

# **CRESTED BUTTE**



# **AREA PLAN**

# **CRESTED BUTTE AREA PLAN**

**July 5, 2011**

## **Crested Butte Planning Commission**

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## CRESTED BUTTE AREA PLAN - SYNOPSIS

The Crested Butte Area Plan (this Plan) is created to:

- comply with C.R.S. Sections 31-12-101 et. seq., which require that there be a plan for a three mile area from any point of the municipal boundary prior to annexation, and to
- provide the basis for addressing and evaluating proposed development in unincorporated Gunnison County in the vicinity of Crested Butte.

More than 50 sources of information were used to help create this Plan including plans from other communities, books about rural design and designing with nature, the 513 responses from the 2004 Land Use Survey, and public comments made during the most recent annexation process.

The three mile area surrounding Crested Butte is referred to in this Plan as the Middle Slate River Valley (MSRV) and it is approximately 39 square miles, excluding Crested Butte and Mt. Crested Butte. 49% of the land is federal, 21% is developed, 15% is preserved open space, 1% is local government land, and 14% (3,500+- acres) has not been developed or preserved as open space.

This Plan is capacity based. The underlying question is: what is the capacity of the MSRV to absorb more development? Capacity is determined by examining the constraints for development and the resources our community would like to preserve. Constraints include: avalanche zones, flood plains, geologically unstable lands, steep slopes and wildfire areas. Resources include: wetlands, important wildlife habitat, and views that should be preserved.

This Plan allows development anywhere on private land in the 39 square mile focus area, unless there are constraints to development or resources we would like to preserve on a site. The constraints and resources are mapped to identify lands that may need additional investigation.

Mitigation is the key to developing most parcels of land. The first recommendation about each constraint or resource is to avoid sensitive areas. If avoidance is impossible, then mitigation of impacts to sensitive areas should occur. Examples of mitigation include:

1. Preserving off-site wetlands when wetlands are proposed to be filled or dredged
2. Building back from the edge of a steep cliff so wildfires will not sweep up a cliff wall and consume a house at the edge
3. Clustering development so most of a site is open for resident, wildlife, or livestock use
4. Maintaining corridors for wildlife movement such as river corridors for bird migration or patterns of development that allow wildlife to move between developments

After appropriate lands for development were identified, the Town then asked: which developable lands are most appropriate for development and how should they be developed? The most important considerations were that if additional development is to occur, it should be clustered near existing higher density development, it should be served by central water and sewer, significant amounts of open space should be preserved and local housing should be a major component of the project. Development that meets these tests will have the support of Crested Butte when the other policies of this Plan are met. The type of development that is discouraged is dispersed, large lot development with no open space, no public access, and no local housing.

As a result, residential development is recommended to be near Crested Butte, Skyland and Buckhorn Ranch. Light industrial development is recommended to be adjacent to Riverland Industrial Park.

The underlying density of the MSRV is one unit per 35 acres as a matter of right. Incentives to accomplish the goals of this Plan include higher densities to direct growth and to create local housing and preserving less open space if the preserved land is a “Priority Preservation Area”

Higher density is directed to areas near existing development. Densities in these areas are based on existing density in the vicinity and may be as high as listed below:

1. Crested Butte to the Slate River (east of Gothic Road) 5.00 units per acre (including streets and alleys but not parks and open space
2. The Slate River to south side of cemetery 3.50 units per acre
3. State Highway 135 to Buckhorn Ranch Subdivision .50 units per acre
4. North side of the cemetery to Moon Ridge Lane .25-.3 units per acre

**Open space incentives** encourage important open space to be preserved. This Plan recommends preserving five acres open space for each new residential unit. If Priority Preservation Areas are preserved, rather than preserving the recommended five acres per residential unit, only three acres of priority open space need to be preserved per unit. Priority Preservation Areas include:

1. hillsides seen from Crested Butte
2. wetlands
3. important wildlife habitat
4. a one-quarter (1/4) mile view corridor buffer along State Highway 135
5. all private land in the Crested Butte watershed
6. all irrigated agricultural land

Open space may be on site or off site. If it is offsite, the potential density offsite is “transferred” from the “Sending Area” to the site to be developed, which is the “Receiving Area.” It is anticipated that conservation easements, or similar instruments, will be used to restrict future development of Sending Areas and that the free market will determine the value of the development rights being transferred from the Sending Areas.

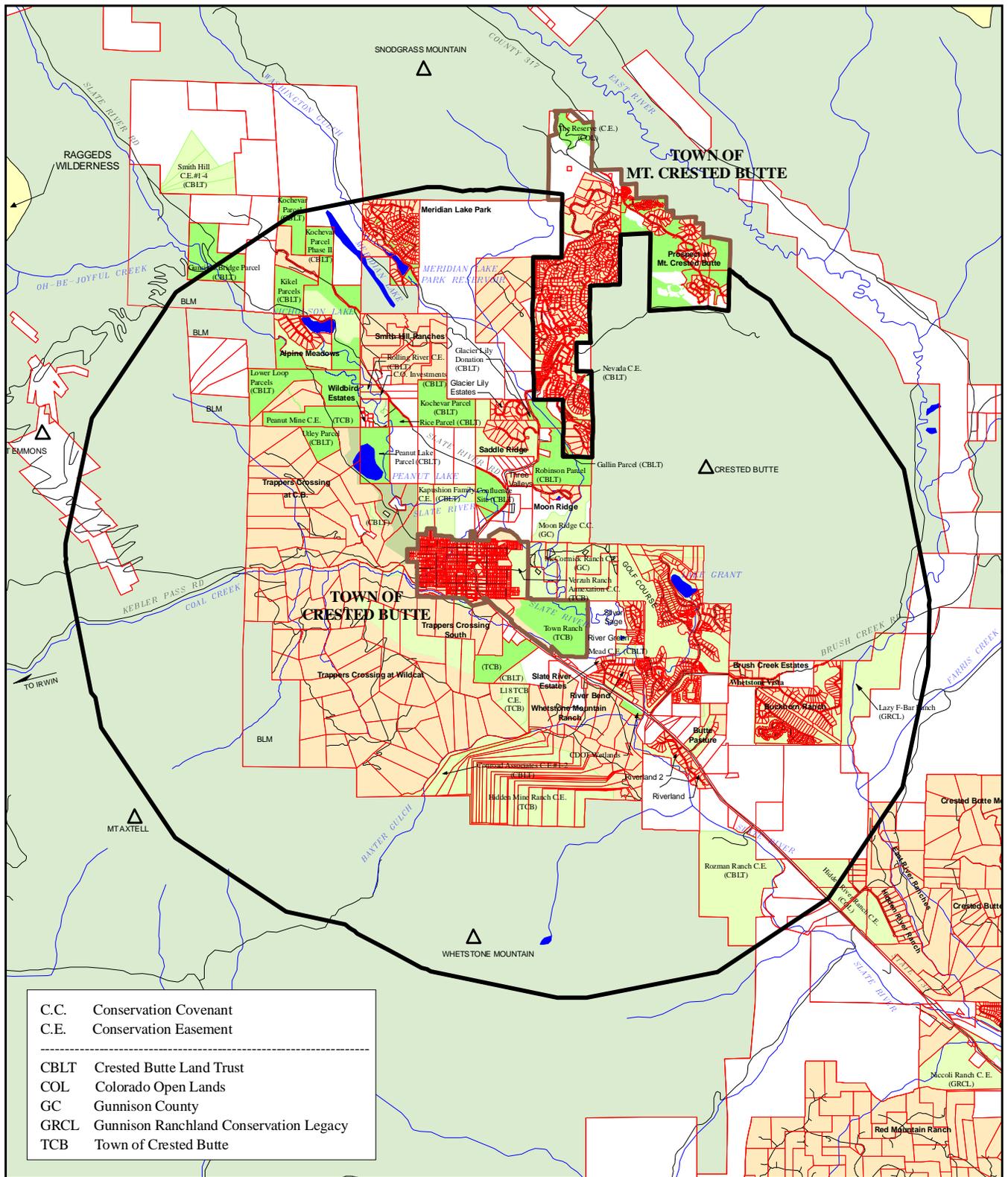
**Local housing incentives** allow for maximum density and the least open space. Density may be as high as 10 units per acre and 1 acre of open space is recommended for each local housing unit.

The transportation policies recommend creation of transit centers in Crested Butte and Mt. Crested Butte, the creation of park-N-ride facilities, the development of mass transit, trails and trailheads and having a cohesive intermodal transportation system in new development.

Currently, 69% of all occupied residential units are owner occupied or long-term rentals. The Housing Policies recommend that developers provide land and/or units so that at least sixty percent (60%) of all new residential units annexed to Crested Butte are permanently deed-restricted to a variety of mixed income people.

This Plan is transferable to other areas and/or expandable. Constraints and resources can be mapped for any area. However, if this Plan is expanded, decisions about higher density should be made by the people who live near potentially higher density areas.

What are the implications of this Plan? Currently existing approvals and zoning allow for 10,320 units from Round Mountain to Gothic, including both towns, but not including the Larkspur and Three Valleys subdivisions. If all the units are occupied, for example on the Fourth of July, as many as 24,549 people could be in the valley. If the policies of this Plan are followed, the total number of units could be 10,507 if all new units are free market, and 10,893 if all new units in Receiving Areas are affordable housing.



## **ACKNOWLEDGMENTS**

The Town of Crested Butte expresses its sincere appreciation to the following sources for providing most of the information for the mapping:

- Gunnison County Current, and Long Range, Planning Offices
- Gunnison County Geographic Information Systems Office
- Colorado Geological Survey
- U. S. Environmental Protection Agency
- Colorado Division of Wildlife
- Town of Mt. Crested Butte

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# Part 1, PREFACE

## Authorization

The Crested Butte Area Plan is a guide for the physical development of the municipality as well as a limited area outside its boundaries in unincorporated Gunnison County. The Plan is created in part to comply with the Colorado Municipal Annexation Act of 1965, (C.R.S. Sections 31-12-101 et seq. as it may be amended. It is also created pursuant to the authority set forth in the following Colorado Statutes:

C.R.S. Sections 31-23-201 et seq.	Planning Commission and Master Plans
C.R.S. Sections 24-65-101 et seq.	The Colorado Land Use Act
C.R.S. Sections 24-65.1-101 et seq.	The Areas and Activities of State Interest
C.R.S. Sections 24-67-101 et seq.	The Planned Unit Development Act of 1972
C.R.S. Sections 29-20-101 et seq.	The Local Government Land Use Control and Enabling Act of 1974

## Evolution of the Crested Butte Area Plan

Work began on the Crested Butte Area Plan in 1990 when the Towns of Crested Butte and Mt. Crested Butte surveyed the public about their values and land use issues in the upper East River valley. Active work on this Plan began in February, 1993. Background information and the maps were prepared to describe the existence and the extent of land issues important to land use planning. That information was integral to the development of policies to address the issues. The Crested Butte Three Mile Plan was adopted by the Town Council, as the Municipal Planning Commission, on November 1, 1993.

The 1993 Three Mile Plan was included in the Crested Butte Land Use Plan in 1996. Later in 1996, the wetland chapter was updated to incorporate information from Howard H. Whiteman, Ph.D. In 2003 the Three Mile Plan was updated by revision of the Three Mile Plan boundary map to reflect changes in the Town boundaries since 1993.

In 2004 the Town Council asked the Town staff to update the 1993 Three Mile Plan. Statistics and other dated information in that plan were 10 years old and the Town Council wanted their Three Mile Plan to be more current. In addition to updating the data, the maps were updated and new relevant maps were added. The name of the Three Mile Plan was changed to Area Plan to reflect the fact that a three mile boundary is arbitrary and may cut through a topographic area in a way that is not logical.

In 2010 and 2011, after considering an annexation for about two years, many issues were raised by the public and the annexors that needed clarification in the Area Plan and in the Subdivision Regulations. The purpose of the 2011 update was to make those clarifications and to begin addressing the carbon footprint of the Town, which has become an issue since the last update.

## How the Crested Butte Area Plan is Organized

This Plan is divided into three broad parts. **Part 1, Policies**, contains the Preface and other introductory information and the policies of this Plan. These policies recommend how and where development should occur and how to address issues discussed in Part 2. **Part 2, Description of**

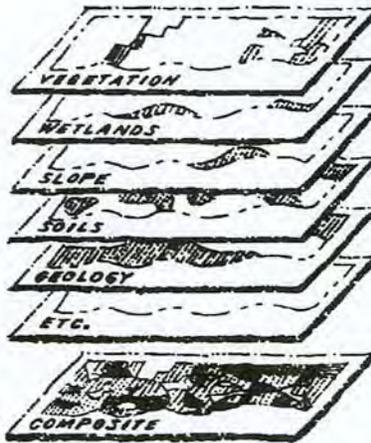
**the Issues**, includes information and maps describing issues related to development in the vicinity of Crested Butte. Topics include: public participation, natural hazards, natural resources, transportation, and socioeconomic trends. **Part 3, Appendices**, contains a list of the primary resources used during development of the Crested Butte Area Plan, responses to the 2004 Land Use Survey, and other summary and detailed information.

### Goal of the Crested Butte Area Plan

The goal of the Crested Butte Area Plan is to manage growth to:

1. avoid hazards that may threaten life or property when developing structures or infrastructure
2. preserve what the citizens and the Town Planning Commission appreciate about Crested Butte and the Middle Slate River Valley including:
  - a. a healthy environment
  - b. a high quality of life
  - c. housing for people who live and work in the community
  - d. open space
  - e. recreation facilities adequate to serve the recreation-oriented people of the Middle Slate River Valley
  - f. access to public lands
  - g. the natural character of the valley and surrounding mountains

Therefore, the Crested Butte Area Plan is based on the carrying capacity of the land which is identified on a series of overlaid maps and in the discussions of the topics in Part 2, Description of the Issues. This overlay mapping approach was described by Ian McHarg, an ecological planner, in his 1969 book, Design With Nature. If some parcels of land have characteristics making it difficult for construction, they have less carrying capacity. If other parcels of land have resources the community values and wishes to preserve, those parcels also have less carrying capacity. Land that has neither resource nor hazard limitations is targeted for future development.



Reprinted from *Ecology of Greenways*

## **Why Amend the Three Mile Plan Now?**

Ideally, the Town would like to work with Gunnison County to adopt a Plan for a land use for the area around Crested Butte. In the absence of such a plan, the policies set forth herein are the Town's opinions about how development should occur in the vicinity of Crested Butte.

There are a number of reasons to amend our plan including the following:

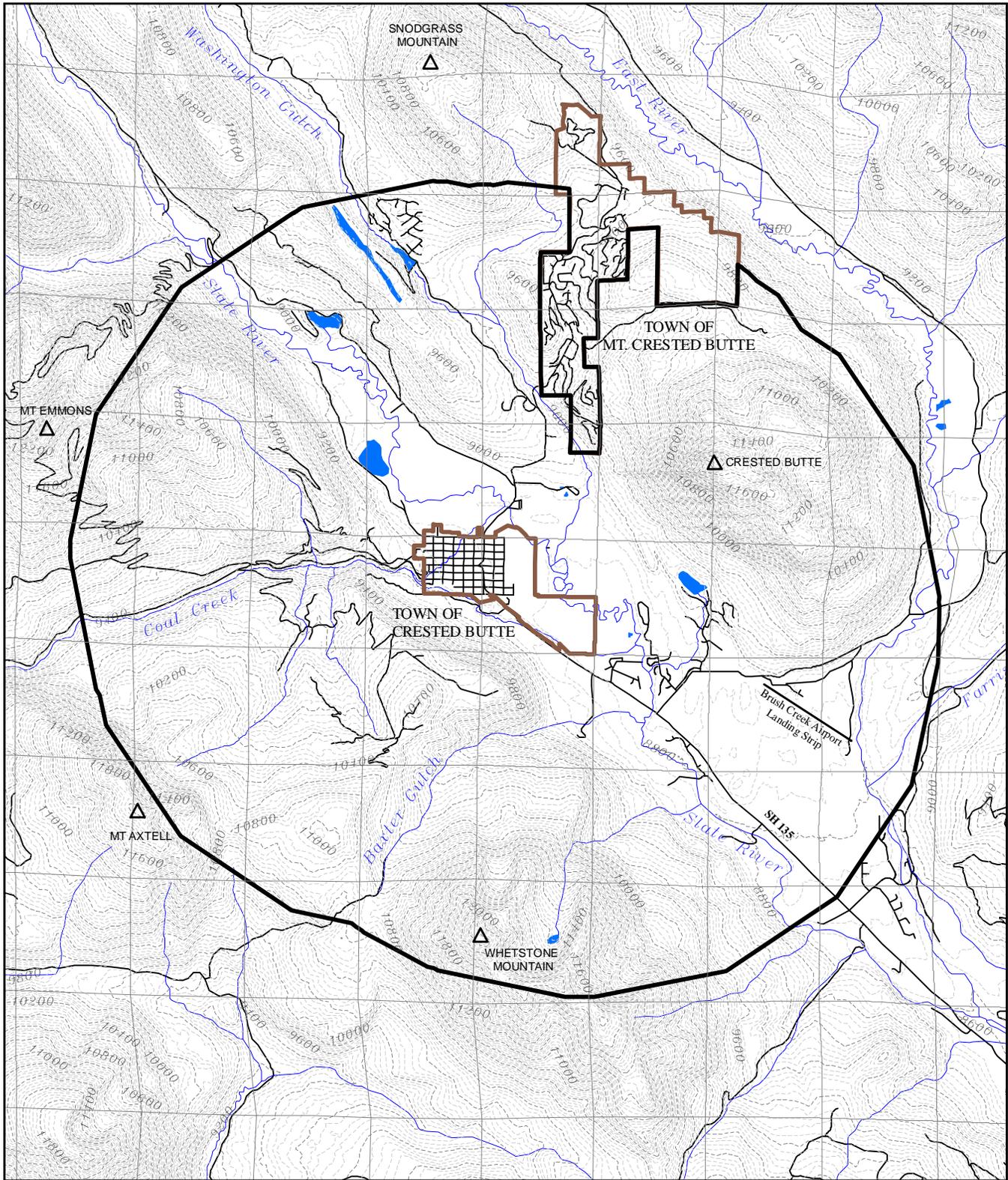
- a. The Town wants to give guidance to landowners and developers, before they begin making plans. This should allow developers to move through the review process in a timely manner, rather than learn about Town concerns after they have submitted plans and then need to make changes.
- b. This Plan will help the Town be consistent when providing comments to the County during development reviews.
- c. This Plan will help the Town decide upon its comments when providing comments to the Federal and State governments about their initiatives, or proposals on their land.
- d. It helps with grant applications when we can say the project complies with local policies.
- e. It updates mathematical justifications for particular policies in this Plan.

The Town feels that now is the time to adopt this plan because:

- a. The Town thinks it is prudent to update our plan for annexations so:
  - i. Landowners and developers know what will be expected of them if they want to annex to Crested Butte,
  - ii. Circumstances have changed since 2006, so this Plan and our expectations should reflect those changes.
- b. The Town solicited public input about development in the vicinity of Crested Butte and that information should be incorporated in the Town's policies. Major opportunities for public input included the following:
  - i. A series of public meetings regarding the proposed Foothills Annexation,
  - ii. The public hearing held on July 5, 2011 prior to adoption of this 2011 plan amendment.
- d. A subcommittee of the Planning Commission has been working on the plan update for nearly a year, and Town staff members have been working on it for over a year. It is time to finish it before circumstances change so much that the plan needs to be updated again.

The Town would like to work with Gunnison County on reviewing our Area Plan or working together to create a plan for development in the vicinity of Crested Butte.

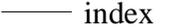
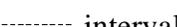
(1) Colorado Revised Statute 31-12-105(e)



**Area Map**

-  3 Mile Boundary - Middle Slate River Valley (MSRV)
-  Town Boundary
-  Streams
-  Lakes
-  Roads
-  Section Lines

**40' Topographic Contours**

-  index
-  interval



Drawn by: Hilary Mayes  
 Date: June 22, 2005  
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# **CRESTED BUTTE AREA PLAN POLICIES**

## **I. APPLICABILITY OF THIS PLAN**

1. The Town of Crested Butte intends to apply the policies of the Crested Butte Area Plan (this Plan) when considering the following:
  - a. any annexation proposals to the Town, or
  - b. when making comments about development proposals for lands included in the Middle Slate River Valley (MSRV) that are being considered by another governmental entity but not proposed for annexation to Crested Butte
  - c. when major subdivisions are proposals within the existing town, applicable policies will be applied, such as the Transportation policies in Part 1 VI.
2. By publishing this Plan developers can ascertain, before they purchase land or design developments, the position of the Town on many issues. Many misunderstandings of the past and assumptions about the future will be clarified by referring to this Plan.
3. As a master plan for lands annexed to Crested Butte, this Plan is not regulatory or binding upon private land use activities until enforced through regulatory mechanisms such as zoning and subdivision regulations. The Crested Butte Area Plan has immediate binding effect only upon public activities as required by C.R.S. 31-23-209. Because it is a general plan for development, it is not a zoning plan. Accordingly, the use herein of the words shall, must, require, etc. are not to be interpreted as mandatory or regulatory except with respect to the public activities described in C.R.S. 31-23-209.

## **II. GENERAL POLICIES**

1. The land included in the Crested Butte Area Plan will be referred to in this Plan as the “Middle Slate River Valley” or “MSRV.” The MSRV is primarily the land along the Slate River, from the confluence of Oh-be-joyful Creek with the Slate River to two miles south of the confluence of Baxter Gulch and the Slate River just south of the Rozman Ranch. Portions of the Coal Creek, Washington Gulch, and Baxter Gulch watersheds, and the confluence of Farris Creek with the East River are also included. The mountain named Crested Butte is on the east side, Mt. Emmons is on the west side, Snodgrass Mountain is on the north side and Whetstone Mountain is on the south side. The MSRV is delineated on the "Area Map" in Part 1, Policies, and on the “Property Boundaries” map in Part 2, Description of the Issues, and is shown on most other maps in this Plan.
2. This Plan should be reconsidered and amended as necessary in the future by the Crested Butte Town Planning Commission (the Town Planning Commission) to reflect changing conditions in the valley.
3. The Town recognizes the rights of citizens to play a role in governmental decisions which affect their lives and property through continual efforts to maintain and improve open and public communication and conduct of business. The Town will continue to provide opportunities for citizen participation and neighborhood involvement.
4. The Town of Crested Butte may be referred to as “the Town” in these policies.
5. All references in the Policies to Parts 1, 2 or 3 are references to Parts 1, 2 or 3 of the Crested Butte Area Plan.
6. When any land is developed within the MSRV, all policies in this Plan should be applied.

7. This document captures the goals and desires of the Town with respect to new development in the vicinity of Crested Butte. Measures are proposed throughout the policies to direct development and mitigate the impacts of new development. When, in the opinion of the Town Planning Commission, the public benefits proposed by a developer outweigh the public benefits expected from the mitigation measures proposed in the policies, the Planning Commission may accept the alternate mitigation measures.
8. Development within three miles of Crested Butte should comply with the policies of the Crested Butte Area Plan. When the policies of the Crested Butte Area Plan do not address the issue, but the policies of the Gunnison County Comprehensive Plan do address the issue, new developments and land use changes should comply with the applicable policies of the Gunnison County Comprehensive Plan.
9. Each section of policies begins with Policy Number 1. When policy numbers are referred to in other policies, they begin with the first letter(s) of the section they are in. For instance, when policies in the Land Use section are referred to the reference begins with "LU" and references to the policies in the Transportation section begin with "T".

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**ACTION ITEMS:**

10. Joint planning and close cooperation between the Towns of Crested Butte and Mt. Crested Butte, Gunnison County, the RE1J School District, the Crested Butte Fire Protection District, regional organizations, and other policy making bodies (e.g. utilities, the Upper Gunnison River Water Conservancy District, federal agencies) influencing the physical and social development of the MSRVA should be aggressively pursued to avoid conflicts and to provide a means by which each entity may more fully benefit from the presence of the others.
11. The Town will refer the 2011 Crested Butte Area Plan to the Town of Mt. Crested Butte, Gunnison County, Mt. Crested Butte Water and Sanitation District, the East River Sanitation District, The Crested Butte Fire Protection District and the Skyland Metropolitan District. The Town of Crested Butte should work cooperatively with the other local governments as each jurisdiction considers whether to adopt this Plan as a portion of its master plan. The implementation of the Crested Butte Area Plan, regardless of jurisdiction, should be guaranteed as part of intergovernmental agreements between Crested Butte and the other local jurisdictions.
12. The Town should consider adopting regulations for Areas and Activities of State Interest (1041 regulations) within the jurisdiction of the Town for:
  - a. Natural Hazard Areas (such as floodplains, wildfire hazard areas, geologic hazard areas, and avalanche hazard areas),
  - b. Areas containing or having significant impact upon historical, natural (including, but not limited to, wildlife habitat), or archeological resources of statewide significance and
  - c. Areas around key facilities in which development may have a material effect upon the key facility or the surrounding community.

In addition to the recently adopted intergovernmental agreement regarding development reviewed under the County Special Development Projects Regulations, the Town should also consider having an intergovernmental agreement with Gunnison County to apply land use policies adopted in this Area Plan for land use approvals that require compliance with the County Master Plan, outside the Town's boundaries.

### III. LAND USE

#### GENERAL POLICIES FOR LAND USE

##### GOAL:

**Provide a livable manmade environment and respect the character of the valley.**

##### POLICIES:

###### *About Annexation*

1. The Town intends to impose terms and conditions of annexation to protect the public interest and to ensure that annexation is realistic and practical.
2. The Town is very concerned about long-term maintenance costs of annexed land. Developers should identify revenues adequate to pay the long-term costs for the maintenance of their developments, and the Town should agree that the revenues will be adequate, prior to the Town approving annexations to Crested Butte.
3. There will be no annexations to the Town of Crested Butte of areas outside the three mile boundary shown on the Area Map on page 11 of the Preface, with the exception of annexation of acquired open space or parcels of land that begin within the three mile boundary and extend beyond the three mile boundary, as allowed by state law.

###### *Density and Density Transfers*

Many principles form the foundation of this Plan. With regard to open space, two principles of this Plan are critical. The first recommends increased density only if open space is preserved. The second allows residential density to be transferred. These principles are explained below.

For the following policies, five types of land will be discussed:

- **Developable Land:** land that does not contain hazard areas or resource areas.
- **Hazard Areas:** land that contains flood, geologic, wildfire, steep slope or snow avalanche hazards as described in this Plan.
- **Resource Areas:** land determined by the Town to be valuable to the residents of the community because it preserves:
  - ecosystems,
  - wildlife habitat,
  - views of significant lands in the vicinity of Crested Butte,
  - the historical culture of the MSRV,
  - private land in the Town's watershed (the Coal Creek watershed), or
  - irrigated agricultural land.

For the purposes of this Plan, Resource Areas include wildlife habitat, wetlands, Visual Resources, private land in the Town's watershed, irrigated agricultural land, and a ¼ mile visual buffer along State Highway 135 (see Policy VR 24 on page 40) as shown on the maps of this Plan. Resource Areas are labeled "Priority Preservation Areas" on the Preservation Priorities maps.

- **Receiving Areas:** land where density may increase in compliance with Policy LU 5.
- **Sending Areas:** land that is preserved as open space and where density is transferred from, to a Receiving Area.

4. a. The recommended residential density throughout the Middle Slate River Valley is one residential unit per 35 acres or one unit per existing parcel if the parcel is less than 35 acres. This policy applies to all land in the MSRVA including “Priority Preservation Areas” and “Other Preservation Areas” as shown on the Preservation Priorities maps.
- b. Development that meets the density of one unit per 35 acres of land may be clustered if significant open space is preserved and if the point where snowplowing currently ends on County roads does not change. The Town prefers that sites located beyond the point where snow plowing ends on County roads be sending areas, rather than developed. (see Policy LU 11.)
5. Density may be increased in Receiving Areas by preserving open space in Sending Areas. At least five (5) acres of open space should be preserved for each additional unit. As an incentive, if land is preserved in “Priority Preservation Areas” (as shown on the Preservation Priorities maps) less open space is recommended as a way to preserve the more important open spaces. As another incentive, if local housing units are proposed, less open space is recommended. These preserved open space areas are referred to as “open lands,” or open space, in the Subdivision Regulations. See **Table P 1** below for the recommended amount of open space per additional residential unit and for each 5,000 sq. ft. of commercial development:

**Table P 1**  
**Number of Acres Recommended for Preservation**

<b>Type of Development</b>	<b>Type of Land Preserved</b>	
	<b>Hazard Areas, Developable Land, or land beyond the end of plowed roads</b>	<b>Priority Open Space (Resource Areas)</b>
Free market dwelling unit	5 acres	3 acres
Local housing unit	1 acre	1 acre
Each 5,000 sq. ft. of commercial development	5 acres	3 acres

6. Many acres of land are suitable for development after applying the policies of this Plan. The lands where the Town recommends increased density (Receiving Areas) are listed below:
  - a. between Crested Butte and the Slate River, east of the Gothic Road;
  - b. between State Highway 135 and Buckhorn Ranch, south of Brush Creek Road;
    - a. and b. have been identified because these lands are located near existing development and can be served by all utilities,
  - c. between the north side of the cemetery and Moon Ridge Lane;
    - c. has been identified because the land between the cemetery and Moonridge Lane is adjacent to smaller lots. However, it is not served by all utilities, and it is beyond walking distance to Town for most people. In this area the Slate River, the cemetery, and many high quality wetlands create natural separations between higher densities on the town side of the river, and lower densities on the north side of the cemetery. Therefore, the recommended density is lower in Policy LU 7.
  - d. between the Slate River and the south side of the Cemetery.
 

This area has been evaluated by wetland consultants and a small area may be appropriate for development outside the wetlands and the 100 foot buffers from water features, as defined in the Subdivision Regulations. The costs of bridges to serve this area may make it inappropriate for development.

These lands are shown on the Developed and Undeveloped Land maps as Receiving Areas in Part 2, Description of the Issues, pages 141 and 142.

7. The recommended maximum densities for Receiving Areas listed in Policy LU 6 are usually based on the density of adjacent developed lands and the recommended densities are found in **Table P 2**. Such densities should only be allowed when the proposal complies with Policy LU 5, and the other applicable policies of this Plan have been met or satisfied.

**Table P 2**  
**Recommended Maximum Densities for the Residential Portions of Developments in Receiving Areas**

Location	Units per Acre	Basis for Recommended Density
a. between Crested Butte and the Slate River, east of the Gothic Road	5.00	similar to Town single family density including streets & alleys but not parks, public land or open space
b. between Sate Highway 135 and Buckhorn Ranch on the south side of Brush Creek Rd.	0.50	similar to Skyland densities
c. between the Slate River and the cemetery	3.50	to create a lower density at the edge of town as a buffer to adjacent lands (this density includes the residential portion of the subdivision but not the parks, public land ,or open space)
d. between the cemetery and Moon Ridge Lane	.25 -.3	similar to Cow Camp and Moon Ridge Subdivision densities and development patterns

8. If a developer can show, to the satisfaction of the Town Planning Commission, that other parcels of land, in addition to those discussed in Polices LU 6 and 7, are not affected by the hazards or resources discussed in this Plan, and if the parcel is adjacent to existing development, then the density on those other parcels may be increased from one unit per 35 acres after complying with Policy LU 5 and the other applicable policies of this Plan. The density should not exceed the average density per acre for the parcels surrounding the land proposed to be subdivided or the density of areas described in Policy LU 7, whichever is applicable, unless the proposal complies with LU Policy 9 below, in which case the density may be higher. For purposes of this policy, if a subdivision is located adjacent to the parcel proposed for subdivision, the density of the whole subdivision, including streets, parks and open space, will be considered the density of that parcel. If the proposed subdivision is adjacent to the Town and not included in Table P 2, the single family density, as described in Table P 2, which includes the typical number of units per block and includes the alleys and streets on all four sides of that block, is used to determine density of the land on that side of the proposed subdivision. (See also the notes at the end of this section.)
9. As an incentive to create more local housing, if more than 40% of the dwelling units in a residential subdivision that will not be annexed to Town, or if more than 60% of the dwelling units proposed in a residential subdivision that will be annexed to Town, meet the definition of local housing units, then the density of the residential portion of a residential subdivision may be twice the density allowed in Policies LU 7 or LU 8 if:
  - a. the local housing is permanently deed-restricted,
  - b. the buildings are similar in mass and scale to adjacent neighborhoods, and
  - c. all other applicable policies of this Plan have been met or satisfied.
10. Commercial Development and Open Space Requirements.

- a. For each five thousand (5,000) square feet of business or commercial space, or portion thereof, approved in a development:
    - i. five (5) acres of Developable Land or Hazard Areas land or
    - ii. three (3) acres of Priority Preservation Areas (see Preservation Priorities maps), should be preserved in perpetuity as open space.
  - b. A further density bonus is offered for “local housing” (see Glossary). For each built, permanently deed-restricted local housing unit, it is appropriate to approve up to 5,000 square feet of business or commercial space on a site and no open space will be necessary for that 5,000 square feet of business or commercial space. The local housing may be created either within the commercial site or elsewhere within the Middle Slate River Valley.
11. Sending Areas are shown on the Preservation Priorities maps and include:
- a. Priority Preservation Areas,
  - b. Other Preservation Areas, and
  - c. Any private land past the point where snowplowing currently ends on County roads in the following drainages:
    - i. Slate River,
    - ii. Washington Gulch,
    - iii. Brush Creek,
    - iv. Coal Creek, and
    - v. East River north of Round Mountain.

Such land may be mining claims, Hazard Areas, Resources Areas or Developable Land. (No developable land has been identified outside the MSRV.) 35-acre lots created without County review may only be used for open space if the whole lot is preserved as open space. Such 35-acre lots that have been built on may not be used as open space.

12. Priority Preservation Areas are mapped on the Preservation Priorities maps (Part 1, Policies, pages 20 and 21). These priority lands for preservation are Resource Areas which include:
- a. Priority Views that Should be Preserved,
  - b. The Slate River Wetlands Preserve,
  - c. Elk Production Areas,
  - d. Irrigated agricultural land,
  - e. Private land in the Town’s watershed (the Coal Creek watershed), and
  - f. A ¼ mile visual buffer along State Highway 135 from Crested Butte to mile marker 19.75 (see Policy VR 24 on page 40).

(Also see maps in Part 2, Description of the Issues, pages 99, 110, and 116)

Notes for policies 5, 6, 7, 8, 9, 10 and 11:

- i. To qualify as local housing, dwelling units should comply with the definition of local housing in the Glossary.
- ii. A proponent may use one or more of the above mechanisms to increase density. When the land considered for permanent open space has both resource and hazard attributes, an average of the number of acres discussed above should be used to determine how much the density may increase. For example, if eight (8) acres which are both hazardous land (flood plain) and resource area (wetland) are preserved, that acreage would be adequate to increase the density by two dwelling units.
- iii. The tool used to preserve open space must be acceptable to the Town and may include a permanent deed restriction on the applicable land, a conservation easement, donation to the Town, or as otherwise negotiated by the developer and the Town. Third-party deed restrictions using a conservation organization are preferred. It is the intent of this section that the open space be permanently preserved at the time of annexation or subdivision approval.
- iv. Sample developments meeting the above policies are discussed in Appendices VI and VII, but they have not been updated since 2006.

- v. The densities listed in Table P 2 are for the residential portions of a site, including streets and alleys. Each subdivision will also need to provide park land, public land, school land, open space, etc. within the subdivision,

### ***Provision of Facilities***

- 13. No new urban development and no new industrial development, regardless of lot size, in the MSRVA should occur until and unless adequate urban facilities and services for the development are provided by and funded by the developer and not by existing residents.

### ***Miscellaneous Land Use Objectives***

- 14. The intent of this Plan is to encourage development to take place in an orderly fashion by encouraging new development to expand upon existing urban services and to avoid patterns of leapfrog, noncontiguous, scattered development within the MSRVA.
- 15. Avoid development which would be inconsistent with the scale and character of the Town of Crested Butte or with adjacent developed areas.
- 16. Major entryways into the MSRVA should be identified, protected and enhanced in order to emphasize and preserve the natural setting and appearance of the community. Within three miles of Crested Butte, on parcels of land that extend more than ¼ mile from State Highway 135, the Town encourages residential and commercial development (particularly buildings) to be located at least ¼ mile from the State Highway to help preserve the view. (See Policy VR 24 on page 37 in the Visual Resources section for additional detail.)
- 17. Buildings and sites of historic, architectural, or archaeological significance should be identified and protected.
- 18. Natural resource extraction, including mining and timbering, should be conducted in such a way that:
  - a. the health, welfare and safety of residents in the MSRVA is maintained,
  - b. the current quality of air and water is maintained,
  - c. permanent visual scars or temporary visual pollution during the extraction period will not be created, and
  - d. it is in compliance with the applicable policies of this Plan.
- 19. U.S. Forest Service and U.S. Bureau of Land Management land which is exchanged, sold or otherwise falls into private ownership should remain as open space and not be developed for private use unless it is otherwise designated as being developable under this Plan.

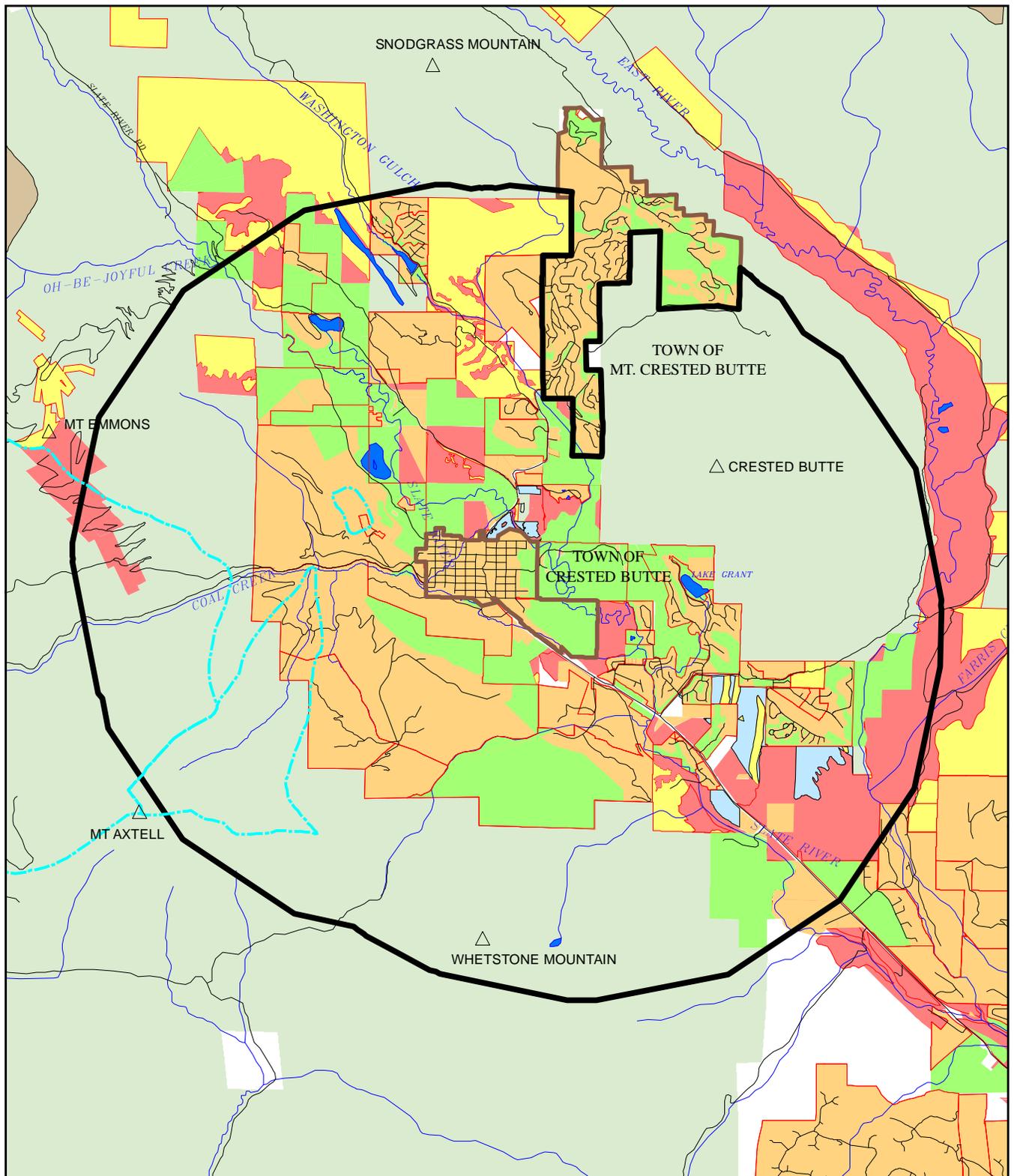
### ***Development Impact Mitigation***

- 20. Impacts resulting from development of land should be mitigated by developers by eliminating the impact or, at the discretion of an affected public agency, by the provision of land or the payment of an impact fee to mitigate the impact(s) prior to development of the land. Impacts can be identified by the public or by public agencies. If fees are paid to mitigate impacts they should be based on the demonstrated cost to the public agency to minimize or eliminate the impact.
- 21. Developers should pay the costs incurred by the Town for reviewing annexation and subdivision development proposals, including but not limited to Town staff time, fees charged by state agencies and fees charged by Town consultants.

### ***Commercial Land Use and Residential Facilities***

- 22. Business and Commercial Zoning Districts in Crested Butte and Mt. Crested Butte should continue as the service centers of the MSRVA for office, retail, restaurant, financial, governmental, medical, and cultural activities.
  - a. Light industrial uses such as those found at Riverland Industrial Park (Filing 1 Plat recorded 9/14/1982 and Filing II Plat recorded 5/24/1996) should continue to be located

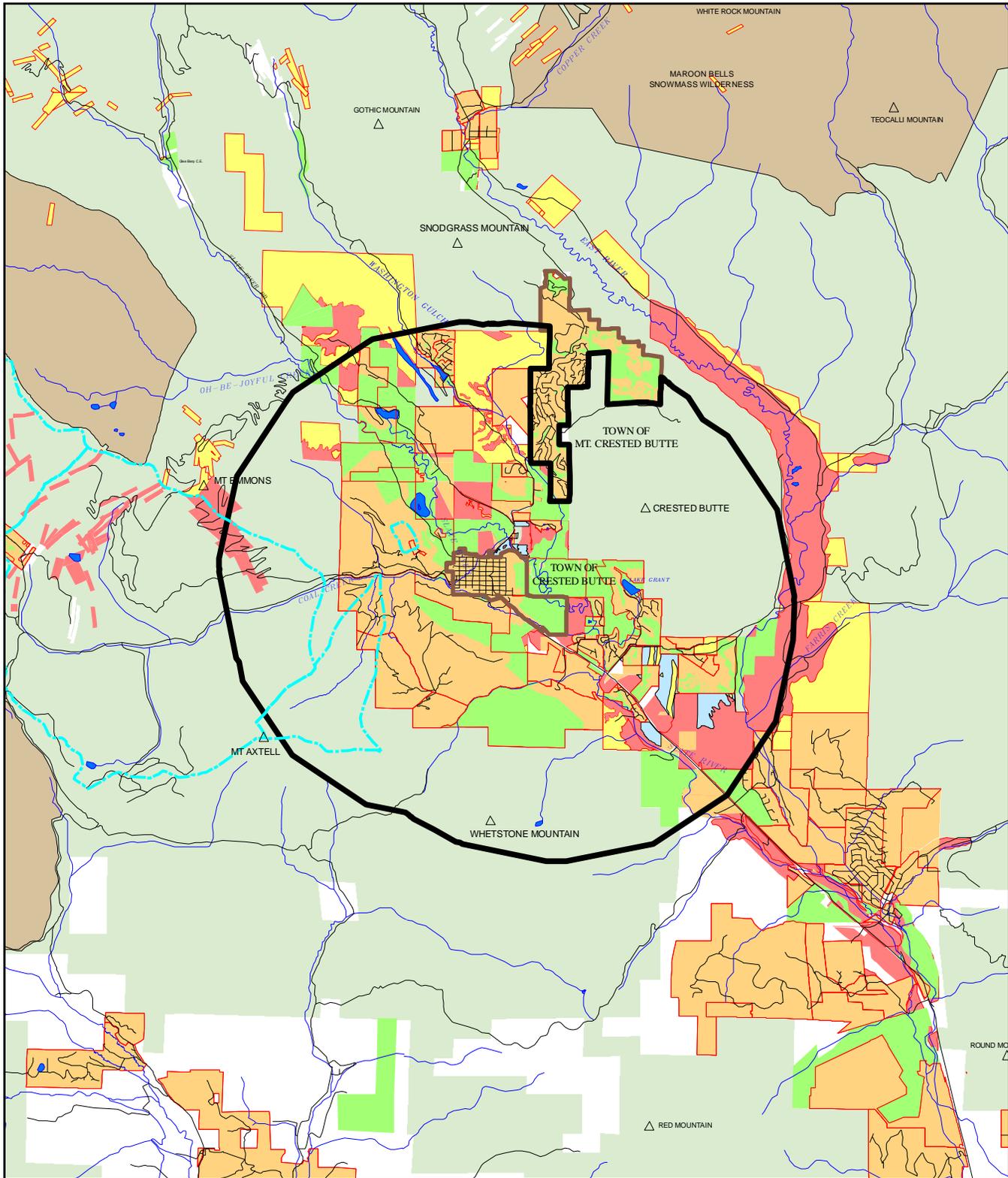
- adjacent to Riverland Industrial Park, on the west side of State Highway 135, because adequate land approved for other commercial uses has been provided in the Town and within the unincorporated East River valley for the number of residential units approved in the Town and in the unincorporated East River valley. (See Part 2, Description of the Issues, page 152, Table SE 8).
- b. All other commercial development is discouraged outside Crested Butte and Mt. Crested Butte, except as discussed below.
23. Residential developments annexed to Crested Butte should be served with facilities and provided with additional programs, which cater to the particular needs of that development, such as child care, parks and local shopping opportunities. (For example, a pro shop at a golf course would be a shopping opportunity that caters to the particular needs of a golf course development.)
  24. Commercial and office uses should be limited to those uses which are oriented exclusively toward meeting the needs of the residents or temporary occupants of the subdivision. The size and scale of the buildings for such uses should be similar to the size and scale of residential buildings in the subdivision. Additional commercial space should be provided within the existing business and commercial zoning districts in Crested Butte and Mt. Crested Butte and, when necessary, by expanding those zoning districts.
  25. Tourist oriented commercial land uses that are land based recreational uses, including: dog sled rides, outfitter horseback rides, etc. but not bed and breakfasts, are encouraged in Washington Gulch between Meridian Lake Park Subdivision and the Gothic Road.



### Preservation Priorities #1

- |                        |                                    |
|------------------------|------------------------------------|
| 3 Mile Boundary (MSRV) | Receiving Areas, Increased Density |
| Town Boundary          | Subdivided or Developed Land       |
| Roads                  | Priority Preservation Areas        |
| Streams                | Other Preservation                 |
| Lakes                  | Wilderness                         |
| Parcels                | Government Lands                   |
| Open Space             | Coal Creek Watershed               |



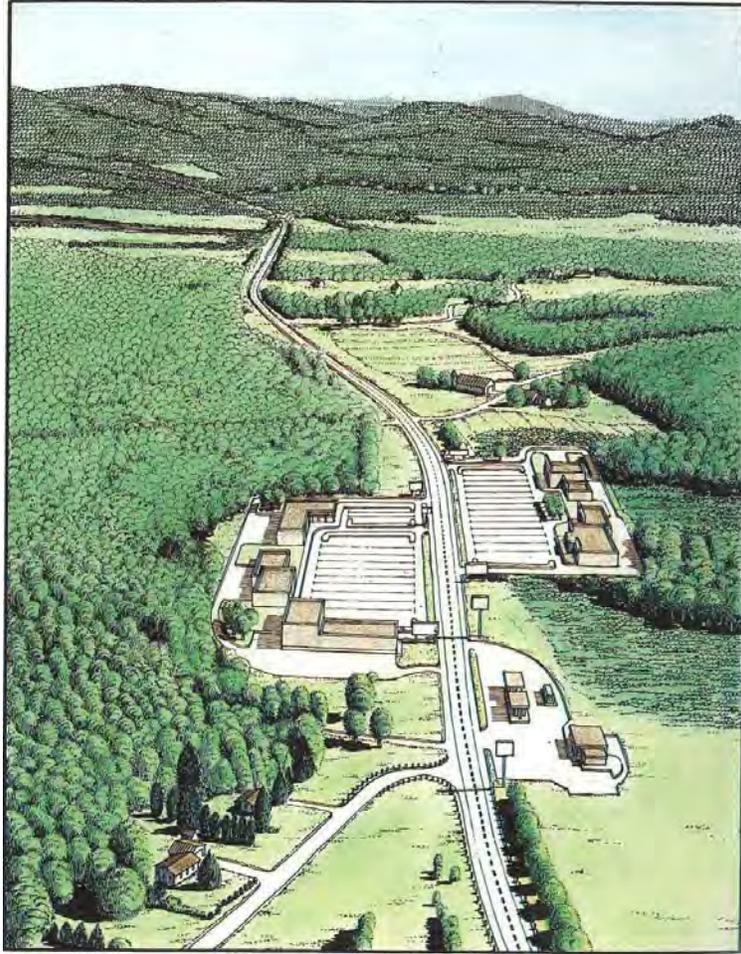


### Preservation Priorities #2

- 3 Mile Boundary (MSRV)
- Town Boundary
- Roads
- Streams
- Lakes
- Parcels
- Open Space
- Receiving Areas, Increased Density
- Subdivided or Developed Land
- Priority Preservation Areas
- Other Preservation
- Wilderness
- Government Lands
- Coal Creek Watershed



26. Strip commercial development is strongly discouraged along arterial highways.



Strip commercial development, like this, is discouraged

Reprinted from "Dealing with Change in the Connecticut River Valley: A Design Manual for Conservation and Development."

27. Commercial uses may be extended along the Gothic Road, but only if it is a continuation of commercial uses along Sixth St. and the Gothic Road.
- Leap frog commercial use, where a commercial use is not located adjacent to existing commercial uses or land zoned for commercial uses, along the Gothic Road or SH 135, is discouraged.
  - Commercial uses along the Gothic Road should be oriented with buildings near the front property line and parking on the rear of the lot.

***Edges of Crested Butte***

28. The Town should strive to maintain and enhance an open land buffer separating Crested Butte from surrounding communities and contributing to a distinct community identity.
29. Well defined edges of the Town's boundaries are important because they support an understanding and appreciation of the Town's image and create a clear sense of arrival and departure. Natural features are most effective as edges, but public open land, major roadways or heavy tree planting can also function as community edges. The definition of a community edge should be a design priority as new areas are developed.

## RESIDENTIAL SITE DESIGN

### GOAL:

Proposed development should incorporate, but not be limited to, the following design objectives:

- a. preservation, to the maximum extent possible, of the natural character of the land and habitat,
- b. clustered buildings,
- c. provision of substantial open space,
- d. solar access and alternative energy, and
- e. preservation of agricultural uses whenever possible.

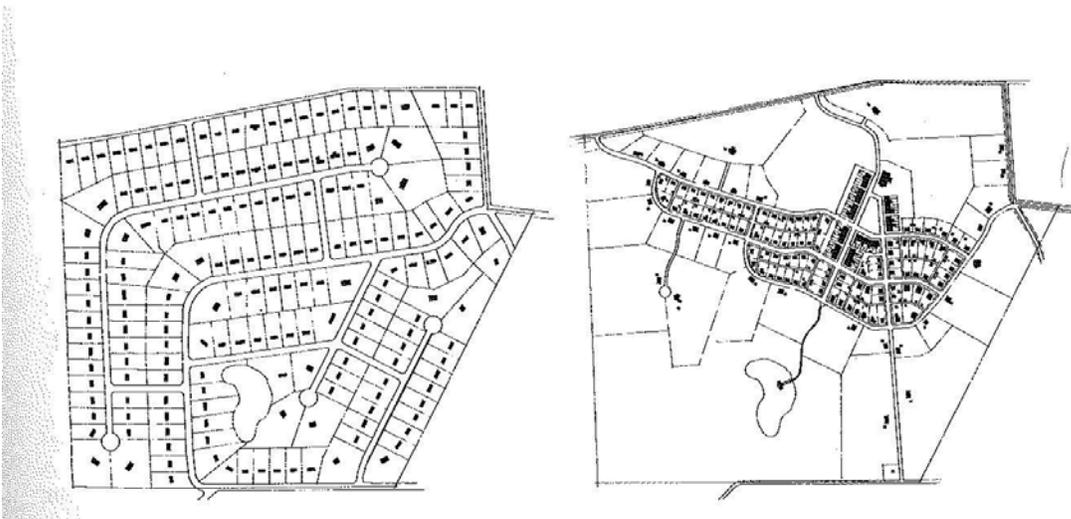
### POLICIES:

#### *Zoning*

1. The Crested Butte Board of Zoning and Architectural Review should designate, and the Town Council should approve, the Architectural Guidelines District for each annexation or part thereof. Landscaping and building design should be consistent with the designated district guidelines.
2. Uses, lot sizes, and building sizes should conform to the standards of existing zoning districts in Crested Butte except the R1A Zoning District, rather than creating new zoning districts for development that may be out of character with Crested Butte.

#### *General Development Design*

3. Clustered development is encouraged.



Discouraged

Encouraged

Reprinted from "Rural by Design."

Although the drawings above do not show examples of the Crested Butte town grid, they do demonstrate the difference between traditional design that scatters development throughout a site and clustered design that limits development to a portion of the site, leaving the remainder

as open space for public recreation, social interaction, physical activity, wildlife or agriculture.

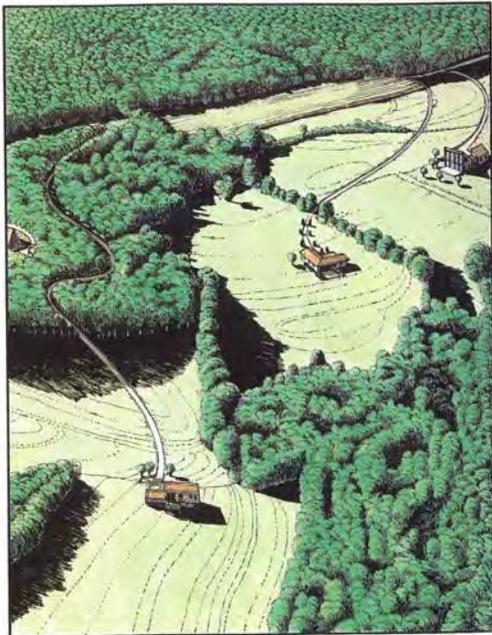
4. Subdivision design should begin by analyzing the site to identify its inherent values and features that will contribute to a sustainable subdivision such as natural drainages, important natural features, areas development should avoid such as hazard areas and flood plains, solar orientation, etc.

### ***River Development and Trails***

5. The Slate River, Coal Creek, Washington Gulch and their tributaries should serve as unifying design features for the community. These areas are referred to as greenways. Greenways should be preserved as natural areas. In this way the greenways can contribute to maintaining wildlife movement corridors and wildlife habitat, improving air quality, and providing a contrast to urban development.
6. Greenway corridors for pedestrian access to and along rivers, streams, and lakes should be preserved. River corridors and greenways should be public areas but measures should also be taken to protect and preserve wetlands adjacent to the water body and water quality. For instance, trails should be outside wetlands, other water features and their buffers.
7. Trail development should be sensitive to the ecology, the terrain, and the privacy of adjacent residents and surroundings. Existing and new trails should be dedicated to the public. (See Policy T 18 on page 50 for the recommended number of feet of trail per residential unit)
8. Development should provide trails identified on the Crested Butte Trail Plan, which is located at the end of the Transportation Policies in this Plan, and in the Town of Crested Butte Parks and Recreation Regional Master Plan, 2010 and in the Gunnison County Trails Master Plan, and should connect missing trail links when the link, or part of a link, could be made within the development site.

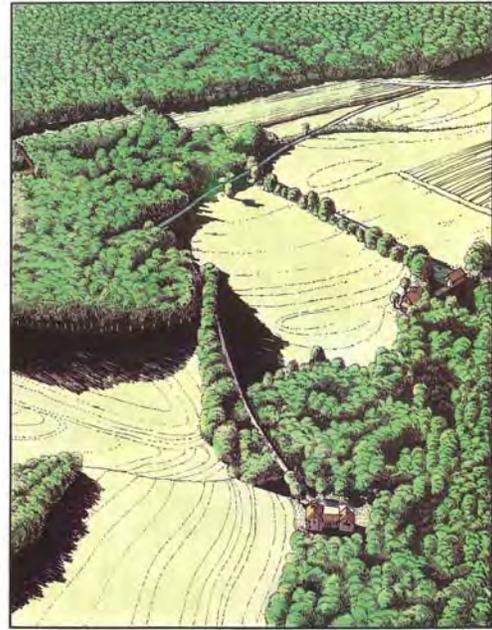
### ***Trees***

9. Existing trees and other indigenous vegetation should be saved and protected whenever possible. Isolated stands of trees should be preserved and incorporated into the site design.
10. Homes and other structures should be sited at the edge of wooded areas whenever possible if open lands, such as meadows and grazing fields that are predominantly free of trees and often allow views of the valley, can be preserved as a result.



*Aerial View of Site D After Conventional Development*

Discouraged



*Aerial View of Site D After Creative Development*

Encouraged

Reprinted from *“Dealing with Change in the Connecticut River Valley: A Design Manual For Conservation and Development.”*

### ***Agricultural Issues***

11. Retention of the agricultural productivity of the MSRVA is encouraged. Land use change which does not discourage, interfere with, or create negative impacts to adjacent or nearby agricultural operations, is appropriate.
12. Agricultural policies should not prevent the conversion of agriculture land to other uses.
13. Preserve access to irrigation ditches so water right owners have adequate access, as they had historically to maintain ditches.
14. Irrigation ditch crossings are discouraged unless the details of the crossing have been agreed upon with the irrigation ditch owner(s).
15. Maintain historic stock drive routes.
16. Developers should work with neighbors to maintain historic grazing operations.
17. Developers and homeowners associations should maintain their side of a fence as has been done historically by landowners on each side of fences.
18. Homeowners associations should repair their fences annually after the heavy snows and throughout the summer months after wildlife and livestock run through the fences.
19. The Town encourages developers of land to resolve fence/boundary line issues prior to submitting an application for a development. If disagreements about boundaries continue during the development review process, decisions by the Town should not be construed to resolve the disputed boundary issues.
20. Protective covenants should make it the responsibility of the developer and the homeowners association to eradicate state recognized noxious weeds on their property so they do not spread to agricultural land.
21. Developers are encouraged to contribute to a legal fund for agricultural operators who find it necessary to do more than talk with representatives of neighboring developments to resolve impacts from development on agricultural lands.

22. Dog owners should ensure that dogs do not chase livestock.
23. Homeowners associations should be responsible for preventing trash from entering neighboring lands, especially during construction.
24. When land, that has historically been used by elk during summer months, is developed with houses, roads, mountain bike trails or other development features, the Town encourages developers of those human uses to pursue mitigation for agricultural lands that may be affected.
25. While the Town encourages the use of non-treated water for lawn irrigation, the Town also discourages transferring water rights from agricultural land which would result in drying up irrigated agricultural land in the MSRV for lawn irrigation in a subdivision proposed for annexation – See Utilities Policies.

### ***Public Lands***

26. There were 50.93 acres of land used for Town public facilities in Crested Butte in 2010 such as the Town Hall, the Fire Hall, equipment maintenance and water and waste water treatment plants and all of it was needed for public purposes. In 2009 there were 1,078 residential units and in 2010 there were 351 commercial units in Town, thus for each residential or commercial unit there were .0356 acres (1,552 square feet) of land for public purposes. Residential and/or commercial developments should provide at least .0356 acres (1,552 square feet) of developable land for each residential and commercial unit for Town public facilities purposes.
27. There were 30.21 acres of park land in Crested Butte in 2009. In 2009 there were 611 single family, accessory and mobile home residential units and there were 467 duplex, multifamily, year-round occupied units in bed and breakfasts and units in commercial spaces. There were .0263 acres (1,146 sq. ft.) of parks per single family unit and .03 acres (1,307 sq. ft.) of parks per multi-family unit. Developments should provide at least .0263 acres of park land for each single family residential unit and .03 acres of park land for each multi-family residential unit.
28. The Crested Butte Community School, the Crested Butte Academy, Paradise Preschool and Stepping Stones are located on 13.56 acres of land. Those school facilities serve 3,558 residential units (not hotel units) north of Round Mountain. This means that for each existing dwelling unit there are 166 square feet of land for schools. Therefore, for each new residential unit approved, at least .0038 acres (166 sq. ft.) of land should be provided for schools.
29. All public lands, park lands and school lands should be identified on final plats.
30. Payments-in-lieu of land may be considered when it is not deemed feasible, or in the public interest, by the Town, to reserve land for public purposes. Payments-in-lieu of land should be based on the number of acres recommended for parks, schools, or other public purposes and on the value of the average square foot of land in the proposed subdivision after all approvals have been obtained. The source for the value of the average square foot of land in the proposed subdivision should be an appraisal, performed by an appraiser acceptable to both the Town and the subdivider.
31. As the number of dwelling units increases, the purpose of park land and therefore the size and geography of park land, should change. In 2010 there were six (6) major large, relatively flat contiguous park facilities suitable for ball fields and other large park facilities in Crested Butte on a total of 26.06 acres and there were 1,078 dwelling units in Town. Therefore, as a guide, for every 100 dwelling units proposed in a subdivision, at least 2.42 acres of contiguous, flat park land should be provided in the proposed subdivision. ( $26.06/1,078 = .02417$  acres  $\times 100 = 2.42$  acres) Pocket parks should be located in residential developments as frequently as possible.

### ***Road Design***

32. The Standards and Guidelines policy published by the Crested Butte Fire Protection District, should be complied with for any land annexed to Crested Butte with the following exceptions:
- providing less than two access points should not be waived,
  - road grades should not exceed 7%,
  - subdivision roads should not have turnouts; instead all developments should have two access points,
  - all access roads ending in cul-de-sacs, or dead-end roads, should not exceed 500 feet with no exception, and
  - all residential subdivision developments annexed to Crested Butte should be served by central water systems.
33. All cut and fill areas should be reclaimed by restoring topsoil and revegetating with indigenous plants.

### ***Lighting***

34. All exterior lighting or illumination should be located, placed and shielded to have minimum visual impact on adjacent lands. Such lighting should use full cut-off fixtures that, by design, have a cut-off angle of not more than ninety (90) degrees.



### ***Solar Access and Energy***

35. Solar access should not be blocked by adjacent buildings.
36. Development design should optimize solar gain for the entire development and development design should include the following:
- Tract design that allows at least 70 percent of the glazing on the south-facing wall to be completely unshaded at noon on Dec. 21. Developers should demonstrate, through 3-dimensional analysis, that residential structures achieve this standard.
  - Tracts at the east and west ends of blocks should have an east/west orientation, with the intention of maximizing the amount of south facing façades on those tracts.
  - The use of deciduous trees should be encouraged on the north side of avenues to enhance solar access during winter months for housing units on the north side of the avenue, which face south.
37. Wood stoves should comply with Chapter 18, Article 8 of the Town Code.
38. Wood-burning fireplaces should not be used.
39. Residential development should be located close to current infrastructure to conserve motor vehicle fuel.

- 40. Higher-density residential development, that promotes pedestrian and other energy efficient transportation, is encouraged.
- 41. Sustainable energy communities which use the, following tools but are not limited to only the following tools, are encouraged:
  - a. on-site energy production,
  - b. off site energy production,
  - c. a local offset purchasing program, or
  - d. a combination of the preceding measures.

\*\*\*\*\*

**ACTION ITEMS:**

- 42. The Town should work with the agricultural community to create incentives to help maintain the open spaces that agricultural operations currently maintain.
- 43. The Town should work with appropriate entities to develop a “Welcome to the MSRV” brochure, or other medium, to explain what makes the MSRV special and what people need to do or understand to maintain that special character including:
  - a. why agriculture is important in the valley,
  - b. that cows in the backcountry mean that the community below is a community based on long-term land management practices for agriculture, and a community that appreciates the values of the agricultural community,
  - c. that certain actions by residents and tourists negatively impact agriculture,
  - d. why small houses and a pedestrian oriented community are important to the Town, and
  - e. the many other qualities that make the MSRV special.
- 44. The Town and the County, along with other partners such as the Crested Butte Land Trust, need to become much more proactive with regard to the control of State identified noxious weeds.

## UTILITIES

### GOAL:

**Ensure the availability and maintenance of public utility systems of adequate size and capacity to meet the needs of permanent and visitor peak populations and protect the residents of the Middle Slate River Valley from impacts caused by development.**

### POLICIES:

1. New urban development should be served by central water and waste water systems.
2. New urban development should be located adjacent to existing urban development and should be annexed by the appropriate town or sanitation district.
3. New urban developments, that are not adjacent to existing urban development, should not be approved.
4. Discourage the proliferation of special districts, private central utility facilities and individual sewage disposal systems within the MSR. The 1995 Upper East River Valley Areawide 201 Facilities Plan designates the service areas for the Crested Butte, Mt. Crested Butte, and East River Sanitation districts (see Upper East River Valley Wastewater Service Areas map on the next page). Only the extreme southern and northern portions of the MSR are excluded from all of these existing service areas and therefore, private sewage disposal systems should not be encouraged.
5. Avoid the extension of utilities into areas which are deemed inappropriate for development based upon an evaluation of the development against the goals and policies of this Plan.
6. Ensure that new urban development, which is annexed to the Town of Crested Butte, will meet the Town's technical design standards and specifications.
7. All utilities should be installed underground.
8. Utilities should be buried deep enough to prevent freezing.
9. Utility easements, at least 20 feet wide, should be provided to each lot to provide adequate space for maintenance. An easement divided by a lot line is acceptable if it is a total of 20 feet wide and if the terrain allows for access by maintenance equipment.
10. Whenever possible, trails should be dedicated to the public on any utility easements except on individual service lines.
11. When land is proposed for development and annexation:
  - a. adequate water rights for all domestic and public uses in the development should be transferred to the Town, and
  - b. the agricultural ditches that will no longer be used for agricultural purposes should be converted for public and private lawn watering rather than treating water for these purposes. Agricultural ditches that support large trees and shrubs should be maintained by the development so that they can continue to flow and provide water for the trees and shrubs dependent upon the ditch water.
12. In addition to the drinking water distribution system, a non-treated water distribution system, should be provided throughout the subdivision for lawn, park and garden irrigation.
13. Water rights from the property proposed for subdivision should stay with the property and should be used for drinking water and for lawn, park and garden irrigation.
14. The Town discourages transferring water rights from agricultural land in the MSR to a subdivision for lawn, park or garden irrigation in a subdivision proposed for annexation if the transfer of water would result in drying up land that had been irrigated for agriculture.

### ***Drainage***

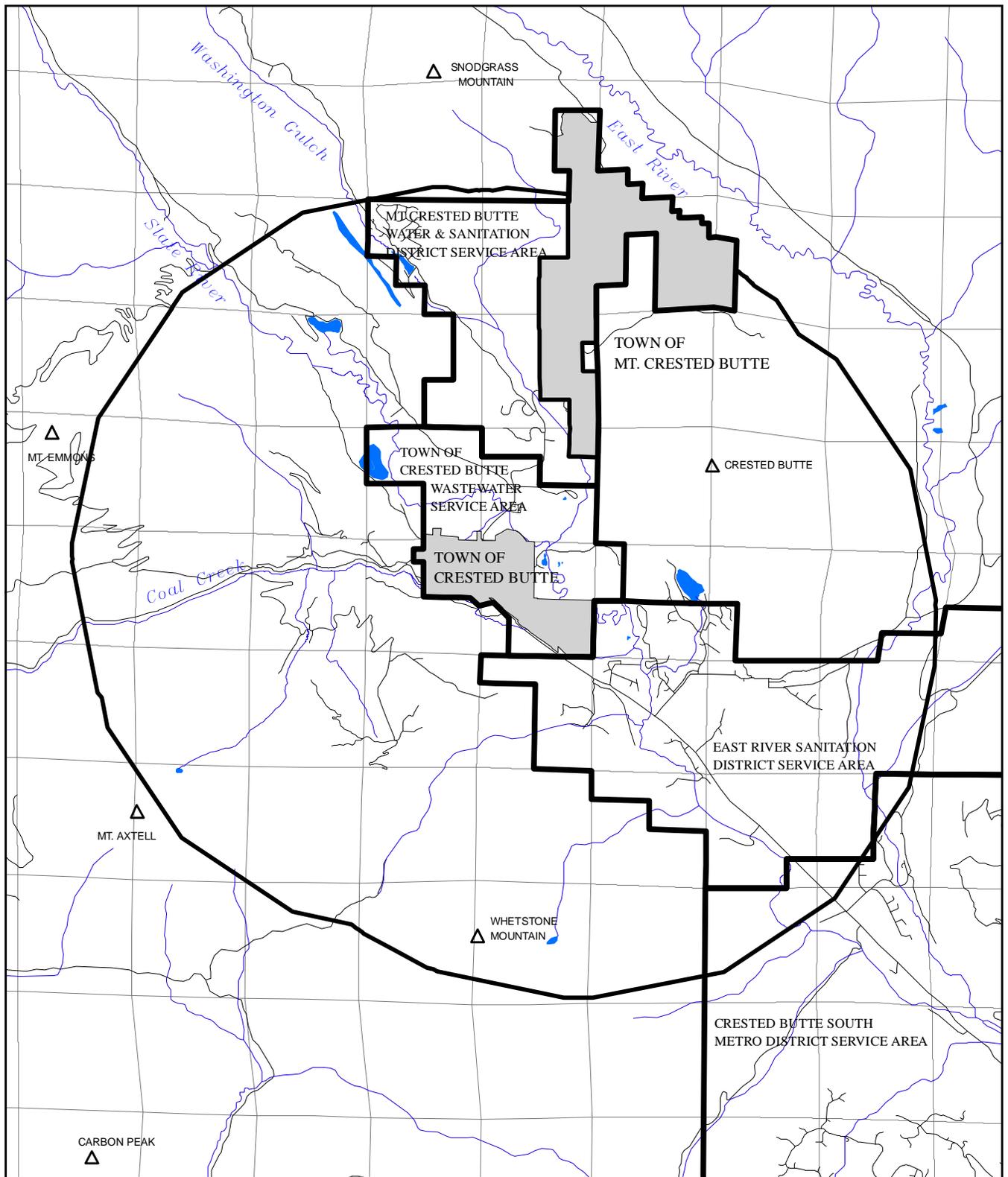
15. A drainage plan should be created for each development proposal and adequate easements for runoff and storm sewers, where necessary, should be provided.
16. Drainage easements, channels, pans and culverts should be designed by a registered engineer and should be capable of handling an expected maximum flow in any 25-year period.
17. Bridges over main channels in the MSRV such as Coal Creek, Slate River and Washington Gulch and enclosed drainage systems such as culverts, should be designed to be capable of handling an expected flow in any 100-year period.
18. Bridges over the Slate River should provide adequate space between high water and the bottom of the bridge so people may float the river in a raft during high water and pass safely under the bridge.
19. Bridges and drainage systems should not disturb river water levels with respect to the flood plain or further aggravate the downcutting of the stream channel which is already occurring on the Slate River.
20. Drainage should not increase from one proposed development property to neighboring property. Retention basins and other passive designs should be used to achieve this policy.
21. "Low impact development" strategies should be used to address storm water, integrate natural drainages, and accommodate large snow loads and high volume spring melts. The following are examples of how low impact development could be integrated into subdivisions in the MSRV:
  - a. Each development design should begin with an examination of how the natural hydrologic cycle works, how various land and water features control the volume and quality of runoff, infiltration, and recharge and how these factors will be altered by the proposed introduction of new impermeable surfaces.
  - b. Each development should address findings from the above analysis by either:
    - i. providing earthen ponds, or detention basins, located downstream of areas disturbed by site clearing, designed to capture runoff and sediment, and release water slowly to waterways at a peak rate no greater than before development,
    - ii. a storm water recharge system based on recharge, rather than detention. Such a system can:
      - a. Have a high proportion of impervious surfaces, as a means of expanding a site's capacity for infiltration, thereby reducing the volume of runoff, including:
        1. small building footprints,
        2. narrow roads,
        3. downsizing all other paved areas, (Permeable paved areas with a fabric liner beneath the stone bed to prevent the stone bed from filing with soil and open edges and trench drains to ensure the operation of the bed beneath the paved area in the event of pavement sealing.)
      - b. Have drainage swales and berms that slow runoff and permit its infiltration into aquifers,
      - c. Maintain the vegetation, soil mantle, and soil permeability for groundwater recharge to the maximum degree, rather than reshaping the landscape of the site to meet perceived development needs or building sites.
      - d. Minimize gutters, to the extent possible, in favor of natural filtration and bio swales. (Developers should provide for the long-term maintenance of drainage systems.)
    - iii. a combination of the above measures.
  - c. conservation of natural areas through compact site design,

22. Drainage and the associated water pollution from fertilizers, construction sites, mining and timbering activities, oil based roofs and roads or sediment from drainage of the proposed development site should not be allowed to pollute any water body.
23. Stream bank erosion, which causes non-point source pollution through sediment loading, should be avoided.
24. Drainage plans should incorporate drainage swales whenever possible to direct water flow because they also serve as speed dips to slow vehicles.
25. Developers should provide for the long-term maintenance of drainage systems.

\*\*\*\*\*

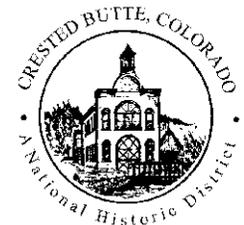
**ACTION ITEM:**

26. Update the 1995 Upper East River Valley 201 Facilities Plan.



### Upper East River Valley Wastewater Service Areas

- Wastewater Service Areas
- Lakes
- 3 Mile Boundary (MSRV)
- Roads
- Town Boundary
- Section Lines
- Towns
- Streams



Drawn by: Hilary Mayes  
 Date: May 4, 2005  
 Filename: 3mileplan/area.apr

## **IV NATURAL HAZARDS TO DEVELOPMENT**

### **GOAL:**

**Development proposals should be planned to best promote the health and safety of the residents of the Middle Slate River Valley by minimizing the effects of natural hazards.**

### **GENERAL POLICIES APPLICABLE TO ALL HAZARDOUS AREAS**

1. Development in hazardous areas should be avoided.
2. Natural hazards should be identified for open space uses.
3. When specific hazard areas have been identified, the following relevant policies from this Plan should be applied.

### **AVALANCHE HAZARDS**

4. Development in avalanche zones and runout zones should be avoided. Unless a professional avalanche control engineer can demonstrate the proposed development area is not in a snow avalanche area, Crested Butte discourages development in snow avalanche areas as shown on the Avalanche Hazard map in Part 2, Description of the Issues, page 67.
5. All proposals at the bottom of hills exhibiting avalanche potential, as determined by a qualified expert in avalanche behavior and dynamics, should be reviewed by an avalanche control engineer for potential snow avalanches.
6. Crested Butte discourages developments which require access roads to cross potential avalanche zones unless avalanche frequency in these zones is small, as determined by a qualified expert in avalanche behavior.

### **FLOOD HAZARDS**

7. Development in a flood prone area should be avoided. Unless a professional flood plain engineer demonstrates an area is not in a flood plain, Crested Butte discourages development, including parks, in flood plains as shown on the Flood Hazards map in Part 2, Description of the Issues, page 71.

### **GEOLOGIC HAZARDS**

#### ***Landslides***

8. Development on potential landslide areas should be avoided. Unless a professional engineering geologist demonstrates an area is not in a geologically hazardous area, Crested Butte discourages development on land slide areas, unstable slopes, potentially unstable slopes and rockfall areas as shown on the Geologic Hazards map in Part 2, Description of the Issues, page 74.
9. Excavation on unstable slopes and in potential landslide areas is discouraged.
10. Removal of natural supportive material at the toe of a landslide area and the area immediately adjacent to the slide area is discouraged.
11. Filling that causes loading on unstable slopes is discouraged.

### ***Mudflow and debris fan areas***

12. Development on mudflow and debris fan areas should be avoided. Crested Butte discourages development in:
  - a. potential mudflow paths,
  - b. potential debris flow paths, and
  - c. potential debris fan areas.Unless a professional engineering geologist can demonstrate the proposed development area is not a mudflow or debris flow area, Crested Butte discourages development on the mudflow and debris flow areas as shown on the Geologic Hazards map.
13. Developments proposed at the base of steep drainages, which begin at high, barren, mountainous areas and which are not interrupted by gentler slopes along the path, should be assessed by a professional engineering geologist for mudflow and debris flow potential.
14. Removal of vegetation on debris fans in areas described in policy 13, which may contribute to a mudflow or debris flow, is discouraged. Replacement of vegetation that must be removed for construction is encouraged.
15. Developments that require access roads across mudflow or debris fan areas should be avoided.

### **Seismic Effects**

16. Development on or near faults should be avoided. Unless a professional engineering geologist can demonstrate the proposed development area is not on a fault, Crested Butte discourages development on the faults as shown on the Geologic Hazards map.

### **WILDFIRE HAZARDS**

17. Development in “Extreme,” “High,” or “Moderate” wildfire hazard areas should be avoided. Unless a professional range scientist or graduate forester can demonstrate that the proposed development area is not in an Extreme, High, or Moderate wildfire hazard area, Crested Butte discourages development in Extreme, High, or Moderate wildfire hazard areas as shown on the Wildfire Hazard map in Part 2, Description of the Issues, beginning on page 82.

### **Mitigation**

18. When the Town Planning Commission agrees development cannot avoid Extreme, High, or Moderate wildfire areas, as identified on the Wildfire Hazard map, the policies that follow should be applied for development in those areas to help mitigate the potential impacts.
19. Comply with the wildfire mitigation recommendations in the Wildfire Chapter in Part 2, Description of the Issues, beginning on page 82, particularly those listed under:
  - a. “Fuel modification or treatment includes:”
  - b. “When building roads or structures, the following measures can reduce wildfire hazards:”
  - c. “Measures which reduce ignition sources include:”, and
  - d. “Providing adequate fire fighting equipment involves the following:”.
20. Land uses which increase the potential for wildfires in high risk areas are discouraged.
21. Crested Butte discourages all development on slopes of 30% or more that are also high risk wildfire areas. Development in steep draws or valleys, which tend to channel fire movement, is particularly dangerous and is also discouraged.
22. Landowners planning to build in vegetated sites should request mitigation recommendations from the Colorado State Forest Service or the Crested Butte Fire Protection District.

## **SOILS**

23. Soil testing should be conducted for all development proposals by a registered soil engineer and recommendations should be made by the engineer to address all the types of soil and all the types of development proposed. Registered soil engineers should address the potential problems identified on the Soils Chapter of this Plan in the Description of the Issues, Part 2, and on the Soils map in Part 2, Description of the Issues, page 88, when making recommendations for all types of proposed development.

## **SLOPE**

24. Development on slopes exceeding 30% should be avoided. Unless a professional engineer can demonstrate that the proposed development area does not exceed 30%, Crested Butte discourages development on slopes that exceed 30% as shown on the Slope 30% and greater map in Part 2, the Description of the Issues, page 92.

# V NATURAL RESOURCES

## VISUAL RESOURCES

### GOAL:

**The hillsides and valleys, particularly where a relatively undisturbed natural ecology exists and where agricultural hay meadows are found, are irreplaceable, have special public value, and benefit developed urbanized areas. The goal of the Visual Resources policies is to preserve the existing character of the identified Visual Resources in this Plan.**

### POLICIES:

#### Avoidance

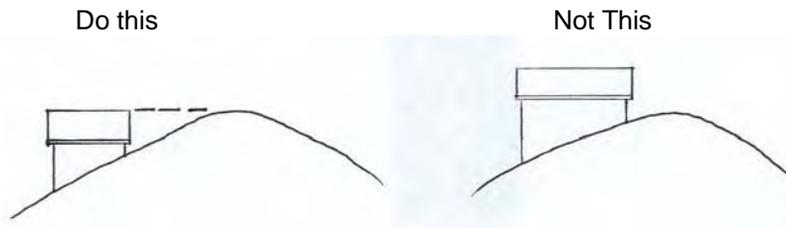
1. All development should be avoided in the "Priority Views That Should Be Preserved" identified on the Sensitive Visual Resource Areas map in Part 2, Description of the Issues, page 99.
2. Lands identified as "Priority Views That Should Be Preserved" are targeted for preservation including purchasing land when owners are willing to sell land or conservation easements.

#### Mitigation

3. When the Town Planning Commission agrees development cannot avoid "Priority Views That Should Be Preserved" which are identified on the Sensitive Visual Resource Areas map, the policies that follow (mitigation measures) should be applied to development in those areas to help mitigate the potential impacts.

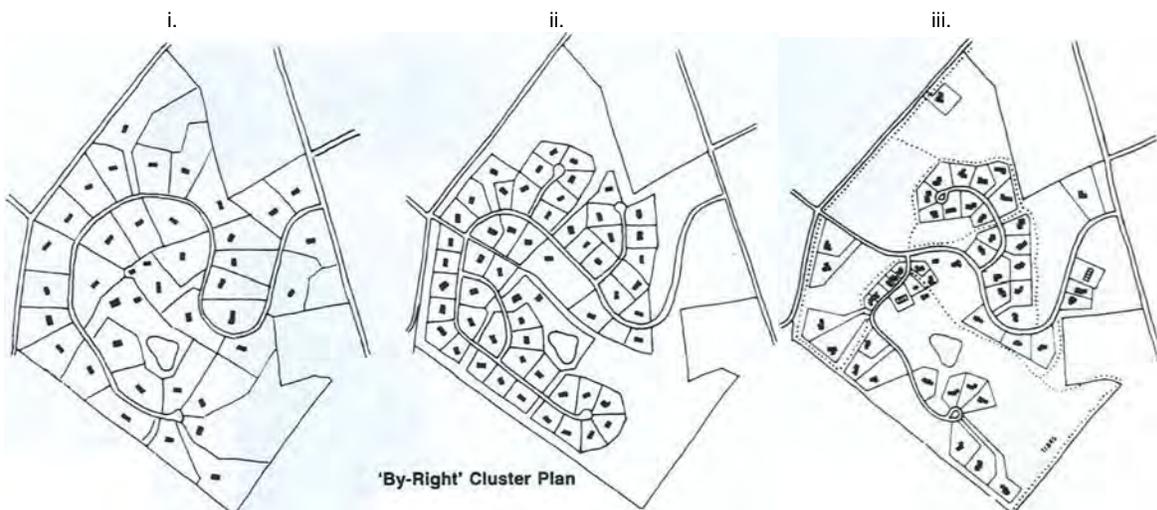
#### *Preserve Natural Character*

4. If development is to occur on Smith Hill, (also known as Chicken Ranch), it should be directed to the lower 100 feet of Smith Hill, along the Slate River Road. The tops of buildings in this lower 100 feet should be no higher than 130 feet above the Slate River Road as measured from any point of the building to the nearest portion of the road.
5. Preserve the natural character of the land on hillsides to the greatest extent possible.
6. No portion of a building constructed between the foot and the crest of Smith Hill, Anthracite Mesa, or Mt. Emmons should be above the natural crest of the hill (See those labeled hillsides on the Sensitive Visual Resource Areas map in Part 2, Description of the Issues, page 99). The top of the ridge is the top of the grade, not the top of the vegetation.



7. Particular consideration should be given to protecting views and vistas to and from public areas. The silhouette effect of structures on ridges is discouraged.

8. When grading on hillsides, the smallest practical areas should be exposed at any one time during development.
9. Deep or extensive excavations and fills scar the landscape and should be avoided. The practice of terracing hillsides in order to provide additional or larger building sites should not be used.
10. Buildings should be sized and located so that they least disrupt the natural character of the hillside and should be sited in locations which are least visible from outlying areas. Yards and patios should respect the natural contours, drainage patterns and vegetation of the site.
11. Development sites on hillsides should retain the maximum number of existing trees and other natural features which constitute physical, aesthetic and economic assets to the community.
  - a. Where development is to occur on hillsides, a mosaic of development nestled into the forest cover, rather than complete elimination of large areas of vegetation, is encouraged.
  - b. View quality is usually more important than view quantity. Trees which block views are often attractive foreground elements which can be pruned into beautiful open screens through which to see the view.
  - c. All cuts, fills and any other earth modifications should be replanted with appropriate native vegetation.
12. Clustered development should be used to the greatest extent possible, and it should be located on the flatter, less fragile portions of the property.
  - a. A compact development pattern, which is sensitive to the natural environment, clusters land uses, and provides significant areas of open space, is preferred to a scattered development pattern and major alterations to the natural landscape.
  - b. Clustered development should be designed to protect the most scenic and less stable portions of the site.
  - c. Where necessary, small scale natural features such as ledges, shelves, bowls, hollows, or ravines should be retained and incorporated in the site design to emphasize the natural character of the site.
  - d. Pockets of visual density (clustering) related to the natural contours of the land are preferable to even dispersal of development.



**Conventional Plan**  
 38 dwelling units  
 3+ acre lots  
 No open space  
 No rural character

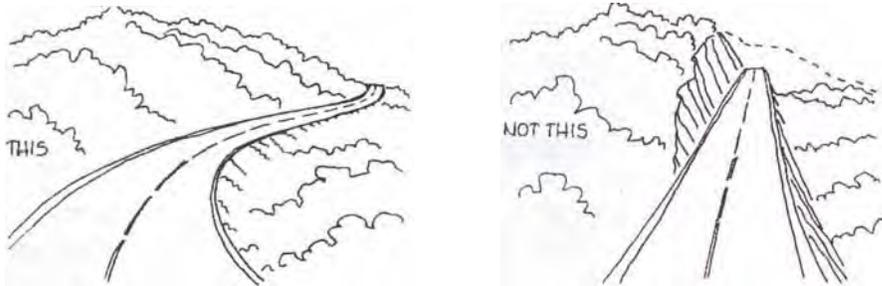
**Alternate 1 Cluster Plan**  
 54 dwelling units  
 1+ acre lots  
 52% open space

**Alternate 2 Cluster Plan**  
 58 dwelling units  
 40 one acre lots  
 10 town size lots  
 8 attached units  
 62% open space

*Source: Brandywine Conservancy, 1992.*

Note: These sketches above illustrate:

- i. a typical checkerboard plan for 38 three-acre lots;
  - ii. a simple cluster of 54 one-acre lots providing 52 percent open space; and
  - iii. a more sophisticated alternative cluster combining one acre lots, large lots, town sized lots, some multifamily units, trails (dotted lines) and permanent preservation of 62 percent of the parcel as open space.
- e. Plans for hillside developments should be laid out so that lots on the flatter upland portions of the site are set back from the crest of the hill. Buildings, will therefore, be less visible when viewed from major roadways and other public viewing places off site. This will maintain a clear sense of the hillside brow in its natural condition.
13. Roadways and utilities constructed on hillsides should blend into the natural landscape to the greatest extent possible and take advantage of scenic hillsides. This may involve:
- a. following the curving contours of the land rather than straight line or geometric patterns,
  - b. screening roads with trees wherever possible, and
  - c. minimizing the amount of cut and fill required for construction.



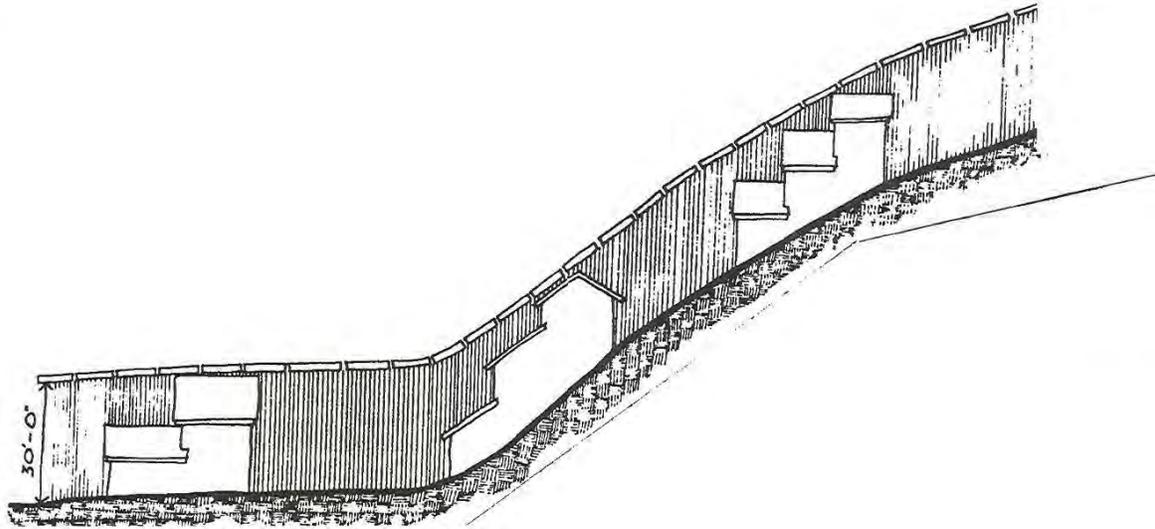
Reprinted from "A Hillside Protection Strategy for Greater Cincinnati."

### ***Significant views***

14. Roads should be designed to preserve and protect significant views from hillsides and of hillsides, as seen from major roadways and public viewing places. This may involve:
- a. orienting roadways toward prominent or particularly attractive hills,
  - b. avoiding prominent, steep, or visually exposed portions of the property,
  - c. using hillsides to frame vistas of distant landmarks, and
  - d. generally providing the traveler with an attractive sequential experience.
15. The portions of hillsides with the most attractive and panoramic views should be utilized for a variety of community or public land uses such as roadways, walkways, observation points, parks and green spaces.

### ***Structure Design***

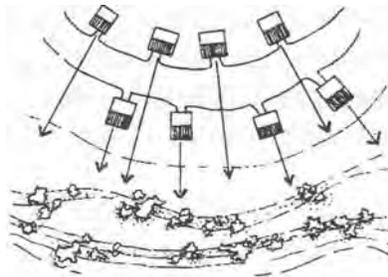
16. Large mass type structures are discouraged on hillsides. Their scale is such that they tend to visually dominate the hillside landscape in an ungainly manner, rather than harmonize with it. In addition, they usually require massive earthworks which can destabilize the hillside.
17. Building design on hillsides should reflect the natural character of the land.
- a. Buildings on hillsides should be designed to minimize apparent height and bulk.
  - b. Building masses should be stepped down the hillside instead of attempting to adapt a hillside to a building designed for a flat site.



**Buildings step-down to conform to slope line.**

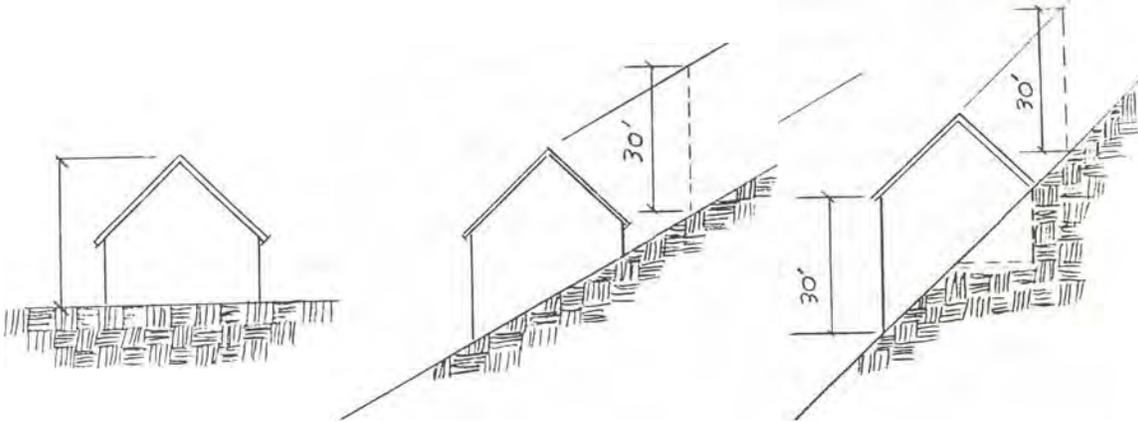
Reprinted from “*Design Guidelines for Architecture and Landscape Architecture in Crested Butte.*”

- c. Wall recesses, wall projections, roof overhangs, decks and other features, which enhance the play of light and shadow, are encouraged to reduce bulk, minimize scale and integrate the building with surrounding vegetation.
  - d. Roof forms should be broken into a series of levels to reflect the irregular forms of the surrounding natural landscape. Flat and unbroken rooflines should be discouraged.
  - e. Long buildings reflecting long hillsides are encouraged.
18. Utility wires on hillsides should be installed underground. Towers and antennae which are particularly obtrusive (such as water towers, microwave relay towers, broadcasting antennae, etc.) should be sited in locations not visible from major thoroughfares or other heavily frequented places such as the Town of Crested Butte.
19. Hillside developments should be designed so that intrusion of buildings constructed at lower elevations, into the views of those above, will be minimized.



Reprinted from “*A Hillside Protection Strategy for Greater Cincinnati.*”

20. Parking should be located on the uphill side of the lots, behind buildings.
21. In order to minimize the nighttime visual disruption of residential areas below, unobtrusive forms of lighting should be employed (e.g. lights where the lamp itself is screened from direct view, where the lights have shields directing light straight down, or very low garden type lighting). Lighting should be functional rather than decorative.
22. No portion of a building constructed between the foot and the crest of a slope should be higher than 30 feet above the natural slope and no part of a building should be above the crest of a hill (see Policy 6).



### ***Scenic Corridors***

23. Scenic corridors should be preserved. Scenic Corridor examples include:
- a. the Slate River, north of Wildbird Estates, to the north side of Oh-be-joyful Creek, to protect the high quality wetlands in that area and to preserve the views of the wetlands from the public road, and
  - b. the corridor on both sides of State Highway 135 (See below).
24. Within three miles of Crested Butte, on parcels of land that extend more than one-quarter mile ( $\frac{1}{4}$ ) mile from State Highway 135, the Town encourages residential and commercial development to be located at least  $\frac{1}{4}$  mile from the State Highway to help preserve the views from the State Highway unless:
- a. development more than  $\frac{1}{4}$  mile from the State Highway right-of-way would be more visible than development within  $\frac{1}{4}$  mile, such as development on a hillside,
  - b. buildings are proposed on a site adjacent to existing buildings,
  - c. development can be screened by existing topography or trees so that only roof tops are visible from the State Highway,
  - d. light industrial development is proposed adjacent to Riverland Industrial Park, on the west side of the State Highway,
  - e. the entire parcel of land is within the  $\frac{1}{4}$  mile buffer, or
  - f. agricultural buildings or operations are proposed. The location of riding arenas exceeding 8,000 square feet is also encouraged to be at least  $\frac{1}{4}$  mile from the State Highway.
- Hidden River Ranch and Butte Pasture are good examples of this  $\frac{1}{4}$  mile buffer concept.
25. Developments in scenic corridors should use cluster development to the greatest extent possible, on the flatter, less fragile portions of the property.

## **WETLANDS**

### **Goal:**

**The wetlands in the Middle Slate River Valley should be preserved and, where already degraded, enhanced.**

### **POLICIES:**

26. It is the policy of Crested Butte to:
- a. recognize that wetlands have important value to the community of humans as well as other organisms,

- b. ensure that wetland creation and restoration projects maximize wetland functional values rather than merely meeting the minimum requirements of a U.S. Army Corps of Engineers 404 permit,
  - c. recognize that wetlands differ in their functional values,
  - d. maintain or increase water storage capacity of the wetlands in the Middle Slate River Valley MSR),
  - e. take actions to prevent further destabilization of the Slate River,
  - f. eliminate sources of nitrogen and phosphorous that cause eutrophication of wetlands,
  - g. encourage the protection of wetlands by public education,
  - h. participate with the U.S. Army Corps of Engineers during the 404 permitting process in wetlands in the MSR by submitting comments about development proposals in the MSR to the Corps of Engineers and by sharing all of the Town's policies, regulations, research and information from wetland projects, and
  - i. protect riparian areas to prevent stream bank erosion and maintain wildlife habitat.
27. The Town of Crested Butte hereby adopts the wetland maps created as part of "Wetlands of the Crested Butte Region" by David Cooper, 1993, and will maintain them in the Community Development office of the Town.
28. The policies that follow apply to all designated wetlands as originally mapped in "Wetlands of the Crested Butte Region" by David Cooper, 1993 and as amended by Town staff, and those wetlands mapped by Bio-environs and Wright Water Engineers and approved by the Town, as shown on the Wetlands map in of Part 2, Description of the Issues. The Wetlands map on page 110 is a reduction of the six maps created for the "Wetlands of the Crested Butte Region" with amendments by Town staff, Bio-environs and Wright Water Engineers.
29. The policies that follow apply to the above designated wetlands, unless the proponent demonstrates the land proposed for development is not a wetland, or unless otherwise stated in these policies. Whether the proponent has adequately demonstrated that a designated wetland is not a wetland should be decided by the Town Planning Commission with whatever professional assistance it deems appropriate.
30. Irrigated wetlands are identified and regulated the same as wetlands, unless a hydrologic study can unequivocally show that the land is non-wetland.

### **Avoidance**

31. Avoid all development in Wetlands as shown on the Wetlands map on page 110 of Part 2, Description of the Issues.
32. Avoid all development in all wetlands and in all high quality wetlands and within a 100-foot buffer area around high quality wetlands. Whenever a site may include wetlands or high quality wetlands, the proposed development site should be evaluated by a wetlands consultant hired by the development proponent to determine the existence, location, and extent of high quality wetlands, prior to submission of any submittals for development. The cost of such evaluation should be paid by the developer. The developer's wetland consultant's evaluation of the site should be reviewed by a consultant hired by the Town and paid for by the developer. The 100 foot buffer may be enlarged depending upon the recommendations of the consultants who have evaluated the site relative to criteria such as those discussed under "Mitigation of Impacts to Wetlands", "Setting Buffers" listed in Part 2, Description of the Issues, Wetlands.
33. A setback of 25 feet should be maintained from all water bodies unless a larger setback from wetlands is appropriate as discussed above. The setback should be measured horizontally from the ordinary high water mark in average hydrologic years on each side of a water body or from the wetland boundary identified using the procedures discussed in the Town's Subdivision Regulations for the Sketch Plan Submittal. This setback is referred to as the

“Wetland and Other Water Features Buffer.” The following activities should not be allowed in the Wetland and Other Water Features Buffer:

- a. construction, installation or placement of any obstruction or the erection of a structure,
- b. placement of material, including including, but not limited to soil, sand, gravel, mineral, aggregate, organic material, or snow plowed from roadways and parking areas,
- c. removal, excavation, or dredging of solid material, including soil, sand, gravel, mineral, aggregate or organic material,
- d. removal of any existing vegetation or conduct of any activity that will cause any loss of vegetation, unless it involves the approved removal of noxious weeds, non-native species, or dead or diseased trees,
- e. lowering of the water level or water table by any means, except as allowed by the Colorado Division of Water Resources,
- f. use of equipment within the buffer, except for the construction of roads or bridges across wetlands or other water features,
- g. disturbance of existing natural surface drainage characteristics, sedimentation patterns, flow patterns, or flood retention characteristics by any means including grading and alteration of existing topography. Measures taken to restore existing topography to improve drainage, flow patterns or flood control should be approved.
- h. Any landscaping activities, unless they are for the purposes of the restoring or enhancing degraded areas to their native vegetation communities. Restoration and/or enhancement actions shall only involve the use of plants native to the site and shall be approved by the Town prior to taking action.
- i. Placement or location of any portion of any residential or commercial tracts.

34. The following structures and improvements and activities are exempt from the Wetland and Other Water Features Buffer:

- a. structures for decreed water rights, docks, piers, watercraft launches, and ramps,
- b. activities and structures in wetlands resulting from agricultural operations,
- c. projects primarily for water protection that have received required state or federal permits such as those projects designed for the enhancement, protection and/or restoration of wetlands or other water features
- d. emergency flood control measures, and
- e. maintenance, repair, or replacement of roads, roads that approach bridges, and bridges existing as of the effective date of this Plan.
- f. Single track dirt trails may be constructed outside, but adjacent to, the Wetland and Other Water Feature Buffer if measures are taken to protect and preserve the adjacent wetlands or water feature and if the Planning Commission agrees the proposed trail(s) will not negatively impact the adjacent wetland or water feature.

35. A Variable Outer Buffer should also be maintained. The width of the Variable Outer Buffer need not be uniform across a parcel. Specific features or activities proposed within 100 feet of the closest border of a wetland or other water feature should define the width of the Variable Outer Buffer on a site-specific basis and should be based on the presence of, or the proposal of:

- a. slopes steeper than 15 percent and draining into a wetland or other water feature,
- b. highly erodible soils,
- c. The area is needed to protect trees, shrubs or other natural features that provide for stream bank stability, habitat enhancement for aquatic environments, riparian area protection, or to maintain predevelopment riparian plant or animal communities,

- d. an activity presents a special hazard to water quality (e.g., storage or handling of hazardous or toxic materials),
  - e. the area is needed to prevent or minimize flood damage by preserving storm water and floodwater storage capacity.
36. A Variable Outer Buffer should not be required to extend more than 100 feet beyond the outer boundary of the Wetland and Other Water Features Buffer unless when considering the functions and values of the wetland, and the proposed adjacent uses, the Planning Commission determines a larger buffer should be maintained.
  37. The activities listed in Policy 33 should not be allowed in the Variable Outer Buffer and the exemptions in Policy 34 should also be exempt in the Variable Outer Buffer.
  38. Developers desiring to develop within a designated wetland have the burden of proof that the land they want to develop is not a wetland.
  39. Discontinue and discourage further filling of wetlands.
  40. Discontinue and discourage further ditching and draining of wetlands but continue maintenance of irrigation ditches.
  41. Discontinue and discourage further cutting of willows.

### **Mitigation**

42. When the Town Planning Commission agrees development cannot avoid wetlands designated on the Wetlands map on page 110 of Part 2, Description of the Issues, or wetlands identified by the developer's consultant and the Town consultant, the policies that follow (mitigation measures) should be applied for development in those areas.
43. Ensure there is no net loss of wetland area, functions or values.
44. The priority of compensatory wetland mitigation shall be (in order of preference) to:
  1. protect
  2. enhance
  3. restore
  4. create

wetlands of the same wetland type that perform the same wetland functions to the same degree or better, or as otherwise approved by the Town, and on-site. If mitigation cannot be done on site, then mitigation should be accomplished within the MSR.V.
45. Allow for the use of payments-in-lieu of preserving wetlands when there is no reasonable alternative, other than to destroy wetlands for development and protection, enhancement, restoration or creation of new wetlands is not feasible, as determined by the Town. The payments should be used to acquire other wetlands for preservation or to help restore degraded wetlands, rather than trying to create new wetlands. Payments-in-lieu should be for an area of wetland equal to the amount of wetland lost and the dollar amount should equal or exceed twice the average cost per acre of wetlands that the Town has participated in preserving in the last 5 years from the date the development is approved. The value should be higher than the amount paid recently because the value of land continues to rise and because this will allow for up to a 2:1 ratio of wetlands protected for wetlands lost. From 2005 to 2010 the Town did not participate in preserving land with significant wetlands included. The average price of land, with a significant amount of wetlands, that the Town will help preserve by making expenditures to do so, will be \$18,268 per acre for the Kochevar Open Space Phase III which is under contract to purchase from the Trust for Public Land in the next five years.

## **Compensation**

46. The preferred method of compensation for destruction of wetlands is by restoration of degraded wetlands.
47. Restore wildlife habitats, wetland ecosystems and functional values.
48. Compensation by enhancing existing wetlands should only be used as a last resort because too often, those proposing to destroy wetlands, also propose enhancement which is not adequately thought out and may damage the function of a wetland that previously functioned well.
49. Restoration programs should be evaluated periodically after implementation to ensure the treatment will produce the desired results.
50. A restoration stewardship fund should be created for each restoration project to ensure noxious weeds do not invade and to otherwise pay for management of the wetland. The stewardship fund should be at least \$5,000 per acre of wetland restored, or as otherwise recommended by the Town's wetland consultant or the Army Corps of Engineers if the Town has not hired a wetlands consultant, when consideration is made for the wetland functions, the amount of restoration being attempted, and values to be restored, and other issues at the particular site. The Town should not use the principal of the stewardship fund, but should instead use interest earned from the fund to pay for stewardship. Ownership of the restoration site by the Town, or a conservation easement that allows Town access to the restoration site should accompany the fee.

## **WILDLIFE**

### **GOAL:**

**Rehabilitate, enhance and maintain wildlife habitats to ensure the continued environmental, economic, and aesthetic value of this natural resource.**

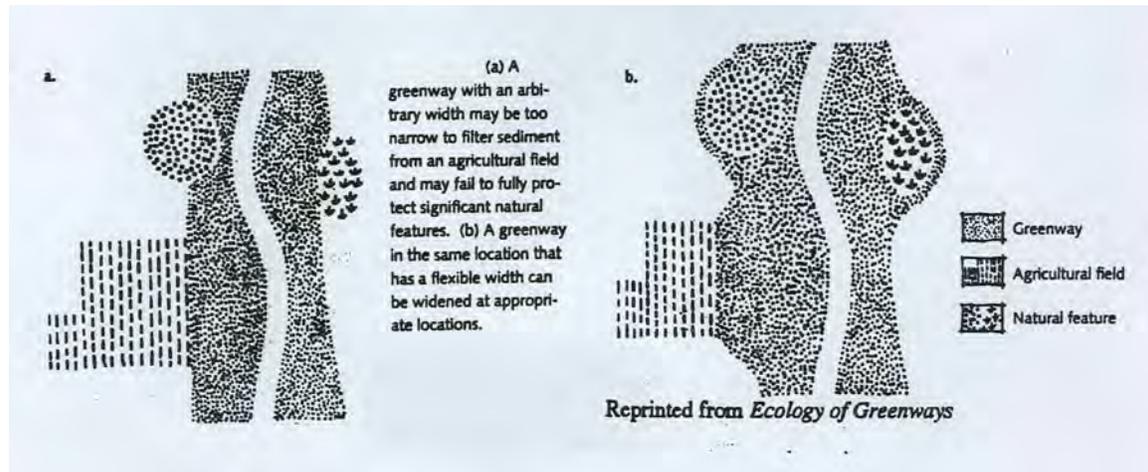
### **POLICIES:**

49. The Town of Crested Butte hereby adopts the Elk Production Areas map on page 116 of Part 2, Description of the Issues, as provided by Gunnison County MIS Depart. and the Colorado Division of Wildlife.
50. All development proposals should be referred to the Colorado Division of Wildlife for site specific review, comment and recommendations.

### **Avoidance**

51. "Important Wildlife Habitat Areas" are Elk Production Areas, as shown on the Elk Production Areas map of this Plan
52. Threatened or Endangered Species (TES) habitat which has been identified in a TES Survey (See definition in the Subdivision Regulations) for a site proposed for development is also Important Wildlife Habitat Area.
53. Development in Important Wildlife Habitat Areas, including TES habitat, should be avoided because habitat survival and species survival go hand-in-hand. Unless a professional wildlife biologist demonstrates an area is not in an Important Wildlife Habitat Area, Crested Butte discourages development in "Important Wildlife Habitat Areas" as shown on the wildlife maps of this Plan or as shown in a TES Survey on a site proposed for development. Whether the proponent has adequately demonstrated that an area is not in an important Wildlife Habitat Area should be decided by the Town Planning Commission with the assistance of the Division of Wildlife or a Town wildlife or wetland consultant.

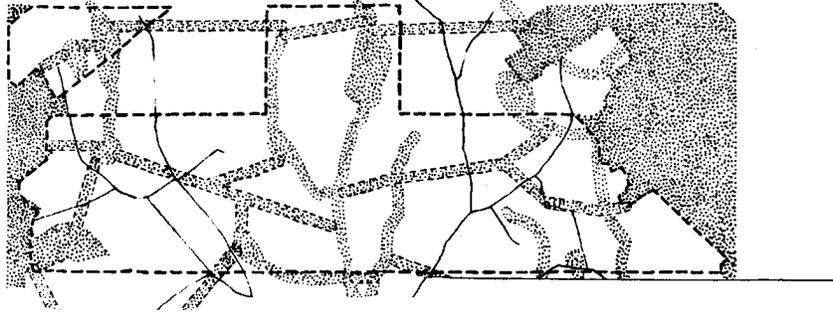
54. At the time of adoption of this Plan there was no evidence that lynx, moose and southern gray wolves use the MSR. If evidence of these species, or other endangered or threatened species, in the MSR is demonstrated, it would be appropriate to add the mapped habitat of these species to the "Important Wildlife Habitat Areas."
55. There should be a network of public and private open space to ensure the continued presence of wildlife in the area.
56. River and stream corridors between Gunnison and Gothic should be preserved as migration routes and flyways for birds and other wildlife.



57. Forests, grasslands, shrublands, rivers and lakes are dynamic wildlife habitat. Development should allow for changes in the ecosystem by maintaining at least a 100-foot buffer around all identified habitat areas. A 100-foot buffer between waterfowl habitat and development should be preserved but may be reduced by enhanced planting of willows or other vegetative barriers between waterfowl habitat and development. Other reasons to establish 100-foot buffer zones around wildlife areas are to:
  - a. decrease the line of sight distance for wildlife and humans,
  - b. reduce auditory disturbance,
  - c. protect areas of critical habitat, such as reproduction areas, riparian habitat and migration corridors, and
  - d. protect bodies of water, including wetlands.
58. Any activity that may harass, harm, or lead to the killing of any endangered species or "Species of Special Concern" in the State of Colorado, such as neo-tropical birds, is discouraged.

### Mitigation

59. When the Town Planning Commission agrees development cannot avoid Important Wildlife Habitat Areas designated on the maps of the Crested Butte Area Plan, or identified during a TES survey, the policies that follow (mitigation measures) should be applied to development in those areas.
60. Ensure that there is no net loss of wildlife habitat, functions or values.
61. Maintain and create corridors so that birds and animals can travel between habitats through the maze of buildings, parking lots, trails and highways in the MSR. Streams and wetlands should be preserved because they often provide good corridors and they are difficult to develop for the housing and commercial needs of people.



Reprinted from "Ecology of Greenways."

62. Since subdivision developers generally fail to consider nuisance animals such as skunks and porcupines when developing rural land, subdividers should provide for homeowner associations to solve conflicts with such animals rather than the Town or the Division of Wildlife.
63. Site design should be sensitive to wildlife habitat. Examples of site design techniques that should be encouraged include:
  - a. leaving the wildlife habitat in a natural state,
  - b. avoiding severe cuts and fills that might disrupt wildlife movement,
  - c. revegetating cuts, fills and check dams to reduce siltation,
  - d. minimizing the disturbance of areas by clustering development,
  - e. using vegetation to enhance and maintain wildlife habitat and shelter (exotic plant species that taste good to wildlife should not be used),
  - f. preserving natural vegetation, food plants, grasses, forbs, shrubs and shelter areas,
  - g. locating commercial and industrial uses that generate noise in low impact wildlife areas,
  - h. avoiding building fences which unduly restrict the movement of various wildlife species,
  - i. mitigating noise impacts by enclosing activities, limiting uses, using good site design, etc.,
  - j. avoiding construction in or immediately adjacent to elk calving areas (Elk Production Areas) between May 15 and June 30,
  - k. incorporating speed bumps, rough pavement, cattle guards or other physical devices to encourage slow speeds,
  - l. establishing and maintaining fishing easements along lakes, creeks and rivers, and
  - m. limiting construction in rivers to projects that do not alter downstream water temperatures.
64. Roads should be signed to alert drivers to game crossings.
65. Dog owners should ensure dogs do not chase wildlife.
66. Wildlife mapping for most of the MSRVA is very general and not specific to particular sites. When determined by the Town to be necessary, developers should provide the following information, as it pertains to the project area, prior to requesting development approvals:
  - a. identify the more important wildlife activity areas and habitat requirements in the project area,
  - b. determine the importance of project area vegetation to wildlife,
  - c. determine the boundaries of potential impacts,
  - d. determine the range of potential impacts,
  - e. determine the significance of potential impacts,
  - f. based on the preliminary information, determine what animal and plant species may need more intensive study in order to determine what the impacts of the proposed development might be on these species and how these impacts might be avoided or lessened,
  - g. identify alternatives to the proposed development,

- h. identify steps to be taken to offset adverse effects of the proposed project on wildlife habitat,
- i. estimate the costs for implementation of mitigation measures, and
- j. identify TES habitat.

**Compensation**

- 67. Lost habitat should be compensated for by enhancing habitat in other areas.
- 68. Enhancement of habitat should consider the following:
  - a. understanding the habitat requirements, population dynamics, limiting factors, etc., of the target species,
  - b. determining the land's capability to provide for the target species' requirements,
  - c. taking a broad approach to limit negative impacts to other species or resources,
  - d. considering the effects of enhancement practices on adjacent sites and on areas farther removed from the treatment site areas as well as evaluation of the short and long-term effects,
  - e. weighing carefully the use of more than one technique to ensure that the techniques are complementary, and
  - f. evaluating the program to ensure the treatment will produce desired results.

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**ACTION ITEMS:**

- 69. Work with Gunnison County and the other towns in the County, to create mitigation banking of wetlands in the Crested Butte area. Many different mitigation efforts may be linked to create a large wetland complex that would be of higher long-term value than smaller, isolated wetlands created for compensation.
- 70. The Town of Crested Butte should participate in creation of "Habitat Conservation Plans"<sup>1</sup> required by the Federal Endangered Species Act for endangered species in the Middle Slate River Valley.
- 71. The Towns of Crested Butte and Mt. Crested Butte, Gunnison County, the Crested Butte Mountain Bike Association, the Colorado Division of Wildlife, the Gunnison National Forest Service and other interested and affected people should review the current location of recreation trails with respect to the conflicts they create with wildlife. Consider limiting the number of trails, closing recreation trails at critical times during the year and/or moving the location of recreation trails to decrease negative impacts to wildlife and agriculture in the Middle Slate River Valley.

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(1) Habitat Conservation Plans (HPC's) are required by the federal Endangered Species Act. Such plans should be created for endangered species when private land owners intend to conduct an activity that will affect or harm a threatened or endangered species. HCP's layout what will be done n private land so the human activities will not affect threatened or endangered species. The plan must be approved by the U.S. Fish and Wildlife Service (FWS). Once the plan is approved, the FWS will issue a permit to proceed with the human activity. Source: US. Fish and Wildlife Service.

(2) Species of Special Concern is a category used by the U.S. Fish and Wildlife Service to refer to species that are beginning to become a species of concern. These species may never reach threatened and endangered status but they are of special concern.

## **VI. TRANSPORTATION**

### **GOAL:**

**Transportation within the Middle Slate River Valley should strive for efficient movement in the area and maximum safety for residents and visitors, while minimizing the transportation carbon footprint.**

### **POLICIES:**

#### **PUBLIC TRANSPORTATION**

1. The Middle Slate River Valley (MSRV) should be served by an integrated all-mode transportation system. Development design should strive to eliminate conflicts between auto, transit, bicycle, and pedestrian users and provide safe and convenient connections between modes.
2. Plan for and develop transit centers in:
  - Crested Butte,
  - Mt. Crested Butte, and
  - Gunnisonto help encourage mass transit and alternative transportation.
3. Tourists should move about the County on tour buses as an alternative to driving.
4. Developers should provide public transportation facilities in all new urban developments. When it is premature to construct public transportation facilities, land should be dedicated and funding should be provided by the developer for public transportation systems such as Park-N-Ride areas, bus stops, etc.
5. Bus stops for circulator buses should be provided to serve new subdivisions and the Mt. Express Board should be consulted when deciding upon the best route and locations for stops.

#### **PERSONAL TRANSPORTATION**

6. All roads, trails and other transportation systems intended to serve a subdivision should be funded at the developer's expense.
7. Coordinate with the Colorado Department of Transportation and the West Elk Scenic Byway Steering Committee regarding interpretive wayside information signage informing visitors about the MSRV.

#### **INTERMODAL TRANSPORTATION SYSTEMS**

8. New developments in Crested Butte should have a cohesive intermodal transportation system including the following:
  - a. Narrow (24 foot wide) paved residential streets.
  - b. Provision of public transportation facilities such as Park-N-Ride areas, bus stops, etc.
  - c. Connectivity with the existing town grid by having intersections with existing streets.
  - d. Public transportation routes within two blocks, or five minutes, of all residences through a developer funded bus feeder system and/or transit facilities.
  - e. The transportation system should be multipurpose providing equally for:
    - i. the movement of automobiles and other vehicles
    - ii. pedestrian movement,

- iii. communications through signs,
- iv. a setting for landscaping,
- v. snow storage,
- vi. ski ways,
- vii. public open space, and
- viii. storm water drainage systems.
- ix. Consideration for horseback riders and horse drawn vehicles should also be made.
- f. Promotion of alternative fuel vehicles through infrastructure improvements including car share facilities, electric vehicle charging stations, and/or alternative fueling stations.
- g. Priority parking provided for low emissions vehicles in public parking areas.
- i. Bike racks provided at all major transit hubs, in the vicinity of large concentrations of commercial development and at public buildings.
- j. Provision of bicycle lanes, separate from motorized lanes, on arterial streets, where speed limits are greater than 15 miles per hour.
- k. Measures for pedestrian safety, such as traffic calming devices that result in pedestrian walkability in streets, where parallel trails or sidewalks are not provided.
- 1. Traffic patterns and quantities should not cause unacceptable community and environmental impacts.

## **TRAILS**

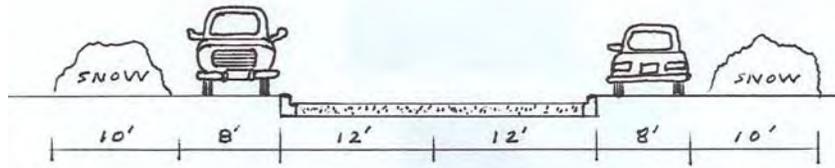
9. The Crested Butte Town Trails Standard is the existing level of service, as described in the Trails portion of the Transportation Chapter of Part 2, Description of the Issues, beginning on page 126, of this Plan.
10. Walking is an inexpensive and easy way for most people to improve fitness. Streets and trails in Crested Butte should be designed to encourage walking and non-motorized traffic.
11. The location of trails should:
  - a. link outlying residential areas to towns, or residential areas to recreation areas,
  - b. provide alternative routes not used by automobiles,
  - c. be designed for recreation,
  - d. provide connections from within the development to the major trail system to best facilitate use of the system,
  - e. be within subdivisions so they will be accessible to all residents of the subdivision,
  - f. implement proposed trails on the subdivision site as:
    - i. shown on the Crested Butte Trail Plan map at the end of the Transportation policies, ,
    - ii. described more generally in the Town of Crested Butte Parks and Recreation Regional Master Plan
    - iii. described more generally in the Gunnison County Trails Master Plan,
  - g. be away from arterial streets or state highways to make their use safer, especially for children, and more pleasant than when they are affected by highway vehicle noise and speed.
12. Trail width should be consistent with the intended use of the trail. Trails should facilitate non-motorized modes such as bicyclists, pedestrians, hikers, cross country skiers, snowshoers, and equestrians. Trail rights-of-way and easements should be at least 15 feet wide.
13. Most trailheads are adjacent to road corridors and should be provided for when roads are built, improved or maintained.
14. When land adjacent to public lands is proposed for development, the provision of a trailhead to access public land is highly encouraged by the Town, unless the public land agency discourages public access at that location. Preferably, trailheads should be located as close as possible to public roads, unless the trailhead would create a negative visual impact from the public road, in which case the trailhead may be located elsewhere on the property. Public

trail access, across the property from a trailhead, will be necessary to access the public lands. Incentives such as a reduction in the number of acres of open space recommended per residential unit may be considered by the Town to encourage the creation of such trailheads.

15. Trails should be designed to:
  - a. protect the natural environment (they should not be built into water feature or wildlife buffer areas since their construction and use would disturb those areas),
  - b. provide efficient and effective maintenance, and
  - c. ensure that ranching interests are protected.
16. Designate and continue improving the old Kebler Pass Wagon Road as a non-motorized trail.
17. Developers are encouraged to provide trail access to public lands.
18. Based on the documentation in the Trails section of the Transportation chapter of Part 2, Description of the Issues, beginning on page 126, in order to maintain the existing ratio of trails to residents and residential units, as new development occurs within the Town, at least 61 lineal feet of public trail should be required as a condition of subdivision approval in the Town of Crested Butte for each proposed residential unit for summer trails. The land provided for trails should meet the standards of the above trail policies.
19. Trails in a proposed subdivision should be built by the land developer.
20. When it is not deemed feasible, or in the public interest, by the Town, to provide land for trails, payments-in-lieu of land for trails may be considered. Payments-in-lieu of land for trails should be based on the recommended length of the trail after applying Policy T 18 and the width of trail as recommended in Policy T 12 multiplied times the fair market per square foot value of the entire property proposed for subdivision after it has received all subdivision approvals minus the value of any dedications made toward the required dedication at the fair market value as described above. Payment in lieu of providing trails may be used for purchasing land for trails, purchasing easements, or constructing trails.

## **STREETS AND ROADS**

21. Crested Butte residential streets are multipurpose. They serve not only the movement of cars and other vehicles but they also provide for all the uses listed in policy T 8. Therefore, developers of residential streets are encouraged to design residential streets to provide equally for all of the uses in Policy T 8.
22. Developers of residential neighborhoods are encouraged to be creative when designing streets and neighborhoods so that cars and other vehicles are not the dominant users of streets.
23. Developers should design roads and other transportation facilities so as to contribute to a positive and attractive visual image and the desired community character.
24. A pattern of rectangular blocks should be extended into annexed areas unless the topography suggests other designs. The pattern of rectangular blocks should be adjusted to avoid high quality wetlands or other significant natural features.
25. All subdivision tracts or parcels should have access to an adjacent public street or avenue and an alley.
26. Roads should be designed to meet the following minimum criteria:
  - a. All roads should be either residential streets or arterial roads.
  - b. Arterial roads should be designed to carry traffic loads agreed upon by the Town and all arterial roads should have at least 80-foot wide rights-of-way.
  - c. Residential streets designed for motorized vehicles, should have at least 60-foot wide rights-of-way. These rights-of-way should provide the following minimum spaces:
    - i. 12 foot wide driving surfaces in each direction,
    - ii. 8 foot wide parallel parking spaces on each side, and
    - iii. 10 foot snow storage spaces on each side.



- d. Roads should meet the design criteria described in the Residential Site Design Policies .
  - e. When the need is demonstrated by a traffic analysis, developments should provide acceleration and deceleration lanes and/or turn lanes from and to the Gothic Road, Washington Gulch Road, the Slate River Road, or from State Highway 135. The acceleration and deceleration lanes and /or turn lanes should be paid for by the developer of the land that needs them.
  - f. Cul-de-sacs are discouraged. When they cannot be avoided, cul-de-sacs should be no longer than 500 feet and adequate snow storage at the cul-de-sac should be provided.
  - g. Roads approved in the unincorporated county, which are likely to be annexed into a municipality, should comply with the nearest municipality’s road standards and any applicable street extension plans, such as the Crested Butte Major Street Plan unless, by complying with the plan, roads would be placed in areas confirmed to be wetlands, 100 year flood plains or other resource or hazardous areas. In those cases, the location of roads should be modified to avoid such areas.
27. No other roads or streets should be constructed within three miles of Crested Butte except in areas that are closer to Mt. Crested Butte than Crested Butte. No roads are shown at this time on properties closer to Mt. Crested Butte than Crested Butte because Mt. Crested Butte’s influence on these areas is greater than Crested Butte’s.
28. Minimize the number of access points onto State Highway 135, the Gothic Road, Washington Gulch Road, and the Slate River Road by combining or eliminating existing access points where such steps would improve the safety, design and/or service capacity of the road system.
- a. All avenues proposed north of the existing town, should intersect with the Gothic Road. If the County will not approve multiple new intersections of avenues with the Gothic Road, then avenues should be merged, on the subdivider’s land, to create one or more access points on the Gothic Road. Avenues should not dead-end at the Gothic Road.
  - b. As an alternative to merging avenues on the subdivider’s land before they intersect the Gothic Road, the subdivider may propose to acquire the Gothic Road from the county as far north as the north boundary of the proposed subdivision and dedicate that portion of the Gothic Road to the Town, if a practical funding mechanism for maintenance and snow plowing of the Gothic Road, which is acceptable to the Town, is also proposed.
29. Crested Butte encourages the maintenance of State Highway 135 as an improved two-lane highway by encouraging the development of alternate transportation systems capable of preventing the deterioration of safety levels and the service capacity of the roadway.
30. If traffic from a proposed development causes unacceptable community and environmental impacts, the developer should be required to adequately mitigate these negative impacts or redesign the development to make the reduce the impacts.
31. Transportation systems for developments should be designed to minimize air pollution by:
- a. promoting the use of alternate transportation modes,
  - b. promoting the use of alternative fuels (eg. natural gas, electricity),
  - c. reducing automobile traffic, and
  - d. maintaining acceptable traffic flow.

32. Kebler Pass Road should be improved. Improvements include:
  - a. scenic viewing areas, and
  - b. additional signing to identify intersecting roads and points of interest.Kebler Pass Road should not be paved or open year-round beyond the winter trailhead except when paving is designed to reduce water pollution in Coal Creek.
33. Where a subdivision abuts or contains an existing or proposed major arterial street or highway, the Town may require the following:
  - a. service roads,
  - b. sidewalks along the arterial street, or highway,
  - b. reverse frontage lots with screen planting in a reservation strip along the rear property line,
  - c. deep lots with rear service alleys abutting the major arterial street or highway, or
  - d. such other treatment as may be necessary for adequate protection of residential properties, protection of pedestrians, and for separation of through and local traffic.
34. All streets, roads, alleys and trails should conform to the Town road specifications and should be environmentally sensitive.
35. There should be no further duplication of street names within the MSR. Proposed streets and roads should have names of the existing streets and roads when they are in alignment with existing county or adjoining municipal streets or roads.
36. All avenues should be named for mountains in the region.
37. Provision of alleys between streets is encouraged to provide locations for utilities away from snow plows and to provide alternate entrances to lots for automobiles during summer months.
38. Full-cutoff lights that do not light up the night sky, should be used for street lighting to provide light at intersections and other locations where visibility is limited by natural or man-made obstructions.
39. A snow storage area should be set aside in each single family residential block for storing snow from streets, and should be the equivalent of two parking spaces, as defined in the Crested Butte Zoning and Land Use Code, for each housing unit in the block. (Assuming blocks are approximately 2.8 acres each, an area equivalent to .12 acres [5,184 sq. ft.] should be set aside in each block for storage of snow from the street.) The snow storage area can be included in the land intended to comply with the public land recommendation found in Residential Site Design policies. Drainage from such snow storage areas should be directed away from adjacent lots.
40. Snow storage space should be provided for commercial and multifamily land uses equal to 1/3 of the parking areas and driveways on the lot.
41. Maintain the small town atmosphere and safety of Crested Butte that is reflected by low vehicle speeds.
42. If the Snodgrass Ski Area development and North Village are approved, an alternative transportation system, including a parking area south of Crested Butte and alternate transportation to Mt. Crested Butte should be a part of every approval by the U.S. Forest Service, Gunnison County, Mt. Crested Butte and Crested Butte.
43. Snow plowing should result in a winter atmosphere that is safe for pedestrians and vehicles.
44. Bridges over the Slate River should provide adequate space between high water and the bottom of the bridge so people may float the river in a raft during high water and pass safely under the bridge.

**TRANSPORTATION POLICIES THAT APPLY ONLY TO PROPOSED SUBDIVISIONS IN THE EXISTING TOWN**

- 44. Relieve summer traffic congestion and make it easier for tourists to find their way around Crested Butte.
- 45. Facilitate additional parking for the business district and reduce the negative impacts of parking to residential neighborhoods.
- 46. The purpose of commercial alleys is as important as the purpose of commercial streets. Commercial alleys need to be functional.
- 47. Maintain adequate access to the northwest part of town and between the northwest and other parts of town by providing pedestrian access and vehicular access to that area. New development should address access and spreading the impacts of growth throughout the Town.

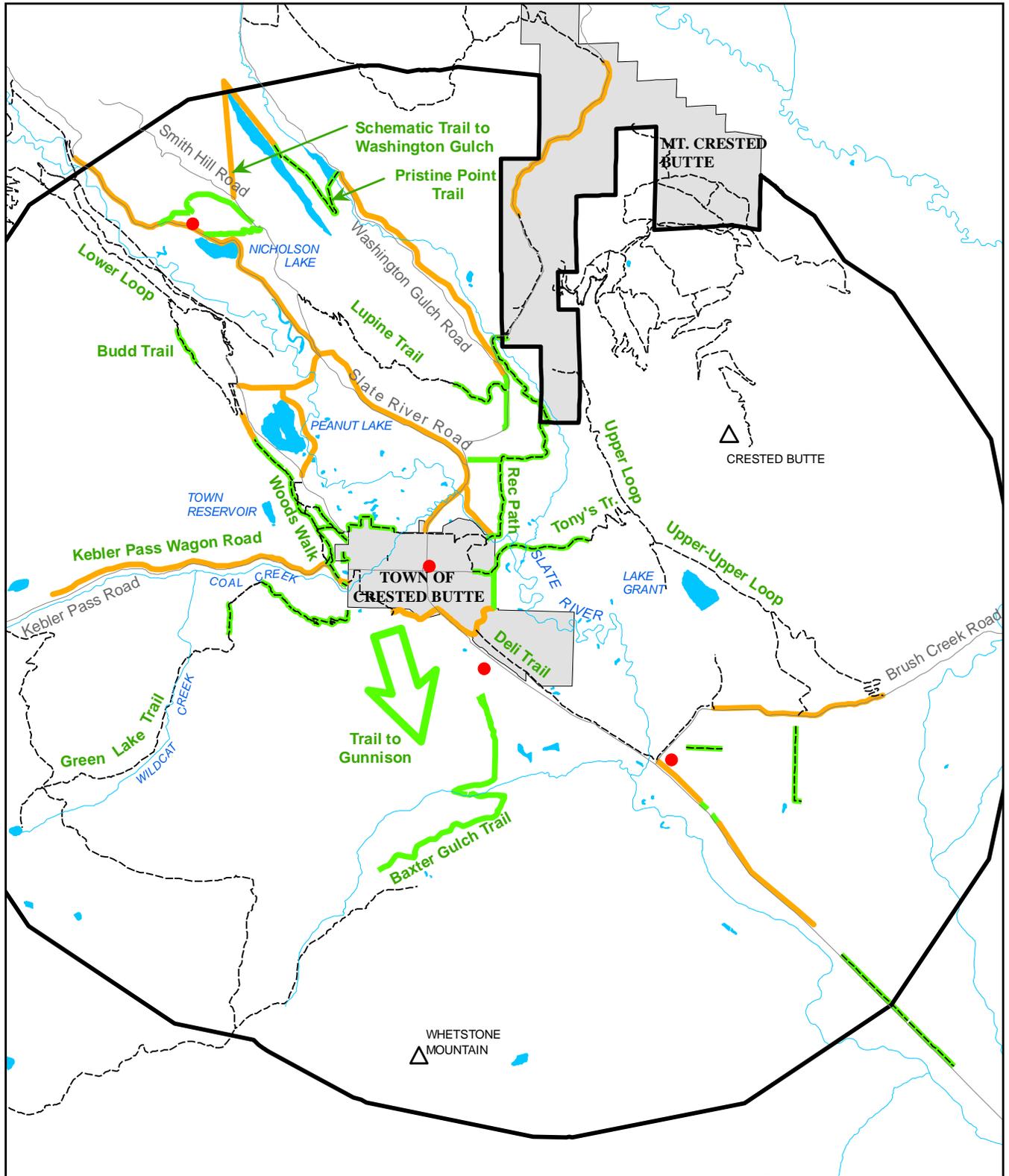
**AVIATION**

- 48. The Buckhorn airstrip should continue as a small-scale private airstrip that any airplane, except for commercial flights, can use.
- 49. Crested Butte discourages commercial helicopter, small airplane tours, and military training activities in the Middle Slate River Valley.

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**ACTION ITEMS:**

- 50. Develop a countywide impact fee system to finance transit infrastructure and vehicles.
- 51. Develop an expanded mass transit network.
- 52. Develop Park-N-Ride facilities for access to alternate transit systems.
- 53. Implement applicable policies from the following:
  - Upper Gunnison River Valley Transportation Plan, August 24, 1998;
  - Crested Butte Transportation Plan, 1998;
  - Transportation Alleys and Parking report, 1992; and
  - Gunnison County Comprehensive Plan, Crested Butte / Gunnison Corridor, 2005.as new development occurs within the MSRV.
- 54. Transportation between the major developed areas will need to be addressed. The largest number of additional dwelling units will be in Mt. Crested Butte which also has a significant amount of commercial development. The nature of traffic generated will depend in large part on the total development plan of Mt. Crested Butte. Establish a committee to address how the traffic generated by development, both north and south of Mt. Crested Butte, during construction and after the developments are occupied, will be addressed. Committee participants should include: Crested Butte, Mt. Crested Butte, Gunnison County, CBMR, Mountain Express, the Rural Transportation Authority, Rocky Mountain Biological Laboratory and the National Forest. The committee could also address traffic generated by developments between Round Mountain and Gothic.
- 55. The Town should continue working to create the perimeter trail described in the Town of Crested Butte Parks and Recreation Regional Master Plan.



### Crested Butte Trail Plan

- Roads
- ▭ 3 Mile Boundary (MSRV)
- Streams
- Trails
- Easements
- Proposed Trail Corridors
- ▭ Town Boundary
- ▭ Lakes
- Proposed Trailhead

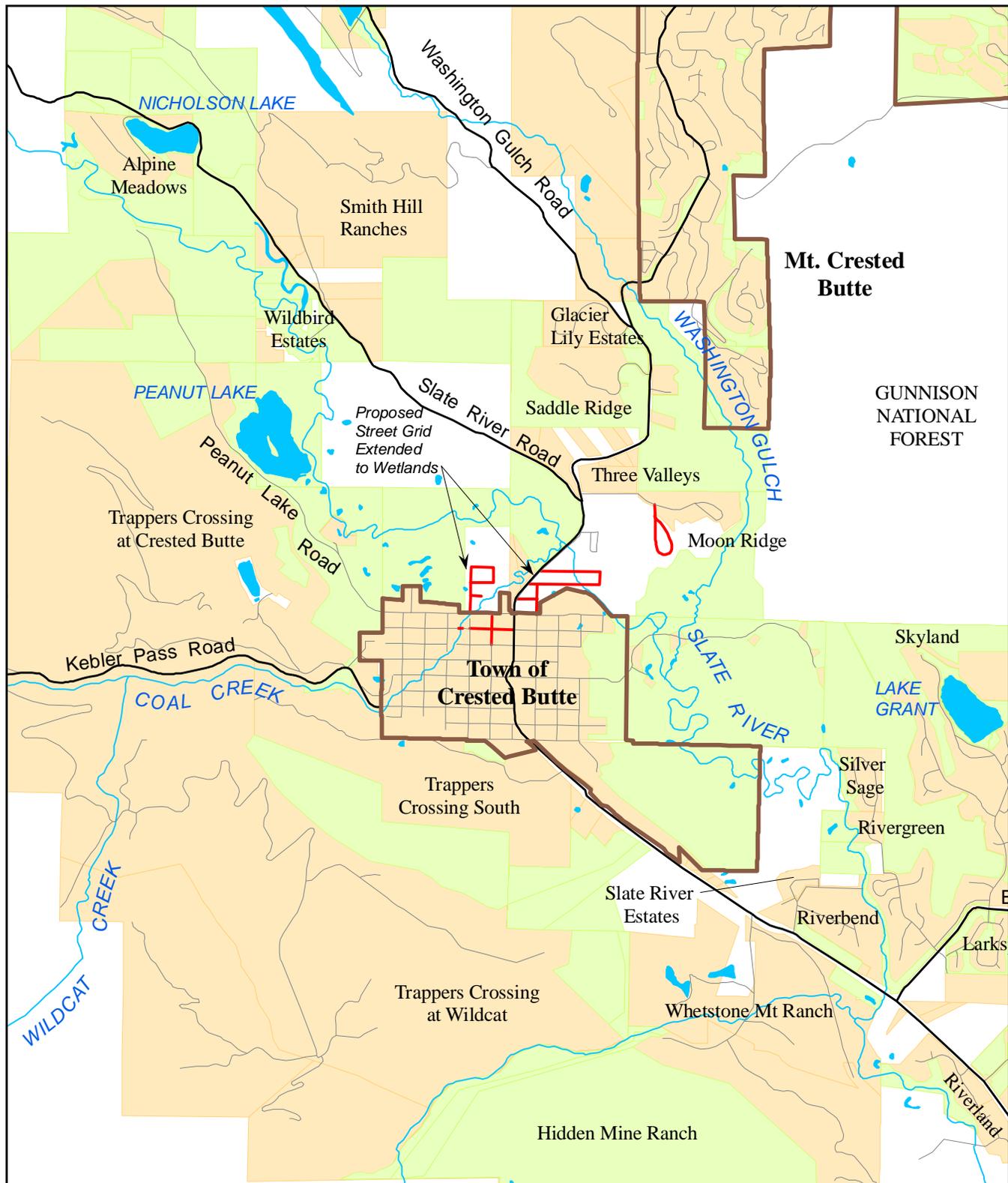
Sources:  
 Gunnison County GIS  
 Town of Crested Butte GIS  
 Town of Mt. Crested Butte  
 Crested Butte Planning Workshop, 11-18-95  
 EPA Ortho Imagery 2006



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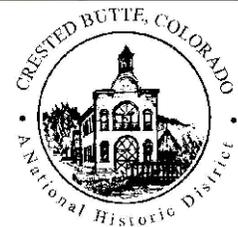


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### Master Street Plan

- Town Boundary
- Major Arterial Roads
- Streets
- Proposed Streets
- Water
- Lakes
- Subdivisions / Developed Land
- Open Space



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 Date: June 24, 2011  
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## VII HOUSING

### Goal:

**The housing policies of the Crested Butte Area Plan are designed to develop a socially, culturally and economically balanced community with an appropriate mix of residential dwelling unit types for permanent residents, part time residents and tourists.**

### POLICIES:

1. The Town of Crested Butte, through its land use regulations and incentive programs, encourages the private sector to provide a mixture of housing types with varied price ranges and densities, for multiple income levels, in each sub-community of the Town and in each new development in the Middle Slate River Valley for year-round and seasonal employees. The purpose of this policy is to attempt to meet the needs of all elements of the MSRV population as identified in the most recent housing needs assessment.
2. At least sixty percent (60%) of all new residential units annexed to Crested Butte should, at a minimum, be permanently deed-restricted to a variety of mixed income people who earn at least eighty percent (80%) of their income in the Gunnison County. Developers should provide units and/or adequate land, to achieve this policy.
3. At least forty percent (40%) of all new residential units that are not within town, but within three miles of Crested Butte, should, at a minimum, be permanently deed-restricted to a variety of mixed income people who earn at least eighty percent (80%) of their income in the Gunnison County. Developers should provide units and/or adequate land to achieve this policy.
4. The Town prefers a range of deed restrictions within each development that addresses the needs of many different groups of people by, for example, addressing ranges of incomes and prices.
5. Accessory dwelling units, that are long-term rentals, should be allowed and encouraged in all developments annexed to Crested Butte. Accessory dwelling units that are to be used exclusively as long-term rentals and are deed-restricted to that use, should not be counted toward the maximum or average density per acre discussed in the Land Use chapter of the policies.
6. The Town recognizes that the housing needs of the low-income residents of the Middle Slate River Valley may not be met solely through private development. To facilitate availability of housing for this segment of the population, appropriate federal, state, and local programs and resources should be utilized.
7. Housing for low-income families as well as elderly and disabled households, whether publicly, privately or jointly financed, should be designed to be compatible, in size and scale, and dispersed and integrated with housing throughout the community and throughout new developments.
8. Employers are encouraged to provide housing for their own seasonal employees.
9. New developments should comply with the policies of the Housing Chapter of the Crested Butte Land Use Plan.
10. All residential development should be served by public transit to allow all income sectors to be served by the development while minimizing traffic generated by employees of the MSRV and occupants of local housing.
11. Demolished residences which had been occupied by year-round residents should be 100% replaced with an equal number of local housing units.

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**ACTION ITEMS:**

12. The Town should determine a target number of local housing units as a percentage of the total housing stock.
13. Provide incentives to increase the percentage of local housing over the requirements of the Gunnison County Land Use Resolution.

## VIII Mineral Resource Areas

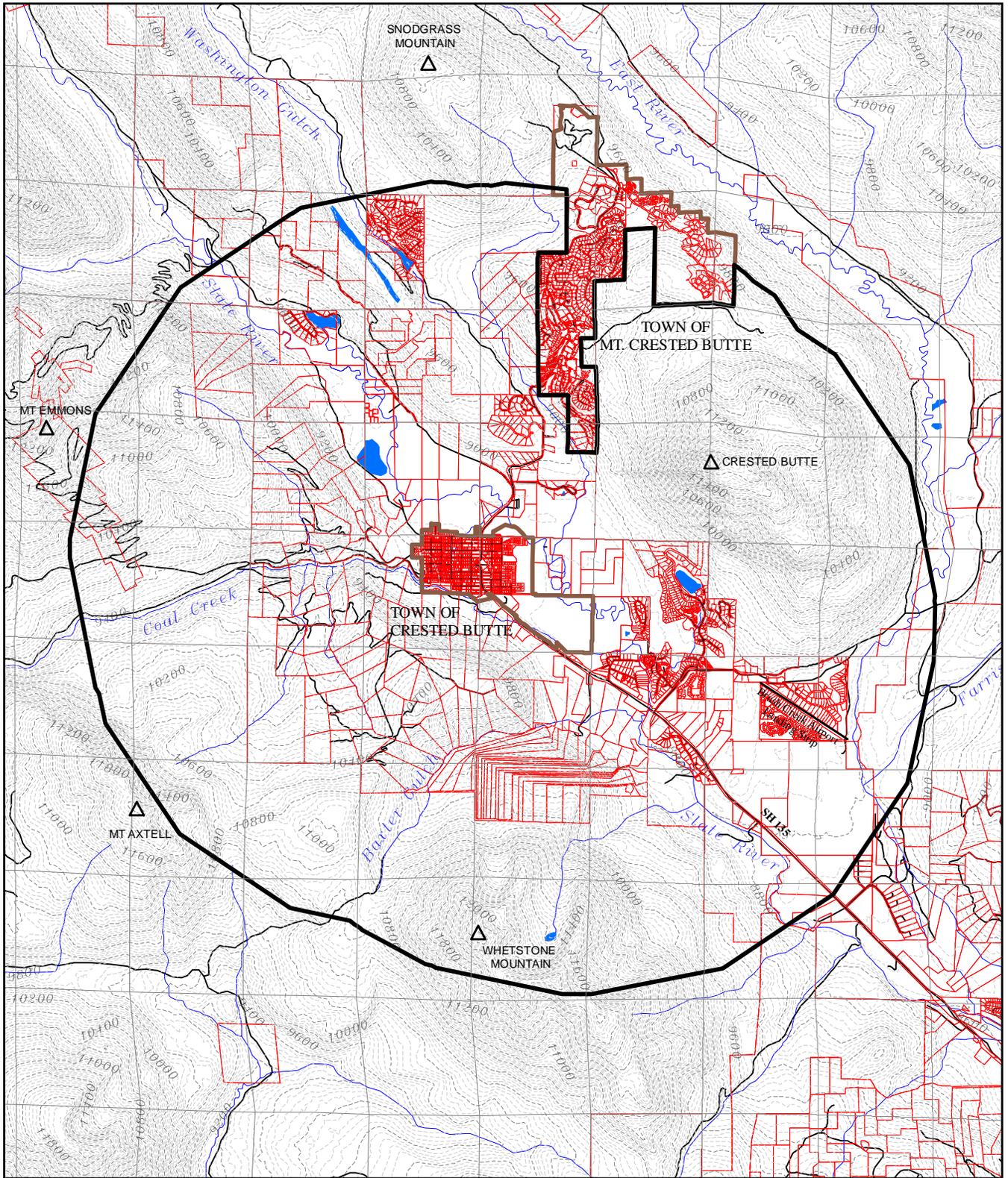
### GOAL:

**Manage mineral resource areas to permit extraction and exploration of minerals unless extraction and exportation would cause significant adverse impacts to public health and safety; plant or wildlife habitat; or areas of paleontological, historic or archeological importance.**

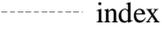
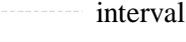
### POLICIES

1. Prior to any mineral extraction activity within the MSRVA, a resource extraction company should receive a permit from Gunnison County and/or the Town, depending upon the mine location, to extract the mineral.
2. A comprehensive socioeconomic impact analysis that addresses the manner in which the applicant will comply with the relevant permit application approval criteria should be provided.
3. Resource extraction projects should not impair property rights held by others.
4. Applicants for resource extraction projects should demonstrate that the applicant has the necessary expertise and financial capability to develop and operate the proposed resource extraction operation consistent with all requirements and conditions of approval.
5. Resource extraction projects should demonstrate that alternatives to the project were considered and why they were rejected. They should also provide projections or growth trends that form the basis of demand projections justifying the project.
6. The benefits accruing to the community and its citizens from the resource extraction project should outweigh the losses of natural, agricultural, recreational, grazing, commercial and industrial resources within the MSRVA.
7. Resource extraction companies should provide housing for the proposed workforce.
8. Workforce housing should be located so as to minimize:
  - a. traffic,
  - b. air quality degradation, and
  - c. energy consumption.
9. Resource extraction projects should not have a significant adverse impact on:
  - a. land use patterns,
  - b. the capability of local governments, special districts and school districts to provide services,
  - c. existing residents by creating undue financial burdens,
  - d. other portions of the current or foreseeable future local economy,
  - e. quality or quantity of recreational opportunities and experience,
  - f. air quality,
  - g. surface or ground water quality, wetlands or riparian areas,
  - h. plant or wildlife habitat, and
  - i. areas of paleontological, historic or archeological importance.
10. Resource extraction projects should not result in unreasonable risk of release of hazardous materials.
11. Conservation techniques in the construction and operation of a resource extraction project should be a high priority.
12. A monitoring and mitigation plan, including a description of all mitigation that is proposed to avoid, minimize, or compensate for adverse impacts of the project and to maximize positive impacts of the project should be provided and it should describe:
  - a. how and when mitigation will be implemented and financed,
  - b. impacts that are unavoidable that cannot be mitigated,

- c. the methodology to be used to measure impacts of the project and effectiveness of proposed mitigation measures, and
  - d. the location and intervals of proposed monitoring to ensure that mitigation will be effective.
13. Resource extraction projects should comply with all other applicable policies of this Plan.



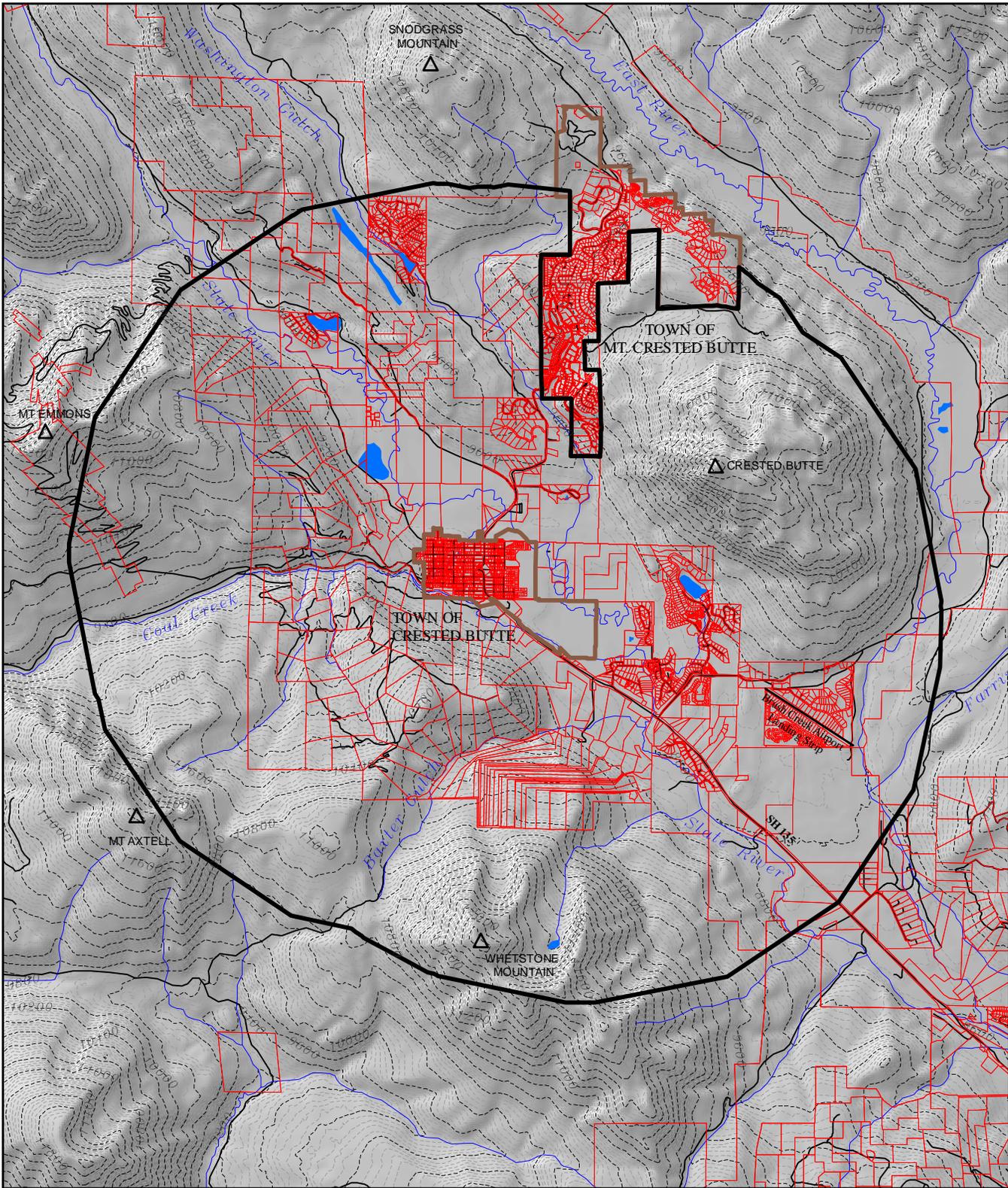
**Property Boundaries**

-  3 Mile Boundary - Middle Slate River Valley (MSRV)
-  Town Boundary
-  Streams
-  Lakes
-  Roads
-  Parcel Boundaries
-  Section Lines
- 40' Topographic Contours**
-  index
-  interval



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**Property Boundaries**

-  3 Mile Boundary - Middle Slate River Valley (MSRV)
-  Town Boundary
-  Streams
-  Lakes
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- 40' Topographic Contours**
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-  interval



Drawn by: Hilary Mayes  
 Date: April 26, 2005  
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## Part 2, DESCRIPTION OF THE ISSUES

### PUBLIC PARTICIPATION

In 1990, the Towns of Crested Butte and Mt. Crested Butte surveyed post office box holders and the landowners between the towns about development in the valley. The two towns also conducted neighborhood meetings about the corridor between the two towns. In November 1991, the Gunnison Basin Community Forum steering committee organized the Successful Communities Workshop. In 1995 and in 2004, additional post office box land use surveys were conducted by Crested Butte.

A summary of the results of these meetings and surveys is found below.

**Table PP 1**  
**Number of respondents, by community,**  
**2004 Land Use Survey**

Crested Butte.....	323
Mt. Crested Butte.....	58
Crested Butte South area.....	62
Meridian Lake Park Subdivision.....	13
Skyland.....	16
Other valley residents.....	55

**Table PP 2**  
**Number of Returned Surveys**

	<b>Surveys Returned</b>	<b>Return Rate</b>
<b>1990</b>	147 of 1,200	12.3%
<b>1995</b>	336	
<b>2004</b>	513 of 2,929	17.5%

The table and information on the following page presents the results of three general questions in the 2004 boxholders survey. When comparisons can be made, boxholder responses to similar questions in earlier surveys are also presented. The results of other more detailed questions will be discussed in the sections of the plan addressing the applicable subject matter.

Respondents have consistently most valued the healthy, natural, mountain environment, and recreational opportunities of the Crested Butte area and the upper East River valley. Those features that are least valued include economic opportunities, cultural activities, and a place to raise children. Valued features, from a list of 22 options, receiving more than an eighty percent (80%) response in any of the surveys, are listed below.

**Table PP 3**  
**Features of Crested Butte Valued by Respondents**

Features	2004		1995		1990	
	#	%	#	%	#	%
Beautiful scenery	494	96%	325	96%	142	97%
Clean air	486	95%	329	97%	120	82%
Clean water in lakes and streams	475	93%	314	93%	103	70%
Living in the mountains	464	90%	312	92%		
Abundance and variety of wildflowers	455	89%	302	89%	118	80%
Low crime rate	451	88%	321	95%	118	80%
Summer outdoor recreation opportunities	454	89%	299	88%	131	89%
Winter outdoor recreational opportunities	439	86%	285	84%	101	67%
Nearby designated wilderness areas	439	86%	293	86%		
Vistas (unobstructed views)	432	84%	301	89%	124	84%
Abundance and variety of wildlife	424	83%	286	84%	113	77%
Large expanses of open space with development in isolated areas	410	80%	272	80%		
Open space between developments in the valley	409	80%	272	80%	107	73%
Ability to get around without a car	402	78%	296	87%		
Small population	390	76%	298	88%	122	83%

At least seventy-five (75%) of respondents in 2004, and a higher percentage for every item listed in 1995, identified the following when asked which features, from a list of 16, should be preserved or remain undeveloped when a parcel of land is developed:

- Natural creeks and rivers
- Air quality
- Natural ponds or lakes
- Water quality
- Wetlands
- Wildlife movement corridors
- Wildlife habitat
- Open space
- Top of ridgelines

The last general question about development asked respondents to identify what should be provided as part of a development proposal from another list of 16 items. At least seventy-five (75%) of the respondents in 1995 or 2004 identified the following:

2004	1995	
82%	85%	Public access to public lands
80%	84%	Open space
77%	79%	Lake and river access
70%	78%	Affordable housing

Other surveys had similar results. The 2003 branding study, conducted by the Gunnison-Crested Butte Tourism Association to help determine what draws people to the County, found that the majority of responses centered on the county's natural landscape and rural flavor. Respondents

are quoted as saying they enjoyed the “hiking...bird watching...remoteness...laid back lifestyle and unspoiled natural beauty” in Crested Butte. <sup>(1)</sup>

In 2002 Gunnison County sponsored a community survey to gauge a wide range of opinions from citizens of the County. “The highest components that residents valued include scenery, clean air, open space, rural lifestyle, vistas, and view sheds.” <sup>(2)</sup>

Respondents to a 2004 winter tourism and land development survey also valued natural attributes very highly. Given a choice of 21 attributes, “mountain views” was ranked the highest. “Snow quality” and “friendly people” ranked second and third. “Affordable lodging” and “general affordability” were next most important, but, “forested landscapes,” “valley views” and “wildlife viewing” all ranked higher than the remaining tourism infrastructure attributes (such as “high quality restaurants” and “high quality lodging”) and all the social/cultural attributes except “solitude and lack of crowds.” The respondents spent an average of \$1,550 per trip in Gunnison County, plus travel expenses between their front door and Gunnison County. Ninety-seven percent (97%) of the respondents indicated that their choice of Gunnison County for their winter recreation experience was “highly sensitive” to the county’s current, relatively undeveloped and open rural and agricultural characteristics. <sup>(3)</sup>

The Successful Communities Workshop was held in November, 1991. Over 100 participants met in Crested Butte and Gunnison to discuss what people value about the Gunnison Basin, their visions for the Basin, and what to do to achieve those visions. In 1991, people valued the following that apply to the Middle Slate River Valley:

- clean environment
- incredible beauty
- solitude and isolation
- vast public lands
- variety of the landscape
- animals and wildlife
- the three major legs of the Gunnison basin economy (education, ranching and recreation)
- both rich and poor can live in our community
- the many public benefits of ranching
- the moderate growth rate
- the affordability of housing
- the income from second home owners who demand less service than full time residents
- the mining, ranching, skiing and mountain biking heritage of the valley
- old buildings and the National Historic District in Crested Butte
- skiing
- summer recreation opportunities
- close to home recreational opportunities
- small towns
- bicycle and foot transportation that can get us to our destinations in the towns in reasonable time
- excellent cultural benefits
- good restaurants and sufficient shopping
- recycling
- stimulating politics
- the people of the Gunnison Basin:
  - fun, friendly, caring

- lifestyle of choice
- tolerance
- genuine, “Real Thing”
- relaxed slow paced lifestyle
- united in our battle to protect our water
- environmentally conscious
- diversity of people

- (1) “Shatter the Model,” Crested Butte News, 10 September 2004, p. 20.
- (2) Focus Group Review Draft of the Gunnison County Comprehensive Plan, Crested Butte/Gunnison corridor, January, 2004, Page 4.
- (3) Adam Orens and Andrew Seidl, “Winter Tourism and Land Development in Gunnison, Colorado,” 2004, (Economic Development Report for the Department of Agricultural and Resource Economics, Colorado State University, Fort Collins, CO) p. 8-13.

## **NATURAL HAZARDS TO DEVELOPMENT**

### **AVALANCHE HAZARDS**

Most of the information that follows is taken from the Slate River avalanche study for the Gunnison County Planning Office, and the Environmental Impact Statement for the Mt. Emmons Mine, 1981.

Thousands of avalanches occur throughout the Colorado mountains each year. The majority of these avalanches occur in remote regions. As with all other hazards, avalanches are usually not a problem for people, unless they have built structures in the path of a wildfire.

An avalanche path refers to the specific area in which an avalanche moves. Most paths are made up of three parts: the starting zone, the track, and the runout zone. Within the starting zone, the unstable snow breaks loose and accelerates. This zone typically consists of slopes between 60% and 100% (30 to 45 degrees). Slopes steeper than 100% are too steep to permit snow to adhere, thus small sluffs, rather than large avalanches, are common.

In the track, avalanches reach and maintain maximum velocity as the snow released from the starting zone moves down slope. Avalanche tracks may be confined by gullies or may be open slopes as wide, or wider, than the starting zone.

Avalanches decelerate and stop in runout zones. Runout zone slopes are more gentle than track slopes, and are sometimes flat. In some cases, the runout zone may extend partway up a slope of a reversed gradient. It is in this runout zone that the avalanche hazard may sometimes encounter man and his works.

After releasing, there are three forms of avalanche motion depending upon snow types and avalanche tracks: powder avalanche, flowing avalanche, and mixed avalanche.

Powder avalanches travel the longest distance in the runout zone and this must be considered when planning development. Powder avalanches can be predicted in a given path when steepness and irregularity of terrain causes sufficient velocity or fluidization of the avalanche.

Flowing avalanches refer to all avalanche types that move close to the ground. Dry flowing avalanches are 10 to 100 times denser than powder avalanches, but move more slowly and, as a result, tend to follow terrain features more closely. In spite of lower velocities, they are capable of higher impact pressures. Wet flowing avalanches are similar, forming heavy, wet snow with high densities and low velocities.

Mixed avalanches are a combination of dry flowing and powder avalanches, occurring when a portion of the mass of a dry flowing avalanche is whirled into turbulent suspension as a dust cloud.

Snow avalanche areas in the Middle Slate River Valley which may affect areas of existing or potential use by people are shown on the Avalanche Hazard map on page 8. Avalanche areas near the proposed Amax molybdenum mine in the Coal Creek drainage and in the Mt. Axtel area are also mapped. Other avalanche areas in the three mile area have not been mapped except in and near the Town of Mt. Crested Butte.

Avalanches in the Middle Slate River Valley are widespread. Most of the avalanche paths studied occur on open, unforested slopes. This enables single avalanche releases to extend for long distances because slab fractures in the snowpack would not necessarily be limited in length by ridges. Portions of paths north and south of Oh-be-joyful Creek can produce low density powder avalanches so large and fast-moving that they can travel completely across the valley and impact the opposite valley wall.

A very large avalanche, of the type described above, occurred in 1976 on the slopes south of Oh-Be-Joyful Creek. The avalanche released from an elevation of about 11,200 feet and dislodged and incorporated more than 60 acres of snow from the northeast facing slope. This slope averages more than 35 degrees. The released snowslab quickly developed into a mixed dry flowing and powder avalanche, and reached the valley bottom at a very high velocity, probably in excess of 170 miles per hour. After reaching the flat valley floor, the dense lower layer of the avalanche traveled approximately 1,000 feet before coming to rest against the northeast side of the Slate River. The less dense powder avalanche did not stop there. It destroyed about one acre of mature pine trees and ran an additional 700 feet. The mature trees were more than 100 years old. The "air blast" managed to carry small pieces of pine tree limbs about 600 feet further, depositing some of them as much as 150 feet above the Slate River. Including the air blast zone, the total runout zone length was about 2,300 feet.

In 1996 another large avalanche occurred on the south side of Mt. Emmons. This avalanche began in Red Lady Bowl and came down through the Kebler Pass Trail head across the Keystone Mine, Kebler Pass, and Trapper's Crossing at Wildcat roads. It picked up many parked snowmobiles and carried them across Coal Creek. The avalanche ran down Mt. Emmons to Coal Creek at the bottom of the valley and the runout zone rose about 50 feet above the creek on the opposite side of the valley.

Most of the avalanche zones mapped along the Slate River in the Middle Slate River Valley are high hazard zones. Avalanches within this zone have return periods of 25 years or less and will produce impact pressures of 600 pounds per square foot or more. The high hazard zone is characterized by either high frequency, high impact pressure, or both.

The bottoms of the avalanche zones in the Slate River area are labeled moderate hazard zone. Avalanches within these zones will occur at return periods in excess of 25 years and will have impact pressures of less than 600 pounds per square foot. Avalanche frequency and impact pressures decrease toward the outer limits of these zones. When large avalanches occur and run to the outer boundaries of these zones they can be very destructive in spite of their reduced probability and pressures.

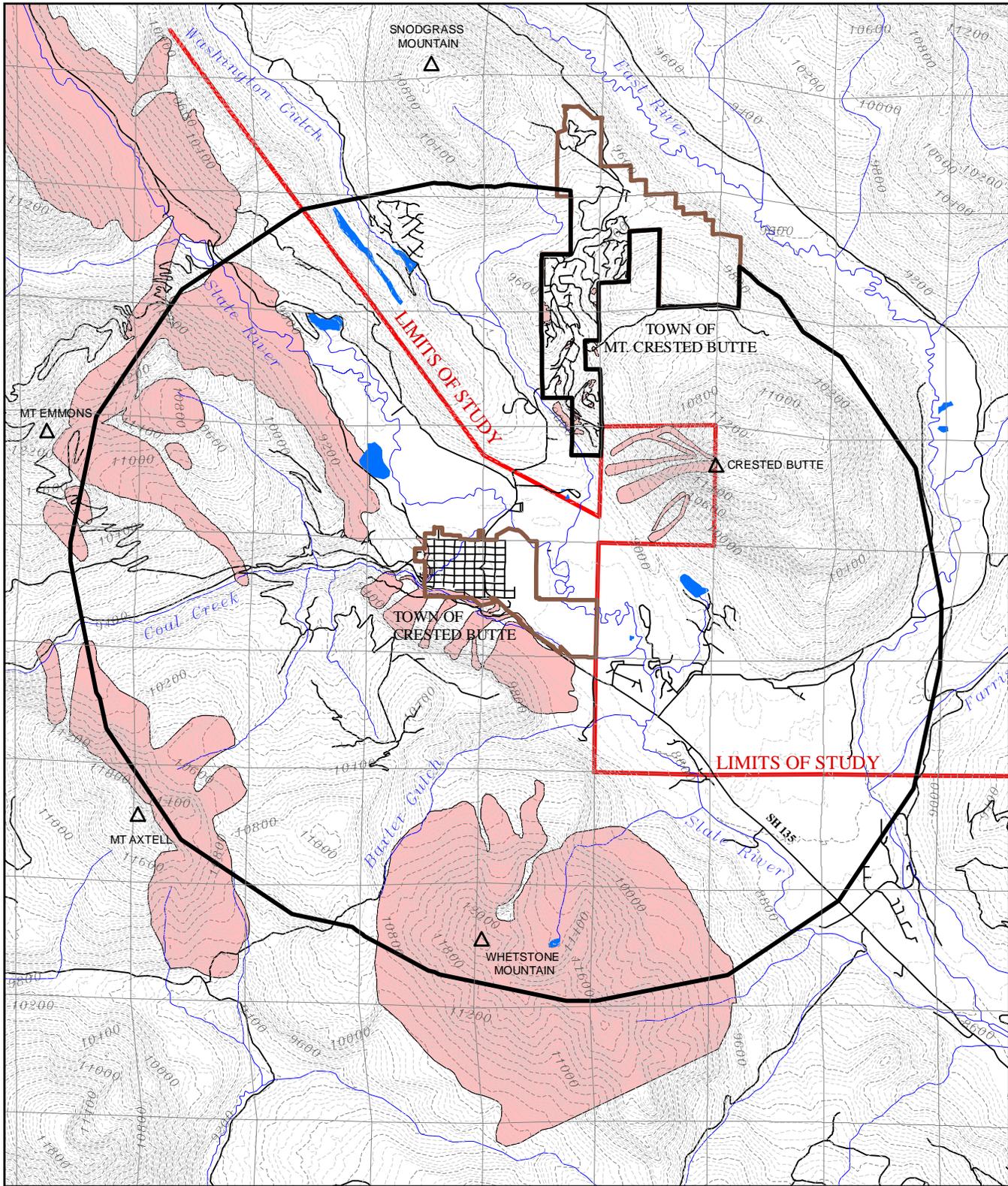
Avalanches are one of many imperfectly understood natural phenomena. The large, infrequent avalanches of interest for planning purposes have seldom been observed and have almost never been monitored to determine velocities, densities and impact pressures. In view of the uncertainties inherent in avalanche analysis and in the obvious consequences of inadequate design of structures, it is strongly recommended that an especially conservative approach be taken to design and planning within or adjacent to these areas.

Avalanches become a problem when buildings or infrastructure are constructed in the lower parts of avalanche paths that are reached by avalanches only rarely. The difficulty is determining how far this rare avalanche will go and its destructive force. Since avalanches reach their potential limit at infrequent, irregular intervals and man's direct observational record in most areas is short, it is unlikely that an extreme event will have been observed.

Land threatened by avalanche danger can be used so it will not conflict with the hazard. Examples of such uses include agriculture and open space summer uses which avoid avalanche complications. If dwellings are to be built within areas of potential avalanche hazard, then the degree of hazard must be defined much more precisely. This information should be presented on a detailed map (scale 1:2,000 or larger) showing the topographic details of the avalanche track, the runout zone where the most serious problem usually exists, and especially the part of the runout zone which is seldom reached by avalanches. The runout zone is of great practical importance in land use considerations because, on casual examination, such land appears most suitable for development.

Structures can be engineered to withstand the maximum pressure any avalanche can produce but the derivation of pressure zones through assumption of a dynamic model is an inexact procedure. For this reason, proposed development in or near the hazard areas must be accompanied by detailed avalanche studies conducted by qualified experts, providing information about:

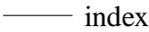
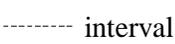
- area extent of the runout zone,
- impact pressure distribution within runout zone,
- avalanche frequency,
- avalanche discharge, and
- avalanche flow depth.



**Avalanche Hazard**

-  3 Mile Boundary (MSRV)
-  Town Boundary
-  Streams
-  Lakes
-  Roads
-  Section Lines
-  Avalanche Hazard

**40' Topographic Contours**

-  index
-  interval



SOURCE: Gunnison County Planning Dept.  
 Mt. Emmons Mining Project E.I.S., 1981  
 Mears, Art, 1980, Avalanche Hazards in the Mt. Emmons Project Area.  
 Mears, Art, 1987, snow Avalanche Hazard Analysis, Gibson Ridge Area, Crested Butte.  
 Town of Crested Butte Archives.  
 Town of Mt. Crested Butte



Drawn by: Hilary Mayes      Date: June 22, 2005  
 Filename: C:/project/areaplan/2011/avalanche.mxd

## **FLOOD HAZARDS**

Information for the floodplain map for the Crested Butte Three Mile Plan was taken from:

- the Flood Insurance Rate Map produced for the National Flood Insurance Program, Gunnison County, Colorado, 1989,
- the Floodplain Information Report for Coal Creek, Crested Butte, Colorado, 1992,
- information provided to the Town during review of the Kapushion Annexation, and
- information provided to the Town during review of the Verzuh Annexation.

The Flood Insurance Rate Map does not identify all areas subject to flooding, particularly from small local drainage sources. Most of the information that follows has been taken from Nature's Building Codes, Geology and Construction in Colorado, 1979.

### **Characteristics**

Flooding is the overflowing of water onto land that is normally dry. Flooding occurs when soils become saturated from prolonged rains and/or snowmelt. If runoff or rain continue, water begins to accumulate faster than it can be absorbed or carried away in stream channels. Stream levels begin to rise and eventually overflow the normal stream channel. The gradual rise in water levels may take a few hours or a few days. The Slate and East Rivers experience floods like this each spring.

Tributaries and the larger rivers in the Middle Slate River Valley can also experience flash flooding which happens so fast that little warning can be given.

The mainstream of a flood (floodway) is swift and destructive. The overflow onto the floodplain is less forceful but still destructive. Flood waters are loaded with sediment and debris which become agents of destruction in addition to the water itself. Streams may also change their course during a flood, cutting a new channel within the floodplain.

### **Consequences**

Flood damage is caused by the force of the water itself, the saturation of land and property, the erosive nature of the water and deposition of mud and debris. The whirling waters, their erosive capability increased by sediments and debris, undermine bridges, buildings, and other improvements. Homes, trailers, trees, signs, and other items swept away by the flood waters can jam against bridges, fences, buildings, utility poles, and other structures, resulting in "backwater" damage. Sewer and water lines may be ruptured and utility lines downed. The loss of human and animal life is a possibility in any flood. As the flood waters recede, sediment and debris covers the inundated areas.

The frequency, extent, and degree of damage from flooding are directly related to land use. As natural features such as open land, trees and grasses are replaced with paving, buildings and other improvements, there is a resulting increase in the amount and rate of runoff because the natural areas can no longer absorb the water. A variety of structures including homes erected in floodplains are not designed to withstand floods, and not only may be damaged or destroyed, but often become debris and an aggravating factor in increasing damage to other property.

Flooding is a natural process which only becomes a hazard to people when they build and develop in flood-prone areas. People can also create new and enlarged floodplains. As communities grow, storm runoff from new development can be channeled through older areas. The additional water that is generated cannot be handled in the historic manner and flooding of

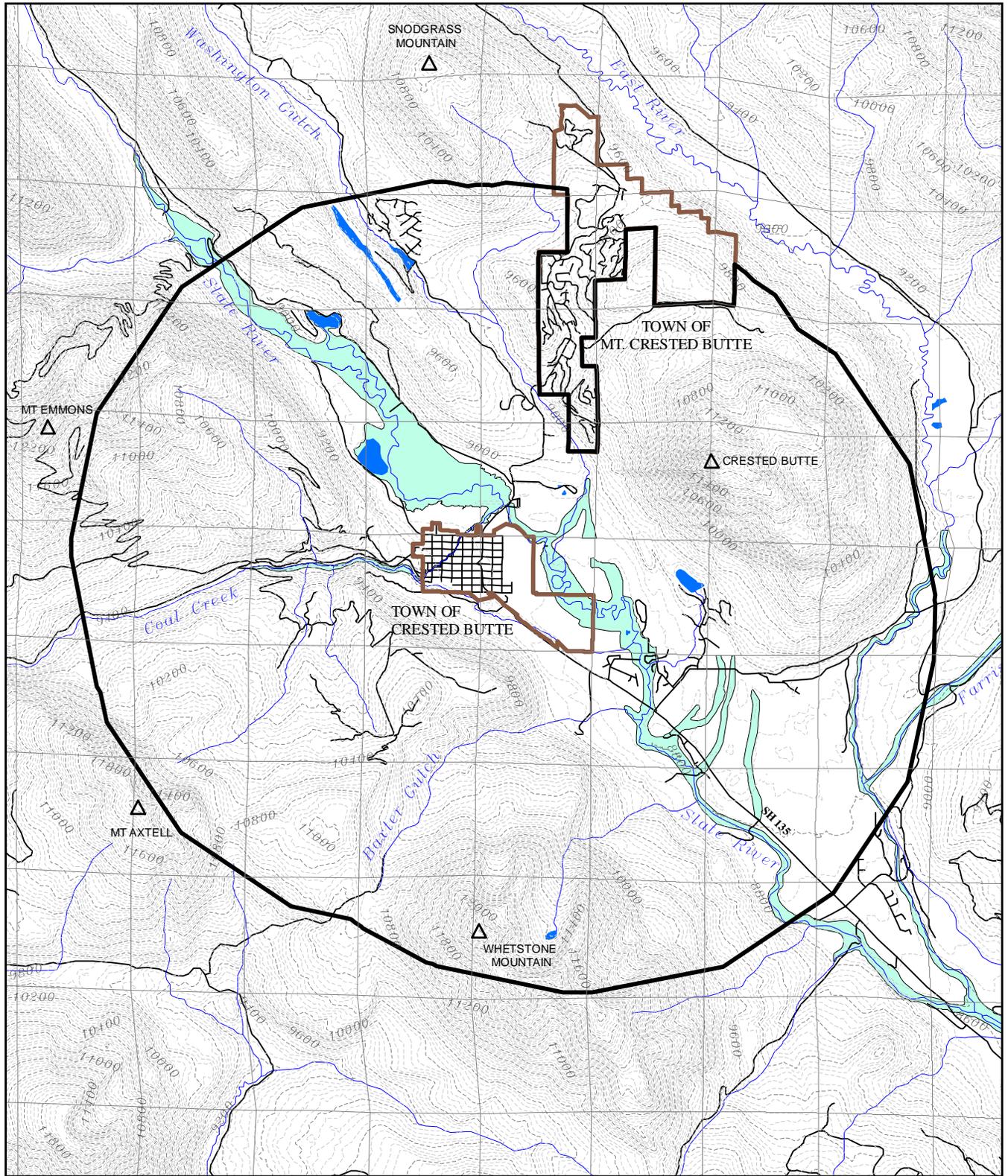
previous flood free areas results. In the Middle Slate River Valley, older developed areas such as Riverbend may be affected in this way if development is allowed upstream.

### **Mitigation**

The least costly way of minimizing flood damage is to avoid intense development on floodplains. Essential improvements such as highways, bridges and utility lines can be designed to withstand floods. Farming, livestock grazing, woodlands, and sand and gravel mining are appropriate uses of floodplains. Fringes of drainageways can double as hiking and bicycle paths and garden areas.

Preservation of natural drainageways as open space in developed areas permits land to serve more than one beneficial use. In developing areas, detention basins can effectively store and slow down the velocity of high water, lessening the likelihood of flood damage. Detention basins are bowl shaped holding areas where runoff waters can accumulate and drain off later through normal channels at lower volumes and velocities. Parks, playgrounds and parking areas can be useful in this way and they can be cleaned up relatively easily after a flood. Keeping natural and manmade drainageways open and free of debris and keeping low lying areas undeveloped helps minimize the damage from high water.

Storm sewers, drop structures, channelization, and irrigation ditches can be used to dissipate floodwater energy and to direct high water away from or through developed areas to another location. Floods usually subject several governmental jurisdictions to a natural, though man-aggravated, hazard. Consequently, flood control, drainage and land use programs and policies must be on a regional or river basin basis if damage from floods is to be minimized. Otherwise, one area might be protected at the expense of another.



**Flood Hazards**

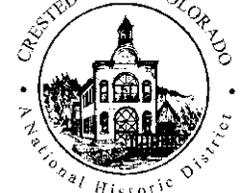
-  3 Mile Boundary (MSRV)
-  Town Boundary
-  Streams
-  Lakes
-  Roads
-  Section Lines

**40' Topographic Contours**

-  index
-  interval
-  100 Year Floodplain



SOURCE: Flood Insurance Rate Map, Crested Butte, CO 9/04/85;  
 Flood Insurance Rate Map, Gunnison County 09/29/89; Del-Mont  
 Consultants, Inc. 11/03/94; Schmuesser Gordon Meyer, Inc. 07/16/01



Drawn by: Hilary Mayes Date: June 22, 2005  
 Filename: C:/project/areaplan/2011/floodpl.mxd

## **GEOLOGIC HAZARDS**

Geologic hazards were mapped for most of Gunnison County, including the Middle Slate River Valley, by James M. Soule of the Colorado Geologic Survey (CGS) in 1975. In 1974 and 1979 the Colorado Geological Survey published two documents designed to guide development in geologically hazardous areas. The publications are: Guidelines and Criteria for Identification and Land-Use Controls of Geologic Hazard and Mineral Resource Areas and Nature's Building Codes, Geology and Construction in Colorado. Most of what follows summarizes information in these three publications.

Geologic hazards in the Middle Slate River Valley are natural conditions and processes that, if unrecognized or inadequately planned for, can result in damage to structures and costly maintenance (especially for homes, other buildings, roads and utilities) or loss of life.

In 1979, the CGS estimated that Americans sustain more than \$1 billion in damages annually from landslides, mud flows, ground subsidence, avalanches and other common earth movements. Earthquakes are not included in this annual figure. In addition, there can be loss of life. While no specific figures have been compiled for Colorado annually, the price tag is in the millions of dollars. It has been estimated that losses "could be reduced 90 percent or more by a combination of measures involving adequate geologic interpretations, good engineering practice, and effective enforcement of legal restraints on land use and disturbance." (1) This section describes identified, potential, geologic hazards in a three mile area surrounding Crested Butte.

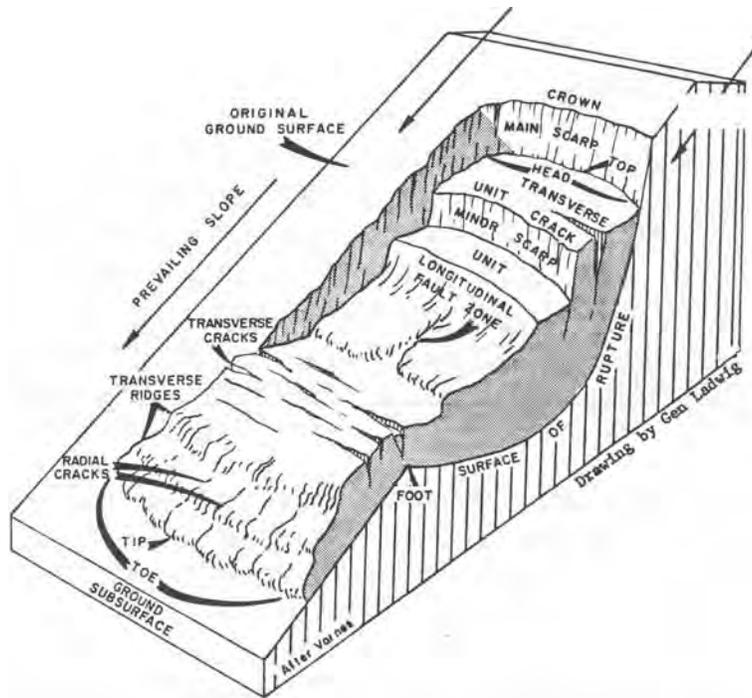
The geologic hazards mapped in the area by Soule include landslides, unstable slopes, potentially unstable slopes, and mud flow and/or debris fans. All of these mapped hazards indicate places where slow to rapid movement of earth materials downslope is occurring, has occurred in the past, or can be expected to occur under certain man-caused or natural conditions. Seismic faults were added to the Crested Butte Three Mile Plan Geologic Hazards Map by Crested Butte Town Staff using information from U.S.G.S. quadrangle maps of the surface geology in the area. (2) Other geologic hazards such as collapsing soils, and subsidence are not mapped in the Middle Slate River Valley because they do not occur here. A summary of the issues involving each mapped geologic hazard follows:

### **Landslides**

A landslide is a mass movement of natural material where there is a distinct surface of rupture, or zone of weakness, which separates the slide material from more stable underlying material.

Landslides are widespread, naturally-occurring geologic events throughout the Middle Slate River Valley. They usually involve a mass which moves as one unit downward and outward. Landslides are usually characterized as dry rock surface material in contrast to mud flows which include movement of a cohesive and sticky fluid material with high water content. Mud flows also lack a distinct surface of separation.

A landslide can occur in several different ways. It may be rapid and of short duration, or it may consist of intermittent periods of active movement separated by relatively inactive periods. It may involve slow, continuous movement over a considerable period of time and may involve isolated, smaller slides occurring within the body of a large slide.



Diagrammatic drawing of a rotational landslide

Reprinted from "Guidelines and Criteria for identification and Land-Use Controls of Geologic Hazard and Mineral Resource Areas"

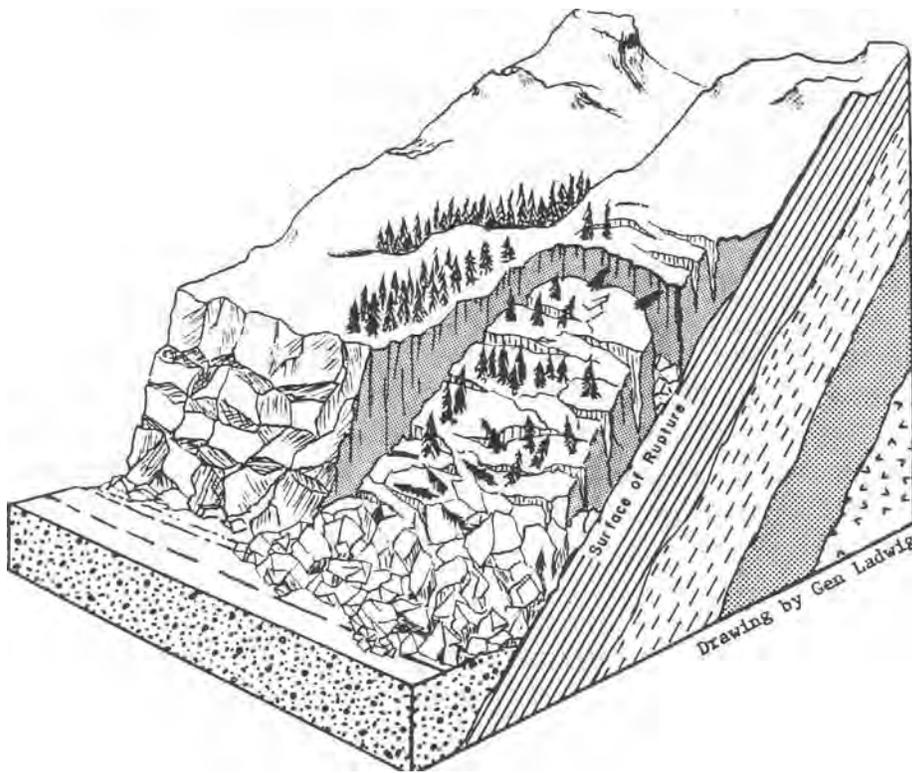
### Selected Rotational Slide Terminology

- Main Scarp: steep undisturbed ground surface above the highest part of the slide, resulting from downward movement of slide material
- Crown: in-place material just above the main scarp
- Head: uppermost part of slide material along the contact between the main scarp and the slide material
- Radial cracks: tension cracks resulting from lateral spreading of unconfined slide material
- Surface of rupture: projection of main scarp surface beneath the slide mass

For most moderate to high intensity land uses prevalent in the Crested Butte area, landslides and/or earthflows are serious hazards. These areas are usually high-cost, difficult areas for most developments. Development practices that result in undercutting, wetting, overloading or oversteepening of slopes can cause accelerated slope movements and result in even greater problems that may be impossible to rectify. Lower intensity uses such as utility lines and ski trails are generally possible, but more intensive uses such as buildings, heavy structures and roads are usually feasible only with careful planning and engineering. Maintenance of structures in active slide areas can be costly and, in many cases, may equal or exceed the price of the structures prior to expiration of their useful life.

### Unstable and Potentially Unstable Slopes

An unstable or potentially unstable slope is an area susceptible to a landslide, a mud flow, a rockfall, or accelerated creep of a slope-forming material.



Diagrammatic drawing of a translational landslide

Reprinted from *“Guidelines and Criteria for identification and Land-Use Controls of Geologic Hazard and Mineral Resource Areas”*

Unstable slopes are common under both natural and modified conditions. Natural factors contributing to instability include weathering, erosion, hydrologic changes, earthquakes, and slow natural deterioration of strength in slope-forming materials. Artificial factors include redistribution of mass by cut and fill operations, alteration of surface drainage, blasting, or heavy vehicular traffic.

Unstable slope areas are places with landforms characteristic of landslides and earthflows, but where current or very recent activity of these slope failure processes is non-existent or uncertain. The distinguishing characteristic is that active landslide/earthflow areas show obvious evidence of current movement, whereas unstable slopes do not. However, all of the areas mapped as unstable slope have undergone slope movement in the recent geologic past.

Hazards in unstable slope areas differ from landslide/earthflow areas. In the case of the latter, an active process is taking place, and in the case of the former, a slope failure process can be initiated by the activities of man.

Many of the unstable slopes in the Middle Slate River Valley are suitable for low to moderate land uses if the nature of the hazard is well-understood and considered seriously in development plans and in subsequent construction. Construction of roads, benching and deep cuts for building foundations can be especially problematical in these areas.

Potentially unstable slopes are more widespread. They differ from unstable active areas of landslide, mudflow and rockfall in that, rather than being an ongoing process, it is an imminent one. Such slopes may be composed of natural rock, soil, artificial fill, or combinations of these materials. They are in a state of metastable equilibrium and actual slope failure can be initiated by a change of conditions; either natural or man induced.

Potentially unstable slope hazards differ from the previous two classes primarily because there is no obvious evidence implying that landslides and earthflows are likely to occur. That is probably true in most areas so mapped. For some areas, potentially unstable slopes can be more hazardous than either of the two previous classes. Man-caused slope failures resulting from roads cut across slopes or other causes in areas where natural slope movements are unknown, can be much more difficult to plan for than in places where slope movement is predictable and can be avoided or mitigated.

Most of the moderate to steep slopes in the Middle Slate River Valley are potentially unstable. Nearly all mountain and sideslope areas, where weak nonresistant bedrock is covered by its derived colluvium, are potentially unstable. Weathered areas or slopes that are oversteepened by erosion, or for other reasons are excessively steep, can also be potentially unstable.

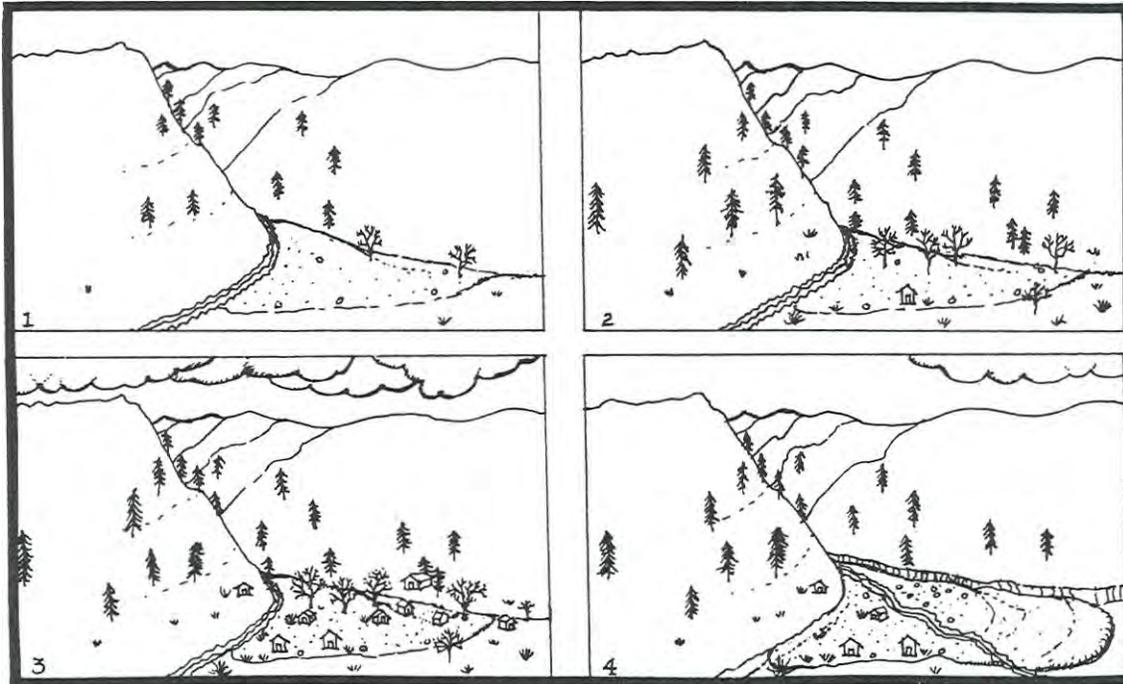
Problems resulting from these slopes depend on the rate of movement and the cost or difficulty of repairing and replacing man-made structures. Generally, as construction costs rise, or the complexity of the structure increases, repair costs and the time to repair also increase after slopes have moved. As the rate of movement increases, the damage also increases. Where movement is slow, structures such as roads, walkways and powerlines can be repaired or re-aligned and the expense tolerated.

### **Mudflow and Debris Fan Areas**

Mud flow and debris fan areas are typically made up of the following three elements:

1. a source of mud and debris, usually in the upper reaches of a drainage basin or its contiguous sideslopes
2. a drainage way or other channel down which this mud and debris can move
3. a debris or "alluvial" fan formed by successive episodes of deposition of mud and debris

A mudflow is a mass of water and fine-grained earth materials that flows down a stream, ravine, canyon or gulch. If more than half of the solids in the mass are larger than sand grains (rocks, stones or boulders) the event is called a debris flow. Mud and debris flows are usually initiated by high-intensity summer rainstorms or rapid snowmelt runoff that mobilizes accumulated sediment and debris. This moving material is channeled into a drainage way, and eventually is discharged onto the debris fan where it is deposited.



Debris and mudflow fans frequently offer scenic building sites in mountain valleys. This case illustrates the problems that can occur on such sites.

1. This first box represents a time in the past, shortly after a debris flow that removed many of the trees and left the channel on one side of the fan.
2. Some years later the soil and vegetation have recovered and the fan shows little evidence of past debris flow events.
3. People develop the fan area with housing.
4. An intense cloudburst causes a debris flow which destroys structures and vegetation and moves the channel to a new location until the next event.

Reprinted from "Nature's Building Codes" *Geology and Construction in Colorado*

Debris and mudflows are a combination of fast moving water and a great volume of sediment and debris that surges downslope with tremendous force. The consistency is similar to pancake batter. They are similar to flash floods and can occur suddenly and without adequate warning. When the drainage channel becomes less steep, the liquid mass spreads out and slows down to form a part of a debris fan or a mudflow deposit. In the steep channel itself, erosion is the dominant process as the flow picks up more solid material. A drainage may have several mudflows a year, or none for several years.

A debris fan is a sloping, wedge-shaped deposit of loose rock, earth and vegetative debris near or at the junction of a smaller stream with a larger stream valley, or where the gradient of a stream abruptly decreases. The stream which deposited the fan normally traverses or runs along one of the edges of the fan.

Many stream valleys in the Middle Slate River Valley have debris fans that were built up over the centuries at the mouth of the stream valleys. They appear to offer attractive places for development. Frequently, in an effort to avoid mainstream flooding, debris fans are proposed for

development without the realization that they too are subject to periodic debris flows and flooding.

Usually, the destructive forces of the debris flows decrease as one moves from the narrow, steep apex of the fan to the broader, gentler slopes down gradient. Correspondingly, the size of the material deposited decreases as the debris flow moves across the fan. Debris fans often are vegetated with cottonwood or aspen trees, grasses and shrubs in distinct contrast to adjacent plant growth. Some debris fans are also subject to avalanches.

Structures and improvements on the apex of the fan may be destroyed or badly damaged while improvements farther down on the fan may experience milder water and mud damage. The heavy mass can push in walls, remove buildings from foundations, fill in basements and excavations, and sweep away cars. Boulders and trees, swept along by the muddy mass, can demolish buildings and flatten fences and utility poles. Even lower intensity land uses such as roads and utilities can be seriously jeopardized, resulting in loss of service and high maintenance costs. Erosion and deposition on an active fan by successive debris flows is to be expected. Removal of vegetation on steep slopes, dumping debris and fill in a mud flow path and improper road building or earth moving can contribute to a mudflow. The failure of a dam, irrigation ditch or other water management structure can initiate a mud/debris flow if the escaping water can swiftly accumulate a large volume of soil materials.

Mitigation requires an understanding of the natural processes of a debris fan and locating and constructing improvements accordingly. Measures that can be taken to decrease the hazard include building massive earth structures on the uphill side of houses or other improvements to divert the flow to one side or the other, planting a dense row of trees, erecting retaining walls, and channeling the stream. These measures should be considered only after a complete understanding of the process is obtained because in many instances they could be of little benefit and could even increase the hazard to other developed areas.

To prevent loss of life and property damage, areas subject to mudflows and debris flows should not be developed. Land uses on debris fans should range from open space to low intensity uses.

### **Seismicity**

Geologists recognize that many of the state's mountain ranges and basins are geologically youthful and that the faults associated with them continue to move and have the potential for generating earthquakes. In the last few decades, earth movement has been detected by seismographic instruments. Most of the earthquakes were quite small, but several exceeded Richter magnitude 5 and caused severe ground-shaking locally. Colorado is a moderately active earthquake area and in time larger earthquakes may occur.

Probably the largest quake ever felt in Colorado occurred November 8, 1882. Its intensity has been estimated as high as 6.5 on the Richter scale. It was felt throughout the state and in several adjacent states. Accounts of the quake suggest it was centered north of Denver near present day Broomfield or Louisville.

A powerful earthquake occurred near Crested Butte in 1880. The event occurred near midnight and brought residents out of their homes. Other earthquakes in the area occurred in 1940 and 1941 near Aspen, and 1984 near Carbondale.

More recently, earth movements were felt in the Crested Butte area in 1986. They were centered in the Ruby Range near Paradise Divide. An intense sequence of at least 200 events occurred

between August 12th and September 23rd. Sixteen of the earthquakes were felt locally and ranged from 2.0 to 3.5 on the Richter scale.

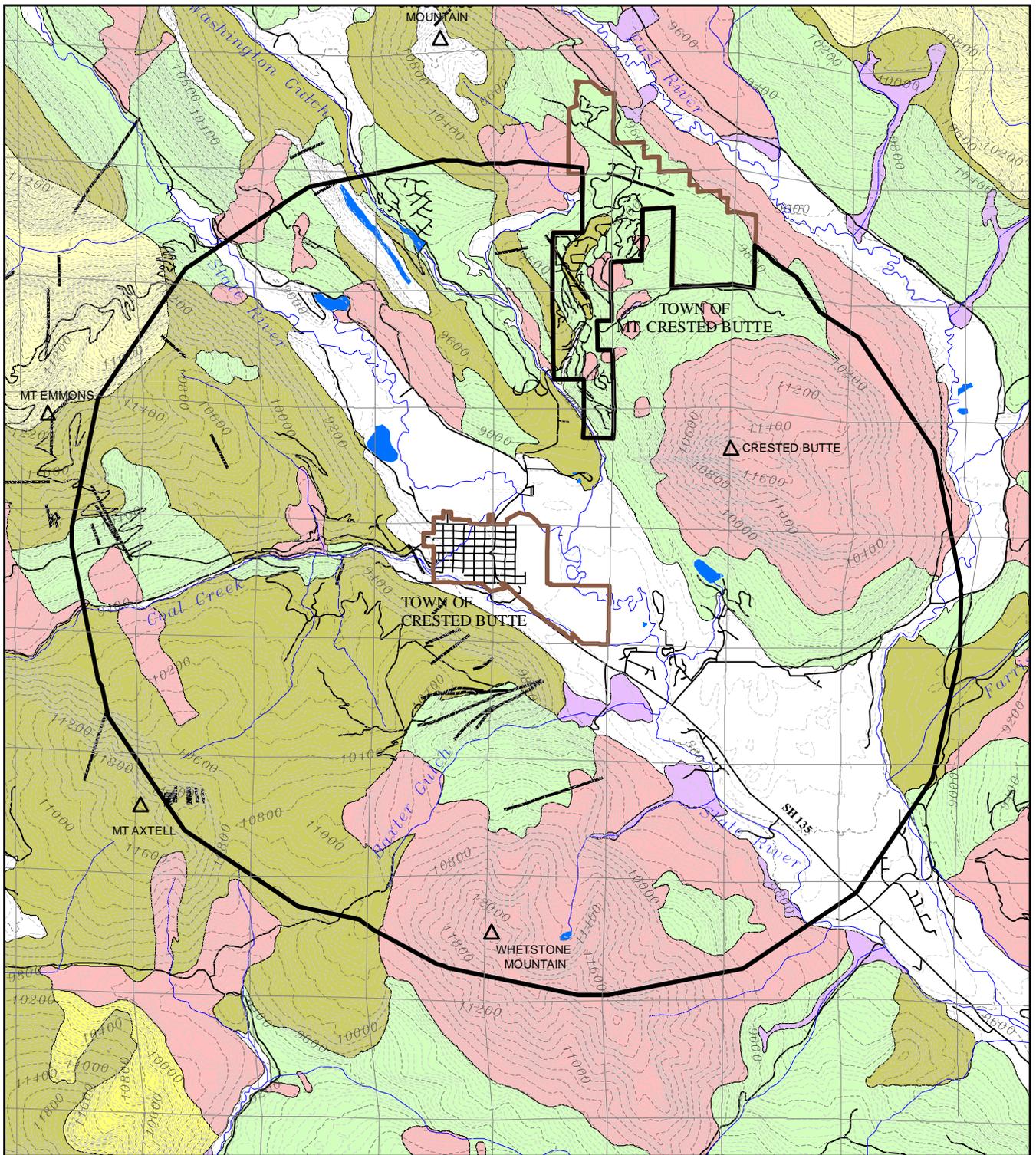
Earthquakes are caused by fault movements within the earth that produce vibrational waves which are transmitted through the ground. Interaction of these earthquake vibrations with the nearby surface and with the works of man results in the damage and destruction that often accompanies moderate and larger-sized earthquakes. The adverse effects may include severe ground-shaking in the epicentral region and possible ground rupture and displacement in the fault zone. In cases of adverse conditions, ground failure, such as landslides, soil settlement, soil liquefaction and ground cracking, may occur.

The faults mapped on the Geologic Hazards map are those that are evidenced in the surficial geology (surface geology) of the area. When the location of active faults in an area is well known and surface rupture and displacement are known to accompany earthquakes, building near faults should be avoided completely. Only when there is no alternative should certain transportation and utility corridors be built near faults.

Mitigation of earthquake damage deals primarily with the broader effects of ground-shaking on actual structures. It also deals with preventing associated effects such as landslides, through careful and conservative engineering designs and building codes consistent with the actual seismic hazard.

Development activities and structures that have the potential for severe offsite impacts are a special category of development near faults. Included in this category are large tailings impoundments, large reservoirs, hazardous waste storage, deep fluid disposal wells, and any other activity where a malfunction due to an earthquake could cause serious adverse effects to adjacent lands. Such facilities should receive careful seismic analyses and conservative engineering designs consistent with the earthquake risk of their locations.

- (1) Landslides: Analysis and Control, Special Report 176, Robert L. Schuster and Raymond J. Krizek, Editors; National Academy of Sciences, 1978; 234 pages.
- (2) Geologic Map of the Crested Butte Quadrangle, Gunnison County, Colorado; D. L. Gaskill, Steven M. Colman, J. E. DeLong, Jr., and Charles H. Robinson; U.S. Geological Survey; 1986.  
Geologic Map of the Gothic Quadrangle, Gunnison County, Colorado; David L. Gaskill, Felix E. Mutschler, John A. Thomas, and Stephen G. Zahony; U.S. Geological Survey; 1991.  
Geologic Map of the Mt. Axtell Quadrangle, Gunnison County, Colorado; D. L. Gaskill, J. E. DeLong, Jr., and D.M. Cochran; U.S. Geological Survey; 1987.  
Geologic Map of the Oh-Be-Joyful Quadrangle, Gunnison County, Colorado; David L. Gaskill, Larry Godwin, and Felix E. Mutschler; U.S. Geological Survey; 1967.

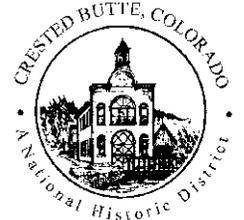


### Geologic Hazards

-  3 Mile Boundary (MSRV)
-  Town Boundary
-  Streams
-  Lakes
-  Roads
-  Section Lines
- 40' Topographic Contours**
-  index
-  interval
-  Faults

### Geologic Hazards

-  LANDSLIDE-EARTHFLOW AREA
-  UNSTABLE SLOPE
-  POTENTIALLY UNSTABLE SLOPE
-  MUDFLOW-DEBRIS FAN
-  ROCKFALL AREA
-  UNKNOWN



SOURCE: Colorado Geologic Survey, 1975, James A Soule  
 U.S. Geologic Survey Geologic Quadrangle Maps:  
 Crested Butte (GQ 1580), Gothic (GQ 1689), Mt. AxteLL  
 (GQ 1604) and Oh-Be-Joyful (GQ 578).



## **WILDFIRE HAZARDS**

### **Wildfire Hazard Map**

The Wildfire Hazard map for the Middle Slate River Valley was created by the Gunnison County Long Range Planning Office. Information sources for the Wildfire section and the Wildfire Hazard map include: the U.S. Forest Service, the U.S. Geological Survey (USGS), the Colorado State Forest Service (CSFS) and the Crested Butte Fire Protection District.

### **What are Wildfires?**

Wildfires are natural or human caused events that burn native vegetation and human made improvements. As with all other hazards, wildfires are usually not a problem for people unless they build structures in the path of a wildfire. Wildfires can occur in all seasons of the year. The fuels are more hazardous during certain times of the year and during droughts, when vegetation dries out.

The wildfires of concern are those which, once started, may become disastrous. Disastrous, in this context, means loss of life and destruction of improved property or natural resources. Crown fires that advance through the tops of trees or shrubs, more or less independent of the overall fire, are the type of fire to be most feared because most modern fire fighting methods are ineffective in stopping such a fire. Crown fires burn with a rapidly advancing wall of flame often more than 100 feet high. If conditions remain favorable to such fires, several hundred acres can burn hourly.

The best case scenario presented in the August, 2004 journal "Conservation Biology" predicts a 100% increase in wildfires by the end of the century due to projected changes in climate in western states.(1)

### **Wildfire Hazard Mapping**

The process to map wildfire hazard areas used a rating score for various wildfire factors as shown in Appendix III. The three major criteria when mapping wildfire hazard areas were Fuels, Slope and Aspect. Wildfire mapping also considered Ladder Fuels, Forest Density, and Insects and Disease.

As part of the wildfire mapping analysis, wildfire hazard labels of "Extreme, High, Moderate, Low or None" were applied to all parts of the Middle Slate River Valley on the Wildfire Hazard map. Generalized explanations of these categories are shown below:

#### **Extreme:**

Extreme wildfire hazard areas are areas supporting mixed or high-density conifers, heavy deadstanding or down trees, and conifer species with heavy burst understory on steep hillsides. Tree crowns are often touching. The burning characteristics are high intensity, long-burning fires during critical fire weather. Long-range spot fires of more than one-quarter (1/4) mile are common. The rate of spread is slow to very fast and flare-ups are frequent to continuous. Tree crown fires are possible. Just-burned areas are untenable by humans for an hour or more. The fire front is impassable. Extreme wildfire hazard areas are located throughout the Middle Slate River Valley hillsides, especially in the southwest portion.

**High:**

High wildfire hazard areas are areas that score lower than Extreme areas but are similar. They are generally on steep hillsides but the vegetation may not be as mature, making crown fires less likely. In these areas the fuels may be dense, high brush, 1-1/2 to 10 feet in height. They include dense conifer saplings taller than one foot. Small and scattered patches of conifers or deciduous trees may also grow in these areas. The fuels are continuous or nearly so. Flammability may vary markedly during the year due to changes in fuel moisture and leaf fall. Fire does not usually kill the brush species. They may re-sprout after fires with more numerous thin-stemmed fuels than before. Brush fuels reach maturity sooner than forests and thereby can be expected to burn more frequently than forests.

**Moderate:**

An example is a medium density conifer stand in which tree crowns are close but not touching. The burning characteristics of this fuel type support medium intensity fires. The rate of spread is slow to fast and flare-ups occur intermittently. Just burned areas are tenable by humans in about one-half (1/2) hour. Moderate fuel types are located throughout the Three Mile Plan, especially in the northeast portion.

**Low:**

Some examples would be grasses, alpine areas, dryland crops or streamside plants. Where steeper slopes and high grasses occur, and where ranching and wildlife have been displaced, grasses will increase and the grass and brush fire hazard increases.

**Consequences of ignoring the Wildfire Hazard threat**

Consequences of wildfire include flame fronts that are impassable by humans and wildlife, consumption of flammable vegetation, destruction of improperly designed structures, and sharp decreases in property values. Dangers to humans can vary from minor to fatal. Long-term impacts can include soil erosion, stream siltation, landslides, and loss of reservoir capacity. Another consequence of wildfire is the cost of fire fighting.

In Colorado, counties can participate in the Emergency Fire Fund (EFF). The EFF is a trust fund established by member counties into which they pay annual assessments. It is administered and implemented by CSFS. In the event of a wildfire, a member county may apply to the State Forester for EFF assistance. If approved, EFF will assist in paying for suppression costs. Gunnison County received EFF approval for the Wiley Ridge fire in 2002 and the Oso Creek fire in 2003. The total cost to fight the Wiley fire was \$150,000. The Wiley fire was a 1,084 acre forest and sagebrush fire. Approximately three-quarters ( $\frac{3}{4}$ ) of the burned area was sagebrush allowing it to be mopped up quickly. The costs would have been much higher if the entire fire had been timber.

If fire suppression requirements exceed a county's resources and state or federal agencies are asked for assistance, the county, state, and/or Federal Emergency Management Agency (FEMA) must bear the wildfire suppression costs. For example, in Larimer County, a plane crash on private property started a fire that burned 2,400 acres in eight hours. Fire fighting continued for one week and the county was responsible for \$250,000 in costs incurred by the state and the United States Forest Service.

## **Minimizing Wildfire Hazards**

In areas where the wildfire hazard is significant, minimum lot size should increase as slope and amount of vegetation increases. Minimum lot sizes should increase and other modifications may be required when development is proposed in areas where slopes are thirty (30) percent or more. An alternative to larger lot sizes is clustered development, with considerable open space on the property. Clustered development can be an effective means to minimize damage to improvements and the increased threat of wildfire due to human occupation of the land.

For planning purposes, developments should be designed with extreme fire weather conditions in mind. These conditions of high winds, low humidity, and high temperatures may occur only once every two or three years. However, when extreme fire weather is present, a disastrous wildfire is very likely to occur. Similar thinking is used in determining safe wind and snow loading specifications for building codes. Design should include wildfire safety zones for temporary public evacuation during fires. Roads should be designed to provide more than one ingress/egress to a subdivision during a fire and all lots should abut public roads so fire fighting equipment has legal access.

Generally, mitigation measures involve reducing fuels and ignition sources and providing fire fighting capability in developing areas. Examples of these measures are described below.

### **Fuel modification or treatment includes:**

- Chip or burn, under safe conditions, all slash materials that are not to be used as poles, posts or firewood.
- Maintain a large strip around all structures that is free of dead grass and dead trees.
- Prune dead branches to a height of at least 10 feet above the ground. This applies to all trees within two tree heights of structures.
- Thin vegetation near structures, thereby creating large spaces between potentially flammable natural fuels and structures.
- Stack firewood uphill of structures.
- Thin forested areas according to the Firewise Publications or CSFS recommendations, or the CBFD. (Firewise is a Colorado State Forest Service program that helps homeowners and builders prepare sites to address wildfire.)

### **When building roads or structures, the following measures can reduce wildfire hazards:**

- Fire spread rates increase with slope. Fire spreads twice as fast on 30% slopes as on flat ground. When the slope reaches 55%, the rate of spread doubles again. Due to this natural uphill phenomena, structures should be restricted from vegetated hillsides until evaluations and recommendations have been completed by the CSFS or the CBFPD.
- Structures should be set back from the top of ridges because as fires move up hillsides, they swirl at the top of a ridge. Structures near the edge are more prone to catch fire than those that have been set back from the edge. The chart below presents the recommended distances structures should be set back from the edge of hillsides:

**Table W 1**  
**Recommended Distances**  
**from the Edge of Hillsides to Structures**

<b>Hazard Labels</b>	<b>Distance Between Structures and Hillsides (feet)</b>
Moderate	30
High	50
Extreme	100

- Decks and big flat structures extending over the edge of steep hillsides are discouraged. Such structures provide large flat surface areas for exposure to fires.
- Building materials that are less likely to catch fire are encouraged.
- Discourage large soffits because they trap fire under eaves.
- Vents and accesses should have screens with 1/8” openings to prevent embers entering.
- Maintain a large strip around all structures that is free of dead grass, weeds, fallen trees and other debris.
- Prune dead branches to a height of at least 10 feet above the ground. This applies to all trees within two tree heights of structures.
- Single pane windows allow heat to pass through more easily than double or triple pane windows. Curtains and furniture on the inside of windows can spontaneously combust from the heat outside passing through the glass. Double and triple pane windows are encouraged. Curtains made with non-flammable materials are encouraged.
- External fire suppression systems are encouraged since they maximize the use of available water.
- Road design should comply with CBFPD Guidelines, Standards and Fees for the Review of Fire Protection in Proposed Inclusions to the CBFPD and New Subdivisions, P.U.D.’s or any other Buildable Parcel of Land Within the CBFPD, adopted July 20, 2004, as it may be amended, except for exclusions listed elsewhere in this Plan.
- Fire fighters may come from other counties or other states and will not be familiar with an area. Those directing fire crews may ask crews to go to specific roads that will be safe for fire fighters. Clearly mark streets and with reflective signs and clearly mark structures with numbers. Street signs should be constructed of non-combustible materials.
- Protect power supplies so power is available to run pumps.
- Protect pump houses made of non-combustible materials.
- Create evacuation clearings big enough that people can go to them to be safe if they cannot otherwise get away from a fire.

**Measures which reduce ignition sources include:**

- Equip stacks and chimneys with spark arrestors.
- Ban fireworks in Extreme and High wildfire hazard areas.
- Ban debris and trash burning during periods of high fire danger. (See Gunnison County Burn Ordinance.)
- Use explosion proof pumps and motors in areas close to combustible materials.

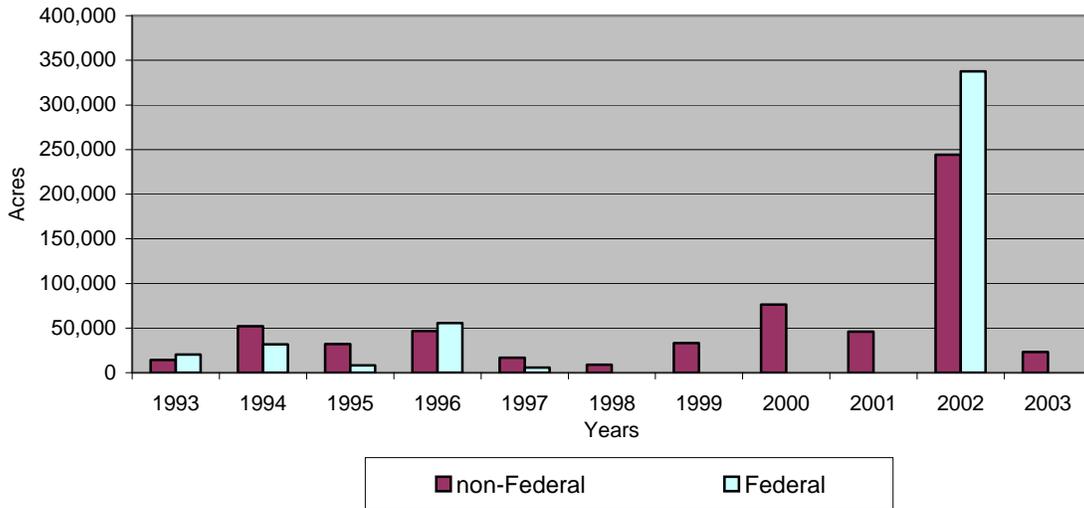
**Providing adequate fire fighting equipment involves the following:**

- Comply with the Crested Butte Fire Protection District standard minimum road specifications for access by fire fighting vehicles.
- Install standard hydrants and/or a cistern water system in developed areas according to NFPA 1141, 1142, 1144 and the International Urban Wildland Interface Code.
- Provide fire stations or substations where developments are planned to be more than five miles from the nearest presently available fire station.

In some cases the economic or environmental costs of mitigation, particularly fuel reduction, may be prohibitive. If, therefore, fuels cannot be modified so the wildfire hazard is acceptable, or if the fuels cannot be modified without creating new environmental problems, then the next most logical mitigation measure is to avoid Extreme, High, and Moderate hazard areas.

**Chart W 2**

Colorado Private and Federal Acres Burned

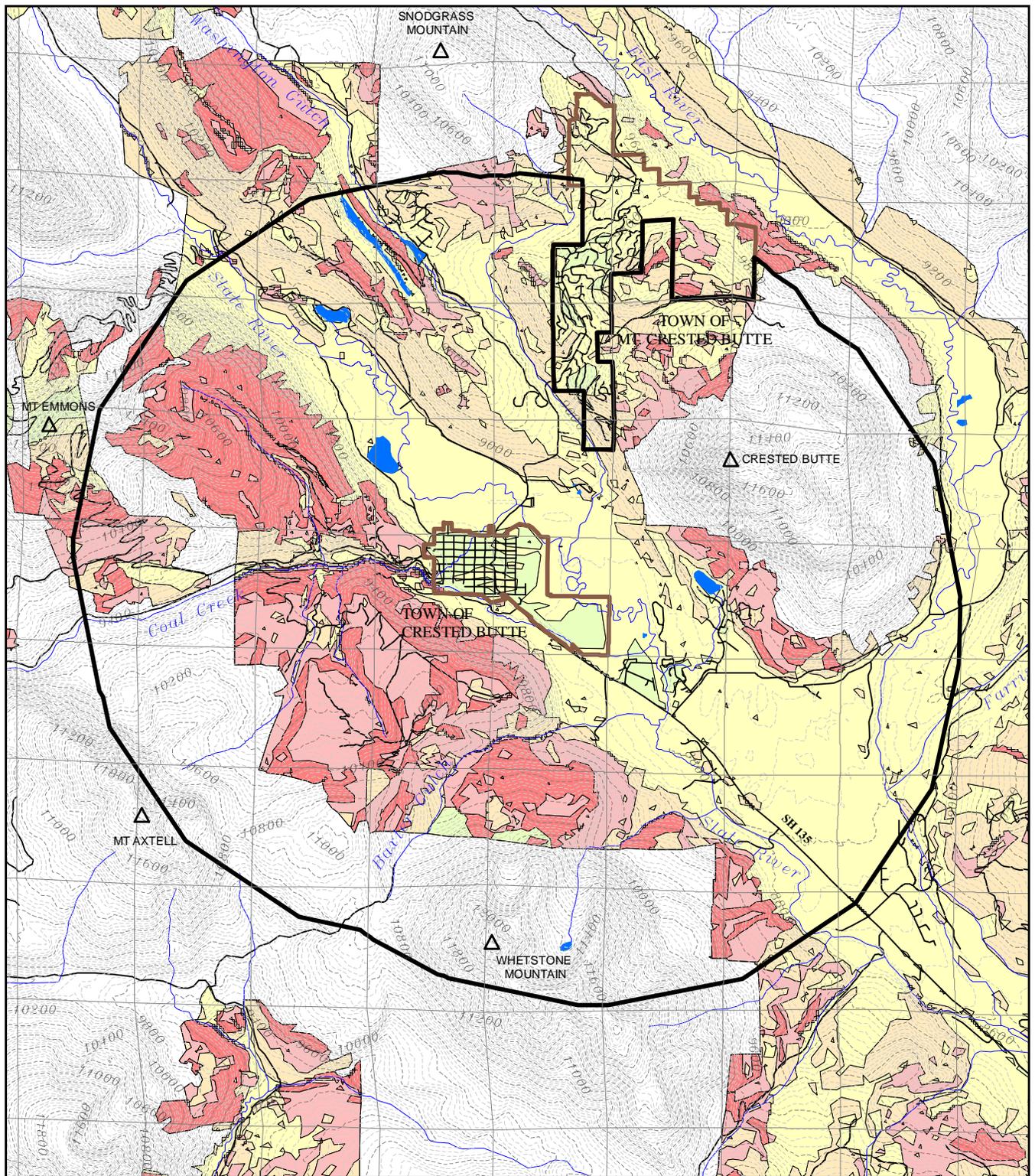


Source: Rocky Mountain Area and Coordination Center, Annual Activity Reports

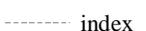
**Table W 3**  
**Private Acres Burned in Gunnison County by Year**

Year	Acres
1998	86
1999	11
2000	70
2001	575
2002	530
2003	80
2004	10

(1) “In a warming west, expect more fire”, High Country News, September, 27, 2004, p. 5.



## Wildfire Hazards

- |  |   |  |
|--|---|--|
|  3 Mile Boundary (MSRV) | <b>Wildfire Hazard</b>  | <b>40' Topographic Contours</b>  |
|  Town Boundary          |  Extreme hazard  |  index    |
|  Streams                |  High hazard     |  interval |
|  Lakes                  |  Moderate hazard |  |
|  Roads                  |  Low hazard      |  |
|  Section Lines          |  No hazard       |  |



SOURCE: Gunnison County MIS Dept. June, 2004  
 Colorado State Forest Service, Fort Collins, CO 1993



## SOILS

When soils are analyzed, the top 60 inches or so are assessed. The soils that have been mapped on the Soils map for the Middle Slate River Valley are those that are least suited for development. Generally these soils are hydric soils or those rated poorly for construction by the American Association of State Highway Officials (AASHO).

Hydric soils are so wet that some of the natural vegetation does not need to get oxygen from the soil. Rather, the stems and leaves allow oxygen to go to the roots. Some soils may be hydric because they are irrigated. When development occurs and irrigation stops, they may no longer be hydric.

The AASHO system classifies soils in seven basic groups according to those properties that affect their use in highway construction. The groups range from A-1 through A-7 on the basis of grain-size distribution, liquid limit, and plasticity index. A-1 soils are gravelly soils of high bearing strength. At the other extreme are A-7 soils which are clay soils that have low strength when wet.

Information used to determine which areas should be mapped was taken from the “Soil Survey of Gunnison Area, Colorado, Parts of Gunnison, Hinsdale and Saguache Counties, August 1975” and from the “Soil Survey of Taylor River Area, Colorado, June 1977.” The soil surveys were conducted by the U.S. Department of Agriculture Forest Service and Soil Conservation Service (SCS), which is now the Natural Resources Conservation Service (NRCS), in cooperation with Colorado Agriculture Experiment Station.

### **The following soils were mapped:**

1. Hydric soils
2. Soils identified as poor for development which received all of the following ratings in the soils studies:
  - a. Poor for road fill
  - b. Severe for local roads and streets
  - c. Severe for dwellings without basements
  - d. Moderate or high shrink swell potential
  - e. Rated A-6 or A-7 on the AASHO engineering classification system
3. Bedrock outcrops and slide areas were also mapped

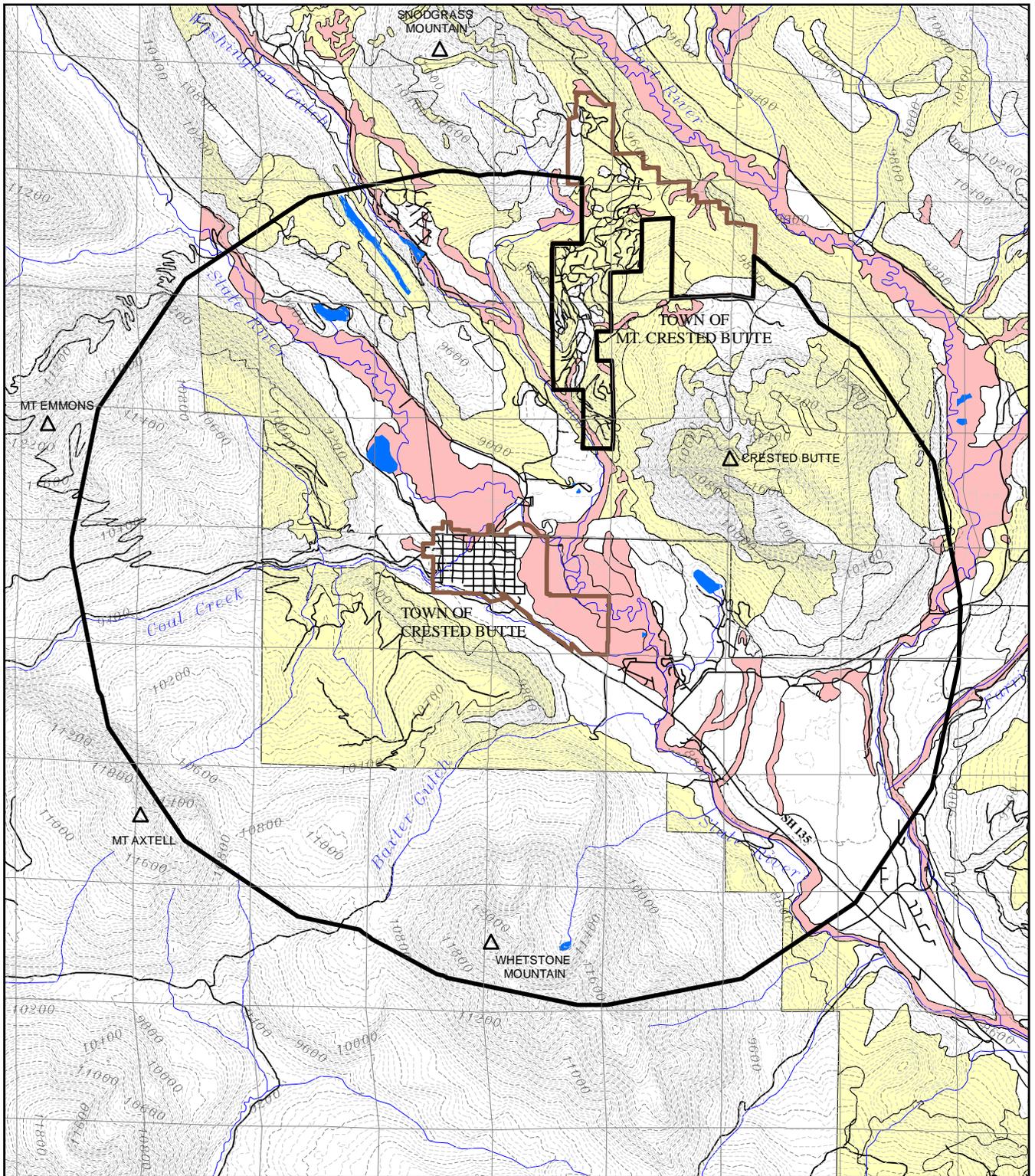
The SCS analyzed many other attributes for each soil type but the above issues are deemed to be most relevant to development. The following list describes each soil mapped and the interpretations by the SCS regarding their suitability for various types of development.

<b>Soil Symbol &amp; Name</b>	<b>AASHO Rating</b>	<b>Shrink Swell Potential</b>	<b>Road Fill Suitability</b>	<b>Local Roads &amp; Streets</b>	<b>Dwellings Without Basements</b>
BaF Bead	A-7	moderate	poor; slope is 10-50%	severe; 10-50% slope; >35% stone fragments	severe; 10-50% slope
BuF Bucklon	A-7	high	poor; depth to bedrock	severe; slope	severe; slope
CoE Cochetopa	A-7	high	poor; plastic clay	severe; 5-30% slope; high shrink swell potential; plastic clay	severe; 5-30% slope high shrink swell potential;
MoE Mord	A-6-7	moderate	poor; low shear strength	severe; 5-30% slope	severe;
NuF Nutras	A-7	moderate	poor; low stability; 25-55% stones	severe; 5-40% slope 25-55% stones	severe; 5-40% slope moderate shrink swell potential
Rl Rockland	too variable to be rated		poor; depth to rock; slope	severe; depth to rock; slope	severe; depth to rock;
Ro Rock outcrop	bedrock		poor; depth to rock	severe; bedrock at surface	severe; bedrock at surface
Rs Rockslides			na	severe; slide area	na
St Stony rock land			na	severe depth to rock	na
Sh Shale rock land	A-7	high	poor; depth to rock; slope	severe; depth to rock; slope	severe; depth to rock;

<b>Soil Symbol &amp; Name</b>	<b>AASHO Rating</b>	<b>Shrink Swell Potential</b>	<b>Road Fill Suitability</b>	<b>Local Roads &amp; Streets</b>	<b>Dwellings Without Basements</b>
TiF Tilton	A-6	moderate	poor; slope	severe; slope	severe; slope
TrF Tongue River	A-6	moderate	poor; sand stone at depth of 20-40" slope 10-50%	severe; bedrock 20-40"	severe; bedrock 20-40"
UtF Uinta	A-6	moderate	poor; 10-50% slope strength	severe; low shear	severe;
WeF Wetterhorn	A-7	moderate	poor; bedrock at depth of 20-40	severe; slope 10-55%	severe; slope 10-55%

**The hydric soils that are mapped are as follows:**

Aw Alluvial land	BbA, BbB Big Blue	Cr Cryaquolls
Cs Cryaquolls and Histosols	GaA, GaB Gas Creek	IrA, IrB Irim



**Soils**

-  3 Mile Boundary (MSRV)
-  Town Boundary
-  Streams
-  Lakes
-  Roads
-  Section Lines
- 40' Topographic Contours**
-  index
-  interval

-  Hydric
-  Other soils that are poor for development

SOURCE: Soil Survey of Gunnison Area, Colorado, 1975  
 Soil Survey of Taylor River Area, Colorado, 1977  
 U.S.D.A. Forest Service and Soil Conservation Service in cooperation with Colorado Agricultural Experimental Station.



## **SLOPE**

The information that follows was generated for the Gunnison County Planning Office in the mid 1970's, and by the Colorado Geological Survey in Nature's Building Codes, Geology and Construction in Colorado, 1979.

The importance of topography, both natural and man-made, to development in the Middle Slate River Valley cannot be overemphasized. An understanding of rock types, vegetation, drainage, climate, and active earth processes in relationship to topography is one of the keys to successful development.

### **Some of the planning elements affected directly by topography include:**

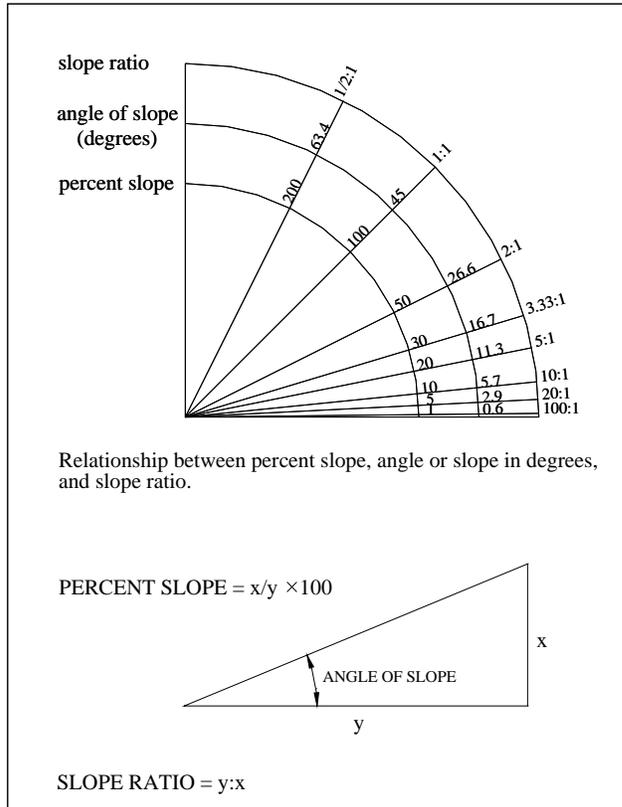
1. road layout
2. access to individual lots
3. need for cut and fill
4. sewage disposal system feasibility
5. surface drainage control and pattern
6. slope stability
7. lot layout
8. density of units
9. location of building envelopes
10. visual impact
11. wildfire hazard

An essential component of any development plan is an adequate topographic map showing the shape and character of the land surface proposed for development. Superimposing the proposed development on a topographic map can reveal unsuspected relationships that are not evident when considered individually. The developer/builder can then take advantage of desirable natural features and avoid problem areas.

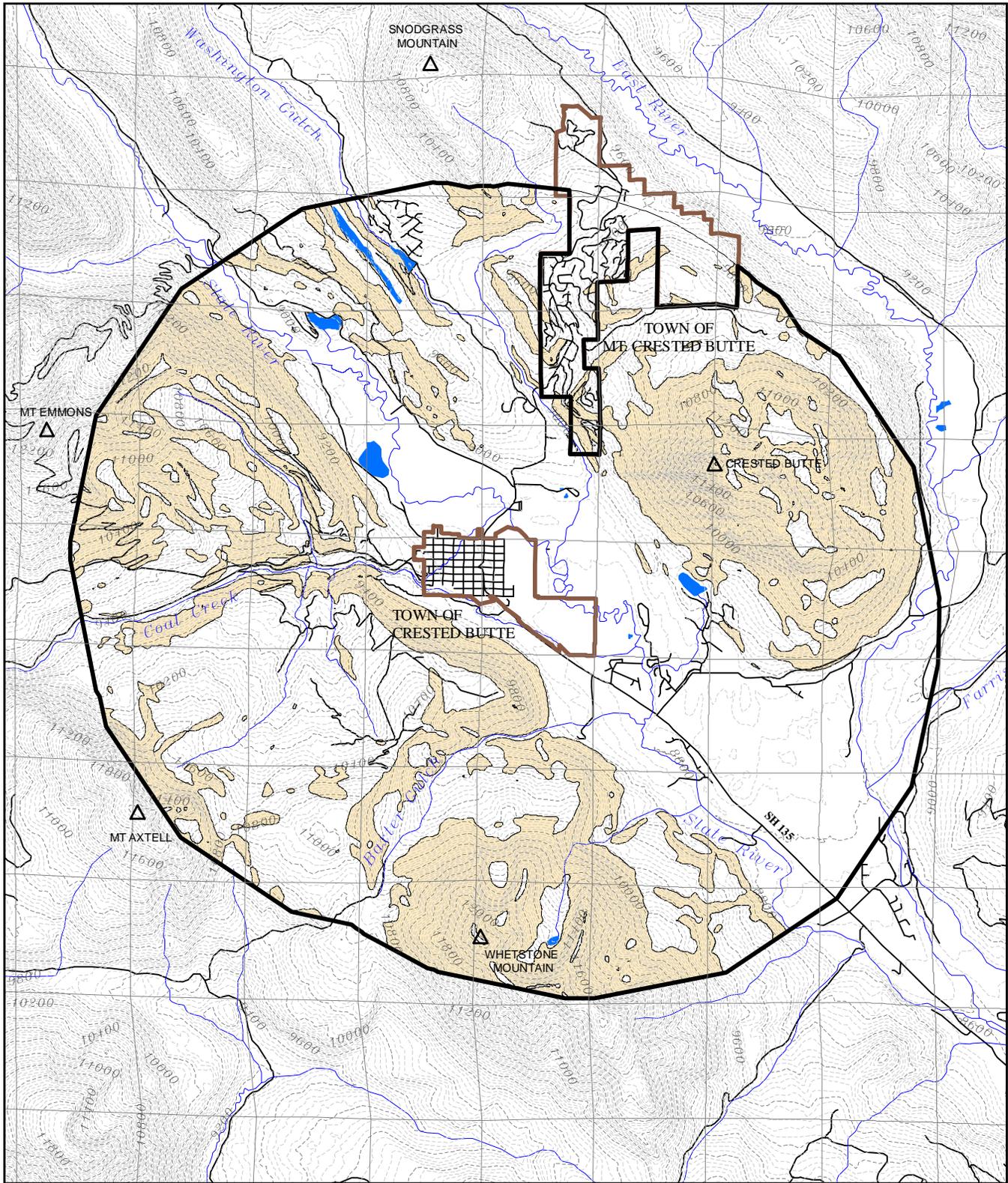
When development occurs on land with steep slopes, design characteristics will have to be altered to keep costs down for cut and fill and also to avoid slope failures. Roads should be placed parallel to contours to avoid grading expenses. Abrupt changes in grade may, in some cases, be overcome by switchbacks.

Slopes from one (1) to four (4) percent are usable for all kinds of intensive activity. Slopes between four and ten (10) percent are suitable for informal movement and activity. Slopes over ten (10) percent, make unfavorable roads and can be actively used only for hill sports or freeplay. Gradients above ten (10) percent require noticeable effort to surmount. Streets and roads should never be over eight (8) percent maximum grade. Maximum road gradients should also be reduced in consideration of snow and ice conditions. A fifteen (15) percent slope approaches the limit that an ordinary loaded vehicle can climb for a sustained period. Lawn areas should not exceed twenty-five (25) percent slope as this is the steepest grade recommended for a power mower.

It is difficult to build and maintain structures or roads on slopes of thirty (30) percent or more and these slopes are shown on the Slope 30% and Greater map.



Reprinted from "Nature's Building Codes" *Geology and Construction in Colorado*



### Slope 30% and Greater

- |   |                        |   |                       |   |                          |
|---|------------------------|---|-----------------------|---|--------------------------|
|  | 3 Mile Boundary (MSRV) |  | Town Boundary         |  | 40' Topographic Contours |
|  | Streams                |  | Lakes                 |  | index                    |
|  | Roads                  |  | Slope 30% and greater |  | interval                 |
|  | Section Lines          |   |                       |   |                          |

SOURCE: Gunnison County MIS dept. June, 2004  
 Town of Crested Butte Planning Department, 2004



# NATURAL RESOURCES

## VISUAL RESOURCES

The Evergreen Area Community Plan,<sup>(1)</sup> A Hillside Protection Strategy for Greater Cincinnati,<sup>(2)</sup> Dealing with Change in the Connecticut River Valley: A Design Manual for Conservation and Development,<sup>(3)</sup> and Computer Terrain Mapping, Inc. were resources used to create this section of the this Plan.

### Background

Crested Butte is in a beautiful natural setting. The Middle Slate River Valley is divided by a sweeping S bend in the Slate River. The towns of Crested Butte and Mt. Crested Butte are separated by the Slate River, open space and larger lot subdivisions. The mountains and peaks surrounding the valley define the Middle Slate River Valley and are focal points for residents and visitors.

The natural hillsides, lakes and ridge lines in the Middle Slate River Valley are increasingly threatened by development. Until the 1970s, most of the development in the region had occurred on the relatively flat valley floors. Construction in these areas was easier, less expensive and usually secure from threat of landslides and avalanches. Portions of Mt. Crested Butte (such as Overlook and the Summit), Glacier Lily Estates, Trappers Crossing, Smith Hill Ranches, and Saddle Ridge Ranch Estates, have increased the pressure for more development on the slopes and hillcrests in recent years. As described below, the views and vistas of the hillsides and ridges are very important to residents and visitors. Development in these locations threatens to change the personality of the valley and to affect the reasons why people live and visit here.

Structures on ridgelines and the hillsides around Crested Butte can degrade the dramatic visual character afforded by our natural setting. In addition, structures on the ridgelines and hillsides cause secondary impacts such as scarring of the slopes with roads, retaining walls, and excavations to build structures. These primary and secondary impacts are compounded by extremely unstable slopes and a relatively dry climate with slow-growing vegetation. Examples of degraded visual character and scarred slopes can already be found in the Middle Slate River Valley.

Preservation of Visual Resources is different than the more black and white issues of avalanches, and floodplains. In those cases we identify where the hazards are located and try to avoid them, or at least try to limit potential safety issues. Visual Resources, on the other hand, are much more subjective. There are many views that are important but part of the purpose of this section is to determine which views should not be disturbed and which ones can be disturbed if done properly.

Prior to Crested Butte's 1993 Three Mile Plan, hillside and hillcrest protection had not been addressed. The 1993 Three Mile Plan tried to protect the upper 40 feet of ridgelines and mountains. The Town found this difficult to achieve because many ridgelines are round hills and the ridgeline is difficult to define. In other instances, such as Crested Butte Mountain, much more than the top 40 feet should be preserved.

Another approach to ridgeline protection was in the 2000 Gunnison County Land Use Resolution (LUR). It tried to protect ridgelines by describing them as hillsides that can be seen from particular places, such as roads. Ridgelines with blue sky behind them should be protected if the proposed development can be seen from particular viewing places. This approach falls short for

ridges that have mountains behind them. The LUR also allows some development if it is shielded by conifer or deciduous trees.

Given this history of ridgeline protection in the valley and the difference between visual resources and other issues addressed in this Plan, the 2005 Three Mile Plan used the following approach for Visual Resources:

1. Determine what respondents to the land use surveys had to say about views
2. Identify priority hillsides for preservation
3. Recommend how to develop on hillsides where development is appropriate

### **Survey Responses**

Three questions in the 2004 Land Use Survey addressed visual resources. The first question asked respondents to identify all the things they value about Crested Butte and the upper East River valley from 22 choices given. “Beautiful scenery” was selected by 96% of the respondents. Beautiful scenery received more support than any other response in the whole survey. In addition, 84% of the respondents selected “Vistas (unobstructed views).”

The second question addressing this issue asked respondents to identify any natural/environmental features that should be preserved or remain undeveloped when a parcel of land is developed. From a list of 16 choices, 79% selected “Top of ridgelines” and 72% selected “Hillsides seen from the Town of Crested Butte. “Natural ponds or lakes” and “Natural creeks and rivers” received even higher response scores, but that may be because there are more reasons to revere these features, such as clean water.

Survey respondents were also asked to identify particular views from particular locations. Respondents wrote in views “of what” and “from where.” From Crested Butte respondents, the primary views that respondents identified as those that should be preserved or remain undeveloped in the order they were suggested were:

1. Paradise Divide, Slate River and Oh-be-joyful
2. Crested Butte Mountain
3. The Mountains around the Town
4. Smith Hill
5. Red Lady (Mt. Emmons)

Paradise Divide, Crested Butte Mountain, and Smith Hill were also mentioned multiple times from other locations, as were the Elk Mountains from CB South.

### **Priority Hillsides for Preservation**

Since beautiful scenery and views and vistas rated highly in the survey, the Town mapped the lands that can be seen from the Town Park, near the center of Town. These areas are bright yellow on the Sensitive Visual Resource Areas map. The map identifies everything that can be seen by a person standing in the Town Park.

The mapping technique assumed there were no buildings to block the views and the views were from an elevation of up to 12 feet above the ground. Because the wetlands and floodplain are lower, many of them do not show on the map. The hillsides and mountains are shown.

Based on the survey results and the mapping technique used, Anthracite Mesa, Smith Hill, the north side of Gibson Ridge, the western flank of Crested Butte Mountain, the eastern flank of Mt. Emmons and the mountains surrounding the Middle Slate River Valley are the Visual Resources appropriate for preservation.

Given this information, the private portions of Anthracite Mesa, Smith Hill, the western side of Crested Butte Mountain, the northern side of Gibson Ridge and the eastern flank of Mt. Emmons are the priority areas to preserve as visual resources. These priority areas are outlined in brown on the Sensitive Visual Resource Areas map. Views of important landscape features would be impaired or partially blocked if structures or development were built on the areas labeled “Priority Views That Should Be Preserved” on the Sensitive Visual Resource Areas map.

Paradise Divide, Avery Mountain and Whiterock Mountain do not show on the map, but should also be included since they can be seen from most of town and from the Town Park. These important landscape features outside the Middle Slate River Valley could also be negatively affected if structures or development were built on the mountains or Paradise Divide. However, with the exception of Mt. Emmons, these mountains and Paradise Divide are already protected since they are part of the National Forest.

### **Recommendations Regarding Development on Hillsides Where Development is Appropriate**

The Visual Resource policies are located in the Policies Section. They are intended to preserve the most important Visual Resources, describe how development could occur on less visually sensitive hillsides, and how development could occur on visually sensitive hillsides that cannot be avoided.

A transfer of development rights program is proposed as an incentive to land owners and developers to preserve important Visual Resources. This concept allows a landowner who owns land containing identified priority Visual Resources to sell or trade development rights to a person wishing to develop land in a more appropriate location. A conservation easement, or other appropriate mechanism, could then be used to ensure that the priority Visual Resource area is not developed in the future.

The portions of land forms that are near the skyline or near the top of a ridge, whether or not the sky is behind the ridge, are particularly sensitive from a visual standpoint. Structures that break the skyline or that change the ridgeline from a scenic viewing locale, tend to be conspicuous, and development in skyline and ridge top areas can significantly erode the rural flavor of an area. Development on skylines or ridge tops tends to compete with the visual dominance of the hillside and should be discouraged in the policies.

### **Other Important Visual Resources**

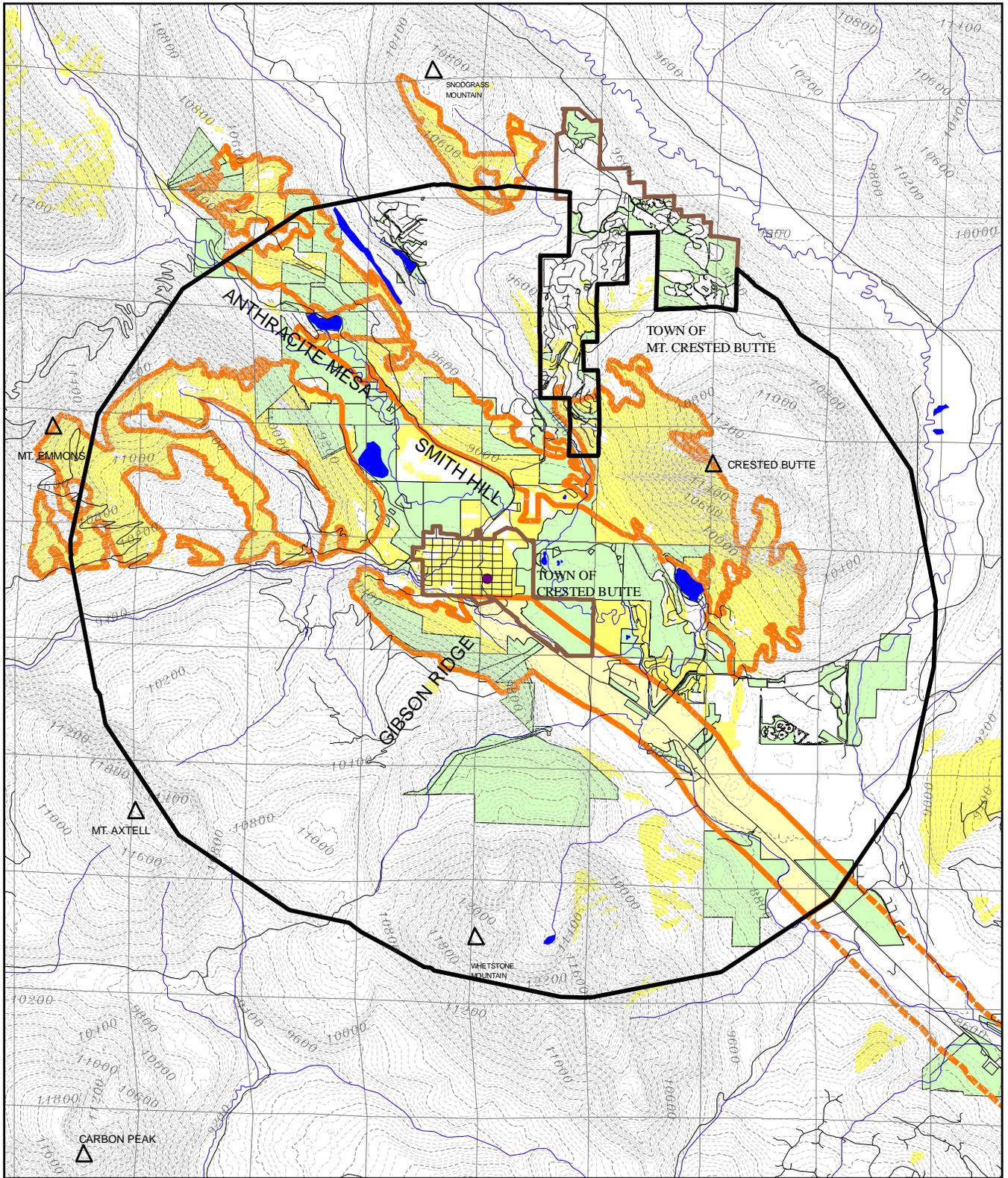
In 2003, the Crested Butte Land Trust began an initiative to preserve the view corridor from Round Mountain to Crested Butte. The views of the mountains and of the agricultural operations along State Highway 135 are the views the Land Trust is targeting. The Land Trust would like to work with land owners to preserve a one-half (1/2) mile buffer on both sides of the Highway as open space by purchasing or accepting donations of land or conservation easements from willing land owners.

Results of the 2004 Land Use Survey support that initiative, but it also identifies other important lands to preserve. When asked “what density is appropriate if development occurs”, 27% of the respondents selected the choice of “Medium density, like Riverbend, or Crested Butte South, with substantial open space” and 18% selected “Primarily open space” for the area south of Riverland Industrial Park.

When asked where is it important to preserve open space, the top three “Number One” choices were: the wetlands, 33%; the land beyond the end of plowed roads (e.g. past Nicholson Lake, past Mt. Crested Butte, past the East River bridge towards Brush Creek), 32%; and the entrance to Crested Butte from Round Mountain north, 12%.

The Sensitive Visual Resource Areas map shows the location of a one-quarter-mile buffer and that buffer is also outlined in brown indicating it is a priority view that should be preserved. It also shows the properties that have been preserved so far indicating significant progress toward the goal.

- (1) The Evergreen Area Community Plan, Golden, CO, Jefferson County Planning Department, 1987.
- (2) A Hillside Protection Strategy for Greater Cincinnati (Vols. 1, 2 and 3), Cincinnati, OH, the Hillside Trust, 1991.
- (3) Dealing with Change in the Connecticut River Valley: A Design Manual for Conservation and Development, Amherst, MA, the Lincoln Institute for Land Policy and the Environmental Law Foundation, 1989.



**Sensitive Visual Resource Areas**

- 3 Mile Boundary (MSRV)
- Town Boundary
- Streams
- Lakes
- Roads
- Section Lines
- Town Park
- Priority Views That Should Be Preserved
- 1/4 mile buffer - Gunnison County Comprehensive Plan
- Preserved Parcels
- 1/4 mile buffer around HWY 135
- Town Park Viewshed @ 12'
- 40' Topographic Contours**
- index
- interval



SOURCE: Gunnison County MIS Dept. February, 2011  
 Town of Crested Butte Planning Department, 2011

## **WETLANDS**

The wetlands of the Crested Butte area were mapped and analyzed by David J. Cooper, Ph.D. in 1992. The study area included most of the lowlands in the Middle Slate River Valley, including the Coal Creek watershed. Most of the information that follows is from the Cooper wetlands study.

For purposes of this Plan, wetlands are saturated or flooded, at least seasonally. The abundant water creates unique ecosystems that provide some or all of the following functions:

1. water quality enhancement
2. fish and wildlife habitat
3. ground water recharge
4. flood water retention, detention and storage
5. shore line anchoring
6. sediment trapping
7. food chain support
8. places for active and passive human recreation

The abundant water also allows primary and secondary biological production to be significantly higher in wetlands than in most surrounding uplands.

Crested Butte uses the wetland definition found in the Subdivision Regulations section of the Town Code (17-1-100).

### **Background**

Approximately 1,880 acres of wetlands were mapped in the Middle Slate River Valley. They are divided into 25 separate areas which are described by the functional values of each.

Wetlands in the Middle Slate River Valley are the result of two primary geologic functions. The first is water moving through the glacial till on valley slopes until it meets the saturated soils of the valley floor. At this point it surfaces and flows across the surface to the streams, creating permanently saturated soils. Roots and leaves do not fully decompose in this area so they accumulate and form peat soils.

Deposits from glaciers and debris flows are the second cause of wetlands in the area. These deposits dammed the Slate River. A glacial moraine deposited material near the State Highway 135 bridge over the Slate River. A series of debris flows from Baxter Gulch, across what is now the Whetstone Mountain Ranch, also deposited material.

Below the dammed area the river runs faster than upstream. Above the dammed area the Slate River flows through relatively flat lands in the Middle Slate River Valley and it is therefore a slow-moving river. Because it is slow-moving, beavers can affect it by building dams. The beaver dams are integral to the wetland system because they hold back the water and raise the water table so lands that might otherwise be dry are wet.

The consequences of these two conditions are soils that are inundated with water for weeks at a time, and vegetation that can only survive because it transports oxygen through the stem to the roots. Wetland vegetation in the Middle Slate River Valley is dominated by geyer willow, mountain willow, and beaked sedge. Other major vegetation types include submerged aquatic

vegetation in beaver ponds, lakes and slow-moving streams, grass, and herb-dominated wet meadows and peatland communities at seeps and springs and on lake and pond edges.

Cooper estimated that, in the relatively dry year of 1992, 840 acre feet of water were stored in the wetlands in the Middle Slate River Valley. During a wet year, the amount of water could be 50% greater. Much of this water is released during the summer, particularly July, as the water table and stream levels drop. The released water provides some of the water that down-stream users divert from the Slate, East and Gunnison Rivers. Additional water is stored again in the summer months, during rain events, and this water is discharged in late summer.

Cooper suggested 10 priority wetlands in the study area. They are shown on a map, from Cooper's wetland study, on the following page. Some are very high quality wetlands while others could be restored to be the high quality wetlands they once were. Other areas of wetlands not included in the priority wetlands can be important, can function very well as wetlands, and should also be protected.

### **Impacts to the Wetlands**

- **Water Quality**

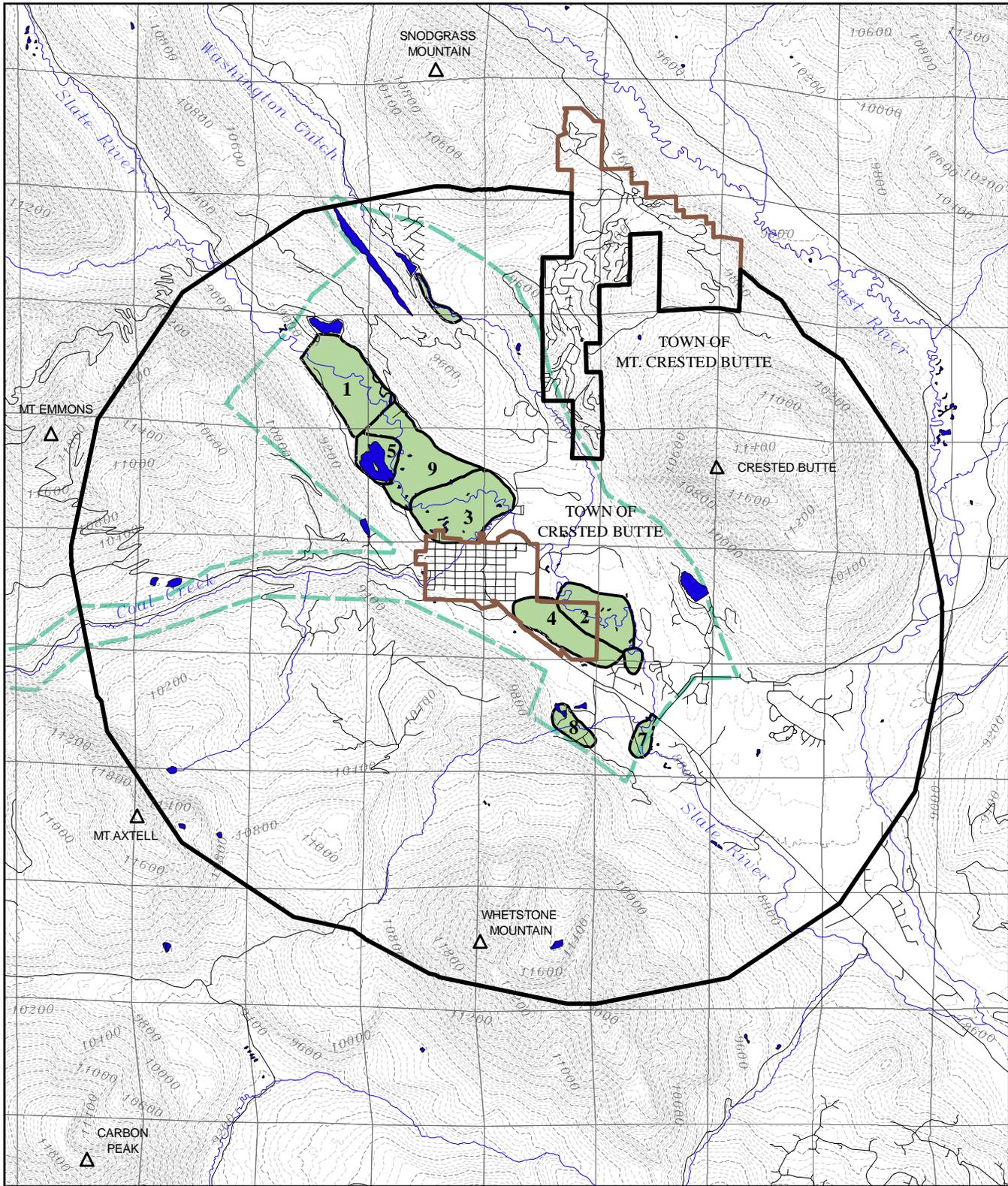
Water quality is an issue in the wetlands. Cooper said: "The Peanut Lake area, in the Slate River valley, is an area with great potential wildlife habitat value. It is also an area where mining has occurred.... During July, 1992, I (Cooper) identified three potential sources of pollution.... The data...indicate that water running from the Peanut Mine, mine portal and mine adit all contain significant concentrations of heavy metals." <sup>(1)</sup>

In 1996 the Crested Butte Land Trust hired Resource Engineering to evaluate the water quality and the sediments of Peanut Lake prior to purchasing most of the land around the lake. Their report found that, "The dissolved concentrations of all sampled metals were extremely low or absent in the water.... Peanut Lake water is of excellent quality with the exception of dissolved manganese (Mn) which...exceeded aquatic life standards and also exceeded concentrations reported by Cooper in 1992." <sup>(2)</sup> For analysis, Peanut Lake sediments were compared to Nicholson Lake sediments. A relatively high presence of Aluminum, Cadmium, Chromium, Copper, Manganese, Molybdenum and Zinc trace metals were found in Peanut Lake when compared to Nicholson Lake. The report concluded that because the pH of the water is high, it forces the metals coming to the lake, in surface water, to precipitate out into the sediments.

Data collected by the Colorado Division of Minerals and Geology (DMV) in 2001 for the Peanut Mine cleanup found that the water coming out of the Peanut Mine adit was good quality. However, after it crossed the tailings ponds on the mine/mill site it picked up heavy metals and transported them to Peanut Lake. Water samples taken by DMV in 2006, after the Peanut Mine cleanup, indicated concentrations of most heavy metals had decreased.

- **Filling**

While there is some filling of the wetlands in the area, most of the filling has had little impact. Much more important issues are ditching, draining and river down-cutting. Approximately 35% of the wetlands in the study area had been lost over the 26 years prior to Cooper's study.



**Priority Wetlands**

- 3 Mile Boundary (MSRV)
- Town Boundary
- Streams
- Lakes
- Roads
- Section Lines
- 40' Topographic Contours index
- interval
- Limit of Study
- Priority Wetlands



SOURCE: Wetlands of the Crested Butte Region, Mapping, Functional Evaluation, Hydrologic Regime, David J. Cooper, PhD Ecologist, March, 1993

Drawn by: Hilary Mayes  
 Date: April 3, 2006  
 Filename: areaplan/prioritywetlands.mxd

- **Ditching**

“Ditching involved the construction of a trench to depths below the water table, capturing groundwater in the trench and allowing it to flow to the river, or another conveyance structure. Typically, groundwater is flowing from upvalley or upslope toward the valley center or downvalley. Ditching can intercept this flowing water and effectively dry out down-gradient areas, removing important hydrologic support to wetland plant species. Three large ditches have been constructed in the Slate River valley between approximately one-half (½) and one (1) mile upriver from Crested Butte.” “These ditches have essentially collected all groundwater on the north side of the Slate River just downstream from Peanut Lake, thereby drying up the entire area below.”<sup>(3)</sup> Since Cooper’s report was written, the Crested Butte Land Trust (CBLT) purchased the Rice Parcel where the most northerly ditch was located. With the help of Crested Butte Mountain Resort, which needed to mitigate the loss of wetlands, that ditch was filled and groundwater may now flow down-gradient within the wetlands in that location.

- **Stream Channelization**

Stream channelization has occurred north of Crested Butte. “Some of this has apparently been caused by human intervention to straighten stream sections, protect bridges and remove gravel. However, the entire reach is now unstable and downcutting. The downcutting has brought the stream channel below the rooting depths of trees, willow shrubs and the herbaceous plants that line the stream bank. These plants are no longer effective for stabilizing the banks and lateral erosion is occurring. This is easily seen in the area of the Wild Bird Estates bridge. Once the stream channel degrades to the point where beavers no longer can divert water on the flood plain, and the willows are ineffective at bank stabilization, the Slate River is disconnected from its floodplain. Once that happens, further deterioration of the wetlands and stream channel habitat is inevitable.”<sup>(4)</sup>

The Slate River is naturally repairing some of the damage caused from channelization. For instance, just below Wildbird Estates the river makes a right angle turn on the CBLT Rice Parcel. Where the river runs fast, on the outside of the turn, it has been cutting into the bank and moving the river in the direction of the outside bank. On the inside of the turn, the river runs more slowly, and therefore, rock and sand are allowed to drop out of the moving water and a point bar (a deposit of gravel on the inside of river curve) is growing on the inside bank. The elevation of this point bar is lower than the surrounding riverbanks, creating a new, lower floodplain where new wetland plants are starting and where high flows can flood the new floodplain. If this process is allowed to continue throughout the wetlands north of Crested Butte, the wetlands can be restored to their former healthy state. This process is also occurring on the Kapushion Annexation open space north of town, but to a lesser degree. In this area the straight river is beginning to make some turns and point bars but not as dramatically as on the Rice Parcel.

- **Vegetation Destruction**

Vegetation destruction has occurred throughout the study area. Cooper estimates that 40% of the willows have been removed to clear land for agriculture. Willows are the most important wetland plant in the area because they provide:

- essential stream bank stabilization
- important habitat for wildlife
- essential food for beavers

- essential food for aquatic invertebrates, which form the base of the food chain for trout

- **Eutrophication**

“Eutrophication results from excessive nutrients concentrating in water bodies.” It is occurring on the Peanut Mine property, the Gunsight Bridge parcel and at Skyland. “The nutrients allow algal growth and the invasion of nutrient demanding plant species such as broad leaf cattail. The most important nutrients are nitrogen and phosphorous....The three important nutrient sources found in the Crested Butte area are fertilizers applied to lawns, municipal waste water, and septic systems with leach fields located near water bodies.”<sup>(5)</sup>

## **Mitigation of Impacts to Wetlands**

- **Buffers**

Buffers around wetlands have become a recognized method for protecting wetlands and their inhabitants. In a 1995 letter to John F. Hess, Crested Butte Director of Planning and Community Development, Howard H. Whiteman, Ph.D. stated:

“It is well documented that many wetland species, such as amphibians, reptiles, certain mammals, and insects, often use both the aquatic and terrestrial habitats during part of their life cycle. Thus both the wetlands and the surrounding habitat must be preserved to ensure that populations of these organisms are not affected. Biologists now realize that a wetland does not end where the water stops, but rather requires a larger amount of the surrounding terrestrial environment to remain biologically viable.”

Dr. Whiteman went on to say that chorus frogs and tiger salamanders, found in the Slate River valley “... spend much of their lives in the terrestrial environment around wetlands, and tiger salamanders are particularly likely to move much farther than 100 feet.”

Dr. Whiteman adds, “Typically, salamanders are only moving between the terrestrial environment and the aquatic habitat for breeding purposes. Adults migrate to the ponds soon after ice melt, breed, remain in the ponds for several weeks, and then return to the terrestrial environment to continue foraging and to search for overwintering burrows. Although it is currently unknown how far tiger salamanders in Colorado travel to find such burrows, Semlitsch (1983), observed an eastern tiger salamander move 163 meters from the edge of a wetlands.... Research at the Mexican Cut Nature Preserve indicated that adult salamanders commonly move between ponds in search of food, often several hundred meters at a time.” “In fact,” Dr. Whiteman observed, “during a two day period several marked individuals traveled approximately 300 meters in elevation, through very rough terrain.”<sup>(6)</sup>

“In most cases, an arbitrary (buffer) width will not reflect the highly variable circumstances found along the length of any given corridor (riparian greenway).” “...in the Pacific Northwest of the United States, a minimum recommended buffer of 30 meters (100 feet) on each side of streams is cited often in the papers reviewed by W. W. Budd and colleagues (in a 1987 study). E. S. Corbett and colleagues (1978) also suggest that a 30-meter strip of riparian vegetation protects stream ecosystems from the effects of logging in the eastern United States. In numerous California streams, J.D. Newbold and

colleagues (1980) showed that most or all of the logging impacts on invertebrate life were prevented by buffer strips of 30 meters or more. The Washington State Shorelines Management Act protects land within 60 meters (200 feet) of a creek, within the 100-year floodplain, or within the creek's associated wetlands, whichever is greater (Morrison 1988). The plan includes an ostensibly inviolate 15 meter (50 foot) buffer adjacent to the stream or wetland...In Maryland, the Chesapeake Bay Critical Area Commission designated land within 300 meters, (1,000 feet) of the bay as critical area and requires intensive review of proposed development (Davis 1987). For all regions, R. E. Togh (1990) recommends that activities within a zone of 150 meters (500 feet) on both sides of riparian corridors be subject to agency and public review for their effects on the stream.”<sup>(7)</sup>

- **Setting Buffers**

“Before setting widths (of riparian greenways and their buffers) identify and understand the surrounding land uses on the integrity of the stream communities and riparian corridors. This understanding should ideally be gained through comprehensive study of sediment and nutrient flows, hydrology, and local biotic integrity.... Include...at a minimum, the stream's geomorphic floodplain, the riparian forest, wetlands, and the stream's shallow groundwater system. Also include other critical areas such as intermittent tributaries, gullies and swales, aquifer recharge and discharge areas, adjacent slopes beyond the point of topographic leveling, and potential and actual areas of erosion (steep slope, unstable soil areas). All of these can have a major impact on the riparian ecosystem.

Set corridor widths that vary in proportion to the impacts of adjacent land uses. Forest clear-cutting, intensive agriculture, and dense housing development require wider corridors.”<sup>(8)</sup>

Based on the letter from Dr. Whiteman, the more general information from the Ecology of Greenways described above, and many other sources, buffers will be recommended as a means to mitigate the impacts of development near wetlands and other water bodies.

- **Other mitigations**

This section presents ideas for restoring damaged wetlands and their ecosystems. The list is not intended to be exhaustive. Local governments, developers, land owners and other interested parties can initiate these actions. Anyone interested in pursuing these activities is encouraged to do so by the Town. The list could also serve as a guide for development of a manual of best management practices for wetlands in the Crested Butte area. Some of the following activities are regulated under the Federal Clean Water Act, Section 404.

**Water storage capacity of wetlands can be maintained by:**

1. analyzing the causes of channel degradation and stabilizing the area
2. directing development to land that is not wetlands, including a 100 foot buffer area around wetlands
3. discontinuing removal of willows in the wetlands
4. planting native willows and other wetlands species in the flood plain and especially on stream banks
5. placing structures in the Slate River that will reduce the speed of the flow and flood additional land
6. minimizing development activities near beaver dams so development does not interfere with construction of structures by beaver that will:

- a. dam water
  - b. reduce the speed of the flow
  - c. flood additional land by raising the water level
  - d. reduce the rate of flow for fast running water
7. filling in drainage ditches so ground water will continue to flow past the former location of the ditches to be absorbed in the soils downstream

**Good water quality in the wetlands can be maintained by:**

1. building retention ponds to catch runoff and the associated sediment, including heavy metals, from roads, roofs, driveways and mines
2. designing individual sewage systems and by regular monitoring of the sewage systems, to ensure that effluent is not contaminating the wetlands or a 100 foot buffer area
3. diverting treated effluent from sewage systems to land that can become wetlands with the continuous application of effluent
4. maintaining a vegetation buffer around areas where construction will take place to reduce some of the sedimentation that takes place with runoff to nearby wetlands
5. managing agricultural activities to ensure return flows from irrigation do not pass through corrals or other intensive animal pastures prior to entering wetlands
6. conducting best management practices on residential lawns and gardens to minimize the use of pesticides, herbicides, and fertilizers
7. treating mine drainage water prior to allowing it to enter the wetland or a 100 foot buffer area

**The loss of wetlands due to filling can be prevented by:**

1. discontinuing filling on the wetlands and a 100 foot buffer area
2. reducing upstream sedimentation from poor construction practices and poor agricultural grazing methods

**The loss of wetlands because willows have been removed can be mitigated by:**

1. planting new willows
2. avoiding willow areas when new development is planned
3. discontinuing removal of willows

**Ditching, stream channelization and the further separation of the river from the flood plain can be slowed by:**

1. placing drop structures or small dams in the Slate River to slow the flow of water and raise the water level
2. allowing beavers to build additional dams behind man made structures to further raise the water level and increase the area inundated by water
3. discontinuing further ditching and straightening of the stream in the wetlands, and
4. avoiding construction of new roads that require compaction and may impede ground water flow to a wetland

**Eutrophication can be minimized by:**

1. applying fertilizers with the goal of least impact to adjacent aquatic and wetland ecosystems such as:
  - a. applying fertilizers in small doses rather than all at once

- b. avoiding application of fertilizers while it is raining
2. more careful construction and maintenance of septic systems and precluding leach fields in areas that could possibly drain into aquatic ecosystems, wetlands or other water bodies
3. working with the County Sanitarian and supporting determinations that a site is inadequate for a septic system
4. maintaining a minimum of a 100 foot buffer between development and wetlands
5. building a wetland near a treatment facility or transporting the waste water via a pipeline to an existing wetland that currently is supported by irrigation or is of low quality. Waste water treatment plants usually discharge nitrogen compounds. The quality of this water could be appreciably improved by a wetland treatment system

**Loss of wildlife dependent upon wetlands can be mitigated by:**

1. identifying species on a parcel targeted for development
2. determining the habitat required for the continued existence of wildlife
3. maintaining and enhancing the required habitat
4. acquiring lands with such habitat and preserving it as open space for the habitat
5. maintaining a minimum of a 100 foot buffer between development and wetlands
6. mapping, on separate overlays, the habitat of the various species and identifying overlapping important habitat and linkages of habitat for the species (These overlapping habitats and linkages should receive high priority when mitigating and preventing wetland losses.)

**Slate River Wetlands Preserve**

Since the 1993 Crested Butte Three Mile Plan was adopted, CBLT has developed a concept to preserve the wetlands described above. The Slate River Wetlands Preserve (SRWP) extends from the confluence of Oh-be-joyful Creek and the Slate River to the Rozman Ranch located downstream of the State Highway 135 bridge, near Riverbend. It includes Washington Gulch from Meridian Lake Park reservoir, to the confluence with the Slate River. The wetland complex is as much as one mile wide and over six miles long. In addition to preserving these wetlands, the Slate River will be able to cut new channels and create a new floodplain as the primary tool for restoring degraded portions of the wetlands. The SRWP includes approximately 1,900 acres of wetlands. Combining the efforts of the CBLT, the Town, landowners and subdividers, 1,159 acres have been preserved so far.

During the past five (5) years, 30 to 90 elk have been summering in the SRWP between Peanut Lake and the Gothic Road. They have been seen in the spring, during calving season, and come and go throughout the summer until late fall when they move south for the winter.

Over 80 birds have been identified in the SRWP by Ron Meyers and friends. See Appendix IV for a listing of identified birds.

**Colorado Natural Heritage Program**

In 2002, the Colorado Natural Heritage Program (CNHP) evaluated wetlands throughout Gunnison County.<sup>(9)</sup> One of the wetland areas evaluated was the upper portion of the Slate River, from the headwaters to the State Highway 135 bridge near Riverbend Subdivision. CBLT refers to the lower part of this study area as a portion of the Slate River Wetlands Preserve.

CNHP tracks plant communities in North and South America as indicators of biodiversity. Existence or absence of certain plant communities can be used as "coarse-filters" to determine whether a broad spectrum of biological diversity exists. Wildlife habitat would be one example of the biological diversity that may or may not exist. In other words, protecting the diversity of plant communities in a landscape directly and indirectly protects all of the species (from invertebrates to large mammals), which may depend upon or use them as part of their life cycles.

The CNHP labeled the Slate River study area a Potential Conservation Area (PCA) because it supports multiple examples of globally vulnerable and globally secure riparian plant communities in addition to two good examples of globally vulnerable plant species. (See map on the following page.) One of the plant species is an excellent example of Drummond willow/bluejoint reedgrass (*Salix drummondiana*/*Calamagrostis canadensis*). In Colorado, less than ten stands have been documented. When Dr. Cooper conducted his wetlands analysis in 1992, he documented the occurrence of these plants near the Rice Parcel, and in the upland Lower Loop wetlands.

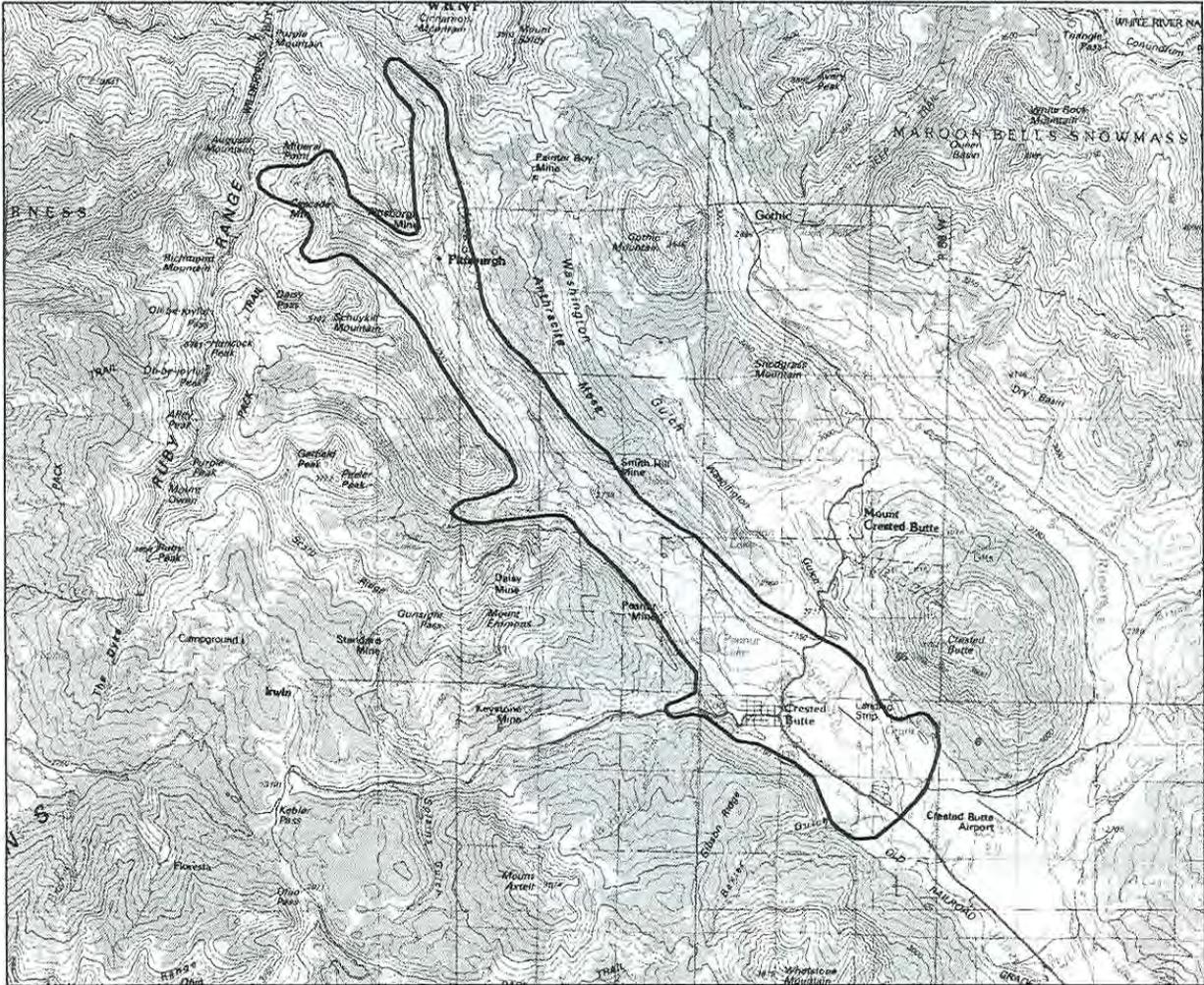
An excellent example of Geyer willow/water sedge (*Salix Geyeriana*/*Carex aquatilis*) shrubland is also found at this PCA. This association forms a tall-willow shrubland with smaller shrubs often occurring under the canopy. The canopy is nearly closed and a thick carpet of mesic grasses and forbs blanket the undergrowth. The ground surface is often hummocky with willows establishing on the raised mounds and grasses dominating the swales. This association is reported from several western states, but few pristine stands occur and it is relatively uncommon in Colorado. These plant associations are found in the High Quality Wetlands on the Lower Loop parcels, at Peanut Lake, at the Coal Creek and Slate River confluence, and south of the town of Crested Butte.

The PCA also supports a good example of the globally vulnerable Rocky Mountain (Serviceberry) willow/mesic forb (*Salix monticola*/mesic forb) shrubland. This association is only known in Colorado, where over thirty stands have been documented.

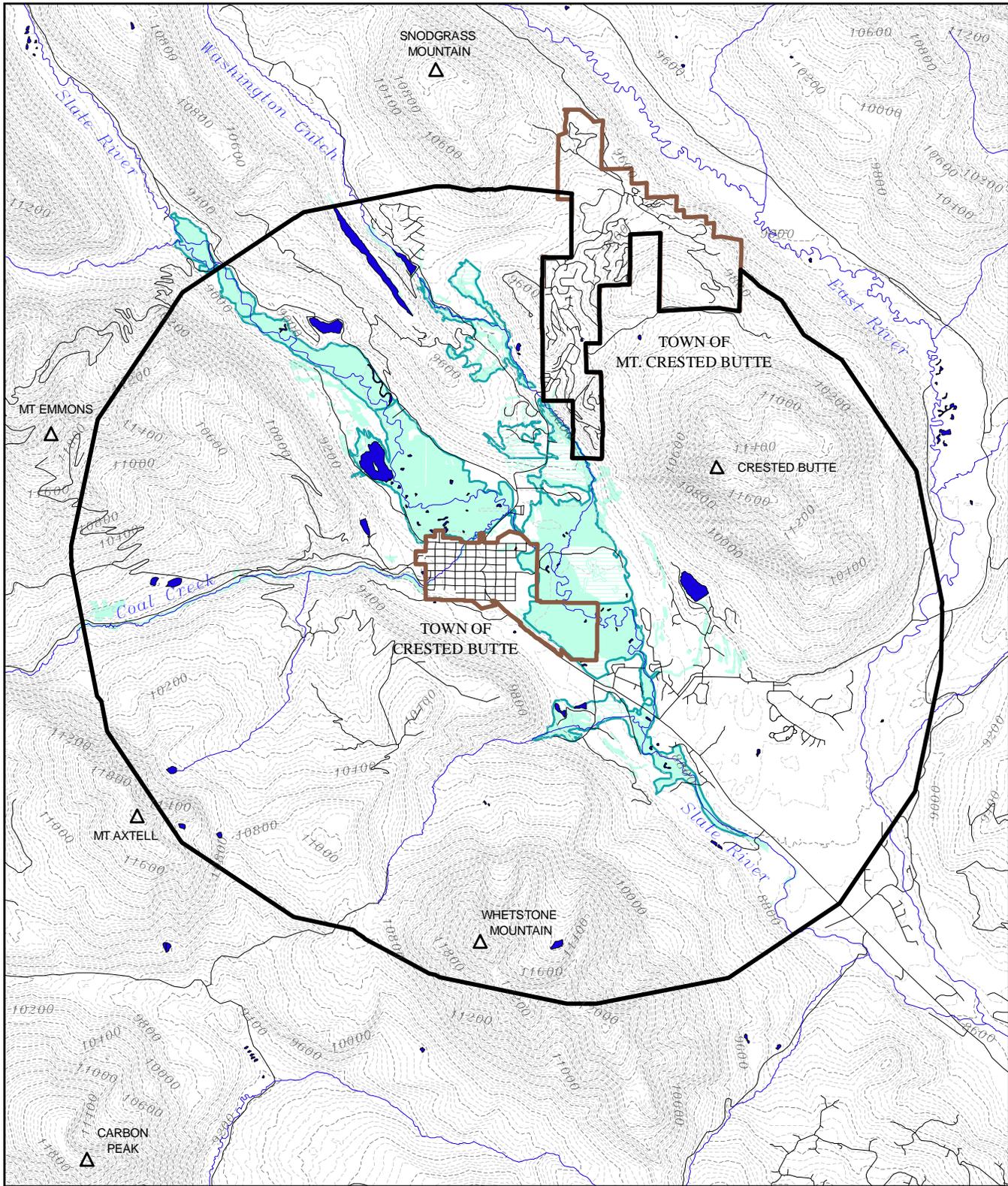
CNHP feels that all three of these plant associations are threatened by heavy recreational use, improper livestock grazing, and altered stream flows. This information can be used to prepare better land management plans for affected property.

- 1) Cooper, D. J. 1992. Wetlands of the Crested Butte Region: Mapping, Functional Evaluation, Hydrologic Regime. Report prepared for the Town of Crested Butte, p. 28.
- (2) R. Scott Fifer, 1996, Peanut Lake Water Quality Review, Crested Butte Land Trust, p. 5.
- (3) Cooper, D. J. 1992. Wetlands of the Crested Butte Region: Mapping, Functional Evaluation, Hydrologic Regime. Report prepared for the Town of Crested Butte, p. 45-49.
- (4) Ibid., p. 49.
- (5) Ibid., p. 53.
- (6) The previous three paragraphs include excerpts from a letter from Howard H. Whiteman, PhD, to John Hess, Crested Butte Town Planner, September 19, 1995. Dr. Whiteman was a member of the faculty at the Department of Biological Sciences, Purdue University, West Lafayette, IN. Dr. Whiteman is associated with the Rocky Mountain Biological Laboratory and has conducted long-term studies of Tiger Salamanders in the Mexican Cut area.
- (7) Daniel S. Smith and Paul Cawood Hellmund, 1993, Ecology of Greenways, (Minneapolis: University of Minnesota Press, 1993) , p.92-93.
- (8) Ibid., p. 99.
- (9) Joe Rocchio, 2002. Survey of Critical Wetlands and Riparian Areas in Gunnison County. Colorado Natural Heritage Program, Fort Collins, CO.

# Slate River Potential Conservation Area



<p>Colorado Natural Heritage Program          Colorado State University          8002 General Delivery          Fort Collins, CO 80523          Phone: (970) 491-1309          Fax: (970) 491-3349</p> <div style="text-align: center;">  </div> <p>map date: Feb 2003          GIS department: gd</p>	<p><span style="border: 1px solid black; display: inline-block; width: 20px; height: 10px; margin-right: 5px;"></span> PCA Boundary</p> <p>U.S.G.S. 30x60 Minute Quadrangles*          Paonia, 38107-E1          Gunnison, 38106-E1</p> <p><small>*Digital Raster Graphics (DRGs) produced by the U. S. Geological Survey, 1996</small></p>	<p style="text-align: center;">Location in Project Area</p> <div style="text-align: center;">  </div>
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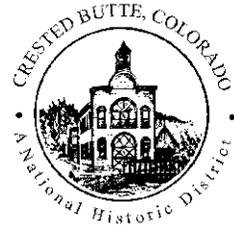
### Wetlands

- 3 Mile Boundary (MSRV)
- Town Boundary
- Streams
- Lakes
- Roads
- Section Lines
- 40' Topographic Contours
  - index
  - interval
- Slate River Wetlands Preserve
- Wetlands**
  - Natural
  - Irrigated



0 0.5 1 2 3 Miles

SOURCE: David J. Cooper, PhD Ecologist, 1993  
 Wright Water Engineers, 2000  
 Town of Crested Butte Planning Department, 2002  
 Bio-Environs, 2004  
 Western Ecological Resources, 2007



Drawn by: Hilary Mayes  
 Date: March 10, 2011  
 Filename: areaplan/wetlands-2011.mxd

## **WILDLIFE**

One of the reasons Crested Butte and the Middle Slate River Valley are special places is the variety and abundance of wildlife in the area. Much of the information that follows is based on discussions with Tom Henry, district wildlife manager, for the Colorado Division of Wildlife (DOW) during the winter of 1993, and Rick Basagoitia, district wildlife manager in 2004.

### **Elk**

Elk calving areas and winter range are mapped on the wildlife maps. At the time of adoption of the 1993 Crested Butte Three Mile Plan, elk were the only species mapped for the Middle Slate River Valley by the Colorado Division of Wildlife. As many as 200 elk summer in the Slate River area in Wolverine Basin, Coon Basin and Democrat Basin and migrate south to the Ohio Creek area for the winter. This migration corridor is just west of the Middle Slate River Valley but it is not unusual for elk to stop temporarily in the Wildcat Creek area or the Rozman Ranch during hunting season, and on their return to the mountains in the spring. Some elk bulls winter on the south face of Snodgrass Mountain.

As many as 90 elk summer in the Slate River Wetlands Preserve between Peanut Lake and the Gothic Road.

In the summer the area from Mt. Axtell to lower Gibson Ridge supports up to 300 elk and 75 to 100 elk use the east and south sides of Crested Butte Mountain. Another migration corridor exists on the eastern edge of the Middle Slate River Valley, from Crested Butte Mountain south, including the Buckhorn Subdivision area. Most of the elk that summer in the Middle Slate River Valley, winter at Flat Top Mountain, Lost Canyon, Cabin Creek, Ohio Creek and Beaver Creek.

Elk production areas and elk winter range areas are mapped by the DOW and that information is supplied via the Natural Diversity Information System (NDIS) to the Town and shown on the Elk Production Areas and the Elk Winter Range maps.

The DOW assists ranchers with losses of hay when elk begin feeding on hay that is stacked for cows. The DOW is not responsible for losses of plants around houses from wildlife.

### **Deer**

Deer populations are in residence in the Middle Slate River Valley in the spring, summer and fall. The number of deer is commensurate with the amount of habitat available. Most deer migrate to the Almont Triangle, Lost Canyon, Cabin Creek and Signal Peak for winter. DOW maps indicate the whole Middle Slate River Valley is mule deer range.

### **Black Bear**

There have been many incidents between people and black bears in recent years because many human activities in the area cause problems with bears. Examples of human activities that cause problems with bears include:

1. Garbage cans in Crested Butte
2. People being surprised by bears when taking trash to rural outdoor dumpsters or cans
3. Feeding pets outside (Even humming bird feeders attract bears.)

Bear proof dumpsters, frequent garbage collection and garbage locked indoors, help minimize contact with bears. DOW maps indicate the whole Middle Slate River Valley is black bear range.

## **Mountain Lion**

NDIS data indicates the whole Middle Slate River Valley is Mountain Lion range.

## **Waterfowl**

The wetland habitat in the Middle Slate River Valley is excellent for waterfowl. Many pairs of waterfowl summer on the Town Ranch, on Peanut Lake, and throughout the Slate River Wetlands Preserve. Waterfowl are adversely affected by dogs and cats. The DOW would prefer a 100 yard buffer between wetland habitat and development and notes that shorter buffers can be enhanced by planting willows or other vegetative barriers between wetlands and development. Geese habitat areas are shown on the Geese Production Areas map.

## **Birds**

The Crested Butte area is the most productive area for Blue Grouse in the upper Gunnison Basin because Blue Grouse prefer aspen trees and the tall grass habitat. Whitetail Ptarmigan use the willow areas in the winter. Great Blue Heron summer in the wetlands from Crested Butte to Pittsburgh. Despite the fact that DOW maps do not show any Blue Heron rookeries in the area, a Blue Heron rookery has been located in conifer trees in the Slate River Wetlands Preserve for the past few years. Most of their rookeries are located south, near the Roaring Judy Fish Hatchery in cottonwood trees. Bird counts on CBLT land by Ron Meyer, a regionally-recognized bird identification expert; Jim Barry, a retired National Forest Service employee; and friends have identified over 80 species in wetland and upland birds within the Middle Slate River Valley. (See Appendix IV)

## **Endangered species**

Wildcat Creek and Gibson Ridge are prime habitat for Lynx. This habitat is over 9,000 feet in elevation and has extreme north slopes and dense conifer stands. Lynx eat Snowshoe Hares and Pine Squirrels that inhabit these slopes. There were two unconfirmed, recent sightings of Lynx on Snodgrass Mountain in 2004. NDIS data indicates potential Lynx habitat in the Middle Slate River Valley and that area is mapped on the Lynx Potential Habitat map.

Boreal Toads are located in the southern portion of the Middle Slate River Valley.

Bald Eagles use the Middle Slate River Valley, especially the riparian areas during winter months.

## **Fish**

The entire Slate River, including its tributaries, is a fishery.

Brown trout	There is a spawning population of brown trout from Blue Mesa Reservoir to the headwaters of the Slate River. When the DOW conducted an “electroshock” of the Slate River between Peanut Lake and the confluence of Coal Creek and the Slate River in 1990, brown trout as large as 18 inches were observed in the River.
Brook trout	Brook trout are stocked in Coal Creek and the Slate River and are also found near the Rozman Ranch at the south side of the Middle Slate River Valley.
Rainbow Trout	Rainbow trout are abundant in the Slate River upstream of Nicholson Lake and near the Rozman Ranch. Catchable rainbow trout, seven to eight inches long, are stocked in the Slate River above Nicholson Lake.

Lake Trout            In the past, Nicholson Lake has had lake trout as large as 11 pounds.

### **Impacts to Fish Habitat**

Keystone Mine        Since the Amax Mining Company began water treatment of the Keystone Mine drainage, Coal Creek is much better for aquatic life.

Standard Mine        A 2002 report for the Forest Service found that concentrations of cadmium, copper, lead, and zinc were elevated below the Standard Mine on Elk Creek. These elevated concentrations continue to be present in elevated levels at the Crested Butte water intake and through town to the last sampling station on Coal Creek near the Slate River, for a total distance of about 7.5 miles. Aquatic life standards are exceeded for many of the minerals sampled. (1)

Peanut Lake            There is conflicting information about Peanut Lake. Peanut Lake is not known for any fish and little fishing takes place there. Tom Henry felt there were few trout in the lake because it is too shallow and acidic. However, Rudy Damjanovich, a local builder and fisherman, has seen fish in Peanut Lake, but has yet to catch any. Dr. David Cooper, who studied wetlands in 1992, expressed concern in his report about the polluted drainage into Peanut Lake from mines. He indicated that the lake was not a healthy habitat for fish because the minimum aquatic standards for cadmium, manganese, copper and zinc are exceeded by the drainages into the lake. He noted the heavy metal levels of the lake water itself are within the limits, but felt that the sediment of the lake may be at elevated levels. This was confirmed in 1996, when the Crested Butte Land Trust (CBLT) conducted sampling of the water and sediments prior to purchasing most of the lake (See Wetlands Section).

Re-establishing the wetlands would help the fish habitat tremendously. District wildlife manager Henry discouraged trails in wetlands because of the impact to habitat and wildlife. He identified mountain bikers as the biggest human problem. A bigger problem than direct human contact is salted runoff water going into creeks. Retention ponds are an effective mitigation measure because they slow the water and allow the salts to seep into the bottom of the pond before the water drains into a creek. However, retention ponds can also be very expensive. Public access to creeks, rivers, ponds and lakes allows the DOW to stock them with trout.

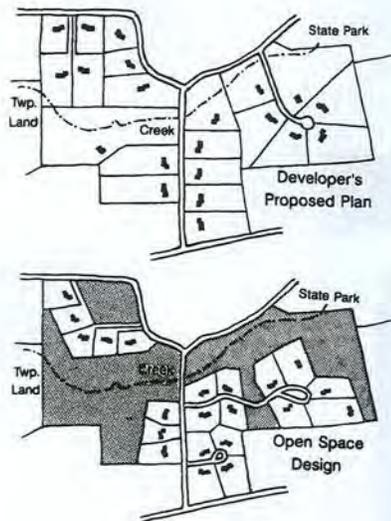
### **Effects of Development**

In habitats where little is being developed or disturbance is minimal, the animal population is stable. As the human population increases and development moves into new areas of previously undeveloped land or wildlife habitats, wildlife will coexist, migrate or die. Many wildlife species are very adaptable and can adjust to changes and disturbances if the habitat components include food, water and shelter (escape cover). The underlying assumption about wildlife migration away from development is that there are other lands that are not at their wildlife capacity. However, since wildlife populations grow in suitable habitat until the population capacity is achieved, the assumption that there is a place for wildlife to move to has no basis in fact.

The effects of subdivisions vary according to species. The wildlife species that generally get the most attention are either economic species (deer, elk and fish) or endangered species (bald eagle, squawfish, etc.). Wildlife species that receive the most attention in human interactions include

deer and bears because people see the consequences of deer and bears in their yards. Deer eat vegetation and are chased by dogs. Bears get into trash and climb trees outside home windows.

Development can have minor affects if it is planned with wildlife as a consideration. The level of impact is highly dependent on the habitat being affected, how wildlife use it, and the juxtaposition of the development and associated human activities with relation to the habitat. The use of land and the amount of disturbance that a development requires is critical. For example, large parcels with development clustered on a small part of the land, can minimize the affects to wildlife if a large percentage of the land remains open. When lots exceed 35 acres, the individual lots can provide adequate amounts of open space for wildlife habitat.

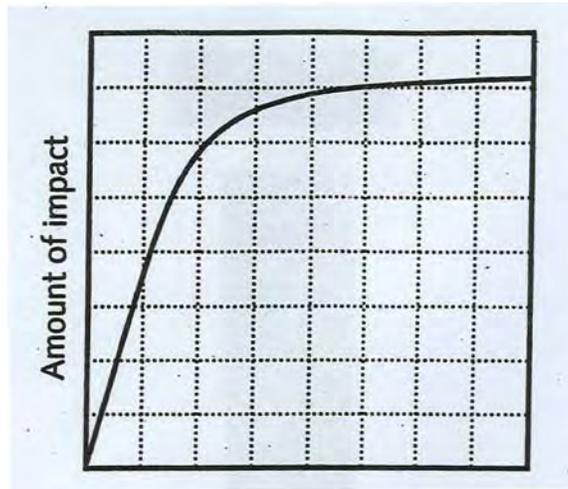


A conventional planning scheme (top), that spreads houses out along two road corridors, compared with an ecological planning scheme (bottom), which also considers habitat connectivity by clustering housing away from the movement corridor along the creek background (Reprinted from Rural by Design)

Protection of critical wildlife habitat such as wetlands, riparian areas, water courses, winter habitat, migration corridors and calving areas is most important. North-facing slopes are also important because they offer the best escape cover for wildlife. Conifers on north-facing slopes provide thermal cover and escape for wildlife of all types including: elk, deer, blue grouse, etc. The open areas, in all tree types, are the areas where wildlife feed during early evening, night, and into early morning. Open areas provide the majority of the feeding spaces used by most wildlife species because of abundant vegetation.

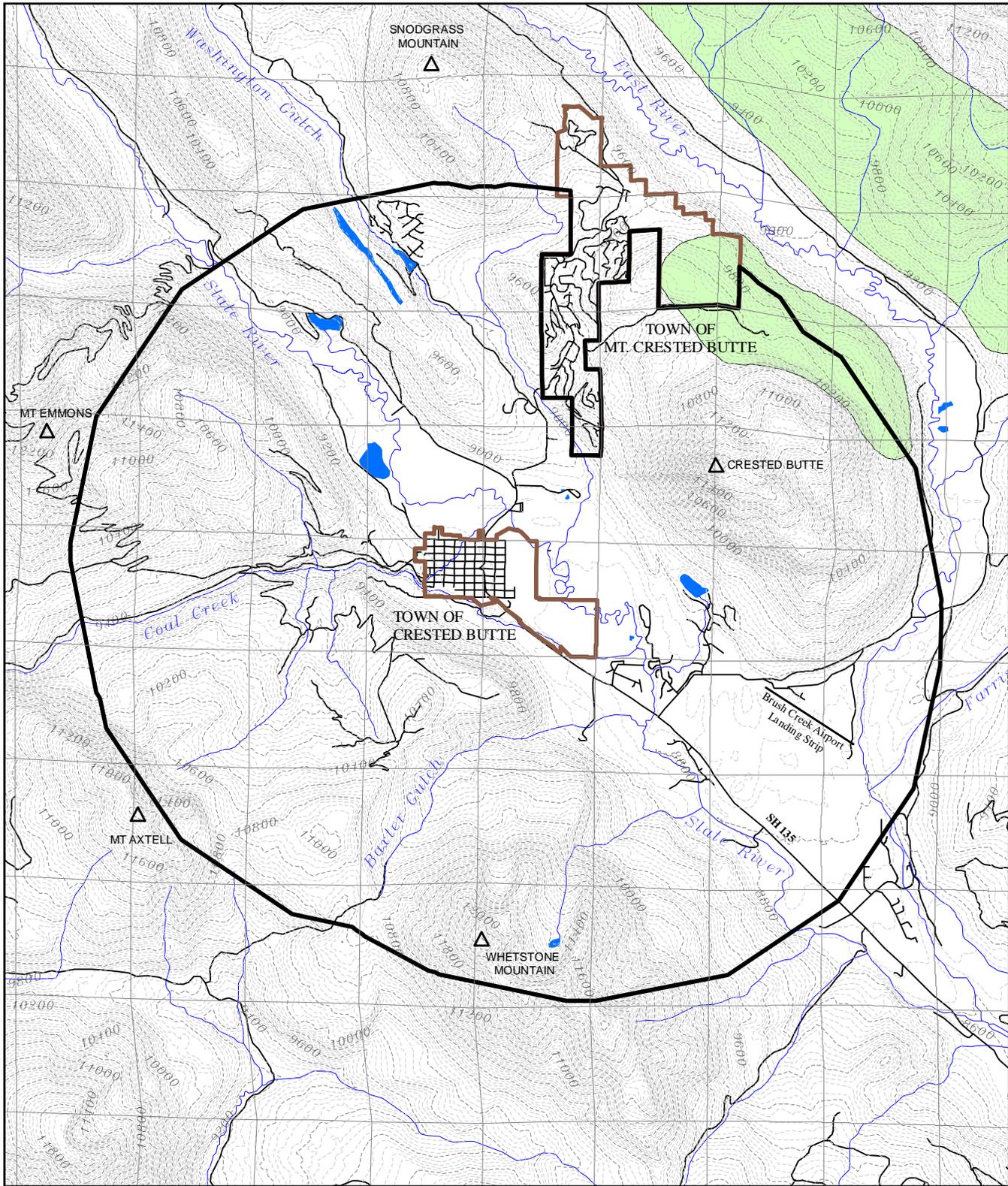
A quick look at the Elk Production Areas map indicates that the new Prospect Subdivision in Mt. Crested Butte overlaps the Elk Production Area.

**A generalized model of the asymptotic relationship between the amount of use and the amount of impact.**



Where use levels are low, incremental increases in the amount of use have a pronounced effect on the amount of impact. Where use levels are moderate to high, incremental increases in the amount of use have little effect on the amount of impact. Reprinted from “*Ecology of Greenways.*”

(1) “Standard Mine, Final Engineering Evaluation/Cost Analysis Report,” Science Applications International Corporation, Grand Mesa, Uncompahgre, and Gunnison National Forest, July 9, 2002.



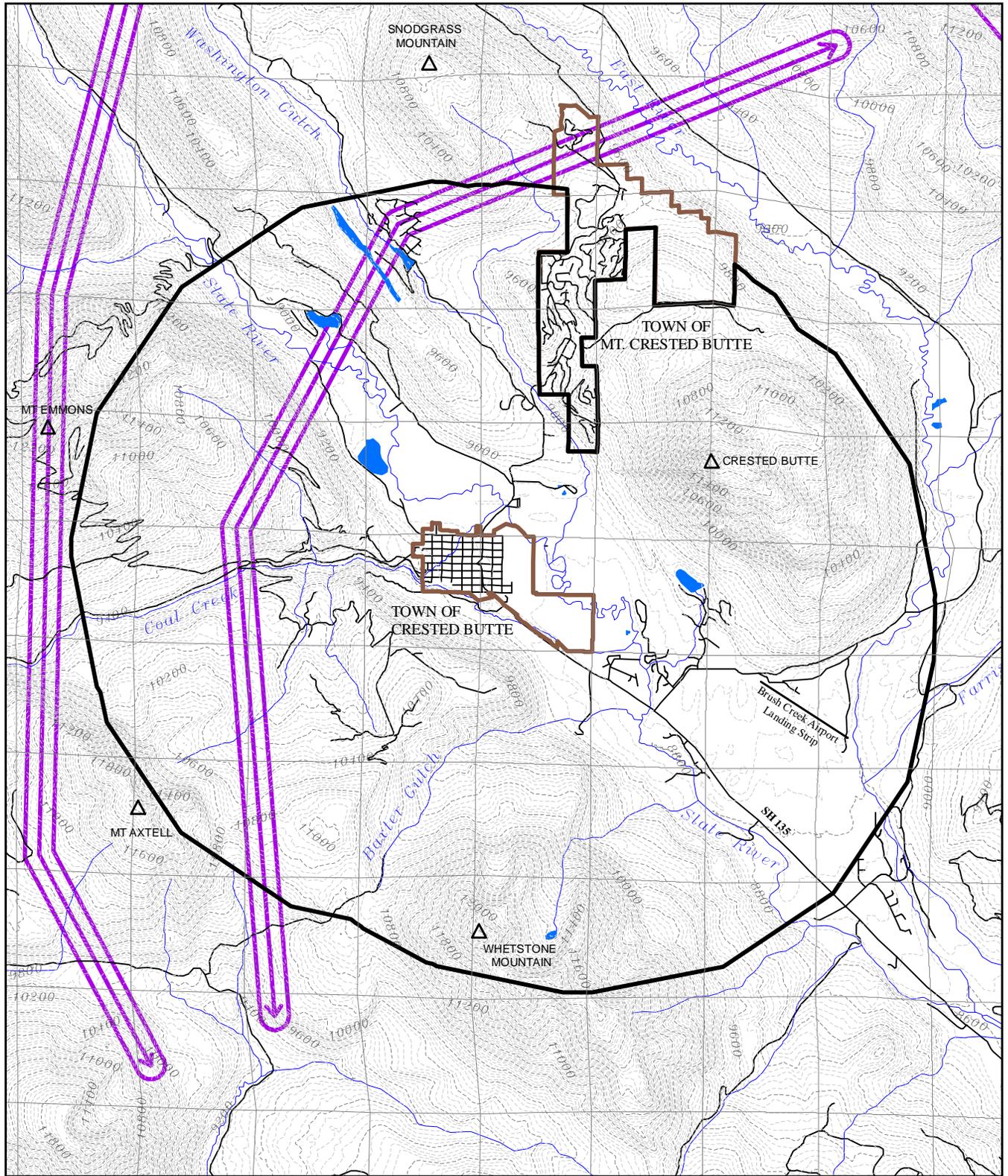
### Elk Production Areas

- 3 Mile Boundary (MSRV)
- Town Boundary
- Streams
- Lakes
- Roads
- Section Lines
- Elk Production Areas
- 40' Topographic Contours — index
- interval



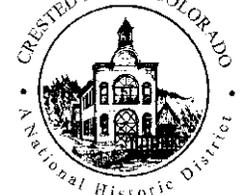
SOURCE: Colorado Division of Wildlife data from Gunnison County MIS Dept., June 2004

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 Date: June 22, 2005  
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### Elk Migration Patterns

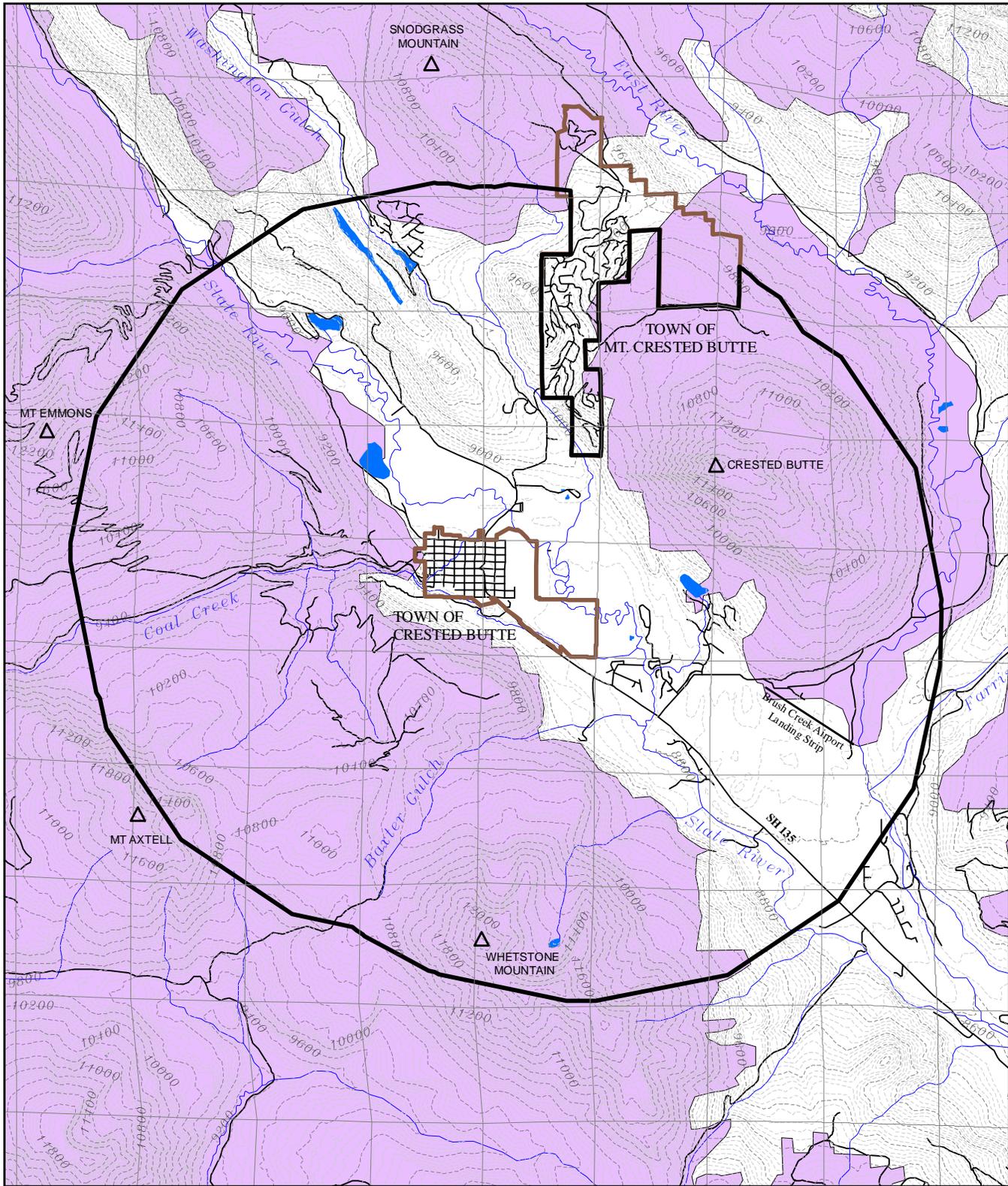
- 3 Mile Boundary (MSRV)
- Town Boundary
- Streams
- Lakes
- Roads
- Section Lines
- 40' Topographic Contours
- index
- interval
- Elk Migration Patterns



Drawn by: Hilary Mayes  
Date: June 22, 2005

Filename: C:/project/areaplan/2011/elk\_migr.mxd

SOURCE: Colorado Division of Wildlife data from Gunnison County MIS Dept., June 2004



**Lynx Potential Habitat**

- 3 Mile Boundary (MSRV)
- Town Boundary
- Streams
- Lakes
- Roads
- Section Lines
- Lynx Potential Habitat
- 40' Topographic Contours index
- interval

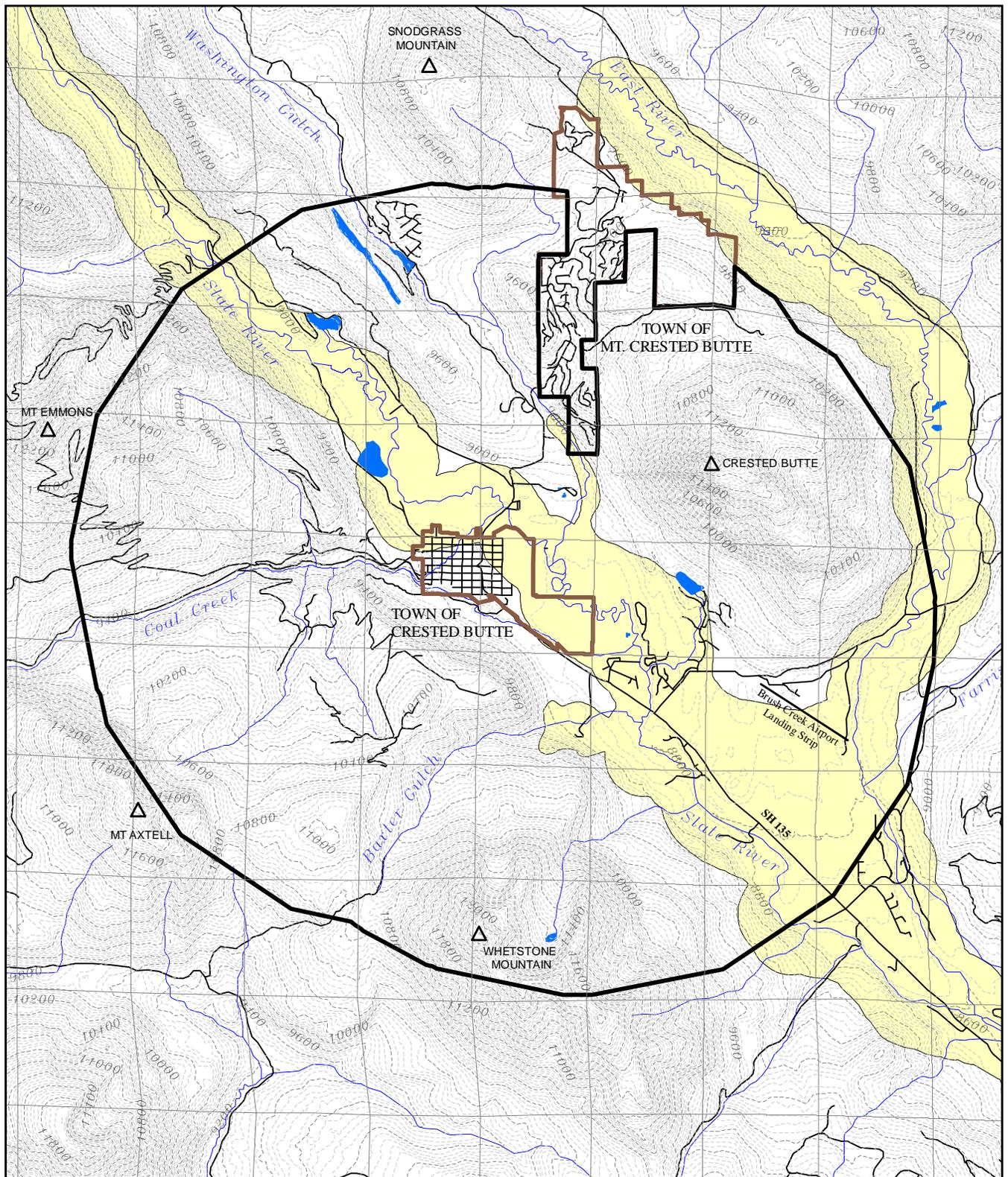


SOURCE: Colorado Division of Wildlife data from Gunnison County MIS Dept., June 2004

Drawn by: Hilary Mayes

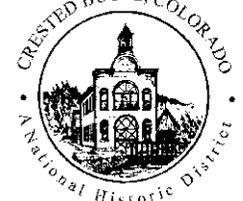
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### Geese Production Areas

- |   |                        |   |                          |
|---|------------------------|---|--------------------------|
|  | 3 Mile Boundary (MSRV) |  | 40' Topographic Contours |
|  | Town Boundary          |  | index                    |
|  | Streams                |  | interval                 |
|  | Lakes                  |  | Geese Production Areas   |
|  | Roads                  |   |                          |
|  | Section Lines          |   |                          |



Drawn by: Hilary Mayes  
 Date: June 22, 2005  
 Filename: C:/project/areaplan/2011/geese.mxd

SOURCE: Colorado Division of Wildlife data from Gunnison County MIS Dept., June 2004

## TRANSPORTATION



When the Town was incorporated automobiles did not exist. The Town was not designed for automobiles and part of the charm of the Town today is that it is a community where pedestrians and the design and scale of historic houses and streets can continue to interact.

### **Community Character**

The major transportation issues facing the Town are maintaining the community character, provision of trails, street maintenance, snow plowing and snow storage, and maintaining the streets after they are paved. The facilities cost to plow snow, which includes most of the maintenance equipment is discussed in the Snow Plowing and Traction Control section of the Land Use Plan.

Transportation is an important subject to the residents of Crested Butte as demonstrated by the comprehensive analysis of the subject over the years. The following is a brief summary of past transportation studies. Recommendations generated during these studies that are applicable to the Middle Slate River Valley (MSRV) are included in the Transportation Policies. Following the summaries of the transportation studies are discussions about Mountain Express (a public bus service between Crested Butte and Mt. Crested Butte), trails, nordic trails, air transportation, roads and the Crested Butte Master Street Plan.

## TRANSPORTATION STUDIES

### 1. Gothic Road Study

The “Gothic Road Study” by Merrick and Co., conducted circa 1976, identified two alternate routes to Mt. Crested Butte - one through what is now Skyland and one west of Sunlight Ridge.

### 2. Transportation Development Program for Crested Butte

Transplan Associates created the first “Transportation Development Program (TDP) for Crested Butte” in 1980. Based on the information in the TDP, several TDP updates, and the newly incorporated Transit Elements to the Statewide Transportation Improvement Plan (STIP) – Region 10, Mountain Express has been applying for federal grants to help fund the system since the 1980s.

### 3. Transportation, Alleys and Parking Report

In 1992 a committee of Crested Butte citizens developed a “Transportation, Alleys and Parking Report” (TRAP) to address transportation concerns in Crested Butte. The report analyzed speed, alternative transportation, tourist transportation, parking, snow-plowing, alleys, bridges and air pollution.

### 4. Transportation and Sustainable Development in Crested Butte

In 1996 Gary Sprung, a Town Council member, wrote a nine page document named “Transportation and Sustainable Development in Crested Butte” with 20 recommendations on “how to get there.”

### 5. 1998 Crested Butte Transportation Plan

The “1998 Crested Butte Transportation Plan” was conducted in response to the changing quality of life in Crested Butte due to motorized traffic. The community was being so impacted by motor vehicles that it was difficult to cross Sixth Street during busy times of the year. Speeds on Whiterock Avenue made it dangerous for pedestrians and bicyclists, and the general congestion in downtown was unpleasant for residents and visitors. In 1997 the Colorado Office of Energy Conservation provided funding for a valley wide look at ways to conserve energy through transportation planning. In the fall of 1997 the Crested Butte Roundtable, consisting of 17 members, began meeting to address transportation. The group identified five major problem areas and 24 action steps to improve traffic flow. The 1998 plan was adopted by the Town Council as an additional appendix to the Upper Gunnison Valley Transportation Plan. It was the intent at the time of adoption that when the Land Use Plan, the Three Mile Plan and subdivision regulations were revised, the findings of this plan should be added.

### 6. Upper Gunnison River Valley Transportation Plan

Beginning in 1997, many steps leading toward a regional transportation plan in the Upper Gunnison River Valley were lead by Charlier Associates, Inc. Throughout the process the public was involved. Community surveys were returned from 497 residents and 52 businesses. A project advisory committee met regularly and several roundtables were held to discuss issues, guide the consultant's work and review data, strategies, and policies as they were developed. Deliverables from that process included:

- a. “Trends and Conditions Report” (May 1998)

This report was the basis for the many plans that followed. It found there were 3,147 housing units in seven zones from Round Mountain north, and that there could be as many as 9,831 units at build out. These numbers included single family, multifamily and resort accommodations because at peak usage times all of these units translate into numbers of people affecting traffic volume. Existing traffic volumes for Crested Butte at the four way stop were 6,500 vehicles per day. Total vehicles counted per day in six locations from Round Mountain north, were 32,100. Assuming a 10% reduction in automobile trips had been made in the Crested Butte/ Mt. Crested Butte area for anticipated transit usage, the low range of daily increase in traffic generated by new housing was projected to be an additional 10,391 vehicles for Mt. Crested Butte and 1,693 for Crested Butte. Total vehicles per day at the four way stop in the low projection were 19,000, which exceeds the capacity of a two lane roadway.

The report did not project traffic for the portion of the unincorporated area from Round Mountain north; however, it did say that the whole unincorporated valley from Crested Butte to Gunnison was projected to generate as many as 21,650 auto trips per day. The occupancy rate at the Gothic Road and Treasury Road intersection in Mt. Crested Butte was 1.44 people per vehicle. The rate at State Highway 135 and Crested Butte South was 1.34.

The report indicated that Alpine Express, a private transportation service, with 30 vehicles, carried an average of 60,000 riders per ski season from the airport in Gunnison to Mt. Crested Butte and 650 per day in winter. The average number of commuter trips between Gunnison and Mt. Crested Butte were 25,000 per ski season and 250 on peak days. Mountain Express, with 14 vehicles, carried 760,000 people per ski season, and 14,000 on a peak day. (In calendar year 2003 Mountain Express served 505,000 passengers with 16 vehicles and Alpine Express served about 30,000 passengers.)

b. "Transportation Alternatives Report" (June 1998)

This report presented a list of possible alternatives for consideration for the upper Gunnison River valley. It was not meant to be an exhaustive list but a shortened list of practical and feasible alternatives that included community concerns and interest. In the Crested Butte area about 40 alternatives were considered addressing:

- 1) Transit
- 2) Bicycle/pedestrian
- 3) Transportation Demand Management (TDM)
- 4) Motor vehicles
- 5) Land use

c. "Upper Gunnison River Valley Transportation Plan" (August, 1998)

Community Roundtable discussions were held in July 1998 testing all of the transportation ideas generated for applicability, feasibility, and effectiveness. This plan was adopted and approved by the Town Council in August 1999. It was also adopted by Mt. Crested Butte and Gunnison County. A summary of each major topic area follows:

1) Transit

There was strong interest in expanding services provided by existing providers (Mt. Express and Alpine Express). Park and rides, intercept lots, and shuttle services were seen as essential to encouraging more use of transit by employees

and visitors. Other major issues of this part of the plan included increasing subsidies for the Shuffle transit system (a service of Alpine Express for commuters between Gunnison and Mt. Crested Butte) to provide more regional commuter routes; forming a Regional Transportation Authority to pay for transit services; extending service to Crested Butte South; and developing a gondola between Crested Butte and Mt. Crested Butte.

2) Bicycle/Pedestrian

The emphasis here was on safety improvements and completing existing networks. In some cases new programs needed to be initiated (e.g., safe routes to school and bicycle parking).

3) Transportation Demand Management (TDM)

TDM addresses demand. It deploys a wide array of strategies including bus passes, flex time, ride sharing, and construction of Park-N-Ride lots.

4) Motor vehicles

To widen or not to widen Gothic Road and State Highway 135 was the question during many debates among Roundtable participants. Ultimately, the concern with preserving the area's character shifted focus to transportation strategies which could, it was hoped, obviate the need for building new by-passes or constructing four-lane highways to meet projected travel demand. Within municipalities, traffic calming was needed.

5) Land Use

This section recommended policies that should be politically feasible and perceived as having a close relationship to transportation issues.

Recommendations included developing:

- i. a multi-jurisdictional housing authority to develop housing opportunities near work designed to reduce commuting
- ii. a county land use plan to help direct growth and decrease motor vehicle trips
- iii. design/location standards (such as density bonuses) to help direct growth and decrease motor vehicle trips
- iv. an accelerated design review process for projects within urban growth boundaries as an incentive to help direct growth and decrease motor vehicle trips
- v. a county-wide impact fee to charge new development its fair share of maintaining county roadway capacity

Alternatives not selected included the following:

- 1) In some cases proposed options were abandoned in favor of other solutions. (e.g., recommendations were made for TDM and safety improvements to the Gothic Road rather than a bypass of Crested Butte, four-laning Gothic Road, or installation of a reversible lane on the Gothic Road)
- 2) In other cases, the perception was that more discussion was needed within the community (e.g., pedestrian mall on Elk Avenue in Crested Butte).
- 3) Some ideas were accepted as good in theory but too difficult to implement politically, (e.g., county zoning)
- 4) Other ideas were viewed as too complex, abstract, or perhaps too distantly related to transportation to merit a high priority (e.g. transferable development rights and adequate public facilities ordinances)

- 7. The West Elk Scenic and Historic Byway Corridor Management Plan**  
This plan was prepared for the West Elk Byway Steering Committee by EDAW (a landscape design and environmental planning company) in 1999. The plan covers a route from Crested Butte to Paonia, to Hotchkiss, to Gunnison and back to Crested Butte. A spur to Carbondale from Paonia is also included. This plan discusses the intrinsic qualities, the resources to be protected, interpretation (roadside exhibits), trails, highway conditions and safety, and marketing of the Byway. While not specific to Crested Butte, the plan includes Crested Butte and crosses the Middle Slate River Valley.
- 8. Sixth St. Corridor Improvement Plan**  
This plan was prepared by Charlier Associates in association with Rolland Engineering. The plan builds on the recommendations of the Upper Gunnison Valley Transportation Plan and makes specific recommendations for Sixth Street in Crested Butte. The plan was adopted by resolution of the Town Council in February 2000 as the basis for the planning and improvements of the area that are located within the geographic scope of the Plan. Except for the traffic calming elements at the north and south entrances to town, the scope of the Sixth Street Plan is entirely within the existing town limits of Crested Butte.
- 9. The Mountain Passenger Transport System Feasibility and Location Study**  
This plan began in April 2000 as a response to the growing need for an improved transit system between Crested Butte and Mt. Crested Butte. The study considered various transit technologies including a detachable gondola, a pulse gondola, an aerial tramway, a funicular, a light rail system and expanded bus service. Gunnison County, Crested Butte, Mt. Crested Butte, and Crested Butte Mountain Resort jointly provided funding for the study. In the near term, a regional bus system with expanded service in the upper valley will be a competitive travel mode, serving both residents and tourists. In the long term, a gondola system will be a more reliable and cost effective transit system. Implementation of the recommendations takes place over the course of 15 years in anticipation of the valley's build out. Specific recommendations include:

  - a. Develop a county-wide impact fee system to finance transit infrastructure and vehicles
  - b. Preserve the necessary right-of-way associated with the recommended gondola alignments
  - c. Form a rural transportation authority to finance transit operations
  - d. Develop an expanded bus transit network
  - e. Plan for and develop three transit centers in Gunnison, Crested Butte, and Mt. Crested Butte
  - f. Develop park-and-ride facilities for access to both the bus and gondola transit systems
  - g. Plan for and develop a gondola transit system along one of the recommended alignments
- 10. Gunnison County Transportation Plan**  
At the same time that the Upper Gunnison River Valley Transportation Plan was developed, a regional transportation plan was created for the Gunnison Valley and the counties of Region 10. Other regional plans were also created throughout Colorado so that all transportation projects would qualify for federal "Intermodal Surface Transportation Efficiency Act" funds. Policies and vision statements of that plan, which the Town of Crested Butte agrees with, are reflected in the transportation policies section of the Crested Butte Three Mile Plan.

#### 11. **Town of Crested Butte Parks and Recreation Regional Master Plan**

Although the 2010 Parks and Recreation Regional Master Plan is not a transportation plan, additional trail connections and trailheads, new trails, a perimeter trail and maintenance of existing trails are recommended.

#### **Recommendations of the Transportation Plans That Have Been Implemented**

1. Construct sidewalks along Sixth St. in Blocks 36, 55, and 56
2. Improve signage
3. Continue use of drainage dips which also serve to slow traffic
4. Add additional bicycle racks throughout town
5. Create a fleet of bicycles for public use
6. Acquire and use more and better sidewalk snow removal equipment
7. Plow pedestrian bridges
8. Continue the gravel paths on 6th St. from Butte Ave. to Red Lady Ave
9. Conduct experiments at Elk Ave. and 3rd St. to reduce pedestrian/motor vehicle conflicts
10. Begin two hour parking on Elk Ave
11. Ban all snowmobiles from streets in Crested Butte
12. Create 30 foot drop-off areas on Elk Ave. for visitors
13. Develop alleys to accommodate deliveries and trash pickup
14. Develop parking at Big Mine Park and 6th St. and Elk Ave.
15. Plow snow from Elk Ave. onto the space between the curb and the sidewalk and remove it when the snow piles are too large to hold more snow
16. Maintain intersection parking setbacks
17. Encourage new development on Sixth St. to locate all parking behind buildings
18. Change the Zoning Code to require two parking spaces per residential unit
19. Locate affordable parcels to store snow that has been removed from Elk Ave
20. Eliminate infringements on alley rights-of-way
21. Plow and remove snow from the commercial alleys
22. Move dumpsters into alleys
23. Change the no skiing in Crested Butte ordinance to allow skiing in residential alleys to trails at the edge of town (Modified to allow skiing on designated streets)
24. Construct a pedestrian bridge over Coal Creek at Butte Ave
25. Replace the town watering truck engine that is a major source of pollution
26. Encourage the County to place chip and seal on Kebler Pass Road to the old Keystone Mine Road
27. Replace the street cleaner with a machine that produces less dust
28. Enhance pedestrian facilities such as crosswalks, traffic calming, trails and bicycle storage
29. Seventh St. and Red Lady Ave. intersection redesign and construction
30. Construct affordable housing in Crested Butte and Mt. Crested Butte
31. Obtain rights-of way for bike paths for commuting and build such trails
32. Construct and place traffic calming features throughout town
33. Expand Mountain Express and down valley transit service

#### **MOUNTAIN EXPRESS**

Mountain Express is a public bus system founded in 1978 and operated by a board of directors comprised of two Council members from each of the Towns of Crested Butte and Mt. Crested

Butte, and one member at large chosen by the other four directors. The primary purpose of the system is to move people between Crested Butte and Mt. Crested Butte in the winter. Summer and off season routes are also operated and “circular loops” are provided inside the Town of Mt. Crested Butte during the ski season but none are provided in Crested Butte. A circulator bus route in Crested Butte was tried during the winter of 2006/07 but ridership numbers did not justify continuing the circulator.

The system is funded by a 1% sales tax in both towns dedicated to transportation as well as a portion of a 1% admissions tax (including lift tickets) in Mt. Crested Butte and federal operating and capital grants.

Between 1986 and 1993, ridership increased from under 300,000 per year to 755,000. Ridership peaked in 1998 at just over 900,000 and hovered just above 500,000 passengers in 2001, 2002, and 2003. During the past four years, ridership averaged 604,000 riders with the peak in 2008 at 631,000 riders.

In 2003 the average cost of operating a bus was \$22.50 per hour. Operating and administrative expenses then totaled \$778,563. In 2003 the fleet ran for 12,517 hours and 142,955 miles. Therefore, the average cost of operating a bus in 2003 was \$62.20 per hour or \$5.44 6.80 per mile. This translated into a cost of \$1.53 per passenger carried. In 2010 the average cost of operating a bus was \$74.02 per hour. The cost per passenger carried was \$1.86 in 2010.

## **TRAILS**



### **The Need for Trails**

Present and future Crested Butte residents utilize and will utilize trails for recreation and transportation purposes. The existing trail system provides a minimum level of trail connections

and service to the existing residents. In recognition of this fact, the Crested Butte Mountain Bike Association was created in 1983 and the Gunnison County Trails Commission was appointed in 1995. Both groups are working with land owners, the Town, and the County to create and maintain trails throughout the MSR.V.

While residents of new development will benefit from existing trails, trailheads and completed and interconnected trails, new development and new residents generate new demand and will detrimentally impact the existing trail system. New residents will require additional trails and trail connections to obtain access to the major trail system and to maintain the present minimum level of trail service for the Town. Existing residents will receive a reciprocal benefit and advantage from the creation of new trails and trail connections within new development when existing residents use new trails in new development.

Trails are used primarily by pedestrian and bicycle riders in Crested Butte. Bicycles are the primary form of transportation for many residents of Crested Butte. Despite the fact that Crested Butte receives nearly 20 feet of snow in an average year, bicycles can be seen on the town streets and trails, every day of the year. Bicycles are an alternative to polluting and, equally important in Crested Butte, they are the most convenient means of transportation to get from one part of our small town to another. Skis, babies and groceries are transported via bicycles. The use of non-motorized transportation decreases air pollution and traffic congestion, increases automobile and street safety and resultant parking problems are minor when compared to automobiles.

Air pollution was a major issue in the MSR.V for years as demonstrated by scientific studies conducted by Virginia Polytechnic Institute and Virginia State University in the 1980s which helped the Town come to the conclusion that a ban on wood burning devices, that do not meet EPA and State standards for operation, was necessary in 1986. The reduction of pollution caused by automobiles and other sources is important in this valley and the use of alternative methods of travel such as bicycles and the provision of trails to encourage alternative transportation, is essential.

The development of land without dedication of new and connecting trails will sever existing trail systems and render the existing trail systems inaccessible to new residents. As new development occurs, new trails will be necessary to enable new residents to access the system and to access public lands. Where trails terminate or fail to make connections with other trails, the use of alternative forms of transportation will decrease within the community.

In 1994, when asked how important a trail system is in providing non-motorized vehicle routes throughout the Slate River Valley, 67% of respondents ranked it 10, very important on a scale of 1 to 10. The results of the 2004 Land Use Survey showed that 73% of the respondents felt that new development should provide summer trails and 82% supported public access to public lands when land is developed.

### **Trail Design**

Trails are most efficient for alternative forms of transportation where the trails are wide enough to accommodate bicycle, pedestrian, and occasional equestrian traffic. Trail design is discussed in detail in the Crested Butte Parks and Recreation Regional Master Plan. Trail rights-of-way of no less than 15 feet in width are adequate to reasonably accommodate these varying uses. For safety and reasonable use, the traveled portion of hard surfaced trails should be not less than six (6) feet in width. Primitive single track trails used for mountain biking and hiking can also be appropriate.

Trails should generally avoid wildlife habitat, water features and wetland areas to avoid conflicts with wildlife. Nordic trails that use wetland areas during winter months only are more acceptable but should be used to cross wetlands rather than use the wetlands as the target for trail area.

### **Existing Trails**

As can be seen below, much work has gone into the provision of trails for residents and visitors to the Crested Butte area. To date, there are over 40 miles of trails or trail easements within three miles of Crested Butte. The discussion below elaborates on past work to establish trails and demonstrates that trails are important amenities to the community. The system of summer trails on private and public lands in the MSRVA is shown on the Transportation and Trails map. Major trails and trailheads include the following:

1. The Mt. Crested Butte Recreation Path is a connector trail. The right-of-way for the path was provided over an eight-year period in five major segments:
  - a. Most of the right-of-way for the path was obtained in 1996 during an annexation to Mt. Crested Butte that failed to materialize. Now, most of the trail passes through land preserved as open space by the Crested Butte Land Trust.
  - b. The north end of the path crosses Gunnison County land just prior to entering Mt. Crested Butte.
  - c. Sissy LaVigne donated another substantial portion during the approval process for the Moon Ridge Subdivision.
  - d. Right-of-way for a spur to the Slate River Road in Three Valleys Subdivision was added when the subdivision was approved. The path can be used by pedestrians and bicycle riders.
  - e. The Town of Crested Butte built a 1,600 foot long section from the Slate River bridge to Elk Avenue in 2004-2005. Except for the Three Valleys Subdivision section, the Recreational Path is a non-motorized connector trail, that is also used by pedestrians, skiers, and equestrians for recreational use.
2. The Lower Loop follows the greenway along the Slate River northwest of Town and connects Crested Butte with Gunsight Pass and Oh-be-joyful Creek. Loops back to Town are available via the Upper Lower Loop or along the Slate River Road. The Lower Loop is a non-motorized multiple use trail (pedestrians, bicycles, horses).
3. The Green Lake Trail is a non-motorized multiple use recreation route through Trappers Crossing and the Gunnison National Forest from Crested Butte to Green Lake on Mt. Axtel.
4. The Upper Loop and the Upper Upper Loop trails are multiple use recreation routes on private and Gunnison Forest Service lands and connect Mt. Crested Butte with Skyland and Brush Creek Road.
5. Tony's Trail and the McCormick Ranch Road are multiple use recreation routes and can be used to access the Upper Loop from Crested Butte. Multiple use access on the McCormick Ranch Road was given to the Town during the annexation of the Verzuh Ranch Subdivision.
6. Long Lake Trail is a recreation route. It begins on private property in the Pristine Point Subdivision, and goes to Meridian Lake on Gunnison National Forest land. The trail across the private land was obtained during the development of Pristine Point Subdivision.
7. The Baxter Gulch Trail begins on Town land and crosses the Kroft property, two Trappers Crossing lots and 10 Hidden Mine Ranch Subdivision lots to connect the Town land near the County shops with the Forest Service land at the north end of Whetstone Mountain. This trail is a good example of the efforts that go into making trails since it took nearly 20 years to obtain all the easements, the threat of law suits, and the trail is yet to be built.
7. Snodgrass Trail is a seasonal, recreational trail on Snodgrass Mountain. Because some of the trail is on private land used for cattle grazing, the section of the trail which connects to Washington Gulch is closed during the late summer and fall to all users.

9. Trails on Crested Butte Mountain, in the area of the ski runs, are maintained by Crested Butte Mountain Resort (CBMR). This trail system is on both public and private land and open to the public.
10. The American Discovery Trail, a coast-to-coast trail linking the nation's principle east-west trails and shorter local and regional trails into a nation-wide network, dips into Gunnison County and uses the Upper Loop and a spur comes into Crested Butte along Tony's Trail and the McCormick Ranch Road.
11. The Kebler Pass Trailhead is used during winter months primarily by snowmobilers accessing the terrain on Kebler Pass and the Townsite of Irwin. The road is closed to automobiles and trucks during winter months because snow avalanches cross the Kebler Pass Road.
12. In the winter, the Slate River, Washington Gulch and Brush Creek Trailheads are parking areas for people changing modes from motor vehicles to skis or snowmobiles.

Since 1990, the Crested Butte Mountain Bike Association has sponsored 5-6 volunteer work days per year to build and maintain non-motorized trails on private and forest service land in the vicinity. In 2011 the Gunnison County Trails Commission also began sponsoring work days.

**The Trail Standard**

The present ratio of lineal feet of trails to the number of existing residential units in the MSRV provides reasonable access, alternate transportation routes and convenience to the Town residents. This minimum ratio should be maintained with new development to ensure the new growth will not render the trail system inadequate or incapable of serving the Town's residents.

**Table T 1  
Existing Trail Lengths**

TRAIL NAME	Trail Length	
	(feet)	(miles)
Baxter Gulch Trails	15,023	2.85
Budd Trail	6,766	1.28
Butte Pasture easement	668	0.13
CB Perimeter Trail (not Tommy V or Verzuh) (incudes Kapuhson, Paradise, Woods Walk)	13,456	2.55
Carbon Creek Trail	278	0.05
Chocolate peak trail easement	199	0.04
FS 436	24,852	4.71
FS 565	8,947	1.69
Green Lake Trail (incl. Big Mine park)	20,172	3.82
Buckhorn Ranch (Gunnison Trails Comm easement)	2,882	0.55
Hidden River Ranch easement	2,500	0.47
Kochevar, Eve trail easement	2,402	0.45
Larkspur trail easement	1,281	0.24
Lower Loop Trail (not Gunsight pass rd.)	25,420	4.81
Lupine Trail	8,950	1.70
McCormick Ranch Road	4,863	0.92

New Deli Trail	7,546	1.43
Pristine Point public access	4,821	0.91
Mike's Mile (Railroad Grade)	4,277	0.81
Mt CB/CB Recreation Path	10,014	1.90
Saddle Ridge (road pedestrian easement not trail)	2,720	0.52
Tony's Trail	3,833	0.73
Totem Pole Park	212	0.04
Sadle Ridge trail easement along Gothic Rd.	1,941	0.37
Skyland Trails, Trail 435	7,102	1.35
Trapper's Crossing Lot 4 Trail easement	945	0.18
Treasury Hill Trail	708	0.13
Upper Loop Trail	7,043	1.33
Upper Upper Loop Trail	17,386	3.29
Verzuh/Tommy V. Trail	2,402	0.45
West Side Trail	11,104	2.10
Wood's Trail	970	0.18
Woods Walk Trail minus Perimeter Trail	6,530	1.24
<b>TOTAL Summer Trails</b>	<b>228,212</b>	<b>43.22</b>
<b>Existing summer trails per res. Unit</b>	<b>61.4</b>	

Table T 1 Notes:

1. Sources: Latitude 40, Crested Butte G.I.S. office, Jennifer Rose, who worked for Latitude 40 in 2004 measuring trails, and NCW Associates.
2. Snodgrass Trail is not included because there is no permanent trail easement.
3. Some trails on Crested Butte are not included because they were, at least partly, built by the corporation, not the community.
4. Mt. Crested Butte Recreation Path, and other trails within Mt. Crested Butte town limits are not included in this list.

Table T 1 lists the public trails in the MSRV in 2011. Some trails are located entirely within private land and within the MSRV (eg. Woods Walk trails). Other trails begin in the MSRV and continue outside the MSRV (eg. Green Lake Trail). Some trails are located entirely on National Forest Service land but are necessary to link trails and, were built by volunteers from the vicinity of Crested Butte (eg Tony's Trail). Only the trail lengths within three miles of Crested Butte are in Table 1.

Table T 1 indicates there were 228,212 lineal feet of public trails in 2011 in the MSRV. Our latest count, using Gunnison County Assessor data and the Town Census, indicates there were 3,718 residential units in the MSRV in December 2010. In order to maintain the existing ratio of trails to residential units as new development occurs within the MSRV, at least 61 feet of trail for each residential unit should be dedicated for public use when subdivisions are approved. (228,212 feet of trails ÷ 3,718 dwelling units = 61.4 feet of trail per dwelling unit)

There are other trails that have not been counted in this evaluation. For instance, there are more trails on Crested Butte that are maintained by CBMR. Since these trails are considered amenities for CBMR guests and were not created by volunteers or required as part of development approvals, they have not been included in Table T 1. Some trails on Snodgrass Mountain are outside the three mile area and others are accessed by crossing Allen family property. There are

no easements for the trails on Allen family property making them permanently accessible to the public so they are not included. Other trails used by residents of the MSR/V or the unincorporated upper East River valley are not included because they are located more than three miles from Crested Butte (eg. Strand Hill Trail).

All trails in Table T 1 are summer trails. Nordic trails, such as the Smith Hill Ranches trail, where the easement allows for summer and nordic skiing use are also included in Table T 1. Trails only for for Nordic use were not included in the trails when determining the number of feet of trail per residential unit because sometimes they overlap with summer trails and because there is no trail built for most of them. While many property owners allow the Nordic Center to set track on their property, there are very few easements to use the snow when setting Nordic trails.

The Paradise Park Trail was constructed in 2004. The cost to construct the Paradise Park Trail was a total of \$25,270 including labor, materials, culverts, and equipment rental. The Paradise Park Trail is 1,749 feet long. Therefore the cost per foot was \$14.45. Since land is not included in this cost, the cost may be low and using this figure may be conservative.

The Crested Butte Rec Path Extension in the Verzuh Annexation has been designed and it is estimated the cost will be \$237,681 to build this trail, excluding the gravel that will be added to the Paradise Park Trail as part of the Rec Path Extension project. Grant funds have been awarded for this project and it is expected to be built in 2012. This trail includes 300 feet of board walk crossing wetlands. The trail is .45 miles long so the cost per foot for this trail will be \$100.03. The cost of land is not included.

Other trail related findings in the 2004 Land Use Survey included:

- The ability to get around without a car is valued by 78% of the respondents.
- Few people feel paved trails are important with an average response of 3.24 on a scale of 1 to 10.

Other trail related findings in the 2010 Town of Crested Butte Parks and Recreation Regional Master Plan included:

- 92% of respondent households have a need for walking and hiking trails, more than any other recreation facility.
- 75% have a need for mountain biking trails.
- The most important trail to create is a perimeter trail around the town that can link all of the trails together and offer residents and visitors convenient access to the network of trails at the edge of the community.
- The Town would benefit from a regional trail linking Crested Butte to Gunnison.

### **Proposed Trails**

The Crested Butte Trail Plan, which is located in the Transportation Policies section of this Plan, indicates the general location of trails identified by the Town Planning Commission and the public in the vicinity of Crested Butte. It is not intended to indicate the exact location of trails, rather it indicates that if land is to be developed, trails in the general location of those on the plan should be provided. Land owners are encouraged to allow a trail to be built by the Town or others in the general locations shown on their land prior to development .

## Nordic Trails



Photo by Lou Beckman

The Crested Butte Nordic Council negotiates easements across private lands for nordic trails and maintains the trails each winter. The Nordic Council is funded by trail fees and through grants. Many nordic trails are located on Crested Butte Land Trust property. Nordic trails maintained by the Nordic Council in the vicinity of Town include the following:

1. Trapper's Crossing trails  
As a result of negotiations between Crested Butte and the subdivider, there are two nordic ski easements crossing private lots in Trappers Crossing at Crested Butte and Trappers Crossing South located west and south of town.
2. Verzuh and McCormick Ranch Subdivisions  
During the Verzuh Annexation and the simultaneous McCormick Ranch Subdivision processes, summer and nordic trails were created on the Verzuh and McCormick Ranch Subdivisions. These trails connect Skyland with the Town.
3. Mt. Crested Butte Recreation Path  
This recreation path is also a nordic trail.
4. Town Ranch  
The Town Ranch trails are maintained by the Nordic Council and the public uses them for free.
5. The Riverbend Extension  
The Riverbend extension connects the Town Ranch with the Riverbend Subdivision
6. Pooch's Paradise is a trail that leaves the Peanut Lake Road near the west boundary of town and connects to the trails at Peanut Lake and the Magic Meadows.

There are many more nordic trails further away from Town and they are mapped in the Crested Butte Parks and Recreation Regional Master Plan.

In 1995 the Gunnison National Forest Service worked with a citizens group, that later become known as the Gang of Nine, to designate winter trail uses in the valleys surrounding Crested Butte and throughout Gunnison County. Designations for valleys in the three mile plan area were as follows:

1. Kebler Pass, East           Emphasis on snowmobiling,  
cross-country skiing discouraged
2. Slate River                Emphasis on general non-commercial use
3. Washington Gulch        Emphasis on cross-country skiing,  
snowmobiles and dog sleds discouraged

## **AIR TRANSPORTATION**

A 4,500 foot air strip exists southeast of Crested Butte at the Buckhorn Subdivision. The subdivision design allows for flying into the airport and parking planes next to homes adjacent to the runway. Although there have been commercial flights to Aspen and Telluride in the past, none are allowed with the current “private airstrip” designation. In the summer of 2004 the airstrip was used for charter flights to fly people in and out of Denver and Montrose while the larger airport in Gunnison was being repaved. Charter flights are private and not commercial.

Helicopters were proposed for moving skiers around in the National Forest in 1993. In October, 1993 the application for a one year trial permit was denied by the Gunnison National Forest after much public concern was expressed. That concern continued into 2011 when the owners of the Keystone Mine proposed doing baseline investigations and using helicopters to help collect data. The public expressed strong negative views about the use of helicopters.

## **ROADS**

The major paved arterial roads in the MSR/V include:

1. State Highway 135 that begins in Gunnison and ends at Elk Avenue in Crested Butte
2. the Gothic Road that begins at Elk Avenue and serves Mt. Crested Butte along with the Slate River Road, Washington Gulch, Gothic and other areas to the north
3. Kebler Pass Road which is a summer road that accesses the Somerset area and Paonia (chip sealed)
4. Brush Creek Road to Buckhorn Subdivision (chip sealed)

Most county roads in the MSR/V are gravel including the following major gravel arterial roads:

1. Slate River Road
2. Washington Gulch Road, above Meridian Lake Park Subdivision
3. Kebler Pass Road above Trappers Crossing Subdivision
4. Brush Creek Road east of Buckhorn Subdivision

Skyland, Saddle Ridge, and Meridian Lake Park subdivision roads are paved or chip sealed. Most other subdivision roads are gravel. Gravel has been the surface of choice for many years because it is less expensive to maintain and can be rebuilt each spring after winter rutting.

Paved streets and gutters in Crested Butte require less maintenance and can better direct runoff water than gravel roads in densely populated areas. The Town of Crested Butte paved most of the town streets with funds from two bonds, one in 1987 and one in 1992. After 1992 the voters did not agree to bond for street paving so the funds raised by the Street and Alley mill levy have been used as they accumulate to complete town street paving and to repave portions of town streets as they age and deteriorate. By 2000 most of the streets in town were paved. The Town estimates that a paved street will need to be resurfaced with chip and seal every five years and repaved

every 15 years. Most of the streets that were paved in 1987 were repaved in 2004 because they were showing signs of wear and considerable time was being spent on maintenance.

There are no planned improvements to major roads in the MSRV. Future Gothic Road improvements or a new access may be required if the 1,975 units that are approved, but not built, in Mt. Crested Butte are constructed and if there is no alternative transportation system to Mt. Crested Butte. In 1993 the average daily traffic on the Gothic Road in the summer was about 5,000 and in the winter it was about 4,000. Since 1997 the County has made the following traffic counts on the Gothic Road:

**Table T 2  
Traffic Counts on the Gothic Road**

	Winter (January)	Summer (July)
1997	4,656	5,284
1998	5,221	2,556
1999	5,087	6,143
2000	4,733	6,184
2001	4,498	6,228
2002	5,219	6,262
2003	5,174	6,536
2004	4,406	6,706
2005	5,136	6,957
2006	5,110	
2007	5,918	7,450
2008	5,615	6,526
2009	4,967	6,864
2010	4,955	7,091

Note: The days included in traffic counts vary from year to year. All winter counts include most of January. All summer counts include most of July. There is no count for July in 2006.

In 1998 the Upper Gunnison River Valley Transportation Plan counted 6,500 vehicles per day at the 4-way stop in Crested Butte. The plan projected between 17,700 and 19,000 vehicles per day by the year 2020. Both projections are more than the capacity of an intersection like the four way stop, where two two-lane roads intersect.

A major problem identified by the Crested Butte Fire Protection District in 1993, which is still true today, is one that affects its ability to successfully protect life and property. In Mt. Crested Butte, there are a number of private roads with hairpin turns and road surfaces that are either too tight or too narrow to allow fire-fighting equipment to access home sites. This problem highlights the need to communicate with the fire district when reviewing development proposals and to require road standards that allow fire-fighting equipment to protect developments.

**CRESTED BUTTE MAJOR STREET PLAN**

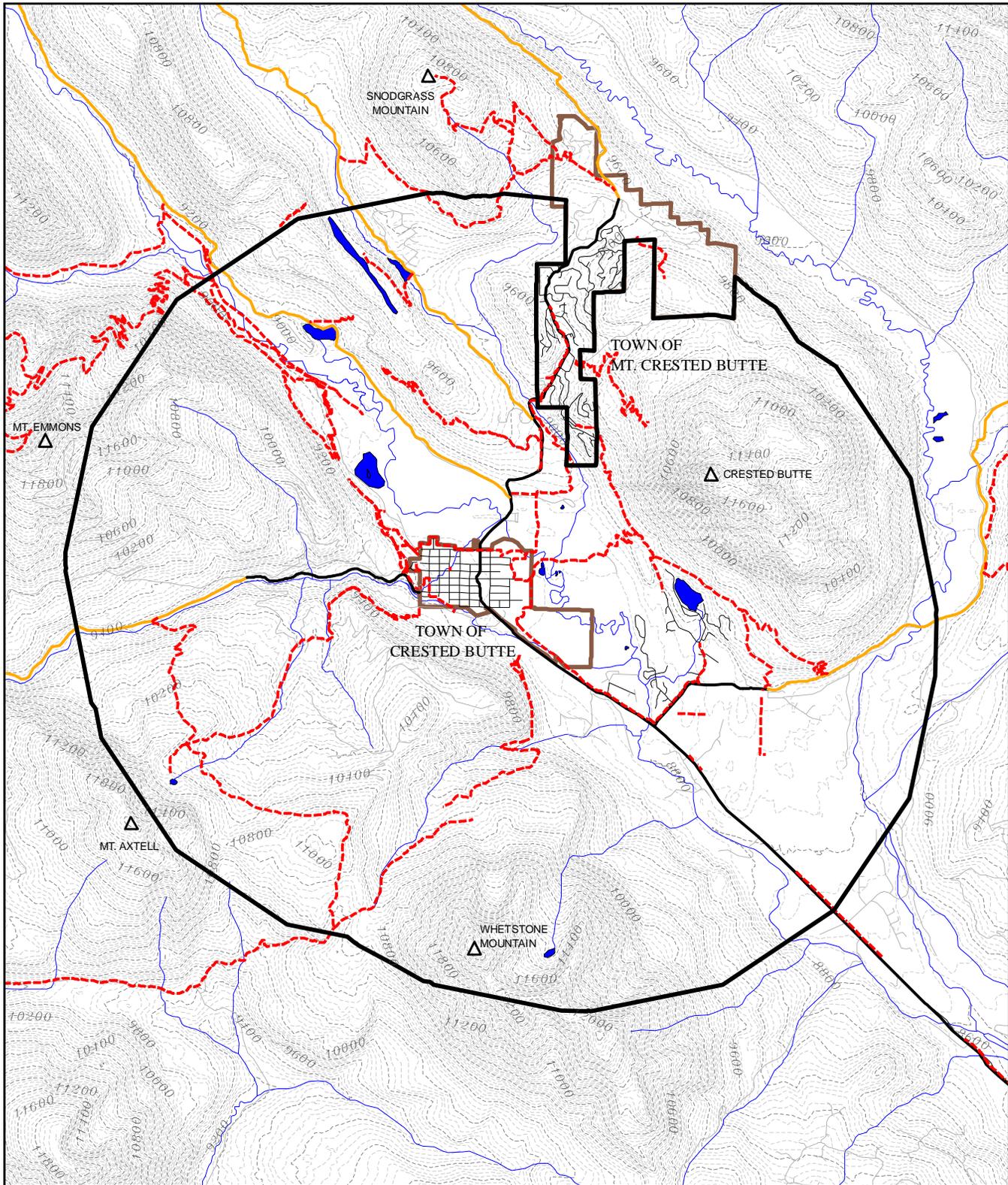
The Crested Butte Major Street Plan is intended to comply with CRS 31-23-212 and CRS 31-23-213 which allow municipalities to create major street plans and once created and certified to the county clerk, no plat of a subdivision shall be filed or recorded until it has been approved by the municipality’s planning commission.

The Major Street Plan envisions local roads on the lands east of the Gothic Road and north of Butte Avenue serving the proposed multifamily and single family neighborhoods south of the cemetery. East of the cemetery there is a generalized loop proposed for eventual use by an expansion of the Moon Ridge subdivision into areas that are not wetlands.

A local road is indicated north of Butte Avenue and west of the Gothic Road, on the Kapushion property, if that land is developed. This would be a local road serving a new residential neighborhood if wetlands can be avoided.

Completion of Teocalli Ave. and First St. is also shown on the Master Street Plan.

No other new streets or roads are contemplated by the Crested Butte Major Street Plan within three miles of Crested Butte. See the Major Street Plan map at the end of the Transportation policies.



### Transportation and Trails

3 Mile Boundary (MSRV) **Roads**

Streams

Town Boundary

Lakes

**Major Arterial Roads**

Paved

Gravel

Paved

Unpaved

**40' Topographic Contours**

index

interval

Existing  
Non-motorized Trails



Drawn by: Hilary Mayes

Date: June 24, 2011

Filename: C:/project/areaplan/2011/transp&trails-2011.mxd

## **AGRICULTURE**

Irrigated lands are shown on the Irrigated Land map. Information from the U.S. Bureau of Reclamation; the Colorado Division of Water Resources; David Cooper, Ph.D. Ecologist; and aerial photographs was used to create the map. The Irrigated Land map on page 128 shows lands that have water rights for irrigation, whether or not they are currently irrigated.

When people move into the Middle Slate River Valley, they are moving into a social and economic system that has been evolving for 150 years – and a natural environment hundreds of thousands of years older than that. Ranching families have been stewards of the land in the Middle Slate River Valley since the 1880s. These family names include: Allen, Eccher, Guerrieri, Kapushion, Lacy, Malensek, Ochs, Niccoli, Rozman, Rozich, Ruland, Spann, Stratman, Trampe, Veltri, Verzuh and Yaklich.

Respect for property and people and a willingness to lend a helping hand are the values that knit rural communities together. New residents need to get to know their neighbors; who are valuable sources of information concerning what it takes to live in rural areas. Neighboring farmers and ranchers especially will appreciate new residents learning about their operations and understanding how they can co-exist with farmers and ranchers.

After nearly 35 years of ski area development in the Middle Slate River Valley, about twenty-five (25) percent of the privately-owned land in the Middle Slate River Valley is still owned by ranching families. In Colorado, an average of 141,000 acres per year, are converted to development.

When agricultural land in the valley is preserved, other important qualities such as views, air quality, and wildlife habitat are also preserved. Frequently people living in residential portions of the valley want to cross agricultural land to access public lands, establish trails on grazing land and otherwise recreate where agricultural families have been working the land for generations. The goals of the different people in the valley often conflict and it is important to help new residents and visitors understand the potential impacts they create.

### **Agricultural Issues When Land is Developed**

People moving into the rural portions of the valley need to learn to maintain fences to keep livestock off their land but allow wildlife to pass through. They need to learn how to live with irrigation ditches which may, or may not, be for irrigation of their land. They need to learn about noxious weeds, historic grazing operations, and the expenses ranchers and farmers incur to defend their historic agricultural practices that some new people infringe upon. Some of these issues are described below.

It is not intended that the policies and recommendations of the agricultural section should prevent conversion of agriculture land to other uses.

### **Noxious Weeds**

The wind blows. Seeds from noxious weeds can blow onto agricultural land from neighboring land. The Colorado Noxious Weed Act states that land owners are responsible for controlling noxious weeds on their property. Eradicating noxious weeds on agricultural land can be costly and time consuming. Noxious weeds can be introduced to parcels of land by the tires and tracks of machinery working on the land to install utilities and build roads. Developers and lot owners

need to recognize noxious weeds and take steps to eradicate them on their property so they do not spread to agricultural land.

### **Fences**

Agricultural fences are not always exactly on the legally described property boundary. Survey techniques have improved over the years but agricultural operators are used to using the land up to a fence. Often, irrigation and other improvements have been installed to the fence. When agricultural land is on the other side of the fence, and when the fence has been in place for over 20 years, it should be considered the boundary and developers of land should resolve fence location issues with agricultural operators prior to submitting plans for development

Developers and homeowners associations should maintain their side of a fence as has been done historically. Usually this means the right half of the fence is maintained by the land owner looking at the fence. Protective covenants should require homeowners associations to be responsible for the whole right side of the fence for the development, not each individual lot owner for their portion of the fence.

Pets should be kept under control and fences should be built that contain livestock but allow wildlife to pass through easily.

### **Irrigation ditches**

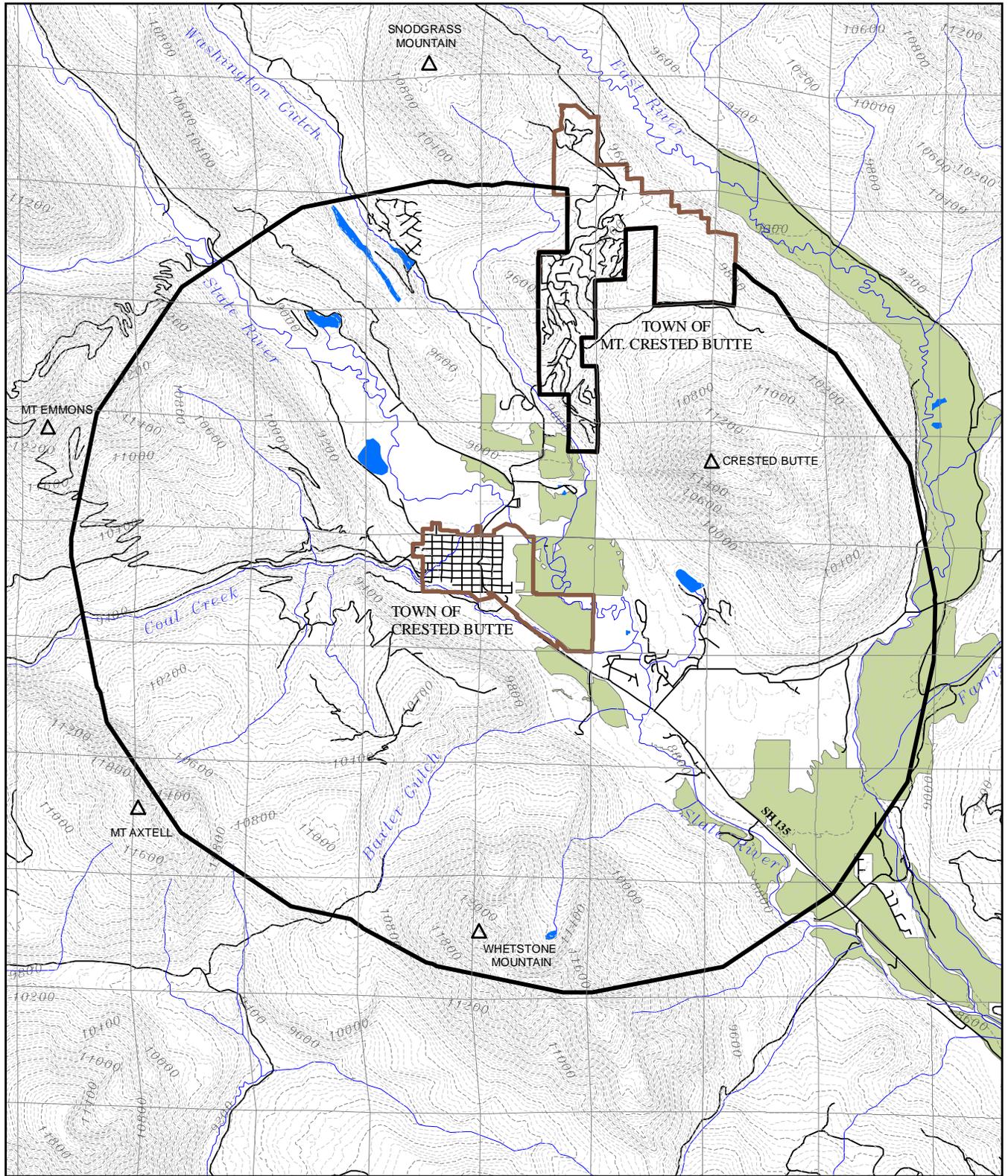
Historic access to irrigation ditches is needed. In Colorado, ditch owners have “right-of-access” to enter a property to access an irrigation ditch. Maintaining irrigation ditches requires walking access to inspect the ditches and may require access by backhoes to clean ditches or place partial flumes to measure the amount of water. To operate effectively, backhoes need 20 feet on both sides of an irrigation ditch. District water commissioners have the right to access irrigation ditches to inspect water flows.

Improvements for developments such as bridges over irrigation ditches should be discussed with ditch owners. Culverts replacing open ditches can create new issues for cleaning the ditches. Culverts can get plugged and cleaning out a culvert can be more time consuming than cleaning a ditch. Use of culverts should only be considered after discussion with ditch owners.

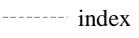
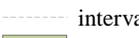
Irrigation ditches are often shared between water rights owners. When the amount of water in a ditch is low, the water rights are proportionate, if both decrees have the same adjudication date. For instance, if a developer owns 1 acre foot of water and a rancher has four (4) acre feet of water in the same ditch, with the same priority, the developer has 1/5 and the rancher as has 4/5 of the water. So if the amount of water cannot fully satisfy both water rights, then the developer has 1/5 of the available water and the rancher as 4/5 of the available water.

### **Grazing Practices**

Ranch families such as the Allen family and the Trampe family use private land in the Middle Slate River Valley for grazing. For instance the Allen family historically grazed the west side of Smith Hill and Anthracite Mesa in the early part of the summer and grazed the west side of the Slate River during the later part of the summer. Fences erected by developers can obstruct this grazing. As noted above, neighboring farmers and ranchers will appreciate new residents learning about their operations and understanding how they can co-exist with farmers and ranchers.



### Irrigated Lands

-  3 Mile Boundary (MSRV)
-  Town Boundary
-  Streams
-  Lakes
-  Roads
-  Section Lines
-  40' Topographic Contours index
-  interval
-  Irrigated Lands



SOURCE: U.S. Bureau of Reclamation, 1994; Colorado Division of Water Resources, 2005; David J. Cooper, PhD Ecologist, 1993; Town of Crested Butte Planning Department, 2005



## SOCIOECONOMIC TRENDS

### CRESTED BUTTE

#### Housing and Population Growth Since 1993

Crested Butte has conducted an annual census of people, housing units and dogs since 1992. The housing portion of the census counts the following:

types of dwelling units including:

- \* single family units
- \* multifamily units
- \* dwelling units in a business
- \* mobile homes
- \* accessory dwellings

uses of dwelling units including:

- \* long term rental
- \* owner occupied
- \* short term rental
- \* second home
- \* vacant

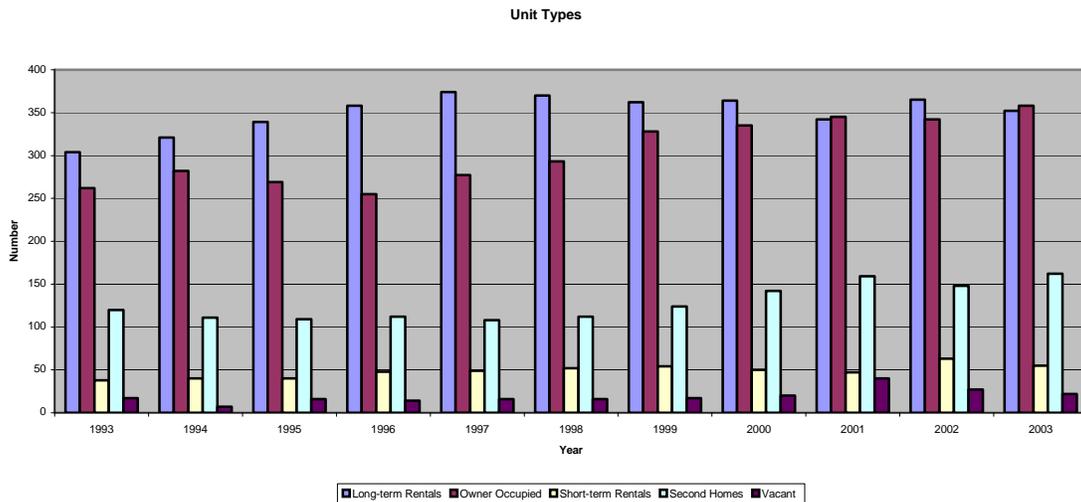
Using findings from the Town census in December 1993 the Town estimated there were 1,384 people and 741 housing units in Crested Butte. By December 2003 there were 1,537 people, 961 housing units and 328 dogs.

The average annual growth in residential units in Crested Butte between 1993 and 2003 was 24 units per year or 2.6%, a relatively high rate of growth. In 2003 there were 29.7% more dwelling units than in 1993.

Although the population of Crested Butte declined after 1998 and changed very little between 1999 and 2002, the average annual change in population between 1993 and 2003 was 1.0%. The ten-year change in total population was 10.5%.

**Chart SE1** displays the number of units by type and by year in Crested Butte.

**Chart SE 1**  
**Number of Units by Type and Year in Crested Butte**



## Major Findings About Dwelling Units in Crested Butte

- The number of owner occupied units is growing faster than long-term rentals:
 

	<b>1993</b>	<b>2003</b>	<b>Percent Increase</b>
Long-term rental units	304	352	16%
Owner occupied units	262	358	37%
- The number of second homes and short term rentals are also growing quickly:
 

	<b>1993</b>	<b>2003</b>	<b>Percent Increase</b>
Second homes	120	161	34%
Short-term rentals	38	55	45%
- The percentage of long-term occupied units compared to all units was 76% in 1993 and 74% in 2003. The number of long-term occupied units continues to be fairly high for a community so closely tied to a winter ski resort.
- When the number of second homes and short term rental units are combined, they account for 23% of all dwelling units in 2004.
- Non-local people own 45% of the dwelling units in Crested Butte. Tax assessment notices for these units are sent to out-of-town addresses. Some of the 45% are rented long-term. If a significant number of long-term rental owners decide to occupy their units, the number of long-term rentals could decline dramatically.
- For comparison purposes, a recent study of second home owners in four other Colorado Counties (Northwest Colorado Council of Governments Second Homeowners Study) found the following percentages of non-local ownership, based on the mailing address of the tax notices:
  - Eagle County      49%
  - Pitkin County     55%
  - Grand County     63%
  - Summit County    67%

The NWCCOG study also determined that all of these units were second homes.

## Buildout of Crested Butte

In 1993 the Crested Butte Planning Department made an estimate for the 201 Waste Water Facilities Plan that the upper limit of housing units, given the current zoning and town boundaries, was approximately 1,000 in Crested Butte. Since 1993, the following developments have been added to town:

- Kapushion Annexation
- Verzuh Ranch Annexation
- Beckwith Avenue re-subdivision
- Red Lady Estates
- Poverty Gulch
- Paradise Park

In addition, the number of commercial buildings with residential units has also increased substantially. Based on the current number of residential dwelling units and vacant lots in town and their zoning, the current projected number of dwelling units at buildout for Crested Butte is 1,288, leaving about 332 units to be built. **Table SE 2** displays the number of occupied units, second homes and short-term rentals that can be expected from the 332 units based on current percentages for each group.

**Table SE 2  
Number and Type of Additional Units Projected at Buildout**

	<b>% of 2003 Units</b>	<b>Number of Additional Units</b>
Owner occupied	37.6%	125
Long-term rentals	36.8%	122
Second homes	16.8%	56
Short term rentals	5.8%	19
Vacant and incomplete	3 %	10

**Population Estimate for Crested Butte**

In 2003 there were 1,537 people in occupied residential units in Crested Butte. Since the number of short-term renters and second home occupants can change with each occupancy, and since the Town has not developed its own figures for second home and short-term rental occupancy, we turned to the CB 2020 report of January 2001 for estimates of those numbers.

CB 2020 was the result of over two years of work sponsored by Crested Butte Mountain Resort with participation by Crested Butte, Mt. Crested Butte and Gunnison County. The purpose of CB 2020 was to try to estimate the total impact of full buildout in the upper East River valley. During that process estimates of occupancy were made for resident occupied housing, second homes and visitor accommodations. CB 2020 estimated that when second homes and short-term rentals are occupied they have an average of 3.9 people in single-family residential units and 3.5 people in townhouses/condos.

The specific units that are second homes and short-term rentals changes each year as new owners find new uses for their homes and for other reasons. Therefore, to estimate total population the average of the two occupancy rates were used. When the average single family and townhouse occupancy (3.7) is applied to the total number of existing second homes and short-term rentals, at 100% occupancy, there could be **799** people in second homes and short-term rentals in Crested Butte.

A spring 2004 pillow count found there were 144 rooms in hotels and bed and breakfasts in Crested Butte. If all 144 rooms were fully occupied, an additional **395** guests could be in town. Therefore, the total number of people who could be in Crested Butte at any one time, in existing units is **2,731** (1,537 + 799 + 395 = 2,731).

**Population Projection for Crested Butte**

**Table SE 2** projects an additional 56 second homes and 19 short-term rentals. Since we do not know if those units will be single family units or townhomes/condos, we have applied the average occupancy for these two unit types from the CB 2020 report (3.7 people per household) to project the number of additional people who could occupy those units in Crested Butte. At an average of 3.7 people per unit, the 75 units could be occupied by **278** people. This may be a conservative estimate, since extended families often use short-term rental houses and second homes.

**Table SE 3** presents the projected total population of Crested Butte at buildout when all units are occupied and assumes there will be no additional visitor accommodations.

**Table SE 3  
Total Projected Crested Butte Population**

	Current Estimate	Additional Units at buildout	Pple per Unit	Total people at buildout
Owner occupied and long-term rentals	1537	247	@ 2.15 =	531
Second homes and short-term rentals	799	75	@ 3.7 =	278
<u>Hotel and bed and breakfast occupants</u>	<u>395</u>			<u>.</u>
<b>Sub-total</b>	<b>2731</b>			<b>809</b>

Therefore, the total existing and projected (year round, second home and visitor) population of Crested Butte at buildout is projected to be **3,540** people (2,731 + 809). All town services will need to be provided for this total population.

Crested Butte population projections in 1993 were based on rates of 6%, 2.7% and 1.15% for high, medium and low rates of growth. The medium projection from 1993 of 1,547 people by 2003 was most accurate. Population projections in 2004 are based on the following:

- Low estimate: Actual average population growth between 1993 and 2003 was 1.0% per year. This is the rate used for the low estimate.
- Medium estimate: Residential unit construction between 1993 and 2003 was 2.6%. This percentage rate of growth was used to project the moderate growth rate.
- High Estimate: Residential unit construction slowed during the past three years, but between 1993 and 2001 the residential unit rate of growth was 3.6% per year. This is the rate used for the high estimate.

Population projections were made by applying the percentages above to the twenty years following the latest estimate of population in Crested Butte, 2003 to 2023. The cumulative projections for 2013 and 2023 are shown in **Table SE 4**.

	<b>Table SE 4 Population Projections</b>					
	<u>High 3.6%</u>	<u>3.6%</u>	<u>Medium 2.6%</u>		<u>Low 1.0%</u>	
	permanent population	with visitors	permanent population	with visitors	permanent population	with visitors
2003	1,537	2,731	1,537	2,731	1,537	2,731
2013	2,189	3,890	2,038	3,622	1,715	3,047
2023	3,118	5,540	2,635	4,682	1,894	3,366

Since many of these growth projections surpass the projected total population at buildout (3,540), the Town will either grow through annexations, reach its maximum buildout and begin to re-develop existing buildings, or reach its maximum buildout and new growth rates will begin. A combination of these three scenarios is likely. Exceeding the total population at buildout implies that services, such as the water treatment plant and wastewater treatment plant, that are currently sized for buildout, will need to be enlarged.

## **HOUSING DEVELOPMENT IN THE UNINCORPORATED UPPER EAST RIVER VALLEY**

In the 1993 Three Mile Plan, it was reported that most of the construction during the last 30 years had been in the two towns. A total of 352 dwelling units had been built in the Unincorporated Upper East River Valley, (the area north of Round Mountain and outside Crested Butte and Mt. Crested Butte). An update of the number of dwelling units and the population north of Round Mountain is presented in **Table SE 5**. The number of units in the subdivisions was counted in 1993, but the Town did not begin counting people in subdivisions outside the Town until 1997. When homes in the Gothic town site, along the Gothic Road, along SH 135 and up Cement Creek are counted, in 1993 there were 438 housing units and in 2003 there were 1,109 housing units in the unincorporated upper East River valley. In 1997 there were 1,171 people in the Unincorporated Upper East River Valley. By 2003 there were 1,684 people in that area. The six-year change in population was 44%. The ten-year change in units was 153%. When compared to the data presented above for the Town of Crested Butte, the Unincorporated Upper East River Valley has been growing much faster in people and dwelling units than the Town.

### **Housing Development in the Three Mile Area and North of Round Mountain**

**Table SE 5** displays the number of units in each of the subdivisions north of Round Mountain and in the towns of Crested Butte and Mt. Crested Butte in 1993 and 2003. The Table also displays the number of year round occupants (six months plus) for 1997, 2003 and at buildout and the total valley population when all units were occupied in 2003 and at buildout.

The count of units in the Unincorporated Upper East River Valley did not include unit types, as described above for Crested Butte, but some inferences can be made. In Crested Butte the number of people per residential unit is 1.6, when comparing the total year round population with the total number of units. Some subdivisions in the County north of Round Mountain have an average of two or more people per household (Allen Homesites, Buckhorn Filing 2A, Crested Butte South, Rivergreen, River Rim, Riverbend, Riverland, and Silversage). Based on the occupancy per unit in Crested Butte, where most dwelling units are occupied, it is fair to say that those subdivisions with an average of more than two residents per household have a high number of occupied units. Other subdivisions have less than one person per household (Avion, Crested Butte Meadows, Hidden River Ranch, Moon Ridge, Trappers Crossing at Crested Butte, and Trappers Crossing at Wildcat) indicating they are probably comprised mostly of second homes because so few people actually live in the subdivisions, when compared to the number of units.

The right hand column in **Table SE 5** projects the population of the valley when all units are occupied. The notes under **Table SE 5** explain the methodology for the table.

**Table SE 5** indicates that the total number of residential units is projected to be 10,320. The total valley population, if all 10,300 units are occupied, could be 24,549. The CB 2020 model assumed that second homes and visitor accommodations would be occupied at less than 100% rates, even in peak periods, meaning it is unlikely all 24,549 people would be in the valley at one time.

**Table SE 5  
Residential Units Approved, Built and Proposed  
Round Mountain, North**

Subdivision/Towns	Units				Population				
	Approved or Zoned	Built 5/93	Built 12/2003	Unbuilt 2003	6 mo. + Occupancy Feb 97	6 mo. + Dec 03	6 mo. + at Buildout	All Units Occupied 2003	All Units Occupied @ Buildout
Allen Homesites	22	18	16	6	47	33	45	35	49
Alpine Meadows	22	15	19	3	17	30	35	48	56
Brush Creek Estates	2	0	0	2	0	0	0	0	5
Buckhorn Ranch Filing 1	9	0	5	4	0	4	7	15	28
Buckhorn Filing 2A	14	0	3	11		6	28	7	32
Buckhorn Filing 2B	325	0	0	325		0	650	0	878
Butte Pasture	8			8				0	22
Cement Creek at CB South	5	1	1	4	1	1	5	3	15
Cement Crk Summer homes	16	16	16	0	1	0	0	58	58
Crested Butte Highlands	16	6	10	6	16	13	21	27	44
Crested Butte Meadows	17	6	10	7	17	8	14	31	52
Crested Butte Ski Ranches	8	0	0	8	0	0	0	0	22
Crested Butte South	953	119	420	533	506	894	2,028	909	2063
East River Ranch	9	0	4	5		5	11	11	25
Glacier Lilly Estates	20	3	15	5	8	16	21	43	58
Gothic	53	51	53	0	4	4	4	188	188
Gothic Mountain	14		1	13	0	0	0	4	50
Hidden River Ranch	17	0	3	14	0	2	11	9	54
McCormick Ranch	7	0	0	7		0		0	19
Meridian Lake Park F. 1,2,3	167	38	73	94	95	73	167	214	489
Moon Ridge	10	0	8	2	4	6	8	25	31
Pioneer Guest Cabins	9	9	9	0	1	2	2	31	31
Pristine Point	23	0	5	18	0	5	23	15	67
Red Mountain Ranch	39	0	16	23	0	16	39	47	114
Ridge (above CB So.)	7		3	4	6	4	9	8	19
Rivergreen	17	0	12	5	21	26	37	26	36
River Rim	11	0	10	1	0	21	23	22	24
Riverbend	63	41	69	-6	197	139	127	155	155
Riverland I (residential)	6	6	5	1	9	15	18	8	9
Riverland II(residential)	23	0	6	17	0	18	69	9	36
Saddle Ridge Ranch Estates	19	0	0	19		0		0	51
Silversage	22	0	9	13	0	19	46	20	48
Skyland	453	51	168	285	60	128	346	518	1397
Skyland Filing 3 phase 2	12			12				0	32
Staples East River Estates	6	2	3	3	8	4	8	8	16

**Table SE 5 (continued)**

Subdivision/Towns	Units				Population				
	Approved or Zoned	Built 5/93	Built 12/2003	Unbuilt 2003	6 mo. + Occupancy Feb 97	6 mo. + Occupancy Dec 03	6 mo. + at Buildout	All Units Occupied 2003	All Units Occupied @ Buildout
Trappers Crossing CB	24	5	14	10	10	7	12	46	78
Trappers Crossing South	8	0	6	2	1	6	8	18	23
Trappers Crossing Wildcat	36	0	14	22	8	11	28	43	111
Whetstone Vista	9	0	3	6	0	5	15	7	22
Whetstone Mountain Ranch	8	0	2	6	0	2	8	6	23
Wildbird Estates	6	6	6	0	7	10	10	15	15
Gothic Road between towns	10	4	11	-1	26	21	19	25	23
St. Hwy 135 (Round Mtn. to CB)	43	24	40	3	75	87	94	85	92
Slate River Road	6	3	6	0	2	10	10	15	15
Washington Gulch Road	4	4	4	0	2	0	0	14	14
Cement Creek Ranch	3	3	3	0	3	4	4	8	8
Irwin	63		18	45		10	35	58	203
<b>Subtotal Existing Subdivision</b>	<b>2,670</b>	<b>438</b>	<b>1,109</b>	<b>1,561</b>	<b>1,171</b>	<b>1,684</b>	<b>4,072</b>	<b>2,857</b>	<b>6,964</b>
Town of Crested Butte	1,288	741	961	327	1,465	1,537	2,060	2,336	3,145
Town of Mt. Crested Butte	4,004	1,165	1,488	2,516	673	707	1,902	2,359	8,408
<b>Subtotal Towns</b>	<b>5,292</b>	<b>1,906</b>	<b>2,449</b>	<b>2,843</b>	<b>2,138</b>	<b>2,244</b>	<b>3,962</b>	<b>4,695</b>	<b>11,553</b>
( Round Mtn. to Gothic)				0					
Unplatted, potential 35 ac lots	421			421				0	1,137
Freestanding less than 35 ac	88			88				0	238
<b>Subtotal res. units/populaton</b>	<b>8,471</b>	<b>2,344</b>	<b>3,558</b>	<b>4,913</b>	<b>3,309</b>	<b>3,928</b>	<b>8,034</b>	<b>7,552</b>	<b>19,891</b>
Hotel/lodge/B&B CB (rooms)	144	50	144	0				395	395
Hotel/lodge/B&B Mt. CB(rooms)	1,604	?	627	977				1,568	4,010
Lodge Skyland (rooms)	51	51	51	0				128	128
Lodge Buckhorn (rooms)	50	0	0	50					125
<b>Subtotal Hotel/Lodge/B&amp;B</b>	<b>1,849</b>		<b>822</b>	<b>1,027</b>				<b>2,090</b>	<b>4,658</b>
<b>Totals</b>	<b>10,320</b>		<b>4,380</b>	<b>5,940</b>	<b>3,309</b>	<b>3,928</b>	<b>8,034</b>	<b>9,642</b>	<b>24,549</b>

Notes: Mt. CB December 03 Population is the 2000 Census figure  
 Mt. CB Units and Population are based on CB 2020 report, January 10, 2001  
 CB South population = 2000 Census avg. pple / household \* number of units built  
 Population if **All Units** are **Occupied at Buildout** is based on the following:  
 # 2nd homes in subdivisions is: (# units in 2003) minus (pop. in 2003 divided 2.15)  
 # 2nd homes at buildout in subdivisions is: # 2nd homes in 2003 times (# of approved units divided by total # units in 2003)  
 Population is: # approved units minus # of 2nd homes X 2.15 + 2nd homes X 3.6 (Avg. of SFR and Apts. 2nd home occupancy in CB2020)  
 2.7 occupants (the average # of occupants in all existing subdivisions at buildout) were assigned to each approved unit in all new subdivisions with zero units in 03  
 Population in unplatted and freestanding lots is 2.7 pple/unit from CB2020 local resident occupancy  
 Proposed subdivisions is 2.7 pple/unit from CB2020 local resident occupancy  
 CB occupancy is the actual 2.15 pple/occupied unit

Mt. CB, Skyland and Buckhorn hotel occupancy is 2.5 pple/unit from CB 2020  
Hotel/Lodge occupancy

Mt. CB res. units are the CB 2020 occupancy rates for single family, townhouse/condos and apts

## **NORTHWEST COLORADO COUNCIL OF GOVERNMENTS SECOND HOME OWNERS STUDY**

While calculating the total population of the valley it was projected that as many as 40% of the dwelling units would be second homes if current trends continue. CB 2020 projected as many as 31% would be second homes. Since both analyses project a significant number of second homes and since second homes present particular circumstances to the community compared to year-round occupied units, it may be useful to review some key findings of the recent study of second home owners by the Northwest Colorado Council of Governments (NWCCOG) in Eagle, Grand, Pitkin, and Summit Counties and of a national study of second home owners “The Second-Home Boom” from American Demographics, June 2003:

1. Compared to the average single property homeowner, second home owners spend five times as much on:
  - a. lawn care
  - b. home security
  - c. pest control
  - d. housecleaning
2. Compared to the average single property homeowner, second homeowners spend four times as much on contributions to:
  - a. churches
  - b. charities
  - c. educational groups
3. The growth rate of second home buying nationally is now about 5% per year, up from less than 2% in the 1990’s.
4. Given six age groups, the largest age group of second homeowners in the NWCCOG study was 55-64.
5. The 2000 US Census indicated there were about 25 million people who were 55-64. It also indicated there were 39 million people who were 45-54 and 44 million who were 35 to 44. If second home owners continue to be mostly 55-64 years old, and if other trends remain the same, then this means the number of second home owners could grow dramatically over the next twenty years.
6. Residents and second homeowners value some topics the same. Results of the four county study and the 2004 Crested Butte Land Use Survey are presented below:

**Table SE 6  
Comparison of NWCCOG Survey with  
2004 Land Use Survey Results**

Topics Respondents Value	NWCCOG Four Counties		Crested Butte	
	Residents	2nd Homeowners	Residents	2nd Homeowners
Air Quality	91%	95%	95%	97%
Water Quality/Quantity	91	91	93	92
Scenic/Visual Quality	90	95	96	97
Wildlife habitat	84	81	82	70
Arts and Culture	54	56	66	70
Public Transportation	44	51		

Local workforce housing is valued similarly by residents and second home owners in the four county study area, but not in Crested Butte:

Local workforce housing	41	44	72	47
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7. The four county study and the Crested Butte survey found that other topics are not similarly valued by residents and second home owners, such as:

**Table SE 7  
Differences between the NWCCOG Survey Findings  
and 2004 Land Use Survey Findings**

Topics Respondents Value	NWCCOG Four Counties		Crested Butte	
	Residents	2nd Homeowners	CB Residents	2nd Home- owners
Recreational opportunities	79%	91%	Summer	89%
			Winter	87
Parks/trail systems	78	89	Summer Trails	74
			Nordic Trails	51
Health Care services	77	63		
Education (K-12)	59	35		
Transportation infrastructure	49	63		
Adult Education	40	25		

8. Second homes (construction and spending) represent 34% of the total outside money coming into the NWCCOG four county study area. Other major money coming into the economy includes: winter visitors, 28%, resident income 18%, and summer visitors 14%.
9. Second homes generate 44% of basic jobs in the four county study area compared to winter visitors 25%, resident income 14%, and summer visitors 11%.

The NWCCOG second home owner study came to the following conclusions:

1. Second homes are the largest economic driver in the study area.
2. Second homes cause job growth and the need for more workers.
3. Second homeowners are in competition with local workers for both the existing housing market and the limited supply of developable land for future housing.
4. Community services (schools, health services, etc.) are also squeezed for space.

5. Second homes are crowding out all other users in the competition for land use.

Until Gunnison County is included in such a study we will not know precisely how Gunnison County compares, but it seems reasonable to expect that since some key survey results in the four county study were similar to results in the 2004 Land Use Survey, that we can expect similar results within the Middle Slate River Valley.

### **Commercial Development**

In 1984 the Towns of Crested Butte and Mt. Crested Butte crafted a joint policy statement that discouraged business and commercial development in the unincorporated County north of the Brush Creek Road. In 1991 the Towns reaffirmed their commitment to that Joint Policy Statement. The Joint Policy Statement also said that all development should be required "...to tie into an existing centralized water and sewer facility, or if this is not feasible at the present time, then provide a system utilizing the best available technology."

In 1982 Gunnison County approved the Riverland Industrial Park. In 1996 the Industrial Park was enlarged. In 2005 a proposal was made to add more commercial land adjacent to the Riverland Industrial Park.

In 2003 the Town analyzed the number of residential units and the amount of commercial square footage that could be built in the upper East River valley, given existing approvals. This number was then compared to communities similar to Crested Butte to see if there was an obvious need for more commercial space outside the towns. When the figures were assessed, the Town found that there is adequate commercial space approved in Crested Butte and in the unincorporated County to handle the number of residential dwelling units approved in these jurisdictions. Mt. Crested Butte was determining the number of square feet of commercial space in the South Village when this evaluation was done so neither residential units or commercial space in Mt. Crested Butte were included in this analysis.

**Table SE 8  
Comparison of Commercial Space to  
Number of Dwelling Units in Resort Communities  
January 2003**

	<b>Square Feet of Commercial Buildings</b>	<b>Number Residential Units</b>	<b>Square Feet of Commercial per Residential Unit</b>
Upper East River Valley	1,761,085	4,467	394
Aspen	1,408,804	4,906	287
Ketchum	1,300,000	3,265	398
Snowmass Village	205,078	3,605	57
South Lake Tahoe	1,110,000	14,066	79
Steamboat Springs	4,762,718	6,777	703
Telluride	454,415	1,233	369
Truckee	1,375,000	10,250	134

Note: Upper East River Valley numbers are at build out

Source: Crested Butte Planning Department

The implications and conclusions of the 2005 Crested Butte Area Plan Socioeconomic Trends chapter are: (not ranked in order of importance)

1. Less than one-half (½) of the number of approved units in outlying subdivisions have been built. Therefore, traffic generated by outlying subdivisions will be increasing substantially.
2. Annexations into the Town of Crested Butte may need to pay for and provide additional water and waste water treatment facilities.
3. Additional major public facilities in the Town may also trigger the need for additional water and waste water treatment facilities
4. The number of long-term rental dwelling units should be closely monitored because they are becoming a decreasing share of the total number of units. Although not discussed above, businesses in Crested Butte are dependent upon renters who work in their businesses.
5. Land will be needed to house workers who work at second homes.
6. Land will be needed for the businesses that serve the second homes.
7. The needs of businesses that cater to second home owners should be explored because, as indicated above and in the Housing section of the Crested Butte Land Use Plan, the types of businesses that have been growing in recent years tend to cater to the needs of second home owners. Land needs and secondary businesses are two subjects that may need more understanding.
8. Until demonstrated otherwise, it appears there is adequate commercial space for the number of dwelling units approved in Crested Butte and in the unincorporated upper East River valley.
9. Recreational facilities should be a major consideration when approving new subdivisions because second homeowners desire more recreational facilities, and at least 25% of subdivision units are projected to be second homes.
10. Expansion of State Highway 135, alternate transportation routes, and alternate forms of transportation may be needed since the number of units projected to be built outside the Town is five times the number that are projected to be built within the Town.
11. More effective and better regulations that discourage outlying development and encourage development in or near towns should be explored because a large percentage of the expected growth is projected to be outside Crested Butte and growth in outlying areas implies there will be issues particular to that type of growth that need to be addressed, such as the following:
  - a. the number of transportation trips per day
  - b. air quality affected by trips per day
  - c. parental trips for recreation
  - d. the potential change in the character of the landscape (loss of open space and wildlife habitat which residents and visitors value)

## **LAND USE IMPLICATIONS OF THE 2006 CRESTED BUTTE AREA PLAN**

### **The Land in the Middle Slate River Valley**

The Middle Slate River Valley (MSRV) includes approximately 39.6 square miles excluding the Towns of Crested Butte and Mt. Crested Butte. 39.6 square miles equals 25,371 acres. Of the approximate 25,371 acres, 49% of the land (12,465 acres) is owned by the federal government, 21% (5,233 acres) has been subdivided or otherwise developed, 12% (2,995 acres) has been preserved as open space in perpetuity, 1% (256 acres) is local government owned land such as the Town's reservoir, and 18% (4,536 acres) remains and has not been developed or preserved as open space. (See Developed and Undeveloped Land map on the next page.)

### **The Number of Units Allowed in the 1993 Crested Butte Three Mile Plan and the Number Approved**

The 1993 Three Mile Plan estimated there were 560 buildable acres in the MSRV that were suitable for development. Those acres had not been designated as either Hazard Areas or Resource Areas. The maximum average density per acre proposed by that plan was 3.95 units per acre. 560 acres times 3.95 units per acre meant that as many as 2,212 units could be added to the MSRV if all the buildable acreage was developed to the maximum allowed by that plan. If an average of the recommended acres was set aside permanently for each dwelling unit (3), then approximately 6,600 acres would have been permanently preserved as open space in the MSRV.

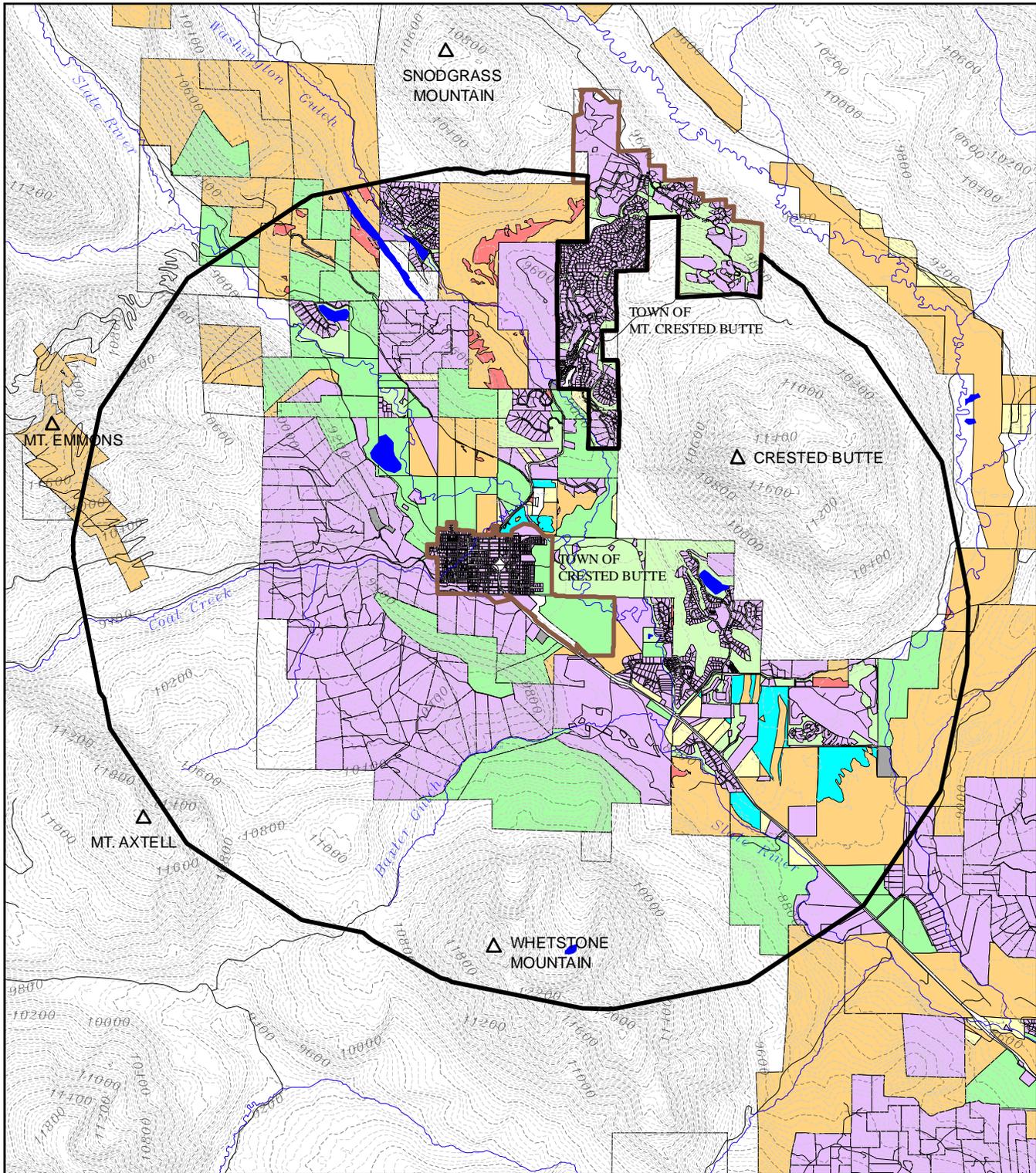
In fact, since 1993 only two annexations with associated developments have occurred. The Kapushion Annexation developed about 10 acres of land and added 33 single family lots to the Town. The Verzuh Ranch Annexation added 68 units to the Town. The associated McCormick Ranch Subdivision added seven more lots and 85 additional dwelling units were approved in the Paradise Park affordable housing subdivision.

The Kapushion Annexation preserved 110 acres of open space. The Verzuh Ranch Annexation preserved 274 acres of land as open space. 40 acres of the Verzuh Ranch Annexation open space are within the Town limits. The remaining open space is within the McCormick Ranch Subdivision. Most of the land included in the 35-acre lots in the McCormick Ranch Subdivision was counted as open space because:

- 35-acre lots were not excluded from the description of open space in the three mile plan
- there is a conservation covenant on those lots outside the building envelopes
- buildings can only be built in the building envelopes

No additional open space was provided with the Paradise Park Subdivision because the Town had participated in preserving 1,023 acres of open space during the previous 10 years.

In summary, 186 dwelling units were approved and 384 acres were preserved as open space through the annexation process. Excluding Paradise Park, an average of 3.8 acres were preserved as open space for each unit approved.



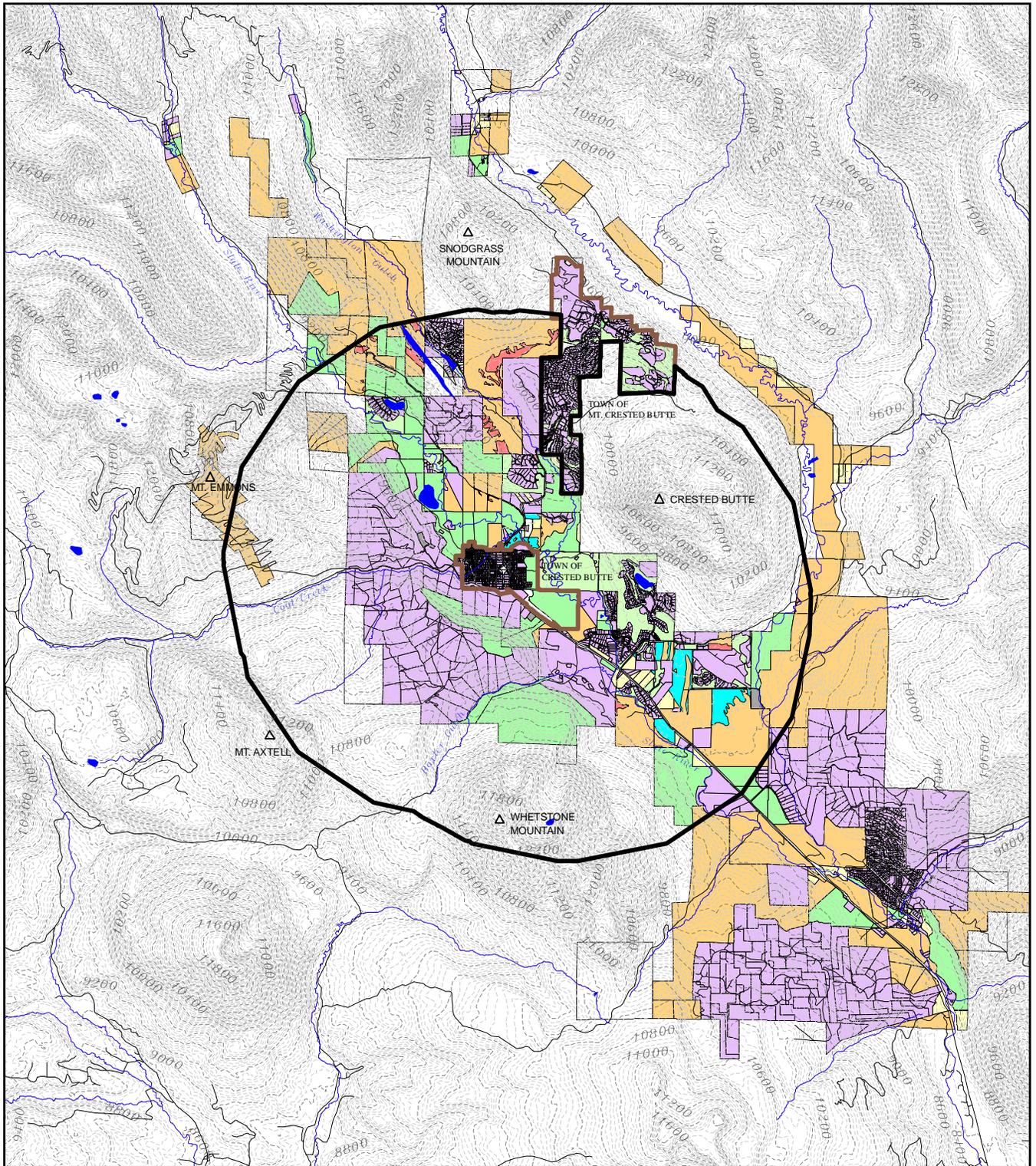
**Developed and Undeveloped Land #1 February, 2011**

- |  |  |
|--|--|
| 3 Mile Boundary (MSRV)                         | Developable Land - Excluding Hazard and Resource Areas (190 acres) |
| Town Boundary                                  | <b>Land Use</b>  |
| Streams  | Common Land or Recorded Document for Non-development Purposes      |
| Lakes  | Open Space   |
| Roads  | Subdivisions / Developed Land                                      |
| <b>40' Topographic Contours</b>                | Unsubdivided Land 35 acres and larger                              |
| ----- index                                    | Unsubdivided Land less than 35 acres                               |
| ----- interval                                 | State or Local Government  |
| Receiving Areas, Increased Density (253 acres) |  |



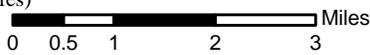
Drawn by: Hilary Mayes  
 Date: April 19, 2011  
 Filename: 3mileplan/developable1-2011.mxd





## Developed and Undeveloped Land #2 February, 2011

- |  |  |
|--|--|
| 3 Mile Boundary (MSRV)                         | Developable Land - Excluding Hazard and Resource Areas (190 acres) |
| Town Boundary                                  | <b>Land Use</b>  |
| Streams  | Common Land or Recorded Document for Non-development Purposes      |
| Lakes  | Open Space   |
| Roads  | Subdivisions / Developed Land                                      |
| <b>40' Topographic Contours</b>                | Unsubdivided Land 35 acres and larger                              |
| ----- index                                    | Unsubdivided Land less than 35 acres                               |
| ----- interval                                 | State or Local Government  |
| Receiving Areas, Increased Density (253 acres) |  |



Drawn by: Hilary Mayes  
 Date: April 19, 2011  
 Filename: 3mileplan/developable2-2011.mxd

**The Number of Units Approved Outside Crested Butte, But Within the Middle Slate River Valley**

In addition to the annexations, the following subdivisions listed in Table LUI 1 were approved by Gunnison County since 1993 within the 1993 Three Mile area. Some of these subdivisions were begun prior to 1993 and some were begun after 1993 (see Table LUI 2):

**Table LUI 1  
Subdivisions Approved Within Three Miles of Crested Butte Since 1993.**

	<b>Number Of Units</b>	<b>Acres of Open Space</b>	<b>Acres of Open Space Per Unit</b>	<b>Total Acres</b>
Moon Ridge Subdivision	9	90	10	119
Riverland II	23	18	.78	46
Saddle Ridge Ranch Estates	19	72	3.79	55
Three Valleys Subdivision	4	0	0	16
Whetstone Vista	9	11.625	1.29	36.87
Brush Creek Estates	2	0	0	36.16
Avion	9	0	0	21
Buckhorn Ranch filing 2A	14	0	0	48
Buckhorn Ranch, Filing 2B	224	75.48	.34	224
Meridian Lake Park Filing 3	56	3.82	.07	74
Pristine Point	18	20.44	1.14	61
Silver Sage	22	6.45	.29	28
Butte Pasture	9	35.11	3.9	62.7
Skyland Filing 3 (Newport)	166	13.215	.079	96
<b>Total</b>	<b>582</b>	<b>346.14</b>		<b>923.73</b>

**Table LUI 2  
Subdivisions Proposed and Approved After the 1993 Three Mile Plan Was Adopted**

Moon Ridge Subdivision  
 Riverland II  
 Saddle Ridge Ranch Estates  
 Whetstone Vista  
 Three Valleys Subdivision  
 Butte Pasture

35-acre lot subdivisions with no dedicated open space were also created within the three mile area. They include the following:

**Table LUI 3  
35-acre Lot Subdivisions Since 1993**

	<b>Number Of Units</b>	<b>Total Acres</b>
Smith Hill Ranches	8	275
Whetstone Mountain Ranch	8	252
<b>Total</b>	<b>16</b>	<b>527</b>

Since 1993, a total of 582 dwelling units have been approved by Gunnison County within three miles of Crested Butte. A total of 346 acres have been preserved as open space in the developments where the 582 units are located. While three County-approved subdivisions include as much (or more) open space per dwelling unit than the amount of open space created through annexations to Crested Butte, 11 have less open space per unit. Most have considerably less open space and four have no open space. With the exception of Three Valleys Subdivision, it appears that most subdivisions begun prior to 1993 have less open space per dwelling unit than those initiated after 1993.

### **Cumulative Affect of the Policies of the 2006 Crested Butte Area Plan**

Approximately 4,536 acres of privately owned land in the Middle Slate River Valley are not developed or designated open space. If the policies concerning:

- Geology
- Natural wetlands (but not a 100 foot buffer)
- Floodplain
- Slope over 30%
- Wildfire (extreme, high and moderate)
- Avalanche
- Elk production areas
- Priority Views That Should Be Preserved from the Town Park (not the entire viewable area from that point)
- the one-quarter ( $\frac{1}{4}$ ) mile buffer along State Highway 135

are applied to the 4,536 acres, an estimated 927 acres remain as developable land in the MSR.V. The 927 acres are not designated as either Hazardous Areas or Resource Areas.

If the average single family block in Crested Butte is built with single family homes only, then the average density for such a block would be 4.65 units per acre, including one-half of the required streets to serve that block ( $16/(460*326/43,560)$ ). The maximum density in the R4 zone can be 14 units per acre ( $48/(460*326/43,560)$ ).

A minimum of one acre is required in the County for each dwelling unit if there is no central sewer system. A minimum of 30% of the land in each subdivision should be open space in the County but 10% of that land can be between the buildings so about 27% of the each site must be set aside for open space.

### **Three Development Scenarios**

1. If the County Land Use Resolution was used to guide development and 27% of the 927 acres were preserved as open space (250 acres) then 677 acres could be developed. If all of the buildable land was developed without central sewer, then approximately 677 dwelling units could be added to the MSR.V. (This number would be slightly lower to accommodate roads.) 677 units are one hundred sixteen percent (116%) of the units approved in the last ten years ( $677/582$ ).
2. The next scenario applies the average single family density of Crested Butte (4.65 units per acre) to all the land that has not been developed or preserved as open space (4,536 acres). If the land preserved as open space is all hazardous and resource areas, (eg. floodplain and wetlands) an average of three 3 acres would need to be preserved for each unit. An arbitrary 1,400 units would need 4,200 acres open space plus 301 acres of land to develop, including roads ( $1,400 / 4.65 = 301$ ). The 1,400 dwelling units

would require a total of 4,501 acres ( $4,200 + 301 = 4,501$ ). The total acreage required for the 1,400 units is very near the 4,536 acres that are available and are not federal land, existing developed land, or open space in the MSR.V.

This scenario assumes that Town densities and central water and sewer, along with all other utilities, would be extended between the Towns, north of Nicholson Lake, throughout lower Washington Gulch area and south of Buckhorn Ranch Subdivision.

3. The policies of this Plan identify lands most suitable for development (Receiving Areas) and allow higher densities there. (See Land Use Policies and the Developed and Undeveloped Land map on page 141 and 142.) Given the recommended bonus densities and the 235 acres that are most suited for development, a total of 187 free market units, or 378 affordable housing units, could be built on these lands. (See Appendix VI. for sample development scenarios)

If all of the remaining 4,301 ( $4,536 - 235$ ) acres of land (that are not federal land, not already subdivided or not open space) were developed as 35 lots, or one unit per existing parcel that is less than 35 acres, another 134 dwelling units could be added to the MSR.V. A total of 321 free market dwelling units could be added if the policies of this Plan are followed. ( $187 + 109$  units on 35-acre lots + 25 units on existing lots less than 35 acres = 321) If all units on the land most suited for development are affordable housing, the total number of dwelling units that could be added would be 512 ( $378 + 109 + 25$ ). When the 321 free market units are added to all approved units in the upper East River valley and the potential units on 35 acre parcels and on parcels less than 35 acres outside the MSR.V, the total number of units in the upper East River Valley could be 10,507, see Table LUI 4.

**Table LUI 4**  
**Total Units after applying the policies of This Plan**  
**Round Mountain to Gothic**  
**Approved, Zoned for, or allowed by This Plan**

Approved units in subdivisions	2,670
Approved or zoned for units in the Towns	5,292
Hotel, lodge, and B&B rooms,	1,849
Potential 35-acre lots outside the MSR.V	312
Parcels less than 35 acres outside the MSR.V	63
<u>Additional free market units within the MSR.V</u>	<u>321</u>
<b>Total</b>	<b>10,507</b>

Park land is another major issue for Crested Butte when residential subdivisions are approved. In addition to the open space discussed above, the Town approved 5.8 acres of parks for the 186 units approved. The only dedicated park lands in the County in the MSR.V are at Skyland and Buckhorn Ranch. All of the subdivisions approved by the County were reviewed under the old LUR. The new LUR requires open space to be provided and some of that open space should be used for park uses. Since both the LUR and this Plan require/recommend the provision of park land, this could also affect the total number of dwelling units.

## GLOSSARY OF TERMS

**Adequate urban facilities and services for new urban development** - means the availability of public central water; public central sewer; fire protection; emergency medical care; police protection; public transportation; developed parks; developed trails; electric, natural gas, cable and telephone utilities; and schools at the capacity necessary to accommodate proposed development. All utility lines should be underground. This list should not be considered comprehensive but only an example of the minimum services necessary.

**Commercial development** - includes all, primarily for profit: office, retail, restaurant, financial, medical, recreational, cultural, light industrial, industrial, and service uses.

**Developable Land** - is land that does not contain hazards to development and does not contain resources targeted for preservation in this Plan.

**Development** - includes residential, commercial, industrial, mining, timbering and any other activities that convert land from its natural state or historic agricultural use to a new human use.

**Elk Production Area** - That part of the overall range of elk occupied by the females from May 15 to June 15 for calving.

**Flooding** - is the overflowing of water onto land that is normally dry.

**Geologic Hazards** - are natural geologic conditions, and processes that, if unrecognized or inadequately planned for, can result in damage to structures and costly maintenance (especially for homes, other buildings, roads and utilities) or loss of life. (See also Hazard Areas.)

**Ground subsidence** - is the sinking of the land over man-made or natural underground voids.

**Hazard Areas** – land that contains flood, geologic, wildfire, steep slope or snow avalanche hazards as described in this Plan. Hazard areas are areas so adverse to past, current or foreseeable development as to constitute a significant hazard to public health and safety or to property. For the purposes of this Plan, hazard areas as mapped and included in this Plan are:

- land slides
- unstable slopes
- potentially unstable slopes
- rockfalls
- debris flow and debris fans
- seismic areas
- snow avalanche areas
- flood plains
- wildfire areas
- slopes at or exceeding 30%

**Landslide** - is a mass movement of natural material where there is a distinct surface of rupture, or zone of weakness which separates the slide material from more stable underlying material.

**Local housing** – is permanently deed restricted housing. The intended beneficiaries for such housing are people who cannot afford unrestricted sale or rental housing prices. At a minimum, the occupants of affordable housing are a variety of mixed income people who earn at least 80%

of their income in Gunnison County. “Earned Income” is defined by the Internal Revenue Service. (IRC S 32 (c)(2). Other restrictions such as maximum income, maximum assets and/or maximum resale price may also be a part of a deed restriction on local housing.

See definition in Section 15-3-2. Exclude the last sentence.

**Metastable; metastable equilibrium** - is a delicate, easily changed condition where movement can be initiated by slight upset of the natural state.

**Mineral** – means an inanimate constituent of the earth, in solid, liquid or gaseous state, which, when extracted from the earth, is usable in its natural form or is capable of conversion into usable form as a metal, a metallic compound, a chemical, an energy source, a raw material for manufacturing, or a construction material. Mineral does not include surface or ground water or geothermal resources.

**Mineral Resource Area** – means an area in which minerals are located in sufficient concentration in veins, deposits, bodies, beds, seams, fields, pools, or otherwise as to be capable of economic recovery.

**Mud flow** - a general term for a mass-movement land form and a process characterized by a flowing mass of predominantly fine-grained earth material possessing a high degree of fluidity during movement.

**Non-development purposes** - refers to the land that is permanently set aside when density transfers occur. Non-development purposes include but are not limited to such uses as agriculture, open space preservation, and view corridors that do not allow the construction of buildings and habitat preservation areas. The preferred method of ensuring land will be used for non-development purposes is via conservation easements which are three-party agreements.

**Oversteepen** - in a general sense, oversteepening is when a slope is made more steep, by whatever means, so that it will no longer stand in place. Instead it will slip, although the slipping may not occur immediately.

**Receiving Areas** - land where density may increase in compliance with Policy LU 5.

**Resource Areas** - land determined by the Town to be valuable to the residents of the community because it preserves:

- ecosystems
- wildlife habitat
- views of significant lands in the vicinity of Crested Butte
- the historical culture of the MSR/V

For the purposes of this Plan, Resource Areas include wildlife habitat, wetlands, Visual Resources and irrigated lands as shown on the maps of this Plan and labeled “Priority Preservation Areas” on the Preservation Priorities maps.

**Ridge top** - that area located at the upper elevation of a hillside, knoll or peak.

**Riparian areas** - are areas adjacent to streams or other water bodies that support vegetation adapted to wetter areas and that are not always wetlands but may contain wetlands.

**Sending Areas** - land that is preserved as open space and where density is transferred to a Receiving Area.

**Sensitive Visual Resource Areas** - are labeled "Priority Views That Should be Preserved" on the Sensitive Visual Resource Areas map.

**Skyline** - the point or line which occurs where the top of a ridge meets the sky and typically viewed as the ridge crest, peak or top of a hillside or knoll.

**Strip commercial development** – automobile dependent, low density, linear development that is oriented towards a highway and which frequently has parking lots located between the buildings and the highway. (See drawing Volume 2 page, 16.)

**Unstable or potentially unstable slopes** - are areas susceptible to landslide, mudflow, rockfall or accelerated creep of a slope-forming material.

**Urban development (new)** – includes:

- a. all residential, commercial, or industrial development on lots smaller than one acre, and
- b. the subdivision of land pursuant to C.R.S. 31-23-214 as amended and the Town's Subdivision Regulations excepting those parts of developments which will remain perpetually in open space and are created under the density transfer policies described in this Plan

**Urban facilities and services** - include the provision of central water and sewer services; paved streets and gutters; dry utilities including: electricity, telephone, cable, and natural gas (if available); police; fire fighting services; and emergency services.

**Water body** – a perennial or intermittent natural river, stream, lake, pond, spring, or wetland but does not include reservoirs, irrigation ditches, roadway drainage ditches, artificial lakes or ponds, or wetlands that are created and used for the primary purpose of agricultural operations.

**Wetlands** – See Section 17-1-100 of the Town Code.

**Wildfire hazard** - a wildfire phenomenon which is so adverse to past, current or foreseeable construction or land use as to constitute a significant hazard to public health and safety or to property. (C.R.S. 24-65.1-103 (21))

# Part 3 Crested Butte Area Plan

## APPENDIX I

### MATERIALS AND PUBLICATIONS USED IN DEVELOPMENT OF THE CRESTED BUTTE THREE MILE PLAN

#### Literature

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**Appendix II**

**BOXHOLDER  
2004 LAND USE SURVEY**

All Respondents

513 responses from 2,929 contacts via Post Office boxes, 17.5%

Dear Crested Butte or Upper East River Valley Resident:

The Crested Butte Town Planning Commission is assessing the Town's planning goals and standards for development in the vicinity of Crested Butte. Our decisions may influence the Town for years to come. With this survey, we request your help to guide the Planning Commission while preparing to meet new challenges in our community.

This survey is being conducted to determine whether directions outlined in the 1993 Crested Butte Three Mile Plan should be continued and to address new issues that have surfaced since the Plan's adoption.

This survey is distributed to all Post Office BOXHOLDERS, second home owners in Crested Butte, and to major land owners near town. Our goal is to determine the desires of the community, rather than any particular individual. We will not publish the results of individual respondents. Please complete the questionnaire and return it to the Town at:

- o the Crested Butte Post Office, in a drop-off box, or
- o the Crested Butte Town Hall, at 507 Maroon Ave.
- o Second home owners and major land owners should return the questionnaires in the envelope provided.

**Please return all questionnaires by April 16, 2004 at the Post Office or by April 30, 2004 at Crested Butte Town Hall.**

Thank you for your cooperation.

Sincerely,

James A. Schmidt, Mayor and Planning Commission Chairman.

1. What do you value about Crested Butte, and the upper East River Valley around Crested Butte?  
(Please **select ALL** features that apply)

- |    |      |        |   |
|----|------|--------|---|
| a. | _402 | 78%___ | Ability to get around without a car                             |
| b. | _455 | 89%___ | Abundance and variety of wildflowers                            |
| c. | _424 | 83%___ | Abundance and variety of wildlife                               |
| d. | _175 | 34%___ | Agricultural opportunities in the valley                        |
| e. | _494 | 96%___ | Beautiful scenery   |
| f. | _486 | 95%___ | Clean air   |
| g. | _475 | 93%___ | Clean water in the streams                                      |
| h. | _338 | 66%___ | Cultural activities   |
| i. | _183 | 36%___ | Economic opportunities  |
| j. | _291 | 57%___ | Good place to raise children                                    |
| k. | _410 | 80%___ | Large expanses of open space with development in isolated areas |
| l. | _464 | 90%___ | Living in the mountains   |
| m. | _451 | 88%___ | Low crime rate  |
| n. | _439 | 86%___ | Nearby designated wilderness areas                              |
| o. | _409 | 80%___ | Open space between developments in the valley                   |
| p. | _347 | 68%___ | Relative isolation  |
| q. | _134 | 26%___ | Strong business climate   |
| r. | _454 | 89%___ | Summer outdoor recreation opportunities                         |
| s. | _390 | 76%___ | Small population  |
| t. | _368 | 72%___ | Small scale of buildings in Crested Butte                       |
| u. | _432 | 84%___ | Vistas (unobstructed views)                                     |
| v. | _439 | 86%___ | Winter outdoor recreation opportunities                         |
| w. | _84  | ___    | Other _____   |

2. Should any of the following natural/environmental features be preserved or remain undeveloped when a parcel of land is developed for residential, business or industrial uses? **(Select ALL features that should be preserved)**

- a. 469 91% Air quality
  - b. 294 57% Hay meadows for ranching
  - c. 369 72% Hillside seen from the Town of Crested Butte
  - d. 166 32% Mineral deposits
  - e. 465 91% Natural ponds or lakes
  - f. 374 73% Natural topography and contours
  - g. 480 94% Natural creeks and rivers
  - h. 396 77% Open space
  - i. 404 79% Top of ridgelines
  - j. 362 71% Trees and willow bushes
  - k. 384 75% Unique wildflower stands
  - l. 202 40% Views from critical locations
- from: \_\_\_\_\_ looking at: \_\_\_\_\_
- m. 418 81% Wildlife habitat
  - n. 412 81% Wildlife movement corridors
  - o. 419 82% Wetlands
  - p. 464 90% Water quality
  - q. 31 Other \_\_\_\_\_

3.a. Crested Butte can grow north into the corridor between Crested Butte and Mt. Crested Butte; north along the Slate River Road; or south near the County Shops at the top of the Highway 135 hill. More development could occur south of Riverland. If development occurs in any of these areas, what types of land use should be located there. **(Select ONE for each area)**

	<u>North</u>	<u>North</u>	<u>South</u>	<u>South</u>	
	Gothic	Slate	Top of	of	
	Road	River	SH 135	Industrial	
	Corridor	Road	Hill	Park	
i.	106	141	47	38	Single family residential
ii.	15	3	24	15	Multifamily residential
iii.	78	64	64	39	A mix of mostly single family residential and some multifamily
iv.	22	7	60	41	A mix of business uses in some blocks and residential uses in other blocks
v.	4	0	7	8	Business like those located on Elk Ave
vi.	0	0	10	5	Business designed to serve only the uses within the development.
vii.	1	1	23	70	Commercial like Bellevue Ave. between Third Street and Fifth Street
					Recreational developments like:
viii.	6	5	7	18	golf courses,
ix.	0	4	10	9	RV parks,
x.	10	6	5	9	other rec. development _____
xi.	37	49	16	24	Other/Comment _____

3.b. If development occurs in these areas, what density is appropriate: **(Select ONE for each area)**

- xii. 13 5 36 31 High density (close together as in the town grid pattern).
- xiii. 29 19 47 63 High density with substantial open space in the valley.
- xiv. 29 18 60 47 Medium density like Riverbend, or Crested Butte South.
- xv. 49 47 99 102 Medium density like Riverbend, or Crested Butte South with substantial open space in the valley.
- xvi. 48 35 21 17 low density like the existing density in the Gothic Corridor
- xvii. 75 59 30 28 low density like the existing density in the Gothic Corridor with substantial open space in the valley.
- xviii. 18 47 22 16 Very low density like Trappers Crossing.
- xix. 120 148 54 69 Primarily open space.

4. Where should additional business uses, like Elk Avenue, be located if and when needed? (**Select ALL** that apply)
- 408 80% Downtown adjacent to existing business uses
  - 89 17% North of Butte Avenue in the corridor between the two towns
  - 125 24% South of Red Lady Ave. along State Highway 135.
5. Where is it important to preserve open space? (Rank the choices with **1 MOST important** and **7 LEAST important**)
- |    | #1         | #2         |   |
|----|------------|------------|---|
| a. | <u>43</u>  | <u>35</u>  | Between Crested Butte and Mt. Crested Butte.  |
| b. | <u>50</u>  | <u>50</u>  | The entrance to Crested Butte, from Round Mountain north.   |
| c. | <u>140</u> | <u>100</u> | The wetlands.   |
| d. | <u>19</u>  | <u>66</u>  | Agricultural hay meadows.   |
| e. | <u>135</u> | <u>91</u>  | The land beyond the end of plowed roads (e.g. past Nicholson Lake, past Mt. Crested Butte, past the East River bridge towards Brush Creek.) |
| f. | <u>21</u>  | <u>45</u>  | Smith Hill, north of Crested Butte.   |
| g. | <u>16</u>  | <u>8</u>   | Other _____   |
- 
6. Should houses be clustered on small portions of a parcel leaving most of the parcel undeveloped and preserved or should houses be distributed throughout a parcel? (**Select ONE**)
- 367 27% clustered with preserved open areas
  - 109 21% distributed throughout the parcel
7. If there is going to be more development, should development be: (**Select ONE**)
- 14 3% distributed throughout the Slate and upper East River valleys
  - 44 9% distributed throughout the Slate and upper East River valleys if substantial open space is provided in the valley
  - 104 20% clustered adjacent to Crested Butte (CB), Mt. Crested Butte (Mt. CB), or existing subdivisions
  - 337 65% clustered adjacent to CB, Mt. CB, or existing subdivisions if substantial open space is provided in the valley
8. Which of the following, if any, should new development provide as part of the development proposal? (**Select ALL** that apply.)
- 358 70% Affordable housing
  - 308 60% Alternative transportation station sites
  - 260 51% Alternative transportation rights-of-way
  - 330 64% At least one tree planted on each lot
  - 288 56% Continued agricultural uses on open lands
  - 393 77% Lake and river access
  - 126 25% Land for a school
  - 257 50% Nordic track
  - 409 80% Open space
  - 251 49% Park land for ball fields, picnicking, etc.
  - 224 44% Parking
  - 422 82% Public access to public lands
  - 233 46% Snow storage space
  - 153 30% Stock drive routes
  - 376 73% Summer trails
  - 288 56% Significant setbacks from Highway 135 (e.g. ¼ to ½ mile)
  - 4 Other \_\_\_\_\_

9. Are the following athletic facilities generally available when you have time to use them? Do we need more facilities?

Are they available when you have time?		Do we need more?	
Yes	No	Yes	No
a. <u>258</u>	<u>17</u>	Softball fields	<u>38</u> <u>217</u>
b. <u>205</u>	<u>27</u>	Basketball courts	<u>52</u> <u>182</u>
c. <u>199</u>	<u>81</u>	Ice rinks	<u>133</u> <u>151</u>
d. <u>250</u>	<u>33</u>	Multipurpose lawns for frisbee, kite flying, yoga, etc.	<u>125</u> <u>134</u>
e. <u>214</u>	<u>26</u>	Soccer fields	<u>62</u> <u>167</u>
f. <u>224</u>	<u>44</u>	Tennis courts	<u>80</u> <u>172</u>
g. <u>176</u>	<u>26</u>	Volley ball courts	<u>45</u> <u>168</u>
h. <u>201</u>	<u>11</u>	Skateboard park	<u>47</u> <u>168</u>
i. <u>217</u>	<u>15</u>	Kids playground (eg. Mary Yelenick Park)	<u>90</u> <u>143</u>
j. <u>333</u>	<u>4</u>	Cross-country ski tracks	<u>153</u> <u>132</u>
k. <u>237</u>	<u>20</u>	Sledding Hills	<u>103</u> <u>142</u>
l. <u>51</u>	<u>30</u>	Other _____	<u>71</u> <u>34</u>
m. <u>65</u>	I do not use these facilities.		

10. Please help us identify places that should be linked by trail. Please indicate whether the trail should be for summer use, winter use or both summer and winter use. (**Select summer, winter, or both** or if it is not an important trail to you, leave all three spaces blank.) (Assume Crested Butte is already linked by trail to Mt. Crested Butte, Oh-be-joyful Wilderness, Green Lake, Riverbend, and Skyland (via Tony's Trail and the Upper Loop))

	summer	winter	both	
a.	<u>118</u>	<u>1</u>	<u>286</u>	Crested Butte with Crested Butte South
b.	<u>94</u>	<u>2</u>	<u>238</u>	Crested Butte with Kebler Pass
c.	<u>91</u>	<u>1</u>	<u>214</u>	Crested Butte with Baxter Gulch
d.	<u>64</u>	<u>1</u>	<u>273</u>	Crested Butte with Skyland along State Highway 135
e.	<u>44</u>	<u>2</u>	<u>154</u>	Crested Butte with Buckhorn Ranch (subdivision surrounding Crested Butte Airport)
f.	<u>136</u>	<u>2</u>	<u>178</u>	Smith Hill primitive road with Long Lake and Washington Gulch Road
g.	<u>48</u>	<u>1</u>	<u>215</u>	Riverbend with Skyland
h.	<u>85</u>	<u>2</u>	<u>187</u>	Meridian Lake Park with the Mt. Crested Butte Recreation Path
i.	<u>114</u>	<u>1</u>	<u>194</u>	A trail along Slate River Road, separated from the road, to Oh-be-joyful Creek
j.	<u>11</u>	<u>2</u>	<u>25</u>	Other _____

11. On a scale of 1 to 10, how important to you is a trail system providing non-motorized vehicle routes throughout the Slate and upper East River Valley?

Not important.....Average Response 8.19.....Very important

1 2 3 4 5 6 7 8 9 10

12. On a scale of 1 to 10, when connecting places, how important to you is a paved trail, rather than an unpaved trail?

Not important.....Average Response 3.24.....Very important

1 2 3 4 5 6 7 8 9 10

13. On a scale of 1 to 10, how important to you is a larger performing arts center?

Not important.....Average Response 5.80.....Very important

1 2 3 4 5 6 7 8 9 10

14. Are you a resident of:

a. <u>291</u>	Crested Butte	d. <u>13</u>	Meridian Lake Park subdivision
b. <u>58</u>	Mt. Crested Butte	e. <u>16</u>	Skyland/Buckhorn Ranch
c. <u>62</u>	Crested Butte South/Allen Homesites	f. <u>55</u>	A valley resident but not in the above communities
<u>1</u>	Irwin	<u>3</u>	Own property do not live here

**Appendix II**

**BOXHOLDER  
2004 LAND USE SURVEY**

Residents

476 responses of 2,815 contacts via Post Office boxes, 16.9%

Dear Crested Butte or Upper East River Valley Resident:

The Crested Butte Town Planning Commission is assessing the Town's planning goals and standards for development in the vicinity of Crested Butte. Our decisions may influence the Town for years to come. With this survey, we request your help to guide the Planning Commission while preparing to meet new challenges in our community.

This survey is being conducted to determine whether directions outlined in the 1993 Crested Butte Three Mile Plan should be continued and to address new issues that have surfaced since the Plan's adoption.

This survey is distributed to all Post Office BOXHOLDERS, second home owners in Crested Butte, and to major land owners near town. Our goal is to determine the desires of the community, rather than any particular individual. We will not publish the results of individual respondents. Please complete the questionnaire and return it to the Town at:

- o the Crested Butte Post Office, in a drop-off box, or
- o the Crested Butte Town Hall, at 507 Maroon Ave.
- o Second home owners and major land owners should return the questionnaires in the envelope provided.

**Please return all questionnaires by April 16, 2004 at the Post Office or by April 30, 2004 at Crested Butte Town Hall.**

Thank you for your cooperation.

Sincerely,

James A. Schmidt, Mayor and Planning Commission Chairman.

1. What do you value about Crested Butte, and the upper East River Valley around Crested Butte?  
(Please **select ALL** features that apply)

- |    |      |          |   |
|----|------|----------|---|
| a. | _370 | 78%_____ | Ability to get around without a car                             |
| b. | _423 | 89%_____ | Abundance and variety of wildflowers                            |
| c. | _396 | 83%_____ | Abundance and variety of wildlife                               |
| d. | _169 | 36%_____ | Agricultural opportunities in the valley                        |
| e. | _458 | 96%_____ | Beautiful scenery   |
| f. | _450 | 95%_____ | Clean air   |
| g. | _441 | 93%_____ | Clean water in the streams                                      |
| h. | _312 | 66%_____ | Cultural activities   |
| i. | _173 | 36%_____ | Economic opportunities  |
| j. | _273 | 57%_____ | Good place to raise children                                    |
| k. | _382 | 80%_____ | Large expanses of open space with development in isolated areas |
| l. | _438 | 92%_____ | Living in the mountains   |
| m. | _422 | 89%_____ | Low crime rate  |
| n. | _410 | 86%_____ | Nearby designated wilderness areas                              |
| o. | _381 | 80%_____ | Open space between developments in the valley                   |
| p. | _324 | 68%_____ | Relative isolation  |
| q. | _121 | 25%_____ | Strong business climate   |
| r. | _424 | 89%_____ | Summer outdoor recreation opportunities                         |
| s. | _364 | 76%_____ | Small population  |
| t. | _342 | 72%_____ | Small scale of buildings in Crested Butte                       |
| u. | _401 | 84%_____ | Vistas (unobstructed views)                                     |
| v. | _412 | 87%_____ | Winter outdoor recreation opportunities                         |
| w. | _78  | _____    | Other _____   |

2. Should any of the following natural/environmental features be preserved or remain undeveloped when a parcel of land is developed for residential, business or industrial uses? **(Select ALL features that should be preserved)**

- a. 434 91%      Air quality
- b. 274 58%      Hay meadows for ranching
- c. 337 71%      Hillsides seen from the Town of Crested Butte
- d. 157 33%      Mineral deposits
- e. 433 91%      Natural ponds or lakes
- f. 350 74%      Natural topography and contours
- g. 445 93%      Natural creeks and rivers
- h. 369 78%      Open space
- i. 372 78%      Top of ridgelines
- j. 338 71%      Trees and willow bushes
- k. 359 75%      Unique wildflower stands
- l. 185 39%      Views from critical locations  
from: \_\_\_\_\_ looking at: \_\_\_\_\_
- m. 392 82%      Wildlife habitat
- n. 385 81%      Wildlife movement corridors
- o. 391 82%      Wetlands
- p. 430 90%      Water quality
- q. 31      Other \_\_\_\_\_

3.a. Crested Butte can grow north into the corridor between Crested Butte and Mt. Crested Butte; north along the Slate River Road; or south near the County Shops at the top of the Highway 135 hill. More development could occur south of Riverland. If development occurs in any of these areas, what types of land use should be located there. **(Select ONE for each area)**

	<u>North</u>	<u>North</u>	<u>South</u>	<u>South</u>	
	<u>Gothic</u>	<u>Slate</u>	<u>Top of</u>	<u>of</u>	
	<u>Road</u>	<u>River</u>	<u>SH 135</u>	<u>Industrial</u>	
	<u>Corridor</u>	<u>Road</u>	<u>Hill</u>	<u>Park</u>	
i.	<u>98</u>	<u>128</u>	<u>43</u>	<u>35</u>	Single family residential
ii.	<u>14</u>	<u>3</u>	<u>22</u>	<u>13</u>	Multifamily residential
iii.	<u>72</u>	<u>63</u>	<u>62</u>	<u>36</u>	A mix of mostly single family residential and some multifamily
iv.	<u>21</u>	<u>7</u>	<u>56</u>	<u>38</u>	A mix of business uses in some blocks and residential uses in other blocks
v.	<u>3</u>	<u>0</u>	<u>6</u>	<u>8</u>	Business like those located on Elk Ave
vi.	<u>0</u>	<u>0</u>	<u>9</u>	<u>4</u>	Business designed to serve only the uses within the development.
vii.	<u>1</u>	<u>1</u>	<u>21</u>	<u>66</u>	Commercial like Bellevue Ave. between Third Street and Fifth Street
					Recreational developments like:
viii.	<u>6</u>	<u>5</u>	<u>7</u>	<u>17</u>	golf courses,
ix.	<u>0</u>	<u>4</u>	<u>9</u>	<u>9</u>	RV parks,
x.	<u>10</u>	<u>6</u>	<u>5</u>	<u>9</u>	other rec. development _____
xi.	<u>33</u>	<u>43</u>	<u>12</u>	<u>20</u>	Other/Comment _____

3.b. If development occurs in these areas, what density is appropriate: **(Select ONE for each area)**

- xii. 13 5 34 28 High density (close together as in the town grid pattern).
- xiii. 29 19 45 62 High density with substantial open space in the valley.
- xiv. 27 18 53 39 Medium density like Riverbend, or Crested Butte South.
- xv. 45 42 93 97 Medium density like Riverbend, or Crested Butte South with substantial open space in the valley.
- xvi. 42 33 19 16 low density like the existing density in the Gothic Corridor
- xvii. 69 54 28 23 low density like the existing density in the Gothic Corridor with substantial open space in the valley.
- xviii. 15 45 20 15 Very low density like Trappers Crossing.
- xix. 111 134 49 66 Primarily open space.

4. Where should additional business uses, like Elk Avenue, be located if and when needed? (**Select ALL** that apply)
- a. 378 79%\_\_\_\_\_ Downtown adjacent to existing business uses
  - b. 82 17%\_\_\_\_\_ North of Butte Avenue in the corridor between the two towns
  - c. 111 23%\_\_\_\_\_ South of Red Lady Ave. along State Highway 135.
5. Where is it important to preserve open space? (Rank the choices with **1 MOST important** and **7 LEAST important**)
- |    | #1         | #2        |   |
|----|------------|-----------|---|
| a. | <u>38</u>  | <u>29</u> | Between Crested Butte and Mt. Crested Butte.  |
| b. | <u>46</u>  | <u>47</u> | The entrance to Crested Butte, from Round Mountain north.   |
| c. | <u>129</u> | <u>95</u> | The wetlands.   |
| d. | <u>19</u>  | <u>59</u> | Agricultural hay meadows.   |
| e. | <u>127</u> | <u>88</u> | The land beyond the end of plowed roads (e.g. past Nicholson Lake, past Mt. Crested Butte, past the East River bridge towards Brush Creek.) |
| f. | <u>17</u>  | <u>42</u> | Smith Hill, north of Crested Butte.   |
| g. | <u>16</u>  | <u>7</u>  | Other _____   |
- 
6. Should houses be clustered on small portions of a parcel leaving most of the parcel undeveloped and preserved or should houses be distributed throughout a parcel? (**Select ONE**)
- a. 340 77%\_\_\_\_\_ clustered with preserved open areas
  - b. 102 21%\_\_\_\_\_ distributed throughout the parcel
7. If there is going to be more development, should development be: (**Select ONE**)
- a. 13 3%\_\_\_\_\_ distributed throughout the Slate and upper East River valleys
  - b. 39 8%\_\_\_\_\_ distributed throughout the Slate & upper East River valleys if substantial open space is provided in the valley
  - c. 97 20%\_\_\_\_\_ clustered adjacent to Crested Butte (CB), Mt. Crested Butte (Mt. CB), or existing subdivisions
  - d. 311 65%\_\_\_\_\_ clustered adjacent to CB, Mt. CB, or existing subdivisions if substantial open space is provided in the valley
8. Which of the following, if any, should new development provide as part of the development proposal? (**Select ALL** that apply.)
- a. 341 72%\_\_\_\_\_ Affordable housing
  - b. 291 61%\_\_\_\_\_ Alternative transportation station sites
  - c. 241 51%\_\_\_\_\_ Alternative transportation rights-of-way
  - d. 304 64%\_\_\_\_\_ At least one tree planted on each lot
  - e. 266 56%\_\_\_\_\_ Continued agricultural uses on open lands
  - f. 368 77%\_\_\_\_\_ Lake and river access
  - g. 119 25%\_\_\_\_\_ Land for a school
  - h. 241 51%\_\_\_\_\_ Nordic track
  - i. 381 80%\_\_\_\_\_ Open space
  - j. 235 49%\_\_\_\_\_ Park land for ball fields, picnicking, etc.
  - k. 209 44%\_\_\_\_\_ Parking
  - l. 395 83%\_\_\_\_\_ Public access to public lands
  - m. 220 46%\_\_\_\_\_ Snow storage space
  - n. 143 30%\_\_\_\_\_ Stock drive routes
  - o. 350 74%\_\_\_\_\_ Summer trails
  - p. 266 56%\_\_\_\_\_ Significant setbacks from Highway 135 (e.g. ¼ to ½ mile)
  - q. 47 \_\_\_\_\_ Other \_\_\_\_\_
-

9. Are the following athletic facilities generally available when you have time to use them? Do we need more facilities?

Are they available when you have time?			Do we need more?	
Yes	No		Yes	No
a. 247	15	Softball fields	35	209
b. 197	24	Basketball courts	50	175
c. 191	79	Ice rinks	128	148
d. 240	31	Multipurpose lawns for frisbee, kite flying, yoga, etc.	119	131
e. 203	36	Soccer fields	61	161
f. 213	42	Tennis courts	75	167
g. 168	26	Volley ball courts	43	163
h. 192	11	Skateboard park	45	162
i. 199	15	Kids playground (eg. Mary Yelenick Park)	85	139
j. 313	4	Cross-country ski tracks	143	129
k. 224	19	Sledding Hills	95	140
l. 49	30	Other _____	71	34
m. 65		I do not use these facilities.		

10. Please help us identify places that should be linked by trail. Please indicate whether the trail should be for summer use, winter use or both summer and winter use. (**Select summer, winter, or both** or if it is not an important trail to you, leave all three spaces blank.) (Assume Crested Butte is already linked by trail to Mt. Crested Butte, Oh-be-joyful Wilderness, Green Lake, Riverbend, and Skyland (via Tony's Trail and the Upper Loop))

	summer	winter	both	
a.	109	1	274	Crested Butte with Crested Butte South
b.	88	2	226	Crested Butte with Kebler Pass
c.	88	1	204	Crested Butte with Baxter Gulch
d.	61	1	260	Crested Butte with Skyland along State Highway 135
e.	43	2	147	Crested Butte with Buckhorn Ranch (subdivision surrounding Crested Butte Airport)
f.	128	2	167	Smith Hill primitive road with Long Lake and Washington Gulch Road
g.	47	1	206	Riverbend with Skyland
h.	81	1	178	Meridian Lake Park with the Mt. Crested Butte Recreation Path
i.	110	0	185	A trail along Slate River Road, separated from the road, to Oh-be-joyful Creek
j.	11	1	23	Other _____

11. On a scale of 1 to 10, how important to you is a trail system providing non-motorized vehicle routes throughout the Slate and upper East River Valley?

Not important.....Average Response 8.22.....Very important  
 1            2            3            4            5            6            7            8            9            10

12. On a scale of 1 to 10, when connecting places, how important to you is a paved trail, rather than an unpaved trail?

Not important..... Average Response 3.29.....Very important  
 1            2            3            4            5            6            7            8            9            10

13. On a scale of 1 to 10, how important to you is a larger performing arts center?

Not important..... Average Response 5.83.....Very important  
 1            2            3            4            5            6            7            8            9            10

14. Are you a resident of:

a. 261	Crested Butte	d. 13	Meridian Lake Park subdivision
b. 58	Mt. Crested Butte	e. 16	Skyland/Buckhorn Ranch
c. 62	Crested Butte South/Allen Homesites	f. 55	A valley resident but not in the above communities
1	Irwin		

**Appendix II**

**2004 LAND USE SURVEY**

Second Home Owners

37 responses of 114 contacts via U.S. mail, 32.4%

Dear Crested Butte or Upper East River Valley Resident:

The Crested Butte Town Planning Commission is assessing the Town's planning goals and standards for development in the vicinity of Crested Butte. Our decisions may influence the Town for years to come. With this survey, we request your help to guide the Planning Commission while preparing to meet new challenges in our community.

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**Please return all questionnaires by April 16, 2004 at the Post Office or by April 30, 2004 at Crested Butte Town Hall.**

Thank you for your cooperation.

Sincerely,

James A. Schmidt, Mayor and Planning Commission Chairman.

1. What do you value about Crested Butte, and the upper East River Valley around Crested Butte?  
(Please **select ALL** features that apply)

- a. 32 87% Ability to get around without a car
- b. 32 87% Abundance and variety of wildflowers
- c. 28 76% Abundance and variety of wildlife
- d. 6 17% Agricultural opportunities in the valley
- e. 36 97% Beautiful scenery
- f. 36 97% Clean air
- g. 34 92% Clean water in the streams
- h. 26 70% Cultural activities
- i. 10 27% Economic opportunities
- j. 18 49% Good place to raise children
- k. 28 76% Large expanses of open space with development in isolated areas
- l. 26 70% Living in the mountains
- m. 29 78% Low crime rate
- n. 29 78% Nearby designated wilderness areas
- o. 28 78% Open space between developments in the valley
- p. 23 62% Relative isolation
- q. 13 35% Strong business climate
- r. 30 81% Summer outdoor recreation opportunities
- s. 26 70% Small population
- t. 26 70% Small scale of buildings in Crested Butte
- u. 31 84% Vistas (unobstructed views)
- v. 27 73% Winter outdoor recreation opportunities
- w. \_\_\_\_\_ Other \_\_\_\_\_

2. Should any of the following natural/environmental features be preserved or remain undeveloped when a parcel of land is developed for residential, business or industrial uses? **(Select ALL features that should be preserved)**

- a. 35 95%      Air quality
- b. 20 54%      Hay meadows for ranching
- c. 32 87%      Hillside seen from the Town of Crested Butte
- d. 9 24%      Mineral deposits
- e. 32 87%      Natural ponds or lakes
- f. 24 65%      Natural topography and contours
- g. 35 95%      Natural creeks and rivers
- h. 27 73%      Open space
- i. 32 87%      Top of ridgelines
- j. 24 65%      Trees and willow bushes
- k. 25 68%      Unique wildflower stands
- l. 17 46%      Views from critical locations  
from: \_\_\_\_\_ looking at: \_\_\_\_\_
- m. 26 70%      Wildlife habitat
- n. 27 73%      Wildlife movement corridors
- o. 28 76%      Wetlands
- p. 34 92%      Water quality
- q.      Other \_\_\_\_\_

3.a. Crested Butte can grow north into the corridor between Crested Butte and Mt. Crested Butte; north along the Slate River Road; or south near the County Shops at the top of the Highway 135 hill. More development could occur south of Riverland. If development occurs in any of these areas, what types of land use should be located there. **(Select ONE for each area)**

	<u>North</u>	<u>North</u>	<u>South</u>	<u>South</u>	
	<u>Gothic</u>	<u>Slate</u>	<u>Top of</u>	<u>of</u>	
	<u>Road</u>	<u>River</u>	<u>SH 135</u>	<u>Industrial</u>	
	<u>Corridor</u>	<u>Road</u>	<u>Hill</u>	<u>Park</u>	
i.	<u>8</u>	<u>13</u>	<u>4</u>	<u>3</u>	Single family residential
ii.	<u>1</u>	<u>    </u>	<u>2</u>	<u>2</u>	Multifamily residential
iii.	<u>6</u>	<u>1</u>	<u>2</u>	<u>3</u>	A mix of mostly single family residential and some multifamily
iv.	<u>1</u>	<u>    </u>	<u>4</u>	<u>3</u>	A mix of business uses in some blocks and residential uses in other blocks
v.	<u>1</u>	<u>    </u>	<u>1</u>	<u>    </u>	Business like those located on Elk Ave
vi.	<u>    </u>	<u>    </u>	<u>1</u>	<u>1</u>	Business designed to serve only the uses within the development.
vii.	<u>    </u>	<u>    </u>	<u>2</u>	<u>4</u>	Commercial like Bellevue Ave. between Third Street and Fifth Street
viii.	<u>    </u>	<u>    </u>	<u>    </u>	<u>1</u>	Recreational developments like: golf courses,
ix.	<u>    </u>	<u>    </u>	<u>1</u>	<u>    </u>	RV parks,
x.	<u>    </u>	<u>    </u>	<u>    </u>	<u>    </u>	other rec. development _____
xi.	<u>4</u>	<u>6</u>	<u>4</u>	<u>    </u>	Other/Comment _____

3.b. If development occurs in these areas, what density is appropriate: **(Select ONE for each area)**

- xii.           2 3 High density (close together as in the town grid pattern).
- xiii.           2 1 High density with substantial open space in the valley.
- xiv. 2      7 8 Medium density like Riverbend, or Crested Butte South.
- xv. 4 5 6 5 Medium density like Riverbend, or Crested Butte South with substantial open space in the valley.
- xvi. 6 2 2 1 low density like the existing density in the Gothic Corridor
- xvii. 6 5 2 5 low density like the existing density in the Gothic Corridor with substantial open space in the valley.
- xviii. 3 2 2 1 Very low density like Trappers Crossing.
- xix. 9 14 5 4 Primarily open space.

4. Where should additional business uses, like Elk Avenue, be located if and when needed? (**Select ALL** that apply)
- 30 81% Downtown adjacent to existing business uses
  - 7 19% North of Butte Avenue in the corridor between the two towns
  - 14 38% South of Red Lady Ave. along State Highway 135.
5. Where is it important to preserve open space? (Rank the choices with **1 MOST important** and **7 LEAST important**)
- |    | #1        | #2       |   |
|----|-----------|----------|---|
| a. | <u>5</u>  | <u>6</u> | Between Crested Butte and Mt. Crested Butte.  |
| b. | <u>4</u>  | <u>3</u> | The entrance to Crested Butte, from Round Mountain north.   |
| c. | <u>11</u> | <u>4</u> | The wetlands.   |
| d. | <u>7</u>  | <u>7</u> | Agricultural hay meadows.   |
| e. | <u>8</u>  | <u>3</u> | The land beyond the end of plowed roads (e.g. past Nicholson Lake, past Mt. Crested Butte, past the East River bridge towards Brush Creek.) |
| f. | <u>3</u>  | <u>3</u> | Smith Hill, north of Crested Butte.   |
| g. | <u>1</u>  | <u>1</u> | Other _____   |
6. Should houses be clustered on small portions of a parcel leaving most of the parcel undeveloped and preserved or should houses be distributed throughout a parcel? (**Select ONE**)
- 27 73% clustered with preserved open areas
  - 7 19% distributed throughout the parcel
7. If there is going to be more development, should development be: (**Select ONE**)
- 1 3% distributed throughout the Slate and upper East River valleys
  - 5 14% distributed throughout the Slate and upper East River valleys if substantial open space is provided in the valley
  - 7 19% clustered adjacent to Crested Butte (CB), Mt. Crested Butte (Mt. CB), or existing subdivisions
  - 23 62% clustered adjacent to CB, Mt. CB, or existing subdivisions if substantial open space is provided in the valley
8. Which of the following, if any, should new development provide as part of the development proposal? (**Select ALL** that apply.)
- 17 47% Affordable housing
  - 17 47% Alternative transportation station sites
  - 19 53% Alternative transportation rights-of-way
  - 26 72% At least one tree planted on each lot
  - 22 61% Continued agricultural uses on open lands
  - 25 69% Lake and river access
  - 7 19% Land for a school
  - 16 44% Nordic track
  - 28 78% Open space
  - 16 44% Park land for ball fields, picnicking, etc.
  - 15 42% Parking
  - 27 75% Public access to public lands
  - 13 36% Snow storage space
  - 10 28% Stock drive routes
  - 26 72% Summer trails
  - 22 61% Significant setbacks from Highway 135 (e.g. ¼ to ½ mile)
  - Other \_\_\_\_\_

9. Are the following athletic facilities generally available when you have time to use them? Do we need more facilities?

Are they available when you have time?		Do we need more?	
Yes	No	Yes	No
a. <u>11</u>	<u>2</u>	Softball fields	<u>3</u> <u>8</u>
b. <u>9</u>	<u>3</u>	Basketball courts	<u>2</u> <u>7</u>
c. <u>8</u>	<u>2</u>	Ice rinks	<u>5</u> <u>3</u>
d. <u>10</u>	<u>2</u>	Multipurpose lawns for frisbee, kite flying, yoga, etc.	<u>6</u> <u>3</u>
e. <u>11</u>	<u>0</u>	Soccer fields	<u>1</u> <u>6</u>
f. <u>11</u>	<u>2</u>	Tennis courts	<u>5</u> <u>5</u>
g. <u>8</u>	<u>0</u>	Volley ball courts	<u>2</u> <u>5</u>
h. <u>9</u>	<u>0</u>	Skateboard park	<u>2</u> <u>6</u>
i. <u>18</u>	<u>0</u>	Kids playground (eg. Mary Yelenick Park)	<u>5</u> <u>4</u>
j. <u>20</u>	<u>0</u>	Cross-country ski tracks	<u>10</u> <u>3</u>
k. <u>13</u>	<u>1</u>	Sledding Hills	<u>8</u> <u>2</u>
l. _____	_____	Other _____	_____
m. _____	I do not use these facilities.		

10. Please help us identify places that should be linked by trail. Please indicate whether the trail should be for summer use, winter use or both summer and winter use. (**Select summer, winter, or both** or if it is not an important trail to you, leave all three spaces blank.) (Assume Crested Butte is already linked by trail to Mt. Crested Butte, Oh-be-joyful Wilderness, Green Lake, Riverbend, and Skyland (via Tony's Trail and the Upper Loop))

	summer	winter	both	
a.	<u>9</u>	<u>0</u>	<u>12</u>	Crested Butte with Crested Butte South
b.	<u>6</u>	<u>0</u>	<u>12</u>	Crested Butte with Kebler Pass
c.	<u>3</u>	<u>0</u>	<u>10</u>	Crested Butte with Baxter Gulch
d.	<u>3</u>	<u>0</u>	<u>13</u>	Crested Butte with Skyland along State Highway 135
e.	<u>1</u>	<u>0</u>	<u>7</u>	Crested Butte with Buckhorn Ranch (subdivision surrounding Crested Butte Airport)
f.	<u>8</u>	<u>0</u>	<u>11</u>	Smith Hill primitive road with Long Lake and Washington Gulch Road
g.	<u>1</u>	<u>0</u>	<u>9</u>	Riverbend with Skyland
h.	<u>4</u>	<u>1</u>	<u>9</u>	Meridian Lake Park with the Mt. Crested Butte Recreation Path
i.	<u>4</u>	<u>1</u>	<u>9</u>	A trail along Slate River Road, separated from the road, to Oh-be-joyful Creek
j.	<u>0</u>	<u>1</u>	<u>2</u>	Other _____

11. On a scale of 1 to 10, how important to you is a trail system providing non-motorized vehicle routes throughout the Slate and upper East River Valley?

Not important.....Average Response 7.74.....Very important  
 1 2 3 4 5 6 7 8 9 10

12. On a scale of 1 to 10, when connecting places, how important to you is a paved trail, rather than an unpaved trail?

Not important.....Average Response 2.62.....Very important  
 1 2 3 4 5 6 7 8 9 10

13. On a scale of 1 to 10, how important to you is a larger performing arts center?

Not important.....Average Response 5.40.....Very important  
 1 2 3 4 5 6 7 8 9 10

14. Are you a resident of:

- |              |                                     |          |  |
|--------------|-------------------------------------|----------|--|
| a. <u>31</u> | Crested Butte                       | d. _____ | Meridian Lake Park subdivision                     |
| b. _____     | Mt. Crested Butte                   | e. _____ | Skyland/Buckhorn Ranch                             |
| c. _____     | Crested Butte South/Allen Homesites | f. _____ | A valley resident but not in the above communities |

## Appendix III

### Methodology for 2002 Wildfire Hazard Mapping, Gunnison County

#### THE GIS PROCESS

##### **1. Fuel Hazard Evaluation**

The evaluation formula uses the below fuel rating from USGS fuel cover types.

**Table 1**  
**USGS Land Cover Types and Fuel Hazard Rating**

<u>U.S.G.S. Land Cover Type</u>	<u>Rating</u>
Cropland and Pasture	1
Orchards, Groves, Vineyards, and Nurseries	2
Other Agricultural Land	1
Herbaceous Rangeland	1
Shrub and Brush Rangeland	2.5
Mixed Rangeland	2
Deciduous Forest Land	2
Evergreen Forest Land	3
Mixed Forest Land	3
Forested Wetlands	2
Shrub and Brush Tundra	1
Herbaceous Tundra	1
Mixed Tundra	1

The remaining 23 categories contain little or no natural wildfire fuels, and therefore carry a Fuel Hazard Rating of 0.

##### **2. Slope Hazard Evaluation**

**Table 2**  
**Slope Hazard Rating**

<b>Slope Type</b>	<b>Slope Value</b>	<b>Rating</b>
Mild	0-8%	1
Moderate	9-20%	2
Steep	21-30%	3
Extreme	31% +	4

Slope values are obtained from the USGS digital elevation model (DEM). They are categorized by slope value in percent and are assigned a Slope Hazard Rating from 1 to 4 in accordance with Table 2.

### 3. Aspect Evaluation

Aspect, or compass orientation of a slope, accounts for the fact that vegetation on south-facing slopes will have lower moisture content than similar surrounding vegetation with a different orientation. Aspect is treated as an "Additional Factor" in NFPA 299, and is assigned an Aspect Hazard Rating as follows:

**Table 3  
Aspect Hazard Rating**

<u>Aspect in Degrees (N=0, E=90)</u>	<u>Rating</u>
175-185	3
165-175 or 185-195	2
160-165 or 195-270	1
0-160 or 270-0	0

Aspect in degrees is also calculated from the DEMs. Again, the data are categorized and assessed from 0 to 3 in accordance with Table 3.

### 4. Ladder Fuel Rating

Ladder fuels such as saplings, shrubbery, and low branches allow for fire to climb into overstory. Ladder fuels are treated as an additional factor. Ladder fuels are assigned a Hazard Rating in accordance with Table 4.

**Table 4  
Ladder Fuel Rating.**

Low	0
Moderate	1
High	2

### 5. Forest Density

All forests were evaluated for density. This is described as percent of crown closure. Density is treated as an additional factor and categorized in accordance with Table 5.

**Table 5  
Forest Density Rating**

<b>Structural Stage</b>	<b>Code</b>	<b>Stand Size Class</b>	<b>Diameter Range for Most Trees</b>	<b>Crown Cover %</b>	<b>Rating<sup>1</sup></b>
Grass-Forb	1	non stocked	any	0-10	0
ShrubSeedling	2	seedling/sapling	< 1.5" diameter	11-100	0
Sapling-Pole	3a	seedling/sapling or poletimber	1.5" to 9" diameter	11 - 40	0
	3b	"	"	41 - 70	1
	3c	"	"	71 - 100	2
Mature	4a	sawtimber	9" and larger	11 - 40	0
	4b	"	"	41 - 70	1
	4c	"	"	71 - 100	2

## 6. Insects and Disease

**Table 6**  
**Insect and Disease Rating**

<b>Code</b>	<b>Insect and Disease</b>	<b>Rating</b>
0	None Visible	0
1	Moderate Western Spruce Bud Worm (WSBW)	0
2	Heavy WSBW	1
3	Heavy Aspen Cankers	1
4	Moderate Mistletoe	0
5	Heavy Mistletoe	1
6	Moderate Bark Beetle	0
7	Heavy Bark Beetle	1

This category includes pests and pathogens that increase dead ground and aerial fuels, thereby increasing fire hazard. Insect and Disease ratings are in accordance with Table 6.

## 7. Total Hazard Calculation

**(FUEL HAZARD \* SLOPE) + ASPECT HAZARD + LADDER FUEL + DENSITY + INSECT & DISEASE = TOTAL HAZARD**

The result is a range of Wildfire Hazard from 0 to 20, minimum to maximum. The final GIS process evaluates the total hazard and categorizes their values as follows:

**Table 7**  
**Quantifying Wildfire Hazard Severity**

<b>Total Hazard Rating</b>	<b>Wildfire Hazard Severity</b>
0	None
1-4	Low
5-8	Moderate
9-12	High
13+	Extreme

This calculation produces the final, new map layer. The new target data may now be displayed in a graphic map composition.

## Appendix IV

Bird identification by Ron Meyer and associates

### List of all Birds Found in the 2002 and 2003 Bird Survey on 8 Crested Butte Land Trust and Town Sites

Pied-billed Grebe	1
Great Blue Heron	2 <i>Ardea herodias</i>
Canada Goose	3 <i>Branta canadensis</i>
Gadwall	4 <i>Anas strepera</i>
Mallard	5 <i>Anas platyrhynchos</i>
Cinnamon Teal	6
American Wigeon	7
Ring-necked Duck	8
Lesser Scaup	9
Common Merganser	10
Red-tailed Hawk	11 <i>Buteo swainsoni</i>
Swainson's Hawk	12 <i>Buteo swainsoni</i>
American Kestrel	13 <i>Megasceryle alcyon</i>
Sora	14 <i>Porzana carolina</i>
Green-winged Teal	15
American Coot	16
Killdeer	17 <i>Charadrius vociferus</i>
Spotted Sandpiper	18 <i>Acticus muscularia</i>
Common Snipe	19 <i>Capella galinago</i>
Broad-tailed Hummingbird	20 <i>Selasphorus platycen</i>
Rufous Hummingbird	21 <i>Selasphorus rufus</i>
Red-naped Sapsucker	22 <i>Sphyrapicus ruber</i>
Red-shafted Flicker	23 <i>Colaptes auratus</i>
Mourning Dove	24 <i>Zenaida macroura</i>
Western Wood Pewee	25
Belted Kingfisher	26
Cordilleran Flycatcher	27
Dusky Flycatcher	28
Willow Flycatcher	29
Tree Swallow	30 <i>Iridoprocne bicolo</i>
Violet-green Swallow	31 <i>Tachycinata thalassir</i>
Cliff Swallow	32
No. Rough-winged Swallow	33
Barn Swallow	34
Steller's Jay	35 <i>Cyanocitta stelleri</i>
Gray Jay	36 <i>Perisoreus canadensis</i>
American Crow	37 <i>Corvus brachyrhynch</i>
Black-billed Magpie	38
Common Raven	39
Black-capped Chickadee	40 <i>Parus atricapillus</i>
Mountain Chickadee	41 <i>Parus gambeli</i>
White-breasted Nuthatch	42
House Wren	43 <i>Troglodytes aedon</i>
Mountain Bluebird	44 <i>Sialia currucoides</i>

American Dipper	45
American Robin	46
Townsend's Solitaire	47
Swainson's Thrush	48
Hermit Thrush	49
Warbling Vireo	50
European Starling	51 <i>Sturnus vulgaris</i>
Orange-crowned Warbler	52
Yellow Warbler	53 <i>Dendroica petechia</i>
Yellow-rumped Warbler	54
MacGillivray's Warbler	55
Wilson's Warbler	56 <i>Wilsonia pusilla</i>
Western Tanager	57 <i>Piranga ludoviciana</i>
lazuli Bunting	58 <i>Passerina amoena</i>
Green-tailed Towhee	59
Fox Sparrow	60
Savannah Sparrow	61
Song Sparrow	62
Lincoln's Sparrow	63 <i>Metospiza lincolni</i>
White-crowned Sparrow	64 <i>Zonotrichia leucophrys</i>
Gray-headed Junco	65
Red-winged Blackbird	66 <i>Agelaius phoeniceus</i>
Yellow-headed Blackbird	67
Western Meadowlark	68
Brewer's Blackbird	69 <i>Euphagus cyanocephalus</i>
House Sparrow	70 <i>Passer domesticus</i>
Ruby-crowned Kinglet	71
Common Grackle	72
Brownheaded Cowbird	73 <i>Molothrus ater</i>
Pine Siskin	74 <i>Carduelis pinus</i>
Lesser Goldfinch	75

**Additional Birds Identified by Local People**

Downy Woodpecker	76
Hairy Woodpecker	77
Hammond's Flycatcher	78
Ruby-crowned Kinglet	79
Audubon's Warbler	80
Pine Grosbeak	81 <i>Pinicola enucleator</i>
Cassin's Finch	82 <i>Carpodacus cassinii</i>
American White Pelican	83
Common Night Hawk	84
lewis' Woodpecker	85
Northern Flicker	86

## Appendix V

### Example developments that meet the recommendations of the Land Use Policies.

5 acre parcel between the Town and the Cemetery  
Permitted use = one residential unit or  
zero commercial uses

#### Development potential if open space is preserved:

Option A Hazardous lands or developable lands are preserved.

For each 5 acres preserved, one more unit may be added until a total density of 5 units per acre is reached.

1 unit plus (5 acre parcel x 5 units per acre equals 25 units) so the total number of units is 26. The total open space recommended for the extra 25 units is 125 acres.

(5 acres x 5 units per acre x 5 acres open space per unit = 125)

Option B Resource Area lands (or Priority Preservation Lands) are preserved.

For each 3 acres preserved, one more unit may be added until a total density of 5 units per acre is reached.

1 unit plus (5 acre parcel x 5 units per acre equals 25 units) so the total number of units is 26. The total open space recommended for the extra 25 units is 75 acres.

(5 acres x 5 units per acre x 3 acres open space per unit = 75)

Option C Five of the units are local housing and Resource Area lands will be preserved.

Since local housing can be up to 10 units per acre, only .5 acres are needed for the local housing. This leaves 4.5 acres for free market housing. 22.5 units can be approved on the 4.5 acres and this is rounded down to 22 (4.5 acres \* 5 units per acre = 22.5). Total units = 27 (5 + 22).

Free market housing: For each 3 acres preserved, one more unit may be added until a total density of up to 5 units per acre is reached.

Local housing: For each 1 acre preserved, one local housing unit may be added.

a. 1 unit plus the 22 units on the 4.5 acres is 23 units (4.5 acres of the parcel x 5 units per acre equals 22 units = 22). So 66 acres should be preserved as open space.

b. 1 acre of the parcel is for local housing so 5 more units may be added to the development, so 5 more acres should be preserved as open space.

Total dwelling units = 28

Total Open Space = 71 acres.

(4.5 acres x 5 units per acre x 3 acres open space per unit = 66)

(.5 acres x 10 units per acre x 1 acre open space per unit = 5)

## Appendix VI

### The Number of New Units and Amount of Open Space If the Plan Is Followed

If development occurs in compliance with Land Use Policies 5 and 7, and the general maps in this plan are found to be correct after more detailed analysis, as many as 187 dwelling units could be built in the designated Receiving Areas within the Middle Slate River Valley and as many as 944 acres could be preserved as open space.

#### North of Crested Butte

Between CB & Slate River (13.02+3.44) 16.5 acres x 5 units per ac = 82 units x 5 acres preserved = 410  
 Slate River to Moon Ridge Lane 6.4 acres x .25 u per acre = 1 units x 5 acres preserved = 5

#### Brush Creek Road

Furthest West (2.21+8.02)	49.8 acres x .5 u per acre =	24 units x 5 acres preserved =	120
Middle strip	4.5 acres x .5 u per acre =	2 units x 5 acres preserved =	10
Adjacent to Buckhorn, West	79.4 acres x .5 u per ac =	39 units x 5 acres preserved =	199
<u>Adjacent to Buckhorn, South</u>	<u>78.8 acres x .5 u per ac =</u>	<u>39 units x 5 acres preserved =</u>	<u>195</u>
<b>Total</b>	<b>235.4</b>	<b>187</b>	<b>944</b>

If development occurs in compliance with policy9, as many as 378 local housing dwelling units could be built in the designated bonus density areas within the Middle Slate River Valley and as many as 378 acres could be preserved as open space.

#### North of Crested Butte

Between CB & Slate River 16.5 acres x 10 units per ac = 165 units x 1 acres preserved = 165  
 Slate River to Moon Ridge Lane 6.4 acres x .5 units per ac = 3.2 units x 1 acres preserved = 3.2

#### Brush Creek Road

Furthest West	49.8 acres x 1 unit per acre =	49 units x 1 acre preserved =	49
Middle strip	4.5 acres x 1 unit per acre =	4 units x 1 acre preserved =	4
Adjacent to Buckhorn, West	79.4 acres x 1 unit per acre =	79 units x 1 acre preserved =	79
<u>Adjacent to Buckhorn, South</u>	<u>78.8 acres x 1 unit per acre =</u>	<u>78 units x 1 acre preserved =</u>	<u>78</u>
<b>Total</b>	<b>235.4</b>	<b>378</b>	<b>378</b>

In addition, dwelling units could be built on all of the developable land on 35-acre parcels in the MSRVA or on existing individual lots less than 35 acres that have not been designated for higher densities. Approximately 109 dwelling units could be built on the 35-acre parcels and 25 on the smaller than 35-acre parcels. This plan does not recommend that open space be preserved for each of those dwelling units.

## Appendix VII

### A Sample Development of 100 Units.

If the policies are followed then a 100 unit residential subdivision could look something like this:

#### Residential Units

Maximum density for free market units would be	5 units per acre.
Maximum density (if more than 40% of the dwelling units in a residential subdivision that will not be annexed to Town are local housing) would be	10 units per acre

#### Assume:

60% or 60 units would be local housing, at max. density this requires at least (60 units / 10 units per acre = 6 acres)	6 acres for the units
40% or 40 units would be free market, at the same maximum density this requires at least (40 units / 10 units per acre = 4 acres)	<u>4 acres</u> for the units
Total acres required for residential units: (Between the town and Cemetery there are 16.5 developable acres.)	10 acres

#### Open Space

Assuming some resource land and some hazardous land is preserved, then 3 acres should be preserved for each free market unit for a total of 120 acres.

Open space for local housing would be	<u>60 acres.</u>
Total open space would be (between Round Mountain and Schofield Pass/Paradise Divide)	180 acres,

#### Land for Public Purposes

Land for public purposes would be: ((1,393 SF per unit x 100) / 43,560)	3.2 acres
Land for parks would be: ((1,425 SF per unit x 100) / 43,560)	3.27 acres.
Land for a school would be 16,100 sq. ft. or	.37 acres

The average sale price of all vacant land in the Middle Slate River Valley and in Crested Butte, but not Mt. Crested Butte, in 2004 was \$2.18 per square foot. So as an alternative to providing land, payment-in-lieu of land would be:

Public land: 3.2 x 43,560 sq. ft. = 139,392 sq. ft. x \$2.13 =	\$296,905
Parks: 3.27 x 43,560 = 142,441 x 2.13 =	\$303,340
Schools: 16,100 x \$2.13 =	\$ 34,293

#### Trails

Trails for 100 units x 40 feet per unit =	4,000 ft.
or payment-in-lieu of \$14.45/ft.) =	\$57,800

#### Snow Storage

Snow storage for single family areas is .12 acres snow storage per 2.8 acres of development. So, if 14 acres are developed the recommended snow storage would be .6 acres