

# ACKNOWLEDGMENTS

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The hundreds of citizens who provided information, opinions, historical facts and testimony.

**THE MILLER CREEK PLAN CITIZENS ADVISORY GROUP** whose countless hours of personal efforts as well as the coordination with their respective committee members was invaluable.

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Dan Cederberg, Chair of the Citizen Involvement Committee

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Al Brule', Chair of the Vegetation and Wildlife Committee

Representatives of the Lloyd A. Twite Family Partnership

Representatives of the Maloney Ranch

Dr. C.G. "Pat" McCarthy

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## **PREFACE**

The impetus for updating the Comprehensive plan governing the Miller Creek Planning Area originated in late 1994. At that time a large development was proposed that generated significant neighborhood concern. The concerns were channeled into a neighborhood effort to bring together major landowners, developers, appropriate agencies and neighboring residents in an effort to develop a more detailed Miller Creek Area Comprehensive Plan. The proposed plan was to recommend with specificity the desirable land uses for the area. The original goal of the parties initiating the effort was to reach consensus on land uses and sufficiently define the character of the Miller Creek Valley for the next twenty years.

# INTRODUCTION

This comprehensive plan is intended to guide community development for the neighborhoods of the Miller Creek Valley Planning Area. Comprehensive Plans are documents that identify land use issues and provide direction to the governing body and community regarding the issues identified through the planning process. A comprehensive plan compiles specific relevant information for an area and presents a vision of the future for the study area. (NOTE: certain words within the text are **bold** and *italicized* which signifies that there is a more specific definition of the word(s) or phrase in the Glossary section of this text.)

Implementation of the plan recommendations occurs through adherence to guidelines and concepts presented in the plan and, more precisely, through local and state regulations that may be adopted regarding specific issues. Zoning ordinances should reflect the plan and will control land uses in the Planning Area. As required by Montana State Law, zoning, development and **subdivision** regulations must conform to an adopted plan.<sup>1</sup> The formation of these regulations will be conducted in a separate planning process coordinated by the local planning office, the Missoula Office of Planning and Grants and will follow the formal hearing and adoption of this Plan.

The planning goals for the area are derived from citizens who participated in the planning process, from the current Missoula Urban Comprehensive Plan, and from the themes adopted by the Missoula City and County governments for Planning for Growth in Missoula County.<sup>2</sup> Recognizing the need to plan for future growth and development, the Missoula Board of County Commissioners joined with the Mayor of Missoula, representatives of the Missoula City Council, the Missoula Chamber of Commerce and the Neighborhood Network to form the “Growth Management Task Force”. In late 1994, the Task Force adopted a document of Themes that would guide growth and community development. In general terms, the Themes demand balanced attention among concerns for natural resources, housing, economic development and service **infrastructure**. Two equally important goals are stated: 1) to protect our critical lands and natural resources (e.g., **riparian** resources, wildlife habitat, hillsides, air and water quality and **open spaces**); and 2) to embrace human resources (e.g., health and safety, social, educational, recreational and cultural services, employment and housing). The Themes document also called for the development of regulatory tools and necessitates fulfillment of stated goals.

In 1996, the Growth Management Task Force endorsed development of 10 tools recommended by citizens participating in the Stakeholders Scenario Planning Process.<sup>3</sup> Implementation of the Miller Creek Area Comprehensive Plan Amendment will be enhanced by successful development of several of these tools, including refining the concept of the Designated Urban Service Area, setting concurrency standards that require infrastructure to be in place with development, establishing development design standards to preserve neighborhood character, allowing **density** transfers to conserve open and resource lands and instituting an impact fee system to ensure that new development pays for itself and effectively mitigates any negative impacts it will cause in existing neighborhoods. Two tools that should be explored for use with this plan should be the development of concurrency standards for infrastructure development and that in the Miller Creek Study Area new development take place from within the existing “urban” neighborhood adjacent to urban services and progress to the south.

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<sup>1</sup>Montana Department of Commerce, A Primer on Land Use Planning and Regulation for Local Governments, May, 1994.

<sup>2</sup> See Appendix C for full text, Planning for Growth in Missoula County, *Themes Document*, Revised February 12, 1996

<sup>3</sup> Ibid, see Themes Elements and Priority Planning Tools

# NEIGHBORHOOD PLANNING PROCESS and NEIGHBORHOOD GOALS

Early in 1995, citizens in the Miller Creek Valley contacted the Office of Planning and Grants (OPG) to initiate a planning process for the Valley. These citizens, eventually called the “steering committee,” identified two issues that needed to be addressed: first, the 1990 Missoula Urban Comprehensive Plan was not considered sufficiently detailed to provide direction for the type of change expected in the Miller Creek neighborhoods; and second, the roles and responsibilities for improvements to *infrastructure* serving the neighborhoods needed clarification.

## Planning Process

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In June 1995, a public forum was held at the Linda Vista Golf Course to explain the planning process and to gather initial citizen comments. Six citizen committees were formed based on the following broad categories: Land Use; Parks and *Open Space*; Infrastructure; Geology/Hydrology; Public Information; Vegetation and Wildlife.

These committees gathered data concerning existing conditions in the Valley and the community, assembled and analyzed the data, and worked with staff to organize the information with supporting maps, charts and reports.

Initially a survey was distributed throughout the planning area to identify neighborhood preferences. Staff and steering committee members tabulated and analyzed the responses.

## Miller Creek Valley Preference Survey

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### QUESTION #1--THINGS YOU LIKE BEST ABOUT LIVING IN MILLER CREEK

OPEN SPACE	31
QUIET	28
LARGE LOTS/LOW DENSITY	27
CLOSE TO TOWN, BUT NOT TOO CLOSE	27
RURAL	24
IEWS	21
WILDLIFE	17
NICE/KNOW NEIGHBORS	14
COVENANTS/NICE HOMES	13
NO TRAFFIC	13
CLEAN AIR/ABOVE SMOG	8
NOT IN CITY	8
NO STREET LIGHTS	7
NO CRIME	7
NO COMMERCIAL	5
PRIVACY	4
GOLF COURSE	4
NO RENTALS	3
NEIGHBORHOOD PARKS	3
GOOD WELLS	2
GOOD SCHOOLS	2
WALKING	2
NO BUSES	1

### QUESTION #2-- THE ONE THING YOU LIKE BEST ABOUT LIVING IN MILLER CREEK

OPEN SPACE	18
CLOSE TO TOWN, BUT NOT TOO CLOSE	16
LARGE LOTS/LOW DENSITY	13
RURAL	11
QUIET	8
WILDLIFE	6
NO RENTALS	4
IEWS	4
NO COMMERCIAL	3
NEIGHBORHOOD ORGANIZATION	3
NICE/KNOW NEIGHBORS	3
PRIVACY	2
WALKING	2
NO CRIME	2
NO TRAFFIC	1

QUESTION #3 --THINGS YOU WOULD LIKE  
TO SEE CHANGED IN THE MILLER CREEK AREA

BETTER PLANNING/SUBDIVISION DESIGN	25
REDUCE DEVELOPMENT	23
ROADS NEED IMPROVEMENT/MAINTENANCE	22
S.I.D.'s	14
NEED BIKE PATH	11
OPEN SPACE	11
ANOTHER ACCESS OUT	9
WEEDS/DUST	9
ENFORCEMENT OF SPEED LIMITS	8
TRAFFIC	8
MORE CONTROL TO HOME OWNERS	7
CONSTRUCTION NOISE/TRAFFIC IMPACT	7
TAXES LOWERED	5
IMPACT ON SCHOOL	4
MORE DOG CONTROL	4
MORE TREES	4
WANT BUS SERVICE	3
HONEST DEVELOPERS	3
LOG TRUCKS	3
MORE PARKS/ BETTER MAINTENANCE	3
MAINTAIN STORM DRAINS	3
NEED CONVENIENCE STORE	3
ACCESS TO OPEN SPACE/RIVER	3
FORCED ANNEXATION	2
SEWER PROBLEMS	2
STREET RECONSTRUCTION	2
STREET RECONSTRUCTION	2
ANTI-CITY	1
NOISE	1

QUESTION #4 -- THE ONE THING YOU WOULD MOST LIKE  
TO SEE CHANGED IN THE MILLER CREEK AREA

REDUCE DEVELOPMENT	16
ROADS NEED IMPROVEMENT/MAINTENANCE	13
S.I.D.'s	8
BETTER PLANNING/SUBDIVISION DESIGN	8
OPEN SPACE	6
NO HIGH DENSITY DEVELOPMENT	6
TRAFFIC	5
WEEDS/DUST	4
CONSTRUCTION NOISE/TRAFFIC IMPACT	3
ANOTHER ACCESS OUT	3
TAXES LOWERED	2
MORE BIKE/PEDESTRIAN PATHS	2
ENFORCEMENT OF SPEED LIMITS	2
MORE CONTROL TO HOME OWNERS	2
MORE PARKS/ BETTER MAINTENANCE	1
MORE FIRE PROTECTION	1
DO NOT WANT COMMERCIAL	1
CLEAN UP NEIGHBORHOOD	1
REDUCE LIGHTS AT GOLF COURSE	1
PROTECT ENVIRONMENT	1
IMPACT ON SCHOOLS	1

Note: Ranking is based on frequency of expressed concerns.

From the survey a list of goals and objectives was developed by the neighborhood and the Planning Staff.

## Neighborhood Goals

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### *I. Air and Water Quality*

a. **Improve Air Quality in the Plan Area.**

- 1) Reduce traffic congestion;
- 2) Develop a plan for paving roads;
- 3) Provide for pedestrian - bike routes;
- 4) Develop a regular road maintenance program;
- 5) Require dust abatement at all construction sites;
- 6) Minimize road grade to reduce the need for road sanding.

b. **Improve Water Quality in the Plan Area.**

- 1) Encourage all new development to hook up to public sewer or effective alternative sewer disposal system based on the geological and hydrological characteristics of the specific area;
- 2) Devise a plan for adequate handling of storm water (i.e. grassy swales);
- 3) Ensure new water supply uses do not reduce the quality or quantity of existing uses;
- 4) Establish a program to determine baseline data for water quality and quantity in the area and a system for monitoring changes in water quality and quantity.

### *II. Water and Sewer Quality*

a. **Provide for the timely installation, upgrading and replacement of sewer, water and streets sensitive to the economic constraints of the residents in the planning area. The installation of new wells and drainfields and the replacement of existing wells and drainfields will be accomplished subject to the geologic and hydrologic characteristics of the specific area.**

- 1) Provide or plan for the provision of public sewer and water based upon the type of development and the geologic and hydrologic character of the area;
- 2) New water systems should not reduce water quality or quantity in existing wells or water systems;
- 3) Baseline data should be established for the existing *aquifer*(s).

### *III. Transportation*

a. **Maintain or Improve Existing Levels of Transportation Services.**

- 1) Provide for safe lighting in scale with the neighborhood, e.g. porch lights and coach lights on homes may be adequate in residential neighborhoods;
- 2) Better street design and layout needs to be incorporated in new ***subdivisions*** so that transportation routes are comprehensively planned and provided for;
- 3) Existing roads should be brought to acceptable safe standards for vehicles, pedestrians and bicycles;
- 4) A bicycle path plan should be prepared for the Miller Creek area and bicycle paths should be incorporated in new as well as existing developments;
- 5) Weeds need to be mowed or removed from roadsides;
- 6) Pedestrian movement within the Miller Creek area needs to be carefully planned and provided for;
- 7) Road systems should be designed to keep traffic at safe speeds within the Miller Creek planning area;
- 8) Locate new arterials and collectors outside of existing neighborhoods;
- 9) Design standards for arterials and collectors should include adequate setbacks and street trees to preserve the rural character of the area;
- 10) The preference is for two-lane roads for arterials and collectors with additional access routes outside of the valley instead of constructing four-lane roads;
- 11) Separate the walkway by a boulevard;
- 12) Require paving and minimize grades on new roads;
- 13) Pedestrian crossing of Miller Creek Road should be safe;
- 14) Incorporate traffic-calming devices to reduce speeds;
- 15) Intersection lights may be needed in neighborhoods;
- 16) Change the texture of the crossing area from that of roadway;
- 17) Signalize crossings;
- 18) Grade separate crossings.

## ***IV. Fiscal Concerns***

- a. **In a time of decreasing discretionary income, try to accommodate development without placing undue financial burden on existing property owners.**
  - 1) Design cost-sharing formulas and plans in cooperation with area property owners prior to the construction of each project which will distribute cost equitably among existing users, future users, and those profiting from future development.
  - 2) Have a new development pay the full cost of improvements arising as a direct result of the development. Conversely, the new development should pay only its pro-rata share of already-existing needs in the community.

## ***V. Land Use***

- a. **Preserve the rural character of the Miller Creek Area.**
  - 1) Allow for clustering when it preserves the rural character and is sensitive to existing development;
  - 2) Designate areas for neighborhood convenience centers based upon population and accessibility;
  - 3) Develop performance standards for architecture, landscaping, buffer zones, scale and neighborhood compatibility;
  - 4) Limit uses to neighborhood services such as conventional retail, laundromat, video, ice cream, espresso and gas stores;
  - 5) For new development provide for transition areas to existing large lots.

## **VI. Open Space, Parks And Wildlife**

- a. **Protect Wildlife Corridors and Habitat**
- b. **Preserve the Maximum Amount of Open Space Possible.**
  - 1) Preserve views by allowing no building on ridgelines.
- c. **Provide for Parks adequate to meet the needs of development in the area.**
  - 1) At least one big, multipurpose park by the river which has playing fields, rafting access, and swimming and fishing access;
  - 2) Diverse neighborhood parks that allow for such activities as sledding and nature walks;
  - 3) Provide for adequate parks that are flat and allow for game playing;
  - 4) Provide good access to parks and adequate parking at parks.

## **VII. Public Services**

- a. **Provide for adequate schools in the area.**
- b. **Provide for adequate police protection in the area.**
- c. **Provide for adequate fire protection in the area.**

Newsletters prepared by OPG and steering committee members kept the public informed of the progress of the plan, announced meetings and asked for comments. In addition to the newsletters, staff and "steering committee" members participated in radio and television talk shows and were featured in newspaper articles publicizing the progress of the planning effort. In November of 1995, the six subcommittees presented data about existing conditions to a second public forum.

Once the existing conditions were researched and established, a series of community workshops were scheduled. A consultant was hired to facilitate these workshops and a third newsletter was distributed to announce the workshops. At the first workshop, staff and steering committee summarized all of the information gathered to date for participants, who were then asked to act as consultants to develop a plan for the valley. Using the basic themes of the Growth Management Task Force and the goals developed by the staff and steering committee, the citizens worked in six groups with maps and data, to develop six sketch plans of the area.<sup>4</sup>

The second workshop focused on formulating consensus from the participants on a final map depicting recommendations for the Valley based upon the six sketch plans. This map and the final set of goals are the basis for recommendations contained throughout this document. (See Map #1) This plan for the Miller Creek Valley will be the guiding document for development over the next 10 to 20 years.

## **Miller Creek Design Principles**

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These design principles were assembled as a result of the Community Design Workshop held on March 30, 1996. These principles guide many of the recommendations found throughout this document.

1. Motor Vehicle Access Improved Prior to or Concurrent with Significant Development
2. Circulation Systems Emphasize Pedestrian and Cyclist Needs
3. Trail System Connects All Subdistricts
4. Trail Environment Emphasis: Nature/Exercise
5. Residential Focus; Growth in Clusters; Avoid Sprawl
6. Maintain Rural Character, Especially Along Major Roadways, Ridgelines and Trails
7. Create Focal Points (NODES) For Civic and Cultural Activity: **Infrastructure** and Amenities Provide A Framework For Tradition
8. Create Opportunity For Commercial Activity Adjacent To Civic/Culture Centers That Serves Local Neighborhoods

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<sup>4</sup>Summary maps attached in Appendix D

## 9. Create A Logical Framework For Phased Growth

The design principles were developed with the assistance of a consultant to facilitate the formation of the basis for the six citizen Concepts for the future. The consultant grouped participants' issues into broad categories and developed the design principles. For those who did not participate in the exercise the following discussion will capture the meaning behind the nine principles. Principle 1, 2, 3 and 4 surfaced after significant participant requests for non-motorized alternatives and connections within existing and future developments. Subdistricts is meant to define the distinct existing neighborhoods and areas within the study area. Principle 5 allowed for growth but not uncontrolled sprawled growth, but rather clustered and residential in nature. Principle 6 developed from strong desire to maintain the rural character of the area, and preservation of the rural landscape, hillsides and ridges. Principles 7 and 8 developed from the concept of creating a new neighborhood center, allowing for parks, schools and areas for gathering. It also allowed for limited in scale commercial operations that would serve the corresponding neighborhoods and the study area. Lastly, principle 9 required a phased approach to developing neighborhoods. It required that new development connect to existing neighborhoods and the appropriate level of infrastructure needed to support future residential and commercial developments.

These six designs were voted on by the participants with the top three being used as the basis for the synthesized Citizen Design Map. (See Map #1 and Appendix D for the Concept Team Maps.)

# CHAPTER 1: HISTORY OF SETTLEMENT AND POPULATION

To set the stage for planning the future of this distinct area within the Missoula Urban Area a brief historical accounting is presented in this section. Recent trends in land use planning and community and regional design indicate that history is repeating itself and that neighborhood designs from the past are becoming more desirable. The so-called *neo-traditional neighborhoods* from the early 20th century and preservation of the historical landscape are leading principles in modern planning and community development. Historical investigation in this valley revealed that a school was placed in what is known as the “Buckhouse” area. This site would have served many different functions, including that of a public gathering place. As you read this plan, note that it calls for eventual “redevelopment” of the “Buckhouse” as a neighborhood center, with commercial and public uses developed, including a new school site when needed.

## Early Use

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Until they were relocated to the Flathead Reservation, when Salish Indians traveled from their homeland in the Bitterroot Valley north to Marias Pass and east to hunt buffalo, they were known to camp in the Miller Creek Valley. The original all-weather trail on the east side of the Bitterroot River went through Cahoot Canyon and down Davis Creek to the south toward the Skalkaho in what is now Ravalli County.

## Homesteading

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In 1864 Ezra Miller was the first non-native to homestead in the Miller Creek Valley, in the area known today as the Maloney Ranch. Miller’s 160 acres was the first item in the “First Book of Ranch Claims of Missoula County.” Ezra Miller was a miller by trade, a probate judge, and the first bartender in Missoula. In 1866 Miller and Missoula businessman, Thomas Pomeroy, were granted permission to build a ferry landing or a bridge at a point known as the “lower crossing” on the Bitter Root Road across the Bitterroot River. There is no evidence that either was built.

By 1871 increased traffic resulted in the construction of the first Buckhouse Bridge, just upstream of the current intersection of Blue Mountain Road and US Highway 93. All travel from Missoula to the Bitterroot Valley crossed the river outside Missoula along the Bitter Root Road. That road is now known as Lower Miller Creek Road. (see map ca. 1912). During this period, the Bitter Root Road and the Buckhouse Bridge linked the southern Bitterroot Valley to the Missoula Valley. After construction of the original bridge, transportation on Lower Miller Creek Road passed in front of the Buckhouse School site at the northeast corner of Section 11. The Buckhouse Bridge was moved in the middle of the 1920’s to its current location.

Historical research indicates that settlement during the first 100 years in the Miller Creek Valley was agrarian. During this period, land in the planning area was homesteaded, farmed, and transferred often. John Maloney, a blacksmith, bought the Miller Ranch in 1878. The Miller ranch was also owned from the 1870’s to mid-1880’s by Nathaniel Daggett and Colonel

Jimmerson Baker, who together formed the Baker Ditch, which is currently used for the Maloney Ranch. By 1890 Col. Baker sold his part of the Miller ranch.

Water is key to understanding the history of the Miller Creek Planning area. The availability of water to support settlement, agriculture and mining, and diversion of Miller Creek water to areas outside the Valley, has affected the history of the valley. In 1888, the Miller Creek Ditch company was formed by Henry Buckhouse, John Maloney and Charles Teachart to carry water to the north, out of the valley around the hill to the Buckhouse lands in the north half of Section 11.<sup>5</sup>

As settlers moved into the Miller Creek Valley, filing mining claims and water rights, a number of small lumber mills supplied the Northern Pacific Railway Bitterroot line with rail ties and bridge timbers. An early lumber pioneer, Hezekiah Van Dorn operated a sawmill up Cahoot Canyon, along the old all-weather trail to the south.

Four different schools were located in the Miller Creek area. One school was near the Holloman farm. The Buckhouse School was located at the northeast corner of the Maloney Ranch, on a small site that was placed in the stewardship of the Buckhouse family by John Maloney. Two other schools in the valley were located on the Harlan place and on lands now owned by Charlie Graham. By 1919, the school district had consolidated these schools into the Cold Springs School, and the school building at the Buckhouse site was moved across the river to Hayes Creek. All of these old school sites are now in private ownership.

## **Increased Settlement**

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The period from the 1920's to the end of the 1950's was a cycle of settlement, relocation and loss of population. Farming was not a stable, sustainable economic activity during this period.

During the Great Depression, the planning area lost population and the larger land holdings, such as those of McCullough and Maloney, were consolidated. This is consistent with the history of settlement all over Montana. Historically, people in Montana settled in settlement clusters, villages and towns or on homesteads and mining claims.<sup>6</sup> Homesteaders often moved to nearby towns but continued to work their land. Suburbia -- the large lot, low **density** expansion of residential use into the lands at the edge of towns -- is a recent trend in the west, in the Missoula Valley, and in the Miller Creek Planning Area. Aerial photographs of the western portion of the Planning Area reveal an agrarian image of the entire planning area, including the Linda Vista neighborhoods.

The first Linda Vista neighborhoods were platted in 1956, changing the landscape of the Missoula Valley portion of the planning area. However much of the remaining area still reflects this rural image of 1955. Development in this dispersed pattern gives the newer neighborhoods in the planning area a suburban character in a rural area.

## **Existing Conditions**

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The settlement pattern in the planning area is rural and **urban/suburban**. The neighborhoods are distinct. The Linda Vista and the upper Miller Creek road neighborhoods as well as the neighborhoods on either side of Miller Creek Road from Briggs St. to the intersection of Upper and Lower Miller Creek Roads, and the Rodeo Ranchettes neighborhood are residential on large

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<sup>5</sup>Local residents report seeing no water in the ditch in the last 50 years.

<sup>6</sup>John A. Alwin, Patterns of Montana Towns 1860-1920. MA Thesis Univ. of MT, 1972

lots of a suburban character. The Lower Miller Creek Valley can be described as natural resource and agricultural land. The Middle Miller Creek Valley is a rural residential settlement area, with very large suburban lots in the flat valley bottom and open hillsides. The remainder of the area is resource and agricultural land.

The Planning Staff has identified 14 distinct subdistricts within the study area. They are defined by the **subdivisions** that created the neighborhood and in absence of actual subdivisions, by geographical and topographical features. (See Map #2) These areas include:

1. Lower Miller Creek Road/Cold Springs
2. Lower Linda Vista
3. Massey McCullough Acres
4. Ravenwood
5. Mortgage Heights
6. Upper Linda Vista
7. Buckhouse
8. Lower Miller Creek
9. Middle Miller Creek/Trails End
10. The Big Hill
11. Rodeo Ranchettes
12. Lost Mine - Canyon Village
13. Upper Miller Creek
14. Upper Upper Miller Creek

## **Population**

The total estimated population for the study area in 1990 was 1449 people, of that 462 residents were under the age of 18 years and 80 residents were 65 years or older.<sup>7</sup> This then clearly indicates that a majority of residents-907 persons-are between the ages of 19 and 64 years.

Based on an average 1.9% growth rate for Missoula County between the years 1990 and 1996, the 1996 population estimate for the Miller Creek study area is 1622 residents.<sup>8</sup> This estimate is most likely very conservative. As this planning document is being written, new home construction continues adding new residents as homes become occupied.

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<sup>7</sup>US Census Report 1990

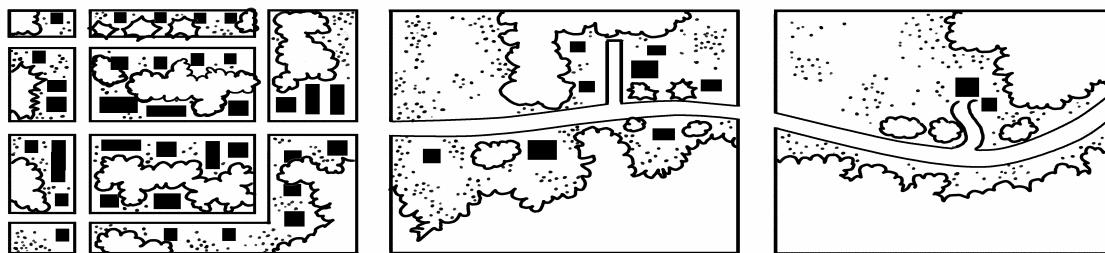
<sup>8</sup>Modified State Census Counts, MT Department of Commerce, 1996

## CHAPTER 2: COMMUNITY AESTHETICS AND CHARACTER

In the Miller Creek planning area, there are three types of existing residential patterns reflected in distinct neighborhoods:

- 1) The Lower Linda Vista, Upper Linda Vista, Southpointe and Country Club Addition areas are considered the ***urban/suburban*** neighborhoods and are generally served by urban services. The residential pattern is one of uniform lot size and consistent uses. (See diagrams on page 13 and page 15A) Two distinct neighborhood types will be proposed: the neighborhood center and urban/suburban residential.
- 2) The neighborhoods on upper Miller Creek Road-like Southside Homes, Massey McCullough, Ravenwood, and the Rodeo Ranchettes neighborhood are residential development on large lots of a ***rural/low density suburban*** character. Rural/low density suburban settlement patterns in the Miller Creek planning area are easily identified by the irregular spaces between buildings and settlements, in a treeless landscape, or by frequent clearings for structures and roads in a forested hill and valley landscape. In this rural/low density suburban area, urban/suburban amenities like sidewalks and street lights are generally absent; however the frequency of residences is greater than the rural/open and natural resource and agricultural land where resource and agricultural activity are the dominant land use.
- 3) The upper Miller Creek Valley is considered ***rural/natural resource and agricultural land*** including a residential settlement area, with large suburban lots in the flat valley bottom and open and resource hillsides. The lower Miller Creek Valley and the remainder of the planning area is open, resource and agricultural land. Open and resource rural areas can be identified as those areas where the landscape of ranches and farms, forests and hillside areas are dominant, and residences are sparsely located.

Current development patterns can be seen in the diagram below.



## Tools For Planning -- Design and Performance Guidelines

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Participants in the Miller Creek Community Design Workshop were asked to consider many design options including residential and commercial patterns; transportation and circulation; grading and *site planning*; landscaping; *open space*; bicycle and pedestrian linkages; wildlife habitats and corridors; agriculture and open and resource lands. Of the community design options available, participants in the March, 1996 workshop recommended a model described as “rural and growth areas”. This model included a clear distinction between “town” and “country” design.<sup>9</sup> Site planning standards can be further broken into “town” categories of neighborhood center with commercial uses and *urban/suburban* residential. “Country” categories can be broken into *rural/low density suburban* residential uses and rural-natural resource and agricultural areas.

Generally, “town” development including a mix of building sizes, footprints, lot sizes, and building types, is recommended to provide a traditional pattern of development and the opportunity for diverse types of residential units for a range of ages and incomes. Internal urban and suburban open space, motorized and non-motorized transportation linkages, and parks are important for recreation and as public gathering places. Boulevards with street trees like the urban forest in Missoula, are important public open space, providing shade and pedestrian linkages.

“Country” development includes areas that are appropriate for natural resource and agricultural land designation. Rural/open and natural resource and agricultural lands include environmentally sensitive lands, recreational areas, conservation lands, timber and minerals reserves, areas of *riparian* resource and wildlife habitats.

## Site Planning For Neighborhood Center With Commercial Uses

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A neighborhood center is an area of mixed uses with small signs, compatible with the architecture of the buildings surrounding it in the neighborhood. On-street parking allows businesses to locate within walking distance of each other. Parking located on the side or the back of the building can be shared by businesses.

This pattern is recommended for the “Buckhouse” area, west of lower Linda Vista, overlooking the Bitterroot River *Floodplain*. Ideally, the compact form of the neighborhood center is surrounded by *urban/suburban* residential areas, linked by trails and *open space* to a more rural

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<sup>9</sup>Paula Craighead, Ed. , The Hidden Design in Land Use Ordinances. 1991.

landscape. A mix of commercial and residential options is permitted, and should be based on a set of performance standards regulating noise, odors, traffic, site and building design, landscaping, lighting and hours of business operation.

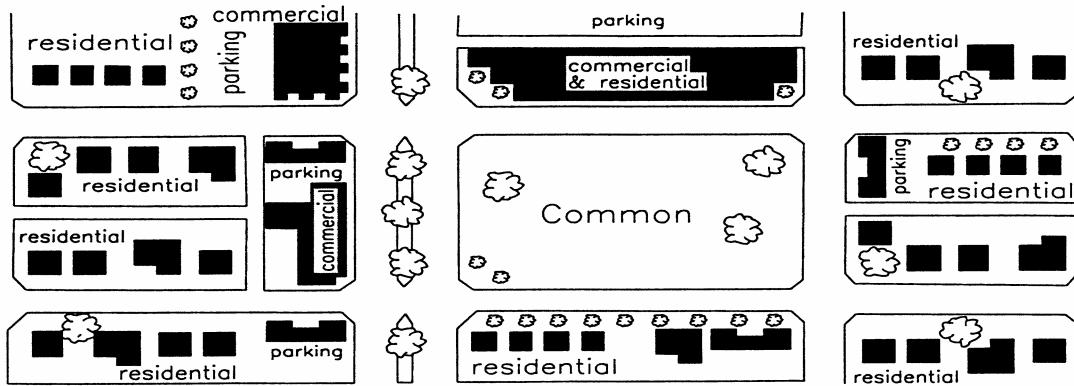
Recommended Uses Include: Neighborhood cafe, neighborhood grocery, professional offices, video store, personal service shop, specialty retail, accessory apartments, residential units.

Recommended Design Standards Include: Central green spaces/parks, small lots, alleys, street grid system, variable densities.

## Neighborhood Center

- In the neighborhood center, encourage the design of two story structures consistent with mixed use goals, and diversity of housing opportunities.
- Reduce the impact of expansive facades by incorporating architectural variety, varied rooflines, offsets, elements that produce shadow patterns, balconies, windows and doors. (page 9B)

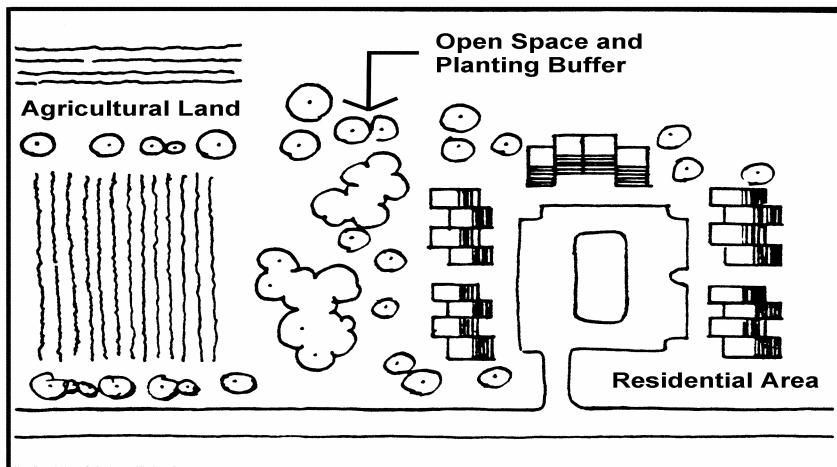
### TYPICAL NEIGHBORHOOD CENTER WITH COMMERCIAL USES



## Landscaping

- Landscape standards should be uniform in intent, yet flexible enough to allow for individual expression.
- Street trees should form a coherent streetscape and a canopy for pedestrian movement.
- All areas not covered by buildings or for vehicle and pedestrian use should be landscaped. Trees and shrubs should provide shade and diversity.
- Existing trees, shrubs and other landscape elements should be protected and retained on site whenever possible.
- Native and naturalized drought tolerant plants should be used to conserve water. Low water use landscaping is the preferred alternative with lawn areas only in the active recreation and use portions of a developed site.
- When possible, use native wildlife sustaining trees and shrubs.
- Minimize risk of fire hazard in the urban-wildland interface area by removing fuel, preserving and thinning existing vegetation, and siting buildings away from gullies and other natural “chimneys.”

- Buffers should be functional landscaped areas for wildlife and trails and should be used to connect neighborhoods, not to separate them.



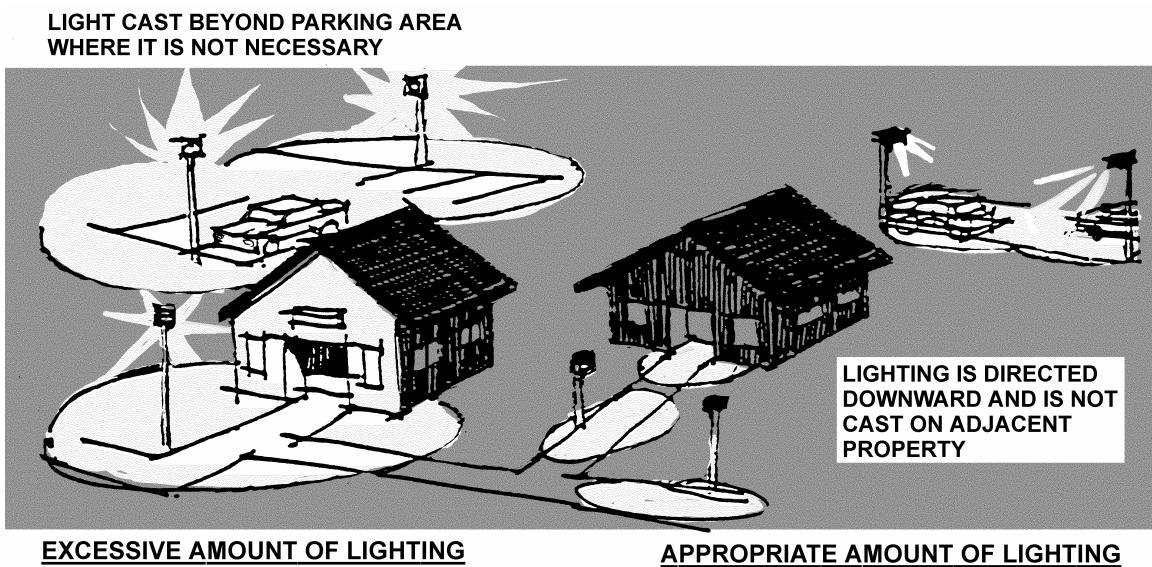
## **Vehicle Use Area (in the Neighborhood Center)**

- Parking should accommodate normal business and employee transportation, including areas for compact cars, motorcycles and bicycles.
- Minimum/maximum number of parking spaces should be limited to actual observed vehicle use by type of land use (according to the Institute of Transportation Engineers “Parking Generation” use documentation).
- 15% of the vehicle use area should be landscaped and planted with trees.
- Parking can be on the street where appropriate. Required parking areas could be located to the side and rear of buildings, and could be shared with neighboring businesses.

## **Lighting**

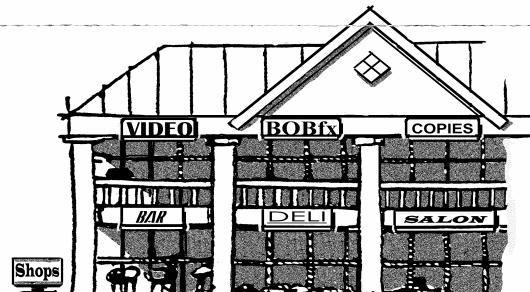
- Only security lighting should be lit at night or after business hours.
- Lighting on site should not extend beyond property line except for safety lighting.

- Limit the height and intensity of lights to the maximum necessary to provide for safe walking.
- Limit lighting to security lighting and “coach” lights. Allow street lights only for safety.



## Signage

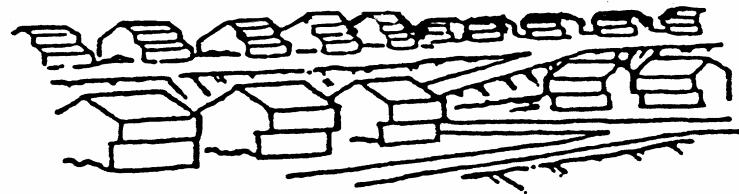
- Signs should not be hung on buildings, but should be integral to the architectural form of the building.



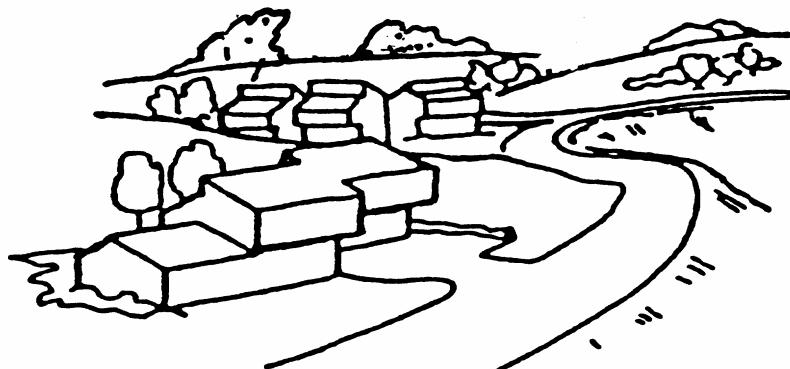
- Lighting for signs shall be indirect lighting only.
- Signs should not be lit after business hours.
- Ground signs should be low to the ground, located in landscaped areas. They should be small and should reflect the architectural form of the on-site business structure.
- There shall be no off-premise signs.
- No signage in residential districts.
- Small (2-4 sq. feet) commercial signage only, including - rural resource businesses like agriculture, timber, sand and gravel, and home based service.

## Site Planning General Guidelines

- Buildings, or building ensembles, should face the street or other public space.
- Design structures around existing mature trees and unique land forms like rock outcrops.
- Site structures in a way that respects the natural environment, the surrounding residential area and pedestrians.
- Design structures to have volumes, shapes and forms similar to or compatible with structures in adjacent existing neighborhoods.
- Site structures to protect views and reduce visual impacts from roads, parks and other public places.
- Prevent or minimize obstruction of views of adjacent property owners.



NOT THIS



THIS

- Maximize the preservation of *open space*.
- Avoid siting buildings on hilltops and ridgelines.



Not Recommended



Recommended

- Keep rooflines of structures below the ridgeline to preserve views.

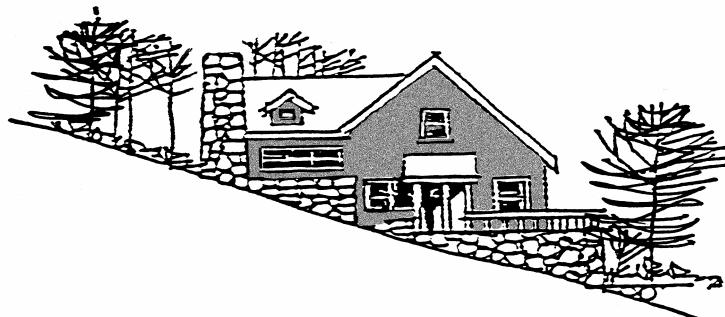
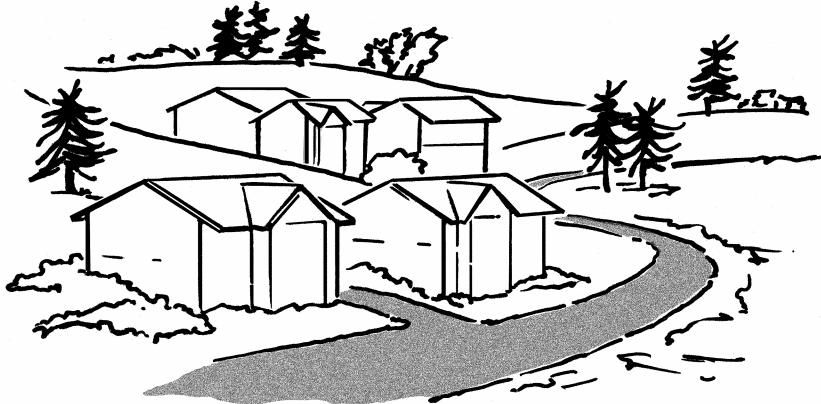


**NOT THIS**



**THIS**

- Hillside structures should reflect the hillside landform by “stepping” up or down the hillside and “daylighting” the structure at the existing landform grade.



**BUILDING FOLLOWS NATURAL TERRAIN**

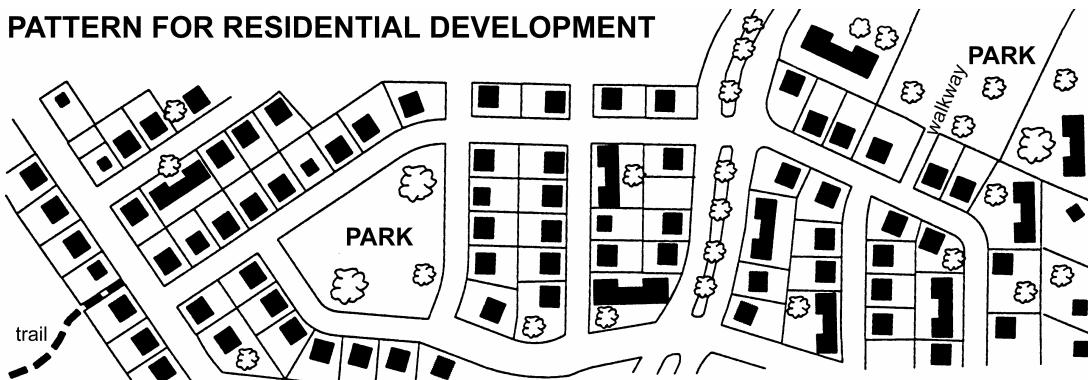
- Minimize setbacks.
- Allow narrow streets.

## Site Planning For Urban/Suburban Neighborhood Uses

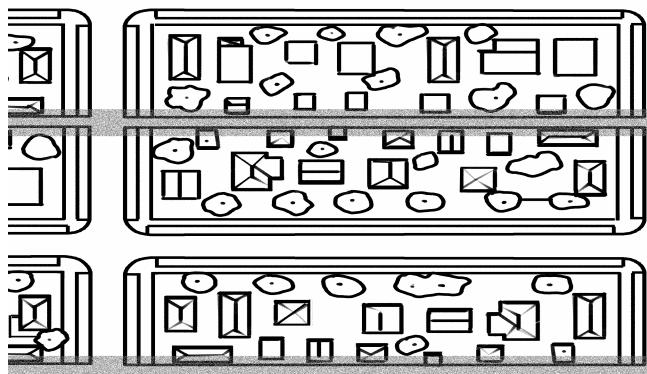
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The ***urban/suburban*** pattern is recommended for areas with urban services and in the area connecting the Linda Vista neighborhoods to the neighborhood center. (see Map B Appendix A)

## PATTERN FOR RESIDENTIAL DEVELOPMENT

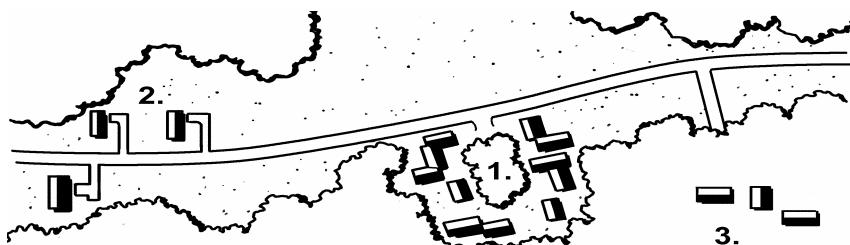


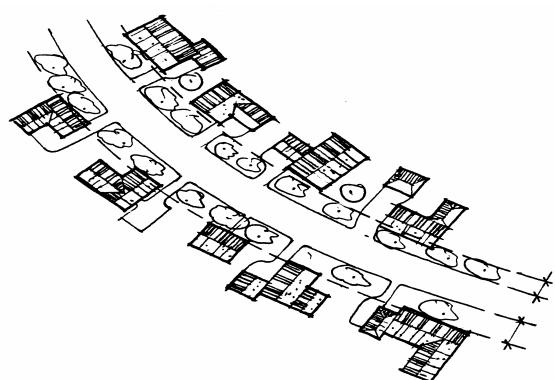
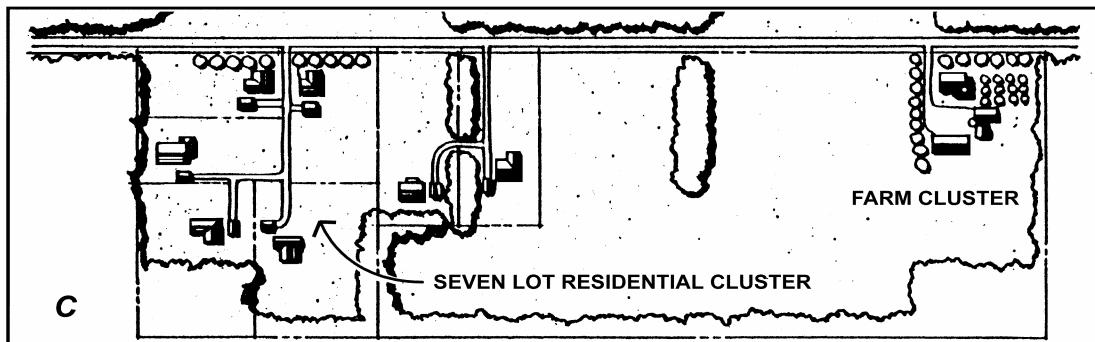
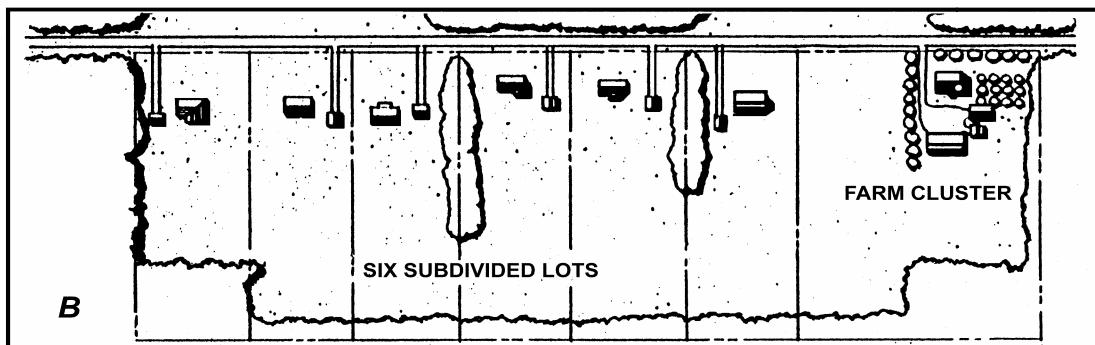
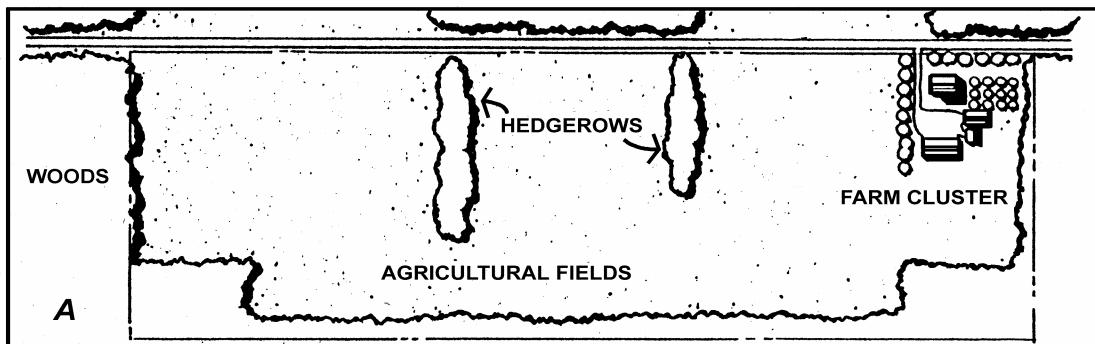
There is a clear and easily recognized pattern in *urban/suburban* development with a regular order to the lots and a recognizable geometry to the spaces between buildings. Additional **density** is achieved with the discretionary addition of residential accessory apartments in owner occupied homes, multiple unit buildings, and attached buildings, as long as such development fits the architectural character of the neighborhood and adheres to prescribed standards.



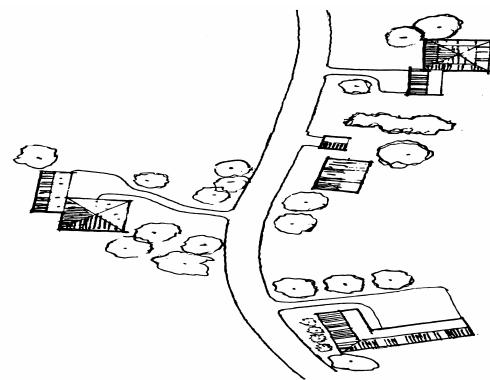
## Site Planning For Rural/Low Density Suburban Residential Uses

Rural, suburban patterns feature traditional compact settlement patterns similar to farmsteads. Design approaches include setbacks from rural roads, aggregating pasture and agricultural lands into continuous fields and locating buildings at the edge of open fields and timber lands or on gentle slopes at the bottom of steeper hillsides. In the rural/suburban development pattern the spaces between buildings are irregular. Residences are clustered in compact areas away from roadways similar to traditional farm houses next to outbuildings. The clusters should be set back with enough distance to allow for continued agricultural uses such as grazing, and hay production. Setbacks should not adversely impact habitat, *riparian* areas or agricultural areas.





Regular Setback Urban/Suburban Residential



Varying Setback Rural Residential

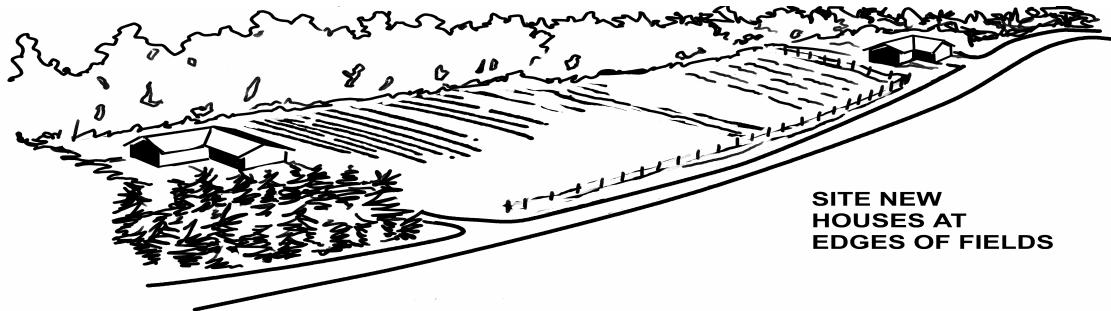
Regulations for development in timberlands and on hillsides should address natural hazards such as wildfire, hillside **runoff** and slope failure. This can be accomplished a) by requiring that developers develop basin wide drainage plans, stabilize and revegetate slopes, and b) by providing education for the management of fire fuels. Hillside development guidelines should be adopted as development regulations. Housing near ridge-tops should be designed with roof peaks below the elevation of the hilltop, with minimal site excavation and grading, and with protection for down gradient property owners.



## **Site Planning For Rural, Natural Resource and Agricultural Areas**

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The **site planning** guidelines for these areas should include dispersed development set back from rural roads and accommodation for existing natural resource and agricultural lands. New uses should be subject to similar site planning standards as those recommended for like areas within the Missoula Urban Comprehensive Plan. The distinction in this area clearly is that the use of the land for resources and agricultural activities is the primary design criteria. Housing and housing development should play a minor role on the landscape, not impeding the overall objectives for the parcel.



**SITE NEW  
HOUSES AT  
EDGES OF FIELDS**

In Miller Creek, it is recommended that landowners be encouraged to transfer development rights located in areas valued for rural character or for other resources, to areas more suitable for urban suburban residential uses. This can be accomplished by use of a development agreement, deed restrictions, planned variations from zoning or planned unit developments.

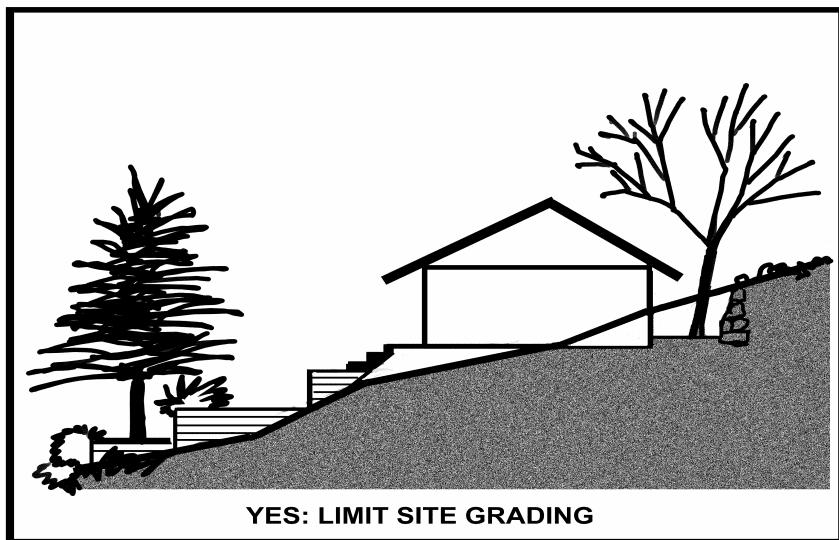
Excerpt from the 1990 Urban Area Comprehensive Plan

***Open and Resource District***

*This district serves some of the same purposes as the **open space** district, but does not necessarily preclude development. The one unit per forty acres has been retained, along with the recognition that greater **density** may be appropriate when possible without compromising the goals and policies adopted with this Update. This category consists of land with environmental constraints, containing timber, agricultural or other resources, or that which is not anticipated as necessary for urban use during the life of the Plan.*

## Grading

- Design structures to fit the natural topography of the site. Use contour grading to retain and restore the existing land form and natural drainage of the site.

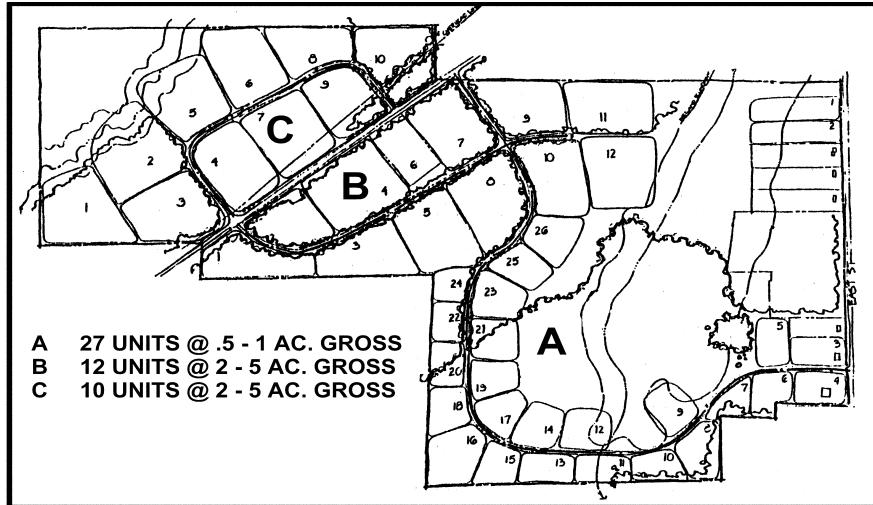


- Clearing existing trees and shrubs is not allowed unless for building sites (with appropriate wildfire protection distances and clearing), roadways and walkways, and approved landscaping.
- Minimize *impervious surfaces*. To safely meet transportation needs, the grades and widths of hillside roads should be minimized.
- Protect for public enjoyment the scenic views of hillsides as well as the scenic vistas from hillsides.

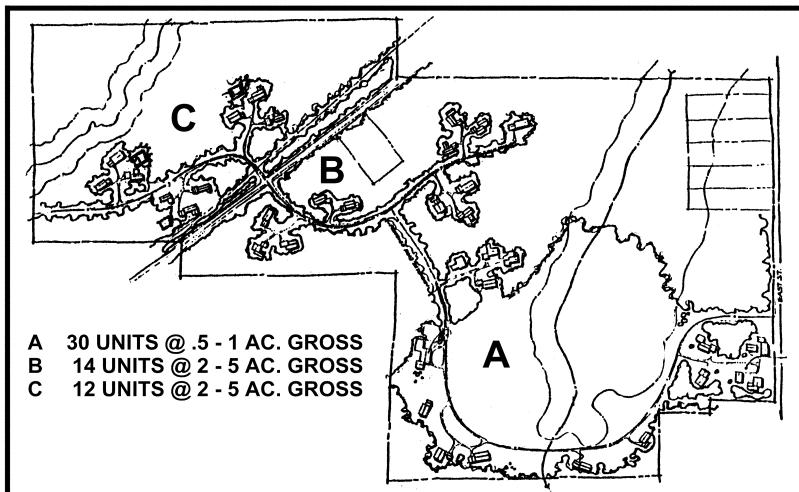
- Site structures, new construction and *infrastructure* in a manner that preserves existing land forms.
- Retain on-site *runoff*.
- *Erosion control* is required especially where excavation and fill placement occurs.
- Discourage development and road construction on steep slopes (25% or greater).
- Revegetate areas of *earthworks* with site-appropriate native plants.

## **General Site Planning and Open Space Subdivision Guide**

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Not Recommended



Recommended

## Recommendations

**Neighborhood Goal: V: Land Use**

**Growth Management Goal: IA. Natural Resources The Environment and IB. Human Resources Healthy People and Healthy Community Structure and Character**

Due to the fact that a significant portion of the study area (that within the true Miller Creek watershed) is agricultural and open and resource land, opportunities exist to develop compatible transitional areas from moderate densities (2-4 homes per acre) to clusters of suburban tracts (5-40 acre parcels) and ultimately natural resource and agricultural land. The natural topography of the area and site limitations may dictate the appropriate level of development. Land use recommendations and development standards are also necessary.

Owners of larger agricultural tracts within the study area are finding it more and more difficult to economically maintain and operate the farms and ranches. As residential development extends into these areas, incentives for continued agricultural and resource operation should be available and reflect the prevailing character of the landscape and surrounding residential uses.

## **Actions and Implementations**

- a) Identify distinct neighborhoods and their associated character.
- b) Identify a Neighborhood Center and locations in the study area for neighborhood commercial activities, new school and other public use sites and varieties of residential development based upon existing and projected population and accessibility.
- c) Update the County Zoning Resolution to correspond to the principles of this plan.
- d) Encourage the voluntary retention of agricultural land uses and allow for development plans incorporating existing and future agricultural uses.
- e) Encourage the use of Conservation ***Easements*** and other voluntary land preservation techniques.
- f) Use the ***site planning*** and building guidelines included in Chapter 2: Community Aesthetics and Character and Appendix D, when designing new development.
- g) Adopt area wide design guidelines to ensure that patterns are established, maintained and overall desired character preserved.
- h) Encourage landscaping with native species and incorporate water wise conservation irrigation systems.
- i) Development should occur in such a way as to be compatible with the surrounding uses.
- j) Transitional buffer areas and uses such as landscaping, wind breaks, walkways, trails, paths and gardens should be placed between converted agricultural land and proposed new development to soften changes in land use.
- k) Avoid premature development of rural areas and open and resource lands that would preempt sites for more appropriate and necessary land uses and public facilities such as school sites, recreational land and wildlife and ***open space*** resources.
- l) Encourage compact development and clustering when it preserves the rural character and is sensitive to existing development.
- m) Adopt a phasing plan for the expansion of existing neighborhoods, and the development of new neighborhoods, and the development of the neighborhood center within the recommended Designated Urban Service Area.
- n) Upper Miller Creek should maintain the present development pattern.
- o) Implement a settlement pattern that continues the historic distinction between the agrarian, open and resource lands and the current urbanizing lands while providing a transition between uses.
- p) Adopt design and performance standards for buildings and the spaces between buildings and settlements for the ***urban/suburban***, rural residential and open and resource character and function designations.
- q) Adopt a general pattern of neighborhood development based on the urban/suburban, rural residential and ***rural/natural resource and agricultural land*** character and function designations.
- r) Home occupations are encouraged as a means of reducing vehicular trips.
- s) A Neighborhood Center would support most daily needs of neighborhood residents.

## CHAPTER 3: HOUSING

As the Miller Creek Valley Planning Area continues to grow, diverse and affordable housing, housing stock condition, and the housing supply are important issues. The lack of affordable housing is reaching a critical point in Missoula County as it is in many counties in Montana. Overall, the cost of housing in Montana is accelerating at a faster rate than housing nationally, with housing in Bozeman and Kalispell selling for 20 percent more than the national average for comparable units.<sup>10</sup> The Growth Management Task Force noted that as a guiding principle “Healthy communities sustain diverse households and a combination of housing alternatives across all economic strata” (Themes Document, 1996). Many socio-economic factors have resulted in the increase in the price of housing and the resulting lack of housing readily available to many residents. Affordable housing is defined as a safe, decent dwelling that a family can buy or rent for not more than 30% of its gross income. A 1992 study of the availability and affordability of housing in the urban area of Missoula reported that the following income groups are spending in excess of 60% of their total household income on rent.<sup>11</sup>

- 21.8% of below median income renters
- 50% of HUD income renters
- 14% of older renters

The median family income for the greater Missoula Urban Area was \$28,529 in 1995, according to figures provided by the Local Government Assistance Division of the Montana Department of Commerce.

As new neighborhoods develop in the Miller Creek study area, there are opportunities to offer housing types that reflect the changing needs of the overall Missoula Community. Ideally, every neighborhood will reflect a community, accommodating a variety of housing needs. The Growth Management Task Force proclaimed a “primary objective of managing growth ...to achieve the overall mix and placement of housing needed to support a community rich in social, cultural, and economic diversity and an environment rich with natural resources.” Housing types such as duplexes and single family homes on smaller lots with smaller square footage, accessory

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<sup>10</sup>State of Montana 1995-1999 Consolidated Plan. Helping Montana Communities -Housing -Economic Development & Infrastructure MT Department of Commerce. 1996

<sup>11</sup>John McQuiston. Missoula Housing: Availability & Affordability. 1992

apartments built to reflect the overall character of the surrounding neighborhoods provide a diversity of housing types and opportunities for various income groups.

Accessory units, or second units, located in the single-family portion of residential areas create affordable rental units without changing the character and quality of single-family areas. They also offset housing costs for the primary unit, provide needed space for a family member, or act as transitional single-family housing. Accessory units, are calculated as an additional unit per lot. These units increase the **density** of an area without changing the pattern of single-lot owner occupied ownership. As a source of affordable rental housing the units provide the option of additional income and land use where appropriate and a diversity of housing.

Infill sites which are served by utilities and other public services reduce a developers up-front costs, and in turn, may reduce the costs of completed housing units. Infill sites in the urban areas of Miller Creek planning area capable of service by public transit can reduce traffic congestion. Encouragement of infill development also reduces development pressures on non-urban locations outside the urban service area, meeting the goal of slowing urban sprawl and conserving **open space** and agricultural lands.

Implementation of development standards should not result in the increase of the cost of housing, however these increases can be offset by modifying other standards. For example, large setbacks between the house and the street and between buildings reduce the buildable area of the lot. Minimal requirements for site improvement standards including drainage, dimensions and spacing of storm drains, street construction, pavement widths and cul-de-sac turning radii, parking, sidewalks, sewer pipe sizes and spacing of manholes reduce costs. The revision of development standards promotes more efficient use of resources, land, labor, material and time, thus expediting the construction process and saving on total development costs. If passed on to the home buyer, housing meets a greater diversity of housing needs. However, these reductions in standards will not be allowed if they adversely impact necessary improvements to **infrastructure** given particular site needs. Proper engineering and design can allow for adequate infrastructure without degrading the character of the neighborhood and its resources.

## Housing Stock

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Most housing stock in the Miller Creek planning area is considered new and in good condition, generally less than 30 years old.<sup>12</sup> Housing costs in the study area as reported in the 1990 census ranged from \$32,500 to \$205,400, giving mean home value of \$90,287, with an average of 6.7 rooms per household. The average length of home ownership within the study area is 12 years. According to information reported by the Census in 1990, there are 481 housing units in the study area.<sup>13</sup> In 1996, the actual mean cost of housing within the study area was \$144,000.<sup>14</sup> 1996 estimates using vehicular trip data show that approximately 850 units are within the Miller Creek Road portion of the study area.<sup>15</sup>

The Linda Vista area was first platted in 1956. A conceptual plan for the phased continued development of the Linda Vista project was presented in 1988. New phases continue to be proposed. Other developments within the study area offer different types of housing

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<sup>12</sup>Missoula County Subdivision Records, Building Permit Data

<sup>13</sup>US Census Report 1990

<sup>14</sup>Missoula County Association of Realtors

<sup>15</sup>Missoula Urban Transportation Plan. 1996

opportunities, such as ***urban/suburban*** and low ***density*** suburban which illustrate periods of growth within the urbanizing and outlying adjacent County area. Below is a representative chronological sample of ***subdivision*** development in the planning area.

Subdivision Name	Date Platted	Subdivision Name	Date Platted
Linda Vista	1956	Ravenwood Hills	1972
Massey McCullough Acres	1960	Linda Vista # 3	1978
Linda Vista # 1	1964	Linda Vista # 4	1993
Canyon Village	1969	Trails End Estates	1994
Lost Mine	1970	Linda Vista # 9	1995
Rodeo Ranchettes	1970	Evan's Ridge	1996

## Development Densities

The majority of existing residential development reflects a limited diversity that ranges from four homes per acre to two homes per acre. The largest contiguous ranch land has one homesite on its 3000 acres. This pattern includes dwellings requiring on-site wells and independent septic systems, as well as dwellings in the Linda Vista area and the northern Maloney Ranch area with rights to connect to Missoula City sewer. Using *The 1990 Comprehensive Plan* and zoning patterns and densities allowed under existing zoning, approximately 800 single family dwelling units are available in the undeveloped, zoned areas. Continued residential development at current large lot densities contributes to the higher cost of housing in the area and will prevent the accommodation of a diversity of housing type and market value. In addressing this issue the Growth Management Task Force *Themes* made the following assumptions:

1. Healthy communities sustain diverse households and a combination of housing alternatives across all economic strata.
2. Housing needs change historically across economic strata; they are different now than in years past.
3. Housing development should recognize and accommodate social change.
4. Housing should be located in proximity to physical, technological, social, and economic ***infrastructure***. (See Appendix C)

In order to meet neighborhood and community goals of preventing sprawl, creating a neighborhood center, preserving rural character, linking new development with adequate infrastructure and providing diverse housing opportunities, design of new housing developments in compact, clustered areas adjacent to natural resource and agricultural land is recommended.

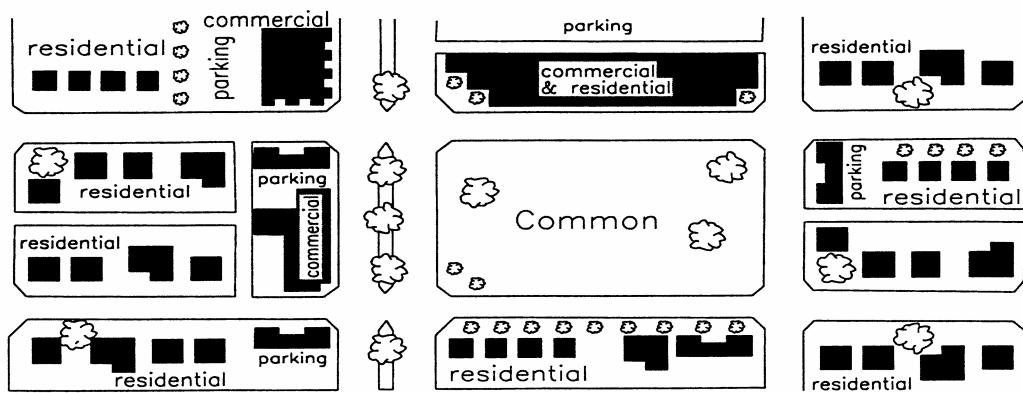
## Housing Mix

This plan recognizes existing neighborhood character and its importance within the planning area while recommending opportunities to add additional dwelling units consistent with zoning.

***Density*** is not a mandate, nor is ***infill*** development. Landowner choice and overall neighborhood character preservation will dictate appropriate levels of infill. Owner occupied units, accessory dwelling units and apartments, provide flexibility that fits the development pattern of the neighborhood. A diverse housing mix is achievable without intensifying the overall level of density by clustering homesites and providing for more ***open space*** and trail opportunities on a given site.

It is possible to develop housing with smaller square footage on smaller lots while meeting design standards which promote the character of the immediate or adjacent area. Increased diversity is also achieved by designating an area west of lower Linda Vista, in the “Buckhouse” area, as a neighborhood center, for location of cultural facilities, a central green or park and a school site, mixed with housing and neighborhood commercial uses. (See Map #2, Map B in Appendix A)

#### **TYPICAL NEIGHBORHOOD CENTER WITH COMMERCIAL USES**



## **Recommendations**

**Neighborhood Goals:** V. Land Use and VI. Open space, Parks and Wildlife

**Growth Management Goals:** IA. Natural Resources The Environment - Consideration 9., II A. Housing Development

### **Actions/Implementation**

- a) Encourage diverse housing development in areas which can physically accommodate residential development and which do not have other development constraints.
- b) Promote housing development which meets the needs of future residents, provides a diverse housing stock, respects the capacities of existing, or future development of public services and facilities, and respects neighborhood character.
- c) Facilitate permit processing efficiency, zoning effectiveness, and land development standards to encourage the development of appropriate and adequate housing.
- d) Aid and encourage private, governmental and non-profit agencies in their efforts to promote affordable and diverse housing construction and innovative neighborhood design in areas appropriate for development.

- e) Provide for safe lighting in scale with a neighborhood. ***Urban/suburban*** neighborhoods may need a limited number of street lamps for safety and character. Standards should discourage lighting as distance from the urban area increases.
- f) Create design standards which encourage the construction of diverse housing (e.g., minimum lot size, zero lot lines, minimum street widths, cluster developments) and which help enhance the historical character of the Miller Creek planning area.
- g) Encourage the development of ancillary or accessory dwelling units through zoning revisions and permit processing methods.

## CHAPTER 4: THE MILLER CREEK ECONOMY

The economy in the Miller Creek Valley planning area is primarily a residential neighborhood, consumer economy. The only significant commercial land use in the planning area is the Wal-Mart store at the intersection of Miller Creek Road and US 93. Most of the economic history and current economic value produced in the planning area is from resource-based land uses: agriculture and forest products. Of this activity, “prime” agricultural land, as defined by the Natural Resource Conservation Service (formerly the SCS), is concentrated in the lower Miller Creek area and on the edge of the Bitterroot *Floodplain*, west of lower Linda Vista. Prime agricultural land is defined as those areas with soils and climates determined to be best suited for growing crops if irrigated and is rated by crop productivity. There is land in single ownership’s in the Middle and Upper Valley that is in agricultural use and not currently proposed for development. All of the current agricultural operations within the study area have vested water rights for irrigation and use their flat agricultural land for hay and grain production.

Plum Creek Timber owns approximately 4200 acres of hillside land in the Miller Creek watershed. Representatives from Plum Creek Timber Co. indicated in the planning process that their Miller Creek holdings were intended for timber management at this time. They have recently appraised all of their Montana holdings to determine a highest and best use for each.

The State of Montana is the second largest landowner in the area, with more than 3000 acres of School Trust lands. These lands are managed as a timber and grazing resource.

Home occupations, “tele-commuters” and other non-visible commercial uses operate in the planning area as they do in other areas in and around the Missoula area. Home-based businesses and offices are increasing nationally and it is important to make allowances for this trend if the uses are compatible and consistent with existing neighborhood character.

### **Recommendations**

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**Neighborhood Goal:** V. Land Use

**Growth Management Goals:** IIB. Sustainable Economic Development

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#### **Actions/Implementation**

- a) Performance standards should be developed to address noise, lighting, parking, traffic generation and site design in order to accommodate small neighborhood and mixed uses.
- b) Encourage commercial uses that are at a scale appropriate to the neighborhoods.
- c) Any commercial use should be developed with design concepts that integrate the development into the neighborhood context, whether it is urban or rural.
- d) Diversify the economy, encourage small businesses and home occupations, including home-based service businesses.
- e) Allow for the continued operation of natural resource and agricultural lands in the study area.

- f) Phase in cultural facilities sited in the neighborhood commercial center so that as the community's population grows, it is also able to support more diverse opportunities for commerce, recreation, employment etc.
- g) Develop employment sites within the neighborhood commercial center which offer office space and other low intensity employment resources for those who do not wish to develop offices at home. This would decrease transportation pressures created by more typical suburban sprawl.

# CHAPTER 5: NATURAL ENVIRONMENT

## Land Use and Settlement Pattern

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The natural topography of the land and availability of water have dictated the use of land within the Miller Creek Valley. Agriculture is the dominant use on this landscape; grazing stock for breeding and market. The open, steeply sloped hillsides and thin soils won't support more intensive agricultural uses. Agricultural buildings are tightly clustered so that viable lands were not wasted. The upper reaches of the Valley continue to be used as timber lands, and where allowable, grazing properties. Initial residential land uses were mini-ranches and horse properties. The lower reaches of the study area have developed as more urban and suburban residential uses due to their proximity to *infrastructure* and services.

## Vegetation and Wildlife

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The Miller Creek Valley is rich with plant and animal resources. The *riparian* bottomlands adjacent to the Bitterroot River provide various habitat types and support a multitude of species including but not limited to white-tailed deer, wintering bald eagles, ospreys, countless migratory and nesting songbirds and waterfowl. Black cottonwood, ponderosa pine, red-osier dogwood, other woody riparian vegetation and low level shrubs and *forbs* are common in the Bitterroot River *floodplain* areas.

The upland hills and ridges above the floodplain provides additional habitat types with vegetation dominated by grassland species and sparse clusters of ponderosa pine and hawthorn. Grassland bird and mammal species use this area. Ground-nesting birds and mammals, other grassland species such as bobolink, vesper and grasshopper sparrows, and Columbia ground squirrels also inhabit the area and are the prey for predators such as coyotes, prairie falcons, bald and golden eagles, long-eared and great horned owls and other raptors who use the area for hunting and nesting. Many animals use all of these areas periodically as daily travel corridors to access food, water and shelter, and as seasons change, as migratory corridors.

In the middle part of the Valley, where Cahoot Canyon enters the drainage, there is a change in landform and subsequent change in habitats and species. The drainage steepens and becomes more densely forested, creating another habitat type supporting species such as elk and mule deer, goshawks and red-tailed hawks. The vegetation provides nesting and perching areas and cover for protection from predators. There is a documented wintering elk herd of approximately 150-200 head using the Davis Creek and Cahoot Canyon areas. The Montana Department of Fish, Wildlife and Parks monitors the herd, reporting that it is gradually increasing in size. Mule deer also reside in the drainage and use this same winter range. The upper portions of the study area, near the USFS boundary is reported by Fish, Wildlife and Parks agents to have a resident population of moose. (See Wildlife Map 3)

The open slopes and ridge tops in the study area have varying quantities of native grasses and wildflowers. Idaho and rough fescue grasses and bluebunch wheatgrass remain, but are being choked out by the spread of noxious weeds. Wildflowers such as shooting stars, bitterroots, Indian paintbrush and arrowleaf balsamroot continue to be abundant on the southern slopes and ridgetops. There are small populations of rare vegetation and species of special concern,

including toothcup and wolffia located adjacent to the ponds in the Bitterroot River floodplain (Western Montana Retriever Club lands) and pointed broom sedge and small lady's slipper in the lowland meadows.

Much of the native vegetation in the Valley has been impacted by the spread of noxious weeds such as spotted knapweed and leafy spurge. This infestation has serious ramifications for the continued use of the area for agriculture and as habitat to support wildlife.<sup>16</sup>

The citizen-based planning committee studying wildlife issues identified significant *open space* areas and potential trail corridors in the area. (See Map B, Map 1, Map 3) The group strongly recommends limiting of development on ridge tops and hillsides as a means of preserving the resources of the study area. Separate trail and path networks connecting public open spaces and parks is also recommended but these non-motorized connections should not rely upon additional development to construct and maintain these improvements.

Trails to open spaces and resource lands owned by State Lands, Plum Creek Timber, and the US Forest Service lands should not adversely impact slopes and sensitive areas. Current policy allows recreational use of Plum Creek land as long as road closures and other area restrictions are followed. Other open space areas have been recognized as wildlife habitat, agricultural areas and floodplain and floodway areas. (See Maps 3, 4 and 11)

## Geology

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Geologically, the Miller Creek Valley has a dramatic past. The landscape of the study area is the result of historic erosional wind, water and volcanic deposits. The bedrock formations were created in the Precambrian Period (1-3 billion years ago). Layers of material conglomerated and compressed, creating quartzite and argillite rock types. In places where the sediments contained lime, limestone was formed through the compression of layers. The study area contains three types of material formed in this period: Bonner Quartzite, Miller Peak Formation and the Wallace Formation.

The Miller Creek Valley was created with the Rocky Mountain Range about 60 million years ago. Molten rock pushed up under the quartzite, argillite and limestone layers. Faults formed between the layers of material, lifting some areas to form the Bitterroot Mountains and dropping other areas to form the Miller Creek Valley and others. Five areas of faults have been mapped in the study area. The Tertiary period, which took place from 60 million to 3 million years ago produced heavy sediment loads of up to 3000 feet in the Missoula and Bitterroot Valleys. These sediment loads were highly variable mixtures of sand, silt, clay and gravel. The end of the Tertiary period left over 400 feet of sediment load in the Miller Creek Valley, now found on the valley margins and beneath the valley floor. The hills and mountainsides in the study area were formed by these sediment deposits and were more completely formed by the next geologic stage in the Tertiary Period, the Ice Age.

Approximately 1 to 3 million years ago the “wet stage” of the ice age began. Streams and rivers began to form and carve their way through the sediment layers, remnant from the previous geologic events. The water also mixed with the existing layers of clay in the soils creating landslides where slopes and materials became unstable. Erosion of the sediments and existing bedrock formations on the north and south of the Miller Creek Valley shaped the valley between the terraces on each side of the study area.

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<sup>16</sup>Wildlife & Vegetation Committee Report: Brule' et al. 1996

About 10,000 years ago, at the end of the last ice age, a large ice dam formed in Idaho, in what is now known as the Purcell Trench and Lake Pend Oreille. This dam blocked water and created Glacial Lake Missoula. The lake extended from Sandpoint, Idaho in the West, Darby in the South and Drummond in the East. The maximum depth of Glacial Lake Missoula was approximately 1000 feet, placing the Missoula Valley floor 1000 feet beneath the lake surface. The Miller Creek Valley was an arm of the glacial lake with the side slopes, ridge tops and surrounding mountains acting as shorelines. The formation and break-up of a dam and the resulting cycle that filled and then emptied Glacial Lake Missoula occurred several dozen times at the end of that period, with varying lake levels and sediment loads. Portions of the Lake Missoula sediments remain today as top soil layers in the Miller Creek Valley and are part of what is collectively known as valley fill. Areas of slumps and landslides within the study area were created by the complex history of the Miller Creek Basin.<sup>17, 18, 19</sup>

## Soils

There are 31 soil types in the Miller Creek study area.(See Map 7 and Table 5-1) These soils were mapped and classified using the USDA Natural Resource Conservation Service (formerly known as the Soil Conservation Service) definitions and site limitation recommendations. Soil limitations are primarily based on material, depth to **groundwater** and slope. The Miller Creek basin has severe limitations where the creek enters the Bitterroot River, where the most sensitive soils, riverwash and xerofluvents, are dominant. Other soil types in the basin are generally limited due to erosion, compositions and slope.

**Table 5-1**

SOIL ID NUMBER	SOIL NAME	SOIL TYPE	SLOPE	DRAINAGE
7	Argixerolls-Haploixerolls	Cobbly	0-4%	Well Drained
8	Argixerolls-Haploixerolls Complex	Cobbly, Stone	4-15%	Well Drained
9	Argixerolls-Haploixerolls Complex	Cobbly, Stone	15-30%	Well Drained
14	Beeskove	Gravelly Loam	30-60% NE Aspect	Well Drained
16	Bigarm	Gravelly Loam	0-4%	Somewhat Excessively Drained
17	Bigarm	Gravelly Loam	4-15%	Somewhat Excessively Drained
18	Bigarm	Gravelly Loam	15-30%	Somewhat Excessively Drained
19	Bigarm	Gravelly Loam	30-60%	Somewhat Excessively Drained
20	Bigarm Rock Outcrop Complex	Gravelly Loam	30-69%	Somewhat Excessively Drained
21	Biglake	Gravelly Sandy Loam	8-15%	Excessively Drained
22	Biglake	Gravelly Sandy Loam	15-30%	Excessively Drained
23	Bignell	Gravelly Loam	8-30%	Well Drained
24	Bignell Winkler	Gravelly Loam	30-60% NE Aspect	Well Drained
34	Desmet	Loam	0-2%	Well Drained
44	Grantsdale	Loam	0-2%	Well Drained
45	Grassvalley	Silty Clay Loam	0-4%	Well Drained
46	Grassvalley	Silty Clay Loam	4-8%	Well Drained

Continued on next page

**Table 5-1 Continued**

SOIL ID NUMBER	SOIL NAME	SOIL TYPE	SLOPE	DRAINAGE
57	Holloway	Gravelly Silt Loam	30-60%	Somewhat Excessively Drained
71	Mitten Tevis	Gravelly Loam	30-60%	Somewhat Excessively Drained
72	Moiese	Gravelly Loam	0-2%	Excessively Drained
89	Repp	Very Gravelly Loam	30-60%	Well Drained

<sup>17</sup>Land & Water Consulting Report for WGM, Maloney Ranch Conservation Easement Report, December 1995.

<sup>18</sup>Geology and Ground-Water Resources of the Missoula Basin, Montana, McMurtrey et al., July 1965 - Montana Bureau of Mines & Geology Report Bulletin #47

<sup>19</sup>Geology, Southwest Missoula Quadrangle, Montana. Weber & Associates, Inc. 1978.

			SW Aspect	
91	Repp	Very Gravelly Loam	30-60% NE Aspect	Well Drained
93	Riverwash	Sandy, Silty, Gravelly Sediments	0-2%	Frequent Flooding
102	Tewis	Gravelly Loam	30-60%	Somewhat Excessively Drained
105	Totelake	Gravelly Loam	2-8%	Excessively Drained
114	Urban Land	Impervious		No Drainage
131	Winkler	Very Gravelly Sandy Loam	30-60% SW Aspect	Somewhat Excessively Drained
132	Winkler	Gravelly Loam	8-30%	Somewhat Excessively Drained
133	Winkler	Gravelly Loam	30-60% NW Aspect	Somewhat Excessively Drained
134	Winkler Rubble Land Complex	Very Gravelly Sandy Loam	50-80% SW Aspect	Somewhat Excessively Drained
136	Xerofluvents	Floodplains	0-2%	Frequent Flooding

## Water

There is serious concern among residents about **groundwater** quantity in the Miller Creek Valley **aquifer**. Information regarding the quantity, location and quality of water, to make recommendations for location or quantity of additional development in the whole study area is limited. Site-specific water evaluations have been completed for specific development proposals, the Trail's End **Subdivision** and the Twite Family Partnership community water supply well site. These studies and past geologic reports begin to describe the underlying hydrological system of the basin. This data is not developed to a standard allowing for basin-wide assumptions regarding water. Landforms mask the underground diversity of materials, even in the valley fill areas, providing little predictability that there will be water-bearing formations beneath all land areas.

## Groundwater and Surface Water

The average annual precipitation in the 46-square mile Miller Creek watershed is 20.19 inches. Average annual **groundwater** yield from the watershed was estimated at 11,583 acre-feet.<sup>20</sup> [One acre-foot is equal to the volume of water that will cover one acre to a depth of one foot; 43,560 cubic feet or 325,851 gallons.] During summer months it has been estimated that 31.7 acre-feet of water flows through the Miller Creek **aquifer** daily.

The thickness of the Miller Creek aquifer has been predicted to be relatively uniform. Geologic and hydrologic profile examinations performed in 1994 suggest that the valley fill materials and corresponding water table aquifer (unconfined aquifer) is at least 30 feet thick except near the valley fringes.<sup>21</sup> This water table aquifer varies in thickness seasonally as much as 20 feet of variation has been estimated during periods of drought.<sup>22</sup>

Residents have suggested the creation of a **Controlled Groundwater Area** for the basin for approval by the State of Montana's, Department of Natural Resources and Conservation (DNRC). Approved lots in the Trails End Estates **Subdivision**, located in the middle of the drainage, have reported difficulty finding on-site water at a reasonable cost. Some residents have deepened existing wells to ensure, at least temporarily, an adequate supply for domestic and agricultural use. Water quantity concerns can also be mitigated with the installation of water-saving devices on appliances, faucets and toilets. Low-flow systems, aerators, water collection systems and drip irrigation reduce overall demand for this finite resource. Creative landscaping can reduce the need for more water use per household. Establishing recommendations for development that

<sup>20</sup>Howard Newman, Hydrogeologist, Report for Twite Family Partnership, 1990.

<sup>21</sup>Van Der Poel, W.I. 1994. VLF Resistivity Surveys, Miller Creek Alluvium. Missoula County, Montana.

<sup>22</sup>Howard Newman, Hydrogeologist, 1990

incorporates water quantity controls will mitigate the impact on the availability of water. Any future development must address the quantity of water available for residential use with detailed information regarding the Miller Creek aquifer and potential quality impacts due to sewage treatment.

In the late 1980's, water quality issues in the western edge of the study area, including the Lower Linda Vista neighborhood, resulted in connection of existing and developing households to an extended municipal central sewer system. Water systems in that neighborhood contained elevated nitrate levels. The Missoula Water Quality District placed a monitoring well within the County road right-of-way in the study area during the summer of 1995 as part of a long range monitoring plan for water quality in the basin. Initial data collection in June, 1996, showed a static water level of 110.5 feet and a Sulfate concentration of 6 mg/l (ppm), Chloride concentration of 2 mg/l (ppm) and a Nitrate concentration of 0.50 mg/l (ppm). These initial water analysis indicate safe drinking water quality in the basin at and above the test well. The periodic testing and static water level measurements taken at this well site will, over time, become sound base data for making determinations regarding the quality and quantity of groundwater within the watershed. Cumulative impacts from residential development, septic systems and other methods of sewage treatment can have negative effects on the Miller Creek and Bitterroot aquifers. Overall Missoula Urban Area impacts should be considered when analyzing environmental and water quality (surface and sub-surface) impacts.

Surface water in the Miller Creek basin has historically been diverted for agricultural purposes into a series of ditches in the upper and middle portions of the study area. Past agricultural operations and grazing have impacted the quality of the *riparian* resources normally associated with creeks of this nature. Currently, owners of large parcels have indicated a willingness to improve the quality of the riparian areas associated with Miller Creek. Modifications of past agricultural practices and diversions will assist with the revegetation effort adjacent to Miller Creek. Vegetation along the creek corridor play a fundamental role in the overall biology of the riparian zone and assists with preserving the surface water quality. Storm drainage *runoff* and septic effluent have direct effects on both Miller Creek and the Bitterroot River. Surface water quality should not be diminished nor the quantities increased due to storm water drainage.

A Voluntary Nutrient Reduction Program (VNRP) is being considered for the Missoula Valley in which in stream targets for total nitrogen and total phosphorus are being locally monitored. The VNRP will measure discharge from the four largest dischargers, two of which are in the Missoula Valley (the City of Missoula and Stone Container) and measure overall river water quality. Surface water quality should not be diminished nor the quantities increased due to storm water drainage and septic systems or sewage treatment facilities.

## Air

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Citizen concerns regarding the air quality in present and future neighborhoods have been an issue and should be mitigated with any future developments. The Plan acknowledges the link between vehicle miles traveled (VMT) and air quality. New development strategies and densities are needed that result in reduced vehicle miles traveled.

The Missoula City/County Health Department administers regulations that address air quality concerns within an adopted recognized Air Stagnation Zone. The zone is generally defined as the 4 1/2 mile zone or the building permit jurisdiction. New development within the zone must pave all new roads. Fireplaces and wood stoves are prohibited in all new construction within this zone. Only clean wood-burning pellet stoves are allowed within the study area. Hillside and ridgeline development is strongly discouraged. Vehicular access to these sites expel more emissions and

particulate matter. Roads require sanding for traction assistance and significantly add to suspended particulate matter in the air. Vehicle miles traveled increase as development expands into Miller Creek Valley. Dust abatement measures are required on all non-paved vehicular service routes.

Missoula has been designated as a “non attainment” area for two pollutants: carbon monoxide (CO) which is related to vehicle speed, and particulate matter (**PM<sub>10</sub>** the existing standard and **PM<sub>2.5</sub>** under consideration) which is related to vehicle miles traveled. The 1996 Missoula Transportation Plan Update acknowledges two critical points which will affect development in the Missoula valley: 1) that with fewer vehicle miles traveled than are represented by this comp plan amendment, the assimilative capacity of our airshed will be exhausted by the year 2015; and 2) that new particulate standards (PM<sub>2.5</sub>) are likely to be adopted in early 1997, and will further reduce the capacity of the airshed to accept traffic generated pollutants. Air quality standards may be needed to evaluate development proposals in the future.

## Recommendations

### *Air Quality*

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**Neighborhood Goals:** I. Air and Water Quality and VI. Open Space, Parks and Wildlife  
**Growth Management Goals:** IA. Natural Resources the Environment

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#### **Actions/Implementation**

- a) New construction sites should use dust abatement techniques to reduce impacts to neighboring sites.
- b) Development on hillsides and ridgetops should be avoided.
- c) Discourage the location and construction of roads on slopes greater than 25%.

### *Water Quality and Quantity Priorities*

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**Neighborhood Goals:** I. Air and Water Quality and VI. Open Space, Parks and Wildlife  
**Growth Management Goals:** IA. Natural Resources the Environment

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#### **Actions/Implementation**

- a) Recommend that residents monitor all new wells within the study area that are filed with the state of Montana Water Rights Division of the DNRC to determine the threat of cumulative negative impacts on pre-existing rights holders and households.
- b) Establish baseline data regarding the amount and quality of water within the Miller Creek Valley study area **aquifers** and a system to continually monitor change.
- c) Ensure that individual and community septic systems are in place and maintained regularly. Determine what effects they will have on surface and ground water quality. Water quality and quantity are not to be diminished.
- d) Provide educational materials to suburban livestock owners regarding stock watering and feeding areas and creek crossings.
- e) Maintain and revegetate **riparian** areas and **floodplains** where necessary to hold soil in place, prevent erosion and provide for flood and storm water storage.
- f) Devise a strategy for water resource protection and water conservation, including landscape use. Encourage the use of vegetation with low water requirements for landscaping. Turfed lawn areas should be limited to areas immediately surrounding residences.

g) ***Impervious surfaces*** can have negative impacts on drainage systems, by speeding flow and causing erosion and should be limited.

## ***Wildlife Habitat Conservation***

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**Neighborhood Goals:** VI. Open Space, Parks and Wildlife

**Growth Management Goals:** IA. Natural Resources the Environment

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### **Actions/Implementation**

- a) Preserve all critical ***wildlife corridors*** and significant habitat locations and maintain healthy, viable wildlife populations within the study area by designating no-build areas and incorporating design standards. Wildlife corridors include significant and effective buffers. Buffer area sizes will depend on the resources impacted and should be considered on a case by case basis.
- b) Adequately sign roads where frequent deer and other wildlife crossings occur.
- c) Control noxious weed infestations in and around the study area. Develop weed management district for developed, agricultural and resource lands in the basin.
- d) Develop regulations that require homesites within wildland/residential interface areas to have adequate areas cleared providing a buffer from low level vegetation and tree crowns.
- e) Recommend building materials that retard fire in wildfire interface areas.
- f) Reduce wildlife-human encounters within and adjacent to wildlife interface zones by following these recommendations:

***NOTE: See Deer and Elk habitat Map #3 for delineated wildlife interface zones.***

***The Office of Planning and Grants has educational material available to assist with wildlife and wildfire interface issues.***

1. Gardens and compost piles should be adequately fenced one foot below the surface and eight feet high with a top rail made of something other than wire to prevent wildlife entanglement.
2. Prohibit permanent barbecue pits. Portable barbecues should be cleaned regularly and stored indoors when not in use to prevent wildlife attraction.
3. Encourage the use of native vegetation when landscaping and revegetating disturbed areas. Flowers, ornamental trees and fruit-bearing trees are susceptible to damage from wildlife. Fruit trees should be properly harvested and not allowed to accumulate rotting organic matter which will attract wildlife.
4. Garbage should be stored in wildlife proof containers with sufficiently tight-fitting covers to prevent the escape of noxious odors and to prevent the entrance and destruction by wildlife.
5. Pet and livestock food should be stored in a secured area, not accessible to wildlife.
6. Domestic pets (dogs, cats, etc.) should not be allowed to roam freely and potentially harass wildlife. Dogs should be kept in an enclosed area when not under the direct supervision of the owner.
7. Rabbits, goats, sheep, turkeys, chickens, pigs and other 4-H type animals should be protected and enclosed with adequate fencing or sturdy cages to protect them from wildlife. These domestic species have little or no defense against predators and can be attractive food sources for wildlife.
8. Salt blocks and food for deer and other wildlife are strongly discouraged. They attract prey species that in turn often attract the corresponding predator species, mountain lions and bears, to residential areas.

## ***Select Areas for Conservation Before Allowing Development***

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### **Action/Implementation**

- a) Preserve significant geologic landforms and sensitive soil areas.
- b) Limit hillside and steep slope development.
- c) Discourage development and road construction on steep slopes (25% or greater).
- d) Place new development on stable soils and appropriate underlying geologic areas.
- e) Development in *floodplains* and flood fringe areas should be avoided.
- f) Significant habitats, forested areas and intact or re-established grasslands should be preserved.

## ***Preservation of Open space***

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### **Actions/Implementation**

- a) Encourage the use of conservation *easements* and other voluntary land use restrictions to preserve significant features in the area.
- b) New development should set aside a portion of the overall land area as landscaped public and private *open space (unimproved surface areas)* within the boundary of a *subdivision*). These set asides should conform to the chart below.

Unit per Acre	Open Space Set Aside
Four (4) or More	40%
Two (2) to Four (4)	50%
One (1) to Two (2)	80%

(See Diagram 5-1)

- c) Provisions for agricultural operations should be made that encourage continued operation in conjunction with limited development proposals. Agricultural uses and the “working landscape” they create were identified as an acceptable means to preserve open space and rural character.
- d) Develop setbacks from roads and ridgelines. Require that new construction does not adversely impact historic viewsheds. Preserve views by not allowing building on ridgelines. This should be recommended when it will allow, and not be the rule when other resources will be negatively impacted.
- e) Implement incentives for clustering residential units on parcels so that significant portions of the area remains viable working agricultural land, wildlife habitat, recreation land or scenic and non-scenic open space. Planned unit developments, limited development proposals should be encouraged to provide for development while conserving significant resources on the site.
- f) Provide a Bitterroot River front corridor corresponding to the floodplain zone to be set aside for future conservation and appropriate recreation use.

### **Diagram 5-1**

# CHAPTER 6: INFRASTRUCTURE, COMMUNITY SERVICES AND FACILITIES

This chapter addresses community services and facilities which support the planning area. Included are current needs for parks and *open space*, schools, utilities, public safety, police, fire and transportation services.

Community service needs were identified by contacting the current service providers in the Missoula Valley to determine what levels of service they are currently providing and, in the event of increased development, what levels of service they would be willing and able to provide. In general, service providers reported available capacity and a willingness to supply additional services. For example, BFI (refuse disposal services) indicated available capacity at their landfill site and capability for additional collection capacity, if needed, to serve future development in the Valley. Montana Power, Mountain Water, and City Engineering supplied maps of their major facilities for use in the planning process. Service providers and owners of major *infrastructure* in the Miller Creek Valley include:

Infrastructure Providers	Service
MONTANA POWER	Electricity and natural gas
LINDA VISTA WATER COMPANY	Water: Linda Vista Supplements 1-2 and 4-9
MOUNTAIN WATER	Water
CITY OF MISSOULA (PUBLIC WORKS)	Sewer, Roads, Parks, Snow Removal
TCI CABLEVISION	Cable Television
MONTANA DEPARTMENT OF NATURAL RESOURCES and CONSERVATION (DNRC)	Water Rights (surface and sub-surface), Timber, Mining
US WEST	Telephone and Fiberoptic
MISSOULA CITY POLICE	Provides protection inside City limits
MISSOULA COUNTY SHERIFF	Provides protection <b>outside</b> City limits
MISSOULA CITY FIRE DEPT.	Provides fire protection inside City limits
MISSOULA RURAL FIRE	Provides fire protection <b>outside</b> of City
MISSOULA EMERGENCY SERVICES INC.	Ground Transportation
LIFE FLIGHT	Helicopter ambulance for remote or difficult locations, or high speed needs
BONNEVILLE POWER ADMINISTRATION	Transmission lines
MOUNTAIN LINE TRANSIT	Transit - (interested in expanding into Miller Creek)
MISSOULA COUNTY	Roads, Parks, Snow Removal
SCHOOL DISTRICT. 1 and MISSOULA COUNTY PUBLIC SCHOOLS	Schools

Another method of identifying service needs was from citizen input about the types of services that they would like to see, or avoid, in Miller Creek. Discussions of all of these various services follow.

## Phasing Infrastructure

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Typically **infrastructure** is phased so that only those improvements are built which are required for a particular phase of a development. However, it may be more cost-effective if major infrastructure is built to accommodate future needs. Planning for an impact that is reasonably foreseeable and, where possible, designing a facility so that it may be expanded at a time that more capacity is required is recommended. It is also more cost-effective to phase and construct infrastructure improvements in a concentrated central area. For example, roads and sewer constructed to serve one **subdivision** of a certain size is more efficient than building infrastructure to two or more developments each the fraction the size of the first example. This technique avoids building and maintaining infrastructure for subdivisions that do not get built out due to shifts in market forces or other unforeseeable events.

An Urban Service Area also helps ensure infrastructure expansion occurs concurrently with development. An Urban Service Area concept was first introduced in the *Missoula Urban Comprehensive Plan 1990 Update*. The following text is an excerpt from that Plan.

### **Urban Service Area**

*An urban service area has been delineated, comprising the area in which high density residential, commercial and industrial development is encouraged to locate by the City Council and County Commissioners. This area is generally considered to be appropriate for all urban-density residential development when there are no environmental constraints and when the public services necessary to support high density uses (most notably public transportation and public sewer) are present. Should adjacent areas prove to have access to these services, the boundary can be re-adjusted. It should be periodically reviewed. All neighborhood plans completed within this area should provide for multi-family development at levels determined appropriate through the planning process. The neighborhood planning process should also determine the locational suitability of neighborhood commercial development. (p. 62)*

The 1990 Urban Comprehensive Plan Update adopted this concept and the Growth Management Task Force has recommended this tool. The purpose of a Designated Urban Service Area is to promote compact urban development within and adjacent to existing urban areas to ensure efficient utilization of land resources, reduce potential costs to the community related to the development of outlying lands and facilitate the economic provision of urban services.

The 1990 Update depicted the Urban Service Area as the service area for the existing sewage treatment plant as outlined in the Wastewater Facilities Plan. The 1990 Update further discussed the philosophy behind such an area. As a means to conserve natural resources, new residential development was and is encouraged to take place adjacent to existing development in areas with the least environmental constraints. Urban services were defined as public services available to support residential development at any density, with the primary factors being the availability of public sewer service and public transportation. This same philosophy is continued in this document. The Update did express concern regarding the urban service area, notably that areas with environmental limitations such as slope, topography, geologic constraints and outstanding natural resources should not be adversely impacted in order to extend services.

The Miller Creek **Comprehensive Plan** Amendment acknowledges and advances the notion of a Designated Urban Service Area which was adopted in the 1990 Missoula Urban Area

Comprehensive Plan. Since 1990, the urban service area concept was reaffirmed through several different community planning processes, including the Citizen Stakeholders' Scenarios Planning Process sponsored by the Growth Management Task Force in 1995 and, more recently, the Miller Creek Community Design Workshop citizen mapping exercise in 1996. Within the context of the Miller Creek Comprehensive Plan Amendment, the urban service area concept may serve as a framework for discussion of capital facilities and *infrastructure* project evaluation. It provides opportunities for development where infrastructure, services and facilities are in place or can be put in place concurrent with future development proposals.

The Urban Service Area concept may serve as a framework for discussion of capital facilities and infrastructure project evaluation. It allows the community opportunities for development where infrastructure and existing facilities are in place or can be easily placed concurrent with future development proposals.

## **Transportation**

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Access to and from the study area is one of the top issues identified by residents when discussing the possibility of more development in the study area. Other issues addressed in this section include public transit for the Miller Creek Planning Area and establishing an emergency route out of the valley in the event of major disaster. Also discussed in this section is the impact of increased development on the upper portion of the Miller Creek Valley where roads are currently unpaved and additional traffic causes increased dust and maintenance issues.

Nearly all of the traffic that accesses the planning area uses Miller Creek Road. With on-going proposals to develop in the Miller Creek Valley, this facility will begin to approach its capacity from an engineering perspective. Residents perceive Miller Creek Road to be at capacity today. They believe that the road is inefficient, unsafe, and that further development will require improvements to the road network.

Construction of a bridge across the Bitterroot River to Highway 93 was analyzed by the computer model developed during the Missoula Transportation Plan Update process adopted October 1996. These test runs analyzed different bridge locations, land use patterns and road networks. Land use patterns based on existing zoning, basic road network, and socio-economic projections developed for the Draft Missoula Urban Transportation Plan 1996 Update to the year 2015 were employed. The first location, referred to as the Blue Mountain Road Alignment resulted in approximately 2200 trips over the bridge per day.

The second test run was the Linda Vista Bridge-North/South Alignment. This location is closer to Missoula resulting in a projected volume of traffic of 6200 trips per day. This bridge location removed more traffic from Lower Miller Creek Road-Linda Vista to the "Y" and from Miller Creek Road, between the "Y" and Highway 93. This option however, is likely to have higher financial and environmental costs due to greater intrusion into the flood plain.

Safety and financial issues associated with the addition of an intersection on Highway 93 have not been fully explored for any potential bridge option.

Subsequent to the Urban Transportation Plan Study another test run was completed by the modeling consultants using data supplied by the potential developer of the Maloney Ranch in the Miller Creek Area Transportation Study, WGM Group July 1996. This model used socio-economic data that simulated a more complete build-out of the Miller Creek Valley with a proportionate share of the projected growth being reassigned from around the transportation plan study area. In addition, the transportation network was designed to attract more of the trips generated by the potential development to the bridge. The conclusion of this study was that the

North/South Alignment location accommodates more traffic than the Blue Mountain location, but that the financial and environmental costs of this option are greater than the benefit of accommodating the increased volumes.

One set of studies that should be noted in the context of traffic mitigation is presented in the Missoula Urban Transportation Plan 1996 Update. During the course of this plan a Computer Model was used to project traffic under several growth and transportation scenarios. In one of these scenarios (Test Run #6) an alternative growth pattern was tested. This alternative test run was developed based on input from the Growth Management Task Force and local planners. This alternative promotes growth management goals and includes the following changes to the baseline scenario:

- Increased residential and commercial in-filling within the City limits
- Increased residential densities in the area west of Reserve between Mullan and Broadway, Target Range, and the area between Reserve and Russell between the river and the Bitterroot Railroad Spur.
- Increased industrial development between I-90 and Broadway (from Scott Street to the Airport)
- Significant pedestrian and Bicycle facility improvements

This type of approach suggests a more limited amount of development in areas which are outside of the identified *infill* areas and Designated Urban Service Area.

The current residents of Miller Creek do not want to bear the traffic impacts of new development, or the costs of mitigating impacts on the current transportation system. While all development in the Valley has contributed to the overall impacts, current residents want mechanisms in place to fund necessary improvements prior to experiencing the impacts of new development. Assessing impact fees to fund the costs of new *infrastructure* or requiring that adequate infrastructure is installed prior to development through other funding mechanisms should be considered as options for ensuring that future development pay for improvements.

During the planning process citizens expressed concern about cul-de-sac streets. Cul-de-sac streets should be avoided in favor of through-streets. This will facilitate efficient movement of traffic, provide better neighborhood connections and reduce overall Vehicle Miles Traveled (VMT). Cul-de-sac patterns are undesirable also because they make it more difficult to provide services such as transit, school buses, and emergency services to neighborhoods. School buses do not enter cul-de-sacs.

Another concern articulated by residents of the area pertained to impacts of new construction on existing neighborhoods and streets. Requirements should be placed on developers to provide mitigation for construction impacts to road facilities from construction vehicles. This should also include strategies for dust abatement during construction phases.

Transit should be a major consideration in proposals for new development in the Miller Creek study area. Use of transit will reduce vehicle miles traveled and congestion. Transit also is a viable alternative to the automobile for young people and adults who do not drive personal vehicles due to choice or limitations of age, income or ability. The Missoula Urban Transit District (MUTD) has requested expansion of the transit district into the study area and asks that new developments be required to waive their right to protest out of the MUTD taxing district.

Citizens have expressed a concern about an emergency route out of the Miller Creek Area. Currently, options for egress from the Miller Creek Valley by automobile include Miller Creek Road, Gharrett Street off Upper Miller Creek Road, and an unimproved Forest Service Road that leads over Holloman Saddle to Clinton. As development continues in the study area greater consideration should be given to improved facilities and plans for evacuation of citizens in the event of a major disaster.

Citizens also expressed concern during the planning process that, as development in the study area increases, more traffic will access the Upper Valley on the unimproved portion of Upper Miller Creek Road. This facility is not designed for the number of trips anticipated. This will cause a dust problem along the road corridor and will create a need for more maintenance on the road. As the area develops and funding for other infrastructure construction is generated, consideration should be given to mitigation of these impacts.

At the time of final approval of this Plan, the Missoula Board of County Commissioners and representatives from the development industry have initiated a Miller Creek Transportation Mitigation Proposal. This proposal establishes a means for all new development to contribute to a mitigation fund that shall be used for transportation infrastructure improvements in the Miller Creek basin. Missoula County has agreed that any other developer in Miller Creek Basin will be required to also mitigate road impacts in the Miller Creek Traffic Basin on at least an equivalent dollar volume.

## Utilities

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The study area is bisected by a number of significant utility corridors. The Bonneville Power Administration operates two 500 kilovolt (KV) high voltage transmission lines. These lines were constructed in 1986-87 as part of the Garrison, MT to Spokane, WA study and linkage. These lines are part of the BPA's system to provide residential and industrial electrical power to the Northwest Region of the United States. Montana Power Company operates numerous overhead powerlines that link their Missoula operations to the Bitterroot Valley. Two 161 KV powerlines connect to a substation and are then dispersed at lower voltages to serve residences in the study area and to connect to other sites in the Missoula Valley. Montana Power Company also operates an eight (8) inch underground natural gas line providing service to and from the Bitterroot Valley.

Concern about potential human health effects resulting from exposure to overhead powerlines has been expressed. Research and data regarding this subject are not conclusive. Montana's regulations regarding electromagnetic field strengths in residential developments (1 kV/m at edge of right-of-way) are more stringent than those of any other state. Visual and proximal buffers should be considered when development occurs near utility corridors. Industrial standards for separation (setbacks) exist and will be specifically outlined in development regulations that will be written to conform to the recommendations of this plan.

## Water and Sewer Extensions

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Significant portions of the ***urban/suburban*** neighborhoods in the study area have connections to the City of Missoula Wastewater Treatment Facility. All phases of Linda Vista, South Pointe, Meriwether Additions and the neighborhoods within the Cold Springs area are connected to City sewer.

Water facilities are provided by Mountain Water Company in the northern portions of the study area. The Twite Family Partnership created the Linda Vista Water Company in order to provide water services to that area. Community wells have been established to fulfill the necessary requirements to support residential development on the Twite Family lands. In addition major water storage units have been constructed to provide backup and foreflow to the Linda Vista Water customers.

Missoula City and County and the Twite Family Partnership initiated a process to extend the Central Sewer Interceptor line into the Miller Creek Area in 1991. In June of 1992 an agreement

was made and a Rural Special Improvement District (RSID) was formed to collect the necessary hookup and user fees for those connecting to the sewer. The sewer main was sized for connection of the existing 421 homes in Linda Vista and the surrounding neighborhood and an additional 1230 future homes. The future build-out was calculated assuming an additional 25 units per year would be constructed over the next 50 years, or the predicted life of the sewer system. This estimated build-out was within the recommendations of the City's Central Sewer Masterplan. The Lower Miller Creek Sewer Service Area as defined and authorized by the Memorandum of Agreement between the Missoula Board of County Commissioners and the Twite Family Partnership signed in June of 1992 is outlined in Map #10.

An interlocal agreement between the City of Missoula and the County of Missoula to cooperate in extension of City Sewer Service to portions of the Lower Miller Creek Area of Missoula County was signed in May of 1992 delaying the annexation of the sewer areas.

The City of Missoula passed resolution number 5168 in June of 1991. This resolution required that those property owners connecting to City Sewer enter into a municipal sanitary sewer contract petitioning for annexation and waiving their right to annexation. The resolution further reads that the City of Missoula would not annex pursuant to sewer main interceptor RSID petitions prior to December 1, 2005. Unless at any time prior to December 1, 2005, fifty percent or more of the total number of property owners within the original boundaries of the sewer main are new property owners after the date of the signing of the RSID.

## **Parks, Open Space & Trails**

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The Parks, *Open Space & Trails* discussion is excerpted from the Missoula County Parks and Conservation Lands Plan, 1996. In the Miller Creek/South Valleys area four types of parks are discussed: conservation, pocket, neighborhood, and community. They are defined as follows:

**Community parks.** Community parks, as their name suggests, serve residents of the entire community. They can vary in size from ten to forty acres and typically contain a number of structures and activity opportunities. They are generally separated from adjacent land uses, and can support large crowds. These parks may provide important trail linkages within the community and may also contain complete trail systems within their boundaries. Community parks can either be nature-based or active-recreation based, or a combination of the two if the park is large enough.

**Neighborhood parks.** Neighborhood parks typically, serve several neighborhoods or *subdivisions* in an area. They range in size from two to twenty acres, and provide a number of different uses and structures. They are somewhat separated from adjacent land uses, and tend to be altered from their natural state. They may provide trail linkages between neighborhoods and to other park lands. Larger groups of people tend to use these parks, and the number of encounters with other users can be high.

**Pocket parks.** Pocket parks are generally small and integrated with the adjacent neighborhoods they serve. There is a low number of structures and diversity of uses. They may provide trail linkages within the neighborhood. User groups are generally small in number and live in nearby residences.

**Conservation parks.** Conservation parks are characterized as being primarily in a natural state and/or protecting sensitive habitat or important natural features.. There are no or few structures and a low diversity of activities. Human use is managed to retain these natural values.

## Community Parks

No community parks exist in the Miller Creek planning area. Establishing both an active-recreation and a nature-based community park is a high priority for the area. The active-recreation park would support such uses as baseball, soccer, jogging, basketball, and unorganized play activities requiring level grassy areas. The nature-based park would provide opportunities for quiet, solitude, learning, and reflection in a natural setting. These two parks can be combined on one parcel if the topography permits sufficient separation of uses.

An active-recreation park often requires extensive grading, paving, irrigating, fertilizing, and building of structures. For this reason it should not be located in a **floodplain**, area of high **groundwater**, or other sensitive area. It *should* be in an area that is easily accessible for children and other non-motorized travelers. One possible location is along Lower Miller Creek Road. Another location within an existing neighborhood is the abandoned gravel pit operation adjacent to Meriwether Street. The parcel is of adequate size and has two existing accesses.

A nature-based park is meant to allow human interaction with natural systems. This interaction, however, can lead to significant impacts on wildlife and native vegetation. Such a park should therefore not be located in a very ecologically sensitive area, and should be designed to mitigate impacts caused by human use of it. Low impact techniques include careful trail location and design, control of loose dogs, education of users, and the non-inclusion of irrigated turf areas and large parking lots in its design.

## Neighborhood Parks

**Marilyn Park** is an important site for the Linda Vista area. A tennis court, ice rink, basketball court, small softball field, play equipment, picnic area, and irrigated turf area for informal play occupy five acres. It adjoins five acres of school grounds, which in turn connects to the 4.3 acre Raelene Park. The school grounds and Raelene Park are undeveloped.

**Rainbow Park** is another important five acre site for the Linda Vista area. Half of the park is a steep hillside; a major sledding area in winter. The other half is being developed with play equipment and an informal soccer field.

**Meadow Hills and Cold Springs School** serves as a neighborhood play area for the northern part of the planning area. They each contain play equipment, basketball courts, and open turf area.

**Peery Park** is on the eastern boundary of the planning area and serves as connection between neighborhoods. It contains a paved trail and landscaping.

**Table 6-1**

## Pocket Parks

Park Name	Residences Served	Acres	Condition	Opportunities
Pheasant Run	50	0.33	good	turf and play area
Country Club	75	2.5	poor	informal play area
Hillside	25	3.4	poor	visual <b>open space</b>

Shelby CMA	15	1.9	good	visual open space
Mockingbird	15	0.8	fair	natural area
Whitetail	70	2.3	good	informal play area
Nicole	80	1.8	good	visual open space
Southpointe	60	1.3	fair	visual open space
Chappelle	20	0.5	fair	small play area
Rodeo News	50	0.9	fair	walkway
Trails End	50	1.4	poor	few or none
Ranchette	50	2.1	fair	Bitterroot River access

**CMA** is an abbreviation for Common Areas normally associated with Homeowner's Associations

**Table 6-2**

***Conservation Parks***

Park Name	Acres	Conservation Value
Meriwether CMA	3.3	gullies; poor condition
Ravenwood Hill	22.2	wooded gullies and <i>riparian</i> habitat
Rodeo CMA	6.3	Miller Creek riparian area
Lost Mine	7.7	forested hillside
Canyon Village	2.9	Miller Creek riparian area
Oral Zumwalt	6.8	Bitterroot River riparian area

**CMA** is an abbreviation for Common Areas normally associated with Homeowner's Associations

***Open Space***

The 1995 Missoula Urban Area Open Space Plan recognizes two major potential Cornerstones in the Miller Creek Area. The entire Bitterroot River corridor and parts of Sections 16 and 17 on the flanks of Mount Dean Stone.

***Trails***

Recent City trail construction and other improvements created through *subdivision* approval have provided a continuous trail from 23<sup>rd</sup> Street, west through Peery Park, connecting to River Pine

and Highwood Subdivisions to the intersection of Country Club Lane and Highwood Drive. These connections allow easy access to schools and through neighborhoods. The City trail program has identified Orchard Road as an integral component because it links Briggs and Miller Creek Road to the South Hills neighborhood streets.

Connections between the Miller Creek Area and the South Hills could be accomplished by linking a non-motorized access between Orchard Road and Miller Creek Road through current private property beneath the “Y” on Miller Creek Road.

The trail system that will develop should be conscious of private property owners privacy, be generous in right-of-way dedication so they can be a functional amenity to neighborhoods and not a narrow connection that people fear to use.

## **Recommendations**

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**Neighborhood Goals:** III. Transportation; IV. Fiscal Concerns; VI. Open Space, Parks and Wildlife and VII. Public Services

**Growth Management Goals -- Development Objectives:** C. Infrastructure Development

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### **Actions/Implementation**

- a) Accommodate development without placing undue financial burden on existing property owners for *infrastructure* and other needs.
- b) Maintain or improve existing levels of transportation services by reducing traffic congestion and vehicle miles traveled (VMT).
- c) Access to and from the study area should be improved.
- d) Infrastructure and development amenities should be in place concurrent with new development. (Sewer, Water, Roads, Trails, Parks, Drainage)
- e) New development should incur the full cost of improvements arising as a direct result of the development. Conversely, the new development should pay only its pro-rata share of already existing needs in the community.
- f) Design cost sharing formulas and plans for infrastructure in cooperation with area property owners prior to the construction of each project which will distribute cost equitably among existing users, future users, and those profiting from future development.
- g) Reconstruct, to urban standards, Miller Creek Road from Briggs, including the intersection of Upper and Lower Miller Creek Roads and extending to Mockingbird Lane.
- h) Road systems should be designed to keep traffic at safe speeds within the Miller Creek planning area.
- i) Require paving and minimize grades on new roads in accordance with Health Department studies and Hillside Standards.
- j) Existing roads should be brought to acceptable safe standards for vehicles, pedestrians and bicycles.
- k) Provide a linked street network that connects neighborhoods with each other. Locate new arterial and collectors at the edge of existing neighborhoods
- l) Design standards for arterials and collectors should include adequate setbacks and street trees to preserve the rural character of the area.

- m) In the event of future development a non-motorized access between Orchard Road and Miller Creek Road should be established north of the “Y” on Miller Creek Road
- n) Major utility corridors should be explored as linkages.
- o) *Urban/suburban* existing and developing neighborhoods should provide for safe non-motorized accesses.
- p) Suburban and rural areas should provide linkages for non-motorized access including equestrian uses.
- q) A bicycle and pedestrian circulation plan should be prepared for the Miller Creek area and pathways should be incorporated in new as well as existing developments. Emphasize pedestrian routes that permit full travel between commercial sites and residential areas.
- r) Provide a plan for the provision of public sewer and water based upon the type of development and the geologic and hydrologic character of the area.
- s) Provide for the timely installation, upgrading and replacement of sewer, water and streets within the economic constraints of the residents in the planning area. The installation of new wells and drainfields and the replacement of existing wells and drainfields should be subject to the geologic and hydrologic characteristics of the specific area.
- t) Ensure that household gray water (wastewater) is adequately treated or connected to sanitary sewer to protect *groundwater*.
- u) Link parks, public facilities and *open spaces* with a network of paths, trails or sidewalks for non-motorized circulation through neighborhoods. Non-motorized access ways at the end of cul-de-sacs to connect neighborhoods and park lands are needed. Trails meant for commuting should not be located in natural areas. Occasional small trails, designed for small-scale recreation, are sometimes appropriate in natural areas if located and designed properly, but only if natural resources are not adversely impacted.
- v) Sidewalks and separate bicycle pedestrian paths should be developed as alternatives to on-street (wide road shoulder) non-motorized transportation modes.
- w) Land for an active-recreation and nature-based community park is needed. Options such as purchase or donation should be explored.
- x) Residential and commercial development along the river should be discouraged. Riverfront corridor for conservation and recreation use should be designated and developed.
- y) Land for a neighborhood park near Lower Miller Creek Road is recommended. As *subdivisions* are approved, lands for neighborhood and pocket parks should be dedicated.
- z) Conservation parks should be created on sensitive lands, in wooded draws, gullies, and *riparian* areas. Since these lands are not meant for large-scale human use, dedication to a homeowner’s association as common area, with suitable guidelines placed on its use, is often appropriate.
- aa) Pocket parks and conservation parks can be improved by controlling noxious weeds and other non-native species in accordance with established weed management policies. Conservation parks should also be protected against incompatible uses, such as over-grazing, inappropriate timber cutting, heavy recreational use, or other encroachments.
- bb) Numerous sources for financing development of parks should be explored. RSID’s, bond issues, park districts, cooperative agreements with state, federal and private agencies, user fees for larger parks, developer assistance, and County Park Board matching funds are all recommended.

- cc) Pedestrian crossing of Miller Creek Road should be safe and may incorporate traffic “calming measures” to alert drivers of pedestrian zone.
- dd) Reserve adequate areas for school locations, linking these areas to developing neighborhoods, transportation corridors and area parks and ***open spaces***. Collaborate with school district for size and location of appropriate sites.
- ee) Provide for adequate police and fire protection in the area.
- ff) Establish fire and police station location if development requires these facilities for protection of public health and safety.
- gg) Provide for safe lighting in scale with the neighborhood, e.g. porch lights and coach lights may be adequate in residential neighborhoods.
- hh) Devise a plan for adequate handling of storm water (i.e. grassy swales, retention areas and other passive surface treatment options that do not necessarily need sumps or other injection devices);
- ii) Community and private water supplies (wells) water rights filings should be monitored to ensure that no previous right holder is adversely impacted by new development.
- jj) Determine the type and need for second access in and out of the planning area.
- kk) Explore a cross connection between Gharrett and Miller Creek Road.
- ll) Incorporate an ecological management plan that includes fire into the design and maintenance of trails, open space, conservation ***easements*** and natural resource lands.
- mm) Encourage placement of mailboxes in boulevards and discourage mailboxes in sidewalks. The provisions for mail services should be included in the design of the subdivision.
- nn) Explore reversible lane or a three lane facility on Miller Creek Road north of Y intersection.

## CHAPTER 7: COMMERCIAL AND INDUSTRIAL LAND USE

Commercial land uses at this point includes the working landscape, resource driven industry of agriculture and timber management. The most substantial commercial land use within the study area is the Wal-Mart fronting Highway 93. Other non-visible home occupations undoubtedly exist in the study area and as mentioned in Chapter 2: Home occupations should be allowed to continue as long as they do not detract from the overall character of the neighborhood. The Linda Vista Golf Course is a seasonal outdoor recreational commercial use and pro shop with the banquet rooms operating as requested for particular events.

Montana Power Company owns approximately 85 acres in section 13. A portion of the site is used as a 161 kilovolt substation for transmission lines linking Missoula to the Bitterroot Valley. The site is presently bordered by agricultural uses. Montana Power Company representatives have expressed a desire to use other portions of their lands for commercial storage areas. Any changes in uses surrounding this site should be buffered visually, but not in a way that will impact the ability of the power company to use the site. Montana Power Company also operates a smaller substation adjacent to Miller Creek Road in section 12. Similar setbacks and buffers are recommended adjacent to this facility. Setbacks from electrical utility sites are recommended by the industry. Appropriate setbacks and adjacent uses will be more precisely established when the area is rezoned following the adoption of this plan.

Industrial uses also include the gravel extraction operations in the study area. There are three operating gravel pit and extraction projects operating in the study area. Gravel is being extracted along the banks of the Bitterroot River on the Maloney Ranch Properties ownership. The gravel bar was created when Highway 93 was reconstructed in the 1970's. The gravel was stockpiled at its present location. Current operations will likely conclude within one year and no further gravel mining plans exist along the Bitterroot River *floodplain*. Missoula County Road department operates a gravel operation off Upper Miller Creek Road. The gravel pit is a source of material for road improvements and a storage area for needed road materials. A gravel pit and concrete batching plant currently exists off Trails End Road in an unzoned area. Other gravel operations have operated in the valley, mining the alluvium gravel and valley fill.

New development in the study area may warrant the development of neighborhood commercial uses to provide necessary services to the Miller Creek Area. The creation of a neighborhood center as mentioned in Chapter 2 will provide for services and be designed to complement existing and future neighborhoods. These sites should consider mixed uses combining residential and commercial uses to create diverse housing opportunities and better use of lands and *infrastructure*. Performance and Design Standards for neighborhood commercial uses should be developed as regulatory guides for these sites. Residents for the study should be aware that commercial transport, logging trucks, heavy equipment, construction materials, and natural resources, like gravel, will continue.

# Recommendations

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**Neighborhood Goal:** V. Land Use

**Growth Management Goals:** IIB. Sustainable Economic Development

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## Actions/Implementation

- a) Commercial uses should be developed at a scale appropriate to the neighborhoods.
- b) Any commercial use should be developed with design concepts that integrate the development into the neighborhood context, whether it is urban or rural and according to developed design standards. (See Design Guidelines in Chapter 2)
- c) Neighborhood commercial space is encouraged adjacent to intersections with high volumes of traffic.
- d) Accommodate neighborhood commercial and mixed use types of business development as the neighborhoods grow and intensify through the development of additional housing. All commercial development should be designed and built with attention to the *site planning* and design of the community.
- e) Phase neighborhood commercial development so that it occurs timely and appropriately with residential development. Commercial development is intended to serve the immediate neighborhood and not attract customers from the larger Missoula. Convenience and close proximity to existing and future neighborhoods is the fundamental principle. Gas stations should be considered as a possible use if appropriate design and location criteria have been met.
- f) Montana Power lands (substations) are viewed as utility sites and should have separation distances and buffering from adjacent unlike uses.
- g) Timber and resource lands should continue to be managed for that purpose. Plum Creek Timber Company and State School Trust Lands (DNRC) are considered resource areas and will continue to be managed in ways that may not be compatible with residential uses.

# CHAPTER 8: PUBLIC AND QUASI-PUBLIC LANDS

Approximately 3000 acres of the study area consist of State Forest lands, managed by the Montana Department of Natural Resources and Conservation. These lands are intended for use as timber lands (uses include grazing and mining), managed for the long term health of the forest and harvested to provide money to the State of Montana School Trust Fund. The headwaters of the Miller Creek study area are located within lands managed by the US Forest Service, the Missoula Ranger District of the Lolo National Forest. Future private developments should consider the possible trail and *open space* links to the US Forest Service lands from the neighborhoods and Miller Creek Basin if it can be accomplished without conflicting with land management activities and wildlife movements and habitats.

Other public lands are fourteen County parks, dedicated as a part of *subdivisions* approval, ranging in size from 1/2 acre Chappelle Park, on St. Thomas Drive to the 22.2 acre Ravenwood Hill conservation lands protecting the gully between Gharrett Street and Upper Miller Creek Road. (See *Infrastructure* Map 9 for specific locations) In addition, six common areas owned by homeowners' associations provide play area, *open space* or conservation for the adjacent subdivision. For more detailed park discussion see Chapter 6-Infrastructure, Community Services and Facilities.

Two schools, Meadow Hill Middle School and Cold Springs Elementary and two undeveloped school sites are located within the study area. One school site is located adjacent to Marilyn Park in Lower Linda Vista and a 7 acre site was set aside for a middle school in the Canyon Village subdivision in the middle of the study area. Some middle school students are currently being bussed to C.S. Porter Middle School on south Reserve Street. Current and future school needs should be evaluated to determine appropriate levels of development and site designations.

## Recommendations

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**Neighborhood Goals:** Air and Water Quality; V. Land Use and Open Space, Parks and Wildlife  
**Growth Management Goals:** IA. Natural Resources - The Environment and IIB. Sustainable Economic Development

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### Actions/Implementation

- a) Ensure that appropriate opportunities exist for using public lands.
- b) Ensure that agricultural and forestry management can continue on State School Trust Lands.
- c) Parks, school district lands and developing trails should be designed and used for the greatest public good, weighing natural resource concerns to determine appropriate level of use

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## **GLOSSARY**

<b><u>Aquifer</u></b> -	A water bearing, sub-surface formation capable of yielding sufficient quantities of water for beneficial use.
<b><u>Build out</u></b> -	Build-out is determined by dividing approved platted lots by total potential dwelling units allowed by zoning or recommended by the comprehensive plan.
<b><u>Comprehensive Plan</u></b> -	A master plan or comprehensive development plan or any of its parts such as a plan of land use and zoning, of thoroughfares, of sanitation, of recreation, and of other related matters. (MCA 76-1-103 Definitions)
<b><u>Controlled Groundwater Areas</u></b> -	Controlled groundwater areas may be proposed by the DNRC on its own motion, by petition of a state or local public health agency, or by petition signed by a least 20 or one-fourth, whichever is less, of the users of groundwater in a groundwater area where the petitioners feel a controlled area is necessary. A petition must allege there are facts showing one or more of the following:
	<ol style="list-style-type: none"> <li>1. groundwater withdrawals are in excess of recharge to the <i>aquifer</i>;</li> <li>2. excessive groundwater withdrawals are very likely to occur in the near future because withdrawals have consistently increased in the area;</li> <li>3. there are significant disputes within the area concerning priority of rights, amounts of water being used, or priority of type of use;</li> <li>4. groundwater levels or pressures are declining or have declined excessively;</li> <li>5. excessive groundwater withdrawals would cause contaminant migration;</li> <li>6. groundwater withdrawals adversely affecting groundwater quality are occurring or are likely to occur; or</li> <li>7. water quality within the groundwater area is not suited for a specific beneficial use define by 85-2-102(2)(a), MCA.</li> </ol>
	After notice and public hearing, the DNRC will issue an order. If the order declares a permanent or temporary controlled groundwater area, the order will contain the specific control provisions.
<b><u>Density</u></b>	The ratio between the number of dwelling units located on a lot and the gross area of the lot, and may be determined by dividing the lot area by the number of dwelling units.
<b><u>Gross Density</u></b>	The ratio between the number of dwelling units located on a parcel and the area of the parcel, including all lands within the parcel used for public or private roadways, dedicated right-of-way, parks, common areas and other open space. The gross density of a parcel may be determined by dividing the parcel area by the number of dwelling units.
<b><u>Net Density</u></b>	The ratio between the number of dwelling units located on a parcel and the area of the parcel, not including lands within the parcel used for public roadways, dedicated right-of-way, parks, common areas and other open space. The net density of a parcel may be determined by dividing the parcel area devoted to lots by the number of dwelling units.
<b><u>Earthworks</u></b> -	Moving, reconfiguring or altering natural landforms, usually with heavy equipment.

**Easement** - A right acquired by a public or private authority to use or control property for a designated purpose.

**Erosion control** - Means of limiting or stopping soil and vegetation from slipping, washing or blowing away once exposed. Methods include revegetation, barrier placement or temporary surface covers.

**Floodplain** - The area adjoining any watercourse or drainway which would be covered by the floodwater of a flood of 100-year frequency, as defined by the Federal Emergency Management Agency (FEMA), except for sheetflood areas that receive less than (1) foot of water per occurrence and are considered “Zone B” by FEMA.

**Forb** - A broad leafed flowering plant, as distinguished from grasses and sedges.

**Groundwater** - Water under the earth’s surface, often confined in aquifers capable of supplying wells and springs. Groundwater can be found at or near the surface.

**Groundwater Recharge** - The natural process of infiltration and percolation of surface-water from land areas or streams through permeable soils into water-holding rocks that provide underground storage (i.e. aquifers).

**Impervious Surfaces** - Any material that substantially reduces or prevents the infiltration of stormwater into previously undeveloped land. Impervious surfaces shall include graveled driveways and parking areas and surfaces such as concrete, asphalt, rubber mat, plastic.

**Infill** - The development of new housing or other buildings on scattered vacant lots in a built-up area or on new building parcels created by permitted lot splits.

**Infrastructure** - Physical Infrastructure includes permanent utility installations such as roads, water supply lines, sewage collection pipes, and power and communications lines.

Cultural Infrastructure includes libraries, museums, historical landmarks, government buildings, fire and police stations, public and private parks, open space and schools.

Social Infrastructure provides for the public for the public welfare by protecting the public health, safety, educational and social services.

**Mitigation Measure** - Action taken to reduce or eliminate negative impacts on infrastructure, services or natural resources. Mitigation includes: avoiding the impact altogether by not taking a certain action or parts of an action; minimizing impacts by limiting the degree or magnitude of the action and its implementation; rectifying the impact by repairing, rehabilitating, or restoring the affected environment; reducing or eliminating the impact over time by preservation and maintenance during the life of the action; and compensating for the impact by replacing or providing substitute resources or environments.

**Neo-traditional Neighborhood** - Communities and neighborhoods designed to recreate positive features from neighborhoods of earlier generations.

**100-year Flood** - That flood event which has a one percent chance of occurrence in any one year.

<b><u>Open Space</u></b> -	Open space land is defined as land that provides or is preserved for (a) park and recreational services; (b) conservation of land or other natural resources; (c) historic or scenic purposes; (d) assisting in the shaping of the character, direction, and timing of community development. (MCA 76-6-104 Definition)
<b><u>PM<sub>10</sub></u></b> -	The current standard for measuring the amount of solid or liquid matter suspended in the atmosphere matter including dust. Refers to the amount of particulate matter over 10 micrometers in diameter.
<b><u>PM<sub>2.5</sub></u></b> -	Same as PM <sub>10</sub> except referring to the amount of particulate matter over 2.5 micrometers in diameter.
<b><u>Percent Slope</u></b> -	A common way of expressing the steepness of the slope of terrain, which is derived by dividing the change in elevation by the horizontal distance traversed. An increase of 20 feet elevation over a 100 foot distance is a 20 percent slope.
<b><u>Riparian</u></b> -	Area of Riparian Resource. A stream, wet meadow, woody draw, wetland or other body of water and land containing any of the habitat or community types listed in Appendix VI of the Missoula Subdivision Regulations, and an adjacent buffer area.
<b><u>Runoff</u></b> -	Surface water flow usually associated with high water events (e.g. snow melt, flash floods, high rains).
<b><u>Site Planning</u></b>	A scale drawing showing the actual dimensions of the parcel and the relationship between property lines and the uses, building or structures, existing or proposed on the property. A site plan may be required to include such details as dimensions of proposed and existing buildings or structures, adjacent streets and adjoining properties, parking and driving areas, loading, access points, on-site and boulevard landscaping, areas of riparian resource, public and private access and utility easements, and location of septic tank and drainfield or sewer lines.
<b><u>Subdivision</u></b> -	<p>The division of land, or land so divided, that creates one or more parcels containing less than 160 acres that cannot be described as a one-quarter aliquot part of a United States Government Section, exclusive of public roadways, in order that the title to or possession of the parcels may be sold, rented, leased, or otherwise conveyed; including any re-subdivision and further including any condominium or area, regardless of its size, that provides or will provide multiple spaces for recreational camping vehicles or mobile homes, pursuant to MCA 76-3-103, as amended.</p> <p>A single building, or single multi-unit building intended for rental or lease purposes, whether existing or proposed, on a single lot, is not a subdivision.</p> <p>(A) <b>Rural Subdivision</b> - A subdivision within which the density of development is two dwelling units per acre or less, exclusive of public roadways, parks, or common area.</p> <p>(B) <b>Urban-Suburban Subdivision</b> - A subdivision within which the density of development is greater than two or more dwelling units per acre, exclusive of public roadways, parks, or common area.</p>

**Unimproved Surface Area** - An area in an undeveloped or natural state, that may include the existing vegetative condition, or a landscaped surface.

**Wildlife corridors** - A natural corridor, such as an undeveloped ravine or open hillside, that is frequently used by wildlife to travel from one area to another.

## **APPENDIX A**

### **GUIDELINES FOR INTERPRETING THE LAND USE MAP**

Two maps should be analyzed when determining land use classifications and suggested locations of specific elements within the study area. **Map A** illustrates the entire study areas boundary with reference to **Map B**, a more detailed map of the western portion of the study area adjacent to the urban area and borders the Bitterroot River

Translating goals and policies into lines on a map can be a difficult process. Hence, the map should be viewed as a visual representation of the policies and goals set forth in the Plan. The following guidelines are intended to explain the relationship between the map and the document.

## URBAN SUBURBAN USES

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An area generally described as the Missoula side of the lower Miller Creek area has been outlined for a **density** range of one (1) dwelling unit per acre to six (6) units per acre. This refers to areas recommended for neighborhood commercial, public and quasi-public parks (lands), two (2) dwelling units per acre, six (6) dwelling units per acre and uses within the Neighborhood Center. (See page 6) This area should contain higher density residential and commercial development. In order for the neighborhood center concept to evolve, efficiently using land and providing densities to support urban services (such as transit, public water and sewer) can be achieved in this manner. This area is considered to be appropriate for urban-density residential development where there are no environmental constraints that cannot be mitigated and where the public services necessary to support high density uses (most notably, public transportation, public sewer and public **open spaces**) are present. It is recommended that urban types of development be limited to this area until at least 80% build-out occurs within the area, and the adjacent area has ready access to urban services. Build-out should be determined by dividing approved platted lots by total potential dwelling units allowed by zoning or recommended by the comprehensive plan. Further, in determining the extent of build-out, the Board of County Commissioners should consider the degree to which approved lots have been developed.

### Commercial

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A mixed use **Neighborhood Center** is proposed which may sustain a variety of residential and commercial uses. Performance standards (see Chapter 2) are key to a successful district. Residential densities within the neighborhood center are recommended at six (6) units per acre. The neighborhood center should incorporate mixed commercial uses to encourage efficient use of **infrastructure**, allow for smaller lot development and provide close proximity to other public uses which may locate near the center (e.g. a school, neighborhood park area or other municipal uses). These may include professional offices, single and multi-family residential, small-scale commercial uses and public open spaces and parks, all developed within a concentrated area as designated on the map. They should not include uses which traditionally locate on high-volume commercial strips such as fast-food outlets, casinos, bars, or large retail outlets. These uses properly belong in community commercial areas outside the Miller Creek area.

A neighborhood commercial concept and a mixed use neighborhood center concept have been created with this Plan Update. These concepts are created to serve the Miller Creek Area neighborhoods, with opportunities for using non-motorized connections. Certain uses may work in more than one neighborhood area, though more stringent performance standards may be necessary to mitigate impacts. Many of the negative elements of commercial development can be mitigated through design such as limited access, lighting, landscaping, providing for pedestrian/bicycle and public transportation, and other design controls (see Chapter 2).

Construction of small scale shopping and office/residential buildings designed in the character of the neighborhood is preferred over development of individual and isolated building sites. It should also be kept in mind that these commercial areas may be located at the crossroads and major intersections in the community (i.e. along Upper Miller Creek Road), and designed with parks plazas and connections to *open space*.

**Potential and Existing Neighborhood Commercial** sites are designated on the land-use map. (Note: the Walmart site is currently zoned “SC” - Shopping Center, a special shopping center district created for that site.) These have been drafted through the neighborhood planning process. General location criteria have been used here. Specific design standards should be defined within updated zoning and other development regulations as they are put in place.

- Sites should have access onto collectors, preferably at intersections.
- Uses should be oriented towards serving the convenience needs of the surrounding neighborhood, rather than targeting a Missoula-wide market.
- Sites should be large enough to contain and mitigate al on-site impacts including lighting, parking and landscape buffers.

## **Residential**

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Land has been allocated for residential use at varying densities. **Urban/Suburban Neighborhood** residential development, with a maximum *density* of up to six (6) dwelling units per acre near the neighborhood center, has been designated for some areas inside the areas that have City sewer service and are within the neighborhood center.

**Urban/Suburban Neighborhood** development also has been recommended for the Linda Vista areas and those areas between Upper Miller Creek Road and lower Miller Creek Road, where neighborhood character and general land use has been established. Immediately adjacent to these area lands are designated allowing for four (4) units per acre. where services are available and there are no environmental constraints, greater density may be approved consistent with updated zoning. Areas recommended for lower density Urban/suburban residential development at a maximum density of 1 unit per acre, such as the Ravenwood and Massey McCullough neighborhoods.

## NON URBAN AREAS

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### Residential

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Other areas have been recommended for **Rural/Low Density Suburban Residential**. This allows large tract development at one unit per five acres to one unit per 40 acres for a more rural atmosphere.

The flat lands south of Miller Creek Road and north of Miller Creek are recommended for a **density** of one (1) dwelling unit per five (5) acres. This land should be set aside as a **Residential Reserve** for future development. Any development or **subdivision** occurring in this area should be clustered on smaller tracts allowing for variability in neighborhood designs. These Reserve lands may be developed at a density of one (1) dwelling unit per five (5) acres in clusters at any time, and when the urban area is built out by 80%, the Reserve area would be reviewed by the governing bodies for a possible increase in density. The Reserve status is intended to allow and strongly encourage clustered urban types of development, subject to the following conditions:

1. The Miller Creek floodway and channel must be placed in a dedicated **riparian** management area in conformance with the Missoula County Riparian Regulation and the governing body must be a participant in its management.
2. Appropriate public utilities must be included within the development plan, specifically: community sanitary sewer collection, treatment, and disposal; central water supply and fire protection; a storm drainage system for management of 10 and 100 year storm frequencies (no storm water injection sumps allowed), natural gas, electric and telecommunications.
3. Lower Miller Creek Road must be paved through each developed ownership.
4. A neighborhood recreation system which includes a substantial managed neighborhood park, trails and walkways system is to be included within the development plan.

In order to allow for enough density and to allow for community water and community septic or sanitary systems, clustering is advisable to protect environmental, agricultural and **open space** resources. **Site planning** standards recommended in Chapter 2 should be followed for the protection of ridgelines and conservation of functional agricultural units. Again, these densities are general and intended to represent a range of development patterns which can be anticipated. Actual site characteristics must also be considered when evaluating a proposed development.

A road connection between Upper and Lower Miller Creek Roads should be examined when future development warrants such a connection. The exact location of this connection will be determined in consultation with private owners and the local governing bodies.

The one (1) dwelling unit per forty (40) acres standard has been retained in **Rural/Natural Resource And Agricultural Land** classification, with a recognition that greater density may be appropriate when possible without compromising the goals and policies adopted with this Update. This category consists of lands which have environmental constraints (such as steep slopes greater than 25%), contain timber, agricultural or other resources, or are not expected to be needed for **Urban/Suburban** use during the life of the Plan. Clustering or using compact areas for homesite development is the standard development practice in this area to protect environmental resources.

- Cluster development of those aggregate allowable densities within an ownership under a PUD **subdivision** and zoning is strongly encouraged.

- All roads must be paved and the clusters must be served by community water. Community sewer collection, treatment and disposal systems connectable to the regional municipal sewer service system must be installed and used. Subsurface disposal of treated effluent is allowed subject to determination of non-significant impact by the Montana State Water Quality Bureau and/or the Montana Department of Environmental Quality. The lifting of sanitary restrictions must be obtained from the subdivision bureau of the Montana Department of Environmental Quality.
- **Density** bonuses should be considered when densities recommended by the Plan are transferred from **Rural/Natural Resource and Agricultural Land** which is then designated as permanent *open space*. The land recommended for density at a range of 2 dwelling units per acres to 6 dwelling units per acres, should be eligible to receive density transfers and bonuses.
- Those **Rural/Natural Resource and Agricultural Lands** in designated permanent open space shall be granted as either open space through conservation *easement* agreements with a qualified organization or entity or agricultural covenant with the Board of County Commissioners or another qualified entity. Such lands should be managed for resource conservation by an independent qualified resource management entity, the local government, or a homeowners association. Cooperation and collaboration between all or some of these parties to accomplish the overall land management goals of the dedicated open space may occur if needed and agreed to by all involved.

As depicted on the map, three Rural Cluster sites have been identified on the north side of Lower Miller Creek Road. The exact density within the clusters shall be determined by site design and lot size. As with other clusters, compact development should provide for community water and sewer systems.

Portions of the lands within the designation are in areas known to have wildland fire threats, critical habitat areas, *riparian* resources, agriculture, timber and mineral reserves.

## **Parks and Open Space Area**

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This designation applies where environmental constraints such as *floodplain* and wildlife habitat present limitations to development. Public open spaces as publicly-owned parks (recreation and conservation parks where appropriate), open space and recreation areas, and utility corridors are depicted under this designation. Private land set aside as common area or protected by conservation easements are also included in this district. The Parks and Open Space Area is generally intended to restrict development.

The Land Use Map illustrates the location of major Parks and Open Space Areas, however the scale of the map does not allow full disclosure of all lands appropriate for this designation. Please refer to other maps illustrating slope classifications, deer and elk habitat, flood hazards, soils, and geology.

Lands designated Parks and Open Space for the purposes of this section should not be confused with neighborhood and community parklands that will be created as residential development occurs. Such lands will be generally flat and used for purposes of recreation, non-motorized linkages, and neighborhood gathering areas.

## **Public and Quasi-Public Lands**

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This district is limited to those uses which have a uniquely public nature. Schools and municipal services such as fire and police stations should be placed within the Neighborhood Center.

Missoula County owns and operates a gravel pit operation in the NE 1/4 of Section 13, accessed off of Upper Miller Creek Road. Many utility corridors exist in the study areas. These corridors include two Bonneville Power Administration 500 Kilovolt (KV) overhead powerlines and numerous Montana Power Company overhead powerlines and one natural gas pipeline. These utility corridors have been noted on the detailed land use map with the intention that adjacent parcels may buffer proposed uses from these sites. In addition, where appropriate, utility corridors may serve as trail and walkway corridors linking existing and future neighborhoods.

### **Areas with Special Public Values**

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Important vistas recognized in the *Inventory of Conservation Resources for Missoula County* include The Big Hill (see Map #2), the Bitterroot River and immediately adjacent **riparian** areas. The 1995 Missoula Urban Area **Open Space** Plan outlines the Bitterroot River corridor and those portions of Mount Dean Stone in Sections 16 and 17 as being Cornerstone elements in the overall urban area open space system. Also included are agricultural lands and hillsides within the Plan Area as requested by residents of the community.

## **APPENDIX B**

### **RESOURCE MAPS**

**FOR MORE DETAILED MAPS OR SPECIFIC  
INFORMATION CONTACT  
THE OFFICE OF PLANNING AND GRANTS**

## **APPENDIX C**

# **PLANNING FOR GROWTH IN MISSOULA COUNTY**

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## **PLANNING FOR GROWTH IN MISSOULA COUNTY**

### **Themes Document**

Adopted September, 1994  
Revised February, 1996

The Growth Management Planning Group recognizes the need to plan ahead in order to assure the health and well-being of our children and future generations. Currently Missoula is experiencing rapid growth and development, and we anticipate some measure of continued growth and change in the foreseeable future.

Throughout the process of growth and change, we must preserve the valued characteristics of our communities. To be a truly healthy community, we must achieve two equally important goals: 1) protect our critical lands and natural resources, such as wildlife habitat; riparian resources; hillsides; air and water quality; and open spaces; and 2) enhance human resources, such as health and safety; social, educational, recreational and cultural services; employment; and housing.

We pledge our commitment to address the challenges of growth and change with these goals always in mind. We pledge also to always work in full cooperation with our fellow Missoula City and County citizens.

Together we face a significant challenge to effectively encourage and direct development in accordance with our mission to enhance human and natural resources. A strategy for successfully managing growth in Missoula City and County depends upon our ability to guide three key forms of future development without exceeding the County's carrying capacity: a) housing projects that will produce an adequate supply and variety; b) business activity that will provide good jobs and a reliable tax base; and c) infrastructure, including public works, human and educational services, and public uses of land such as parks and recreation. By meeting development objectives in these three areas, we can achieve a county-wide pattern of community-building, land use, and conservation that reflects the environmental, economic, aesthetic, health and social values of Missoula County residents.

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The effectiveness of our growth management strategy will depend largely upon our collective ability to address pertinent issues in an integrated, coordinated and on-going manner, and upon our ability to respond flexibly and intelligently to events that are unforeseen or beyond our control. Success will also depend upon the effective design and implementation of appropriate tools--both regulatory and non-regulatory--which can provide the means to manage and direct growth.

Presented below are goals, objectives, actions, and potential implementation tools which, together, provide the framework within which sustainable development and planning for the future should occur.

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## I. GOALS

- A. ENHANCED NATURAL RESOURCES
- B. ENHANCED HUMAN RESOURCES

### I. A. NATURAL RESOURCES -- THE ENVIRONMENT

We recognize the close connection between our development pattern and our environmental health. We also recognize the importance of a healthy environment to our sense of social, economic, and physical well-being. Preserving or enhancing the condition of our environment is one of the most important goals for well-managed growth.

#### Guiding Principles:

1. Our physical environment forms a continuum ranging from natural wilderness to densely populated urban landscape.
2. The topography of the County, with historic and current development, offers two patterns:
  - (a) rural, small town, and urban areas; and
  - (b) mountains and hills, valley floors, and streams and rivers.
3. We need to respect the different elements of these patterns and integrate them so as to form a functional, aesthetically pleasing, and livable whole.
4. Missoula County can and should move toward sustainable relationships between human activities and natural systems.
5. Social and economic factors are included in the broadest definition of "environment."

Considerations: In determining how best to approach the integration of patterns of development and preservation or enhancement of the environment, we should consider the following:

1. Identify critical lands (e.g., riparian resources, wildlife habitat, scenic land) so that growth or development can be guided for their protection.
2. Locate open spaces that are recreational (parks, ball fields, golf courses, etc.) near areas where development already exists or where it is desired.
3. Accommodate growth, retain historical resources, and provide appropriate open spaces in the design of development so that areas of greater density remain healthy, safe, and livable.
4. Make decisions about infrastructure recognizing that they affect, deter or promote integration of development and environmental values.
5. Recognize the fragile status of air and water quality and the carrying capacity of the County.
6. Consider the actual, measured, and desired levels of public health and environmental health.
7. Review the current status of regulations governing environmental and health standards.
8. Develop funding mechanisms for environmental protection programs.
9. Consider re-development opportunities for both developed and undeveloped areas. Undeveloped areas may offer the chance to re-aggregate lots and thereby allow beneficial master-planning of larger parcels to occur.

Action: Identify where in Missoula County certain types of growth should or should not occur and how the integration of developed lands and open spaces can best be accomplished. In areas designated as suitable for development, identify what types and levels of development are suitable and why they are. For areas designated as best left undeveloped, clarify concerns about environmental quality or open space values that make us want to protect these lands from development while recognizing and respecting the rights of private property owners. Consider environmental conditions and threats that exist throughout Missoula County. We should use the Cumulative Effects--Carrying Capacity Study information to help us determine how best to mitigate environmental problems, and how best to preserve the fragile elements of our physical environment. We may employ development guidelines and other tools to protect hillsides, riparian areas, wildlife habitat, and air and water quality.

## I. B. HUMAN RESOURCES -- COMMUNITY STRUCTURE, CHARACTER, AND HEALTH

We recognize the role of human interactions and sense of place in maintaining the livability of Missoula County. Our social structure and physical character are distinctive at the neighborhood level, at the small community level, in the larger urban community of Missoula, and in rural areas of Missoula County. Preservation of the diversity, integrity, and unique values of our neighborhoods, communities, and rural areas is one of the most important goals for well-managed growth. The protection and promotion of health for all Missoula citizens is fundamental to this goal.

Guiding Principles:

1. No single form or structure can ever define Missoula; diversity is the very essence of our place.
2. We can and should create a community life which includes the best of small town and big city life while avoiding the worst of each.
3. Urban area neighborhoods and surrounding communities are distinct from each other; each has its own integrity and role to play.
4. The optimal health of all Missoulians is a worthy and necessary goal to guide us in all decisions about our daily activities and future.
5. The spiritual, moral core of Missoula's character is a caring, helping, and responsible citizenry.
6. We should strive for a community where learning and growing can always happen.
7. Our communities should be safe and healthy places for all ages.

Considerations: In determining how best to preserve and enhance the diversity, integrity, and unique values of our neighborhoods, communities, and rural areas, we should consider the following:

1. Protect and encourage individual choice and initiative.
2. Neighborhood identity and integrity is as important as the big picture.
3. Recognize and foster conditions that improve the health of all Missoulians.
4. Reward initiatives that add to the charm and attraction of areas in Missoula City and County.
5. Recognize that there may be cultural as well as physical limitations on the ability of an area to accommodate growth.
6. Judge each individual action or decision in terms of this question: "Will this make Missoula a better place?" Consider how a particular action or decision will either threaten or protect and preserve our natural settings and surroundings.

Action: Identify the distinctiveness and strengths of our people and our physical and social places. Determine how we can preserve these strengths and unique characteristics. Foster community-building throughout. Use information from other resource documents, including Vision 2020, Missoula Health Profiles and the Inventory of Conservation Resources, in planning for growth. Consider the development of several growth centers in both urban and rural communities of the County.

## II. DEVELOPMENT OBJECTIVES

- A. HOUSING
- B. THE ECONOMY
- C. INFRASTRUCTURE

### II. A. HOUSING DEVELOPMENT

We recognize the role of housing in supporting a combination of low, moderate, and high income households in Missoula County. A primary objective of managing growth is to achieve the overall mix and placement of housing needed to support a community rich in social, cultural, and economic diversity and an environment rich with natural resources.

#### Guiding Principles:

1. Healthy communities sustain diverse households and a combination of housing alternatives across all economic strata.
2. Housing needs change historically across economic strata; they are different now than in years past.
3. Housing development should recognize and accommodate social change.
4. Housing should be located in proximity to physical, technological, social, and economic infrastructure.

#### Considerations: In determining how best to work through housing issues, we should consider the following:

1. In today's technological world, many people work at home.
2. Extended- and inter-generational family groupings are emerging.
3. Open space (parks, rivers, river front, wildlands) is valued more highly now.
4. Accommodate greater diversity, including an aging population and those with special needs.
5. The increasing incidence of violence in the home indicates a need to reduce social isolation, the occurrence of conflict and other stresses.
6. Coordinate the activities of private, governmental, and not-for-profit entities to ensure adequate housing for households at low- and middle-income levels.
7. Design and place homes to minimize impacts on natural resources and the physical environment and to maximize social resources while meeting emerging needs.

8. Examine housing densities.
9. Design should minimize neighborhood opposition and maximize constructive neighborhood involvement.

Action: Design and carry out policies that assure housing affordability for a diverse population. Use information from other resource documents, including the Missoula Housing Task Force Report.

## II. B. SUSTAINABLE ECONOMIC DEVELOPMENT

We recognize the role of a strong, diverse economy in maintaining the overall well-being of Missoula County residents. A primary objective of managing growth is to maintain and enhance the economy of Missoula County to support a diverse population, strong community, and healthy environment.

### Guiding Principles:

1. The economic health of Missoula County and the economic health of our multi-county region are mutually dependent.
2. A strong economy is vital to the local tax base which supports most of our public services.
3. Healthy economic development should occur in ways that conserve and enhance our natural and human resources.
4. There is a direct relationship between the incomes of Missoula County residents and their ability to acquire adequate housing.
5. Measures of economic growth include continued diversity as well as improved job opportunities and business expansions.
6. Investments in education and training or retraining pay economic dividends.
7. Both large and small businesses are necessary to the economic health of our community.
8. Business recruitment efforts must be balanced by the careful nurturing and support of our existing businesses.

Considerations: In determining how best to approach economic development opportunities and issues, we should consider the following:

1. Recent technological advances enhance Missoula's status as a place to do business.
2. There is substantial economic value in Missoula County's quality of life (natural open spaces, cultural activities, educational offerings, and relatively low crime rate).
3. Well-designed neighborhood commercial services are important to residential areas.
4. There are opportunities for greater connections among the business communities of western Montana.
5. Sustainable economic development depends upon maintaining and enhancing the quality of life for Missoula County residents.

Action: Protect and further develop the County's economic base. To achieve this, we should work in cooperation with the Chamber of Commerce, Missoula Area Economic Development Corporation, Women's Opportunity and Resource Development, Missoula County Trades and Labor, and others to: a) assure the economic health of the Missoula urban core, smaller communities, and rural areas; b) allow for diverse business and employment opportunities and a competitive tax structure; and c) design and implement an efficient regulatory system that is trustworthy, effective, and offers predictability.

## II. C. INFRASTRUCTURE DEVELOPMENT

We recognize the role infrastructure plays in growth management by supporting existing development, directing new development to suitable locations, and protecting the environment. A primary objective of managing growth is to ensure the availability and affordability of infrastructure such as sewer, water, transportation, public safety, health and social services, public lands, parks and other open spaces, cultural resources, and education. An adequate infrastructure is essential to a healthy natural, economic, and social environment in Missoula County.

### Guiding Principles:

1. Infrastructure should be developed to accommodate present development, and planned to meet the needs of anticipated growth.
2. Infrastructure should accompany new development and be part of the approval requirements.
3. Infrastructure includes more than sewers, transportation systems, water, and telecommunications. Included in a cultural infrastructure are libraries, museums, historical landmarks, government buildings, parks and other open spaces, and schools. Social infrastructure provides for the "public welfare" and includes health, safety, educational, and social services.
4. Infrastructure should be coordinated among governments at all levels, private enterprise, and the public.
5. Various scenarios must be examined in order to fully understand our choices.
6. We should be constantly aware of the likelihood of technological change and the directions it will take.

### Considerations: In determining how best to work through infrastructure issues, we should consider the following:

1. Solicit and consider the values and goals of the community when determining the types and location of infrastructure.
2. Determine the location of infrastructure, document those decisions, and provide information about funding mechanisms through the planning process.
3. Consider how much of the community's future we are willing to invest in infrastructure.
4. Anticipate positive and negative impacts, both short- and long-term, through alternative scenarios suggested through the planning process.

5. Consider development design and site planning as elements of each broad or specific infrastructure decision.
6. Consider financing strategies and affordability of options.

Action: Identify those developed and developing areas that are served by inadequate infrastructure. Identify the most critical infrastructure needs. Explore alternative strategies to encourage new development to locate in areas close to existing service systems. Prevent development which does not have the infrastructure necessary to support it. Employ cost reduction strategies, including affordable financing programs.

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### III. GROWTH MANAGEMENT TOOLS

We recognize that the City, County, other governmental bodies and citizen groups have the ability to manage growth and change through the effective implementation of a variety of incentives, regulations, and other means. Desired positive effects of well-managed growth can only be achieved if effective tools are in place to implement plans and strategies.

#### Guiding Principles:

1. Planning and development of infrastructure are among the most important tools for well-managed growth.
2. Respect for private property rights is fundamentally important.
3. Tools used by the City, County, and other governing bodies should reflect the values of the citizens they serve and effectively accomplish the goal to a) protect critical lands and natural resources, and b) enhance human resources and the valued characteristics of our communities.
4. Efforts by citizen groups to achieve community goals are as vital to effective growth management as government actions.

#### Considerations: As we undertake growth management planning, we should consider the following:

1. Find the statutory authority, resources, and tools that are available to help us manage growth.
2. Recognize that growth management responsibilities are shared by different governing bodies and citizen groups in various areas and situations.
3. Recognize that growth management tools and policies employed by different local jurisdictions can complement one another and work towards common goals.
4. Carefully examine tools used successfully elsewhere, such as development standards, impact fees, permit limitations, transfer of development rights, etc.
5. Identify what additional growth management tools are needed and decide how they will be acquired.
6. Consider how growth on lands already divided through Certificates of Survey can be managed effectively.
7. Analyze and consider carefully the benefits and costs of development.
8. Proceed in a manner that will increase the public's confidence in government's ability to make good and fair decisions.

Action: Develop and implement an affordable, effective set of growth management tools designed to accomplish stated goals and objectives, contain growth-related costs, and ensure that consistent, complementary practices exist in the City and County. We should continually affirm the positive intentions and effects of planned and ongoing activities undertaken by the City, County, and other public and private partners.

## ***Missoula Growth Management Task Force***

### ***Themes Elements and Priority Planning Tools***

#### **I. NATURAL RESOURCES -- THE ENVIRONMENT**

**Action:** Identify where in Missoula County certain types of growth should or should not occur and how the integration of developed lands and *open spaces* can best be accomplished. In areas designated as suitable for development, identify what types and levels of development are suitable and why they are. For areas designated as best left undeveloped, clarify concerns about environmental quality or *open space* values that make us want to protect these lands from development while recognizing and respecting the rights of private property owners. Consider environmental conditions and threats that exist throughout Missoula County. We should use the Cumulative Effects-Carrying Capacity Study information to help us determine how best to mitigate environmental problems, and how best to preserve the fragile elements of our physical environment. We may employ development guidelines and other tools to protect hillsides, *riparian* areas, wildlife habitat, and air and water quality.

A1. Resource Inventories Identification of critical social, environmental, historic and cultural resources, infrastructure availability, and financial resources. Provides critical first step for effective comprehensive planning and development guidelines.	Natural Resources Biophysical Elements Habitat, hydrology, soils, etc.
A2. Educational and Informational Programs, including: Community Preference Surveys; Hands-on Model Workshops; Charrettes; Community Design Forums; Neighborhood Focus Groups; etc.	Themes Elements/Proposed Community Goals Open Space and Resource Lands Planning Regulatory Tools Development, Approval, and Implementation
A3. Benchmarking and Other On-Going "Feed-Back Loops" or Monitoring Mechanisms	Cumulative Effects / Carrying Capacity Clearly articulated community goals
A4. Comprehensive Regional Community, or Neighborhood Planning	Area-specific (regional and neighborhood plans) Issue-specific (parks and open space)
B1. Adequate Public Facility and Concurrency Requirements	Match development to planned level of service/capacity which helps ensure protection of air and water quality. May cause leapfrog sprawl unless adopted inter-jurisdictionally.
B2. Sensitive Lands Overlays and Regulations, i.e., floodplains, riparian areas, water quality districts, etc.	Protect sensitive lands and natural resources.
B3. Quality Development Standards; Special Districts	Cluster development can help use land resources efficiently.
B4. Regulatory Incentives and Density Bonuses for Land Conservation and PUD's	Encourage efficient use of land resources.
B5. Designated Urbanizing and Development Areas. Urban Growth Boundaries	Encourage efficient use of land resources; can improve air and water quality; increases open space linkages.
B6. Public Dedication and Impact Fees	Fees for (relatively more expensive) services to development outside urban growth areas limit sprawl & increase benefits of designating growth areas.

## ***Missoula Growth Management Task Force***

### ***Themes Elements and Priority Planning Tools, cont'd***

#### **II. HUMAN RESOURCES -- HEALTHY PEOPLE AND HEALTHY COMMUNITY STRUCTURE AND CHARACTER**

**Action:** Identify the distinctiveness and strengths of our physical and social places and our people. Determine how we can preserve these characteristics. Foster community-building throughout. Use information from other resource documents, including Vision 2020, Missoula Health Profiles, and the Inventory of Conservation Resources, in planning for growth. Consider the development of several growth centers in both urban and rural communities of the County.

A1. Resource Inventories Identification of critical social, environmental, historic and cultural resources, infrastructure availability, and financial resources. Provides critical first step for effective comprehensive planning and development guidelines.	Cultural Resources Social services, Infrastructure Health and Safety, History and Visual resources, etc.
A2. Educational and Informational Programs, including: Community Preference Surveys; Hands-on Model Workshops; Charrettes; Community Design Forums; Neighborhood Focus Groups; etc.	Themes Elements/Proposed Community Goals Livable Communities Planning Regulatory Tools Development, Approval, and Implementation
A3. Benchmarking and Other On-Going "Feed-Back Loops" or Monitoring Mechanisms	Health and Human Services complement Clearly articulated community goals
A4. Comprehensive Regional Community, or Neighborhood Planning	Area-specific (regional and neighborhood plans) Issue-specific (Civic and Cultural centers; Historic Preservation)
B1. Adequate Public Facility and Concurrency Requirements	Match development to planned level of service/capacity. Encourages "connectedness" over sprawl. May cause leapfrog sprawl unless adopted inter-jurisdictionally.
B2. Sensitive Lands Overlays and Regulations, i.e., floodplains, riparian areas, water quality districts, etc.	Can preserve unique natural and architectural features of area; rural character; historic districts.
B3. Quality Development Standards; Special Districts	Protect unique character of existing neighborhoods or communities; encourage compatible development.
B4. Regulatory Incentives and <b>Density</b> Bonuses for Land Conservation and PUD's	Can protect character and function of agricultural and open lands by encouraging cluster development.
B5. Designated Urbanizing and Development Areas. Urban Growth Boundaries	Often have effect of focusing development in established areas, renewing them (Portland).
B6. Public Dedications and Impact Fees	Often have effect of focusing development in established areas, renewing them (Portland). See above.

***Missoula Growth Management Task Force***  
***Themes Elements and Priority Planning Tools, cont'd***

**III. HOUSING DEVELOPMENT**

**Action:** **Design and carry out policies that assure housing affordability for a diverse population.** Use information from other resource documents, including the Missoula Housing Task Force Report.

A1. Resource Inventories Identification of critical social, environmental, historic and cultural resources, infrastructure availability, and financial resources. Provides critical first step for effective comprehensive planning and development guidelines.	Cultural Resources Social services, Infrastructure Health and Safety, History and Visual resources, etc.
A2. Educational and Informational Programs, including: Community Preference Surveys; Hands-on Model Workshops; Charrettes; Community Design Forums; Neighborhood Focus Groups; etc.	Themes Elements/Proposed Community Goals Housing needs, resources, development options; Fair Share Housing concepts Regulatory Tools Development, Approval, and Implementation
A3. Benchmarking and Other On-Going “Feed-Back Loops” or Monitoring Mechanisms	Housing Data collection and distribution Clearly articulated community goals
A4. Comprehensive Regional Community, or Neighborhood Planning	Area-specific (regional and neighborhood plans) Issue-specific (Community-wide Housing Plan)
B1. Adequate Public Facility and Concurrency Requirements	Encourage development where relatively less expensive <i>infrastructure</i> exists and services and employment are proximal.
B2. Sensitive Lands Overlays and Regulations, i.e., floodplains, riparian areas, water quality districts, etc.	May increase costs of development and, therefore, housing costs in near-term; over long-term, community costs may be less (flooding, etc.).
B3. Quality Development Standards; Special Districts	Can help ensure quality development of affordable and multi-family housing. However, could increase development costs.
B4. Regulatory Incentives and <b>Density</b> Bonuses for Land Conservation and PUD's	Foster creative design; may include affordable housing credits.
B5. Designated Urbanizing and Development Areas. Urban Growth Boundaries	Encourage development closer to services, commerce and employment. Less expensive <i>infrastructure</i> reduces costs.
B6. Public Dedications and Impact Fees	Require development to cover costs so encourages more efficient development inside urban growth boundary (esp. if applied outside urban growth boundary).

## ***Missoula Growth Management Task Force***

### ***Themes Elements and Priority Planning Tools, cont'd***

#### **IV. SUSTAINABLE ECONOMIC DEVELOPMENT**

**Action: Protect and further develop the County's economic base.** To achieve this, we should work in cooperation with the Chamber of Commerce, Missoula Area Economic Development Corporation, Women's Opportunity and Resource Development, Missoula County Trades and Labor, and others to: a) assure the economic health of the Missoula urban core, smaller communities, and rural areas; b) allow for diverse business and employment opportunities and a competitive tax structure; and c) design and implement an efficient regulatory system that is trustworthy, effective, and offers predictability.

A1. Resource Inventories Identification of critical social, environmental, historic and cultural resources, infrastructure availability, and financial resources. Provides critical first step for effective comprehensive planning and development guidelines.	Natural Resources Biophysical Elements Habitat, hydrology, soils, etc. Cultural Resources Social services, Infrastructure Health and Safety, History and Visual resources, etc.
A2. Educational and Informational Programs, including: Community Preference Surveys; Hands-on Model Workshops; Charrettes; Community Design Forums; Neighborhood Focus Groups; etc.	Themes Elements/Proposed Community Goals Economic and commercial concerns integrated with other theme discussions Regulatory Tools Development, Approval, and Implementation
A3. Benchmarking and Other On-Going "Feed-Back Loops" or Monitoring Mechanisms	Identification of economic "vital signs" for benchmarking Clearly articulated community goals
A4. Comprehensive Regional Community, or Neighborhood Planning	Area-specific (regional and neighborhood plans) Issue-specific (Mixed use; economic incentives)
B1. Adequate Public Facility and Concurrency Requirements	Long-term cost-effectiveness re: use of public monies; level of certainty increased for developers.
B2. Sensitive Lands Overlays and Regulations, i.e., floodplains, riparian areas, water quality districts, etc.	Long-term benefits derived by protecting amenity lands, though development is limited.
B3. Quality Development Standards; Special Districts	Can help attract quality economic development.
B4. Regulatory Incentives and <b>Density</b> Bonuses for Land Conservation and PUD's	Offer financial (or development) incentives to help reach community goals.
B5. Designated Urbanizing and Development Areas. Urban Growth Boundaries	Long-term benefit of efficient <b>infrastructure</b> & reduced costs of construction & maintenance. If designated growth areas are too tight, land costs could increase.
B6. Public Dedications and Impact Fees	Increase relative costs of development outside urban growth boundary. Fees must be based on defensible assessment of capital costs specifically associated with new development. Can reduce public opposition to development by providing community with sense that development "pays its own way."

***Missoula Growth Management Task Force***  
***Themes Elements and Priority Planning Tools, cont'd***

**V. INFRASTRUCTURE DEVELOPMENT**

**Action:** **Identify those developed and developing areas that are served by inadequate infrastructure.** Identify the most critical infrastructure needs. Explore alternative strategies to encourage new development to locate in areas close to existing service systems. Prevent development which does not have the infrastructure necessary to support it. Employ cost reduction strategies, including affordable financing programs.

A1. Resource Inventories  Identification of critical social, environmental, historic and cultural resources, <b>infrastructure</b> availability, and financial resources. Provides critical first step for effective comprehensive planning and development guidelines.	Natural Resources Biophysical Elements Habitat, hydrology, soils, etc. Cultural Resources Social services, Infrastructure Health and Safety, History and Visual resources, etc.
A2. Educational and Informational Programs, including: Community Preference Surveys; Hands-on Model Workshops; Charrettes; Community Design Forums; Neighborhood Focus Groups; etc.	Themes Elements/Proposed Community Goals Integrate Infrastructure concerns fully with planning; involve public in problem-solving Regulatory Tools Development, Approval, and Implementation
A3. Benchmarking and Other On-Going “Feed-Back Loops” or Monitoring Mechanisms	Tie infrastructure development to environmental, social, and economic benchmarking Clearly articulated community goals
A4. Comprehensive Regional Community, or Neighborhood Planning	Area-specific (regional and neighborhood plans to address needs) Issue-specific (cumulative effects/carrying capacity; community standards)
B1. Adequate Public Facility and Concurrency Requirements	Match development to planned level of service/capacity; ensures adequacy of facilities/services.
B2. Sensitive Lands Overlays and Regulations, i.e., floodplains, riparian areas, water quality districts, etc.	Can tailor regulations to meet needs of certain sensitive areas or resources needing protection.
B3. Quality Development Standards; Special Districts	Can help to tailor infrastructure to community needs, i.e. “village” design , non-motorized transportation amenities, etc.
B4. Regulatory Incentives and <b>Density</b> Bonuses for Land Conservation and PUD’s	Encourage creative design that is not land-consumptive; can mean reduced infrastructure costs (roading, sewer line, etc.).
B5. Designated Urbanizing and Development Areas. Urban Growth Boundaries	Infrastructure extension costs are reduced; planning is more possible, proactive.
B6. Public Dedications and Impact Fees	May bring in needed infrastructure when not otherwise possible; may not cover full cost or integrate well.

## **APPENDIX D**

### **SIX CITIZEN DESIGN CONCEPTS**

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