Helena Open Lands Management Plan

Final

Adopted February, 23rd 2004

City of Helena

ERG
Ecosystem Research Group

LandARC

HELENA OPEN LANDS MANAGEMENT PLAN

FINAL

Adopted February 23, 2004

Prepared for

The City of Helena, Montana
and
Helena Open Lands Management Advisory Committee
Helena, Montana

by

Ecosystem Research Group
Missoula, Montana

and

LandArc
Helena, Montana

EXECUTIVE SUMMARY

Helena's Open Lands (HOL) are a great asset to the city. They hold precious scenic, cultural, recreation, and natural values. The lands provide a dramatic scenic backdrop to the urban environment and put wildlands directly adjacent to urban environments. Such landuse juxtapositions pose a unique set of management issues. This Helena Open Lands Management Plan (Plan) addresses these issues, provides solutions, and creates a vision for the future of HOL.

This Plan was created by the Helena Open Lands Management Advisory Committee (HOLMAC) through public process, issue identification, and thorough consideration of goals and objectives. Priority issue areas were ranked by importance through public process analysis. Goals were formed as a result of issues, and objectives were subsequently formed to address goals. The ideas spawning from this process have been organized into a multi-faceted management approach and include subject areas of: forest management, wildfire mitigation, noxious weed control, protection of native plant species, recreation plan, wildfire protection, boundary identification and mapping, interpretive opportunities, and urban interface.

Extensive field and pre-existing data have been compiled and presented in a series of maps relating to each of the subject areas mentioned above. Additional, detailed maps of each of the parcel areas have been prepared and presented in this document. These maps will serve as invaluable organization and assessment tools throughout Plan implementation.

Critical thinking has been given to the orchestration of goals and objectives within and across each of the subject areas. Project implementation has been organized by a combination of urgency and funding availability. Six top tasks for the immediate future have been identified:

- Take immediate action on weed control
- Signage/Interpretive projects
- Establish a funding subcommittee
- Fire mitigation
- Access/trails
- Purchase a wildlands fire truck.

The implementation of the plan is summarized by project cost and for a 15-year implementation schedule in the Section 12 of this plan.

While issues presented throughout the scoping phase of this planning project have been thoroughly addressed, there will undoubtedly be unforeseen and new challenges to face. Several provisions for further public process have been embedded into this planning document. Ultimately, it is the City Commission's responsibility for the assessment and recommendations for HOL management decisions. The mission statement for HOLMAC follows:

The mission of the Helena Open Lands Advisory Committee (HOLMAC) is to assist the Helena City Commission and staff in the oversight of the development and implementation of a management and land use plan for the City of Helena's open space system. HOLMAC will review, analyze, and recommend to the Helena City Commission and staff, management policies, procedures, goals and objectives for the open space system. The plan will create a framework to protect or enhance the natural environment, support management and maintenance practices that protect wildlife and natural habitat, enhance the forest resource, provide for fire mitigation, noxious weed control, erosion control, and native plant preservation. The plan will also allow for wise development of recreational uses that are compatible with the environment and each other, plus serve to enhance the enjoyment of Helena's open space system by Helena's citizens and visitors.

ACKNOWLEDGMENTS

Ecosystem Research Group wishes to thank all of the agencies and individuals who participated in the planning process for their help in the preparation of this Draft Open Lands Management Plan. The assistance of the Helena Open Space Advisory Committee (HOLMAC), Prickly Pear Land Trust, Montana Fish, Wildlife and Parks, City of Helena Fire Department, Lewis and Clark County, Kelsey Chapter of the Montana Native Plant Society, Montana Natural Heritage Program, Helena National Forest, City of Helena GIS Department and the citizens of Helena have provided a strong foundation to this Draft Plan. The continued participation of all groups assures that this Draft Plan reflects the values and priority projects important to the maintenance and enhancement of Helena's Open Lands.

Several individuals have provided key guidance and input through this planning process. Alice Stanley, as chair of the HOLMAC has contributed substantial editing and has excelled in providing forums for all interested groups and individuals to voice their opinions and contribute to this plan. Randy Lilje has provided immeasurable help in guiding priority projects to streamline this plan within the existing framework of the City's resources. Jim Cancroft provided thorough technical critique and input for the plan. Dennis McCahon has volunteered vast amounts of time to complete resource maps, provide historical information, and a sophisticated planning approach. Andy Baur has provided a seamless information link between this plan and the Draft South Hills Trail Plan and provided suggestions elemental to recreation planning. Gayle Joslin of the Montana, Fish Wildlife and parks mapped sensitive wildlife areas. Duane Harp has dedicated his time in show of goodwill on the part one of the biggest neighbors of Helena's Open Land, the Helena National Forest.

LIST OF ACRONYMS FOR THE HELENA OPEN LANDS MANAGEMENT PLAN

ACP	Agricultural Conservation Program
ADA	American Disabilities Act
BLM	Bureau of Land Management
BMP	Best Management Practices
CHFD	City of Helena Fire Department
DNRC	Department of Natural Resources & Conservation
ERG	Ecosystem Research Group
ESA	Endangered Species Act
FFMP	Forest Fuel Modification Plan
FSA	Farm Services Agency
GIS	Geographic Information System
HALOS	Helena Area Linked Open Space
HNF	Helena National Forest
HNOSIMP	Helena Natural Open Space Integrated Management Plan
HOL	Helena Open Lands
HOLMAC	Helena Open Lands Management Advisory Committee
ISTEA	Intermodal Surface Transportation Efficiency Act
MEPA	Montana Environmental Policy Act
MHRT	Mount Helena Recreation Trail
MNPS	Montana Native Plants Society
MOU	Memorandum of Understanding
MSU	Montana State University
MTNHP	Montana Natural Heritage Program
NASF	National Association of State Foresters
NOAA	National Oceanic and Atmospheric Administration
NRCS	Natural Resources Conservation Service
NWTF	Noxious weed Trust Fund
OSBAC	Open Space Bond Advisory Committee
PMD	Park Maintenance District
PPLT	Prickly Pear Land Trust
RD&D	Resource Conservation & Development
SID	Special Improvement District
TE	Transportation Enhancement
TEA-21	Transportation Equity Act for the 21st Century
USDA	United States Department of Agriculture
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service

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1. INTRODUCTION

This Plan opens with background on the HOL system and a description of specific resource plans incorporated in this document by reference. The remaining chapters explore the issues and goals individually and in greater detail, and provide a list of the references used in preparation of the Plan. A resource map is provided at the end of most sections illustrating resource characteristics referred to in the section. Finally, the appendices contain maps and other information of value in the planning effort.

1.1 RESOURCE MANAGEMENT PLAN COMPONENTS

This planning document presents an inventory of HOL and provides the management goals and implementation plans for the HOL. The Plan was developed as a cooperative effort on the part of interested citizens and local, state and federal agencies. Cooperative agreements regarding HOL between the City of Helena and other government agencies are an integral part of the Plan and are described in Section 2.4. Three supporting documents are incorporated by reference into this Plan. These documents were useful in developing management procedures throughout the Plan and are described below.

1.1.1 Incorporated Planning Documents

The *Helena Natural Open Space Integrated Management Plan: Forest Fuel Modification Plan*, prepared by the Montana State University Extension Service in April 2002, identifies fuel hazard areas and best management practices for the HOL. Wildfire management practice implementation is summarized in Section 4.

The *Helena Natural Open Space Integrated Management Plan, Managing Noxious Weeds,* prepared by the Montana State University Extension Service in April 2002, provides a weed inventory of the HOL and a weed management strategy. It is summarized in Section 5.

The *South Hills Trails Plan,* prepared by the Prickly Pear Land Trust in April 2003, provides inventory of and management recommendations for trails in the HOL and adjacent federal lands. Trails are rated by condition and recommendations for general recreation and trail use in the HOL are included. A copy of the *South Hills Trail Plan* is found in Appendix A.

1.1.2 Cooperative Agreements

The City of Helena has a cooperative agreement with the Helena National Forest in the form of a Memorandum of Understanding (MOU). Much of the 1,762 acres of HOL are adjacent to national forest land. The purpose of the MOU is to "work together to achieve common goals of enhancing the recreational uses and natural resource conditions of the Mount Helena City Park and adjacent Helena National Forest lands." A copy of the MOU is provided in Appendix B.

The City of Helena and Lewis and Clark County combine resources and goals in the 1998 Comprehensive Parks, Recreation and Open Space Plan which delineates five categories for open lands, including "recreation resource conservation areas" that are at least 80 percent "natural."

A Fire Response and Mitigation Mutual Aid Agreement among several federal, state, and city agencies is currently being prepared by Chief Larson of the City of Helena Fire Department.

1.2 HELENA OPEN LANDS INVENTORY

The HOL system is comprised of approximately 35 parcels of land which have been acquired over the past 100 years. The area consists of 1,762 acres adjacent to the southern boundary of the Helena city limits. These open lands make up two major recreational systems, one dominated by Mount Helena and the other by Mount Ascension. The Project Area Map at the end of Section 1 identifies the approximate boundaries of the HOL.

The City of Helena is nestled along the margin between the Helena valley and mountains to the south. The gradual north-south slope of the town becomes steeper nearer the hills that make up the HOL. Starting from the southern edge of the city, the topography continues to rise up, progressively steeper, culminating on the ridges and mountains beyond. Elevations of the park system range from 4,127 feet at the Donaldson Acquisition to 5,365 feet at the top of Mount Ascension and 5,460 feet on the summit of Mount Helena (the highest point within HOL). In general, the ridges and hills of the HOL screen views of the miles of forested mountains that stretch to the south. From lower parts of the Helena valley, the open lands form a picturesque backdrop, creating a sense of enclosure and serving as a visual frame of reference. From the west side of town, the dramatic cliffs of Mount Helena are a primary focal point and the most striking feature of the HOL.

Figure 1-1 Overlooking the city from Mount Helena.

The varied landscape of the HOL provides habitat for a diverse population of flora that is distributed throughout the area in distinct plant communities. These plant communities consist primarily of ponderosa pine woodlands, Douglas-fir forests, grasslands and shrublands and tall shrub draws; the vegetation is broken in places by barren rock outcrops. The HOL were heavily deforested in the late 1800's when the area's new residents relied heavily on the timber for fuel and construction.

Because the HOL are at the northern end of a long ridge that connects to the many wilder areas of the Continental Divide, they serve as an important movement corridor for wildlife. The area provides sanctuary to coyote, fox, black bear, mountain lions, bobcats, deer and elk. Various rodents, over fifty species of birds, and a few reptiles and amphibians also make their home in the HOL.

1.3 CURRENT MANAGEMENT

1.3.1 Open Space Bond Advisory Committee

The Open Space Bond Advisory Committee (OSBAC), a citizens advisory committee appointed by the Helena City Commission, was created after Helena voters approved the sale of $5 million of open space bonds. The OSBAC consists of 12 voting members and two nonvoting members. One voting member is a city commissioner with the other eleven being appointed by the City Commission. The purpose of the committee is to advise the City of Helena on how best to 'utilize and allocate the proceeds of the $5 million in open space bonds.' Over 700 acres of the City's 1,762 acres of natural open lands have been purchased with open space bonds on behalf of the Helena Parks and Recreation Department.

1.3.2 Helena Open Lands Management Advisory

With the City's open space almost doubled, the Helena City Commission saw the need to dedicate a portion of the remaining open space funds towards the development of an Open Lands Management Plan. The Helena Open Lands Management Advisory Committee (HOLMAC) was appointed to develop and recommend the implementation of a management plan for all of Helena's open lands. In 2002, the City of Helena retained the services of a consulting firm to assist HOLMAC in the development of an open lands management plan (this Plan).

HOLMAC members, were appointed by the Helena City Commission under the following mission statement:

> *The mission of the Helena Open Lands Advisory Committee (HOLMAC) is to assist the Helena City Commission and City staff in the oversight of the development and implementation of a management and land use plan for the City of Helena's open space system. HOLMAC will review, analyze, and recommend to the Helena City Commission and staff management policies, procedures, goals and objectives for the open space system. The plan will create a framework to protect or enhance the natural environment, support management and maintenance practices that protect wildlife and natural habitat, enhance the forest resource, provide for fire mitigation, noxious weed control, erosion control, and native plant preservation. The plan will also allow for wise development of recreational uses that are compatible with the environment and each other, plus serve to enhance the enjoyment of Helena's open space system by Helena's citizens and visitors.*

1.4 HISTORY OF THE HELENA OPEN LANDS

1.4.1 Natural History

Natural forces have shaped the existing landscape around Helena since the Precambrian eon, approximately 600 million years ago. The first human to view this area probably arrived via the Bering Land Bridge in search of game some 12,000 years ago. More recently, the area was occupied by the Salish and Blackfeet Indian tribes.

For hundreds of years thereafter, until the last half of the 19th century, human activity remained fairly constant. The discovery of gold in 1864 brought a flurry of development to the area. Not only did the mountains surrounding Helena witness an influx of new people, they were also called upon to help build the new city with their wealth of natural resources.

Helena's new residents first looked to the nearby mountains to provide timber for their dwellings. Wood was also needed for cooking and providing the warmth to survive Montana's long winters. The land adjacent to Helena also supplied trees to fuel the area's extensive mining operations. Due to this rapid development, much of the timber in Helena's open space was depleted by the 1870s.

Figure 1-2 Women shooting from 1906 Trail, Mount Helena, circa 1908

Still, the open and undeveloped land continued to provide for the newcomers. Limestone was used to make lime mortar for construction, and the Wolsey Siltstone mined from Mount Helena can still be seen on many of Helena's older buildings. In addition to building materials, early residents had hoped the mountains would yield more profitable minerals. In 1901, the Mount Helena Tunnel and Mining Company was created to mine copper thought to be hidden inside the mountain; the much anticipated copper veins failed to materialize.

Two reservoirs were constructed on Mount Helena, the first in 1888 to supply the city with water from the Ten Mile Creek watershed and the second in 1928 to keep up with the demands of a growing population.

While Helena's open space was critical in supplying the resources to build the capital city in the later part of the 19th century, by the beginning of the 20th century the public began to view open space as a different kind of resource, and preservation of open space for the enjoyment of future generations began in earnest.

1.4.2 Social Use and the Move Toward Conservation

By the early 1900's Helena residents began to take notice of the abuse of their surrounding landscape. Throughout the late 1800's Helena's open space had been the site of community picnics and celebrations. Most notable was a large bonfire held on Mount Helena to celebrate the city winning the race for state capital in 1894. If the open space was to continue for these purposes, preservation measures would need to be taken.

The wheels of the conservation movement began to turn in Helena with the formation of the Helena Improvement Society. In 1902 the Society added Mount Helena to their list of areas in need of improvement. Over the next decade the group took several steps to insure the once abused mountain would survive for others to enjoy. Their major accomplishments included: erecting a pavilion at the top of the mountain, the building of a trail to the summit, posting notices that Christmas tree robbers would be arrested, and convincing the City of Helena to declare the mountain a city park. Unfortunately for Mount Helena, this group disbanded in 1911.

"Our plan was to secure title to as much of this area (Mount. Helena) as possible, have the mountain sides retimbered and in other ways make the place attractive as a park." Helena Improvement Society 1910

Over the next century Mount Helena was not completely devoid of stewardship. The 20th century saw the rise of groups such as the Save Mount Helena Committee, Friends of Mount Helena and the Mount Helena Trail Users. These groups, as well as other concerned citizens, were instrumental in the construction of new trails, banning the use of off-road vehicles, halting grazing permits for livestock, restoration of vegetation and implementing erosion control measures.

1.4.3 Management History and Parks and Recreation Department

The City of Helena and its Parks and Recreation Department have been the overseers of Mount Helena since 1905 when they began acquiring land at the urging of the Helena Improvement Society.

A number of guiding documents have been produced over the years to assist in the management of these lands. The Mount Helena Management Plan of 1995 superseded the 1976 Mount Helena City Park Development and Management Plan. Mount Helena was listed on the National Register of Historic Places (District # 96001568) on January 9th, 1997 as the Mount Helena Historic District (Putz, 2003). The South Hills, which include the north flank of Mount Ascension, were also the subject of a 1985 Planning Study.

Through the efforts of the OSBAC and Prickly Pear Land Trust, the City of Helena has acquired 643 acres of land since 1996. All acquisitions are shown collectively on Resource Map 1, separately in Appendix C, and in Table 1.4.3-1.

Table 1.4.3-1 List of Parcels

Parcel Name	Number of Acres	Date Acquired
Mount Helena Park	731.132	1902 - 1976
Drennon/Stewart	110.83	1998
Reber PUD	12.05	1980
Reeders Village Aquisition	23.75	1995
McKelvey	32.4	1999
O'Reilly	14.16	1999
BLM	117	Pending
Deford MS 386	5.119	2002
Water Department Land	180.84	Early 1900's
Diehl Acquisition	9.36	1999
Deihl Acquisition	1.91	1999
Diehl Acquisition	40	1999
Medley (Jefferson County)	20.73	2000
Medley Acquisition	5	2003
Medley Acquisition	153	2000
Beattie Street Parcel	10	1981
Timberline Acquisition	141.91	2001
Crestview Parkland	0.37	2002
Malber Heights Subdivision	1.28	1994
Weydemeyer/Meatloaf Hill	3.06	2000
Bompart Acquisitions	42.35	2000
Bull Run Subdivision	21	NA
Mount Ascension BLM Parcel	23.25	1981
Donaldson Acquisition	40	1999
Oakes Street Parcel	6	NA
Swaney Acquisition	13.83	2003
Weggeman	2.87	2000
American Building	4.32	2000
Fagan Property Acquisition	.8	2001

1.5 THE VALUE OF THE HELENA OPEN LANDS SYSTEM

Mount Helena, Mount Ascension and their immediate surroundings are the most prominent and important features of the local natural landscape. They not only create a stunning backdrop to the City's south side, but they are etched into the minds and daily routines of many Helenans. Helena's open lands offer residents and visitors alike a direct physical/visual link to their natural surroundings. The ability to walk directly from homes or downtown into a vast natural area in a matter of minutes is unique in all of Montana.

Whether one chooses to bike on the many trails, search for birds or simply look out at the distinctive natural beauty, Helena's open lands are key components to the character of the City and in the hearts of many of its occupants.

This profound relationship with these lands has lead to their preservation over time. The area has been continuously changing since the arrival of The Four Georgians and is today subject to increasing pressure for change. The physical growth of the City and surrounding areas has recently been mirrored by a growing community awareness that preserving and enhancing the city's quality of life is in large measure dependent on the conservation of its natural setting.

"Everybody needs beauty as well as bread, places to play in and pray in, where nature may heal and cheer, and give strength to the body and soul alike." - John Muir

1.6 THE NEED FOR AND PURPOSE OF A PLAN

Over the past four years the City has nearly doubled its natural open lands ownership. Although previous planning efforts for natural open lands have been undertaken over the years, an expanded, more comprehensive strategy is now needed to reflect the additional area of responsibility.

The purpose of this plan is to provide the community with a guide to be used as an information resource, a policy document, a vision of the future open lands system, and as a manual for the implementation of efforts to realize that vision.

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2. OVERALL MANAGEMENT GOALS

2.1 RESOURCE DEFINED

The HOL system is comprised of a landscape of natural, historical and cultural richness. In developing a strategy for open lands management, HOLMAC established which essential qualities of the open lands merit special consideration. This Plan was developed to identify, protect and enhance those special qualities.

2.2 VALUE OF THE HOL LANDSCAPE

The city-owned natural lands that make up the HOL are recognized as a unique and valuable community asset. This recognition owes much to the range of experiences provided by the HOL, such as awareness of nature, recreation, spiritual connectedness, aesthetic admiration, historical significance, education and/or a reference point for local identity. These experiences combine to form the special landscape character of the HOL.

The people of Helena, through the passage of the 1996 Open Space Bond, have demonstrated great appreciation for, and a willingness to support, the HOL System.

HOLMAC was formed to identify the characteristics of the HOL system most valued by the people of Helena, develop a management strategy designed to preserve these valued resources, and provide and oversee an implementation plan.

Figure 2-1 Urban/wildland interface

2.3 TOP GOALS

This HOL Plan was developed with significant guidance from public process. Newspaper articles, radio announcements and TV interviews were conducted prior to the first (June 13th, 2002) public meeting to invite the public to participate and help characterize issues. To date, over 100 stakeholders have participated in this plan development, including governmental and non-governmental organizations representing several hundred members. For example the Prickly Pear Land Trust (PPLT) has been intimately involved as a board member is on HOLMAC as well as representation through the PPLT staff. HOLMAC itself is a volunteer representative body composed of Helena neighborhood residents. The city appointed members of HOLMAC represent multiple constituencies.

The goals of the HOL Management Plan were developed as an outgrowth from issues raised through the public scoping process of interested citizens and government agencies. A compilation of the issue-identification phase of the Draft Plan was presented in a July 2002 report prepared by the HOLMAC consultant, ERG, titled "Public Process Issue Identification Report." This report is located in Appendix D.

Issues of concern were raised by members of the general public, special interest groups, local, state and federal agencies and HOLMAC. All issues have been sorted into major categories as follows:

- Access
- Aesthetic Values
- Boundary Identification and Mapping
- Forest Management
- Long Term Funding
- Management Strategies
- Natural Character of the HOL
- Native Plant Protection
- Noxious Weed Control
- Recreation Use
- Trail Maintenance Costs
- Wildfire Mitigation
- Wildlife Protection.

Figure 2-2 Wildfire mitigation emerged as the top issue in the public process

Five areas appeared to be of top concern to most commentors. These are (in no particular order): wildfire mitigation, wildlife protection, noxious weed control, recreation use and urban area growth containment.

All areas of concern are described briefly in the following subsections. The primary issues of concern are addressed in detail in the following sections of this Plan:

- Maintain and conserve the natural character of the HOL
- Wildfire Mitigation – Section 4
- Noxious Weed Control – Section 5
- Wildlife Protection – Section 8
- Recreation Use - Sections 7, 9, and 10
- Urban Area Growth Containment - Section 11

The process to single out issues of concern was undertaken to identify specific problems that could be addressed in the HOL Management Plan. Of course, certain qualities of the HOL which are not seen as threatened or problematic would not necessarily emerge from this process. Aesthetic value, for instance, was judged as the most important feature in a public survey from the 1995 Mount Helena Management Plan. When considered as an "issue of concern" in the latest round of the public process, however, that distinction dropped considerably.

HOLMAC recognizes that the identified issues of concern are based on underlying fundamental values. The Plan addresses the issues of concern with those fundamental values in mind.

The following issues of concern are addressed in this Plan.

2.3.1 Boundary Identification and Mapping

Boundary identification and mapping protects adjacent private landowners and helps open space users be good neighbors. Top goals are the provision of trail maps and identification of private property boundaries at key points.

2.3.2 Forest Management

Forest management includes all activities designed to promote forest health. Priorities of forest management include wildfire mitigation, the control of noxious weeds and preserving the biological integrity through conservation forestry practices.

2.3.3 Interpretive Opportunities

Interpretive opportunities provide enhancement of open lands user experiences. These include either signage or handouts on human or natural history and other topics of interest. Interpretive goals include developing aesthetically pleasing materials to enhance the user experience as well as to educate in order to help build community support and user-based conservation efforts.

Figure 2-3 Hiker yields for a mountain biker

2.3.4 Long-Range Funding

The goal of long-range funding is to provide consistent and reliable sources of funds as well as to seek out additional sources through private and public means.

2.3.5 Noxious Weed Control

Noxious weed control is a time-sensitive issue because of its impact on all of the other uses and functions of open lands. The reduction of weeds through a variety of methods and control of weed seed sources is a priority goal.

Protection of native plant species goes hand in hand with control of noxious weeds and healthy forest (and range) management.

2.3.6 Recreation Use and Trail Management

Trails and recreation management elicited many comments from the public, particularly with regard to open space use by different modes of transportation. Top goals include development and expansion of the trail system, trail maintenance, erosion control, trail closures and improved trail signage.

2.3.7 Wildfire Mitigation

Wildfire mitigation is a time-sensitive issue because of its potential to protect human life and property. The major goal is fuels reduction.

2.3.8 Wildlife Protection

Wildlife protection is affected by human activities and habitat conditions. Wildlife goals include the protection and proliferation of sensitive wildlife habitat and maintenance of biodiversity.

2.4 EXISTING POLICY CONTEXT

This document will refer to open space and open lands generally interchangeably, primarily because we quote from pre-existing planning regulations, growth policy plans and policy documents which use the terms in overlapping but slightly different ways. We say "generally" interchangeably because we recognize and appreciate that the terms imply subtle but potentially significant differences in land use. In the documents we reviewed, open space appears to be more often used to refer to parks and recreational lands with at least a modicum of facilities. By contrast, open lands (also referred to as "open space land" and "natural open space land" by the City of Helena's 2001 Growth Policy Plan, and as "natural open space" by Lewis and Clark County's 1998 Comprehensive Parks, Recreation and Open Space Plan) connotes natural lands with very limited or no facilities. This document focuses on lands that are not developed for recreational or agricultural purposes; that are preserved in a more natural state but are accessible via trails and paths; and that have aesthetic values in addition to natural resource values. We do not wish to discount the significant contribution of working agricultural lands to preservation of open space and valley vistas; the Lewis and Clark County Growth Policy overtly recognizes such contributions. However, this Plan addresses the management of the City of Helena's natural open lands, and therefore excludes neighborhood parks, playgrounds, playing field, fairgrounds, ranch lands, and other types of working and recreational open space.

2.4.1 City of Helena 2001 Growth Policy Plan

Helena's Growth Policy Plan enumerates several goals and policies related to open lands conservation and management. Some of the goals reflect a desire on the City's part to be a good steward not only of its own lands but also of development on land adjacent to City-owned open lands. The Growth Policy approaches open lands management in the context of public safety, environmental quality, land use and transportation issues, as well as parks and recreation issues. The "Preamble" summarizes the plan's primary goals, and contains concrete objectives and policies. These include "prevent[ion] and reduce[tion of] infestations of noxious weeds," "protect[ion of] the City's natural mountain backdrop," "protect[ion of] groundwater and surface water quality in the Helena area watersheds," and "adopt[ion of] a policy that protects natural open spaces, skylines and sightlines on the City's south border."

Some City policies reflect a desire to manage urban growth and direct it to appropriate locations in order to protect open lands. The Growth Policy suggests review and revision of Helena regulations "to address development in areas with challenging physical and environmental characteristics, such as steep slopes, watercourses, drainage ways and wetlands." Similarly, the Growth Policy strives to "ensure that growth and development in the Helena area minimizes environmental degradation and encourages development in the areas without environmental constraints or where constraints can be properly mitigated." The Growth Policy also seeks to "address development standards in the urban-wildland interface."

Consonant with such goals is the objective to "preserve the scenic quality and backdrop of Helena through the acquisition of large blocks of natural open space land," especially through annexations of large parcels of undeveloped land adjacent to the City. The City has acquired open space lands with voters' passage of an open space bond in 1996. These lands include an "extensive inter-connected trail system along the entire southern city boundary [that] connects to federal land (BLM and Forest Service) located to the south." The Growth Policy states that "acquisition of additional open space lands may continue if funds remain available and the long-term maintenance can be provided." At the very least, the City plans to annex its recent open space acquisitions on the South Side.

2.4.2 City of Helena 1998 Comprehensive Parks, Recreation, and Open Space Plan

Coordination between the City and County is clearly critical, particularly concerning issues of annexation. The City's Growth Policy Plan recognizes the need to work closely with both Jefferson and Lewis and Clark Counties on issues of mutual interest. The Lewis and Clark County Growth Policy likewise recognizes a need to coordinate with the City, if only because of the effects of urban development on the County's ability to secure its open lands goals: '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 County plan recognizes that higher density and cluster development are tools that can preserve rural character. This cannot be emphasized enough: protecting the aesthetic and natural resource values of open lands goes hand in hand with sound land development practices and concentrating higher density development where such development is appropriate. These planning documents recognize that low-density, sprawl development is the antithesis to open lands protection.

The City of Helena 1998 Comprehensive Parks, Recreation, and Open Space Plan is considered an element of Helena's 2001 Growth Policy Plan. Much of the Open Space Plan is dedicated to developed open space (community parks, neighborhood parks, etc.). However, a section on "Natural Open Space" is instructive, foremost because the plan counsels that "the County should accept natural open space and other passive use areas only if some form of maintenance and management can be assured." Natural Open Space lands (defined as "undeveloped land left primarily in its natural condition and used for passive recreational purposes, creation of separation and seclusion, and as buffers between urban uses"—open lands, for our purposes here) may be privately or publicly owned, but public access is important, as is the guarantee that the land will remain largely in its natural state. The Open Space Plan delineates five categories for such open lands, including "recreation resource conservation areas" that are at least 80% "natural," wildlife habitat (primarily riparian), historic or archeological areas, scenic or aesthetic lands, and linkages and public access.

Both the Lewis and Clark County Growth Policy and the City of Helena Growth Policy Plan contain other policies that more indirectly affect open land management strategies. Both plans, for example, promote non-motorized transportation and recreation, and facilities for both - including bikeways and sidewalks - in order to improve personal and environmental health. Furthermore, the City Growth Policy encourages "transportation improvements that preserve the natural panorama of skylines and sightlines and are compatible with historic resources."

2.4.3 The 1995 Resolution and 1996 Ordinance Dedicating Mount Helena as a Natural City Park

As a result of the 1995 Mount Helena Management Plan the Helena City Commission dedicated Mount Helena City Park as a natural park by resolution in 1995 and formalized the designation subsequently by ordinance in 1996. (Resolution No. 10961 and Ordinance No. 2762 are included in Appendix M). The term "natural park" is a specific designation of a city park to ensure its natural and primarily undeveloped character in perpetuity. The intent of this special dedication was "to preserve, protect and maintain the park's natural, scenic, historic, educational, and recreational resources for the enjoyment of all present and future citizens". The resolution and ordinance set forth specific rules and regulations outlining permitted and prohibited development activities.

2.4.4 The 2000 Resolution Designating Mount Ascension as a Natural City Park

As a result of substantial land acquisitions by the City of Helena the Helena City Commission passed a resolution designating the Mount Ascension Natural City Park in 2000. Resolution No. 11500 (See

Appendix M) is very similar to Mount Helena City Park Resolution No. 10961 in both substance and intent. An exception to the Mount Helena resolution is that the City has retained the "right to develop water resources" on Mount Ascension Natural City Park. The City has also retained the right to maintain required improvements associated with any water resource development.

2.4.5 The 1995 Mount Helena Management Plan

The 1995 plan was prepared for the City of Helena and the Helena National Forest by the Mount Helena Management Plan Group. This plan addresses management of public land within the boundaries of Mount Helena City Park. The 1995 plan states that "the Park will be managed to accommodate the gradual increase in use that is expected to occur as the City grows. The City will not encourage increased Park use through advertisement or promotion of the Park's recreational opportunities. New facilities will be constructed when a demonstrated need is identified." The overall management goals for the 1995 Plan designed to preserve the natural character of Mount Helena and to not encourage additional use of the mountain for recreation. The rationale behind this management approach was that promoting increased use could be detrimental to such fragile natural areas. The plan provides a management goal implementation program for the City Parks Department but does not indicate how implementation will be funded or monitored.

Because Mount Helena comprises a large portion of the HOL (about 35 percent) this Plan (this document) incorporates most of the policies outlined in the 1995 Mount Helena Management Plan. This Plan also recognizes the importance of the Resolutions No. 10961, 11500 and Ordinance No. 2762 that resulted from the 1995 Plan and uses those as a guideline to establish current management policy. This Plan differs from the 1995 Mount Helena Management Plan in that the current plan is designed to: (1) proactively manage the entire HOL system through scheduled specific activities that address fire mitigation, weed control, forest management, habitat protection, trails maintenance and boundary marking, (2) encouraging the enjoyment of our open lands by everyone in Helena while addressing the growing population and recreational user base, (3) providing for long-term funding solutions and a City Commission-appointed citizen's oversight committee, (4) incorporate regularly scheduled opportunities for public input to update the Plan on an annual basis.

In the eight years since the adoption of the 1995 Mount Helena Management Plan, the population of Helena has increased by 4 percent. Increased recreational use of Mount Helena has resulted in increased erosion, development of unplanned trails, increased weed infestation, loss of native plant communities, increased fire danger, and increased user-conflicts. Proactive HOL management, including closure of unsustainable trails, development of contour-trails, signage, fire mitigation and weed control measures as described in this Plan, will help to alleviate some of these problems. Providing interpretive trails, maps and trail head parking throughout the HOL will also encourage users to recreate in the newly acquired areas and reduce some of the use on Mount Helena. In addition, a mapped trail plan will also address public safety issues associated with rescue operations, allowing rescue personnel to more easily respond to emergency situations. The use of maps and signs for navigation will also increase public safety by decreasing the chance of users becoming lost in the HOL.

This Plan furthers the stated implementation goals of the 1995 Mount Helena Management Plan and 1996 Ordinance by including the following: (1) a site-specific weed-management plan, (2) provisions for continuation of a citizens advisory group responsible for funding and oversight of Plan implementation and seeking public opinion on both changes in policy and on an established frequency (3)plans for improved trail and trail head signage and (4) a baseline comprehensive inventory of HOL resources, including forest, native plants and weeds, fire hazard areas, trails, and regional wildlife for use by future planners.

2.4.6 Helena Open Space Bond Advisory Committee

On November 5, 1996, the Helena voters approved the sale of $5 million of open space bonds. The ballot resolution stated that the bond proceeds would be used for "creating a comprehensive parks, recreation and open space plan; acquiring and constructing recreational fields and facilities; walking, running, and biking trails; open space lands or interest therein (in or near the City); park and recreational areas; paying the costs of maintaining fields and lands so acquired, to the extent permitted by law and as approved by the Commission; and paying costs associated with the sale and issuance of general obligation bonds." The OSBAC acquired land slated for one or more of four uses: sports fields and facilities, open space, other trail corridors, other park areas. To satisfy the open space criteria, OSBAC sought large tracts of open space lands in or near Helena, such as in the southern hills that protect the Helena viewshed and provide for contiguous access from Mount Helena to Mount Ascension and east to Interstate 15. OSBAC also sought property interests that create a safe and accessible trail system connecting park, open space and public properties in and around Helena. These lands and Mount Helena Park are shown on Resource Map 1. OSBAC was also responsible for assuring ongoing maintenance of the acquired open space and recommended the creation of HOLMAC and an implementable open space management plan (this Plan).

2.4.7 General Policy Synthesis

Open lands management concerns the protection and preservation of lands in their natural state, with their aesthetic, scenic, natural resource and wildlife values intact. It also entails protecting lands from the impacts of sprawl development; therefore, open lands management entails growth management. At the same time, open lands management also concerns provision of access to those lands from existing urban neighborhoods creating visual and physical linkages so the public may have the benefit of vistas and natural spaces for experiencing solitude and quiet, and for enjoyment of wildlife in its natural home (McCahon, 2002c). To those ends, this document makes concrete and direct "open lands management" recommendations and also "urban containment" recommendations that protect against urban sprawl.

2.5 LANDSCAPE CHARACTER

As noted in Section 2.2, HOLMAC's task is to identify the characteristics of the HOL most valued by Helena's citizens and develop a management strategy to preserve and enhance those qualities. HOLMAC recognizes that a successful management strategy must address specific Issues of Concern, but implementation of that strategy must also be sensitive to the underlying character of the HOL. Specifically, the detailed management actions described in the remaining chapters of this Plan are designed to be compatible with the intangible qualities that make up the special landscape character of the HOL.

Figure 2-4 Ponderosa pine habitat type

2.5.1 Edge Effect

The physical elements that make up the HOL system compose a widely diverse landscape. McCahon (2002b) notes that this diversity is the product of several factors, including the underlying geology, human activity and local climate, but the overall cause for wide variation is attributed to the lower timberline phenomenon. In general, the open lands are located in the lower timberline position where

upland trees and lowland grasses and forbs are involved in a continuing struggle for dominance. Edge areas in general are recognized by landscape ecologists to be unusually rich in the variety of flora and fauna. The edge areas are highly dynamic in nature, and the types of plants and animals occupying these biological communities will transition rapidly throughout this boundary. Take away a few of the balancing forces, say the effects of grazing by thousands of buffalo, antelope and elk, or the effects of fire, and the benefiting species will rapidly take advantage of the altered conditions.

The edge effect contributes to a richly diverse and enhanced landscape experience. A walk through Helena's open lands will introduce an ever-changing occurrence of environmental conditions, and the environmental diversity intensifies the experience. Walk, for instance, from a heavily forested area toward a clearing, and you will notice changes in microclimate and vegetation. After traveling through the cool, shaded and windless interior of the forest, the opening will appear brighter, a breeze might become more apparent and the air feels warmer and drier. The contrast of landscapes intensifies the character of each.

2.5.2 Sense of Place

The HOL system is comprised of a patchwork of separate landscapes that differ according to the unique combination of natural forces particular to each location. In many areas, the impact of human activity is also clearly present. These unique qualities combine to give every location in the HOL a recognizable identity. The unique characteristics of a particular landscape transform it from a simple location into a recognizable "place". The recognition of this "spirit of place" forms a bond between people and a particular setting, and gives each location a significance that is greater than the sum of its parts. A sense of place enhances the character of the place and makes each location in the HOL special and unique.

2.5.3 HOL Management in Accord with Landscape Character

Before making any land management decision, City planners and HOLMAC must first investigate the essential character of the effected landscape. Management decisions can then grow out of that fundamental understanding.

For example, an HOL management decision must be sensitive to the phenomenon of edge effect and the desirable diversity it can provide. The dynamic nature of edge areas suggests that any effort to limit the natural process will require significant and sustained resources. The best strategy, therefore, is to work toward shaping, rather than preventing the continual process of transformation. Likewise, the species richness associated with edge effect can be enhanced by management actions designed to increase overall edge length.

An HOL management decision must also recognize and appreciate the unique spirit of a place. A trail passing by mysterious old mine ruins, for example, might be enhanced by relocating the trail even closer to the ruins. Similarly, the experience of moving from a semi-open clearing into a densely canopied Douglas-fir grove could be intensified by thinning the clearing even further.

Catastrophic wildfire has the potential to drastically impact existing landscape character. Methods to mitigate the threat of wildfire will also change the landscape character. By recognizing this essential character, thinning operations can be designed to both lower the risk of detrimental fire and enhance the landscape qualities. HOLMAC recognizes that it is important to tread lightly with respect to thinning. Variety, mystery and surprise are all beneficial qualities of the HOL experience. By revealing too much, or trimming all trees in the same monotonous way, those experiences are lost. Especially in areas along

established trails, diversity and variety are the key. Every place in the HOL has unique qualities that will be considered in wildfire mitigation operations.

Another item with the potential to severely impact landscape character is the threat from noxious weeds. If nothing is done, weeds will soon dominate the HOL landscape. During the development of this Plan, weed infestation has been investigated with an eye toward landscape character, and unique areas that are under the greatest threat have been prioritized for treatment.

2.6 RESOURCE INTEGRATION

Crucial to the implementation of this Plan is the interconnectedness of HOL resources. There will be indirect consequences to each management action. For example, a fire mitigation project involving thinning will, in turn, affect vegetation. Soil disturbance combined with a more open canopy could result in the proliferation of weeds. If weeds are controlled, there will likely be an increase in forage or browse species resulting in improved wildlife habitat and the potential increase in mule deer populations. As such, there are few management decisions which will not have bearing on multiple resources.

This Plan has been organized by resource, reflecting the multitude of issues facing HOL managers. These many issues, though separated into individual sections by this Plan, contain many complex relationships. Because of this complexity, it is important to use this entire Plan. For example, if an area is to be thinned, one should look at more than the fire hazard map. The individual parcel maps in Appendix C will help to determine if there would be any potential for impacts to recreation. The parcel maps and the recreation map (Resource Map 6) will tell what types of recreation trails are in the area. Additionally, parcel maps show weed presence, thus one may be able to predict weed response to treatment. The wildlife map will indicate if this is a calving area for elk or moose. Managers will use this multi-disciplinary approach to make well informed decisions and avoid management "blunders."

2.7 CULTURAL RESOURCES

Mount Helena was listed on the National Register of Historic Places on January 9th, 1997 as the Mount Helena Historic District. Its areas of significance are registered as Recreation Conservation Community Planning and Development and Industry. Also, several areas near and potentially within future open lands are listed on the Register such as Helena's West Main Historic District.

Such formally recognized places present management requirements for use as well as protection but there are also cultural places identified as potentially eligible for listing and sites of yet unknown importance. These are linked to an established procedure in federal law and related state and local practices addressing the protection of historic places.

This plan requires HOLMAC to develop provisions to inventory and protect cultural resources in the HOL and to seek funding sources for historic preservation. At a minimum, the City will:

- Establish a baseline policy for the preservation and interpretation of the open land's cultural aspects.
- Recommend a way for local historians and historic preservationists to supplement national register information with other information relating to open lands heritage sites and their significance. This might be accomplished through the establishment of a specials committee but one fully integrated with other planning aspects related to the management plan.

- Include an accounting of the specific features identified in the current Historic Register nominations (such as the Mount Helena Historic District) and link to each of those features management guidance appropriate to 1) protection of the feature and 2) opportunities for public appreciation of the feature.

- Offer the State Historic Preservation Office the opportunity to review and comment on the plan in the event federal funds are sought for improvements to open lands in the future. This would not obviate subsequent SHPO review but would offer guidance in the course of applications for funds.

3. FOREST MANAGEMENT

3.1 DESCRIPTION OF FOREST RESOURCES

Approximately 63% of HOL are forested. Mature stands of ponderosa pine *(Pinus ponderosa)* and Douglas-fir *(Pseudotsuga menziesii)* stands can be found throughout the Helena Open Lands. Patches of solitary limber pine *(Pinus flexilis)* and small patches of quaking aspen *(Populus tremuloides)* can be found on Mount Helena. A map of vegetation types, including forest cover types as determined through satellite imagery, is found at the end of this Section (Resource Map 2). This map is based on generalized regional data and will be updated with site-specific vegetation information as the data is collected. Also please refer to the maps in Appendix E for woodland characteristics on Mount Helena mapped by Dennis McCahon. Varying age groups of trees are present, but much of the forest and woodland is under 120 years of age as shown by historical photos (Turner and Bourie, 1997). Ponderosa pine stands and solitary limber pines can be found on Mount Helena. Some trees on the upper east slope were planted in 1906 by the Helena National Forest (HNF) at the request of the Helena Improvement Society, although there is no data on the survivorship from this planting (Turner and Bourie, 1997). Many trees on upper slopes germinated after a fire in 1900, but there are scattered survivors from pre-settlement times. In more recent years, forest encroachment onto rangelands has led to the demise of some rangeland plant communities. For example, the Prairie Trail on Mount Helena once displayed dramatic wildflower blooms in the springtime, but most of these plants are now shaded by small trees (McCahon, 2002b).

Figure 3-1 Older forest boundary from 1880's growth is clearly defined on the north side of Mount Helena

Forests are one of the key elements of the recreation experience. Trees and timberlines surrounding Helena also serve as landmarks and give the landscape form. The forests and lower timberlines are an important element of the recreational resource, serving as natural gateways out of the valley grasslands and creating a sense of enclosure. Visual separation provided by forest cover defines the forest as a distinct element (Kaplan et al, 1998). Forests help to create more exciting recreation by rendering a deeper sense of exploration. Stringers of trees through draws create natural regions which act as reference points for the mind's eye and create a more intimate familiarity with the landscape.

Silvicultural treatments are planned management strategies for a forest stand designed to achieve specific management goals. Restorative silviculture is an area of rapidly developing technology. Applying silvicultural treatments of thinning and possible use of harvesting equipment introduces new challenges when these applications are utilized in heavily used recreation areas. For this reason, it is imperative that any such treatments be executed with a multi-disciplinary approach. The City of Helena is actively engaged in forest management to reduce fuel loading.

All management decisions should be based on a sound ecological understanding of forest and range ecosystems. There is currently a great working knowledge base of stand density and fire risk on open

lands (McCahon, 2002b; McKelvey, 2003). Forest thinning has already successfully been initiated in numerous areas around Helena. A large portion of survey work has already been completed through volunteer efforts. Refer to Appendix B for maps produced by McCahon (2002a). Inventories such as this will greatly aid important management decisions.

Figure 3-2 Forest thinning on Mount Ascension Road. Tree density on right of photo is indicative of pre-treatment conditions.

3.2 ISSUES OF CONCERN, GOALS, AND OBJECTIVES

The HOL Management Plan issues of concern, goals and objectives regarding forest management are summarized in this section. "Issues of Concern" refer to those issues raised during the public scoping period by interested citizens, special interest groups, local, state and federal agencies, and HOLMAC members. The "Goals" are set by HOLMAC in response to stated concerns. "Objectives" refer to management practices to be implemented by HOLMAC for implementation by this Plan.

Table 3.2-1 Forest Issues of Concern, Goals and Objectives

Issues of Concern	Goal	Objectives
Unnatural state of open lands	Return disturbance regimes and vegetation closer to pre-settlement conditions	-Apply prescribed fires to reduce unnatural fuel loadings -Use some mechanical thinning to reduce recent encroachment of Douglas-fir on rangelands and to reduce unnatural tree density
Potential for noxious weed spread after harvest	Reduce chance of noxious weed introduction or proliferation	-Immediately seed with a native species mix after any silvicultural treatments -Limit operations to months when ground is snow covered and frozen. (Doesn't apply to hand thinning). -Spot treat weeds and monitor in treatment areas for three years after activities
Inadequate data	Collect enough data to make informed management decisions with predictable results	-Do not experiment with large scale treatments -Inventory all open lands -Use data provided by McCahon (2002a) -Work with Lewis and Clark County and Tri-County Area coordinators

Issues of Concern	Goal	Objectives
Timber harvesting	Timber harvesting will only occur to meet specific objectives of the Plan	-Invite review of thinning activities by foresters and biologists to ensure treatments are conservation based. Ask for help from Society of American Foresters, Native plant Society, and USFS.
Lack of government coordination	Coordinate any government actions and reduce omissions and overlap	-Develop Memoranda of Understanding for all involved government agencies -Include agency representatives on subcommittees and in HOLMAC discussions
Forest health	Improve forest health for resiliency to stressful conditions	-Keep natural processes functioning properly -Inventory and monitor sensitive vegetation and wildlife species lists and maintain natural
Pests	Reduce impact and potential insect outbreaks	-Work with extension service or USFS entomologist or professional forester -Create conditions for more resilient and insect resistant forests (see discussion below)

Scoping comments indicated a strong desire from the public that HOL should not be treated as commercial timberland. Therefore, the City shall not seek funds from timber sales to fund open lands improvements. The only exception to this case is when such sales may pay for demonstrably beneficial fuels reduction program operations. The integrity of natural ecosystems, wildlife habitat and recreational quality shall not be compromised in the name of over zealous fuel treatments or timber production. Open lands shall be managed with an attention to detail expected to protect landscape and vegetation aesthetics.

Figure 3-3 High tree densities threaten mature ponderosa pine on the west side of Mount Helena

The most threatening insect on HOL is the mountain pine beetle (*Dendroctonus ponderosae*) and Douglas-fir beetle (*Dencrotonus psuedotsugae*) (Cancroft, 2003). Mountain pine beetle poses the most risk to HOL in high basal area, single-story stands of ponderosa pine where average diameter at breast height of trees is larger than ten inches (Amman et al., 1997). Douglas-fir beetles typically attack mature, dense stands of Douglas-fir . Risk for insect attacks generally increase during periods of drought and mild winters. Although there are no

current epidemic outbreaks on HOL, there is at least one area of recent, insect-killed ponderosa pine on HOL in Grizzly Gulch (Cancroft, 2003).

Insect and disease concerns can be addressed concurrently with the execution of forest thinning projects. Dense stand conditions can lead to insect and disease problems. Silviculture is the most cost efficient tool for controlling epidemic insect and disease outbreaks (Amman et al, 1997). Selective thinning and the retention of trees with diverse age classes and forest structures will help in the prevention of insect and disease outbreaks (Cancroft, 2003).

Should insect outbreaks occur, a professional forester (preferably a forest entomologist) should be consulted. Treatment of outbreaks will be situational, dependent based on location of outbreak, proximity to other susceptible stands, and size of trees, along with a multitude of other factors. Treatment options to consider include silviculture, pheromone baiting (synthetic attractants) and insecticides. The most important factor, besides thinning, to prevent epidemic outbreaks is early detection. Therefore, it shall be the duty of open lands managers to monitor patches of dead trees and arrange for consultation with a forester or entomologist.

The possibility also exists that thinning projects could introduce or exacerbate existing insect and pathogen problems if done incorrectly. Therefore, thinning projects and slash disposal will be completed with the consultation of a forester knowledgeable on insect and pathogens management.

Any forest management activities beyond hand thinning may involve the use of heavier mechanical equipment. The use of such equipment will be reviewed by the citizen's advisory committee. An effort will be made to use equipment or livestock that is the least destructive to native plants and soils. Any forest management activities will adhere to the following best management practices (BMP) developed by the State of Montana DNRC (Appendix N). The following BMP's are of particular importance:

- Mechanical harvesters and skidding equipment will be used. Operate skidding equipment only when the ground is frozen and there is snow on the ground.
- All heavy equipment is to be pressure washed prior to entering open lands.
- Old mining roads and trails will be used if needed. No skid trails or temporary roads are to be built.
- Any thinning activities, which disturb mineral soil, will be promptly followed by seeding so germination can occur as soon as possible. Early seeding will decrease the chances of invasive noxious weeds moving into these areas. Seed mixes will consist of native seeds as recommended by the USDA Natural Resource Conservation Service Field Office.
- Monitoring and follow-up treatment of exotic vegetation should be continued for three years.
- All stumps should be cut as close to the ground as possible. Stumps will be left to be consumed by fire or decomposition. Grinding of stumps in the proximity of trails or trailheads should be considered.
- Only removable trees should be marked. Any marks should be on the side of trees facing away from trail.
- Slash will be burned or chipped depending on circumstances.
- Burn piles near trails shall have the A-soils horizon excavated underneath and replaced after burning to help avert the proliferation of noxious weeds.

3.3 PRIORITY PROJECTS

The following are the Plan priority projects for HOL forest resources. These were derived from a combination of interviews with agency personnel, HOLMAC members and through comments received during public meetings. Note: many of these priority projects are repeated as priority projects in Section 4, Fire Mitigation.

1. Selectively remove ladder fuels (see Priority Projects in Section 4, Fire Mitigation, for treatment areas).

2. Thinning projects (to be conducted in conjunction with above).
   - Conduct some supervised thinning projects, such that the removed trees can be salvaged.
   - Restore and protect mature stands.
   - Work with the Forest Service to continue hand-thinning projects on lower timberlines.

3. Monitor forests for dead and dying patches and take action to prevent epidemic insect outbreaks.

4. Examine methods of low impact treatments and do not treat lands as industrial timberlands. Continue to reexamine success of treatments and potential for further improvements.

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4. WILDFIRE MITIGATION

Wildfire mitigation emerged as a high priority issue of concern during the public process. It is likely this issue will continue to be of great interest as a result of the paradoxical relationship between the fire occurrence in the HOL ecosystems and the desire to preserve highly regarded recreational resources. Forest and range are highly dynamic resources and should be managed with an appreciation for the natural processes that shaped them.

Fire plays a crucial role in the forest habitat types found on HOL (Pfister et. al., 1977). Fire has influenced forest lands throughout the Northern Rocky Mountains for at least the past 10,000 years and probably much longer. In fact, many species have evolved to the point of having several characteristics making them resistant to fire, or, in some cases, dependent on fire for regeneration. Civilization in the Rocky Mountains has been successful in suppressing wildfires for decades. This suppression initially appeared to be a sound forest management policy, but has resulted in dangerous fire potential conditions across huge landscapes. Tinder fuel consisting of shed needles and bark, dead and dying trees, and tall dry grasses were once consumed by regularly occurring small fires before they accumulated into enough material to maintain the intense heat and crown fires we see in forests today. Exclusion of fire has resulted in dangerous accumulations of these volatile fuels. This Plan assumes that fires on HOL are inevitable and includes measures (forest fuel treatments) designed to reduce the impact of uncontrolled burns.

Figure 1 Broadwater Natatorium prior to 1935 with Mount Helena backdrop. The vegetation continues to change today. (Source: Montana Historical Society collection)

Historic species compositions were quite different from those observed today. Certain forest species are less tolerant of fire than others, and their populations tend to increase with fire exclusion. On HOL this is exemplified on Mount Helena with the proliferation of Douglas-fir on the lower timberline. Generally, fire intolerant species are more shade tolerant, and they are able to out-compete fire-hardy species in the fire exclusion environment. Furthermore, at lower elevations, forests throughout the Northern Rocky Mountains are encroaching onto grassland environments.

Regardless of the historic role of forest fires, management of the HOL has been designed in a manner sensitive to aesthetics and recreation uses. Inherent to the HOL recreational experience is exposure to natural objects and processes. This Plan recognizes that it is important to maintain natural appearances of the land, species compositions, tree growth forms and landscape patterns when implementing fuel treatment. Such an approach also serves to improve wildlife habitat. However, it is worthy to note that many existing forest species compositions and fire occurrence frequencies today are probably outside the historic natural range of variation as a result of fire suppression and historic logging (Gruel, 1983; Arno et. al., 1995).

4.1 SUMMARY OF MSU EXTENSION SERVICE HELENA FOREST FUEL MODIFICATION PLAN

The Montana State University Extension Service recently prepared a Forest Fuel Modification Plan (FFMP) (Kolb, 2002) for forest lands adjacent to the City of Helena. This Plan incorporates the *Helena Natural Open Space Integrated Management Plan, Forest Fuel Modification Plan* (HNOSIMP) [Kolb, 2002] that was recently developed for the HOL by the MSU Extension Service. A brief summary of the fuel modification management plan goals and objectives is provided below in this Section 4.1. For detailed discussions on different aspects of forest fuel modification, please see the complete plan (available from Lewis and Clark County Extension Service and Montana State University).

Figure 4-2 Completed thinning/treatment area on Mount Ascension Road

The FFMP is general in nature and does not identify specific treatment areas of concern. The plan identifies information needs and possible implementations to reduce fire hazard. Wildlife and recreation aspects should be carefully considered with any fire treatments, as they are paramount issues which came out of the public scoping process. The key points of the FFMP are summarized and supplemented below.

> Due to the climatic characteristics of the Helena area, wildfires should be considered a constant threat. A serious potential exists for crow[n] fires to develop in the existing fuels surrounding Helena. Crown fires (fires that travel through the tops of the trees) usually result from a combination of environmental factors. Available fuels, wind, low atmospheric moisture, and instability are common factors contributing to the development and reinforcement of crown fires. Crown fires are the most feared and most difficult wildland fires to suppress. Their impact is severe. An intense surface fire with dense, young conifer trees (ladder fuels) enables a fire to move into the tree crowns.
>
> Preemptive manipulations of fuels along with early detection and aggressive suppression efforts are the most logical defense strategies. Fire behavior is largely determined by wind speed, topography, fuels, fuel moisture, temperature, and relative humidity. Of these, fuel concentrations and fuel types are the only manageable variables. High winds, temperature and steep topography can negate the positive effects of fuels management. Management practices to reduce fuels are therefore only effective at reducing the probability of an uncontrollable wildfire (Kolb, 2002).

Fuel treatments considered appropriate for use in the HOL are:

- Patch cutting
- Thinning
- Combined patch cutting and thinning
- Stewardship cutting
- Longevity
- Tree selection (Kolb, 2002)
- Prescribed fire
- Burn hand piles

Please refer to the FFMP (Kolb, 2002) for more details on these treatment methods. Some areas have already received treatment, including parcels on Mount Ascension Road and the Mount Ascension BLM parcel (Area U on Resource Map 1).

The FFMP reports that over 80% of forested areas in the Helena Valley are at high to severe risk from wildfires. The extent of severe fire fuel loading is supported by data provided by the Lewis and Clark County's GIS Department (2002). Please refer to the Fire Hazard Map (Resource Map 3 at the end of this Section), for a display of this data.

Figure 4-3 High tree densities developed in the absence of fire can provide conditions for catastrophic fires involving 100 percent tree mortality and increased potential for soil sterilization.

The FFMP identifies five information needs for HOL, which are described in greater detail below, to facilitate initiation of the fuel reduction plan:

- Mapping of forest conditions
- Forest access
- Ignition locations
- Probability of crown fire occurrences by stand
- Probability of forest management reducing wildfire inertia.

Detailed mapping has occurred on about one-third of the HOL. Dennis McCahon has mapped all of the forest resources on Mount Helena (Appendix E). Regional fire risk has been mapped by the Tri-county Working Group and is included this Plan (Resource Map 3). Lewis and Clark County has worked closely with the Helena Fire Department to identify ignition locations and the probability of crown fire occurrences by stand. Additional survey work has been initiated by local schools, and expansion of this type of community survey work could provide useful inventory data.

Access to targeted forested sites by all-terrain, low impact vehicles such as cut-to-length harvesters, forwarders and water tankers is necessary for both fuel treatment and effective fire suppression. Most of the HOL has adequate access. However, some areas do not, and existing access routes are not yet well-mapped for use by emergency vehicles. The development of access maps would provide a useful resource to emergency response workers. Much coordination has already been completed for prescribed burning on Mount Helena. A *Draft Prescribed Burn Plan for Mount Helena* (USFS and CHFD, date unknown) was recently completed. When the *Prescribed Burn Plan* is finalized and approved by the City, it will be included as part of the HOL Management Plan. The draft plan should be finalized and periodically updated. Much of the information in the *Draft Prescribed Burn Plan for Mount Helena* will also be useful in a Wildfire Response Plan.

The most likely ignition sources of fire in the HOL are humans and lightning. The FFMP also suggests that past lightening strike areas be identified through data available from the National Oceanic and Atmospheric Administration (NOAA).

The FFMP lists a number of stand types and conditions which would be conducive to crown fires. Complete eradication of crown fire susceptible types would likely diminish many of the desirable aesthetic qualities of the HOL by creating a less diverse and visually interesting landscape. Comments

received during public scoping showed that Helenans would not be interested in a plantation-type appearance on their open lands. This type of fuel treatment would also harm wildlife habitat.

4.2 ISSUES OF CONCERN, GOALS AND OBJECTIVES

Comments received during public scoping indicated that some citizens oppose fuel modification projects such as tree thinning, reduction of ladder fuels, and creating more access for emergency vehicles. These activities could increase the spread of weeds, reduce the forest canopy in treasured portions of the HOL, and lead to trail user conflicts. The Plan includes provisions to educate the City and the HOL management advisory committee about public concerns regarding fire mitigation treatments and the entire range of likely consequences of implementing a fuel modification treatment on specific HOL areas. This Plan also includes provisions to provide the public with the same information.

4.2.1 Increased Recreation Use and Hazard

The FFMP states there is a high probability of human caused ignition on open lands. The City continues to have the option to impose restriction or closures in areas of extreme fire risk. These types of restrictions are already administered by the Governor of Montana for state recreational lands. The same system is used by the Forest Service. Closures of these types were witnessed several times in Western Montana and in HOL during the year 2000 fire season. Restrictions on any type of burning on HOL for recreational purposes have been in effect and will continue under this Plan. Additionally, HOLMAC may want to consider the closure of some trails in areas with poor access for emergency response crews.

4.2.2 Wildland/Urban Interface

There are over 1,600 homes in the Helena/HOL wildland urban interface. The wildland urban interface is that area between undeveloped land and neighborhoods. It can pose unique and deadly situations for emergency response crews. Part of the problem lies in training. Often, urban firefighters have neither the knowledge nor equipment to battle wildland fires. The same applies to wildland fire fighters trying to fight structural fires. Urban and wildland firefighters from respective jurisdictions and agencies should continue to improve coordination of response plans. An Emergency Response Plan (ERP) is currently being developed by the Helena Fire Department. The Draft ERP identifies the following agencies as having property/protection responsibilities in or near the City's open space: City of Helena Fire Department, Montana City Volunteer Fire Department, USDA Forest Service, Montana Department of Natural Resources and Conservation, and USDI Bureau of Land Management (Larson, 2003). The current fire attack strategy is to minimize response time by reaching ignition source as soon as possible regardless of jurisdiction concerns. Through this strategy local fire fighting agencies will have the best chance at containing the fire before it can develop into a catastrophic occurrence (Larson, 2003). Radio communication standards should be maintained so there is an open line of communication between emergency response crews.

Figure 4-4 The juxtaposition of homes and forests on the edge of town provides unique hazards for wildland and urban fire fighters alike.

4.2.3 Fire Hazard Areas

Areas of fuel accumulation, fire-susceptible forest structures and forest species compositions in the HOL have been placed as high priorities for fuel treatment. The different levels of fire risk are delineated on Resource Map 3 at the end of this Section. The areas have been assessed and prioritized for treatment (see Section 4.3). The treatment of these areas is key to addressing all of the wildfire mitigation issues. The data displayed on Resource Map 3 was used in part to prioritize the treatment areas in Section 4.3.

Figure 4-5 Hand thinning will help to restore prairie ecosystems and reduce fire danger.

4.2.4 Summary of Issues of Concern, Goals and Objectives

The HOL Management Plan issues, goals and objectives regarding wildfire mitigation are summarized in this section. "Issues of Concern" refer to those issues raised during the public scoping period by interested citizens, special interest groups, local, state and federal agencies, and HOLMAC members. The "Goals" are set by HOLMAC in response to stated concerns. "Objectives" refer to management practices recommended by HOLMAC for implementation by this Plan.

Table 4.2.4-1 Wildfire Issues of Concern, Goals and Objectives

Issues of Concern	Goals	Objectives
Public opposition to fuel treatment	Educate public	-Involve public in process -Interpretive signing/pamphlets -Work with Forest Service for educational materials -No clear-cut patterns, thin in natural patterns and prune to mimic natural species morphology
Increased hazard with recreation use	Restrictions and closures	-Restrict trail use during high fire danger -Consider temporary trail closures during extremely high fire hazard
Wildland/urban interface	Reduce hazards to people and property	-Maintain and continually update the Coordinated Disaster Response Plan -Map access routes -Aggressive fuels reduction program
Aesthetic impact	Prevent forests and grasslands from taking on too much of an artificial appearance	-Keep projects to a manageable scale (don't undertake more than can finish in a timely manner) -Avoid even spacing when thinning -Taper and feather treatment boundaries no lines or hard corners -Follow landscape contours and ridges for treatment boundaries -Grind stumps and use chipper and pile burning to dispose of slash.

Issues of Concern	Goals	Objectives
Wildlife Impacts	Minimize fuel treatment impacts to wildlife	-Work with wildlife working group for any fuel treatments -Consider fuel treatment effects on wildlife thermal cover
Smoke Management	Reduce impact to air quality from burning	Comply with Montana DEQ air quality standards

4.3 PRIORITY PROJECTS

This list contains the HOL priority projects for fire mitigation as identified by Patrick McKelvey (Lewis and Clark County Fire Prevention and Mitigation Program Director), Steve Larson (Helena Fire Chief), Jim Cancroft (forestry consultant), and Dennis McCahon (Mount Helena inventory preparer). These areas have been prioritized based on risk presented to residential areas and resources. Costs for similar treatments in the past have run approximately $950 to $1,200 per acre for thinning and chipping and approximately $650 per acre for thinning and pile burning (McKelvey, 2003). All projects will be kept small size to allow treatments to be completed within one year. Any pile burning will be completed as weather permits and may extend project completion in high fire hazard years or when resources are constrained. All of these priority projects are based on current conditions and needs and are preventative measures. In the event of catastrophic wildfire the City shall cooperate with Lewis and Clark County, USFS, DNRC, BLM and Rural Conservation Districts for restoration guidance.

1. Bompart Hill
2. Davis Gulch
3. Mount Ascension Road (extend existing thinning project by two additional chains away from road)
4. Donaldson Hill
5. Grizzly Gulch
6. Treat west side of Drennan-Stewart area. This will help protect residential areas and mature ponderosa pine stands on Mount Helena.
7. Fire danger signs for usage restrictions during high fire hazard
8. Complete preparation of Fire Response and Mutual Aid Agreement
9. Purchase half of a wildlands fire truck for the Helena Fire Department

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5. NOXIOUS WEED CONTROL

Ever growing populations of invasive exotic plant species, more commonly known as weeds, are polluting our ecosystems, impairing our wildlife habitat, blemishing our native rangelands and weakening our forest lands. Weeds must be viewed not only as exotic problem plants, but, more holistically, as an important variable in the equation of ecosystem functions and social systems. We need to understand and appreciate their significant impacts to recreation, wildlife habitat, soil erosion, plant ecology, native vegetation communities, fire and aesthetics.

Figure 5-1 Musk thistle on hillside above the city. Invasive weeds have infiltrated open lands, especially along trails. Early, aggressive treatment is required to prevent epidemic infestations from developing.

Weeds were consistently identified as a major issue in the scoping phase of the public input to the open lands planning process. In Helena, weed infestations are not yet as severe as in other parts of the state, especially western Montana. Helena has a well-timed opportunity to regain control of its exotic plant problem before it becomes so widespread that the only feasible alternatives are large scale herbicide applications or living with degraded ecological and recreational resources. For a complete list of noxious weeds known to occur in Lewis and Clark County please see Appendix F.

5.1 HELENA NATURAL OPEN SPACE INTEGRATED MANAGEMENT PLAN

This Plan incorporates the *Helena Natural Open Space Integrated Management Plan, Managing Noxious Weeds* (HNOSIMP) [Goodwin and Sheley, 2002] that was recently developed for the HOL by the MSU Extension Service. A brief summary of the weed management plan goals and objectives is provided below in Section 5.1.3. For detailed discussions on different aspects of weed management, please see the complete plan (available from Lewis and Clark County Extension Service and Montana State University).

The key content of the HNOSIMP follows.

5.1.1 Mapping

All of the HOL, as well as property outside, have been mapped for weeds; some sections have not (see Resource Map 4, showing weed distribution at the end of this section). All of HOL, as well as surrounding areas should be thoroughly and systematically surveyed for noxious weeds.

5.1.2 Land Management Goals

Land Management goals that describe the desired condition of the HOL are:

- Be a good neighbor with other landowners and managers;
- Provide opportunities for public education and recreation;
- Maintain or develop healthy, diverse plant communities to enhance wildlife habitat and recreation opportunities; and
- Maintain populations of rare, sensitive or imperiled species or plant communities, if present.

Figure 5-2 Dalmatian toadflax along trail

5.1.3 Weed Management Objectives

Objectives provide a link between goal statements and weed management actions. Measurable weed management objectives for Helena Natural Open Lands include:

- Identifying and mapping existing pristine areas;
- Prevent weed invasion, establishment, and growth in key sites and other "protected" areas (high quality vegetation communities with highly desired plant cover and other valued areas) over the next five years;
- Prevent or greatly reduce weed seed production and dispersal along trails and roadways, and prevent weeds from crossing onto neighboring property over the next five years;
- Prevent small noxious weed patch reproduction (vegetative spread and seed dispersal) while steadily replacing removed weeds with desired plants (naturally or through revegetation) over the next five years with eradication as the long-term objective; and
- Continue controlling large infestations over the next five years through size and density reduction, and manage towards the development of healthy plant communities (including revegetation efforts) as the long-term objective; or continue maintaining large infestation perimeters to prevent spread over the next five years.

5.1.4 Integrated Weed Management

The HNOSIMP provides for integrating weed management with other aspects of HOL planning. The Plan contains guidance for integration of public and planner education, prevention and early detection of weed growth, general weed distribution, infestation management, revegetation and vegetation establishment and management.

5.1.5 Weed Management Strategies

This section of the HNOSIMP provides noxious weed descriptions, general distribution, damage and threats, as well as weed management objectives for each species and a management recommendation.

Herbicide recommendations are offered and cover the rate and timing of herbicide application along with other general information.

5.2 WEED LAW

Montana law provides legal direction to counties with regard to weed control. Additionally, most counties in Montana county weed boards that make regulations providing for the control of weeds. In Montana, these local laws have been patterned after the state law. The Montana County Noxious Weed Control Act (Title 7, Chapter 22, Sections 7-22-2101 through 7-22-2153 and rules 4.5.201 through 4.5.203) requires control of specific weeds.

> It is unlawful for any person to allow noxious weeds to propagate or grow to seed on their land, except that any person who adheres to the noxious weed management program of their district or who has entered into and is in compliance with a noxious weed management agreement is considered to be in compliance with this section (Section 7-22-2116, M.C.A.).

5.3 GIS MAPPING

The weeds occurring along some trails on Mount Helena and other HOL parcels were mapped in 2001 and incorporated into a GIS database. These weed occurrences are shown on Resource Map 4 found at the end of this Section and on the individual parcel maps located in Appendix C. The key weed species for HOL are those weeds mapped and identified in the HNOSIMP and those additional weeds known to inhabit the HOL (Duncan 2002).

5.4 ISSUES OF CONCERN, GOALS AND OBJECTIVES

The HOL Management Plan issues, goals and objectives regarding noxious weed control are summarized in this section. "Issues of Concern" refer to those issues raised during the public scoping period by interested citizens, special interest groups, local, state and federal agencies, and HOLMAC members. The "Goals" are set by HOLMAC in response to stated concerns. "Objectives" refer to management practices recommended by HOLMAC for implementation by this Plan. When one considers how fundamentally weeds impact all other resources, their importance cannot be overstated.

Table 5.4-1 Weed Issues of Concern, Goals, and Objectives

Issues of Concern	Goals	Objectives
Weed proliferation	Educate the public to help reduce the introduction and spread of weeds on HOL	-Install demonstration areas -Involve public in process -Interpretive signing/pamphlets -Work with Forest Service for educational materials -Work with adjoining property owners
	Improve wildlife habitat	-Map pristine habitat areas for weed control and monitoring

Issues of Concern	Goals	Objectives
	Reduce weed infestations	-Treat threatened, endangered, species of special concern, and excellent cond. range first -Mandatory annual minimum treatment of 15% of weed infestation -Promote community weed pulls -Use biological weed control -Apply herbicides
New weed infestations	Allow no new weeds	-Immediate mechanical or chemical treatment of new weeds
Herbicide use	Understand and educate city planners and the HOL advisory committee about the positives and negatives of using herbicides	-Implement herbicide recommendations for rate and timing of application from the HNOSIMP -Examine successes and failures at model communities where herbicide alternatives have been used -Notify public before any herbicide use
Alternative weed treatments	Control weeds using a multifaceted approach	-Goal Integrated Weed Management Plan -Use biological treatments such as insects or goats in coordination with other methods
Treatment areas	Inventory and treat most crucial areas	-Work with county weed board -Treat areas with most problematic weeds first
Education/demonstration	Keep public involved and informed on progress and approaches of weed control	-Use interpretive signs -Organize volunteer group -Weekly weed pull
Time sensitivity	Tackle weed problem while it is still manageable	-Begin treatments immediately to avoid epidemic infestations as have occurred in other parts of the west

5.5 BIOLOGICAL CONTROL

Helenans are very interested in alternative weed control methods. In the past, the city has used a herd of goats as a biological control method. During the scoping phase of this plan, stakeholders highlighted weeds as an issue to be dealt with along with the desire to not always use herbicides.

Biological control is the deliberate introduction of living organisms (insects, pathogens and predators) which attack undesirable species. These are often cultured forms of naturally occurring pest enemies. Though the use has become popular in recent years, biological control of weeds is not new. In 1925 Australia had a 60-million acre infestation of prickly pear cactus that was reduced by 95% with the introduction of a pathogen-carrying moth. Another classic case is the 99% reduction of a 2 million acre infestation of St. Johnswort in California from an introduced European beetle. In other areas of Montana the gall fly (*Urophora affinis & U. quadrifasciata)* have infected most stands of spotted knapweed on large areas. The gall fly can reduce seed production of knapweed by up to 95%. However, the remaining 5% is enough to sustain and expand present knapweed distribution. The leafy spurge hawkmoth (*Hyles uphorbiae*) has also been used in western Montana and have vastly expanded from their original release sites. The larval stage of the hawkmoth defoliates spurge. These insects are voracious eaters, each consuming up to 35 full grown plants. The USFS Lolo National Forest has recently had success combining the hawk moth with herbicide applications. Biocontrol specialists at Montana State University estimate that it will require from four to six biocontrol insects for each weed species before substantial reductions in populations occur.

Figure 5-3 Seeding abandoned trails with native species will help to control invasive, exotic vegetation.

Limited biological control methods are available at this time for HOL pests but they should be incorporated into the IPM plan. Experimental demonstration has been initiated and should continue. Biological control is not a "quick fix" but should provide substantial benefits over the long term. Long-term costs of biological control should be low as environmental equilibrium is reached. Biological control is not a "quick fix" but should provide substantial benefits over the long term. Cultural and chemical controls will still be needed for periodic unanticipated pest outbreaks. HOLMAC can contribute substantially to biological control by supporting research and application efforts within the county extension service and the university system.

Cultural control methods concentrate on maintaining healthy, vigorous plant communities resistant to pest invasion. Improved plant varieties are becoming available which are more vigorous and use less water. Areas can be completely re-seeded or over-seeded. Other cultural controls include hand pulling,

mulching, cultivating (by hand hoe or machinery) and burning. Cultural controls can be effective if properly used. Costs can be relatively low once a low level of infestation is achieved.

Biological agents are classified by type of impact to the weed. Cornell University has published information on biocontrol and grouped biological agents into the following types.

Parasitoids. A wasp is laying its egg inside an aphid where its young will develop is an example of a parasitoid. Parasitoid immatures develop on or inside a host, killing it as they mature. They emerge as adults and continue the cycle.

Predators. Lady beetles are well-known examples of predatory insects. A predator consumes many prey during its lifetime. The predators listed in this guide feed on insects and mites.

Pathogens. A nematode is just one example of a pathogen which may kill its host. Other pathogens include bacteria, viruses, fungi and protozoa.

Weed Feeders. Weeds can be attacked by arthropods, vertebrates, and pathogens (fungi, viruses, bacteria, and nematodes). Some weevils feed only on one particular type of weed.

Three insect biological controls have been implemented by the Lewis and Clark County Extension Office and are currently used on HOL to treat leafy spurge and spotted knapweed infestations (Hoffman, 2003). The insects are black dot spurge flea beetle (*Aphthonia nigriscutis*) and brown-legged spurge flea beetle (*Aphthonia lacertosa*) on leafy spurge, and knapweed root moth (*Agapetu zoegana*) on spotted knapweed. Other forms of biological control that have been used on HOL are goat and sheep grazing. These animals are thought to have fewer significant impacts on the land than others and will browse on invasive species.

Continued use of the biological controls mentioned will help to improve the growing environments for native plant species. The most effective weed management is a multifaceted approach involving the use of biological control, herbicides and public awareness.

5.6 PRIORITY PROJECTS

The priority projects presented below include the combined use of weed treatment practices with revegetation and enhancement of existing native vegetation.

1. **Weed Treatment**. The City of Helena will use cultural, biological or chemical methods to treat at least 15% of open lands weed infestation annually. Weed treatments will be recorded with the City GIS coordinator to develop maps that will aid planners in monitoring the effectiveness of area treatments. Priority treatments are to protect species of concern and all excellent condition rangelands. Trail and transportation corridor weed infestations are the second priority.

2. **Revegetation Plan**. The City of Helena will implement the Reclamation Plan in Appendix G for any projects which cause disturbance to soils or on HOL.

3. **Monitoring Weed Treatments**. The City of Helena will make every effort to monitor all types and intensities of weed treatments on the HOL through the use of GIS mapping and record keeping. In order to plan for follow up treatments, the City will assess treatments for effectiveness.

4. **Biocontrol Methods.** The City of Helena will implement biocontrol methods including goats and insects or pathogens. Grazing schedule shall consist of the following:

   2003. Goats will graze the higher elevation north western area grass lands on Mount. Helena.

2004. The open grass lands northwest of Reeders village will be grazed in year two after the adoption of this plan. This area is noted as "good condition" rangeland in general though has a light to moderate coverage of dalmatian toadflax.

2005. The Bompart Hill and Donaldson Additions will be grazed the third year of a goat/sheep grazing program. The number of animals grazing this area will be approximately one-third of the stocking rate used for the Mount Helena area.

At the end of three years of using goats/sheep as a bio-control, HOLMAC and other interested parties will review the success of grazing as a weed control method. During this review HOLMAC and interested parties will determine if any changes are necessary to recommend to the City Commission for this program continuation.

5. **Purchase Weed Control Equipment.** The City shall purchase spraying equipment for herbicide application.

References:

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6. PROTECTION OF NATIVE PLANT SPECIES

Native plant communities, notable species of grasses, forbs, and shrubs have an intrinsic value in our open lands. Individual plant species that make up native vegetation communities contribute to the aesthetics of the HOL, help with weed control, and comprise habitat that wildlife depends on for food and shelter. The conservation and protection of native plant species was not one of the top five issues of concern to most people who provided input during the scoping process but was one of the top ten issues important to people in Helena.

Figure 6-1 Arrowleaf balsamroot near Prospect Shafts Trail

6.1 INVENTORY/DESCRIPTION OF NATIVE PLANT RESOURCES

There are individual plant species that are of concern to HOL, as well as associations of plants or plant communities. A table of the species of concern that are found in Lewis and Clark County and the HNF is found in Appendix H at the end of this document. Plant species of concern found on HOL are shown on Resource Map 5 at the end of this Section. A review of the Montana Natural Heritage Program (MTNHP) database lists only two plant species of concern located in or near the project area, a lesser rushy milkvetch and a lady's slipper (see Plant Species of Concern map at the end of this Section). The last sighting of the lady's slipper was in 1881. The Helena area Kelsey Chapter of the Montana Native Plant Society (Barton, 2002) reports another "interesting" species of concern, haresfoot locoweed, found on Mount Helena. *Oxytropis lagopus* var. *conjugans,* commonly called rabbit-foot crazy weed or haresfoot locoweed, is a species that is on the watch list to become a species of concern. This plant is found on Mount Helena, typically on dry, north facing slopes. It has been located near the Prairie Trail, the North Access Trail, the Holter Connecting Trail and Prospect Shafts Trail (Barton, 2002).

6.1.1 Botanical Descriptions

6.1.1.1 Small Yellow Lady's Slipper *(Cypripedium parviflorum)*

Small yellow lady's slipper is a perennial that grows in fens, damp mossy woods, seepage areas, and moist forest-meadow ecotones, in valley to lower montane zones at elevations of 2,520 to 6,200 ft. Small yellow lady's slipper has leafy stems that are 15 to 40 cm tall, with elliptic leaves that sheath the stem. In May and June this plant produces one to two yellow flowers with sepals that have a purple dotted lower pouch shaped petal, and produce an elliptic capsule fruit (MTNHP, 2002). Small yellow lady's slipper is listed as an S3 Species of Special Concern by the MTNHP, a Sensitive species by the USFS, and a Watch species by the Bureau of Land Management (BLM). The MTNHP has documented 73 occurrences of this species in Montana (MTNHP, 2002).

Figure 6-2 Small Yellow Lady's Slipper

6.1.1.2 Lesser Rushy Milkvetch *(Astragalus convallarius var. convallarius)*

Figure 6-3 Lesser Rushy Milkvetch

Lesser Rushy Milkvetch is a delicate perennial herb that is found in valleys and foothills of grassland and open woodland areas at elevations ranging from 3,880 to 8,100 ft. The stems are erect and one to six in number from a branching rootcrown. The leaves are either simple or compound and are 2 to11 cm long. The leaflets are threadlike and are found in zero to five pairs. The upper leaves of the leaflets are usually absent, making them appear grass-like. The upper part of the plant is lightly hairy to glabrous. The flowers are off-white or yellowish and sparsely scattered on stalks that arise axillary from the upper leaves. The drooping bean-shaped fruit is green or purple. Milkvetch is found in grasslands and sagebrush desert along the Snake River drainage and from southeast Idaho to south-central Montana, south to Wyoming and Utah. The lesser rushy milkvetch flowers from June to early July, fruiting in late June and early August (MTNHP, 2002). Lesser rushy milkvetch is listed as an S2 Species of Special Concern by the MTNHP and as a Watch species by the BLM. The MTNHP has documented ten occurrences of this species in Montana (MTNHP, 2002).

6.1.2 Plant Communities

Habitat types are classifications of land areas based on their vegetation composition. In layman's terms a habitat type is a land area capable of producing similar plant communities. Vegetation stands within a habitat type may represent a number of early stages (which have different vegetation characteristics) at a given point in time, but in the absence of disturbance, all are predicted to ultimately produce approximately the same climax plant community. Forest habitat types within the study area were identified and mapped using the classification of Pfister et al. (1977) for Montana and Mueggler and Stewart (1980) for grasslands.

6.1.3 Forest Habitat Types on HOL

The predominate habitat types in the HOL are in the ponderosa pine and Douglas-fir series. Typically the ponderosa pine series is the first forested plant community in the transition from grassland habitat types to forested habitats. HOL are an excellent example of true ponderosa pine communities. These ponderosa communities are found on the hot dry, droughty south slopes of Mount Helena. These dry habitat types found in HOL are ponderosa pine/bitterbrush and ponderosa pine/Idaho fescue/rough fescue phase. Examples of these plant communities are found on the southwestern facing slopes of Mount Helena. These ponderosa pine/bitterbrush plant communities are very similar to the ponderosa pine/Idaho fescue community except for bitterbrush difference. Both plant communities have relatively open overstory canopies.

The Douglas-fir series is the other predominate habitat type series on HOL. At the drier end of the Douglas-fir series is the Douglas-fir/bluebunch wheatgrass habitat type. There is an excellent example of the Douglas- fir/bluebunch wheatgrass type directly south of the Powerline Trail on Mount Helena about half-way up the mountain.

The Douglas-fir/kinnikinnick is another major habitat type on Mount Helena and is located on more northern slope aspects. An example of this habitat type is found near the Prospect Shafts Trail between the hotter and drier Ponderosa pine types and is most easily distinguished by the Douglas fir regeneration in the understory along with the easily identifiable kinnikinnick.

On the north side of Mount Helena near the Powerline there is a very dense closed canopy Douglas fir/common juniper. The canopy in this community is so closed and dense as to allow very little sunlight to infiltrate into the understory, consequently there is a very minimal species diversity or understory production in this habitat type.

6.1.4 Rangeland Types on HOL

Rangeland types include upland grassland and shrub land types that generally have little natural of tree cover. Grasslands were mapped according to range sites using NRCS technical criteria. Three range sites were identified for the study area, all in the 10 to 14-inch precipitation zone. One upland shrubland type was identified below the forest habitat zone, the antelope bitterbrush/rough fescue habitat type following the classification of Mueggler and Stewart (1980).

Helen is lucky to have fine examples of excellent condition grasslands within the HOL. In many of the easily accessible areas of Montana, grassland communities were overgrazed. Too often, this overgrazing led to the loss of the grass species, rough fescue. Rough fescue is one of the most palatable grasses in this region, sometimes called an "ice cream plant" by old cowboys and range scientists. It is frequently recognizable because it is one of the first grass plants to be grazed closely by domestic livestock or elk. Rough fescue is also one of the grasses that is most susceptible to loss from overgrazing. There are wonderful pockets of almost pure rough fescue plant communities, occurring in unmixed grasslands or within the community transformation into forest lands. Wonderful examples of these beautiful grass communities are located the BLM acquisition just south of the Rodney Street trailhead overlooking Davis Gulch and in the Mount Ascension area. These larger areas of rough fescue may be considered pristine plant communities and should be protected from weed infestations (these communities are identified as priority weed treatment areas). There are small pockets of rough fescue scattered throughout the large open grasslands in the Mount Helena and Mount Ascension areas.

The largest grassland plant community is found on the northern aspect of Mount Helena. This plant community is in "good" ecological condition. Good condition is an expression of ecological integrity meaning that most of the plants that belong in the community are still present, though not as abundant as in excellent condition. Also this grassland has some degree of weed infestation, mostly of dalmatian toadflax, musk thistle and other weed species (see Resource Map 4) for weed locations.

6.1.5 Habitat Type Descriptions

The following are descriptions of the dominant plant communities occurring in the HOL management area. A complete plant list for Mount Helena open lands is found in Appendix I.

6.1.5.1 Bitterbrush/Rough Fescue Habitat Type

The bitterbrush/rough fescue habitat type is found primarily west of the Continental Divide and north of 47E latitude. The elevations of this habitat type range from 3,000 to 5,000 ft and inhabits south and east facing slopes. This diagnostic feature implies a semi-arid climate with less than 20 in. of rain per year.

Grasses dominate the understory in this habitat type. Bluebunch wheatgrass and Idaho fescue are the most prevalent of the grass species. It is the presence of rough fescue that delineates this habitat type. A common understory forb associated with this habitat type is arrowleaf balsamroot, along with yarrow, goat's beard, blue-eyed Mary, and western gromwell (Mueggler & Stewart, 1980).

6.1.5.2 Rough Fescue/Bluebunch Wheatgrass Habitat Type

The rough fescue/bluebunch wheatgrass habitat type occurs mainly in the northwestern part of Montana above 46E latitude. It is generally found at elevations ranging from 3,000 to 6,000 ft, has documented occurrences on flat topography and steep slopes, and on all exposures. More habitually, however, it is found below 4,000 ft and on more arid south/southwest facing slopes.

Figure 6-4 Pristine rough fescue community along Mount Ascension Trail

Bluebunch wheatgrass and Idaho fescue are usually the most prevalent of the species in this habitat type, however, the presence of rough fescue will likely lead to dominance should there be no fire, grazing, or other disturbance. Common species associated with this habitat type, west of the Continental Divide, are arrowleaf balsamroot, Wyoming kittentails, yellowish paintbrush, and nine-leaf lomatium. This habitat type is known to support a great complexity of species – in some cases up to 50 species have been recorded (Mueggler & Stewart, 1980).

6.1.5.3 Limber Pine Series

In Montana, limber pine can be found on the foothills adjacent to the Great Plains in "coniferous woodland" or pinyon-juniper zone, though it more frequently inhabits steep, dry rocky mountain slopes ranging from mid to low elevations. Population growth is affected mainly, but not entirely, by topography and soil rather than climate.

Limber pine is usually found unaccompanied by any other tree, although it can co-habitate with Douglas-fir and reproduce successfully. Where limber pine is found singly, the understory is dominated by bluebunch wheatgrass. Douglas-fir co-dominates as soil moisture increases, and the understory is dominantly Idaho fescue and/or rough fescue. On steeper, drier sites common juniper and Rocky Mountain juniper are recorded to dominate the understory (Pfister et al, 1977).

6.1.5.4 Ponderosa Pine/Bitterbrush Habitat Type

The ponderosa pine/bitterbrush habitat type inhabits dry benches and rocky slopes at low elevations. Co-dominating with bitterbrush in the Helena area is skunk-bush sumac. There are three dominant understory grasses generally found within this habitat type, depending on the dryness of the site. On the driest sites bluebunch wheatgrass is found to dominate the understory while Idaho fescue, rough fescue, and again bluebunch wheatgrass dominate in the more developed understory (Pfister et al, 1977).

6.1.5.5 Douglas-fir/Rough Fescue Habitat Type

The Douglas-fir/rough fescue habitat type is found from the northwestern to the central parts of Montana. It commonly inhabits south and west facing slopes between 2,700 and 5,700 ft in elevation, though populations have been recorded up to 7,400 ft in central Montana.

The most common associate to Douglas-fir is ponderosa pine, which is usually an important seral or climax species. Due to the presence of rough fescue in the understory, one can presume occurrences of any of its associates: Idaho fescue, bluebunch wheatgrass, prairie junegrass, arrowleaf balsamroot, and western gromwell. Shrubs often found in the understory include western serviceberry, choke cherry, and woods rose (Pfister et al, 1977).

6.2 REGULATORY SETTING FOR NATIVE PLANT PROTECTION

Plants are currently accorded the full suite of protections given to all threatened and endangered species as described by the Endangered Species Act (ESA). The ESA of 1973 was enacted "to provide a means whereby the ecosystems upon which Endangered and Threatened species depend may be conserved, and to provide a program for the conservation of these species." Section 2 of the ESA, as amended in 1978, 1979, 1982 and 1988 (16 U.S.C. 1531 et. seq.), states that "... all Federal departments and agencies shall seek to conserve endangered species and threatened species and shall utilize their authorities in furtherance of the purposes of this Act." The ESA is administered by the USFWS of the Department of Interior. Incentives are provided for "encouraging the States and other interested parties to develop and maintain conservation programs which meet national and international standards for the benefit of all citizens, [and] the Nation's heritage in fish, wildlife and plants."

The USFS has several policies and objectives regarding management of federal lands and sensitive species. The USFS has recognized the value of sensitive species and the significance of implementing conservation measures before species become listed as Endangered under the ESA. The following are the USFS objectives and polices for sensitive species (USFS Manual, Section 2670).

- Develop and implement management practices to ensure that species do not become Threatened or Endangered because of Forest Service actions.
- Maintain viable populations of all native and desired nonnative wildlife, fish and plant species in habitats distributed throughout their geographic range on national forest system lands.
- Develop and implement management objectives for populations and/or habitat of sensitive species.
- Assist States in achieving their goals for conservation of endemic species.
- As part of the National Environmental Policy Act process, review programs and activities through a biological evaluation to determine their potential effect on sensitive species.
- Avoid or minimize impact to species whose viability has been identified as a concern.
- If impacts cannot be avoided, analyze the significance of potential adverse effects on the population or its habitat within the area of concern and on the species as a whole. (The line officer, with project approval authority, makes the decision to allow or disallow impact, but the decision must not result in loss of species viability or create significant trends toward Federal listing.)

- Establish management objectives in cooperation with the States when projects on national forest system lands may have a significant effect on sensitive species population numbers or distributions. Establish objectives for Federal candidate species, in cooperation with the FWS or NMFS and the States.

In Montana, the rarity of a plant species is classified under several federal and state designations. All of the species occurring in Montana included in this HOL Management Plan have a designation of Species of Special Concern by the MTNHP. The MTNHP describes Species of Special Concern and their ranking system as follows:

> Taxa (plant groups) are evaluated and ranked by the Heritage Program on the basis of their global (range-wide) status, and their state-wide status according to a standardized procedure used by all Natural Heritage Programs. These ranks are used to determine protection and data collection priorities and are revised as new information becomes available.
>
> For each level of distribution – global and state – species are assigned a numeric rank ranging from 1 (critically imperiled) to 5 (demonstrably secure). This reflects the species' relative endangerment and is based primarily on the number of occurrences of that species globally or within the state. However, other information such as date of collection, degree of habitat threat, geographic distribution patterns and population size and trends, is considered when assigning a rank, and the number of occurrences...are suggestions, not absolute criteria (MTNHP, 2000).

Montana State environmental specialists have noted the importance of conducting special status plant species evaluations for state lands projects (Hallsten, 2000; Norris, 2000). The laws and permits associated with rare plant species are typically covered by federal statutes. The State of Montana provides general guidance for sensitive species under the Montana Environmental Policy Act (MEPA) (M.C.A. 75-1-101 to 75-1-324) and as described by the State Forest Land Management Plan (Department of Natural Resources and Conservation, 1996). The relevant direction from the Forest Plan is excerpted below.

> We recognize that certain plant and animal species, both terrestrial and aquatic, are particularly sensitive to human activities in managed forests. Populations of such species are usually small and/or declining, and thus continued adverse impacts from land management activities may lead to their being federally listed as threatened or endangered. Further, because sensitive species usually have specific habitat requirements (tending to be ecological specialists rather than generalists), consideration of their needs is recognized as a useful and prudent "fine filter" for ensuring that we meet our primary goal, namely maintenance of diverse and healthy forests. By considering sensitive species in our management actions, we help to ensure that: 1) we are making decisions appropriate to our fundamental philosophy; and 2) additional Federal listings will not be necessary.
>
> Standards and Fundamental Approach
>
> 1) We would manage so as to generally support populations of sensitive species on state land. This policy would be pursued by managing for site characteristics generally recognized as important for ensuring long-term persistence. Localized adverse impacts could be accepted, but only within the context of an overall strategy of supporting habitat capability for these species.
>
> 2) For sensitive plant species, important sites and/or site characteristics would be protected with mitigation measures applied to management activities that would likely have substantial long-term substantial impacts.

6.3 ISSUES OF CONCERN , GOALS AND OBJECTIVES

The protection of native plant species was noted to be an important issue in the scoping process. Helena has an active chapter (Kelsey Chapter) of the Montana Native Plant Society (MNPS). Several stakeholders highlighted native plant protection as an issue, and Native Plant Society members contributed information and suggestions for this plan. The HOL Management Plan issues of concern, goals and objectives regarding protection of native plant species are summarized in this section. "Issues of Concern" refer to those issues raised during the public scoping period by interested citizens, special interest groups, local, state and federal agencies, and HOLMAC members. The "Goals" are set by HOLMAC in response to stated concerns. "Objectives" refer to management practices recommended by HOLMAC for implementation by this Plan.

Table 6.3-1 Native Plant Issues of Concern, Goals and Objectives

Issues of Concern	Goals	Objectives
Native Plant Protection	Protect special plant resources from exotic plants	-Eradicate weeds near TES species, -Monitor TES and weed locations -Apply weed control methods in ways that lessen the impact on native plants.
	Protect special plant resources from trampling	-Identify native plants that need protection -Keep trail locations and construction away from TES species -Educate people to stay on trails
	Protect rough fescue communities and other excellent condition grasslands	-Eliminate weeds from noted plant communities. -Apply weed control methods in ways that lessen the impact on native plants.
Coordinate with Montana Native Plant Society	Preserve, conserve, and study the native plants and plant communities of HOL, and educate the public about the values of native flora	-Continue to monitor plant communities

6.4 PRIORITY PROJECTS

1. Eradicate weeds that may threaten species of concern and grassland communities.

2. Work with Kelsey Chapter of the Montana Native Plant Society and MTNHP to identify new species of concern and to provide in-field locations of species so that any herbicide use is not inadvertently applied to species of concern.

3. Assess weed treatment areas to determine the effectiveness of past treatments.

4. Establish a monitoring program for weed treatment areas.

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TOC

7. RECREATION PLAN (REVISED 1/14/04)

The recreation portion of this Plan addresses approximately 20 square miles of open land that includes the HOL and adjacent land managed by the U.S. Forest Service Helena National Forest (HNF). This includes all of the Helena open lands shown on Resource Map 1 at the end of Section 1 and the trail system that extends into the HNF from the City (see Resource Map 6 map at the end of Section 7). Because the existence of the extensive trail network emanating from Helena into federal lands greatly enhances our recreational experience, this Plan contains a strategy for the coordinated use and management of the entire system shown on Resource Map 7. This area is referred to throughout this chapter as the Recreation Planning Area. The Recreation Plan also includes provisions to encourage dispersal of use from areas such as the base of Mount Helena that receive a high density of walkers and bikers to other HOL areas.

7.1 BACKGROUND

Helena benefits from an extraordinary system of open land and trails directly adjacent to the downtown and residential neighborhoods. With more than 1,900 acres of City-owned public open space and adjoining Helena National Forest (HNF) lands, residents and visitors to Helena have access to thousands of acres of public land "just outside the backdoor." Connected by a system of trails, this amenity is unique for a city of Helena's size. It is an amenity that many Helenans cherish and use daily for a variety of activities.

Figure 7-1 Trail system leading through Douglas-fir encroachment on Mount Helena.

Over the years, several planning efforts have considered open space planning and trails in the HOL and adjacent federal land. In 1995, the City of Helena and the Helena National Forest prepared the *Mount Helena Management Plan*. This plan, inspired by concerns over trail conflicts on Mount Helena focused on the lands within the park as well as the Forest Service Lands along the Mount Helena Ridge Trail. (Since 1995, over 200 acres of land has been added to Mount Helena City Park.) The 1998 *Comprehensive Parks, Recreation and Open Space Plan* commissioned by the City of Helena and Lewis & Clark County focused mainly on public parks. The Helena Area Linked Open Space plan (HALOS) created by a group of interested trail advocates in 1997, envisioned a series of trails and linked open space corridors throughout the Helena Area. This plan never went through an adoption process. Up to now, however, there has never been a comprehensive plan specifically for the analysis, maintenance and development of trails in the Recreational Planning Area. In the spring of 2001, the City of Helena contracted with the Prickly Pear Land Trust to develop a trails plan to provide some trail maintenance and investigate granting opportunities. The South Hills Trails Plan was developed and completed in December 2002 and is incorporated by reference into this planning document. This chapter includes a summary of the trails plan. The complete South Hills Trail Plan can be found in Appendix A.

7.1.1 Purpose and Need for a HOL Recreation Plan

The desired result of this plan is to present achievable objectives that will provide Helena with sustainable recreational opportunities that are accessible and can be maintained using the resources available. A

recreation plan that includes a unified trail system is a key component to the health of the open space system and can result in a "showcase" amenity for residents and visitors to the area.

The need for such a plan is clear. Only about 18 of the 75 miles of mapped trails in the HOL and adjacent federal lands are currently designated as recognized trails. The majority of the trail system was never constructed to recognized standards and is not regularly maintained by land management agencies. As a result, some of the "unofficial" trails are in poor condition showing signs of erosion and unsustainable routing. Additionally, this system had not been inventoried or mapped until recently. Trail users have little usable information regarding the trail system and land management agencies had no data regarding the location and conditions of the routes on their respective lands. Moreover, granting entities are more likely to contribute to proposed projects that are part of a comprehensive plan developed using public input and adopted by the municipality.

This chapter contains planning priorities for the overall improvement of the trail system and recreational experience of the user. These include trail maintenance, user guidelines, locations for new trails and trailheads as well as the obliteration/rehabilitation of existing trails that will not be retained.

7.1.2 Description of the Recreation Planning Area

The land within the Recreation Planning Area is owned by the City of Helena, the Helena National Forest (HNF) and private individuals. There are also several small tracts of Bureau of Land Management lands within the study area. While this plan focuses primarily on public lands, some trails cross private lands and this issue is addressed in the recommendations.

The terrain within the planning area consists of a series of rugged rolling hills dissected by dry gulches. Vegetative cover includes dense coniferous forest to open grassy meadows. The moist gulch bottoms are interspersed aspen and other deciduous trees and shrubs. The tops of many of the hills offer excellent views of the surrounding lands including spectacular views of the City, the Helena Valley and surrounding mountain ranges. The elevation of the study area ranges from about 4,100 feet above sea level in downtown Helena to nearly 6,000 feet in the southern end of the planning area.

A vast system of trails ties this mosaic of landscapes together. This trail network leads to hidden gulches, wildflower-filled meadows and scenic panoramas. In just minutes, a hiker or biker can be in what feels like a distant wilderness. The challenging nature of some of the trails is one element that makes Helena's trails unique and special.

Clues to Helena's history are scattered throughout the area including mine ruins, limestone kilns, city dumps and historic wagon roads. Many of these industrial ruins on public and private lands are currently on, or are eligible for listing in the National Register of Historic Places—a listing of significant heritage properties maintained by the Department of Interior. Protecting the integrity of these ruins from vandalism, destruction and natural degradation is important to many Helena area residents. At the same time, some of these ruins offer opportunities for interpretation along the trail system.

Several county roads radiate from downtown Helena into the South Hills serving the National Forest destinations as well as residential areas. These roads play an important role for access to the trail system.

7.1.3 Off-trail Recreation

Some off-trail activities such as picnicking, bird watching, skiing on an open slope, or exploring a rock outcrop is anticipated and encouraged on Helena's natural open lands. However, continual off-trail use in

the same area by hikers or bikers will cause erosion. Cutting off switchbacks can destroy the drainage features of an otherwise sustainable trail. New trails created without design are often unsustainable and expensive to reclaim. For these reasons, the general rules listed below should be followed on the HOL:

- Create no new trails without research and design by the City and public review and comment.
- Do not cut switchbacks.
- Cyclists should take care not to skid out the corners of the trails.
- All should try to use and stay on approved established trails.

No permanent bolts or permanent anchors are to be placed in the rocks by mountain climbing recreationists. Signs shall be placed on any trails which pass under popular climbing areas to warn of falling rocks.

7.1.4 Trail Planning Process and Public Input

In the spring of 2001 the City of Helena hired the Prickly Pear Land Trust (PPLT) as its trails coordinator on a contract basis. This contract, funded by open space bond funds, entailed trail planning, organizing volunteer work events, grant writing and public outreach. In the process of grant writing and planning trail related events, the need for a comprehensive trail plan was apparent. There were no clear priorities for trail projects nor a publicly supported planning document to show potential grantors. As a result, PPLT recommended to the City that a trails planning effort for the South Hills be initiated. Because much of this trail system lies on Helena National Forest land, forest officials were also asked to participate in this planning process.

The planning process was tailored to gain as much public input as possible. The Prickly Pear Land Trust contacted and interviewed user groups, stakeholders, private property owners and other interested parties to get a sense of what they would like to see in the trails plan. Some of these meetings were held in a public forum such as a group's monthly meeting. Others were one-on-one meetings with interested individuals. A summery of the themes heard at these meetings and interviews can be found in the Appendices of the South Hills Trail Plan. Additionally, information has been posted in the Helena City Parks' website at www.ci.helena.mt.us/parks. The website also provides contact information for comments and questions. The plan also was presented at several public meetings to gather additional comment.

7.2 STATE OF THE TRAILS TODAY

Non-motorized recreationists and outdoor enthusiasts are the primary users of the HOL and adjacent federal lands. A Non-motorized Plan is currently in development for the City of Helena, and it will have an inherent role to this recreation plan. The Non-motorized Plan should be incorporated with this Plan. Trails in the planning area are popular for hiking, walking, jogging, mountain biking and cross-country skiing. In addition, horseback riding and hunting occur on HNF lands. Some use the trails for an intense physical work out, while others are simply out to observe nature. This diversity of opportunities is a great amenity.

According to preliminary mapping estimates, there are approximately 75 miles of trails within the study area. The most heavily used trail areas are adjacent to Helena neighborhoods at the base of Mount Helena and Mount Ascension. Mount Helena City Park, in particular, is the oldest open lands natural park in Helena and has the highest observed use. As one moves away from the City center onto Mount Ascension, newly acquired open lands, and HNF lands, the trail system generally becomes less dense.

Use is concentrated in a few areas due primarily to the fact that citizens are unfamiliar with the new open space acquisitions and there are no corresponding published maps, no sign system and few trailheads.

While the system is vast, some of the trails are in poor condition due mainly to erosion. Trail erosion is caused by several factors. First, the trails may not have been designed or planned with erosion control in mind. Many of the old jeep roads and trails run straight up hills parallel to the fall line ("fall line trails") allowing water to flow directly down them creating ruts and gullies. Secondly, there has not been regular maintenance on most trails. Volunteers and other service groups have been great stewards of the trails but the system is too complex for small groups to handle. Simply put, there are too many trails for the current resources available to maintain them. Third, some areas close to neighborhoods have a dense, haphazard web of redundant user-created trails seemingly created to gain more direct access to a desired destination. Inadequate erosion control coupled with high usage promotes more rapid deterioration of these unplanned trails. Once damaged, users will step to the side of the rutted area and in the process create a new parallel track and the process repeats itself leading to a widened scar and more damage to the resource. In winter, poorly drained trails can become filled with ice again causing users to sidestep the hazards creating more trail damage. In many of these cases the trails will have to be eradicated, relocated or rebuilt to have adequate erosion control. In addition, user education on signs, at trailheads and on trail maps will help alleviate some of these problems.

Some of the most popular trails in the Recreation Planning Area traverse private property. However, very few of these trails are secured with trail easements or similar agreements. In many cases, the property owner simply allows access. In other cases the property owner may not know of the trail use. Some property owners know of the use but would like it to be controlled or rerouted so as not to impact the property or privacy. In any case, a primary goal of this plan is to work cooperatively with property owners to develop access solutions so these popular routes can remain open to non-motorized recreation.

The lack of user education is mainly due to the fact that there are few signs and trailheads in the HOL. Additionally, there are no updated brochures or printed maps of trails. The Mount Helena trailhead at the top of Adams Street is the only official trailhead with signs, maps and parking. Some users park at informal pullouts to access the trail system but there are no signs at these areas. The presence of a single official trailhead and parking area results in a higher density of use on Mount Helena then on other open lands available for recreational use.

The HOL is very popular for dog owners to run their pets. While not a major problem, the issue was raised at some of the stakeholder meetings. Some remarked that dog waste must be controlled and that pets should not be allowed to chase wildlife. Again, there is no clear message posted at most access points.

There have not been many recently reported instances of conflicts between trail user groups. One of the primary reasons for this is that mountain bikers have good access to the more remote trails leaving the closer trails to hikers and walkers. Additionally, horseback riding is not allowed on City-owned property and is not common on HNF lands greatly reducing the potential for horse-bike and horse-hiker conflict.

7.3 CHALLENGES AND OPPORTUNITIES

As with any plan and any area there are challenges to planning and implementation as well as opportunities. In Helena's South Hills, the challenges are not insurmountable and the opportunities are many. Unlike many towns and cities throughout the country, Helena is very fortunate to have abundant open space and trails so close to downtown.

7.3.1 Challenges

- **Many miles of trail to maintain**: Helena has many miles of trail but very few resources to maintain this vast network. Some of these trails are "personal trails" that are created by people gaining access to the trail system form their back yards or unauthorized locations.

- **Wildlife habitat to protect:** The HOL is home to a number of animal species that depend on this habitat to survive. Any plans for new trail development must consider the project's effects on wildlife habitat. (This topic is further addressed in Chapter 8)

- **Uncontrolled access:** Access to the trail system occurs at a variety of points including directly from private property. There are few formal entry points with posted information, regulations and maps.

- **Few maps or directional signs:** If one does not know his or her way around the South Hills trail system, there are few maps or signs to help guide them.

- **Private property issues:** Some of the existing trails cross private property without formal agreements with the property owners. Without easements or agreements, these trails could be closed to public access at any time.

- **Multiple public ownerships:** Public ownership in the Recreational Planning Area is the City of Helena, the Helena National Forest and some small Bureau of Land Management tracts sprinkled throughout. Additionally, there is a parcel of State Land on the west side of the study area. Each agency has its own trail standards and management requirements.

Figure 7-2 Noxious weeds create problems for wildlife habitat as well as native plant communities.

- **Growing user base:** Trails in the HOL and adjacent federal land are becoming more popular as people discover them. In addition, trail use is much higher on Mount Helena then in more recently acquired portions of the HOL.

- **Need for Funding:** In 1996, the citizens of Helena approved a $5 million open space bond to help fund parks, open space and trails. While this funding was vital for the acquisition of open space, the funding has nearly all been allocated, forcing City officials to seek alternative sources of funding to pay for open space properties.

- **Noxious weeds:** While weeds are a separate management issue, trail building, usage and maintenance has implications on the proliferation of weeds in the HOL. (This issue is further addressed in Chapter 5)

- **Potential incompatible uses:** A the time of writing, there is little control over the types of uses on trails in the HNF. In addition to biking, hiking and skiing, trails are also used for 4-wheeling, ATV use and hunting and may not all be compatible with HOL trail usage.

- **Preservation of historic resources:** In the face of growing recreational use and proposed recreational development in the HOL it is important that historic resources are documented and potentially preserved. Some recreation uses may not be compatible with actively protecting heritage resources.

- **Safety on roads:** Some of the trails documented for this plan cross over roads causing potential safety problems and conflicts with motor vehicles.

7.3.2 Opportunities

- **Abundant nearby open space and trails:** Having many acres of public land and miles of trail so close to the downtown area is an amazing resource that Helena can be proud of. The development of looped trails can reduce the potential for conflicts between user groups.

- **Good volunteer participation:** Volunteers have been the lifeblood on trail maintenance in Helena. Non-profit organizations and user groups have been vital to mobilizing volunteers for trail workdays and developing and helping to implement planning goals.

- **Willing and cooperating agencies:** Both the City and HNF have committed financial resources towards maintenance of the recreation planning area. They have also agreed to work together to implement the findings in this plan.

- **Good access:** Access to public lands and trails is relatively easy. There are numerous points to access the trail system throughout the City.

- **Open Space Bond:** This shows the commitment of the citizens to protect open space and trails in the area. While the portion of these funds designated for acquisition has been allocated, there are still resources remaining in the maintenance budget.

- **Historic Resources:** There are numerous opportunities for interpretation at trailheads and along the system of trails including scenic vistas and landmarks, wildlife and unique flora.

7.4 RECREATION PLAN GOALS

Overall Goal: To develop a comprehensive trail system that is maintainable, accessible and that provides a fun, interesting and diverse recreational experience while protecting the area's natural and cultural resources.

The following is a set of attainable goals to ensure that the overall goal is met.

1. The City of Helena will work with the Helena National Forest and other user groups and organizations to create, fund and sustain a routine maintenance program that dedicates resources specifically to open space and trail management, maintenance and construction.

2. Ensure that wildlife habitat and other natural resources are protected and enhanced through sustainable trail projects, education and enforcement of rules and regulations.

3. Reclaim or reroute trails that are in poor condition, are unsustainable and/or are redundant.

4. Create new sustainable trails in appropriate areas that provide access to key destinations and other popular trails.

5. Develop sections of universally accessible trails for wheelchair users, elderly, young children, and others with disabilities.

6. Engage private property owners to ensure continued trail access across their property. Agencies and user groups should accept responsibility for education, maintenance and posting signs.

7. Create trailheads that give the trail system a unique identity and that can be used for all Helena trails. These trailheads should provide information regarding safety, natural resources and trail etiquette. They should also provide maps and trail information. Some trailheads will provide parking and other amenities.

8. Create a durable and attractive sign system that clearly marks trail directions and features without being obtrusive.

9. Develop a funding strategy that maximizes and leverages local funds. Work with Prickly Pear Land Trust and other organizations to prepare grant applications and solicit contributions for trail projects.

10. Continue to develop a volunteer assistance program for trail and trailhead maintenance and construction. Work with local user groups, businesses and service organizations to expand and improve the program.

7.5 RECREATION PLAN OBJECTIVES

This section presents the plan for action regarding the Recreation Planning Area. The objectives described below were developed from user comments and field observations. The first section describes activities and policies that can be applied to the overall planning area. The second section contains recommendations for specific elements on the system.

7.5.1 Area-wide Objectives

The following objectives are policies that will guide the overall development of the Recreational Planning area.

7.5.1.1 Oversight

HOLMAC will work with the City of Helena, in cooperation with the Helena National Forest to explore the feasibility of hiring or contracting with an open space and trail coordinator that can oversee trail and trailhead maintenance and construction including the implementation of the recommendations contained in this plan.

7.5.1.2 Maintenance

HOLMAC will work with the City, County and Helena National Forest to explore the feasibility of creating a dedicated crew charged with maintenance of the area's trail system. This seasonal crew could be patterned after the Montana Conservation Corps where students earn a stipend and work as a team. To accomplish this, a long-term funding source must be identified, perhaps in the form of a trail maintenance endowment.

- Consolidate redundant trails—multiple trails that access the same destination
- Reclaim unsustainable trails such as those that are too erosion prone to maintain.

7.5.1.3 Trail Design and Character (experience)

- Use the existing trail system to create a series of looped trail routes that allow trips of varying lengths and provide opportunities for trail users of varying abilities and fitness levels. This may require building sections of new trail to make key connections.

- Ensure trail connections to existing and future urban trails, neighborhoods and downtown destinations.

- Trails should be built to consistent trail standards by which all future trails are designed, built and maintained. (Suggested Standards appear in Appendix A of the South Hills Trails Plan.)

- New and existing trails should be designed to:

  - Minimize erosion and visual scarring
  - Incorporate views, user experience and natural design elements

- If new trails over and above those recommended in this plan are proposed, a formal approval process should be followed. That process must consider: the intended type of use, replacement of an existing trail, maintenance responsibilities, and connectivity.

7.5.1.4 Special Trails

- Provide at least 1 km of trail that is accessible to people with disabilities, the elderly and those seeking a less rigorous trail experience.

- Develop a trail that educates users as to the natural and cultural history of the South Hills.

7.5.1.5 Volunteers and User Groups

- User groups and volunteer organizations should be encouraged and empowered to create a volunteer "culture" and develop a regular volunteer program that focuses on trail maintenance and construction in accordance with this Plan.

- Explore the implementation of an adopt-a-trail program in which groups, companies and other organizations would assume annual maintenance responsibilities for a trail or trails.

- Any structural improvements such as signage, fencing, steps, the "H", trails, or activities involving the placement of permanent structures, must be in a work plan developed by the Department of Parks & Recreation and HOLMAC approved by the Helena City Commission.

7.5.1.6 Agency Cooperation

The Helena Parks Department and the Helena National Forest should work cooperatively to plan, develop and maintain the trail system in the South Hills. A revised memorandum of understanding or similar mechanism would establish specific responsibilities as to which trail segments fall under each agencies' jurisdiction.

7.5.1.7 Private Property Issues

- Continue to identify those trails that cross private property and the owners of those properties.

- Work with private property owners to ensure long-term non-motorized access across their property through trail easements or permission. User groups and/or public agencies should provide property owners signs and other means of control.

7.5.1.8 Enforcement and Patrol

- Limit the implementation of new rules and regulations to those necessary for safety and that can be enforced. Consistent signage and user education at trailheads and on maps and brochures is vital to this effort.

7.5.1.9 Trailheads

- Develop a series of trailheads at key identified trail system access points. These trailheads will have different levels of development as determined by their location, existing or desired usage. Trailheads can help disperse use of the trail system away from the currently heavily used areas. The hierarchy of trailheads should be as follows:

  - **Major Trailhead**: Located in areas that have a number of trails or trail systems originate and have adequate space to accommodate vehicles. Include sign kiosk, parking for 8 to 10 vehicles, access gate, dog waste mitts, waste containers, and possibly, sanitary and picnic facilities.

  - **Minor Trailhead:** Located in areas that provide access to trail systems where less developed character is desired and have adequate space for several vehicles. Include information sign and map, parking for 2 –8 cars (pullout), access gate, dog-waste mitts.

  - **Neighborhood access point:** Located in areas where primarily local residents gain access to trails. No parking is desired in these areas. Include information sign, access gate, dog waste mitts.

- Trailhead signs should contain the following information:

  - **Major trailhead sign kiosk**: Detailed map of trail system, agency logo(s), trail etiquette, wildlife, natural resource, cultural resource information, names of sponsors and volunteers that helped build/maintain the trailhead and/or trail.

  - **Minor Trailhead and Neighborhood access:** Sign with simple map of local trails and trail rules, agency logo.

7.5.1.10 Trail Signs

- Develop and construct a trail sign system that provides: trail name, directional information, and agency logo.

- Trail signs should be discreet and unobtrusive as well as vandal resistant. The suggested sign type is outlined in Appendix H of the South Hills Trails Plan.

- If a trail is closed or rerouted, provide signs that give reason for closure and direction to new or alternate route.

7.5.1.11 Map/Brochure

Once this plan is adopted, trail maps will be made available to the general public. These maps will show major trails, connections to urban trails and important destinations, trail rules, and other important information.

7.5.1.12 Pets

Dogs are permitted on all trails. Trailheads and neighborhood access points will have clearly stated rules regarding pet control and picking up pet waste. The City will endeavor to maintain a supply of pet waste mitts at major trailheads. Do not allow pets to harass wildlife. Dog guardians must pick up, carry out, and dispose of dog excrement. All dogs must be kept under control either on a leash or be within sight and under voice control. "Voice and sight control" means that the dog must be within the guardian's sight and under verbal control at all times, regardless of the distractions that are encountered in the HOL (such as wildlife, other dogs, or other park visitors). If your dog runs up to people or other dogs, chases wildlife, or will not consistently come to you upon command, the dog must leashed. In addition, all dog guardians are requested to keep dogs on leash for the first 100 yards of any trailhead for better control of pet waste in the HOL and increased control of the dog in areas having highest user density.

Dog guardians should keep in mind that dogs frighten some people. They get the same feelings when approached by a dog that you get hearing a rattlesnake buzz near your leg. When approaching other people on the trails, keep your dog at heel. If your dog is running ahead of you, recall it. Even if your dog is well trained, if someone asks you to leash your dog, please comply cheerfully.

7.5.1.13 Wildlife

The protection of wildlife habitat will be a priority in the development of this trail system. HOLMAC and the City will work with wildlife experts when planning major new trail construction. Planning of new trails must consider trail density and location so as not to adversely effect wildlife habitat.

7.5.1.14 Protection and Interpretation of Historic Resources

Work with the Helena National Forest to identify and catalogue important historical resources in the South Hills planning area. Develop a strategy to protect these resources and identify potential interpretive opportunities.

7.5.1.15 Weeds

An assessment of weeds should be completed prior to every major trail construction project. All trail construction projects will be in accordance with Section 5 of this Plan.

7.5.1.16 New Subdivisions

HOLMAC will work with the City and County planning boards to develop guidelines for open space requirements for new subdivisions that are compatible with this Plan. Trails could be considered an alternative to parkland dedication requirements.

7.5.1.17 Trail User Conflicts

- Segregation of user types is not recommended at this time. However downhill bicycle use on the 1906 Trail and the Powerline Trail on Mount Helena will be discourage through the use of signage.

- The trail system will continue to allow mountain bikers but encourage them, through education, signs and brochures, to gain access to more remote trails that lie beyond neighborhood trails frequented by hikers, especially at peak times such as on weekends and afternoons.

- Equestrian use and any motorized vehicles (with the exception of City maintenance vehicles) are not allowed on the HOL.

- Questionnaires addressing user conflicts will be made available at some trailheads.

7.5.1.18 Mount Helena H Committee

Like most Montana towns, and western towns in general, Helena has long had the first letter of its name inscribed on the slope of a prominent hillside in white stones. The H on Mount Helena has an established history among many native citizens. Because the rocks are movable, the H is currently used by Helenans to form alternating letters and symbols. No changes are recommended to management of the "H".

Figure 7-3 Trail system leading to "H"

7.5.1.19 Archery Range

For the past 20 years The Lewis and Clark Archery Club has leased city-owned property off of Davis Gulch for use as an outdoor archery range. With the acquisition of open lands over the past few years, the area around the range has experienced increased use by hikers and mountain bikers. The latest lease of the property was to expire at the end of September 2001. On January 28, 2002 the City Commissioners agreed to extend the lease for one year while the HOL Management Plan was being developed. The Lewis & Clark Archers Club will have the range evaluated by an approved expert. This evaluation will make recommendations to make the range safe to the satisfaction of the City of Helena, the Helena Ranger District, and the Montana Department of Fish, Wildlife and Parks. Upon approval of the plan the Archers Club will enter into a new use agreement with the City that will require the Club to make the necessary modifications to the range. The new agreement will be extended for a maximum of 3 years. If the Expert determines that that current range cannot be made safe then HOLMAC recommends that the archery range be moved to another location not within the HOL. Leasing of this portion of the HOL for the exclusive use by the Lewis and Clark Archery Club will be revisited routinely by HOLMAC and open to public comment on an annual basis. To accommodate the continued use of the area as an archery range the existing trail will be moved to a parallel location east of the range boundary.

7.5.1.20 Trail Use Dispersion through the HOL

HOLMAC will encourage dispersal of use from areas such as the base of Mount Helena that receive a high density of walkers and bikers to other HOL areas when approving trail maintenance, marking and creation, the use of interpretative trails, and other recreational improvements in the HOL.

Figure 7-4 Sharing of the common resource by multiple users.

7.5.2 Site-Specific Objectives

This section refers to specific trail projects. These projects are presented as a blueprint for the ideal trail system of the HOL and it's integration with federal lands. Trail improvements or changes on federal lands will need to meet federal requirements. Any trails transecting private property will only proceed if a landowner is willing to allow access or the property or trail easement is acquired to allow trail access. Most of the trails in the newly acquired portions of the HOL and new trails on Mount Helena do not have official names and are shown on Resource Map 6 as having no name or a commonly used nickname. The study area has been broken down into the five sub-areas listed below. Please refer to Resource Map 6 at the end of this Section for locations.

- Mount Helena including the Mount Helena City Park and the Mount Helena Ridge National Recreation Trail (MHRT)
- Wakina Sky Gulch Area between Grizzly Gulch and Orofino Gulch Roads
- Rodney Ridge between Orofino Gulch and Davis Gulch/Tucker Gulch including the Cox Lake area
- Mount Ascension including the Davis Gulch Greenway and Meatloaf Hill, Sugarloaf Hill, Quarry Hill and Bompart Hill.
- East Side from the Mount Ascension area to Donaldson Property near the new water tank.

7.5.2.1 Mount Helena

Ownership and Private Property

- Work with property owner to develop a trail access from west end of LeGrande Cannon Boulevard (near the top of Silverette Street) to Mount Helena Park. This access would be established in cooperation with the property owner to prevent wholesale trespass on their property.
- Acquire 14-acre private inholding on the east side of Mount Helena Park. The popular Prospect Shafts Trail crosses this property and has been used by the public for decades.
- Pursue a trail easement where the proposed Lower North Side Trail crosses the edge of several lots in the Forrest Estates Subdivision.

Figure 7-5 Trail erosion

Trails to be Reclaimed, Rerouted and/or Rebuilt

- Consolidate dense web of trails in northeast/Quarry Area to reduce redundancies and resource damage. Work with local neighbors to determine most desirable, sustainable routes. Trails to the tops of hills must be rebuilt or rerouted to more sustainable locations.
- Consolidate trails on the recently acquired property on the west side of Mount Helena Park creating a sustainable approach to the Mount Helena Ridge Trail and trail loops in this area.

- Work with trail advocates to determine the fate of the switchbacks on the North Access Trail, which are poorly constructed and unusable in slippery conditions. Consider closing and replacing with an alternate route or rebuilding portions of this section of the trail.

- Clear small trees and limbs from lower North Access Trail corridor.

- Eradicate and reclaim web of eroding trails around the "H." Replace with a new sustainable access. It is very important that signage be used to direct people to the new access and explain the reason for the closure. Work with High School Groups to prevent further damage to this area.

- Rebuild Powerline Trail to control erosion and reclaim disturbed soils using a "step" like system to stabilize the tread and keep users from stepping off the trail. The Powerline Trail should be considered a hiking only trail.

- Rebuild and stabilize West End Trail between and 1906 Trail and the Backside Trail to control erosion and widening.

- Attempt to control erosion and widening of Prospect Shafts Trail.

- Reclaim fall line trails and consolidate unofficial trails west and south of Reeders Village subdivision and create a sustainable trail connection in this area.

- Close and/or reclaim or all other steep fall line trails.

New Trails

- Designate the Lower North Side Trail, an existing path that contours along the lower slopes of the north face of Mount Helena above LeGrande Cannon Blvd. This trail allows for a less strenuous hike or bike ride and connects the Swaney property and the west end of Mount Helena with the Adams Street Parking Lot/Trailhead.

- When Swaney parcel is acquired by the City, construct a trail that links it to the North Access Trail and potentially directly to the Prairie Trail.

- Explore possibility of a trail link between Spring Meadow Lake State Park and Le Grande Cannon Blvd. Trail. This will bring users directly to the foot of Mount Helena and its trail system.

- Incorporate Emmett's Trail/Mini Ridge and the Horse Trail into the Forest Service official trail inventory. Both provide good alternative access to the Mount Helena Ridge Trail and offer good loop options.

- Investigate potential of trail across state land (Section 27) west of Mount Helena connecting the west end of LeGrande Cannon Blvd. to the Mount Helena Ridge Trail.

- Explore a trail link between Park City/Mount Helena Ridge Trail and Highway 12 via Nelson Gulch on HNF and BLM lands. Before constructing, ensure that wildlife security can be maintained.

Trailheads and Signs

- Major trailhead at Dump Gulch

- Minor trailhead at Swaney Property

- Neighborhood accesses at west side of Mount Helena, Top of Holter Street and top of Clarke Street

- Sign at the south trailhead of the Mount Helena Ridge Trail at Park City
- Place closure markers at all undesired trails.

7.5.2.2 Wakina Sky Area

Ownership and Private Property

- Acquire the 457-acre privately owned parcel encompasses the meadow at the top of the Wakina Sky Trail into public ownership. This property is in danger of being sold and developed potentially blocking access to this beautiful area.
- Secure access on popular trail leading from Wakina Sky Meadow to Orofino Gulch also that lies on private property and was recently closed to access. Bike clubs and other user groups should work with the property owners in this area to develop a cooperative access plan that ensures that that users close gates and patrol the area's use to prevent trespass or vandalism problems.
- Continue to investigate ownership of the land between the Orofino Gulch road and the National Forest boundaries and secure the appropriate easements allowing adequate access from Orofino gulch and the Waterline Trail to Wakina Sky.
- Acquire the 19–acre property directly east of the Dump Gulch Trailhead allowing access to public lands in the Wakina Sky area and the Black Forest Trail as well as opening up a possible connection to the Waterline Trail.

Trails to Be Reclaimed, Rerouted and/or Rebuilt

- Reclaim the two trails on the east side of Wakina Sky connecting to Orofino Gulch Road due to erosion and private property issues. Replace with new sustainable trail be built to allow access between Orofino Gulch and Wakina Sky Gulch. This new access should align with access to the Waterline trail across Orofino Gulch Road.
- Reroute lower portion of Barking Dog Trail away from residence at bottom of trail. Provide a safe access point off of Orofino Gulch Road.

New Trails

- Investigate a sustainable trail connection from the Wakina Sky area to Orofino Gulch.
- Trail connection between Wakina Sky Meadow and Grizzly Gulch Road via the Glory Hole Mine site. There are existing trails in this area that could be used to construct this trail. This trail lies is mostly on private property and would require at least a trail easement to construct. Preferably this property could be purchased by or for the Helena National Forest.

Trailheads and Signs

- The Dump Gulch trailhead allows access to both Wakina Sky and Mount Helena.
- Minor trailhead along Orofino Gulch Road that could also serve the Waterline Trail and Rodney Ridge.

7.5.2.3 Rodney Ridge, Cox Lake and Davis Gulch

Ownership and Private Property

- Work with private property owner to establish trail from Dale Harris Park to Acropolis Hill and Hale Reservoir area across the city-owned Congress parcel.
- Work with private property owner to reestablish Waterline Trail access to Rodney Street.
- Work with private property owner to establish a connection to Cox Lake from Rodney Ridge that ensures residents' privacy.

Trails to Be Reclaimed, Rerouted and/or Rebuilt

- Eradicate eroding jeep roads and fall line trails and replace with sustainable trails if necessary including main connecting trail from Old Shooting Range to the Waterline trail
- Consolidate the trails on the west side of Rodney Ridge.

New Trails

- Reestablish access to the north end of the Waterline Trail connecting to Dale Harris Park and South Rodney Street Area.
- An extension of the Waterline Trail to Dale Harris Park would link the Waterline Trail directly to Downtown Helena and the Walking Mall.
- Establish a trail connection from the north end of the Waterline Trail to Rodney Ridge Trail.
- Work with private landowner to establish trail from Cox Lake to Rodney Ridge.
- Evaluate potential extension of the Waterline trail to the south across Dry Gulch to the Barking Dog Trail.
- Extend Davis Gulch Greenway Trail through the old shooting range south to the intersection with Dry Gulch Road and potentially up Tucker Gulch.

Trailheads and Signs

- Major trailhead at the Old Shooting Range to provide access to both Mount Ascension and Rodney Ridge trails.
- Minor trailhead to access the Waterline Trail on Orofino Gulch Road on property owned by the Prickly Pear Land Trust.
- Neighborhood access on north end of Waterline Trail when it is reestablished.

7.5.2.4 *Mount Ascension (including Quarry Hill, Meatloaf Hill, Sugarloaf Hill and Bompart Hill)*

Ownership and Private Property

- Work with private landowners to establish a route from Beattie Street trailhead to the top of Mount Ascension. Ensure that this route maintains privacy of these landowners.

- Identify and work with property owners to secure existing trail from the top of Mount Ascension south to the Entertainment Trail connecting City property and Forest Service Lands. This trail crosses about nine lots in the Alpine Meadows subdivision in Jefferson County, which currently has little residential development.

- Identify and secure access across private property adjacent to existing neighborhoods on Quarry Hill, Sugarloaf Hill and the western half of Meatloaf Hill.

- Work with property owners at the top of Tucker Gulch to secure access to the Brooklyn Bridge Trail and the Flume Trail. Ensure that landowner privacy is maintained.

Trails to Be Reclaimed, Rerouted and/or Rebuilt

- Eradicate steep and eroding old roads fall line trails on Mount Ascension.

- Consolidate trails on Meatloaf Hill; Sugarloaf Hill and Quarry Hill creating fewer, more sustainable trails that connect to neighborhoods. Work with private property owners on these projects.

- Continue to work with Lewis and Clark Archers to ensure that the Archery Range Trail is completely safe and buffered from any errant arrows.

New Trails

- Plan and construct a looped trail through within the newly acquired Bompart property. This trail will connect Mount Ascension Park with Lime Kiln Road and the east side neighborhoods.

- Reroute Mount Ascension Trail away from private residence.

- Extend the Archery Range Trail along the west flank of Mount Ascension to upper Tucker Gulch Road. This trail would be almost completely on Forest Service land and will allow an off-road trail connection to the Flume Trail.

- A portion of the Davis Gulch Greenway is currently on Davis Gulch road creating an unsafe trail situation. The City of Helena should work to ensure this trail is on a continuous and safe corridor away from auto traffic.

- Establish a trail for people with disabilities, older trails users and those with children using old road grades on Mount Ascension. This trail may not be built to the specifications of the American Disabilities Act (ADA) but it should accommodate wheelchairs by having adequate width, relatively low grades and maintainable natural surfacing.

- Ensure that trails on both east and west side of the Crest View Subdivision are built and maintained to allow access to Mount Ascension around the subdivision

- Ensure trail access from Brooklyn Bridge Trail and Skihi Peak to upper Tucker Gulch

Trailheads and Signs

- Minor trailhead at the end of Beattie Street where it adjoins the Beattie Street Park.

- Minor trailhead along the Davis Gulch Greenway near the intersection of the Eagle Scout Trail. (A turn out already exists here.)

- Neighborhood access points should be located at key points in the south central neighborhoods such as Lime Kiln Road, 2nd Street (west), State Street and the Touchstone area.

- Work with developers of Crestview Subdivision to establish a trailhead at South End of Phase II to allow access for wheelchair users and others with disabilities.

7.5.2.4 East Side Area

Ownership and Private Property

- Identify public and private lands for trail opportunities to make connection to eastside neighborhoods and other key destinations such as the Donaldson Property and St. Peters Hospital area. Explore the feasibility of establishing trails in strips of public lands that lie between these neighborhoods.

- Explore the potential of designating subdivision roads to the east of Mount Ascension part of the trail system. This could include the trail easement through the 120 acres of land lot currently owned by the Prickly Pear Land Trust.

- Work with the developer of the Red Letter subdivision near Gold Rush Ave to establish a trail connecting to South Hills Drive.

Trails to be Reclaimed, Rerouted and/or Rebuilt

- No heavily used trails exist in this area. As new trails are built, they will be incorporated into the trail maintenance system.

New Trails

- Once property ownership has been verified, plan and construct formal trail system in this area.

- Ensure there is a trail connection to the Donaldson Property open space area from Saddle Drive.

- Explore a trail connection from Mount Ascension to South Hills Road some of which will be on existing subdivision roads.

- Work with Jefferson County officials and Montana City residents to establish a trail connection to Montana City and beyond.

- Develop an easy access trail into a treed area.

Trailheads and Signs

- When trail system is established, a major trailhead should be located at the Saddle Drive area near the Donaldson Property.

- Neighborhood access points should be located at key points in the east side such as Beltview. These points will be identified as trail planning in this area progresses.

7.6 ISSUES OF CONCERN, GOALS AND OBJECTIVES

The HOL Management Plan issues of concern, goals and objectives regarding a widespread recreation plan are summarized in this section. "Issues of Concern" refer to those issues raised during the public

scoping period by interested citizens, special interest groups, local, state and federal agencies, and HOLMAC members. The "Goals" are set by HOLMAC in response to stated concerns. "Objectives" refer to management practices recommended by HOLMAC for implementation by this Plan.

Table 7.6-1 Recreation Plan Issues of Concern, Goals and Objectives

Issues of Concern	Goals	Objectives
Many miles of trail to manage	City of Helena will work to create, fund and sustain a routine maintenance program	-Consolidate redundant trails -Reclaim unsustainable trails -Use existing trail system to create looped trail routes -Ensure trail connections to existing and future urban trails, neighborhoods and downtown destinations -Trails should be built to consistent trail standards -New and existing trails should be designed to: 1. Minimize erosion 2. Incorporate veiws, user experience and natural design elements -In new trails a formal approval process should be followed -Limit the implementation of new rules and regulations to those necessary for safety and that can be enforced -Develop a series of trailheads and trailhead signs at key identified trail system access points -Consider hiring open lands and trail coordinator
Wildlife habitat to protect	Ensure wildlife habitat are protected and enhanced	-Protect wildlife through sustainable trail projects, education, and enforcement of rules and regulations -Work with wildlife experts when planning major new trail construction
Uncontrolled access	Limit the amount of uncontrolled access	-Provide formal entry points with posted information regulations and maps
Maps and directional signs	Create a durable and attractive sign system that clearly marks trail directions and features without being obtrusive. Provide maps of trail system	-Maps will show major trails, connections to urban trails and important destinations, trail rules, and other important features -Develop and construct a trail sign system that provides: trail name, directional information and agency logo -Trail signs should be discreet and unobtrusive as well as vandal resistant - If a trail is closed or rerouted, provide signs that give reason for closure and direction to new or alternate route

Issues of Concern	Goals	Objectives
Private property issues	Engage private property owners to ensure continued trail access across their property. Agencies and user groups should accept responsibility for education, maintenance and posting signs.	-Identify trails that cross private property -Work with owners to ensure long term use of property
Multiple public ownership	Helena Parks Department and Helena National Forest work cooperatively to plan develop and maintain the trail system	-Establish specific responsibilities as to which trail segments fall under each agencies jurisdiction -Create uniform trail standards
Growing user base	Develop sections of universally accessible trails for wheelchair users, elderly, young children, and others with disabilities	-Provide at least 1km of trail for people with disabilities and elderly
Need for funding	Develop a funding strategy that maximizes and leverages local funds	-Work with Prickley Pear Land Trust and other organizations to prepare grant applications and solicit contributions for trail projects -Develop a volunteer "culture and develop a regular volunteer program -Explore implementation of an adopt a trail program
Noxious weeds	Prevent and eradicate noxious weeds	-Complete assessment of weeds prior to every major trail construction project
Potential incompatible uses	Maintain control over types of uses on trails in the planning area	-Segregation of user types is not recommended at this time. However downhill bicycle use on the 1906 Trail and the Powerline Trail on Mount Helena will be discouraged through the use of signage. -The trail system will continue to allow mountain bikers but encourage them, through education, signs and brochures, to gain access to more remote trails that lie beyond neighborhood trails frequented by hikers, especially at peak times such as on weekends and afternoons -Equestrian use and any motorized vehicles (with the exception of City maintenance vehicles) are not allowed on the HOL -Trailheads and neighborhood access points will have clearly stated rules regarding pet control and picking up pet waste
Preservation of historic resources	Work with Helena National Forest to identify and catalogue important historical resources	-Develop a trail that educates users to the natural and cultural history -Develop a strategy to protect these resources

Issues of Concern	Goals	Objectives
Safety on roads	Reduce potential safety problems and conflicts with motor vehicles	-Provide signs where pedestrian trails and motor vehicle roads intersect
The H	Resolve the H conflict	Reduce erosion and plant community damage from unauthorized trails

7.7 PRIORITY PROJECTS

The following are the Plan priority projects for HOL recreation. These were derived from a combination of interviews with agency personnel, HOLMAC members and through comments received during public meetings.

1. Improve major trailhead facilities including sign/kiosk, fencing and grading at Upper Davis, Dump and Swaney.

2. Improve minor trailhead facilities including sign, fencing and grading at Beattie, Waterline and Lower Davis.

3. Improve neighborhood access points including signs and fencing.

4. Contract a trail coordinator.

5. Mount Helena Trail and Mount Ascension construction and maintenance through Montana Conservation Corps.

8. WILDLIFE PROTECTION

The areas surrounding Helena are rich with a wide variety of wildlife species. A diverse habitat complex of forests, grasslands, rock cliffs and sagebrush fields provide critical elements to the survival of wildlife. The vegetation which makes up wildlife habitat is very dynamic. As the habitat changes through time, by natural or anthropogenic means, wildlife species composition follows suit. It is crucial that all land management decisions be made with a thorough understanding of the ecological processes that affect wildlife habitat.

Figure 8-1 Mule deer near Mount Ascension trail.

8.1 DESCRIPTION OF WILDLIFE RESOURCES

Wildlife populations are constantly changing demographically in direct relation to highly dynamic habitat conditions. Historic photographs of this region show much different habitat than exists today. For example, Mount Helena was nearly treeless in the late 1800s (Turner and Bourie, 1997). Today the mountain is covered by thick, multilayered forests in many areas. Based on a field inventory, the forested area continues to expand into what was once grassland. These changes, although they may not be considered within a historic range of natural variation, have provided essential conditions for the survival of the present wildlife in and around Helena (Arno and Gruell, 1986). Increased recreational use on Mount Helena has likely caused decline. Prairie Falcons once nested in the cliffs on the north side of Mount Helena and likely have abandoned these nesting grounds as a result of increased recreation use (Joslin, 2002a). Changes in recreation use and vegetation management decisions will continue to alter wildlife presence.

Management of Helena's Open Lands (HOL) also has profound implications for wildlife. The HOL are situated on the edge of vital wildlife migration corridors found on the west and south sides of Helena. These corridors allow for the passage of genetic material important to the conservation of wildlife populations (Joslin, 2002). Recreation management and the interconnection of trails between HOL and more remote trails which would pass through wildlife corridors should be considered in light of their potential impacts on wildlife. The City of Helena may decide to discourage use of these corridors through trails management.

A list of species occurring or potentially occurring on Helena's Open Lands can be found in Appendix J. Regional wildlife habitat areas are shown on Resource Map 7.

8.2 ISSUES OF CONCERN, GOALS AND OBJECTIVES

The HOL Management Plan issues, goals and objectives regarding wildlife protection are summarized in this section. "Issues of Concern" refer to those issues raised during the public scoping period by interested citizens, special interest groups, local, state and federal agencies, and HOLMAC members. The "Goals are set by HOLMAC in response to stated concerns. "Objectives" refer to management practices recommended by HOLMAC for implementation by the Plan.

Table 8.2-1 Wildlife Issues of Concern, Goals and Objectives

Issues of Concern	Goals	Objectives
Current wildlife management is haphazard	Actively manage HOL for desirable wildlife qualities	-Establish a citizens wildlife subcommittee to review, create and/or implement plans
Domestic pet impacts on wildlife	Minimize impact of pets belonging to recreational users and homeowners on edge of HOL	-Identify habitat or species particularly susceptible to irritation by domestic pets -Identify areas where dogs are of particular danger to wildlife in the HOL
Dwindling habitat	Maintain and enhance existing habitat resources on Open Lands	-Reduce fire risk -Aggressively pursue weed control programs -Create seasonal user restrictions to minimize recreationist/wildlife conflicts -Treat weeds to protect browse and grazing plants
Deer coming in to town	Discourage or eradicate deer which are wandering into town	
Special use areas currently at risk	Maintain areas seasonally crucial to survival and maintain proper environments	-Identify and enforce user restrictions near calving grounds and winter ranges
Development drives wildlife away	Mitigate impacts to wildlife	-Implement Section 8 of this Plan
Threatened and endangered species	Help maintain threatened and endangered species	-Avoid use and/or development in areas containing element occurrences of special status species -Discourage trail use in areas which are in migration corridors to the west and south of the city
Mountain lions/bears/people	Reduce negative interactions between wildlife and people	-Educate with kiosks and other interpretive materials

8.2.1 Wildlife/Recreation Interactions

Increasing recreational use of HOL poses many problems for wildlife. Off-road recreational vehicle use, dogs, skiing, hiking, bicycling, horseback riding, rock climbing, snowmobiling, hunting and road and trail development can all negatively impact wildlife. A recent publication prepared by two Helenans for the Montana department of Fish, Wildlife and Parks, *Effects of Recreation on Rocky Mountain Wildlife* (Joslin and Youmans, 1999) states:

> Wildlife responses to disturbance may be behavioral (e.g., avoidance, habituation, attraction) or physiological (stress). Short-term responses to disturbances are often presumed to be of little consequence to wildlife. But, over time, the stress of repeated disturbance may have detrimental consequences to individual animals by interrupting feeding or breeding behavior, reducing vigor, reducing productivity, and causing death; all have been documented. In the long-term, negative consequences to individual animals may result in lower population levels, changes in the composition of wildlife communities, and conflict between wildlife species.

Furthermore, the following activities can severely impact wildlife (Knight and Cole, 1995):

- Hunting – Alteration of sex and age composition, behavior, reproduction (including date of conception in elk), and distribution.
- Viewing – Disturbance as a result of close encounters may alter behavior, cause unnecessary energy expenditure, alter nest placement, and reduce survivorship of young (via abandonment or predation).
- Backpacking, hiking, cross-country skiing, /horseback riding – -flight and/or elevated heart rates, displacement.
- Rock Climbing — Disturbance of preferred raptor perching and nesting sites during the breeding season, displacement.
- Spelunking – Disturbance or abandonment of bat roosting and maternity sites. Spelunking is implicated in the decline of bat populations.
- Pets (dogs) – Provoke more of a predator-alarm response than a person unaccompanied by a dog, harassment/energy expenditure, direct mortality.
- ORV's (motorcycles, ATVs, quadricycles, dune buggies, amphibious vehicles, and air-cushion vehicles) – May cause disturbance (flight and/or stress) and redistribution.
- Snowmobiles – May cause disturbance (flight and/or stress) and/or redistribution. There can be a release of toxic by-products from combustion into snowpack and water.

Considering the intense and increasing recreational use of the HOL, there is clearly a need for guidelines to protect Helena's wildlife. These should be designed for the species needing protection from the type of recreation causing the impact. HOLMAC shall work through an established Wildlife Subcommittee to minimize impacts as much as possible.

8.3 PRIORITY PROJECTS

The majority of wildlife/recreation issues can be addressed through two activities: 1) creating and consulting with a citizens advisory wildlife committee and 2) educating the public. The following list of priority projects will be executed by the HOL advisory committee.

1. Adopt conservation management strategies for the well-being of wildlife on Open Lands.
2. Develop a network of volunteers to monitor and recommend area closures due to nesting or roosting activities.
3. Work with Montana State Natural Heritage Program and USFWS to conserve special status species found on Helena's Open Lands.
4. Consider recreation use restrictions for impacts.
5. Incorporate area use restrictions to minimize impact to sensitive winter use areas and calving grounds.
6. Place informational materials at trail heads to educate the public about the impacts of dogs on wildlife and the responsibilities of pet owners while in the HOL.

8.4 MAP OF SENSITIVE AREAS

Please see Resource Map 7 of sensitive areas on following page. This map data was developed by the Montana Department of Fish, Wildlife, and Parks and shows a portion of the range of select special status species. It does not necessarily include any sightings of these species. This map shall be used to guide timing and locations of recreation use and land management actions.

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9. BOUNDARY IDENTIFICATION AND MAPPING

9.1 DESCRIPTION OF BOUNDARIES AND PARCELS

The HOL System occupies 35 distinct land parcels amounting to 1,762 total acres. Individual parcel maps are found in Appendix C. Information describing the exact boundary configuration of these parcels was not available for this publication. The maps included in Appendix C show approximate property boundaries derived from sketches and other information provided by the City of Helena GIS and Parks Departments.

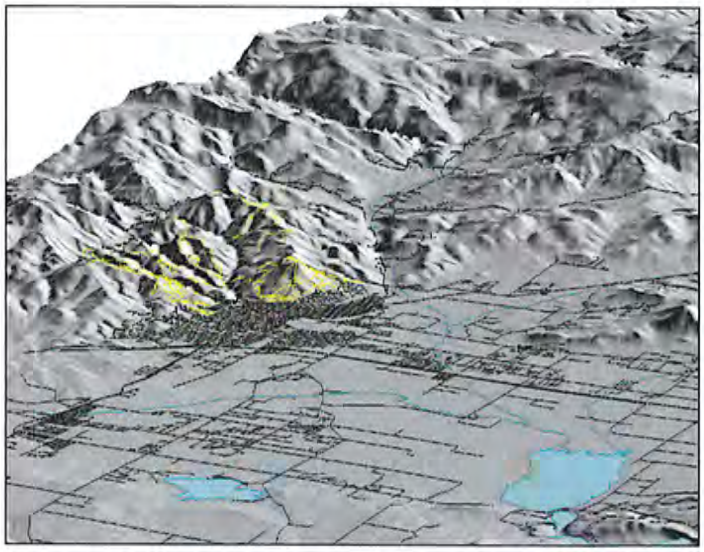

Figure 9-1 Three-dimension computer rendering of the open lands above the Helena Valley.

Resource Map 1 (at the end of Section 1) shows 35 parcels which were digitized into a GIS database. Land ownership boundaries are approximate in this Plan.

As indicated in the individual parcel maps, many of the existing trails in the HOL connect to a network of trails that lie outside of HOL boundaries. Some of these trails connect to private land while others pass through Helena National Forest and BLM land. To prevent unintentional trespassing on private lands and for general orientation purposes, these boundaries will be corrected and clearly identified on maps for the Final Plan. Adequate signage will also be provided in the field. Results of public process to date in regards to boundary identification are presented below.

9.2 ISSUES, GOALS AND OBJECTIVES

The HOL Management Plan issues, goals and objectives regarding Boundary Identification are summarized in this section. "Issues of Concern" refer to those issues raised during the public scoping period by interested citizens, special interest groups, local, state and federal agencies, and HOLMAC members. The "Goals" are set by HOLMAC in response to stated concerns. "Objectives" refer to management practices recommended by HOLMAC for implementation by this Plan.

Table 9.2-1 Boundary Identification Issues of Concern, Goals and Objectives

Issues of Concern	Goals	Objectives
Poor identification of public vs. private lands	Clearly delineate and educate public on boundaries of private lands	-Locate signs at key points along trails -Include boundary identification in trail maps -Survey HOL boundaries -Install HOL boundary corner monuments
Public/Private land conflicts	Prevent unlawful trespass on private property	-Provide clear identification of allowable access points to HOL -Educate public regarding circumstances associated with the unlawful use of private lands -Work with land owners to insure private land ownership rights are fully enforced -Work toward acquiring easements or agreements for trail access over appropriate private lands

9.3 PRIORITY PROJECTS

1. Complete a survey of HOL boundaries.

2. In accordance with signage guidelines outlined in Section 10, HOL standard signs will also be made available to private land owners who wish to more fully delineate their property boundaries.

3. As elaborated in Section 7, the current uncontrolled access to the HOL will be remedied by establishing formal entry points. These access points must be clearly shown on trail maps and in the field.

4. The City of Helena will work with the Prickly Pear Land Trust and other user groups to seek continued trail access across private lands. The City of Helena must accept responsibility for education, maintenance and signage.

Figure 9-2 Access points and boundaries should be clearly marked with attractive signing.

10. INTERPRETIVE OPPORTUNITIES

The HOL is rich with interesting natural history and archeological sites. From the wildlife species which inhabit open lands - to the historic 1906 tree plantings on Mount Helena - to the abandoned Lime Kilns - to the annual run to the top of Mount Helena, there are ample opportunities to provide educational interpretation. Interpretive subjects can be divided into several categories: natural, historical, archeological and cultural. With the wide variety of issues confronting the open lands, interpretive signing will be helpful to raise user awareness of the sensitivities, complexity and conservation importance of HOL resources. The Non-motorized Plan (currently in development) shall be incorporated into this Plan. This is especially important for directional signs which will link the HOL system together.

Figure 10-1 This monument is an example of an unobtrusive entrance gate to the HOL, located at the trail head of a lower Mount Ascension trail from Davis Gulch.

10.1 CURRENT INTERPRETIVE INFRASTRUCTURE

Currently there is one main interpretive area on HOL and it is located at the main trail head to Mount Helena. The interpretive structure consists mainly of a kiosk with posters. The City of Helena maintains this kiosk structure.

10.2 ISSUES OF CONCERN, GOALS AND OBJECTIVES

The HOL Management Plan issues, goals and objectives regarding opportunities are summarized in this section. "Issues of Concern" refer to those issues raised during the public scoping period by interested citizens, special interest groups, local, state, and federal agencies, and HOLMAC members. The "Goals" are set by HOLMAC in response to stated concerns. "Objectives" refer to management practices recommended by HOLMAC for implementation by this Plan.

Table 10.2-1 Issues of Concern, Goals and Objectives

Issues of Concern	Goals	Objectives
Vandalism	Avoid vandalism of interpretive sites	-Use sign construction more resistant to vandalism -Locate signs in less vandalism prone areas (away from trail heads)
Sign design	Design signs so as to not detract from natural beauty of area	-Coordinate with Forest Service signage -Retain natural character by limiting signage and displays -Be cognizant of locating signs in tactful places -Use natural materials in construction, use colors which match natural tones of vegetation, soils and rocks -Place signs sparingly on HOL

Issues of Concern	Goals	Objectives
Sign placement	Blending sign placement with Helena Open Lands aesthetic	-Keep interpretive structures to scales that blend with that of main features in the environment -Locate on periphery of landscape features where appropriate (e.g.. on edge of meadow, not in middle)
Lack of interpretive maps	Add interpretive signs with maps at trail heads	-Keep maps simple. Don't get bogged down by precision. Design for the mind's eye to show only main trail directions and intersections
Stewardship	Design interpretive signage with public education and user responsibility information	-Engaging public rather than laying strict rules and regulations will be more effective -Educate to explain management activities and help build support for HOL management activities
Local knowledge	Increase knowledge of local resources to promote interest and public support for maintenance and enhancement of HOL	-Inventory best sites for interpretive signs -Develop a brochure keyed to site locations along trails
Potential confusion between HOL and HNF trails	Reduce the risk of confusion to the trail user	Coordinate the HNF to develop signage that uses similar symbols and contains similar design themes and images for both the HOL and HNF
Interpretive trails on Mount Helena will increase the density of use in already highly used areas.	Encourage dispersed trail usage throughout the HOL	Interpretive trails, such as those that highlight cultural, geological or biological aspects of an area, will be developed in those areas outside of Mount Helena.

10.3 EFFECTIVE INTERPRETIVE STRATEGIES

10.3.1 Text

Text for interpretive signage will be kept to a minimum. Most people don't want to read more than 125 words on an interpretive sign. Seventy-five words is the most effective number on any single panel (Ostergaard, 2001). Interpretive signs will be created with these guiding principles:

- Text needs order and hierarchy of importance or information. All emphasis is no emphasis. The title, subheads and captions should tell the general story.
- Focus on one theme per sign with only one or two ideas explored.
- Avoid unfamiliar terms or bureaucratic jargon. Make your text readable to a wide range of visitors.

- Evaluate the final content by applying a couple of questions: So what? Why should I want to know this information?
- Use conversational rather than formal language.
- Be concise, use as few words and be as simple as possible.

10.3.2 Sign Construction

Interpretive signs on the HOL will be used sparingly. When provided, the following principles will be applied:

- Pick material that is appropriate to the subject. For example, wood frames resembling mining shaft braces would be effective for mine interpretation.
- Pick resilient materials which will be more resistant to vandalism.
- Consider the extreme weather conditions to which the signs will be exposed.
- Blend sign colors and materials with the site.
- Consider construction and maintenance costs.
- The base is just as important as the sign itself. Consider using stones, metal or attractive wood framing. Where appropriate, consider painting bases to blend in with environment.

Figure 10-2 Education through interpretation can nurture a community conservation ethic.

10.4 DEMONSTRATION AREAS

Demonstration sites will help to build a conservation ethic among Helena Open Lands users. Many of the priority projects in this plan involve the restoration or mimicry of natural biota communities or processes. Whenever land management activities are executed they offer an opportunity for managers to explain these natural processes. Demonstration plots will offer the public the opportunity to witness these processes over time. Whether the demonstrations are successes or failures is not important. Because whenever demonstrations fail, something is learned. Interpretive signing, brochures or whatever media is selected should report the relative success of the demonstration area. By pointing out pristine plant communities or weed free areas the public will develop an appreciation for natural systems and the importance of their conservation.

10.5 PRIORITY PROJECTS

1. Install a map at main trail head of Mount Helena showing major trails. Have a simplified artist rendition or well designed GIS generated map of the trail system rather than an overly technical depiction.

2. Work with Prickly Pear Land Trust on open lands interconnectivity, and provide directional signage for getting from one parcel to the next. Incorporate Non-motorized Plan (currently in development) into this process.

3. Use interpretive signage in concert with management activities (weed control, fuels treatment, trail closures) to educate public and build a sense of community stewardship.

4. Determine one or two sites for interpretation or demonstration area. Define partners and costs.

5. Develop an interpretative trail.

10.6 INTERPRETIVE PARTNERSHIP OPPORTUNITIES

- Montana Native Plant Society
  PO Box 8783
  Missoula, MT 59807-8783

- Helena National Forest
  2880 Skyway Drive
  Helena, MT 59602

- Montana Fish, Wildlife and Parks
  PO Box 200701
  Helena, MT 59620

- Prickly Pear Land Trust
  P.O. Box 892
  Helena, MT 59624

- Montana Natural Heritage Program
  Montana State Library
  1515 East Sixth Avenue
  Helena, MT 59620-1800

- Boone and Crockett
  Conservation Education Program
  P.O. Box 598
  1961 5th Lane NW
  Choteau, MT 59422

- Bolle Center
  University of Montana
  School of Forestry
  Missoula, MT 59812

- Montana Environmental Education Program
  P.O. Box 8065
  Bozeman, MT 59773

- Helena School District #1
  55 South Rodney
  Helena, MT 59601

- Society of American Foresters
  5400 Grosvenor Lane
  Bethesda, MD 20814-2198

- Helena Forest Foundation
  2880 Skyway Drive
  Helena, MT 59602

- Montana Historical Society
  225 North Roberts
  Helena, MT 59601

- The Nature Conservancy of Montana
  Pine Butte Education Program
  P.O. Box 1108
  Choteau, MT 59422

- Boone and Crockett
  Wildlife Conservation Program
  University of Montana
  School of Forestry
  Missoula, MT 59801

- U.S. Fish and Wildlife Service
  Helena, MT

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Beck, Larry and Ted Cable. 1998. *Interpretation for the 21st Century: Fifteen Guiding Principles for Interpreting Nature and Culture*. Sagamore Publishing, Champaign, Illinois. 207 pp.

Ostergaard, Richard. 2001. *Sign Sense*. Paper for 2001 National Scenic Byway Conference, August 26-29, 2001. Portland, Oregon.

Tilden, Freeman. 1957. *Interpreting Our Heritage*, The University of North Carolina Press, Chapel Hill.

TOC

11. URBAN INTERFACE

Urban area growth containment was identified as one of the top five important issues during the public scoping process. Citizens who participated in the public process were concerned about "over-development," "privatization of natural lands," "increasing conflicts between humans and wildlife," "increasing fire danger," and low-density development of natural lands. These concerns have implications for areas outside the project area considered in this Plan, however, they do pertain to the management of HOL resources. Inherent to the urban interface issues is public accessibility. In the balancing act between the interests of individuals and the interests of the community, the Helena stakeholders have clearly weighted community/public interests more heavily in this process:

> Helenans who weighed in on the high-priority issue of Urban Area Growth Containment were uniformly in favor of limiting development that infringes on public lands access, that moves into wildlife habitat, or that is low density (ERG, 2002).

11.1 ISSUES OF CONCERN, GOALS AND OBJECTIVES

The objectives outlined below are short- and long-term strategies for protecting open lands by focusing on the built environment. The HOL Management Plan issues, goals and objectives regarding urban interface are summarized in this section. "Issues of Concern" refer to those issues raised during the public scoping period by interested citizens, special interest groups, local, state and federal agencies, and HOLMAC members. The "Goals" are set by HOLMAC in response to stated concerns. "Objectives" refer to management practices recommended by HOLMAC for implementation by this Plan.

Table 11.1-1 Urban Interface Issues of Concern, Goals, and Objectives

Issues of Concern	Goal	Objectives
Urban sprawl and low-density development	Short- and long-term urban containment and protection of open lands and of public access to open lands	• Establish guidelines for public access from neighborhoods to open lands • Ensure connections between subdivisions and open lands • Coordinate Helena's land use and transportation plans

11.2 LONG-TERM STRATEGIES

People living in fairly dense, traditional pedestrian-scale neighborhoods near the edge of Helena's open lands have a sense of both being "in town" and simultaneously near to open land. The abrupt edge between Helena's dense urban neighborhoods and the open lands is porous both visually (because the street vista terminates at the open lands) and physically (because streets and alleys offer immediate foot-access to open lands). This section describes the long-term strategy for preserving the character of Helena's urban interface.

- Non-motorized Plan: The Non-motorized Plan is currently being developed. The Non-motorized Plan shall work congruently with this Plan to insure accessibility and interconnectedness of HOL.

- Maintain Existing Zoning: Maintenance of existing zoning densities at the edge of the HOL is in accord with the integrity of the open land experience.

- City planning staff participation: Zoning requirements, variances and general planning decisions that affect access or use of open lands must include a consideration of priorities and projects outlined in this plan. Service on HOLMAC by a member of the City planning staff would provide both input to HOLMAC proceedings from a member knowledgeable about City planning issues, and input to the city planning staff from HOLMAC.

- Review platted street closure requests: Request that the City Planning Staff alert HOLMAC to all requests to close platted streets near Helena open lands. Of the many values provided to Helena residents by the HOL, the vistas to open space from within the city give residents and visitors a larger sense of space and connection with natural surroundings. When a platted street is closed to enable construction of a building at the end of a street, rather than to the side, both visual and physical access to city-owned open land is reduced.

- Establish guidelines for spacing pedestrian access routes between existing neighborhoods and public open lands. Such a guideline would ensure that pedestrian access to open lands would not be precluded by the siting of future development.

Develop recommendations to City and County subdivision regulations that would encourage development of land adjacent to Helena open lands to include open space that will be useful to adjacent public open land. Useful open space within a development is land that is contiguous with public open land and provides visual and/or physical access to public open land. While current subdivision regulations require a park dedication (or cash in lieu of parkland), such dedication is not always "useful" for the purposes of accessing or enjoying open lands. Subdivision planned open space is often on steep slopes or in drainages that cannot be used to build sustainable trails.

11.2.1 Public Planning at the Interface

The interest of maintaining visual and pedestrian connections between urban neighborhoods and open lands is represented consistently in Helena's ongoing public planning process. This interest has been reflected in public deliberations regarding issues such as zoning density, subdivision design, transportation system design, park design, and street closures.

An example of the sort of connection that should be maintained can be found in Helena's older south-side neighborhoods, where there is a sense of being simultaneously "in town" and very near to open land. It happens because there is an abrupt edge between those closely-built neighborhoods and adjacent open land and because that edge is "porous," both visually (the street vistas terminate at open land) and physically (streets and alleys offer immediate foot access to open land).

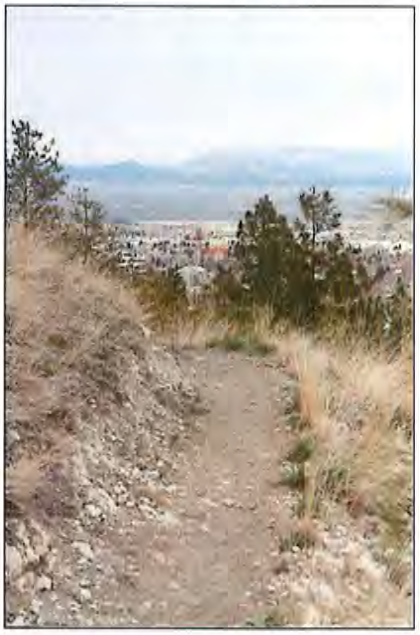

Figure 11-1 Opens lands provide a higher quality of life.

11.3 PRIORITY PROJECTS

Most of the projects in this section must be undertaken in both the City and County, and coordinated closely between the two.

1. Identify lands appropriate for long-term protection with conservation easements, deed restrictions, or other mechanisms. Work with the Prickly Pear Land Trust to identify specific parcels for long-term protection through conservation easements, and to prepare the necessary legal documents associated with such transactions.

2. Establish a guideline for the spacing of pedestrian access routes between existing neighborhoods and public open lands. Such a guideline would ensure that pedestrian access to open lands would not be precluded by the siting of future development.

3. Revise City and County Subdivision Regulations to require that major and minor subdivisions adjacent to open lands, provide visual and pedestrian corridor connections to those open lands. McCahon (2002c) suggests that while current subdivision regulations require a park dedication (or cash in lieu of parkland), such dedication is not always "useful" land—it's often unbuildable steep slopes or drainages. Furthermore, new subdividers do not always design their parklands to be complementary to those of adjacent subdivisions. HOLMAC recommends that Subdividers be required to site parkland as a "useful addition to whatever public open land happens to abut a proposed subdivision"

4. HOLMAC coordinates with the Non-motorized Plan committee.

5. Request that HOLMAC receive notice of all street vacation applications.

6. Identify areas out of the urban interface that have weed control problems.

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12. IMPLEMENTATION AND FUNDING (1/14/04)

This section outlines an organizational structure to implement and fund priority projects. It presents priority projects from previous sections and provides estimated schedules and costs. Administration and coordination of stakeholder priorities and projects are crucial to the long-term success of the HOL Management Plan. Government agencies will work with the City of Helena through intergovernmental agreements or participation with HOLMAC.

Principal Goal: *To preserve, restore and enhance the natural character of Helena open lands and to provide Helenans with accessible natural open lands.*

Figure 12-1 Changing weather over Helena

12.1 HELENA OPEN LANDS MANAGEMENT ADVISORY COMMITTEE

HOLMAC currently has six members that represent the following interests (see Appendix L for current membership list): at-large City residents, the Helena Citizen's Council, and OSBAC.

12.1.1 HOLMAC Membership Guidelines

This plan recommends HOLMAC membership include the following:

- Voting Members
  - Four at-large city residents
  - One Helena Citizen's Council
  - One OSBAC
  - One City/County Parks Board (can be a non-city resident)
- Non-voting Members
  - Up to 3 members that are not located within city limits but have exhibited a strong interest in the HOL and wish to contribute to management policy decisions on a regular basis. Interested citizens that are not members of HOLMAC may be invited to serve on standing subcommittees
- Membership Guidelines
  - All members will be appointed by the Helena City Commission to serve staggered terms from 2 to 3 years with the option for renewal. All organization representatives will have a term of 2 years, at-large committee members will have a term of 3 years. The Plan recommends that HOLMAC contain at least

two members with resource management experience in forestry, soils, hydrology, wildlife management, recreation, or vegetation.

- If the Helena Citizens Council, OSBAC, or City/County Parks Board cannot provide a member to participate, that membership seat can be substituted by an at-large representative for the duration of the membership term. OSBAC membership representative will be replaced by an at-large representative when OSBAC is disbanded.

- HOLMAC will meet approximately once per month at a time and place agreed upon by the committee and staff. HOLMAC officers will be elected on an annual basis.

• HOLMAC Staff

- HOLMAC will be staffed by the Helena Parks Department who will provide monthly budget and implementation reports. This Plan recommends that HOLMAC meetings be attended by a City planning staff member to provide input regarding activities that could impact the HOL or HOLMAC activities that may impact City planning.

12.1.2 General Purpose and Role of HOLMAC

The City of Helena directed HOLMAC to develop a management plan for the Helena Open Lands. This Plan recommends that, upon adoption of this plan, HOLMAC modify its mission to accomplish the following:

Figure 12-2 City Parks Director at public meeting in June, 2002.

1. Assist the City Commission and City staff in the oversight of the development and implementation of the Plan and HOL budget expenditures.

2. Design and implement an effective public input strategy for Plan review and all implementation activities that affect recreational use including trail use and management, interpretative sites, signage, weed control, tree thinning, and wildlife management.

3. Assist the City in obtaining additional funds for implementation of the Plan.

12.1.3 Specific Responsibilities of HOLMAC Members

This Plan recommends that, at a minimum, HOLMAC be responsible for implementing the following activities and procedures:

• Solicit and track volunteer activities for Plan implementation. Volunteer hours and in-kind services provided by HOLMAC members and related organizations should be tracked to support statements of in-kind services and to demonstrate citizen's commitment for grant writing purposes.

• Create subcommittees to address Plan activities that require additional public and/or professional input. This Plan recognizes two high-priority subcommittee areas: Plan projects, and project funding. Other subcommittees may be formed as deemed appropriate. To facilitate public input, HOLMAC is encouraged to invite non-HOLMAC members to sit on subcommittees.

- Develop a mailing list of interested citizens to receive regular updates of public meetings and other HOLMAC activities.

- Present opportunities for public input on a regular basis. Hold at least one public meeting per year to address Plan implementation progress and modifications.

- Insure that fire mitigation and other visible forestry management practices are reviewed by a professional forester before implementation.

- Maintain coordination between the City of Helena and associated local, state and federal agencies such as the Helena National Forest, Montana Fish, Wildlife and Parks, the Helena city planning department, OSBAC, the Parks Board, the Helena Citizens Council, and other Helena citizen organizations formed to address city planning and/or open space management.

- Ensure that City Parks Department staff inventory trails for condition at least once every two years.

12.2 TOP SIX POINTS OF ACTION

This section identifies specific priorities raised during the scoping process. Specific projects that could be implemented in order to realize these goals are included in each section under the Priority Projects heading.

The following action items are specific, finite tasks that can be undertaken by HOLMAC in the first year following formal adoption of the HOL Management Plan.

1. Take immediate action on weed control. Weeds are an imminent threat to many of the intrinsic values found in HOL.

2. Signage/Interpretive

3. Establish a funding subcommittee. Secure funds to continue to expand operations; maintain HOL; and fund priority projects as outlined in each section.

4. Fire Mitigation

5. Access/Trails

6. Purchase a wildlands fire truck.

12.3 IMPLEMENTATION SCHEDULE AND BUDGET ALLOCATION

The following table represents the priority projects that are recommended in this Plan. For specific details regarding each identified priority project, please refer to the corresponding sections. Table 12.6-1 displays a summary of the priority projects outlined in this Plan and concurrently displays a budget for that specific priority project or a group of projects. The numbers in bold represent funding which is to come from the existing Open Space Bond Fund. There is approximately $200,000 in this budget. The budget below for annual costs (figures not bolded) are based on the assumption that a tax can be assessed using a Parks Maintenance District. It is assumed the assessment can be initiated this year, enacted next year and available for spending in 2005.

Many of these projects are small but ongoing tasks and unfunded thus they are marked by an "X" in each year across the timeline. The projects in Wildfire Projects are currently underfunded. Additional grant money shall be sought to complete treatment in these areas.

Table 12.3-1 Priority Projects Implementation Schedule

Priority Project	Year															
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
SECTION 2 OVERALL MANAGEMENT GOALS																
Link bike/trail network	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Jurisdictional coordination	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Hire HOL Planner/fire, weed, trail coordinator			30	30.6	31.2	31.8	32.5	33.1	33.8	34.5	35.2	35.9	36.6	37.3	38	38.8
Seasonal personnel			10	10.2	10.4	10.6	10.8	11	11.3	11.5	11.7	12	12.2	12.4	12.7	12.9
Capitol Projects			10	10	10	10	10	11	11	11	11	11	11	11	11	11
SECTION 3 FOREST MANAGEMENT																
Monitor for insect outbreaks	X	X	Covered by HOL Planner or Seasonal personnel in Section 2 above.													
Initiate thinning projects	Covered in budget and schedules listed under Fuel Mitigation Projects in Section 4 Fire Mitigation.															
Update Resource Map 2 with HOL site-specific vegetation information	Ongoing-unfunded project															
SECTION 4 WILDFIRE MITIGATION																
Bompart Hill fuel mitigation	**5**	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Davis Gulch fuel mitigation		**5**	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Extend fuel mitigation buffer on Mount. Ascension Road			3	X	X	X	X	X	X	X	X	X	X	X	X	X

Priority Project	Year															
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Donaldson Hill fuel mitigation				3	X	X	X	X	X	X	X	X	X	X	X	X
Grizzly Gulch Fuels Mitigation fuel mitigation					3	X	X	X	X	X	X	X	X	X	X	X
West Side of Mount Helena Park fuel mitigation						3	X	X	X	X	X	X	X	X	X	X
Continue fuel mitigation where needed							3	3	3	3	3	3	3	3	3	3
Coordinated disaster response plan	X	X														
Establish criteria for restrictions and closures	X	X														
Purchase half of wildlands fire truck	**20**															
SECTION 5 NOXIOUS WEED CONTROL																
Treat TES and pristine grassland locations	Covered in "Treatment on minimum of 15% HOL weeds" in line below.															
Treatment on minimum of 15% HOL weeds1	**12.0**	**8.0**	4.5	4.6	4.7	4.8	4.9	5.0	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8
Implement reclamation plan	Ongoing project completed initiated with budget in actions which cause soil disturbance. Covered in Section 4 Fuel Mitigations above, or Trails Construction and Maintenance in Section 7.															
Contract goats for weed control	**2.5**	**2.5**	**2.5**	2.5	2.6	2.6	2.7	2.7	2.8	2.8	2.9	2.9	3	3	3.1	3.2
Other biological control e.g. insects, pathogens	X	X	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6

Priority Project	Year															
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Purchase weed control equipment	**19**															
Monitor Weed Treatment areas	X	X	Covered by HOL Planner or Seasonal personnel in Section 2 above													
SECTION 6 PROTECTION OF NATIVE PLANT SPECIES																
Eradicate weeds that threaten TES species	Ongoing project covered by "Treatment on minimum of 15% HOL weeds" in Section 5 above.															
Eradicate weeds adjacent to pristine grasslands	Ongoing project covered by "Treatment on minimum of 15% HOL weeds" in Section 5 above.															
Work with MTNHP and Native Plant Society to assure Species of Concern are not inadvertently treated	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Monitor weed treatment areas	X	X	Ongoing project covered by HOL Planner or Seasonal personnel in Section 2 above													
SECTION 7 TRAILS AND RECREATION MANAGEMENT																
Improve major trailhead facilities including sign/kiosk, fencing, grading (Upper Davis and Dump in 2003 and Swaney in 2004)	**10**	**7**	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Improve minor trailhead facilities including sign, fencing and grading (Beattie and Waterline in 2003 and Lower Davis in 2004)	**2.5**	**1**	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Priority Project	Year															
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Improve neighborhood access points including sign and fencing	**1.5**	**2.5**	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Contract a Trail Coordinator	**5**	**5**	Duties of contacted trails coordinator to be taken over and covered by Open Lands coordinator (Section 2)in 2005													
Hire Open Lands Planner/fire, weed, trail coordinator (See Section 2 above in table)	X	X	Ongoing project to be covered by HOL Planner or Seasonal personnel in Section 2 above													
Mount Helena Trail and Mount Ascension construction and maintenance (MCC)	**9**	**6.5**	**4**	**4**	**4**	X	X	X	X	X	X	X	X	X	X	X
Trail maintenance and development	X	X	5.0	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.9	6.0	6.1	6.2	6.3	6.5
SECTION 8 WILDLIFE PROTECTION																
Establish wildlife citizen's group	X															
Develop wildlife conservation strategies	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Develop volunteer network	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Consider timing use restrictions for impacts	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Work with MTNHP and USFWS to conserve special status species found on HOL	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Priority Project	Year															
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Public meeting to discuss dog/wildlife conflicts	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Prepare educational materials about dogs/wildlife	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
SECTION 9 BOUNDARY IDENTIFICATION AND MAPPING																
Survey of Open Lands boundaries		**27.5**														
With PPLT establish boundary signage		**10**														
Make boundary signs available to private landowners	Budgeted in "PPLT" Section 10															
Fence boundaries	X	**10**	Ongoing. Covered in following line item below													
Fence maintenance	X	**5.0**	5.0	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.9	6.0	6.1	6.2	6.3	6.5
SECTION 10 INTERPRETIVE OPPORTUNITIES																
Print map of trail system	**4**	**1**	1	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.2	1.2	1.2	1.2	1.3	1.3
With PPLT, establish directional signage	**2**	**2**	Ongoing. Covered in following line item below.													
Signage maintenance, map updating	X	X	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.9	6.0	6.1	6.2	6.3	6.5
SECTION 11 URBAN INTERFACE/SPRAWL																
Identify lands appropriate for long-term protection	X	X	Ongoing to be covered by HOL Planner specified in Section 2.													

Priority Project	Year															
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Establish a guideline for the spacing of pedestrian access routes	X	X														
Recommend Revising City and County Subdivision Regulations	X															
Coordinate with Non-motorized Plan committee	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Identify areas out of the urban interface that have weed problems	X	X	Ongoing project to be covered by HOL Planner or Seasonal personnel in Section 2 above													
SECTION 12 LONG TERM FUNDING ALTERNATIVES																
Setup MOU with PPLT	X															
Apply for Noxious Weed Trust Fund monies	X	X	Ongoing project to be covered by HOL Planner or Seasonal personnel in Section 2 above													
Total from Open Space Bond	**92.5**	**93**	**6.5**	**4**	**4**											
Total Proposed Management District			74	77.7	79	80.3	81.7	84.1	85.5	86.9	88.3	89.8	91.3	92.9	94.5	96.1
Total Annual Cost	**92.5**	**93**	80.5	81.72	83.01	80.33	81.68	84.05	85.45	86.88	88.34	89.83	91.34	92.89	94.47	96.08

* All costs are in thousands of dollars; personnel costs were increased at 2% every year. Blank Space indicates no work needs to be completed for item in this year.
X indicates this project is currently unfunded. Project will be completed by volunteers; grant funding shall be sought by HOL manager, or completed on an as-available basis by existing city employees.

12.4 CRITERIA TO EVALUATE PROJECT SUCCESS

12.4.1 Monitoring and Evaluation

Monitoring and evaluation of this Plan's policies and projects will be overseen by HOLMAC with opportunities for public input scheduled at a predictable frequency. HOLMAC will have at least one public meeting per year to review Plan policies and project status.

A city of Helena website link will be developed and used for monitoring and evaluating the success of Plan objectives and to provide an additional vehicle for public input. Visitors could use the website to respond to specific questions about the HOL, or could provide general feedback. Questionnaires could also be made available to visitors and stakeholders at public libraries, city halls, chambers of commerce, trail heads, or even published in area newspapers. These questionnaires could ask people if particular open lands projects have met or exceeded their expectations and would therefore be an excellent method of determining the success of HOL projects.

Ultimately, HOLMAC itself will be responsible for monitoring and evaluating the success of HOL projects. It must clearly define the purposes of any project it decides to carry out. During and after project implementation, it must meet to evaluate the project's success in satisfying those ends.

12.5 PLAN UPDATES

If stakeholder priorities change drastically, or if all of the goals described herein are met, HOLMAC may decide to formally update this Plan. This could take place in a series of public meetings in which stakeholders would reevaluate their goals, hopes, concerns and priority projects. HOLMAC could then prepare a plan addendum to be used in further management of the open lands. However, continued public involvement and careful monitoring of HOL activities will likely prevent such steps. This HOL Management Plan is a guiding document, and its implementation will evolve along with stakeholder's changing ideas and ambitions.

12.6 FUNDING VEHICLE

HOLMAC and the City Parks and Recreation staff believe that a Parks Maintenance District (PMD) tax may be the best mechanism to pay for the costs of annual maintenance operations on open lands (Lilje, 2003). PMD's must be formed and operated similarly to Special Improvement Districts (SID). Political support would be needed for assessing such a tax. In order to make a case to payers, the direct benefit of the tax would have to be demonstrated (Nielsen, 2003). SID's are sometimes assessed with simple flat fees per parcel. If political support can be rallied for the flat tax this would be the most efficient method of assessment. Other SID's may involve complex algorithms where it can be clearly demonstrated that net tax benefits are not distributed equally to each tax payer. Tax planners may want to consider such factors as: number of dwellings per parcel, proximity to open space, or property value.

The following is the existing City of Helena Statute for assessing a tax with a park maintenance district.

> 7-12-4001. Park maintenance districts.
> (1) A city or town may upon petition of 10% or more of the qualified electors of the proposed park maintenance district or upon a resolution of intent adopted by the governing body submit to the electors of the proposed district the creation of a park maintenance district.
> (2) The district may be created for the purposes of, but not limited to, mowing, irrigation, turf repair and maintenance, recreation facility and equipment maintenance, tree trimming, tree replacement, tree removal, garbage removal, general cleaning, and leaf debris removal.

(3) The petition or the resolution of intent must state the maximum number of mills or the maximum fee that will be assessed for the district. The fee assessed or the tax levied may not exceed the maximum amount approved by the electorate.
(4) A park maintenance district authorized by this section must be formed and operated in the same manner as a special improvement district.
History: En. Sec. 6, Ch. 510, L. 1999.

12.7 FUNDING SOURCES

The HOL citizen's advisory committee will investigate the following potential funding sources for plan implementation.

12.7.1 Federal Sources

12.7.1.1 USDA, USFS, State and Private Forestry

The State and Private Forestry Mission Area of the USDA Forest Service is the federal leader in providing technical and financial assistance to landowners and resource managers to help sustain the Nation's forests and protect communities and the environment from wildland fires.

The State and Private Forestry Mission Area programs focus on:

1. Implementing the National Fire Plan to protect lives, property and the environment from wildland fires, particularly in wildland-urban interface areas.

2. Maintaining healthy, sustainable rural and urban forests through stewardship planning, active management and professional technical assistance.

3. Helping improve the quality of living conditions in urban areas through the management of natural resources.

4. Improving the economic well-being of forest resource dependent communities.

5. Improving the collection, analysis and reporting of timely, accurate resource information.

6. Helping people understand and appreciate natural and cultural resources and the importance of conserving them for future generations.

The program most likely to relate to HOL and the HOL Management Plan is the Urban and Community Forestry Program. Nationwide, for FY 2002, the budget was almost 32 million dollars. The Urban and Community Forestry Program in Montana is not very large. It is run as a competitive grant program with the maximum size grant of $2,000.

There is much potential for partnerships with the HNF. The City of Helena and PPLT are currently working with the HNF on partnering on trailheads. A large majority of future Forest Service fire mitigation is expected to be spent on wildland interface areas (McKelvey, 2003). HOLMAC shall work with Lewis and Clark County Fuels Mitigation Program Director to form partnerships with the HNF. Likewise the HNF and City may have potential to partner on noxious weed control programs. Hand thinning and prescribed burning on Mount. Helena also have been initiated with HNF. Potential for similar projects shall be explored by HOLMAC.

12.7.1.2 USDA NRCS Cost Share Programs

There are many cost share programs available to private landowners for improving forest management. Funding is made possible by several state and federal entities that help assist the USDA Forest Service in providing assistance to the private landowner. The Farm Services Agency (FSA), the Natural Resources Conservation Service (NRCS), the US Forest Service (USFS), and the National Association of State Foresters (NASF), are sponsors of such programs as detailed below.

Figure 12-3 Thinning is needed near the Quartzite Trail on Mount Helena.

12.7.1.3 Environmental Quality Incentives Program (EQIP)

Formerly known as the Agricultural Conservation Program (ACP), this program aids in providing incentives for restoring, protecting, and preserving the environment in such ways as decreasing erosion, protecting water supplies, reducing farm-related water pollution, and planting forest vegetation for conservation purposes (USDA, 2002).

12.7.1.4 Forestry Incentive Program (FIP)

The FIP aims to improve the productivity of nonindustrial private forest land for increasing future supply of wood products on a sustained-yield basis. It works, as well, to improve associated forest resources (USDA, 2002). The City and County could benefit indirectly from these funds by working with private landowners to help them secure funding to provide thinning which could reduce fuel loading near HOL.

12.7.1.5 Resource Conservation and Development (RC&D)

The NRCS sponsors this program to develop, improve, and conserve natural resources in hopes to improve economic, social, and environmental well being. Areas must be within RC&D authorized zones. The National level of the Forest Service has also provided financial assistance that is then used for technical and financial assistance to state foresters for planning and implementing forestry projects within RC&D areas (USDA, 2002).

12.7.1.6 Natural Resources Conservation Education Program (NRCEP)

Cosponsored by the USFS and the NASF, this program is targeted toward all ages. The hope is to increase awareness and appreciation of the natural resources, promote critical decision making, and instill the responsibility of conserving and preserving the natural resources (USDA, 2002).

12.7.1.7 Transportation Enhancement

In 1991, Congress initiated a new philosophy in transportation planning. The 1991 Intermodal Surface Transportation Efficiency Act (ISTEA) looked beyond highways to the full roadway experience itself. As a result, scenic byways, trails and historic features are factored into transportation system funding equations. The Transportation Equity Act for the 21st Century (TEA-21) and its predecessor, ISTEA, allow for more local participation in funding priorities and increased flexibility. Now, issues like transportation access and environmental protection can be funded. Federal monies that integrate transportation with the environment are a major potential funding source for projects. While Congress

provides the legislation and money for TE projects, the structure and the administration of state programs have been delegated to each state. In Montana, the TE program is governed by a mix of federal and state regulations. The following projects relevant to the HOL qualify under Section 1201(a)(35) of TEA-21:

- Provision of facilities for pedestrians and bicycles
- Provision of safety and educational activities for pedestrians, equestrians, and bicyclists
- Acquisition of scenic easements and scenic or historic sites
- Landscaping and other scenic beautification
- Historic preservation
- Preservation of abandoned railway corridors (including the conversion and use thereof for pedestrian, equestrian or bicycle trails)
- Archeological planning and research
- Environmental mitigation to address water pollution due to highway run off; or to reduce vehicle-caused wildlife mortality while maintaining habitat connectivity.

12.7.2 State Sources

12.7.2.1 Noxious Weed Trust Fund

The Montana Department of Agriculture has set up the Noxious Weed Trust Fund (NWTF) program that allows Montana landowners and government entities to apply for funds to help assist with the management of noxious weeds. Funding for the 2003 fiscal year is estimated by the Department of Revenue to be approximately $1.7 million. Following is a list of guidelines to ensure a successful grant application, as stated by the Montana Weed Control Association:

- Local cooperative project areas should have at least one year of planning, organization and implementation prior to application. Weed mapping should be completed. Projects should include at least three cooperating adjacent landowners and emphasize an integrated weed management program. Specific environmental information is required, and it is useful to collect this information early in the project development.
- Educational and research projects, including nonchemical research and demonstration, should target new and innovative weed management techniques and must clearly outline the goal of the project and how activities will be completed.
- The project sponsor (weed district, reservation, conservation district, etc.) and the project contact person must be clearly identified. All correspondence will be addressed to the contact person. If other individuals need copies of correspondence, please note this under separate cover.
- Applicants must provide some matching funds in actual dollars (i.e., not all matching funds can be in-kind services). In-kind services can include cooperator labor, agency labor and equipment use and maintenance. The Noxious Weed Advisory Council requires a 50/50 match in actual dollars spent for herbicides and commercial application costs. Cost for fencing will not be allowed, as it is considered a capital improvement.

12.7.3 Local Sources

Local government can provide substantial amounts of money and support to groups such as HOLMAC. This report assumes some contribution of services by governmental agencies. For example, city-county planners can provide some of the analysis noted for priority projects in the Section 11 Urban Interface/Sprawl.

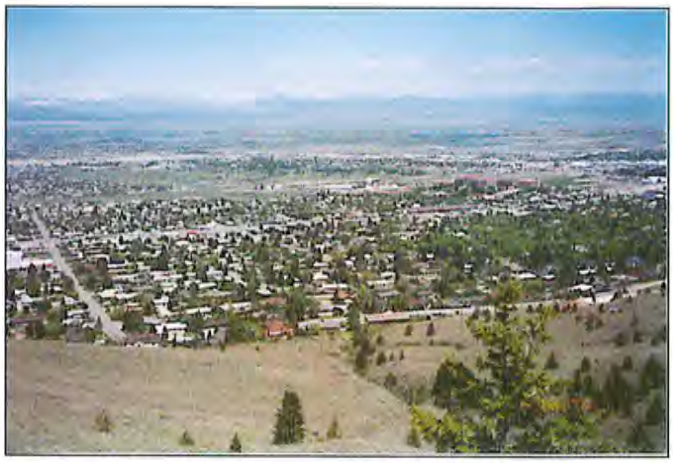

Figure 12-4 Effective weed control is a constant effort.

12.7.4 Private Sources

HOLMAC shall seek funding through private foundations. A list of potential sources is found in the South Hills Trails Plan. Other potential sources include foundations such as the Robert Wood Johnson Foundation, and cost recovery for trail maps by charging for each map.

12.8 FUNDING PARTNERSHIPS

HOLMAC will, at a minimum, include the concept of partnering for funding sources as an agenda item. Preferable to this minimum would be the establishment of a funding subcommittee to pursue funding opportunities. The responsibilities of this subcommittee will include discussions with the representatives of the Montana State Legislature, the USFS, the BLM and the Montana Congressional Delegation. Other entities that could be useful partners are the PPLT, Helena Forest Foundation, Montana Native Plant Society and the Montana State Historical Society. A unified approach to funding, will have the benefit of focused funding and networking. The funding partnership may also allow the leveraging of dedicated funding to be used as in-kind funds for projects.

HOLMAC shall develop an MOU between PPLT and the City of Helena. This nonprofit device could then solicit funds from individuals and organizations for open lands conservation and development. HOLMAC and PPLT would then work to provide representation from individual and institutional stakeholders and to cultivate relationships that will promote funding. This organization viability will depend on continually replacing board members with influential personnel from agencies and organizations that can help to secure funding.

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