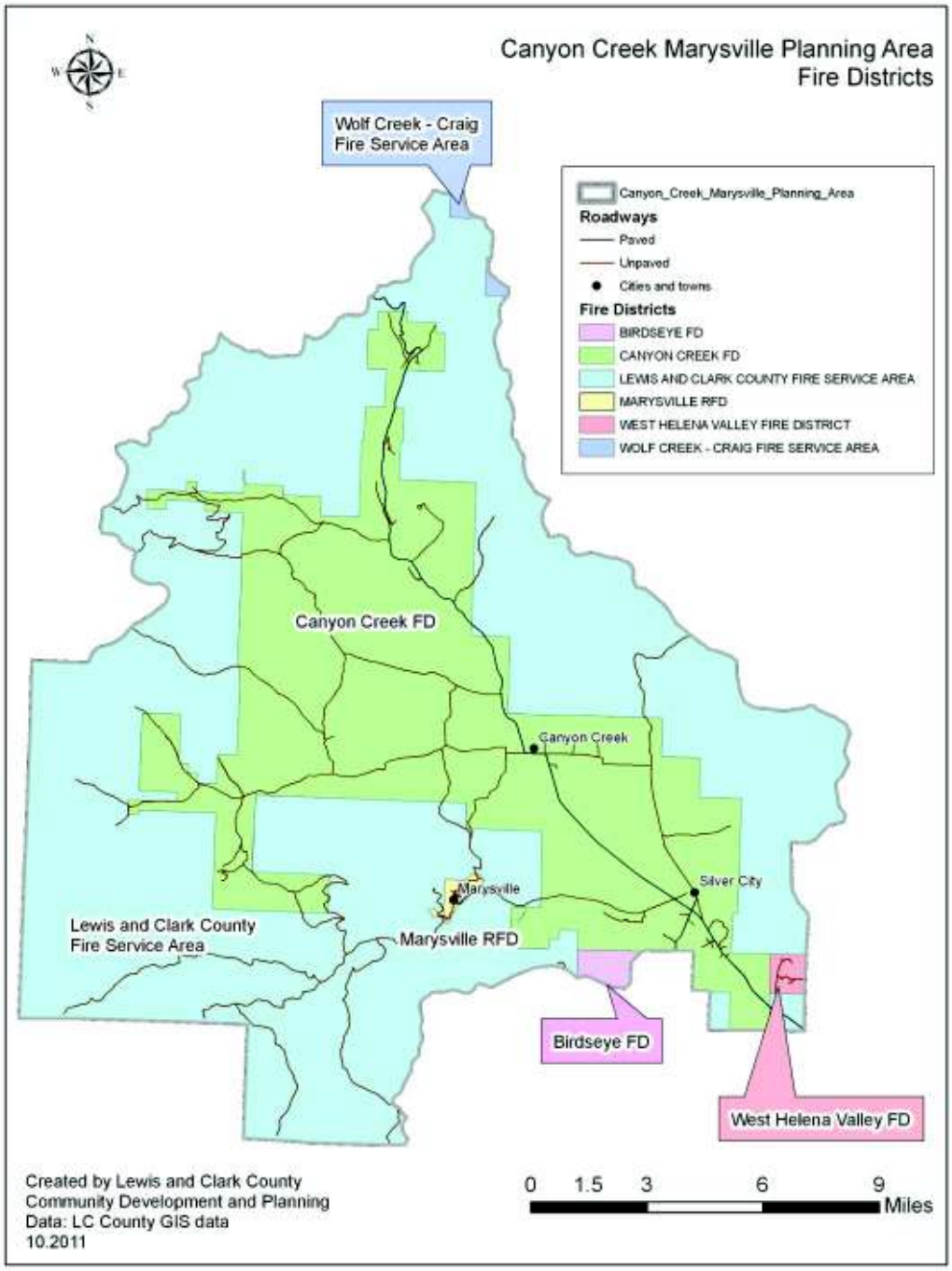

Air, Rail and Roadways
N
W
E
S
Airports and Airstrips
Railroads
Roadways
Paved
Unpaved
TON RD
BARR CREEK RD
Benchmark Airport
BENCH MARK RD
Augusta Airport
Great Northern
SKYLINE RD
DRY CREEK RD
GOSS CREEK RD
ELK CREEK RD
US HIGHWAY 287
BLACK ROCK RD
MT HIGHWAY 200
DEARBORN CANYON RD
MT HIGHWAY 434
MT HIGHWAY 200
LC RD
Created by Lewis and Clark County
Community Development and Planning
10.17.2011
5 2.5 0 5 10 15 20 Miles

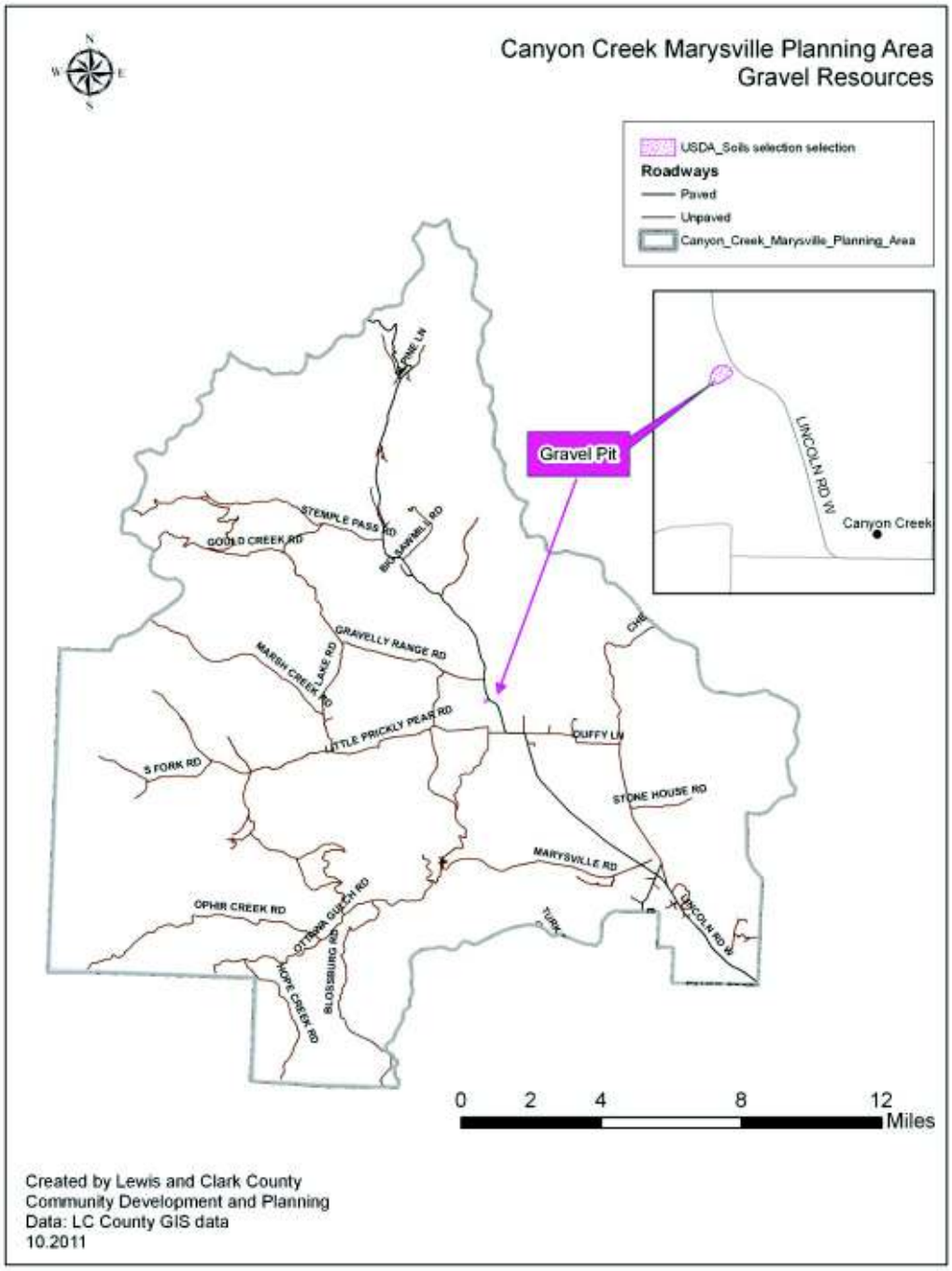
APPENDIX D

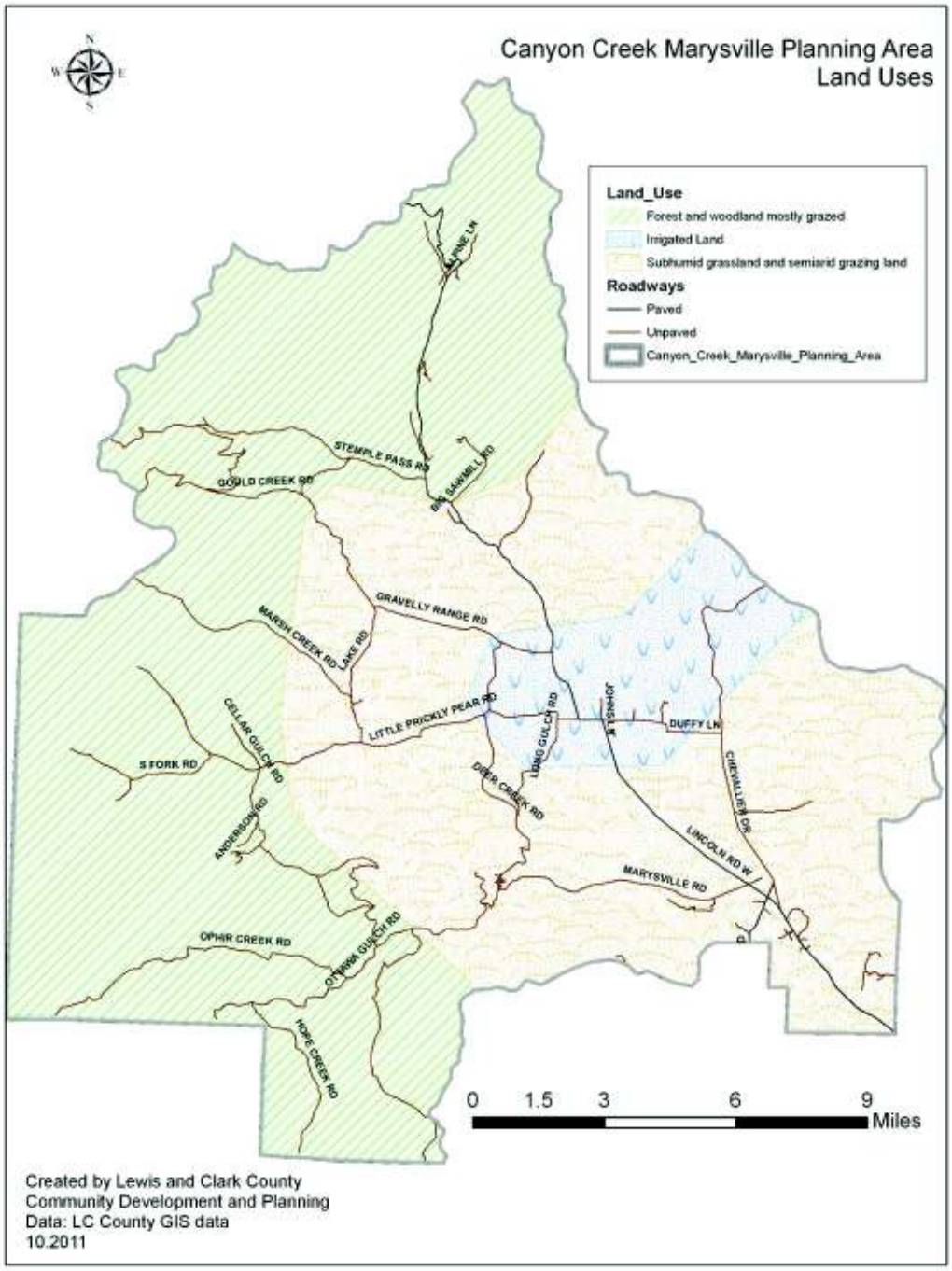
CANYON CREEK/MARYSVILLE PLANNING AREA MAPS

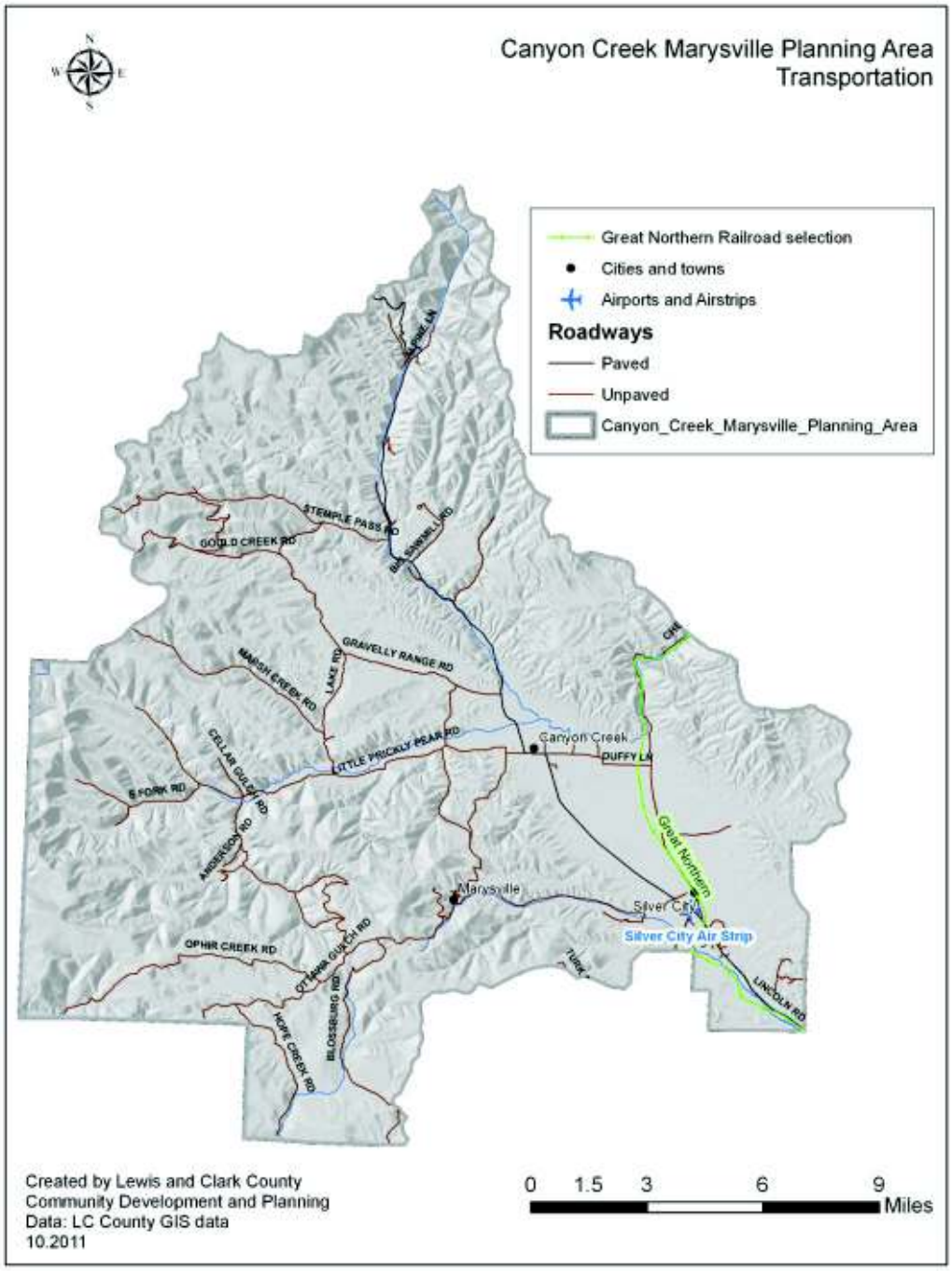



Canyon Creek Marysville Planning Area
Development Constraints
Floodplain, Slopes, and Riparian Areas
Cities and towns
riparian
Approximate Flood Plain
FEATURE_TY
FLOODWAY
100 YR FLOOD: ZONE_A
500 YR FLOOD: ZONE_B
ZONE_C
Roadways
Paved
Unpaved
COUNTY HILLSHADE
Canyon_Creek_Marysville_Planning_Area
Canyon Creek
Marysville
Silver City
ZONE_A
Created by Lewis and Clark County
Community Development and Planning
Data: LC County GIS data
10.2011
0 1.5 3 6 9
Miles


Canyon Creek Marysville Planning Area
Fire Districts
Wolf Creek - Craig
Fire Service Area
Canyon_Creek_Marysville_Planning_Area
Roadways
Paved
Unpaved
Cities and towns
Fire Districts
BIRDSEYE FD
CANYON CREEK FD
LEWIS AND CLARK COUNTY FIRE SERVICE AREA
MARYSVILLE RFD
WEST HELENA VALLEY FIRE DISTRICT
WOLF CREEK - CRAIG FIRE SERVICE AREA
Canyon Creek FD
Canyon Creek
Silver City
Marysville
Marysville RFD
Lewis and Clark County
Fire Service Area
Birdseye FD
West Helena Valley FD
Created by Lewis and Clark County
Community Development and Planning
Data: LC County GIS data
10.2011
0 1.5 3 6 9
Miles

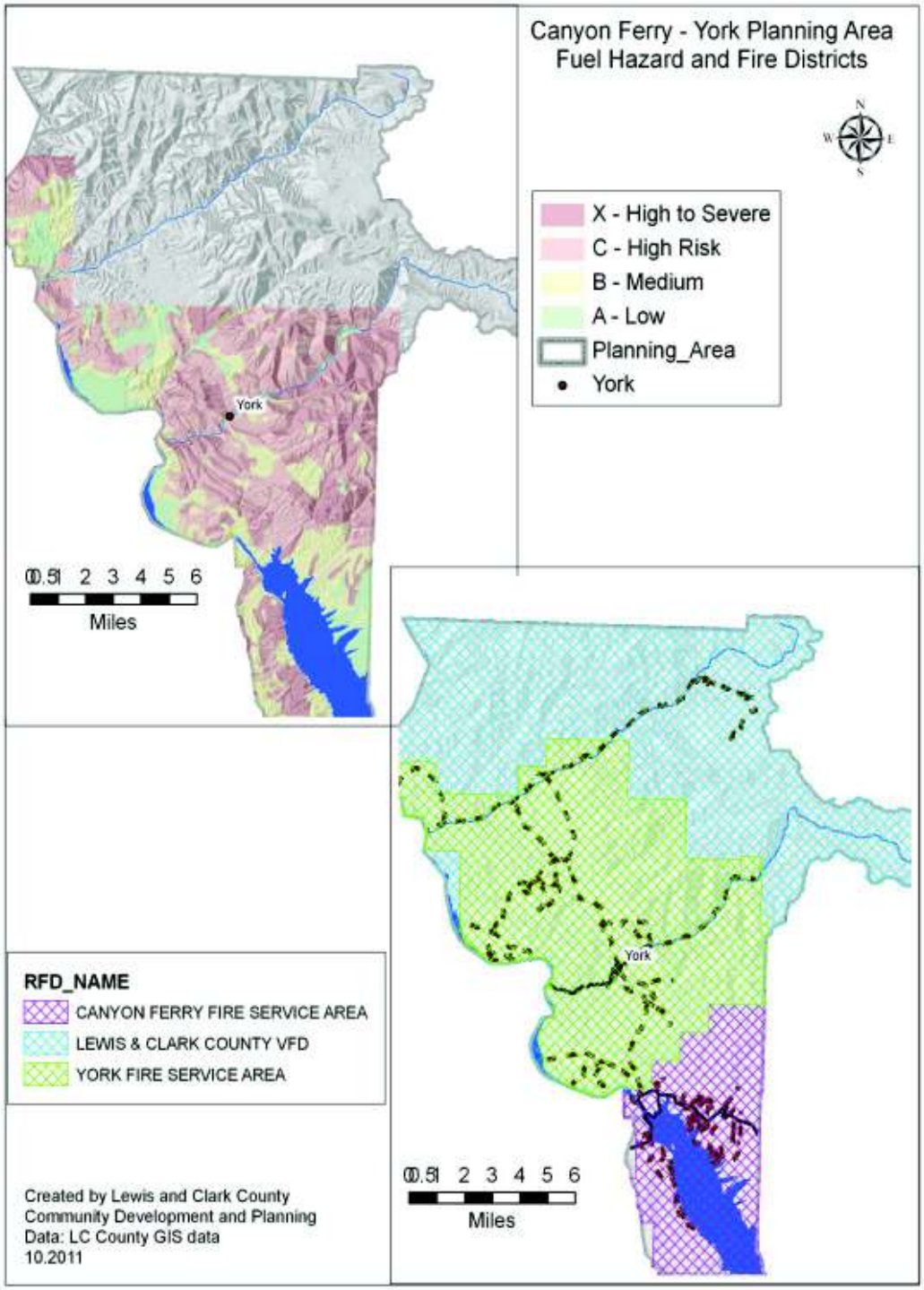

Canyon Creek Marysville Planning Area
Gravel Resources
USDA_Soils selection selection
Roadways
Paved
Unpaved
Canyon_Creek_Marysville_Planning_Area
Gravel Pit
LINCOLN RD W
Canyon Creek
PINE LN
STEMPLE PASS RD
GOULD CREEK RD
BIG CARAMEL RD
GRAVELLY RANGE RD
MARBH CREEK LAKE RD
LITTLE PRICKLY PEAR RD
DUFFY LN
S FORK RD
STONE HOUSE RD
MARYSVILLE RD
OPHIR CREEK RD
OTTAWA GULCH RD
BLOSSBURG RD
HOPE CREEK RD
TURK
LINCOLN RD W
0 2 4 8 12
Miles
Created by Lewis and Clark County
Community Development and Planning
Data: LC County GIS data
10.2011

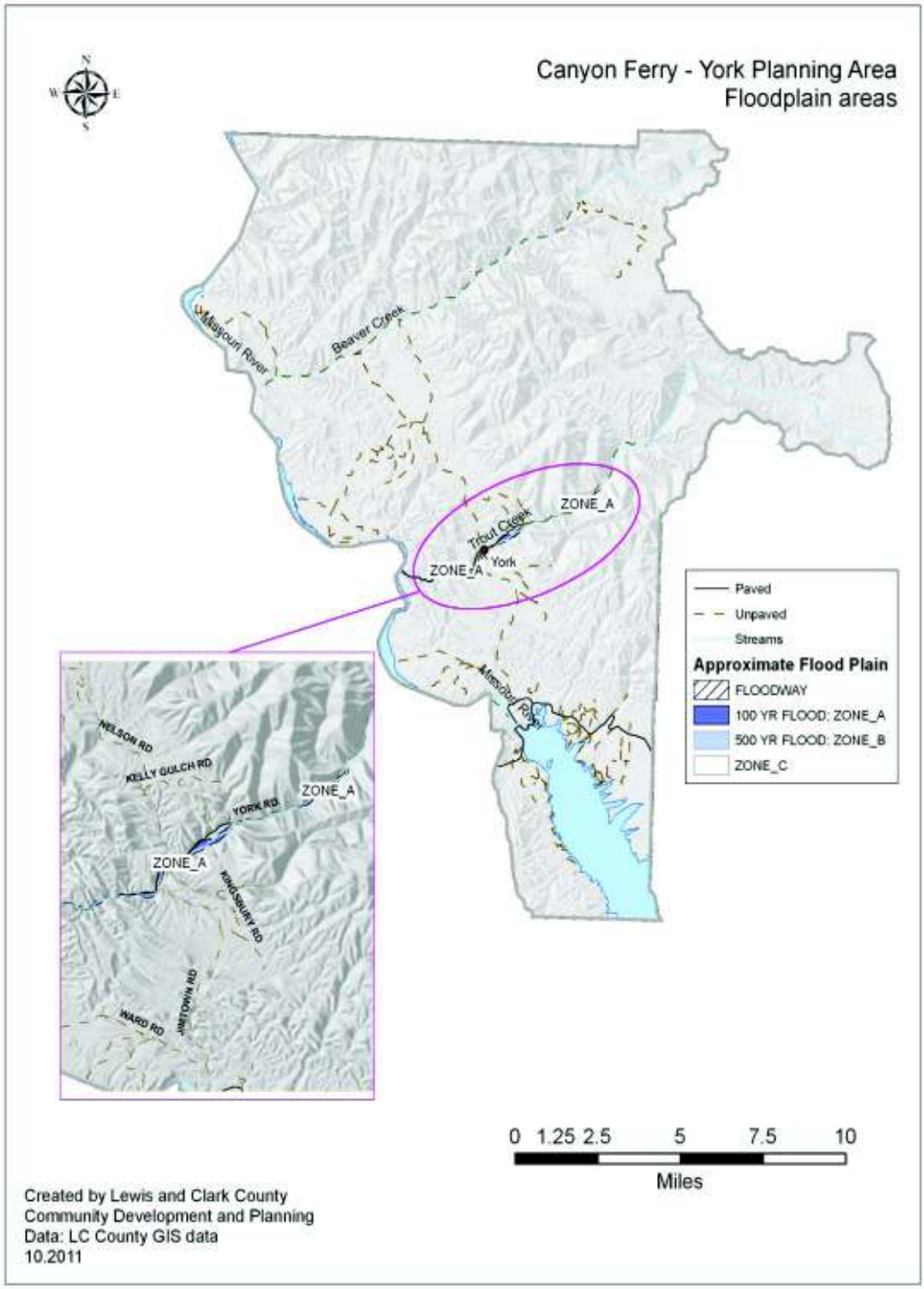

Canyon Creek Marysville Planning Area
Land Uses
Land_Use
Forest and woodland mostly grazed
Irrigated Land
Subhumid grassland and semiarid grazing land
Roadways
Paved
Unpaved
Canyon_Creek_Marysville_Planning_Area
STEMPLE PASS RD
GOULD CREEK RD
BIG SANDBELL RD
GRAVELLY RANGE RD
MARSH CREEK RD
LAKE RD
LITTLE PRICKLY PEAR RD
CELLAR GULCH RD
S FORK RD
ANDERSON RD
LONG GULCH RD
JOHNS LN
DUFFY LN
CHEVALIER DR
DEER CREEK RD
LINCOLN RD W
MARYSVILLE RD
OPHIR CREEK RD
OPHIR GULCH RD
HOPE CREEK RD
0 1.5 3 6 9
Miles
Created by Lewis and Clark County
Community Development and Planning
Data: LC County GIS data
10.2011

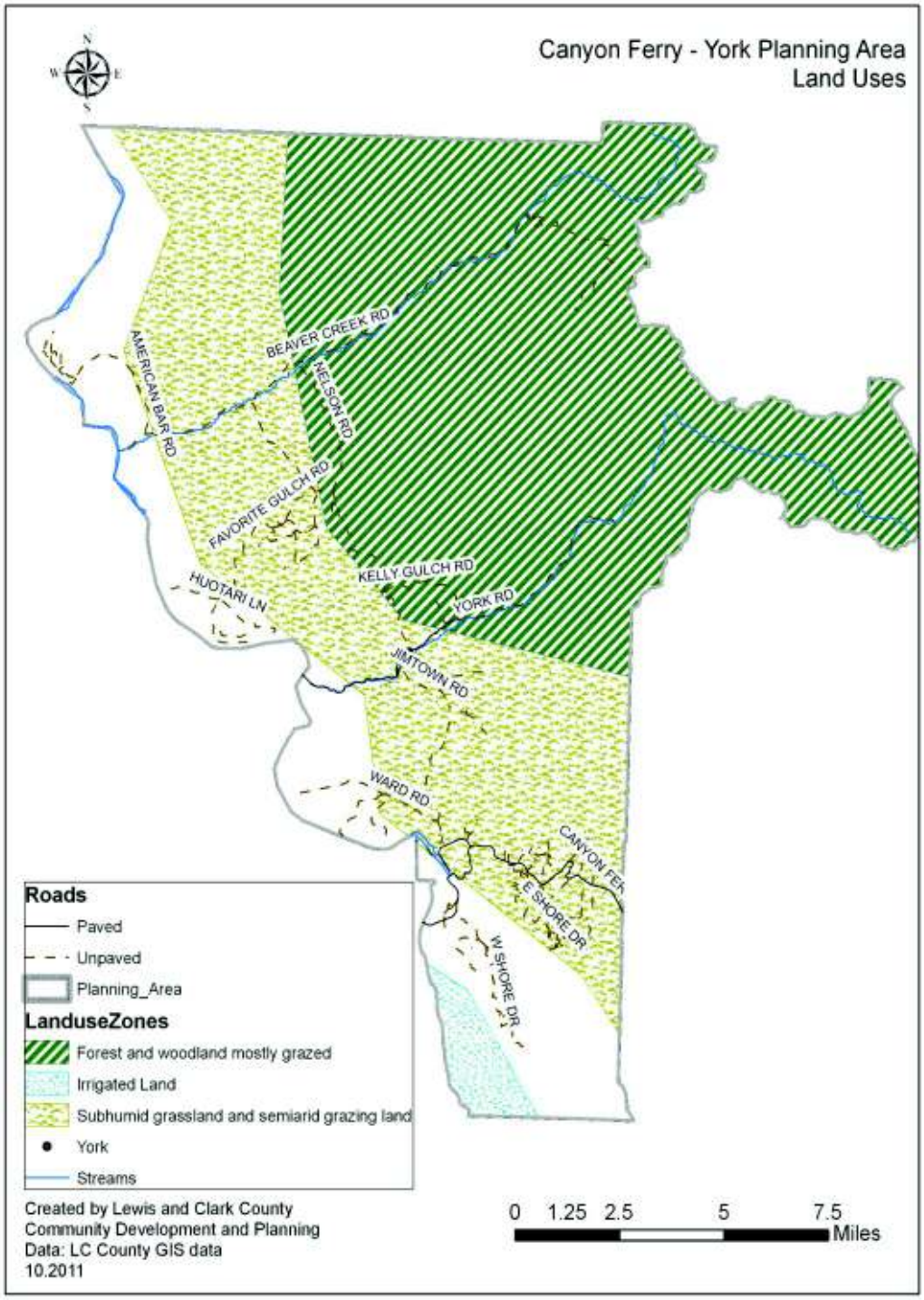

Canyon Creek Marysville Planning Area
Transportation
Great Northern Railroad selection
Cities and towns
Airports and Airstrips
Roadways
Paved
Unpaved
Canyon_Creek_Marysville_Planning_Area
STEMPLE PASS RD
GOULD CREEK RD
GRAVELLY RANGE RD
MARSH CREEK RD
LAKE RD
LITTLE PRICKLY PEAR RD
CELLAR GULCH RD
S FORK RD
ANDERSON RD
OPHIR CREEK RD
OTTAWA GULCH RD
BLOSSBURG RD
HOPE CREEK RD
Canyon Creek
DUFFY LN
Marysville
Silver City
Silver City Air Strip
Great Northern
LINCOLN RD
Created by Lewis and Clark County
Community Development and Planning
Data: LC County GIS data
10.2011
0 1.5 3 6 9
Miles

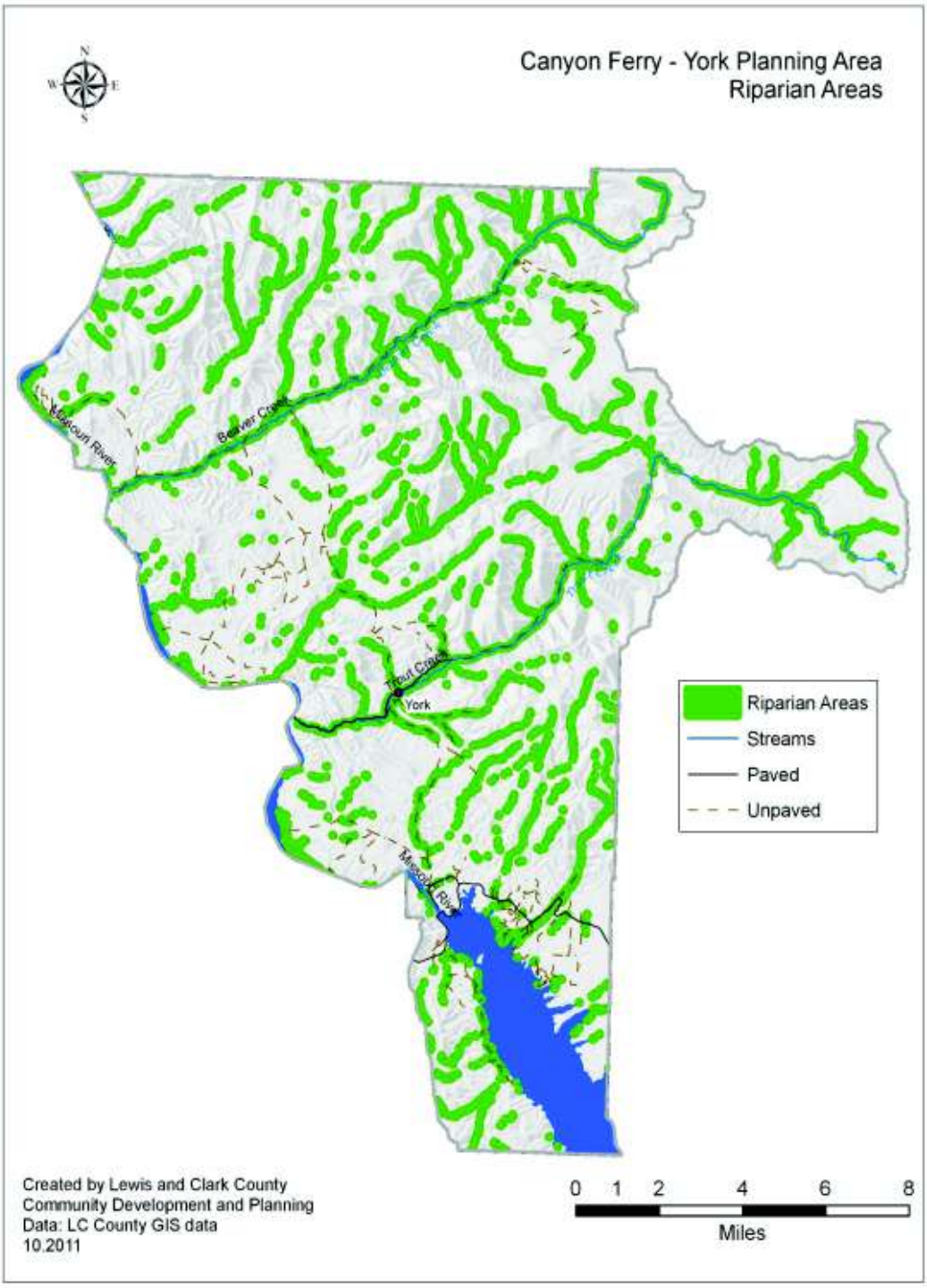
APPENDIX E

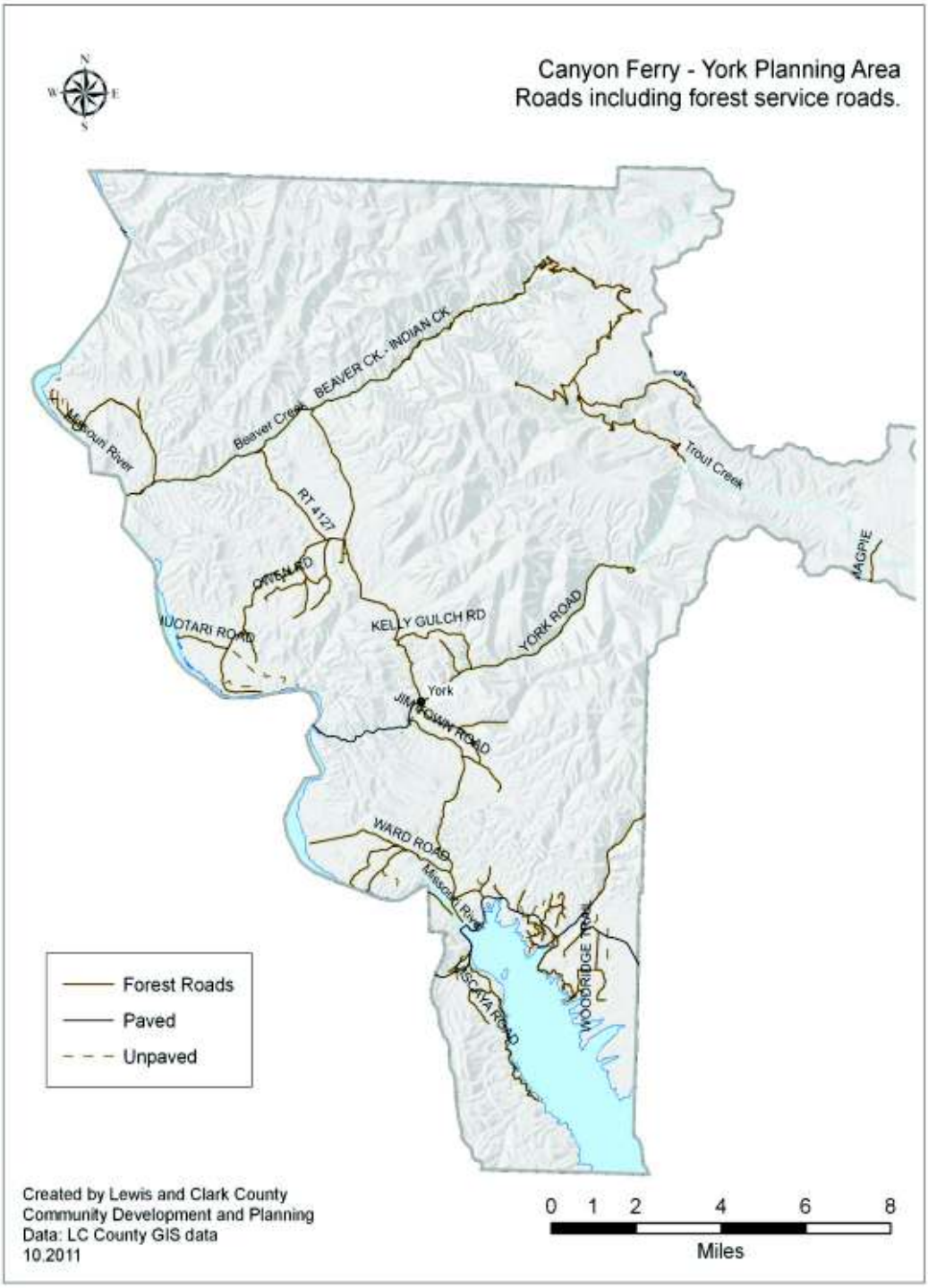
CANYON FERRY/YORK PLANNING AREA MAPS


Canyon Ferry - York Planning Area
Fuel Hazard and Fire Districts
N
W
E
S
X - High to Severe
C - High Risk
B - Medium
A - Low
Planning_Area
York
York
0 0.5 1 2 3 4 5 6
Miles
RFD_NAME
CANYON FERRY FIRE SERVICE AREA
LEWIS & CLARK COUNTY VFD
YORK FIRE SERVICE AREA
Created by Lewis and Clark County
Community Development and Planning
Data: LC County GIS data
10.2011
0 0.5 1 2 3 4 5 6
Miles


Canyon Ferry - York Planning Area
Floodplain areas
N
W
E
S
Missouri River
Beaver Creek
Trout Creek
York
ZONE_A
ZONE_A
ZONE_A
Missouri River
Paved
Unpaved
Streams
Approximate Flood Plain
FLOODWAY
100 YR FLOOD: ZONE_A
500 YR FLOOD: ZONE_B
ZONE_C
NELSON RD
KELLY GULCH RD
YORK RD
ZONE_A
ZONE_A
KINGSBURY RD
JIMTOWN RD
WARD RD
0 1.25 2.5 5 7.5 10
Miles
Created by Lewis and Clark County
Community Development and Planning
Data: LC County GIS data
10.2011

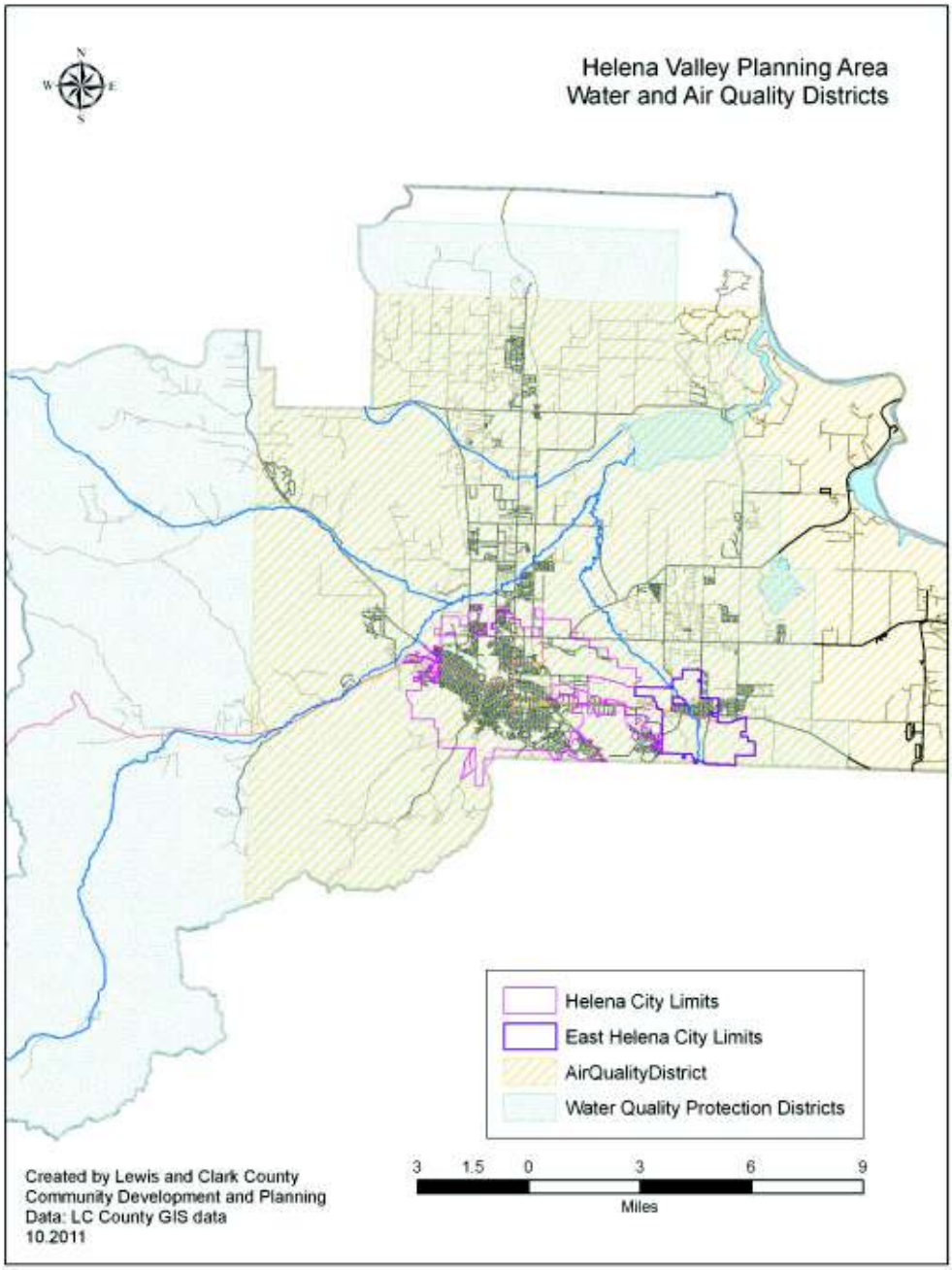

Canyon Ferry - York Planning Area
Land Uses
N
W
E
S
BEAVER CREEK RD
AMERICAN BAR RD
NELSON RD
FAVORITE GULCH RD
KELLY GULCH RD
HUOTARI LN
YORK RD
JIMTOWN RD
WARD RD
CANYON FER
E SHORE DR
W SHORE DR
Roads
Paved
Unpaved
Planning_Area
LanduseZones
Forest and woodland mostly grazed
Irrigated Land
Subhumid grassland and semiarid grazing land
York
Streams
Created by Lewis and Clark County
Community Development and Planning
Data: LC County GIS data
10.2011
0 1.25 2.5 5 7.5
Miles

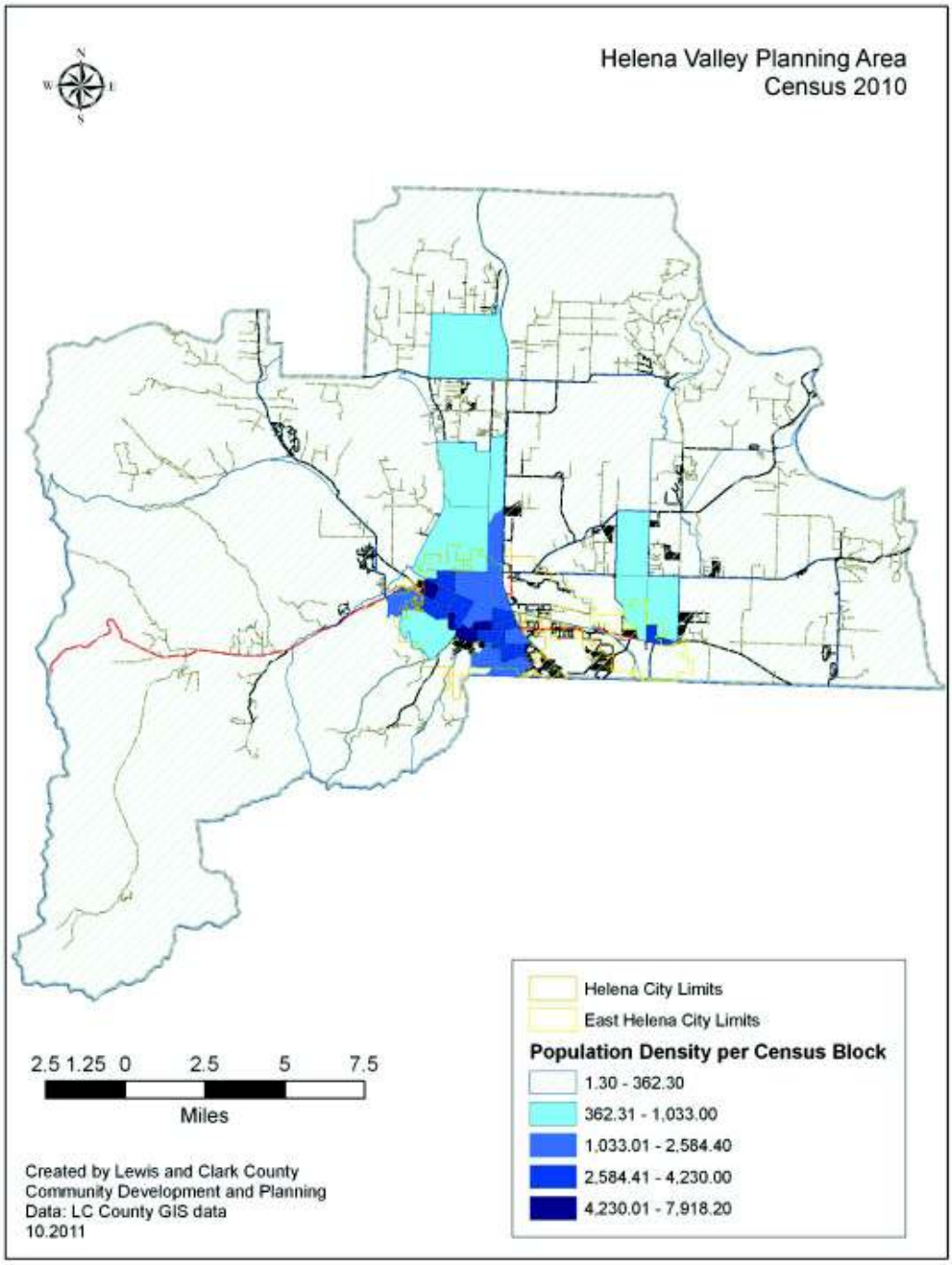

Canyon Ferry - York Planning Area
Riparian Areas
N
W
E
S
Missouri River
Beaver Creek
Trout Creek
York
Missouri River
Riparian Areas
Streams
Paved
Unpaved
Created by Lewis and Clark County
Community Development and Planning
Data: LC County GIS data
10.2011
0 1 2 4 6 8
Miles

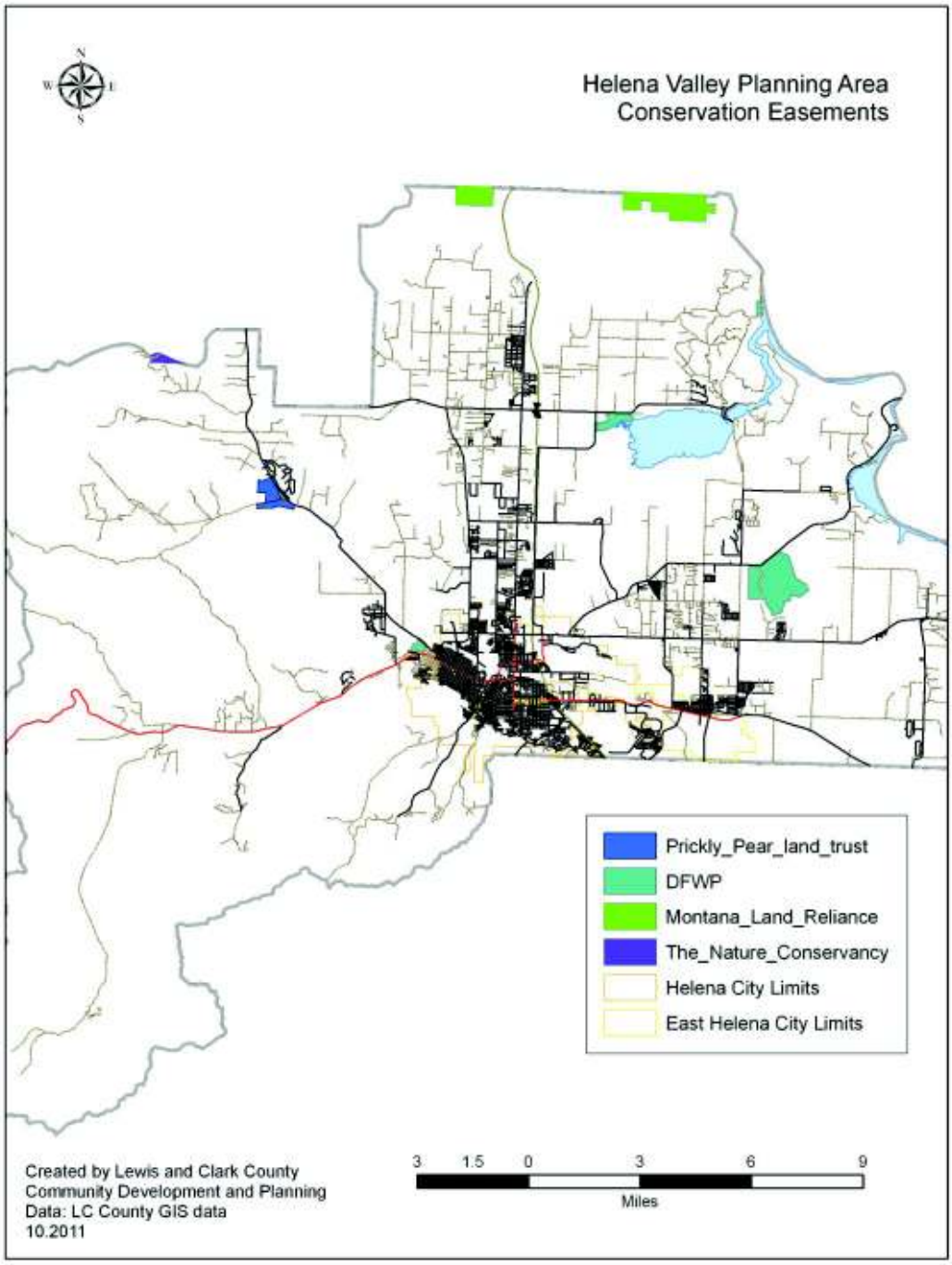

Canyon Ferry - York Planning Area
Roads including forest service roads.
N
W
E
S
BEAVER CK.- INDIAN CK
Beaver Creek
Missouri River
RT 4127
Trout Creek
MAGPIE
KELLY GULCH RD
YORK ROAD
York
WARD ROAD
Missouri River
WOODRIDGE TRAIL
Forest Roads
Paved
Unpaved
Created by Lewis and Clark County
Community Development and Planning
Data: LC County GIS data
10.2011
0 1 2 4 6 8
Miles

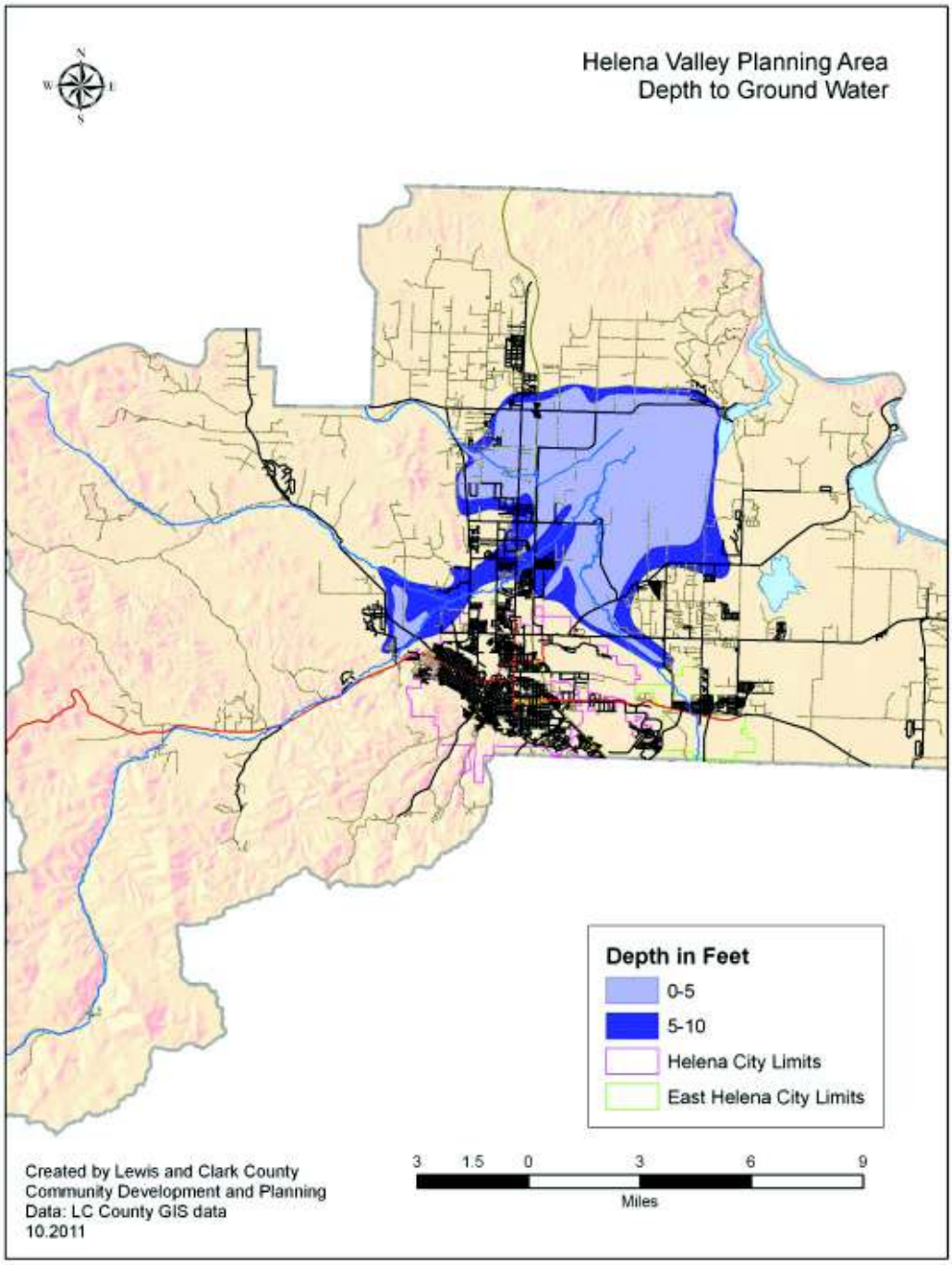
APPENDIX F

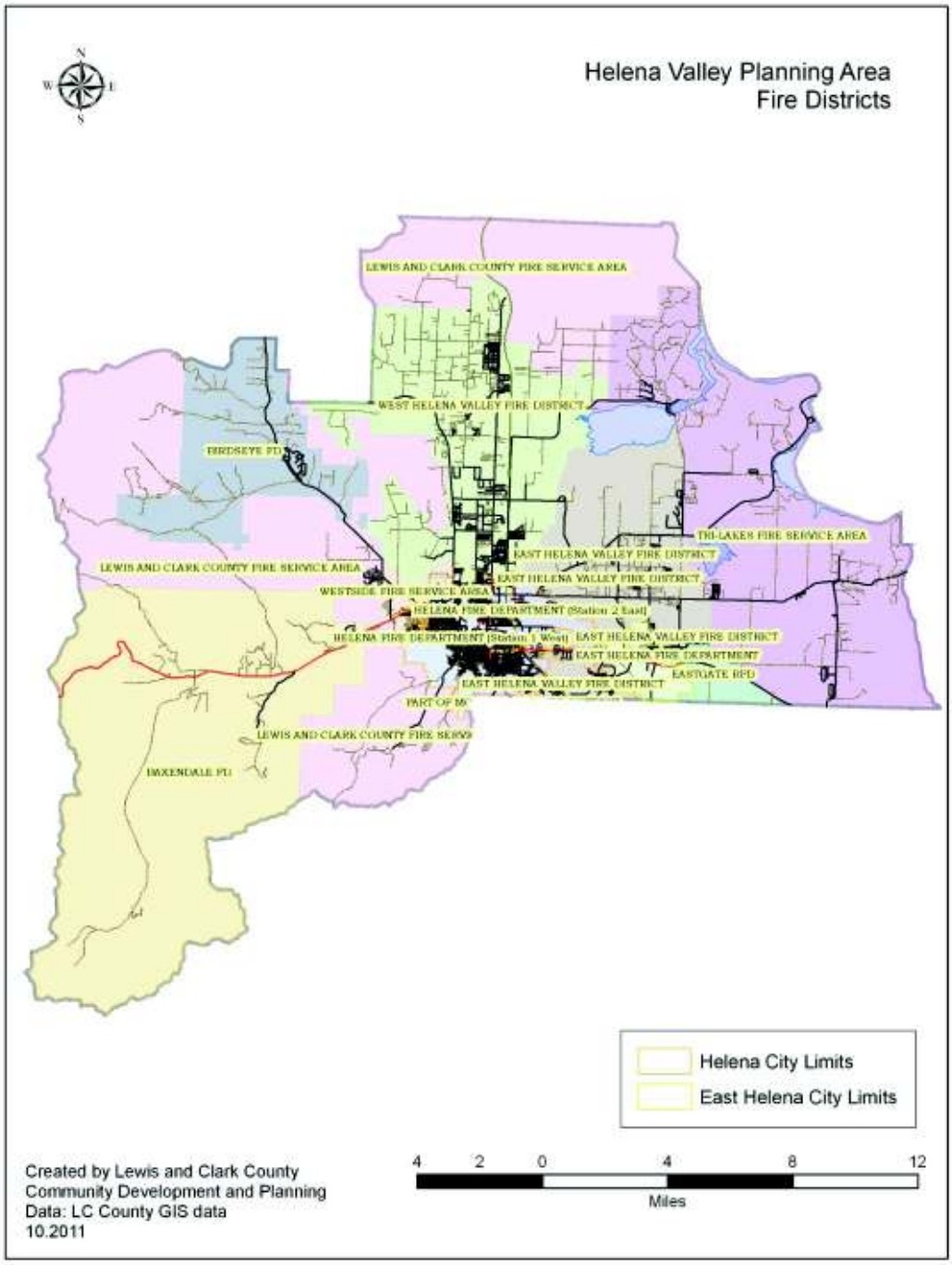
HELENA VALLEY PLANNING AREA MAPS

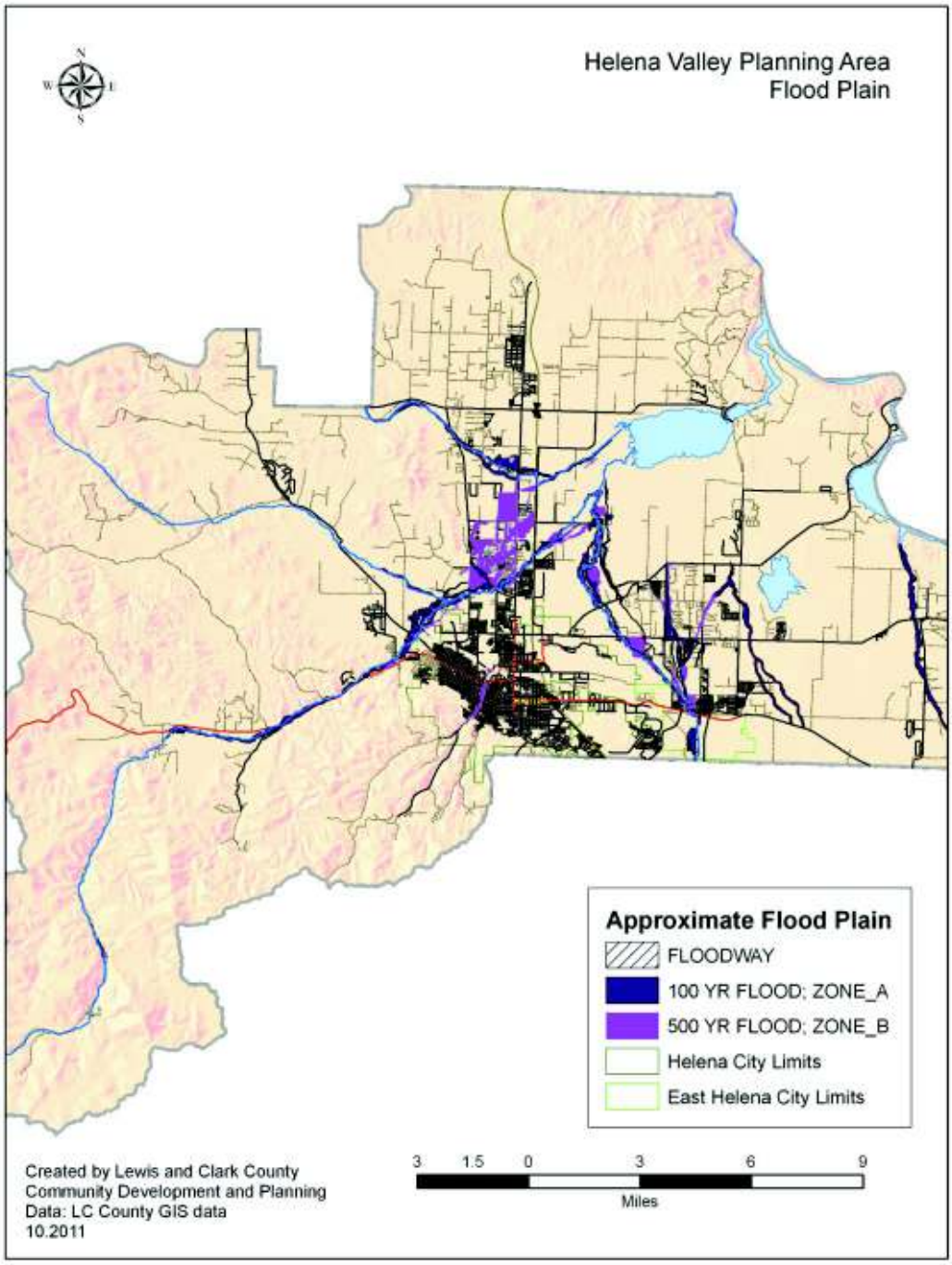


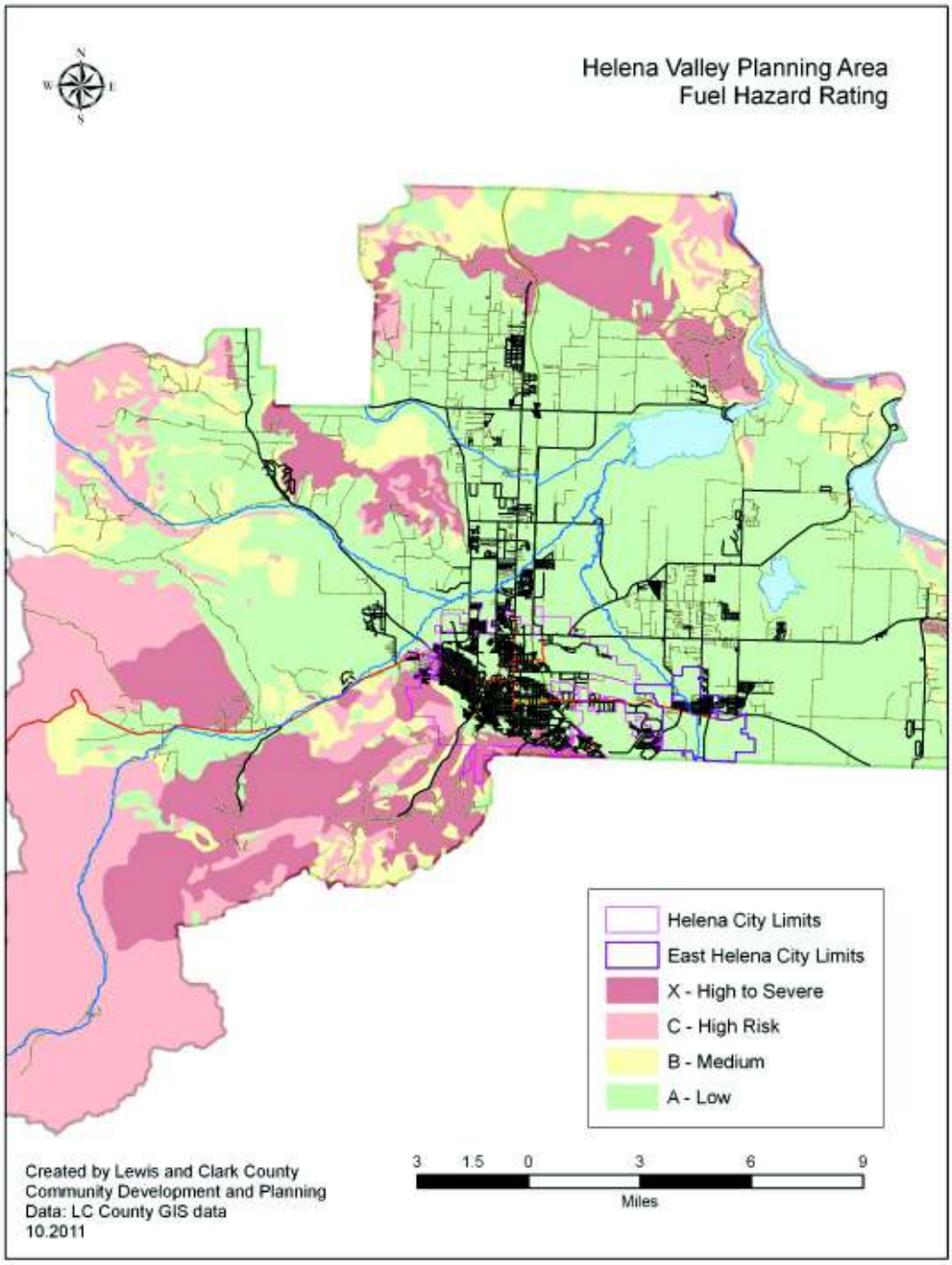

Helena Valley Planning Area
Census 2010
Helena City Limits
East Helena City Limits
Population Density per Census Block
1.30 - 362.30
362.31 - 1,033.00
1,033.01 - 2,584.40
2,584.41 - 4,230.00
4,230.01 - 7,918.20
2.5 1.25 0 2.5 5 7.5
Miles
Created by Lewis and Clark County
Community Development and Planning
Data: LC County GIS data
10.2011

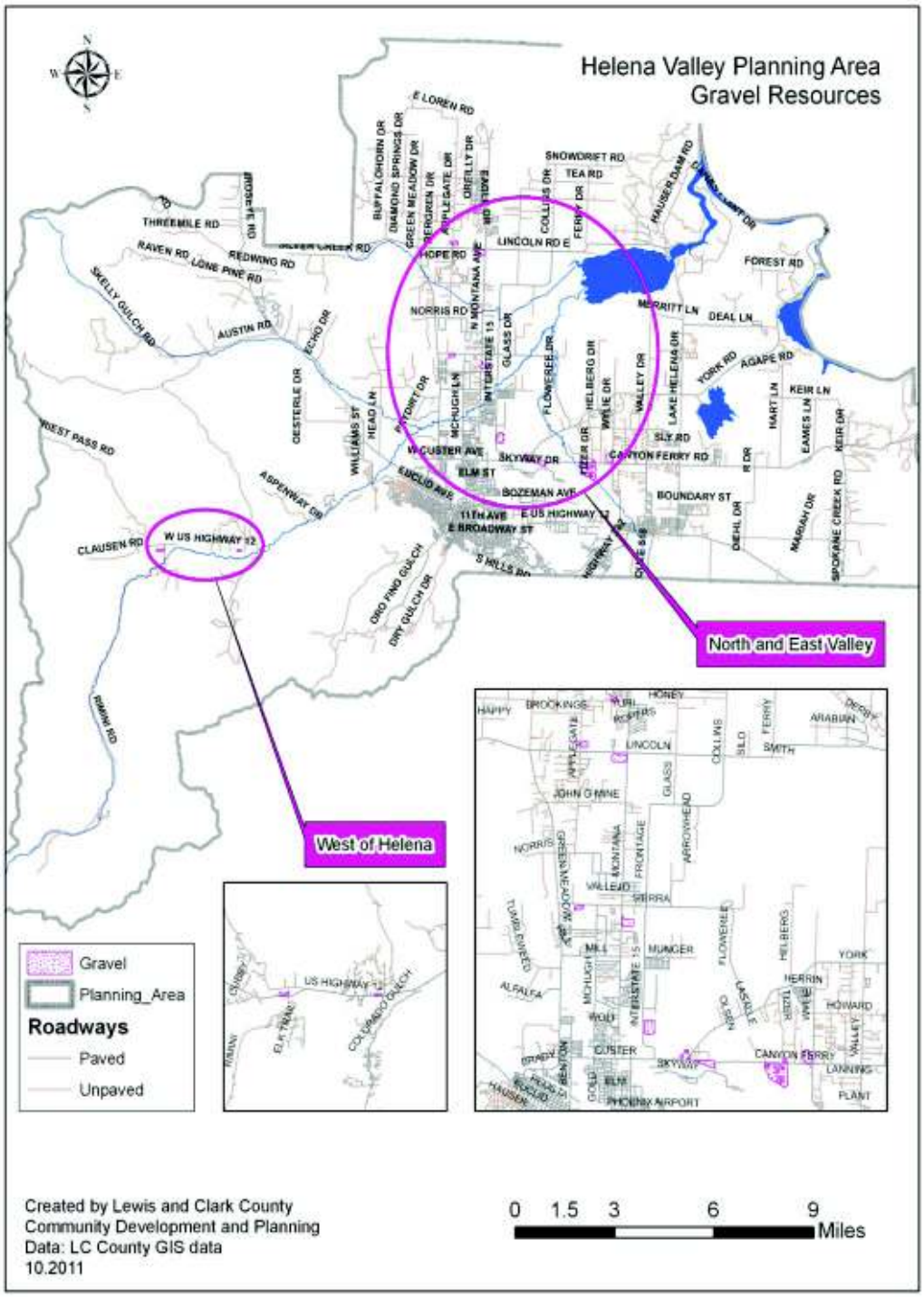

Helena Valley Planning Area
Conservation Easements
Prickly_Pear_land_trust
DFWP
Montana_Land_Reliance
The_Nature_Conservancy
Helena City Limits
East Helena City Limits
Created by Lewis and Clark County
Community Development and Planning
Data: LC County GIS data
10.2011
3 1.5 0 3 6 9
Miles

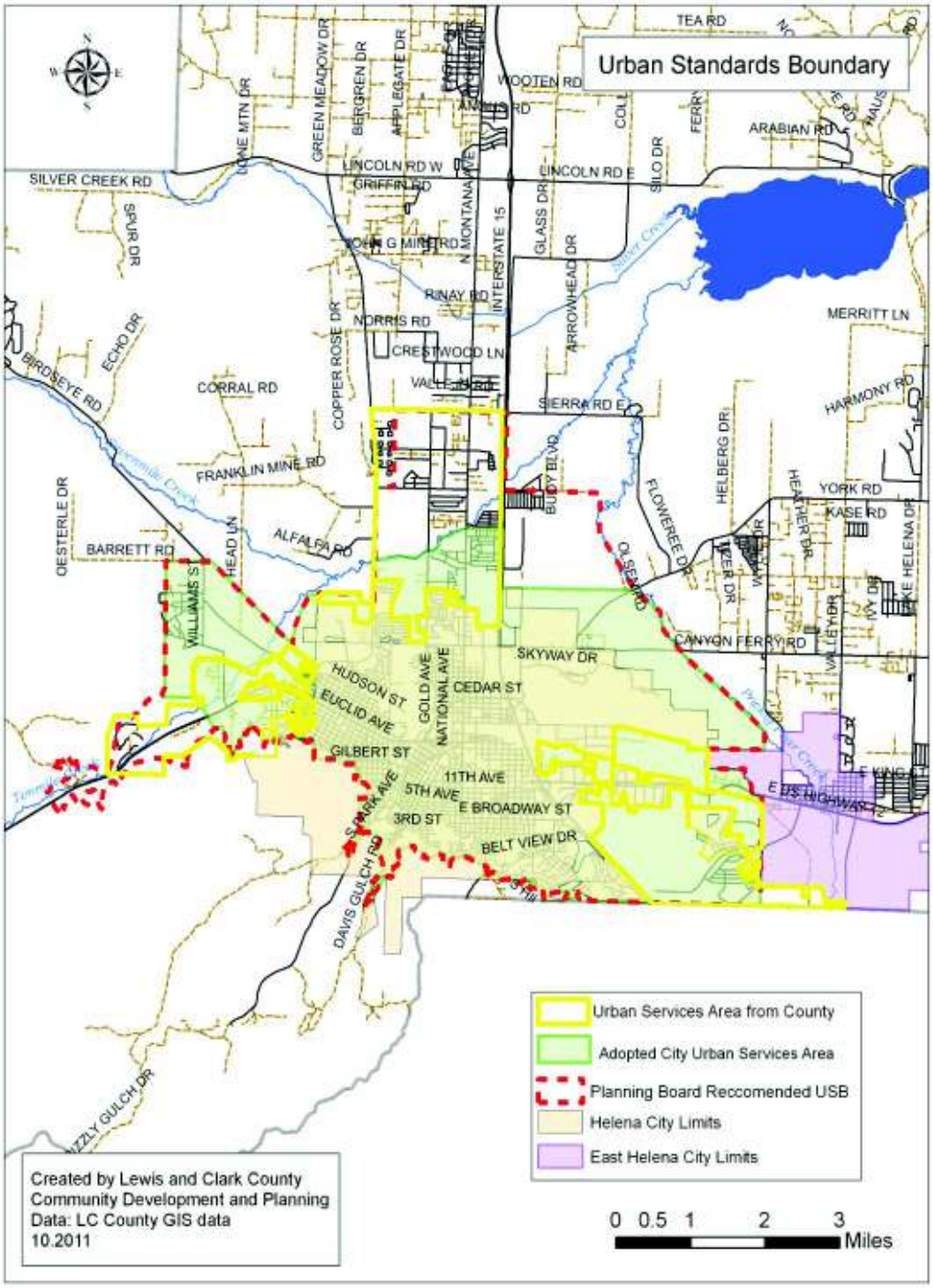

Helena Valley Planning Area
Depth to Ground Water
Depth in Feet
0-5
5-10
Helena City Limits
East Helena City Limits
3 1.5 0 3 6 9
Miles
Created by Lewis and Clark County
Community Development and Planning
Data: LC County GIS data
10.2011

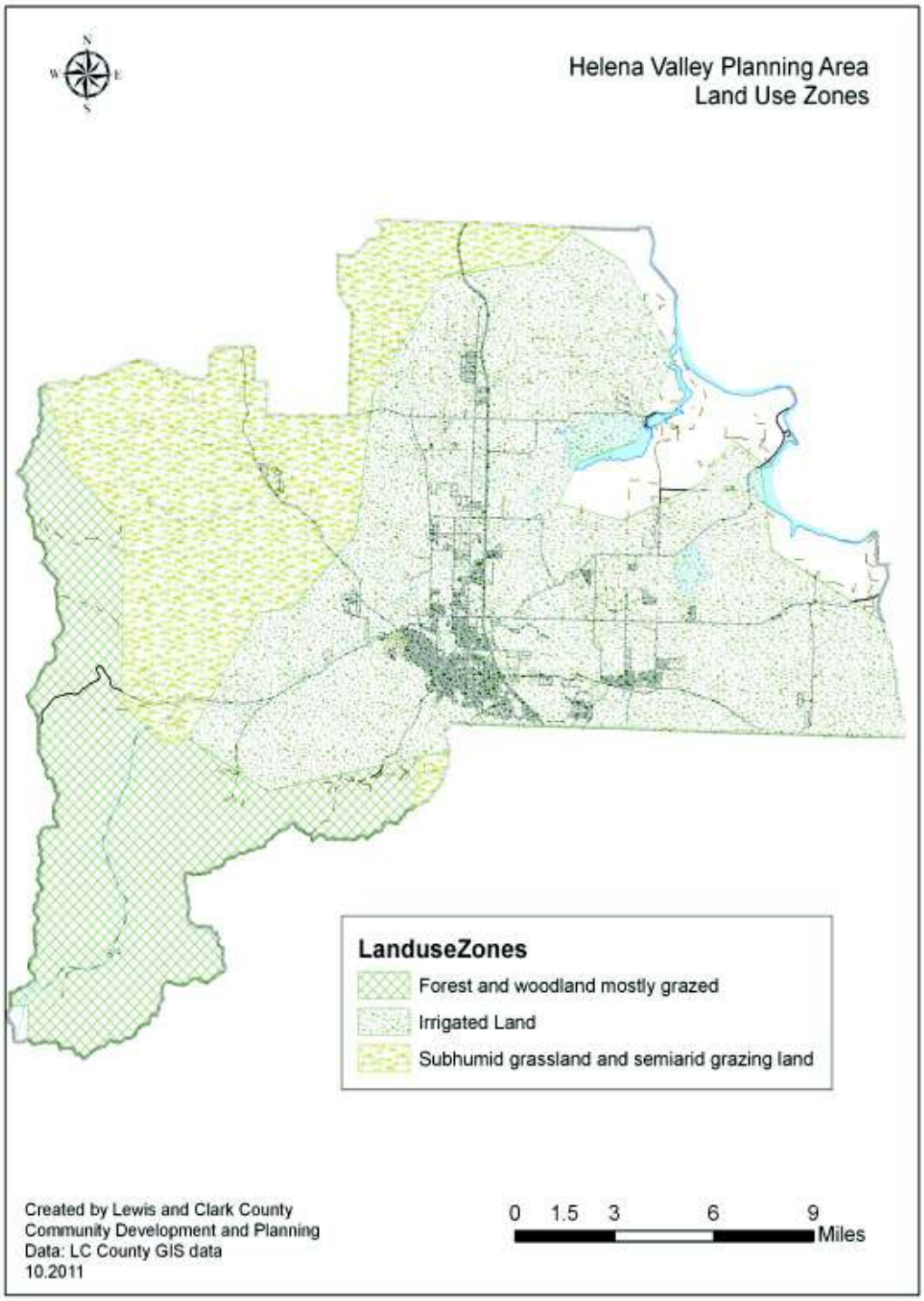

Helena Valley Planning Area
Fire Districts
N
W
E
S
LEWIS AND CLARK COUNTY FIRE SERVICE AREA
WEST HELENA VALLEY FIRE DISTRICT
BIRDSEYE FD
TRI-LAKES FIRE SERVICE AREA
EAST HELENA VALLEY FIRE DISTRICT
LEWIS AND CLARK COUNTY FIRE SERVICE AREA
EAST HELENA VALLEY FIRE DISTRICT
WESTSIDE FIRE SERVICE AREA
HELENA FIRE DEPARTMENT (Station 2 East)
HELENA FIRE DEPARTMENT (Station 1 West)
EAST HELENA VALLEY FIRE DISTRICT
EAST HELENA FIRE DEPARTMENT
EASTGATE RFD
EAST HELENA VALLEY FIRE DISTRICT
PART OF M
LEWIS AND CLARK COUNTY FIRE SERVI
IMMENDALE FD
Helena City Limits
East Helena City Limits
Created by Lewis and Clark County
Community Development and Planning
Data: LC County GIS data
10.2011
4 2 0 4 8 12
Miles

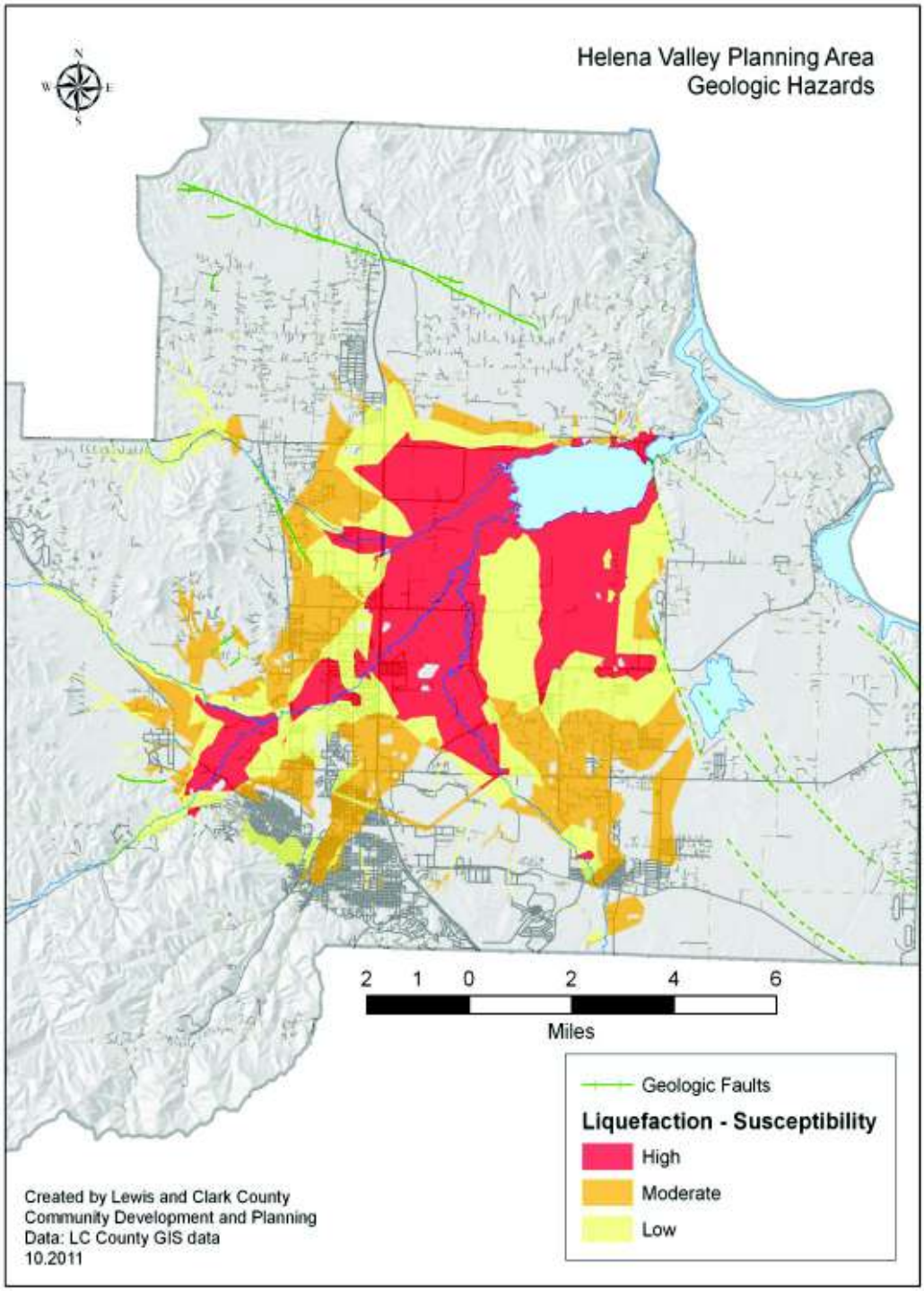

Helena Valley Planning Area
Flood Plain
Approximate Flood Plain
FLOODWAY
100 YR FLOOD; ZONE_A
500 YR FLOOD; ZONE_B
Helena City Limits
East Helena City Limits
Created by Lewis and Clark County
Community Development and Planning
Data: LC County GIS data
10.2011
3 1.5 0 3 6 9
Miles

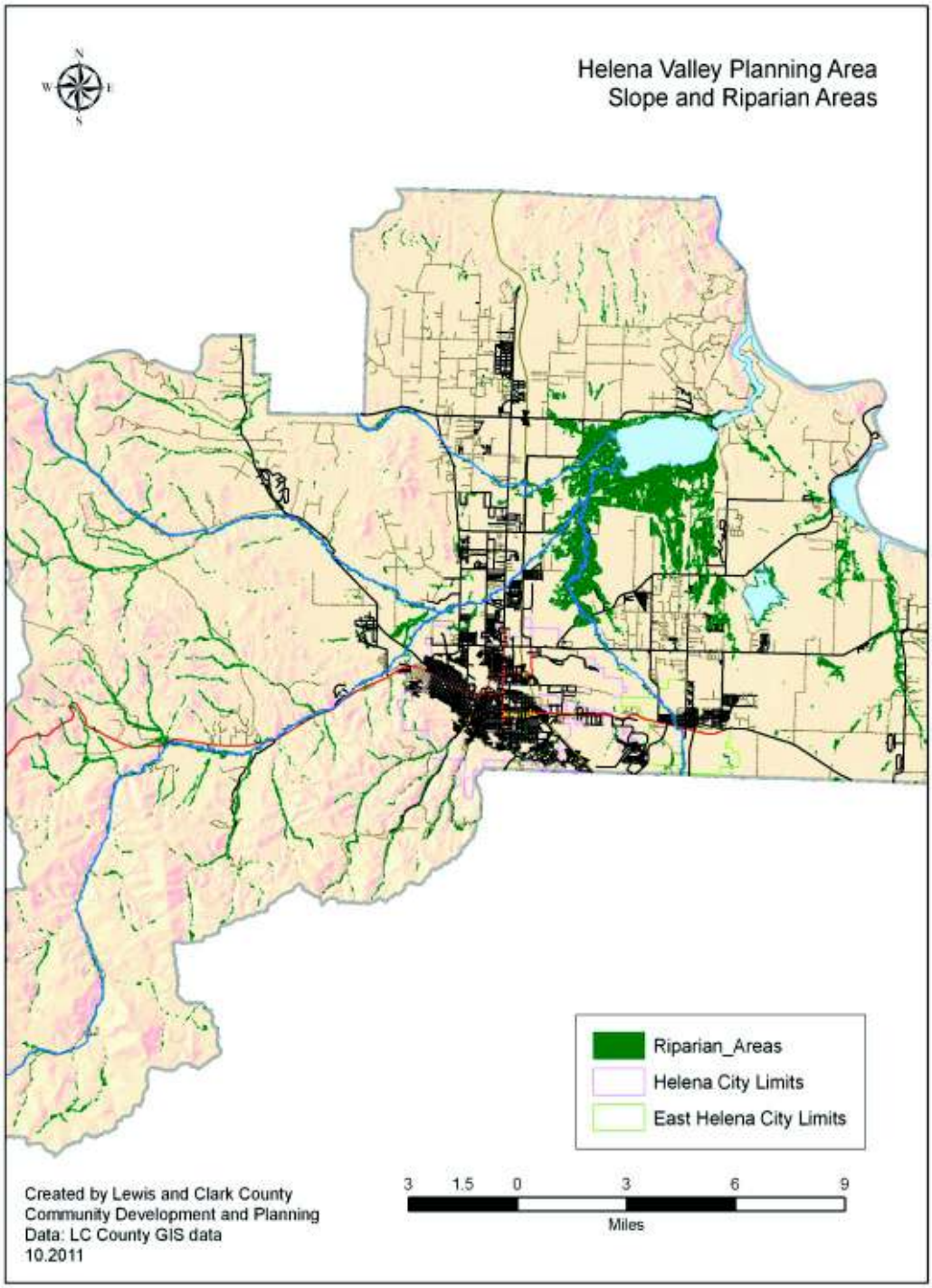

Helena Valley Planning Area
Fuel Hazard Rating
Helena City Limits
East Helena City Limits
X - High to Severe
C - High Risk
B - Medium
A - Low
Created by Lewis and Clark County
Community Development and Planning
Data: LC County GIS data
10.2011
3 1.5 0 3 6 9
Miles

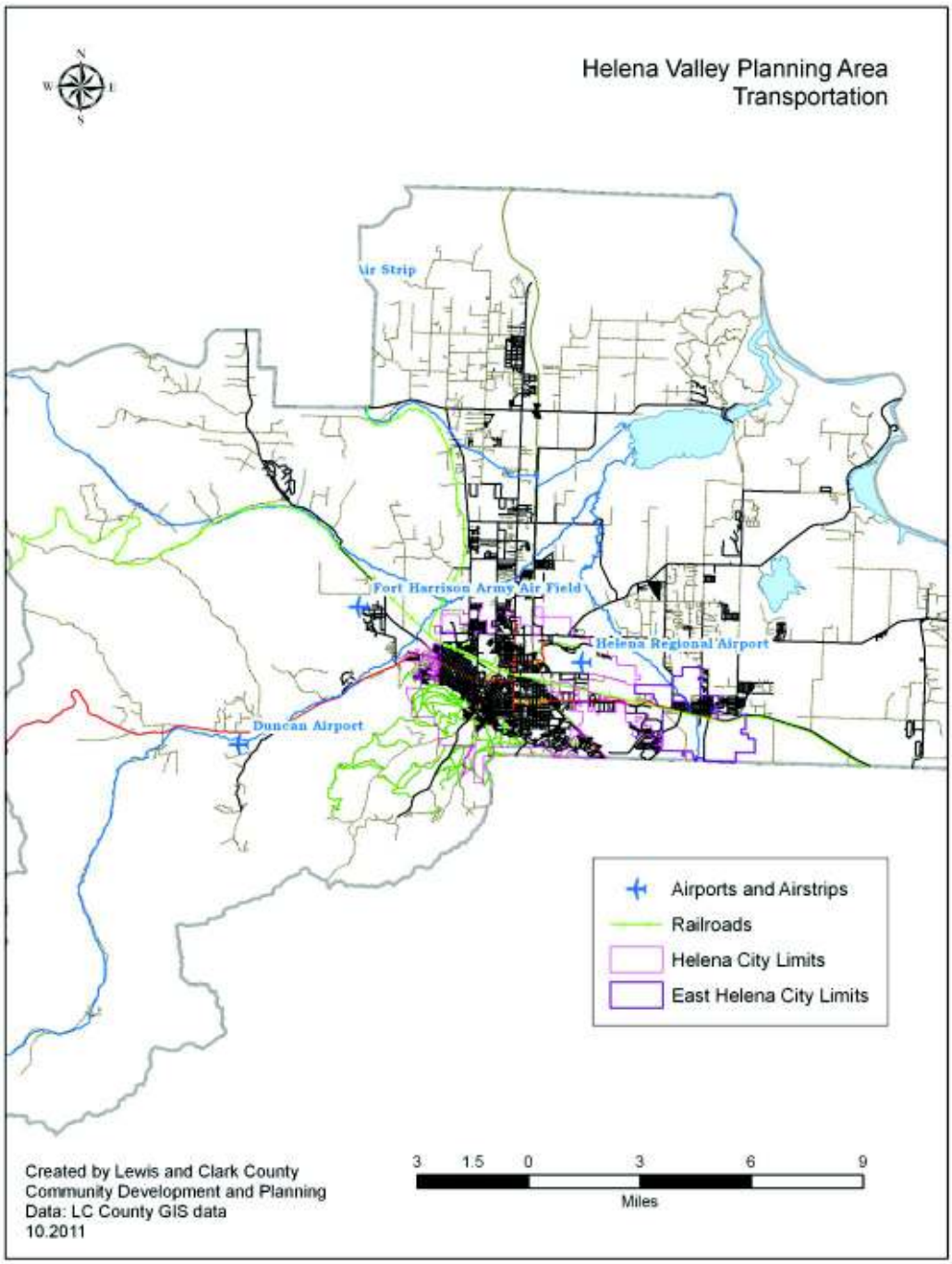

Helena Valley Planning Area
Gravel Resources
North and East Valley
West of Helena
Gravel
Planning_Area
Roadways
Paved
Unpaved
Created by Lewis and Clark County
Community Development and Planning
Data: LC County GIS data
10.2011
0 1.5 3 6 9
Miles

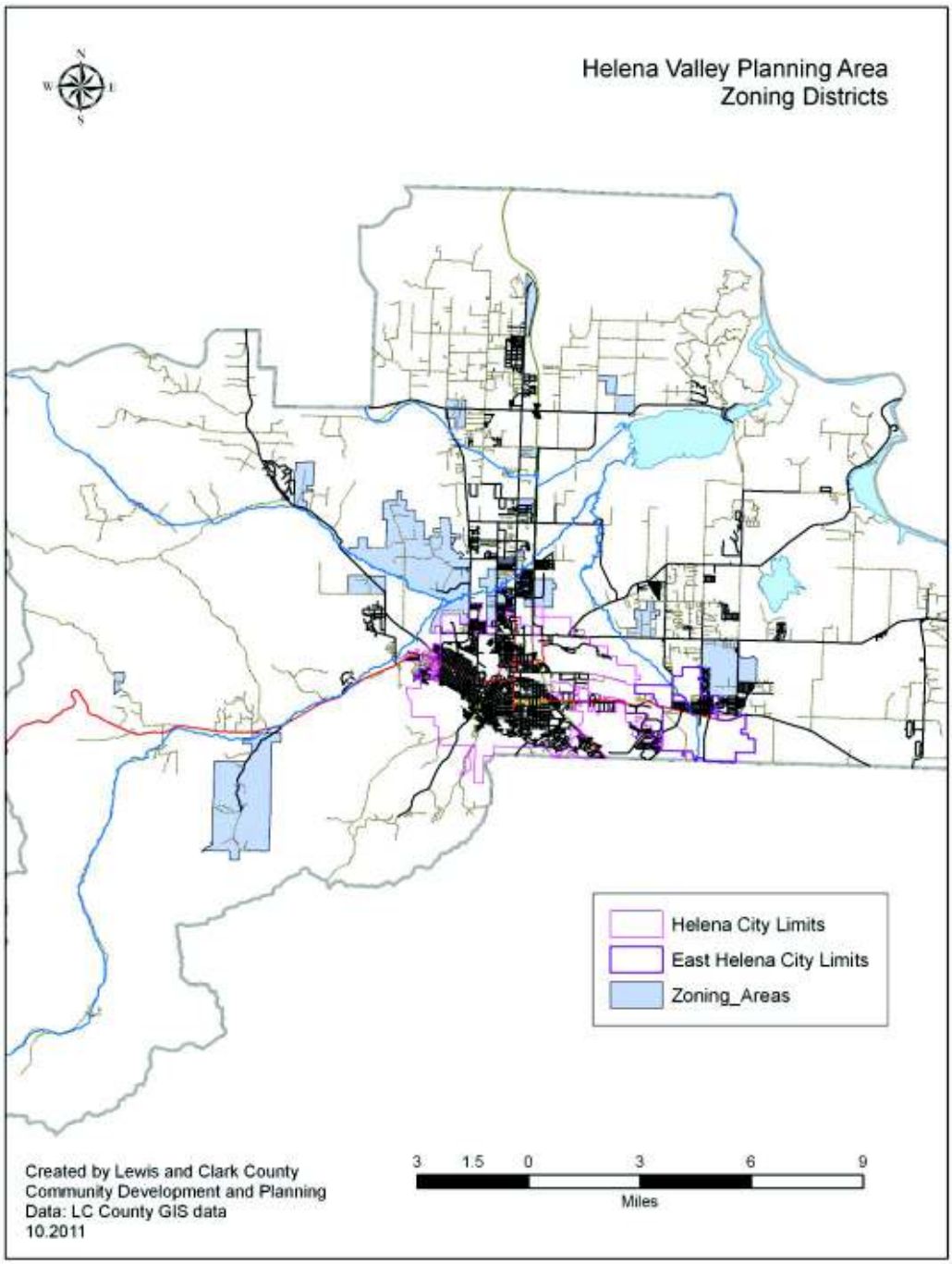

Urban Standards Boundary
TEA RD
WOOTEN RD
ARABIAN RD
LONE MTN DR
GREEN MEADOW DR
BERGREN DR
APPLEGATE DR
LINCOLN RD W
LINCOLN RD E
SILO DR
SILVER CREEK RD
GRIFFIN RD
SPUR DR
JOHN G MINER RD
N MONTANA AVE
INTERSTATE 15
GLASS DR
ARROWHEAD DR
RUNAY RD
NORRIS RD
MERRITT LN
ECHO DR
CRESTWOOD LN
BIRDSEYE RD
CORRAL RD
COPPER ROSE DR
SIERRA RD E
HARMONY RD
FRANKLIN MINE RD
BUDDY BLVD
HELBERG DR
FLOWEREE DR
YORK RD
KASE RD
OESTERLE DR
BARRETT RD
HEAD LN
ALFALFA RD
OLSEMAN
WILLIAMS ST
CANYON FERRY RD
SKYWAY DR
HUDSON ST
EUCLID AVE
GOLD AVE
NATIONAL AVE
CEDAR ST
GILBERT ST
11TH AVE
5TH AVE
E BROADWAY ST
3RD ST
BELT VIEW DR
DAVIS GULCH RD
Urban Services Area from County
Adopted City Urban Services Area
Planning Board Reccomended USB
Helena City Limits
East Helena City Limits
Created by Lewis and Clark County
Community Development and Planning
Data: LC County GIS data
10.2011
0 0.5 1 2 3
Miles


Helena Valley Planning Area
Land Use Zones
LanduseZones
Forest and woodland mostly grazed
Irrigated Land
Subhumid grassland and semiarid grazing land
Created by Lewis and Clark County
Community Development and Planning
Data: LC County GIS data
10.2011
0 1.5 3 6 9
Miles


Helena Valley Planning Area
Geologic Hazards
N
W
E
S
2 1 0 2 4 6
Miles
Geologic Faults
Liquefaction - Susceptibility
High
Moderate
Low
Created by Lewis and Clark County
Community Development and Planning
Data: LC County GIS data
10.2011

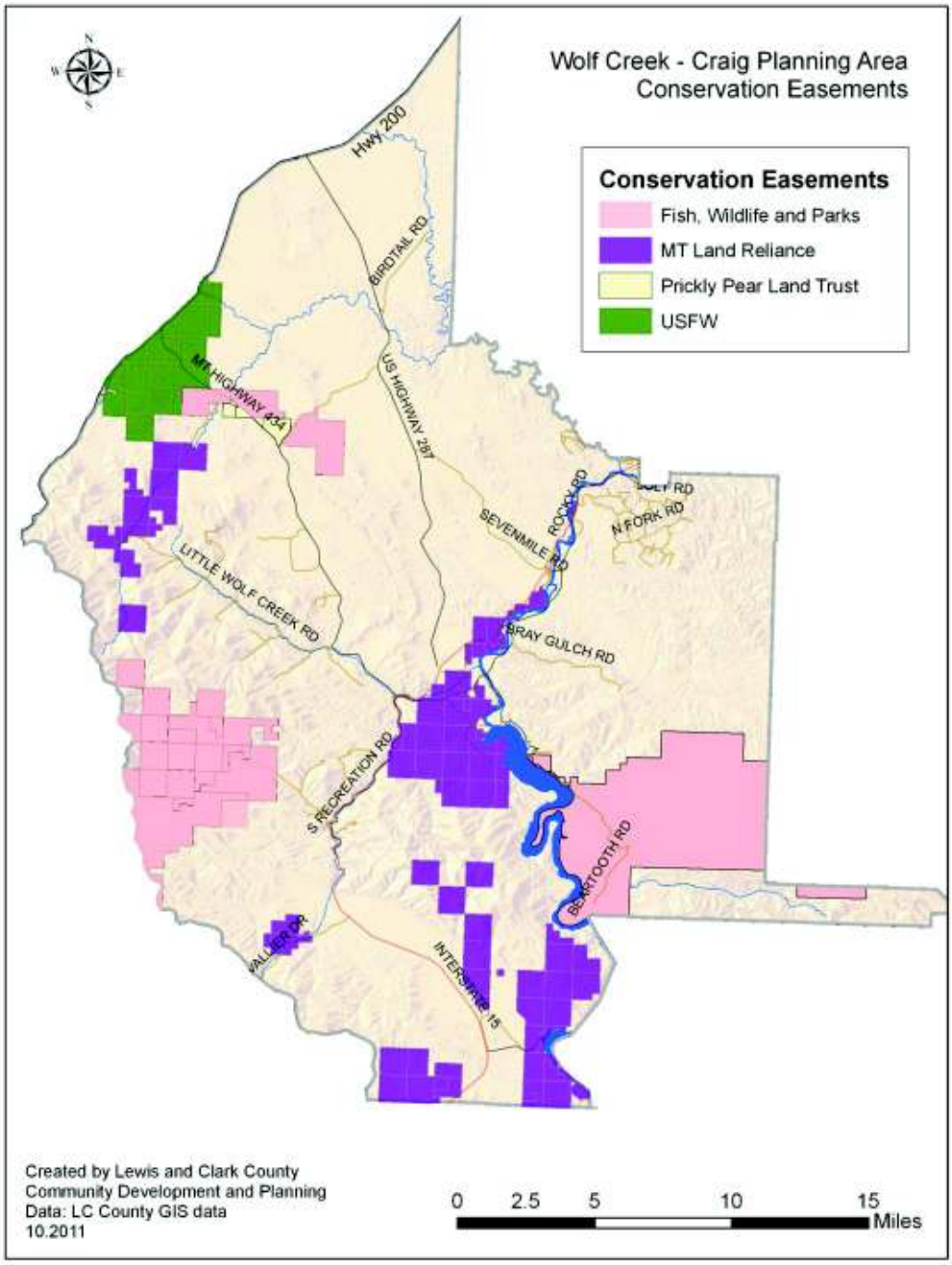

Helena Valley Planning Area
Slope and Riparian Areas
Riparian_Areas
Helena City Limits
East Helena City Limits
Created by Lewis and Clark County
Community Development and Planning
Data: LC County GIS data
10.2011
3 1.5 0 3 6 9
Miles

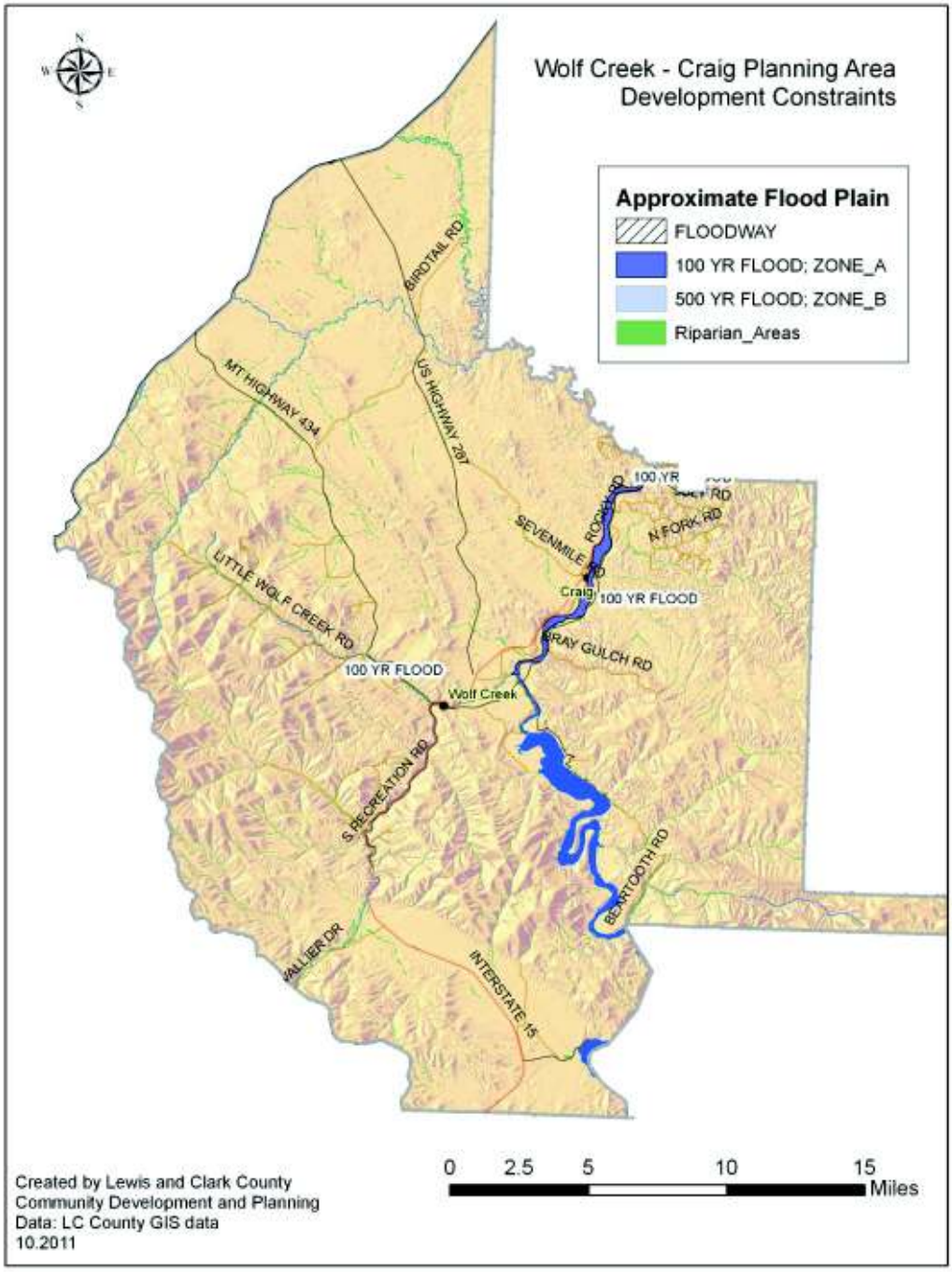

Helena Valley Planning Area
Transportation
Air Strip
Fort Harrison Army Air Field
Helena Regional Airport
Duncan Airport
Airports and Airstrips
Railroads
Helena City Limits
East Helena City Limits
Created by Lewis and Clark County
Community Development and Planning
Data: LC County GIS data
10.2011
3 1.5 0 3 6 9
Miles


Helena Valley Planning Area
Zoning Districts
Helena City Limits
East Helena City Limits
Zoning_Areas
Created by Lewis and Clark County
Community Development and Planning
Data: LC County GIS data
10.2011
3 1.5 0 3 6 9
Miles

APPENDIX G

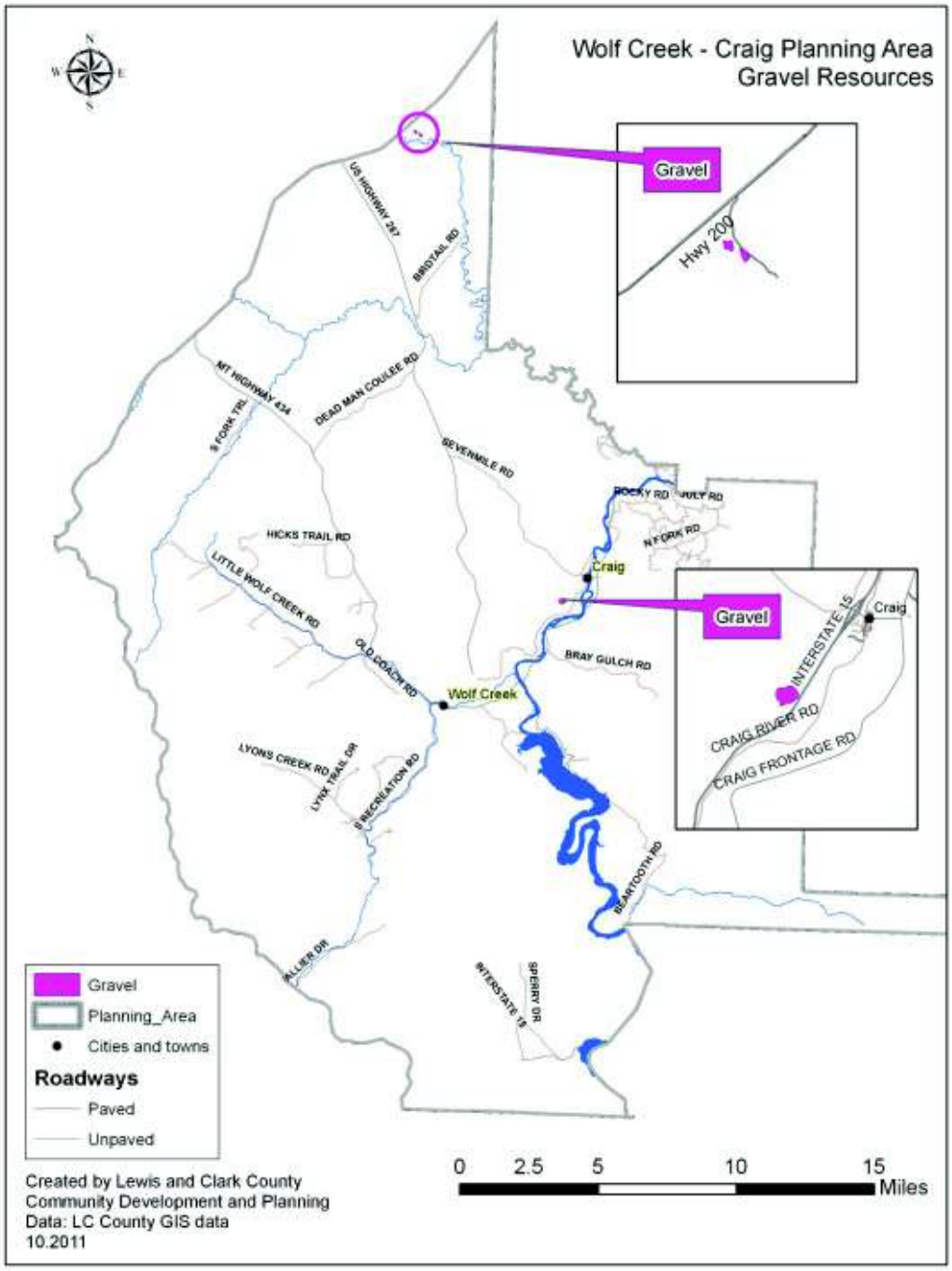
WOLF CREEK/CRAIG PLANNING AREA MAPS

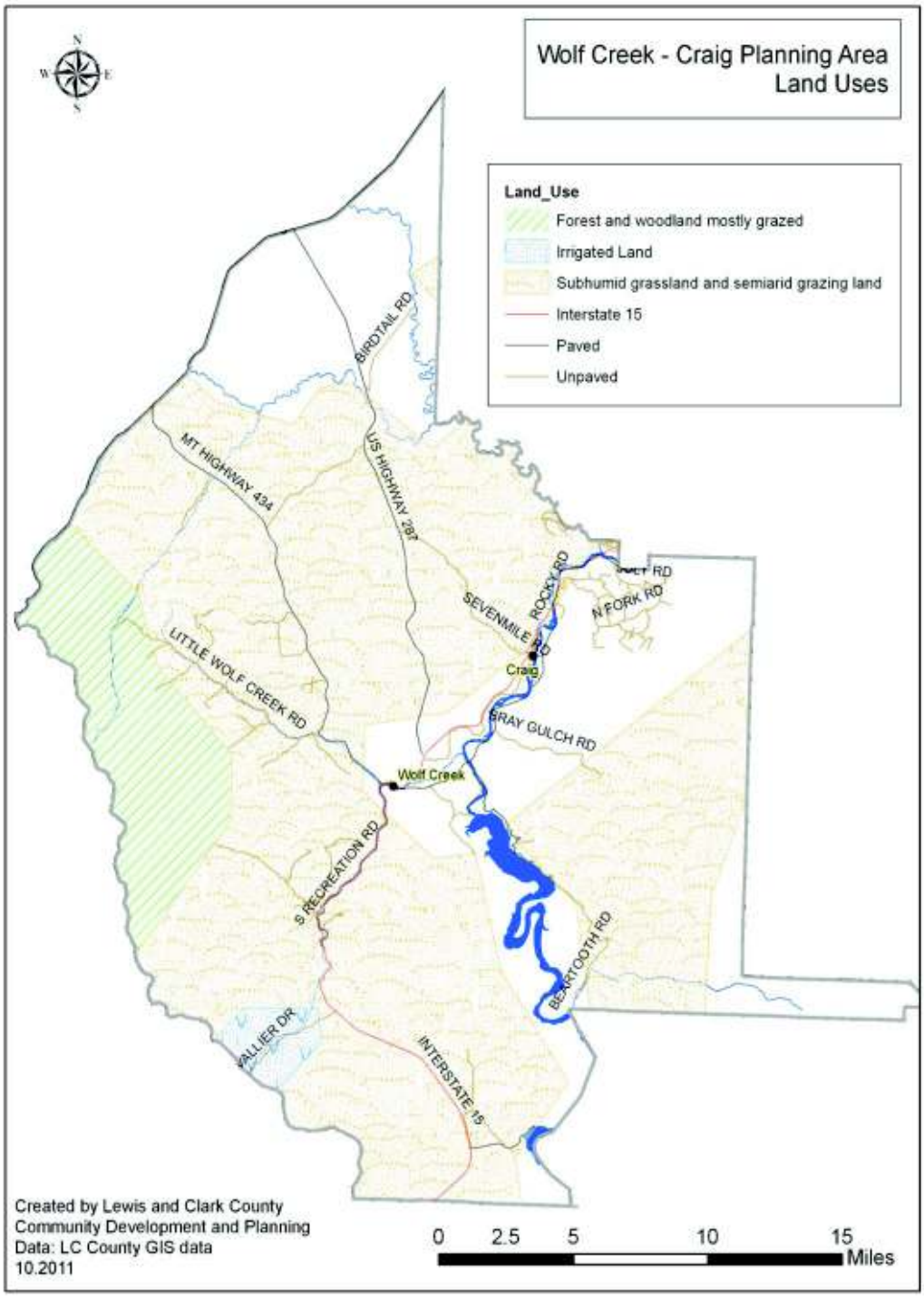


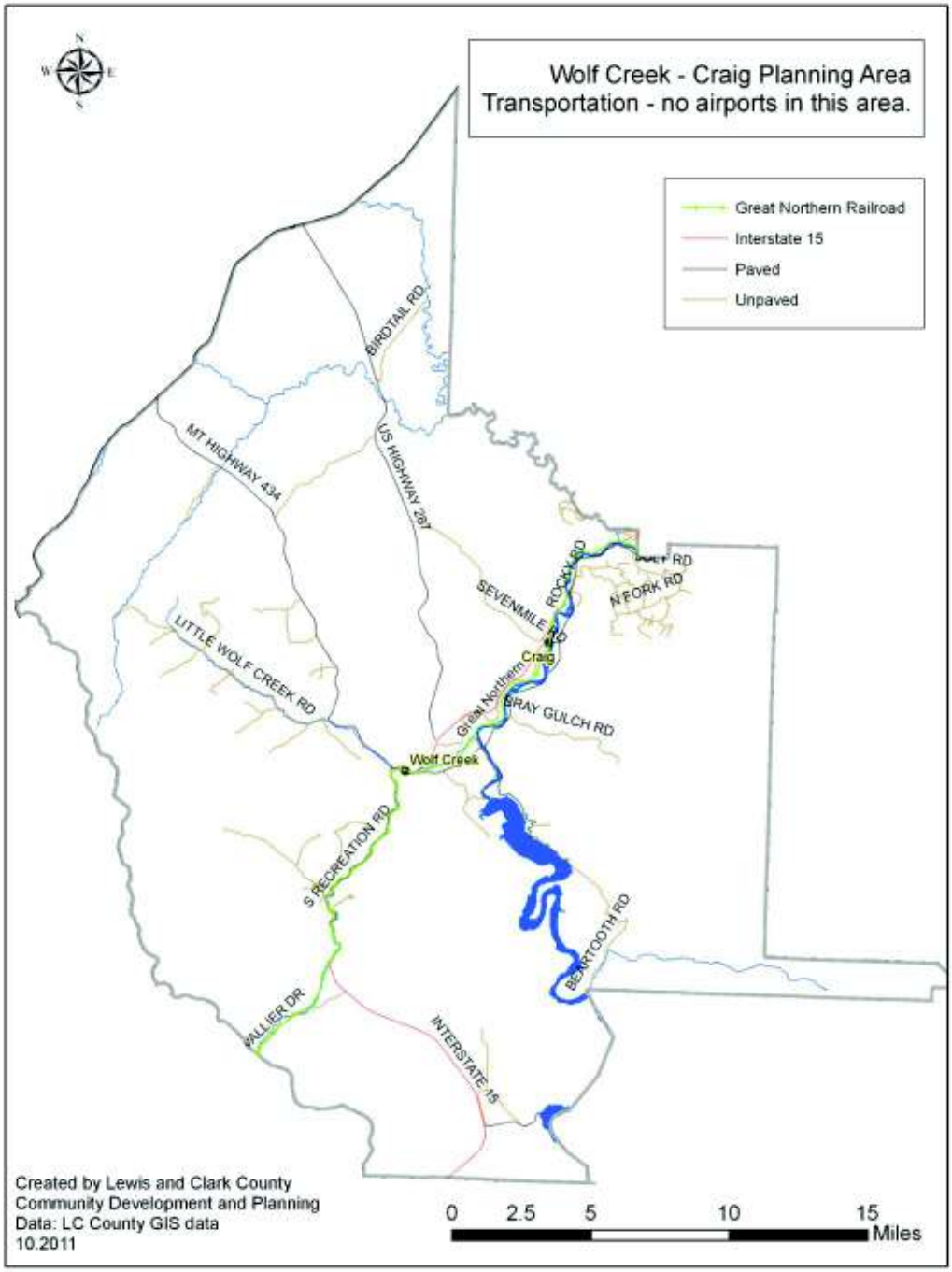

Wolf Creek - Craig Planning Area
Development Constraints
Approximate Flood Plain
FLOODWAY
100 YR FLOOD; ZONE_A
500 YR FLOOD; ZONE_B
Riparian_Areas
BIRDTAIL RD
US HIGHWAY 287
MT HIGHWAY 434
SEVENMILE RD
N FORK RD
100 YR
Craig
100 YR FLOOD
LITTLE WOLF CREEK RD
GRAY GULCH RD
100 YR FLOOD
Wolf Creek
S RECREATION RD
BEARTOOTH RD
INTERSTATE 15
0 2.5 5 10 15
Miles
Created by Lewis and Clark County
Community Development and Planning
Data: LC County GIS data
10.2011

Wolf Creek - Craig Planning Area
Fire Districts
BIRDTAIL RD
MT HIGHWAY 434
US HIGHWAY 287
SEVENMILE RD
DEARBORN FIRE SERVICE AREA
WOLF CREEK - CRAIG FIRE SERVICE AREA
LITTLE WOLF CREEK RD
Craig
BRAY GULCH RD
Wolf Creek
S RECREATION RD
BEARTOOTH RD
LEWIS AND CLARK COUNTY FIRE SERVICE AREA
VALLIER DR
INTERSTATE 15
0 2.5 5 10 15
Miles
Created by Lewis and Clark County
Community Development and Planning
Data: LC County GIS data
10.2011

‘


Wolf Creek - Craig Planning Area
Gravel Resources
Gravel
Hwy 200
Gravel
Craig
INTERSTATE 15
CRAIG RIVER RD
CRAIG FRONTAGE RD
US HIGHWAY 287
BRIDTAIL RD
MT HIGHWAY 434
DEAD MAN COULEE RD
S FORK TRL
SEVENMILE RD
ROCKY RD
N FORK RD
HICKS TRAIL RD
LITTLE WOLF CREEK RD
OLD COACH RD
Craig
BRAY GULCH RD
Wolf Creek
LYONS CREEK RD
LYNX TRAIL DR
S RECREATION RD
BEARTOOTH RD
ALLIER DR
INTERSTATE 15
SPERRY DR
Gravel
Planning_Area
Cities and towns
Roadways
Paved
Unpaved
0 2.5 5 10 15
Miles
Created by Lewis and Clark County
Community Development and Planning
Data: LC County GIS data
10.2011


Wolf Creek - Craig Planning Area
Land Uses
Land_Use
Forest and woodland mostly grazed
Irrigated Land
Subhumid grassland and semiarid grazing land
Interstate 15
Paved
Unpaved
BIRDTAIL RD
MT HIGHWAY 434
US HIGHWAY 287
ROCKY RD
N FORK RD
SEVENMILE RD
LITTLE WOLF CREEK RD
Craig
GRAY GULCH RD
Wolf Creek
S RECREATION RD
BEARTOOTH RD
VALLIER DR
INTERSTATE 15
Created by Lewis and Clark County
Community Development and Planning
Data: LC County GIS data
10.2011
0 2.5 5 10 15
Miles


Wolf Creek - Craig Planning Area
Transportation - no airports in this area.
Great Northern Railroad
Interstate 15
Paved
Unpaved
BIRDTAIL RD
MT HIGHWAY 434
US HIGHWAY 287
ROCKY RD
N FORK RD
SEVENMILE RD
LITTLE WOLF CREEK RD
Craig
Great Northern
GRAY GULCH RD
Wolf Creek
S RECREATION RD
BEARTOOTH RD
VALLIER DR
INTERSTATE 15
Created by Lewis and Clark County
Community Development and Planning
Data: LC County GIS data
10.2011
0 2.5 5 10 15
Miles