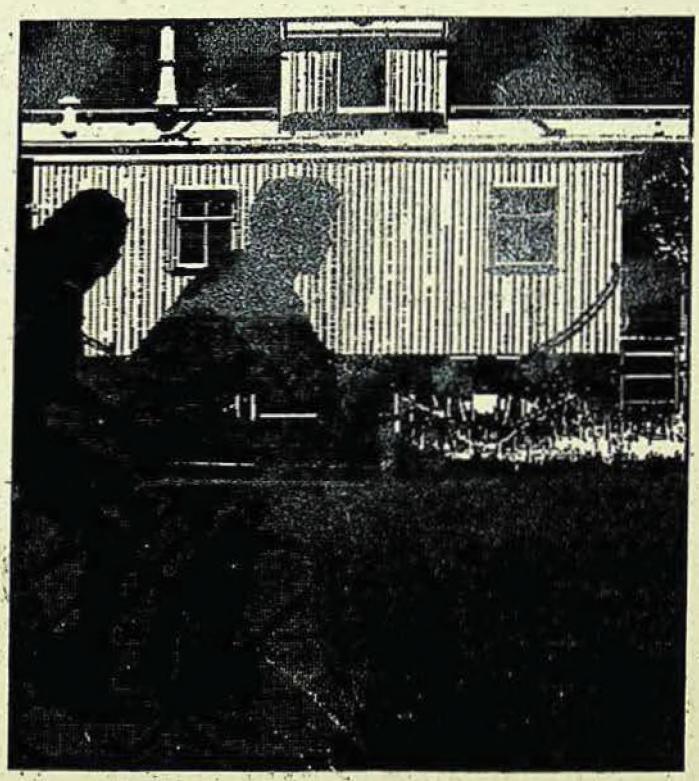
Heart of the Rockies Historic Corridor
Southern Pacific Railroad

Trail Feasibility Study

October 15, 1996



Compiled by Colorado State Parks
in Cooperation with
A Corridor Partnership of Towns and Counties,
State and Federal Agencies,
Non-profit and Community Groups

Heart of the Rockies Historic Corridor
TRAIL FEASIBILITY STUDY

TABLE OF CONTENTS

TECHNICAL APPENDICES

A. Surface Transportation Board Actions
B. Governor's Letter of Intent with Union Pacific
C. Federal/State Historic Designation Processes
D. Linkages with Other Regional Trails
E. Preliminary Phase I Hazardous Materials Assessment
F. Socio-Economic Trends and Surveys
G. Corridor Infrastructure
H. Wildlife Research Sources
I. Attorney General Opinion on Liability Issues
J. Potential Trailhead Development Sites
K. Operations and Maintenance Costs

HEART OF THE ROCKIES HISTORIC CORRIDOR
TRAIL FEASIBILITY STUDY STEERING COMMITTEE

October 16, 1996

Will Shafroth, Executive Director
State Board of the Great Outdoors Colorado Trust
303 E. 17th Ave., Suite 900
Denver, CO 80203

Dear Mr. Shafroth:

We, the undersigned members of the Steering Committee of the Heart of the Rockies Historic Corridor Trail Feasibility Study, are pleased to transmit to you the completed study. Funded primarily by a Great Outdoors Colorado Legacy Project planning grant, the study takes an in-depth look at the feasibility of converting from rail use to trail use the 178-mile corridor from Cañon City to Sage, which the Southern Pacific Railroad has proposed to abandon.

Together, we have gathered and considered a substantial amount of material to determine the feasibility of converting the corridor to trail uses. We have surveyed adjacent landowners, recreationists and business interests. We have conducted research on the economics, physical characteristics and biological resources of the corridor. We have contacted other states with rail-trails to learn from their experiences. And we have simply talked with our neighbors who live along the corridor.

As a result of our efforts, we have concluded that, if replacement rail service for the corridor is not found, the corridor should be converted to trail uses through the railbanking provisions of the National Trails System Act. We recognize there are significant issues to be resolved before a rail to trail conversion can take place. Foremost among these are solutions to control effects of trail use on adjacent landowners, and settling on strategies to protect and conserve the corridor's invaluable plant and animal species. Yet we are confident that these issues can be effectively addressed through a Corridor Management and Development Plan, assembled by a multi-interest team of landowners; recreationists, business and environmental interests, and local, state and federal agencies with a stake in the corridor's future.

The potential benefits of a well-managed trail along the corridor are substantial, and would be an asset for the people of Fremont, Chaffee, Lake and Eagle Counties and Colorado as a whole. We look forward to working with you through the Legacy Project application process to carry this once-in-a-lifetime opportunity forward.

Sincerely,

Members of the Steering Committee
(signatures below)

Charles E. Medina - USDA Forest Service

Michael Conlin - Lake County

Anita Northwood - Chaffee County

Dick Scar - Chaffee County

Marv Bradley - Fremont County

Ellie Caryl - Eagle County

Jeff Friesner - Fremont County

Steve Craig - Chaffee County

John G. Nichols - Fremont County

Dave Taliaferro - Bureau of Land Management

Denzel Goodwin - Fremont County

Tom Hale - Chaffee County

Steven D. Reese - Colorado State Parks

Kevin Foley - Eagle County

Jeff Jackel - Lake County

Jill E. Kovacevich - Eagle County

Judy Lohnes - Fremont County

Kent Hager - Lake County

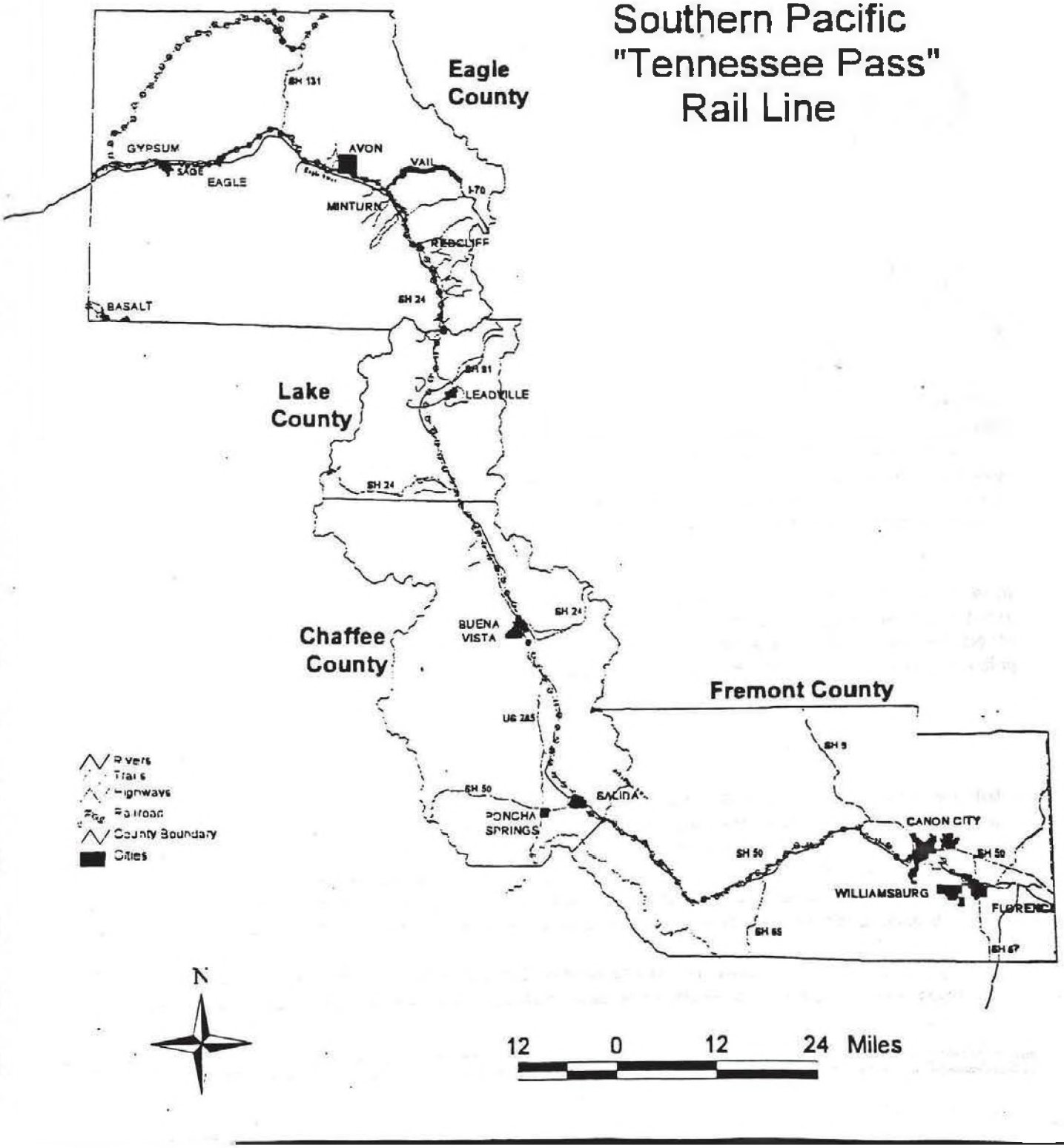
ഇതിനുശേഷം ഞാൻ ഗലീലയിലെ തിബെര്യാസ് കടലിന്റെ മറുകരയിലേക്കു പോയി.

APPENDIX A

SURFACE TRANSPORTATION BOARD ACTIONS

COLORADO
Heart of the Rockies
Historic Corridor

Southern Pacific
"Tennessee Pass"
Rail Line



I. Executive Summary

On August 12, 1996, the federal Surface Transportation Board granted approval of the merger of the Southern Pacific and Union Pacific Railroads, dramatically altering rail service in Colorado and the West. One of the merger's most far-reaching effects is the intention of the new Union Pacific to abandon service on the 178 miles of track linking four counties and 20 towns in the corridor from Cañon City to Sage, just east of Gypsum, Colorado. This feasibility study takes an in-depth look at the potential to convert the rail corridor to trail uses if it is abandoned, and preserve it through the railbanking provisions of the National Trails System Act.

The history and settlement of this region, known as the Heart of the Rockies, is intertwined with 116 years of rail service. Originally conceived as a link in a transcontinental railroad, the Tennessee Pass line from Pueblo to Leadville was completed by the Denver and Rio Grande Company in 1880, opening service to the first boom of the Leadville mining industry. The line was completed to Gypsum and beyond by 1890.

While the face of rail transportation in the corridor has changed substantially over the years, the attachment of the corridor communities to their railroad has not. Uniformly throughout the corridor, community leaders have responded to the proposed abandonment with well organized efforts to find new railway operators. Continued rail service for the corridor is also the top priority of the State of Colorado. Yet cognizant of today's challenges of making rail service profitable in the corridor, leaders have established a bottom line: if rail service does not continue, then the corridor must be preserved for future potential transportation purposes.

Communities nationwide have faced similar challenges, as the rail industry responds to economic forces by merging operations for efficiencies of scale. Many are responding by taking advantage of the twin benefits of railbanking: preservation of the corridor for possible restored rail use while at the same time reaping the benefits of interim trail uses. Over 700 inactive railroad corridors have been converted into trails, including at least 12 "rail trails" in Colorado.

OVERALL CONCLUSION

To guide this feasibility study, a Steering Committee comprised of local community leaders and state/federal agency staffs from along the corridor was formed. After examining several alternatives, the Steering Committee recommends that, in the event replacement rail proves infeasible in the near term, the corridor should be converted to trail use. Initial estimates indicate that by investing between $6.4 million and $10.4 million, the corridor can be transformed into one of the nation's most spectacular long distance trails, offsetting the loss of rail service by annually generating up to $6.6 million for the regional economy.

The Committee also concludes that prior to a rails to trails conversion, a detailed corridor Development and Management Plan should be adopted. Important issues to be addressed in the planning process

include critical wildlife habitat conservation, clean-up of hazardous materials, scope of trail use and development, and accommodation of adjacent landowner concerns.

Management responsibilities must also be determined in the plan. The preliminary assessment is that it would make sense for Eagle County to manage the corridor within its jurisdiction and for the existing Arkansas Headwaters Recreation Area to manage much of the trail from Tennessee Pass to Cañon City. Towns along the corridor may also wish to assume some of the management responsibilities.

A financing plan must also be developed. Joint financing and fund-raising through the existing corridor partnership of communities, state agencies, and federal land managers should be the first option.

CONDITIONS OF THE ABANDONMENT

Jurisdiction over the merger is held by the Surface Transportation Board (STB) of the U.S. Department of Transportation. Following the railroads' December 1, 1995, merger application to STB, an established process afforded proponents and opponents opportunities to make their cases before the STB. As part of that process, the State of Colorado filed to railbank the Tennessee Pass Line. On August 12, 1996, STB officially granted the heavily-contested merger, including 35 conditions.

One STB condition allows Union Pacific (UP) to discontinue rail service on the Tennessee Pass Line. However, STB did not grant the full abandonment request at this time because of a concern that UP's intent to transfer the Tennessee Pass line traffic to the Moffat Tunnel and other lines may affect operating efficiency. Instead, the STB will monitor the traffic transfers before allowing UP to abandon the Tennessee Pass line. UP has not yet identified a date for its next abandonment petition with the STB, but is targeting 12-18 months from September 12, 1996, when the merger was formally consummated.

Associated with the railroads' STB filings was Colorado Governor Roy Romer's March 1996 announcement of support for the merger as part of an agreement with UP. Two key points were part of that agreement. The first commits UP to continue to serve active shippers on the Tennessee Pass line for at least six months after the merger, and to leave the rails in place for at least a year while other rail options are explored. Second was a provision for UP to participate in a working group headed by the Colorado Department of Natural Resources to explore the potential of a 350-mile recreational trail from the Kansas border to Sage. A companion study to this one looks at the feasibility of a rail-trail on the other part of the potential abandonment, the line from NA Junction in eastern Pueblo County to Towner at the Kansas border.

In August 1996 Governor Romer and UP President Dick Davidson refined the original agreement further. A key part of that agreement is that if no replacement rail operators are located in the one year time frame, then UP will donate to the State of Colorado 109 miles of the corridor between Cañon City and Malta, just south of Leadville. Within that 109 miles, tracks and ties would be left in place in the nine mile stretch through the Royal Gorge, to leave open the option of a scenic tour operation as a future use. Tracks and ties would be removed in the remainder of the 109 mile donation. The remaining 69 miles of the corridor from Malta to Sage is subject to on-going negotiations with potential rail operators for that stretch. Eagle County is actively exploring that acquisition for purposes of a commuter rail line with adjacent trail where possible.

PURPOSE AND GOALS OF THE FEASIBILITY STUDY

This study was conducted as a result of two inter-related circumstances. The original rail to trail concept was initially proposed in December, 1995, by way of an application for a Great Outdoors Colorado Legacy Project grant. Then, in March, 1996, Governor Romer signed the agreement with UP, committing

the state and the railroad to explore the potential of a recreational trail. Concurrently, GO Colorado awarded a Legacy Project Planning Grant to Colorado State Parks to conduct the feasibility study in partnership with a coalition of corridor local governments and recreation user groups The study results are intended to form the basis of an application for GO Colorado's final round of Legacy Projects.

• Study Goal

The goal of this study is to determine the feasibility of keeping the Tennessee Pass line corridor intact by railbanking it for interim trail use. To accomplish this goal, a multi-jurisdictional partnership among state, federal and local agencies, private interests, and recreation user groups was coordinated through a Steering Committee.

The Steering Committee was comprised of representatives appointed by County Commissioners from Eagle, Lake, Chaffee and Fremont Counties, as well as state and federal agency staffs. Colorado State Parks took the lead in completing the study, with extensive contributions from the Steering Committee members, Division of Wildlife, Bureau of Land Management, Department of Local Affairs, Department of Public Health and Environment, Colorado Attorney General's Office and the U.S. Forest Service. Several consultants were also contracted to provide specialized information.

• Study Alternatives

Based on in-depth research and public input through meetings and surveys, the Steering Committee examined three primary alternatives for future use of the corridor:

Alternative A, Rails to Trails
- **conversion of the entire corridor to trail uses.**
- **recommended alternative**

Alternative B, Rails with Trails
- **conversion of parts of the corridor to trail uses while parts remain in rail service.**

Alternative C, No New Trails:
- **no action to convert the rail corridor to trail uses.**

• Study Format

In order to compile the substantial amount of information and data generated by the study team, the document is organized as follows:

Chapter I. **Executive Summary**

Chapter II. **Background**— includes information on railbanking, the UP/SP merger, and Steering Committee participants.

Chapter III. **Corridor Inventory**— examining the physical, biological and socio-economic characteristics of the region.

Chapter IV. **Rail to Trail Analyses**— builds on the inventory information from Chapter IV by discussing projected impacts and benefits of trail uses of the corridor resources.

Chapter V. **Future Management Alternatives**— describing three future corridor management alternatives, with detailed analysis of the recommended Rail to Trail alternative.

Chapter VI. **Future Action Recommendations**— recommendations for future actions on corridor acquisition, management and development are discussed.

Technical Appendices— detailed background on the contents of the study.

Map Appendices— a separate reference compilation of GIS maps.

REASONS FOR CHOOSING THE TRAIL ALTERNATIVE

• Recommended Alternative

Alternative A, the Rails to Trails alternative, is recommended by the Steering Committee. This recommendation is based on the premise that an operating railroad may not be a viable option at this point in time. The recommendation is also based on the understanding that this action is not competitive with any railroad operations that may become possible now or in the future.

There are many factors in addition to preserving the rail corridor involved in choosing the trail option as the recommended alternative. While a wide variety of concerns and issues about adjacent land uses and biological resources are examined in this feasibility study, there are many reasons to view the trail concept as a positive response to railroad abandonment.

• Public Support

Public open houses were hosted in each of the four corridor counties, and support for the trail concept was overwhelming among attendees. The attendees consistently commented it was of utmost importance to preserve the corridor, and that interim trail use was the best solution if rail service was eliminated. Responses to a Recreation User Survey conducted along the corridor indicated that 85% would use the corridor, and 52% would use it at least once a week. Support was expressed for increased opportunities for a variety of trail activities, including horseback riding, mountain bicycling, walking, and motorized use in some sections. The vision is a smooth, low-gradient trail for all types of users, including senior citizens, families with small children, people in wheelchairs, and alternate transportation routes.

Members of seven Chambers of Commerce in the corridor responded to a survey and 94% felt a trail would have positive impacts for the business community in general. About 22% of the businesses would consider commercial use of the trail, and 31% felt that the trail would directly lead to an increase in their business.

There are 533 landowners with property adjacent to the corridor, and 182 responded to a survey. While 53% registered concerns about privacy, 49% nonetheless supported the trail and another 11% were unsure. These responses are typical of rail-trail surveys nationwide, and experience has proven that adjacent property owners generally find that once a trail is in place, their concerns diminish.

• Resource Protection

The detailed corridor management plan that will be completed before conversion of the corridor to trail uses will provide a comprehensive framework to guide resource protection. Nationally, abandoned corridors without management facilities and services in place are a source of severe problems. Abandoned rail corridors are accessible, long, flat, inviting locations. Activities and problems such as trash dumping, parties, littering, careless motorcycle and jeep driving, weeds, blocked drainages, unattended fires, vandalism and trespass are common. Nationally, when trails are managed on previous rail corridors all of these activities are greatly reduced.

There are sensitive plant and animal species, plant communities, and habitats near the corridor which should be addressed in a conservation-based management strategy. For example, the Colorado Division of Wildlife (DOW) has expressed concern about potential effects of trail use on sensitive wildlife populations, especially bighorn sheep. A detailed planning process will examine ways to alleviate potential impacts, by examining options such as educational activities, habitat improvements, trail use restrictions, and alternate routes if necessary.

Hazardous materials have been documented at sites along the corridor, including three Superfund sites. In accord with federal law, an agreement with Union Pacific on clean-up of these sites will precede transfer of title to trail managers.

• Existing Corridor Recreation Resources

Substantial recreation opportunities that would complement the trail include ski areas, BLM lands, and National Forest lands. In the national forests alone, 5.5 million visitor days are recorded annually, including 2.4 million annual visitors to the five downhill ski areas near the corridor. Nearly 100 miles of the rail line is included within the boundaries of the Arkansas Headwaters Recreation Area, where outstanding fishing and whitewater boating attract 575,000 visitor-days annually. In addition, the Royal Gorge attracts about 500,000 visitors yearly.

Access along the trail for fishing and hunting would expand, and opportunities for watchable wildlife facilities abound. At least 25 other trails could be linked in to the corridor trail, including local community trail systems, trails on BLM and Forest Service lands, and regional trails such as the Rainbow Trail, Colorado Trail, Vail Pass to Summit County, Glenwood Canyon Trail and the proposed Roaring Fork Rail Trail.

The general infrastructure, services, and public safety aspects of the corridor have a strong orientation towards tourism needs and, with proper planning, could accommodate the additional projected 400,000-500,000 recreation user-days generated by trail use over the entire corridor.

• Economic Benefits

Tourism is the mainstay of the region's economy, and trail development would contribute to it. With the continued closure of mines and the rise in visitors from around the world, it is likely that tourism will increase in importance. The study concludes the trail would generate annual economic activity of about $4.9 to $6.6 million for the region, and from $9.1 million to $12.1 million statewide.

Property taxes lost from abandonment of railroad operations would be significantly offset by sales tax revenues generated by trail uses. In Chaffee, Fremont and Lake Counties, an estimated additional $92,500 to $123,400 in additional sales taxes would be generated, partially offsetting the $222,200 currently collected rail property taxes. In Eagle County, sales tax increases are estimated at $139,500 to $181,000, more than replacing the current $65,200 in rail property tax. In addition, residential and commercial property values will most likely increase adjacent to the proposed trail along the entire corridor.

• Consistency with Adjacent Land Uses

Local governments note few land uses adjacent to the corridor that would be incompatible with trail development, according to analyses by the Land Use Resource Center. A major design challenge may occur in Eagle County where the trail passes through a golf course, and Fremont County notes that existing easements could affect the width of the trail in the Royal Gorge. Eagle and Lake Counties have land use rules that would enable them to ensure that future development would be compatible with the trail. Chaffee and Fremont Counties have less specific development guidelines, but procedures are in place for trail managers to work with local officials on review of development proposals adjacent to the corridor. A list of available tools to guide land use is also presented.

The study identifies several actions that could alleviate impacts of trail use on adjacent landowners. Described are ways to strengthen liability protection afforded to adjacent landowners through the state Recreational Use Statute. Management and trail design actions can also minimize impacts such as littering, trespass, noise and livestock disturbance. Maintenance of existing fences and new fencing as appropriate in residential areas can protect privacy and encroachment concerns.

• Corridor Preservation

In addition to recreation benefits, maintaining the continuity of the railroad corridor has a unique value for other potential uses. Recreation is compatible with a wide variety of utility and transportation uses, such as the recent introduction of fiber optics lines. The corridor could also be useful for new communication lines, or for other technologies not yet envisioned. Preservation of the right-of-way would provide for a wide variety of uses, even as it is railbanked for possible future railroad reconstruction.

FUTURE ACTION RECOMMENDATIONS

The Steering Committee identified nine future actions to carry forward the Rail to Trail alternative:

1. Prepare a detailed *Corridor Development and Management Plan* before opening the corridor to trail use.

2. Adopt strategies to ensure trail use will be compatible with adjacent land uses.

3. Pursue opportunities to link the corridor trail with other regional outdoor resources.

4. Develop strategies to protect and conserve the corridor's invaluable biological resources.

5. Pursue preservation and interpretation of the historic and cultural resources of the corridor.

6. Secure the resources to fund the capital and operations costs of the corridor. Capital costs for acquisition and trail development are estimated at a range of $6.4 million and $10.4 million, and annual operating costs in a $440,000-$567,000 range.

7. Ensure that hazardous materials are cleaned up to a standard that will accommodate public uses of the corridor.

8. Pursue legislative actions that will strengthen liability protection for adjacent landowners.

9. Pursue land exchange transactions with the railroads that would yield mutual benefits.

10. Develop a volunteer network to assist in construction and operation of the trail.

II. BACKGROUND

A. Railroad Abandonment and Corridor Preservation through Railbanking

Railroad service has been lost on tens of thousands of miles of railroads over the past 60 years. While railroad corridors are valuable and irreplaceable public assets, until recent years it has been difficult to preserve the corridors for future transportation uses. Instead, railway corridors abandoned due to changing economics typically were broken up through sales or reversions to public agencies or private interests.

In 1983, as a means to protect these corridors for the future, Congress passed amendments to the National Trails System Act to allow rail corridors to be "railbanked" for future use as operating railroads. It is this legislation that makes it possible to preserve the Tennessee Pass corridor for the day when improved technology, changing economics, and changing public policies make rail service feasible again.

The Southern Pacific line between South Fork and Creede is another candidate for abandonment.

1. Railbanking

Railroad rights-of-way are typically composed of many small parcels. Some parcels are owned by the railroad; in other cases the railroad has only an easement, or right of access across properties. Before the railbanking option was available to preserve corridors, railroads would abandon railways by salvaging the rail and ties, disposing of fee title properties outright, and relinquishing right-of-way easements to landowners or, as in many cases in the West, to the federal government.

Yet preservation of the corridor, even if the rails are ultimately removed, is often a goal of most communities affected by proposed railway abandonments. Railbanking works by continuing the legal status of the railroad corridor while encouraging interim use for trail purposes. In its filing with the federal Surface Transportation Board (STB) for railbanking the Tennessee Pass line, the state acknowledges that use of the right-of-way is "subject to possible future reconstruction and reactivation of the right-of-way for rail service." What this means is that trails could be built for public use along the corridor, but could be supplanted by a return of rails if this becomes feasible in the future.

Any bona fide rail operator may buy back the corridor from the railbanking authority, but must pay a fair price for the land and any improvements. For example, Burlington Northern Santa Fe is currently negotiating with the Washington Department of Transportation to restore rail service on 66 miles of the Milwaukee Road Rail Trail, a previously railbanked corridor. Proceeds from the sale would enable the state to replace the trail on another route.

On March 21, 1996, the State of Colorado submitted a request to the STB to "establish interim trail use and rail banking" for both Southern Pacific lines proposed for abandonment, a total of 300 miles. Due to its August, 1996 action to withhold railway abandonment approval until certain conditions are met, the railbanking action has also been delayed. UP plans to renew its petition for abandonment at an unspecified future date, and at that time the State would also renew its railbanking filing. If the abandonment is granted, the railbanking condition would then take effect.

2. National Trends in Rail Trails

In nearly every state inactive railroad corridors have been converted into trails. Whether for recreation or bicycle commuting, these "rail trails" are very popular, with over 700 in public use, totaling more than 10,000 miles of trail. States with the largest mileage of rail trails are:

Michigan	88 trails totaling	1,023 open miles
Wisconsin	57 trails	1,033 miles
Minnesota	36 trails	831 miles
Pennsylvania	58 trails	488 miles
Iowa	41 trails	475 miles

During the course of this feasibility study, rail-trail managers from around the country were contacted to learn from their experience in both planning and development and on-going maintenance and operations necessary for successful management of a trail corridor. Specific questions were asked regarding not only the positive impacts and successful experiences surrounding their particular trails, but also the negative experiences and impacts that have developed. Their responses are incorporated into this study.

3. Rail Trails in Colorado

In Colorado, at least 12 former railroad grades have been converted to trail use while many more serve as roads. Some examples are:

- **Arkansas Riverwalk Trail:** In Cañon City along the Arkansas River (3 miles) Managed by the Cañon City Metro Parks and Recreation District.
- **The Midland Trail:** A portion of the Colorado Midland Railroad is preserved as a mountain bike trail from Buena Vista to Trout Creek Pass (12 miles). Managed by the Bureau of Land Management.
- **The New Santa Fe Trail:** Palmer Lake to Colorado Springs (16 miles). Managed by El Paso County Parks and Recreation Department
- **The Rio Grande Trail:** From Aspen west along the Roaring Fork River (6 miles). Managed by Aspen Parks and Recreation Department

A draft of a study underway of Colorado's railroad corridors found nearly a hundred intact sections of abandoned rail lines, many with good potential for recreation and historic interpretation. Some of these railroads were abandoned several decades ago, others fairly recently. In several cases where there is an interested agency or citizens' group, efforts are underway to preserve the corridors and plan trail access. Just a few examples are:

• **Mineral Belt Trail:** Lake County and Leadville have done the planning and are now building a 10.2-mile trail loop around the town using the abandoned rights-of-way of the three principal railroads that once served the Leadville Mining District around the turn of the century. Local landowners and the Colorado Mountain College are key participants.

• **Roaring Fork railroad corridor:** Pitkin and Garfield counties are negotiating for the purchase of the 32-mile Denver & Rio Grande rail line (now SP) from Glenwood Springs to Aspen. The initial use of the corridor would be for a trail, while leaving the tracks and roadbed intact for potential rehabilitation for passenger rail service some years in the future.

• **Rock Island Trail:** El Paso County recently purchased seven miles of the former Chicago, Rock Island & Pacific main line from Falcon to Colorado Springs. Initial trail development is scheduled for 1996-97. Three miles of the same rail line in Colorado Springs has already been opened for trail use by the city.

• **Denver & Rio Grande corridor**: In 1995 the City of Colorado Springs acquired a two-mile branch line from downtown west to Old Colorado City. Purchased with state transportation funds, the corridor will create an important link between the Monument Creek Trail and Manitou Springs.

B. The Union Pacific/Southern Pacific Merger

The Tennessee Pass rail line is a candidate for abandonment because of the recent merger of the Southern Pacific into the Union Pacific, which was finalized on September 12, 1996. Jurisdiction over the merger is held by the Surface Transportation Board (STB) of the U.S. Department of Transportation in Washington, D.C., which in October, 1995, took over responsibilities of the abolished Interstate Commerce Commission.

Following the December 1, 1995, filing by the railroads with the STB, a procedure and timetable were established to deal with both the merger and the proposed abandonments. Of most importance was the March 29 deadline to file requests and protests with the STB. Hundreds of shippers, communities, and states filed letters either in support or against the merger. Those supporting the merger sided with UP/SP in their position that in order to be competitive with the recently merged Burlington Northern Santa Fe, they needed to consolidate their systems. Those arguing against did so primarily on the grounds that the merger would produce an anti-competitive "duopoly" of two large railroads dominating the West. Some shippers, including those along the Colorado lines proposed for abandonment, argued against because they would lose service of any kind.

After hearings on July 3 and a formal decision on August 12, 1996, STB granted the merger request and is allowing UP to discontinue rail traffic over the entire line subject to a list of 35 conditions. However, STB decided to withhold abandonment approval until UP could demonstrate that it could efficiently transfer traffic from Tennessee Pass to the Moffat Tunnel or other lines.

On March 21, 1996, Governor Romer announced his support for the merger as part of an agreement with the Union Pacific Railroad. Some key points of the agreement are:

Goal #1: Hold lines "harmless" for a period of time so that alternative rail service can be explored.

- The UP will continue to serve active shippers on both routes for at least six months after merger... At a minimum, rail will be left in place for at least one year after the merger date, September 12, 1996, while other rail options are explored.

Goal #2: Explore the potential of a 350 mile recreational trail from the Kansas border to Dotsero.

- The UP will participate in a working group headed by the Department of Natural Resources which will work toward development of a Plains-to-Mountains recreational trail.
- The group will review segments of the Tennessee Pass and Towner-to-NA Junction lines possessing a credible opportunity for ongoing rail service to determine how rail-activities can co-exist with a recreational trail.
- The working group will explore mutually agreeable ways to reduce the costs of a rails-to-trails acquisition through land exchanges between the State of Colorado and the UP.

C. Feasibility Study Participants

Key to the completion of this study was a multi-jurisdictional partnership, anchored by a Steering Committee representing local, state and federal interests. This study would not have been possible without:

- Funding by the Great Outdoors Colorado Trust Fund through a Legacy Project planning grant.
- Funding and staff time by Colorado State Parks; Eagle, Lake, Chaffee, Counties; City of Cañon City and Cañon City Metropolitan Recreation District; Bureau of Land Management; and USDA Forest Service.
- Funding from the Colorado Off-Highway Vehicle Recreation Fund, and Arkansas River Outfitters Association.
- A great deal of volunteer time by the Steering Committee members, local organizations, and individuals.

STEERING COMMITTEE

The Steering Committee was convened to assist in the study and to help preserve the corridor. Members were appointed by the Board of Commissioners for each county, and staffing came from state and federal agencies. At the outset of the study, the Steering Committee adopted three goals. The completion of the study marks a significant milestone towards the accomplishment of these goals:

1. Develop a clear understanding of the opportunities and constraints of a potential rail to trail project by building and documenting public input.

2. Assist in the creation of a trail management plan which meets the needs of the local communities and residents, private/public interests, environment, and recreational enthusiasts.

3. Assist in the development of a long-term plan for funding to acquire, develop, and maintain the trail corridor.

Steering Committee members are:

- **Lake County**
  Kent Hager (County Administrator, Lake County; Leadville)
  Mike Conlin (Consultant; Leadville)
  Jeff Jackel (Recreational Director, Lake County; Leadville)

- **Chaffee County**
  Tom Hale (County Administrator, Chaffee County; Salida
  Steve Craig (Trout Unlimited SW Collegiate Peaks; Salida)
  Anita Northwood (Director, Heart of the Rockies Chamber of Commerce; Salida)
  Dick Scar (Business Owner and Environmentalist; Buena Vista)

- **Fremont County**
  - Denzil Goodwin (Rancher and Adjacent Landowner; Howard)
  - Jeff Friesner (Cañon City Rec. Dist.; Cañon City)
  - John Nichols (Director, Cañon City Parks Department)
  - Judy Lohnes (Upper Arkansas Council of Governments; Cañon City)
  - Marv Bradley (Banker; Cañon City)

- **Eagle County**
  - Ellie Caryl (Eagle County Planning Dept.; Eagle)
  - Kevin Foley (Vail Town Council; Vail)
  - Jill Kovacevich (Attorney and Chamber of Commerce; Vail)

- **Colorado State Parks staff are:**
  - Tom Easley (Project Manager)
  - Stuart Macdonald (State Trails Coordinator)
  - Steve Reese (Arkansas Headwaters Recreation Area Manager)
  - Jennifer Elling-Dodge (Planner)
  - Denise McCormick (Planner)
  - Yvonne Barnes (Planner)
  - Lois Walton (Researcher)

- **Federal staff members are:**
  - Dave Taliaferro (Bureau of Land Management)
  - Charles Medina (USDA Forest Service)

- **Colorado Division of Wildlife staff members are:**
  - Bruce Goforth
  - Dave Lovell

III. CORRIDOR INVENTORY

A. Topography and Geology

The "Tennessee Pass Line" of the Southern Pacific Railroad runs 178 miles from near Cañon City to a point called Sage near Gypsum, Colorado (see Map Appendix 1). Also included is a five-mile spur from Malta to Leadville. The Tennessee Pass rail corridor follows two river drainages separated at Tennessee Pass: the Arkansas and the Eagle. The journey begins at railroad milepost (MP) 163, less than a mile west of the Cañon City boundary (elevation 5,332).

As the corridor leaves the open rolling foothills of the Cañon City embayment area it enters the Royal Gorge: eight miles of 1,000 foot plus canyon walls with the roaring Arkansas River tumbling southeastward beside the railroad. The steep and narrow canyon traverses through the resistant Precambrian rock and remains sparse of vegetation. As tributary streams fall into the Arkansas there is the typical riparian vegetation of willow, sedges, alder and the introduced Russian olive and tamarisk to name a few.

The Royal Gorge seen from the canyon rim.

Upon exiting the canyon, the corridor comes in contact with Mesozoic sediments of the Webster Park graben, until Parkdale, (MP 171). Here, the Arkansas River and the corridor join Hwy. 50 for the trek through the Big Horn Sheep Canyon (Arkansas River Canyon) to Salida. The landscape in the Canyon periodically passes in and out of steep walled anticline canyons and wide scattered floodplains. Once again, the resistant Precambrian rock as well as riparian vegetation, grasses and cottonwood trees along the river banks, with sage and piñon pine among the high rocky crevices are seen.

The railroad, US Highway 50, and the Arkansas River share Bighorn Sheep Canyon.

The floodplains are gentle mountain valleys which grow larger in size approaching Salida. Unfolding to the south are spectacular views of the Sangre De Cristo Mountains, having peaks greater than 14,000 feet, while at Coaldale there is the first glimpse of the Sawatch Range. The Mosquito Mountains to the north can only be glimpsed occasionally as the corridor hugs the north side through all these valleys. Precambrian rocks underlie this Great Plains area and are exposed in all of these mountain ranges. These rocks consist mostly of granite, schist, gneiss, and undivided metamorphic rocks.

The entry into the Upper Arkansas Valley from the Big Horn Sheep Canyon (MP 213) has a dramatic view of the 14,000 foot Sawatch Range, as the corridor opens up into a broad ten-mile wide agricultural and ranching valley. The Arkansas River meanders through Paleozoic sediments of the Pleasant Valley graben as the corridor reaches Salida, elevation 7,050 feet. Here, both river and corridor depart company with Hwy. 50 and join with Hwy. 291 for the next eight miles. The river and the corridor are still tight against the Mosquito Range, now on the eastern side of the Upper Arkansas Valley. At MP 222 the Arkansas River and the corridor depart from Hwy. 291 to enter Browns Canyon, a spectacular pink granite gorge accessed to this day only by boats and the railroad. In Browns Canyon the river cuts through Precambrian metamorphic and intrusive rock more than 1.6 billion years old, creating the predominant rock outcroppings characteristic of the Mosquito Range foothills.

The railroad passes through Browns Canyon, a roadless area bordered by BLM land.

Upon leaving Browns Canyon to the north (MP 230.5), the Upper Arkansas Valley is narrowing as it rises in elevation staying mainly an agricultural landscape with some cottonwood, piñon and juniper on the valley floor and the higher elevation vegetation of ponderosa, spruce and aspen seen up the mountain sides. The corridor and the river join up with Hwy. 285, which quickly changes to Hwy. 24 at Johnson Village (MP 237.5). The valley is rapidly narrowing as the corridor rises to Granite (MP 257), a small community squeezed between the Sawatch Range and the Mosquito Range. Evidence of Quaternary glaciation prevails throughout this upper section of the corridor.
From Buena Vista to Leadville the topography is dominated by U-shaped tributary valleys, glacial moraines and glacial outwash.

At Malta the five mile spur line and Hwy. 24 head east towards the town of Leadville, while the main line continues north along the now small, braided Arkansas River. The landscape has become a high alpine valley, with low marshy brush along the 10,000 foot valley floor and gentle slopes which rise quickly to the 14,000 foot Sawatch peaks to the west. The Town of Leadville is to the right for the next few miles, with the old mining district and its distinctive mined hillsides. At MP 275 the corridor departs from its partner of the last 112 miles -

The open country north of Leadville with the Collegiate Range in the background.

the Arkansas River. For the next six miles, the railroad climbs through national forest lands finally reaching a tunnel at the summit of Tennessee Pass (elevation 10,221). On the west side of the pass the railroad encounters three percent grades, the steepest on this line.

Once through the half-mile long Tennessee Pass Tunnel (MP 281.5) the corridor has crossed the Continental Divide and within two miles joins the newly formed Eagle River. The descent begins with the Sawatch Mountains still on the left and the Gore Range on the right. Hwy. 24 is on a shelf below the corridor, and the two twist their way down to Camp Hale (MP 287). The corridor looks down on the remnant of Camp Hale for the next two miles. The Sawatch Mountains are too close to the left to see past the foothills, as the corridor closely hugs the west side. At MP 289 it departs from Hwy. 24 and the national forest lands for five miles through a narrow valley between Camp Hale and the town of Red Cliff (elev. 8,750). This is the third isolated canyon/valley of the journey, all of them offering a pristine experience with nature.

Looking north as the railroad runs along the Eagle River between Red Cliff and Minturn.

At MP 294 the corridor crosses under a tall bridge for Hwy. 24 and enters the narrow canyon below the old mining town of Gilman. The corridor, the Eagle River and Hwy. 24 all travel through this steep walled anticline canyon, but Hwy. 24 takes a much higher route, at least 1,000 feet above the canyon floor. The river and corridor snake through the high walled canyon with little riparian vegetation. The Eagle River gains momentum as streams and waterfalls spill into it from the high meadows of the Holy Cross Wilderness Area. At MP 299 the river exits the canyon and enters the Minturn Valley (elev. 7,817), a lush mountain valley with high rolling hills to the left and steep cliff walls to the right.

The Eagle River valley near Wolcott.

At the north side of Minturn the corridor turns towards the west to join Hwy. 6 and I-70 to continue into Sage. Entering the Eagle Valley with this new westerly route the corridor changes from the high mountain forests and mountain valleys to the more arid valleys that were characteristic of the south side of Tennessee Pass. When not among the more developed Vail Valley the corridor gently drops through rolling foothills to the north, and alternating Precambrian rock bluffs and foothills to the south. The journey ends at the Sage siding (MP 332), a few miles east of the town of Gypsum.

B. Historic and Cultural Resources

The Tennessee Pass railroad corridor is rich with history and culture. The corridor has an important place in history for serving a major mining region of Colorado for over a hundred years, both as a narrow and standard gauge railroad. A goal of preserving the railroad corridor is to both save and interpret the historic remains of a vivid chapter in Colorado history.

The historic Hanging Bridge in the Royal Gorge.

1. Railroad History

Until September 12, 1996, the Tennessee Pass line was owned by the Southern Pacific Transportation Company (SP). Effective September 12, ownership of this line passes to the Union Pacific Transportation Company (UP). The Tennessee Pass line was built over a century ago by the Denver and Rio Grande Railroad (D&RG), and merged into the SP system in 1988. Conceived as a link in a transcontinental railroad, the Tennessee Pass route begins at Pueblo on the east and reaches Salt Lake City on the West. The Tennessee Pass line was an important part of the expansion of the D&RG south and west from Denver toward Santa Fe and the mining country of the Rockies. Trains from Denver reached Pueblo in 1872. The next goal, the coalfields near Florence, west of Pueblo, was attained before the end of the year, but Cañon City itself was not reached until 1874.

The route through the Royal Gorge and up the Arkansas River was well-established as the logical route in the mind of General William Palmer, founder of Colorado Springs and the moving force behind the Denver and Rio Grande Railroad. In 1873, in fact, General Palmer personally surveyed the entire route to Leadville for its suitability as a railroad in the company of Governor Hunt. Then, in 1875, the Atchison, Topeka and Santa Fe Railway (Santa Fe) formed a new subsidiary with a similar plan. The Pueblo and Arkansas Valley Railway Company was chartered to build a railroad from Granada, Colorado, just west of the Kansas border, up the Arkansas River to Pueblo and on to Salt Lake City. Santa Fe rails reached Pueblo in 1876, four years after the D&RG.

The stage was set for a dramatic chapter in Colorado's railroad history. The discovery of important ore deposits at Leadville and the upper Arkansas in 1877 brought a sudden urgency to reaching the mines with rails. The Santa Fe looked at a line to Colorado Springs with an eye to a route over Ute Pass to South Park, while the D&RG considered a route from Cañon City via Grape Creek and Texas Creek to

avoid the Royal Gorge. The Arkansas River route, however, shone as the most promising, with good water, timber, minerals, and fertile lands plus a low gradient all the way to Leadville. But the most important strategic reason for choosing this route was revealed in a statement by General Palmer: "It is the shortest and cheapest single line which will at the same time tend to keep both the Atchison company and the Denver and South Park Company from our territory."

Meanwhile, the Santa Fe set up another subsidiary, the Cañon City and San Juan Railway Company and in 1877 surveyed its own route 20 miles up the Arkansas. The D&RG set its own plans in motion and both railroads announced they would start construction the week of April 10, 1878. As the narrow gorge could accommodate only a single rail line, clashes between the two competing railroads began immediately. At the same time, the battle for the right-of-way was waged in the courts of Denver and in the boardrooms of the two railroads. Historian George L. Anderson described the scene:

> There followed a period of much confusion in the Arkansas valley. Stone forts were built, armed men patrolled the right-of-way, grades were zigzagged by one company across the right-of-way of the other, and all the while each company claimed that it had a prior right to locate and build a railroad to Leadville.

For two years the dispute dragged on amid lawsuits, price wars, bills in the state legislature, and contentious work by both railroads in the gorge. The Santa Fe managed to grade 23 miles from Cañon City to Spike Buck Canyon where the D&RG held the line. For a time ownership of the D&RG passed to the Santa Fe amid more legal maneuvering. Finally in April, 1880, two years after work had started, the Arkansas valley line was back under D&RG control and its rapid completion brought trains to Leadville in July, 1880.

The next month construction over Tennessee Pass was started, and by the end of 1881 the line reached the mines at Red Cliff. Survey work further west was not begun until 1886, but rapidly progressed to complete the railroad down the Eagle River to its confluence with the Colorado River at Dotsero. Later improvements included boring a tunnel under Tennessee Pass in 1888-89. With the completion of the railroad through Glenwood Springs and Grand Junction to Ogden, Utah, the decision was made to widen the gauge of the entire Tennessee Pass line to standard gauge. The work of widening the rails from the original three-foot narrow gauge to 4' 8-1/2" was completed by the end of 1890. The Tennessee Pass line remained the only D&RG route across Colorado for several decades. Not until the completion of the Moffat Tunnel in 1927, and the Dotsero Cutoff in 1934, did the main line west from Denver to Utah open.

2. County History

FREMONT COUNTY

Fremont County, home of the longest settled area in the state, officially became incorporated in 1861.. The county experienced a population boom in the late 1880's due to the Denver & Rio Grande's rail lines to gold, oil, uranium, limestone, gravel, marble and coal mines throughout the county. Cañon City, the county seat of Fremont, came from land originally homesteaded by Anson Rudd. The Colorado State Prison is located in Cañon City and is the main employment center for the county.

Just west of Cañon City is the Royal Gorge Bridge, the highest suspension bridge in the world. The bridge was completed in 1929 and stands 1,053 feet over the Arkansas River. Below the bridge exists another engineering feat, the D&RG Hanging Bridge. General Palmer and ex-president of the U.S. Grant rode the first train to the Arkansas Headwaters. On the way they stopped to admire the railroad bridge, designed by Charles Shaler Smith, which supports the tracks over the water in a spot where the Royal Gorge walls are too narrow to permit a train to pass through.

CHAFFEE COUNTY

Chaffee County was named after the first elected Colorado U.S. Senator Jerome B. Chaffee. The county was originally a part of Lake County until it separated on February 8, 1879 by an act of the state legislature. The earliest settlers were attracted by both the mining potential of the county and the availability of good water and soil for farming. The Ute Indians were the first to roam this area of the Arkansas Valley for its vast amount of food in the rivers, vegetation, and wildlife. The Spaniards and trappers next came to the Valley and were followed by the miners and farmers. The town of Hartsel is the geographic center of the state of Colorado.

Nicknamed the Heart of the Rockies, the town of Salida is situated at the foot of Mounts Shavano and Antero, and borders the Arkansas River before it flows into the narrow canyons leading to Fremont County. Originally called South Arkansas, the name Salida, the Spanish word for "gateway", was suggested by Governor Hunt. Now the county seat, Salida spent three quarters of a million dollars in 1987 to restore its historic downtown.

The town of Buena Vista, whose name was picked out by one of the first settlers, Alsina Dearheimer, is Spanish for "beautiful view". Three railroads, the Denver, South Park & Pacific railroad, the Denver & Rio Grande Railroad, and the Colorado Midland Railroad, had major impacts on the development of this town. The Buena Vista Correctional Facility, located just south of town near the rail line, plays a major role in the economy.

LAKE COUNTY

Lake County is rich with mining history. It all started on April 26, 1860 when Abe Lee pulled his pan out of the frozen stream bed in the Arkansas Valley and said, "I got it—the hull state of California right here in this pan." California Gulch was born and the rush to Lake County began. Gold prospectors came by the thousands to the surrounding area. By the summer of 1862, there were ten thousand people lining the stream and creating a rowdy lifestyle the old west is famous for.

The gold rush was short lived and the 1870 census recorded only 522 whites in Lake County. However, the next major discovery came in 1873 when Lucius F. Bradshaw discovered a body of lead-silver near the same place Lee first discovered gold in California Gulch. The second rush to Lake County began. Between 1878 - 1890, the miners in Leadville created over 150 miles of underground workings, including 1,000 shafts and 125 tunnels. The mines surrounding Leadville produced gold, silver, lead, zinc, copper, tin, iron, manganese, bismuth, and molybdenum for over a hundred years. Leadville now serves as the county seat and is the largest National Historic Landmark District in the state of Colorado.

EAGLE COUNTY

Eagle County claims the Coronado Expedition first passed through the area in 1540. Prior to 1845 the land was used by the Ute Indians as a summer hunting ground as well as Spanish, French, and American trappers. The famous Battle Mountain where Chief Colorow of the Ute tribe fought Chief Ouray of the Arapahoe tribe, was responsible for the lead rush to Eagle County in the late 1870's. Settlements occurred up and down the Eagle and Turkey Rivers.

The settlement maintained at the junction the two rivers became known as Redcliff in 1880. The original county seat, Red Cliff thrived as a mining town until the railroad moved the railhead to Belden, just south of Gilman. Gilman was established when the miners of Battle Mountain found the commute from Red Cliff to the mines too far. By 1890, Gilman surpassed Red cliff in population. The town of Eagle became the new county seat after the decline of Red Cliff. Eagle was originally called Castle due to the lava pinnacle by William Edwards who claimed the 156 acres at the mouth of Brush Creek.

Dotsero came into being purely by chance. In 1879, prospectors discovered carbonates in what is now Garfield County, however the snow was so deep that a camp of 1500 people had to wait out the winter in what is now Dotsero. Many other towns throughout Eagle County, like Gypsum, Edwards, Wolcott, Minturn, and Avon all have rich histories which add to the Indian and mining stories of the 1800's.

3. Historic Assessment of the Corridor

In compliance with Section 106 of the National Historic Preservation Act, SP and UP hired two consultants to review and identify all eligible historical properties along the corridor as a part of the Environmental Assessment submitted with the merger application to the Surface Transportation Board.

While at the time of this study's printing the historical reports were still being finalized, the recommendations of the State Historical Preservation Office are that the whole corridor should be eligible for historical designation. This means the new owner could apply to the state or federal government to have parts or the whole corridor listed as a historical site. The corridor does not run through any Certified Local Governments or local jurisdictions with the ability to declare historic sites. For detailed information on state and federal historic designation process see Appendix C.

C. Recreation Resources

The entire corridor is characterized by an extensive array of outdoor recreation resources. The corridor passes through, or is adjacent to two national forests, two BLM resource management areas, the Arkansas Headwaters Recreation Area, CDOW lands, two scenic byways, and community trail and recreation systems.

1. Federal Lands

- **San Isabel National Forest:** Over one million acres with elevations ranging from 5,860 to 14,443 feet are administered by three district offices. The forest land includes almost 800 miles of trails, ski areas, nineteen peaks over 14,000 feet, three wilderness areas and numerous campgrounds and picnic areas to provide challenges and opportunities for the recreational user.
- **White River National Forest:** Within this 2.25 million acre forest there are an unprecedented seven wilderness areas and eleven ski areas managed by seven district offices. Several state parks and state wildlife areas border the forest. The immensity of this national forest lends itself to spectacular views with abundant wildlife.

Between these two national forests in the five districts directly adjacent to the corridor, 5.49 million visitor-days were counted for the most recent years in which data is available. Top use categories are winter sports, camping, picnicking, and hiking. Wilderness areas adjacent to the corridor include Collegiate Peaks, Buffalo Peaks, Sangre de Cristo, Mt. Massive and Holy Cross, totaling over 625,000 acres.

- **BLM Royal Gorge Resource Management Area:** The corridor falls within this jurisdiction for a significant length of its lower reaches. There are two special resource management areas: the Arkansas River SRMA with 125,000 acres and the Gold Belt SRMA with 150,000 acres, both offering camping facilities, trail access, fishing access and a myriad of opportunities. Two proposed wilderness areas at Brown's Canyon and McIntyre Hills total 23,400 acres.
- **BLM Glenwood Springs Resource Management Area:** This management area has stewardship of 500,000 acres, 300,000 of which are in close proximity to the corridor. Two of the sites available for fishing and climbing are the Wolcott site (also adjacent to a locally popular rock-climbing wall) and the Gypsum site.

2. State Lands

- **Division of Wildlife Lands:** There are over a dozen DOW State Wildlife Areas and fishing access areas in or near the corridor. Among them are Wilmore Lake in Eagle County, Johnson Village Fishing Easement, Big Bend Fishing Easement and the Mt. Ouray State Wildlife Area.

- **Arkansas Headwaters Recreation Area (AHRA):** Approximately 100 miles of the corridor falls within the boundaries of AHRA, which was created in 1989 in a unique, cooperative partnership between Colorado State Parks and BLM. Together, the agencies provide visitors with outstanding recreation opportunities and care for the nationally significant natural resources of the upper Arkansas River valley.

The focal point is the river itself, one of the premier recreation rivers in the U.S. Stretching for 148 miles, the area offers abundant fishing, rafting, kayaking, picnicking, hiking, camping, mountain biking and sightseeing among deep canyons, broad valleys, and towering mountain peaks. AHRA includes 6,500 acres and 20 developed river access sites. About 575,000 visitor-days were counted in FY 95/96. Total statewide economic impacts of all AHRA recreation activities combined is estimated at over $60 million per year.

3. Downhill Ski Areas

The Monarch, Ski Cooper, Vail, Beaver Creek and Arrowhead ski areas are all within an easy drive or walk from the trail corridor. Combined, the five areas served 2,427,000 skiers during the 1995-96 ski season. During both winter and summer seasons, visitors to these areas and the towns that serve them would be likely candidates for trail corridor use. Rail transport of ski area customers and ski area employees has been identified as a potential new use of the corridor. A rail with trail option would be analyzed if such proposals were to become reality.

4. Scenic Byways and the Royal Gorge

Visitors to two Colorado scenic byways intersecting the corridor would likely also be drawn to use of the trail corridor. The Gold Belt Tour is a byway north and east of the Cañon City area, looping through Cripple Creek, Victor, Penrose and Florence. The Top of the Rockies Scenic Byway runs beside Twin Lakes, and parallels the rail corridor through Leadville and over Tennessee Pass to Minturn. There may be opportunities to explore the potential of sharing the costs of trail access and trailhead development with the byways. Currently, no record is kept of numbers of scenic byway visitors.

Another important regional recreation resource is the Royal Gorge Park at the southern end of the corridor in Fremont County. Drawing about 500,000 visitors per year, the 5,200 acre Royal Gorge Park is owned and operated by the City of Canon City. In addition to campgrounds and picnic areas, the park features the famous Royal Gorge Bridge, a suspension bridge over the gorge with a 1,000 foot drop to the Arkansas River. Also featured are an aerial tramway and incline railway to the bottom of the gorge. It is reasonable to assume that the corridor trail and the Royal Gorge Park would be complementary attractions, and would share visitors. It would be in the best interests of the City and the trail management agency to maintain the current easements in the railway corridor which accommodate operations of the tramway and incline railway.

5. Community and Regional Trail Systems

Approximately 25 trails and trail systems intersect or are near the corridor, such as the Tenth Mountain Division Hut System, the Colorado Trail, the Rainbow Trail, Midland Bike rail-trail and the Glenwood Canyon trail. Several community trail systems would be accessed, including Leadville's new Mineral Belt Trail. OHV users have identified several potential links or access points that the corridor could provide. A more detailed description of these 25 trails is found in Appendix D.

6. Community Support Services

The Steering Committee inventoried support services in the 20 corridor towns. Generally, the region is well-equipped to furnish tourism-based services and businesses that trail users would find desirable.

- **Hospitals** - 4 towns have hospitals or medical clinics, with additional services available in Vail and Glenwood Springs.
- **Police** - 8 towns have established police forces, and county sheriffs serve the rest.
- **Fire** - 13 towns have fire protection services.
- **Lodging** - 105 businesses
- **Campgrounds and RV parks** - 39 locations
- **Groceries, service stations and sporting goods**- 94 businesses
- **Restaurants and taverns** - 180 businesses
- **Car and trailer rentals** - 15 businesses
- **Art galleries and gift shops** - 130 businesses

D. Biological Resources

1. Wildlife and Fisheries

Colorado is home to more than 900 species of wildlife. Of these, about 750 species are classified as non-game, meaning they are not hunted or fished. Some species, such as river otter, black bear, and mountain lion, are secretive and rarely seen. Others, such as mule deer, yellow warbler, mallard, eastern fox squirrel, and tiger salamander, are common and abundant. The corridor travels through many miles of significant fish and wildlife habitat, creating a unique and spectacular opportunity for trail users to fish, hunt, or simply watch many of Colorado's species.

Elk are common residents in many areas along the corridor.

Much of the following information was supplied by both the Colorado Division of Wildlife (CDOW) and the Colorado Natural Heritage Program. Using the CDOW Wildlife Resources Information System (WRIS), wildlife data have been entered in a Geographic Information Service (GIS) format, some of which is displayed in the Map Appendices.

TERRESTRIAL RESOURCES

According to the Colorado Natural Heritage Program, the native faunal component surrounding the rail corridor is highly diverse: almost too diverse to treat properly here. Mammals range from deer mice to mountain lions from meadow voles to lynx, and from small footed myotis bat to river otter. Bird species vary highly due to their migratory nature. Breeding birds in the western study area include chipping sparrow, MacGillivray's warbler, western wood-pewee, Lewis' woodpecker, broad-tailed hummingbird, common nighthawk, blue grouse, and Swainson's hawk. Reptiles and amphibians are less diverse in the study area due to the cold winters, but boreal toad, northern leopard frog, tiger salamander, bull snake, and western rattlesnake have been documented.

The following is a description of some terrestrial resources in Colorado which are also important species relative to the rail to trail corridor study area.

The bighorn sheep is primarily a wilderness species, inhabiting some of the most remote and rugged mountains, on Pikes Peak and Mount Evans, and along steep river canyons such as the Arkansas. Statewide counts of bighorn sheep place their number at a vulnerable 6,000. Much of the corridor from Cañon City to Twin Lakes features significant populations of bighorn sheep, which take advantage of extensive and relatively isolated Bureau of Land Management (BLM) and US Forest Service lands on parts of the north and east sides of the river. Many of the reaches on this 90-mile segment of the corridor support year-round use by the bighorn sheep (see Map Appendices).

In Colorado, the elk is a creature of the mountains, inhabiting almost all of the high, forested habitats in the state. The population is estimated at over 175,000 animals today. Most of the elk herds undergo seasonal migrations, from the high alpine forests and meadows in summer to the low valleys in winter. The railroad right-of-way traverses elk winter range and severe winter range in the Eagle County Reach. Elk use becomes quite extensive during the winter in the Brown's Creek area of the Browns Canyon to Salida reach (see Map Appendices).

The mule deer, the most common large mammal in Colorado, presently has a stable population at about 600,000 animals. In the corridor study area, specifically the Granite Reach (Twin Lakes to School Section), mule deer use the area east of the river for winter range and are of concern due to low population levels. Another extensive winter range is located within the Browns Canyon to Salida reach.

About 60,000 pronghorn antelope make Colorado their home. Large herds inhabit much of the eastern third of the state, as well as the extreme northwestern corner. Smaller populations are scattered through North Park, Middle Park, South Park, and the San Luis Valley. In the corridor study area pronghorn antelope utilize the Sand Park area northwest of Salida on the east side of the river, mostly during severe winters. They migrate from near Buena Vista and from South Park. Pronghorn antelope are generally not found in close proximity to the railroad right-of-way. During extremely severe winters, pronghorn antelope will move south out of the South Park area on the east/north side of the river to Coaldale and congregate along the railroad right-of-way.

Because of the secretiveness of black bear, it remains difficult for scientists to accurately predict their numbers. It is believed that much of the corridor along the Arkansas river to Parkdale is used by black bear. Also rarely seen is the mountain lion, protected as a game animal with much of its range designated as wilderness or national park. Today, mountain lion populations are believed to be stable.

FEDERALLY PROTECTED RAPTORS

Bald eagles, mostly a winter visitor to Colorado, have been federally protected since 1976. In the winter, as many as 500 bald eagles migrate to Colorado, many of which can be seen along the Arkansas river. Bald eagles use both the Eagle River and the Arkansas River from the Granite Reach south to Cañon City as winter range.

Also protected nationally is the golden eagle, a year round resident of Colorado which can be seen over all habitat types—mountains, canyons, and plains. Golden eagle nest sites have been documented in Eagle County and from the Granite Reach south to Salida, and from the Texas Creek Reach south to Cañon City (for bald and golden eagle nest sites, see Map Appendices).

The numbers of peregrine falcon flashing through the Colorado sky has increased dramatically in recent years, although this species has never been abundant in Colorado. In 1984, due to successful reintroduction programs conducted by CDOW and other groups, there were 31 known occupied nests in the state which fledged 62 young. Several active aeries (nest sites) exist within the Parkdale to Cañon City Reach on both sides of the Arkansas River.

FISHERY RESOURCES

The cold temperatures of aquatic systems in the Upper Arkansas and the Eagle River watersheds keep aquatic diversity low as well. Native salmonids include two subspecies of cutthroat trout, greenback cutthroat, and Colorado River cutthroat. Popular non-native salmonids include brown trout, rainbow trout, and brook trout. Fathead minnow and white sucker are widespread native cyprinids.

The area of the proposed trail supports good and relatively stable populations of brown and rainbow trout throughout its length, including both the Eagle River and the Arkansas River from the Granite reach southeast to Cañon City. Snake River cutthroat trout have also been stocked but are far less common. All trout species are considered desirable for angling from a recreational perspective.

In the upper Arkansas River, brown trout predominate, even though rainbows become more abundant from the Granite reach southward. This southern segment of the river can be characterized as supporting a mixed brown and rainbow trout fishery, with brown trout the more frequently occurring species.

Trout populations have remained stable and in some sections of the Arkansas have increased in recent years due to improvements in water quality in the historic mining district around Leadville. Since completion of tertiary wastewater treatment systems at the Yak Tunnel and Leadville outfalls in 1992, CDOW reports an increase in brown trout density in this area and a trend in production of longer-lived fish. Where previously three to four year old fish were common, CDOW is now seeing six year old fish. All reaches of the Arkansas may produce trout up to 20 inches in length.

SENSITIVE SPECIES

The following rare animal and fish are known within a five mile radius of the project corridor. This information is provided by the Colorado Natural Heritage Program. CNHP ranks are described below; they should not be interpreted as legal designations of any type (some of these sensitive species found in the corridor area are shown in the Map Appendices).

G1: Critically imperiled globally (<5 occurrences)
G2: Imperiled globally (6-20 occurrences)
G3: Rare or uncommon (21-100 occurrences)
G4: Widespread, and apparently secure, but with cause for long-term concern (>100 occurrences)
G5: Demonstrably widespread abundant and secure
G#T#: Refers to species and subspecies

S1: Critically imperiled state wide (<5 occurrences)
S2: Imperiled state wide (6-20 occurrences)
S3: Rare or uncommon state wide (21-100 occurrences)
S4: Widespread state wide, and apparently secure, but with cause for long-term concern (>100 occurrences)
S5: Demonstrably widespread abundant and secure state wide
S#B: Refers to state breeding status for migratory birds
SR: Reported to occur in the state but unverified

Scientific name	Common name	Global Rank	State Rank
VERTEBRATES			
Bufo boreas (pop. 1)	Boreal toad (S. Rocky Mtn.s)	G5T2	S1
Oncorhynchus clarki stomias	Greenback cutthroat trout	G4T2	S2
Oncorhynchus clarki pleuriticus	Colorado river cutthroat	G4T2T	S2
Felis lynx canadensis	Lynx	G5	S1
Accipiter gentilis	Northern goshawk	G5	S2B
Falco peregrinus anatum	American peregrine falcon	G4T4	S2B
Plecotus townsendii	Townsend's big eared bat	G4	S3
Sistrurus catenatus	Massasauga	G4	S3
Lanius ludovicianus	Loggerhead shrike	G4G5	S3B
Ardea herodias	Great blue heron	G5	S3B

Additional rare species may exist in the area, particularly rare invertebrates, but they are not currently represented in the Natural Heritage Program database, perhaps due to low search effort. Other examples of natural communities may also exist.

Of the known sensitive species in the study area, some are particularly sensitive or are particularly close to the proposed trail. In the western spur, lynx and wolverine habitat exists in the high forests near Tennessee Pass. Lynx have been more recently confirmed in that area than wolverine, which are poorly known. Goshawks are also known from similar forest habitats in the upland areas. American peregrine falcons are known in the Royal Gorge, where they nest and hunt. Southwestern willow flycatchers have been documented near the town of Eagle and may occur in the Eagle River riparian zone. Rare cutthroat trout can be found in the main channels of the upper Arkansas River and upper Eagle River, and are also known from certain tributaries. Boreal toads are documented from ponds not far from the rail line.

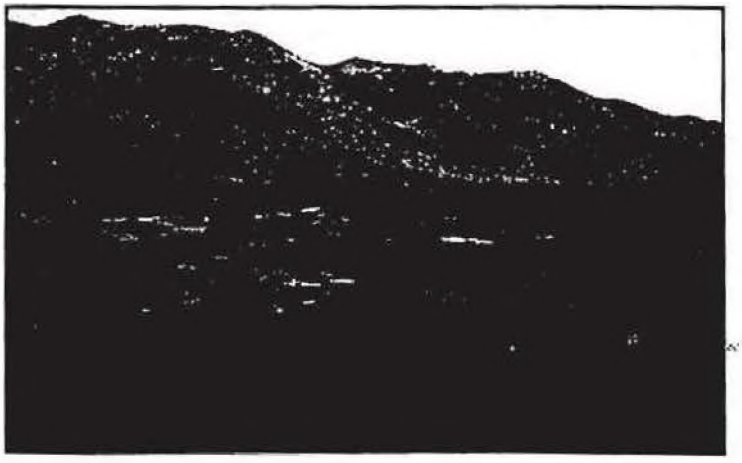
2. Corridor Inventory: Vegetation

GENERAL DESCRIPTION OF NATURAL ENVIRONMENT

According to the Colorado Natural Heritage Program, the project corridor crosses several subtle ecological gradients between Cañon City and Gypsum. It can generally be classified, as defined by Bailey, et. al. (1994), as the North Central Highlands and Rocky Mountain Section and the Southern Parks and Rocky Mountain Ranges Section of the Southern Rocky Mountain Province. The North Central Highlands and Rocky Mountain Section contains steeply sloping to precipitous flat-topped mountains dissected by narrow stream valleys with steep gradients. There are gently rolling mountain parks, mountain ridges, and foothills. The Southern Parks and Rocky Mountain Ranges Section is comprised largely of very high elevation meadows and mountain ranges, principally the Sangre de Cristo Mountains.

ECOLOGY OF THE STUDY AREA

The vegetation is adapted to very dry conditions below Buena Vista in the Arkansas River watershed, and below Minturn in the Eagle River watershed. Moist, cool conditions predominate in the upper elevations. Climate data indicates that Cañon City, at the eastern terminus of the western spur, averages 12.5 inches of precipitation annually, while Salida averages 10.87 inches. Leadville, the highest official weather station in the study area, averages 18.42 inches, mostly in the form of snow. The frost free season at Leadville is only 79 days, compared to Cañon City which has 130.



Typical rocky piñon-juniper landscape along the rail corridor as it parallels the Arkansas River.

The rail corridor alternates between upland, dry vegetation, and river bottom, wet vegetation. Between Cañon City and Buena Vista, the upland vegetation consists primarily of piñon pine and juniper, interspersed with hardy shrubs such as mountain mahogany. Trees and shrubs are usually only abundant on the slightly cooler, north aspect slopes of the river valley. Various xeric, bunchy, mid-grasses are common as undergrowth in these woodlands, and can also make up the dominant vegetation in the unwooded areas. These grasses include mountain muhly, sleepygrass, fescues, and western wheatgrass. The rocky substrate in this part of the study area generally prohibits the establishment of sod-forming grasses.

Vegetation patterns along the river are generally dictated by the river's hydrology and morphology. In general, the flows of the Arkansas River are highly manipulated, leading to an unnatural hydrologic regime. The riparian corridor between Cañon City and Buena Vista is usually channelized, sometimes from the railbed and Highway 50, but is sometimes naturally channelized. Only in isolated areas does the river widen and become braided. Where the river is channelized, bare ground is common, and coyote willow may establish itself in a narrow line along the water line. Where the river is braided, extensive willow carrs are common. In various points along the river, narrow-leaf cottonwoods may form a tall gallery forest. North of Salida, ponderosa pine and Engelmann spruce are often found just above the water line, and deciduous trees and shrubs such as alder and river birch.

Between Buena Vista and Leadville, the vegetation changes subtly to include less xeric plants. In the uplands, more meadows dot the landscape, and ponderosa pine and Engelmann spruce begin to displace piñon pine and juniper. Aspen is found here in areas. The riparian zones changes slightly as well. North of Granite, the narrow channel changes to more of a meandering stream as it crosses a wide floodplain. Coyote willow gives way to Geyer willow and plane-leaf willow.

Above Leadville the rail line enters the cool environment of the Tennessee Pass area. Here, between Leadville and Red Cliff, thick forests are common, generally consisting of subalpine fir and Colorado blue spruce. Lodgepole pine creates large dense stands in previously disturbed areas. Open grassy areas are common where the Arkansas River valley is wide enough, and are usually used for grazing or hay production.

On the north side of Tennessee Pass the topography changes from a fairly wide and gentle valley to a narrow and steep profile. Here, the Eagle River descends quickly towards Minturn. Above Camp Hale, wetlands and riparian vegetation are extensive, but below that point, where the rail line joins the river in its narrow confines, riparian vegetation has been greatly degraded. In some points, especially for four miles below Red Cliff, the river has been essentially reduced to a rocky, gravelly ditch.

From Minturn to Gypsum, the rail line enters a wider valley. Barren shale and clay breaks dominate the northern uplands, and steep hills with spruce-fir forests lead up to the Holy Cross Wilderness on the southern side. Sagebrush grows on gentle slopes on both sides of the river, along with some piñon pine and juniper.

Throughout this area, much of the valley bottom has been converted to human use. Some small pastures and hay meadows dot the landscape, but around the town of Avon condominiums, golf courses and shopping malls have eliminated most natural features. However, a mosaic of gallery forests (of narrow-leaf cottonwood) are found between Edwards and Gypsum, and the river is occasionally wide and braided with extensive willow carrs. The rail line is out of the floodplain for ten miles above Gypsum, perhaps contributing to more natural morphological processes there.

SENSITIVE SPECIES

The following rare plant, natural communities are known to occur within a five mile radius of the project corridor (many of these sensitive species are shown in the Map Appendices). This information is provided by the Colorado Natural Heritage Program. Ranks are described below. These ranks are not intended to be interpreted as legal designation of any type.

G1: Critically imperiled globally (<5 occurrences)
G2: Imperiled globally (6-20 occurrences)
G3: Rare or uncommon (21-100 occurrences)
G4: Widespread, and apparently secure, but with cause for long-term concern (>100 occurrences)
G5: Demonstrably widespread abundant and secure
G#T#: Refers to species and subspecies

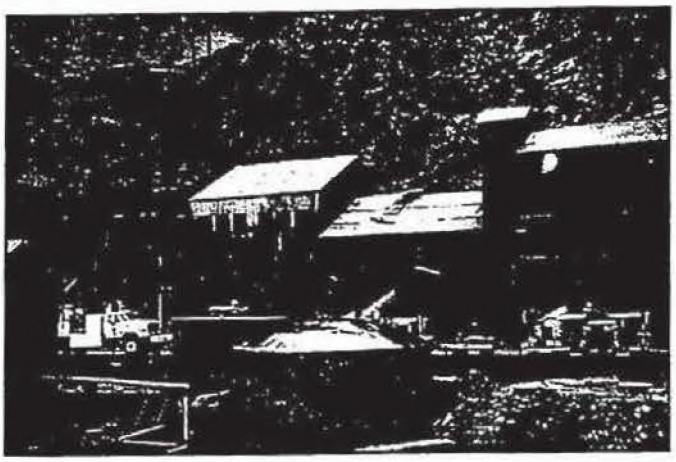
S1: Critically imperiled state wide (<5 occurrences)
S2: Imperiled state wide (6-20 occurrences)
S3: Rare or uncommon state wide (21-100 occurrences)
S4: Widespread state wide, and apparently secure, but with cause for long-term concern (>100 occurrences)
S5: Demonstrably widespread abundant and secure state wide
S#B: Refers to state breeding status for migratory birds

Scientific name	Common name	Global Rank	State Rank
PLANTS			
Eriogonum brandegei	Brandegee wild buckwheat	G1G2	S1S2
Ambrosia linearis	Plains ragweed	G2	S2
Mentzelia densa	Arkansas canyon stickleaf	G2	S2
Sisyrinchium pallidum	Pale blue-eyed grass	G2	S2
Platanthera sparsiflora var. ensifolia	Canyon bog orchid	G4G5T 3	S2
Epipactis gigantea	Giant helleborine	G4	S2
Carex concinna	Low northern sedge	G4G5	S1
Penstemon harringtonii	Harrington beardtounge	G3	S3
NATURAL COMMUNITIES			
Juniperus osteosperma/ Artemisia tridentata	Xeric western slope piñon-juniper/sagebrush woodland	G5	S?

Additional rare species may exist in the area, but they are not currently represented in the Colorado Natural Heritage Program database, perhaps due to low search effort. Other examples of natural communities may also exist.

E. Hazardous Substances

Currently, an inventory exists of hazardous substances or hazards to human health for lands within the railroad corridor. These lines have been the site of many railroad accidents, some of which have caused environmental damage to the surrounding lands and water bodies. The lines proposed for abandonment, moreover, pass through three Superfund sites along or near the corridor: the California Gulch Site in Leadville, the Eagle Mine Site in Minturn, as well as one proposed site the Lincoln Park-Cotter site in Cañon City.



The Eagle Mine site in Minturn.

In order to determine known and possibly unknown human health and environmental conditions, it is legally necessary to conduct an investigation over the corridor. The goal is to perform remediation before title passes to new owners, whether governmental or private. Any past or potential releases of hazardous substances, pollutants or contaminants, and any other associated environmental problems, must be handled in a manner protective of human health and the environment.

1. Contamination Investigation - Phase I Environmental Site Assessment

Real estate transactions today are normally preceded by a due diligence audit of the property. Recommended practices have been established by the American Society for Testing and Materials (ASTM), to conduct environmental audits of property in a phased approach to determine if there are any specific or potential environmental and human health concerns. As such, this practice is intended to permit a potential buyer/user to satisfy one of the requirements to qualify for the innocent landowner defense to Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) liability: that is, the practices that constitute "all appropriate inquiry into the previous ownership and uses of the property consistent with good commercial or customary practice" as defined in 42 USC § 9601(35)(B). This appropriate inquiry, also known as due diligence process, has become an acceptable practice to identify and quantify environmental and human health exposure liabilities.

As a potential title owner responsible to show "all appropriate inquiry," Colorado State Parks has conducted a Preliminary Phase I Environmental Site Assessment (ESA) over the corridor, as part of the feasibility study. The Colorado Department of Public Health and Environment (CDPHE), acting as a consultant for State Parks, performed the Pre-Phase I. The ESA identifies potential sources of contamination and associated environmental liabilities that may impact Colorado State Parks' decision to pursue conversion.

While performing the ESA, CDPHE reviewed available state and Environmental Protection Agency (EPA) environmental records for facilities located within, adjacent, or close to the railroad corridor, and took field reconnaissance trips along the corridor segments. CDPHE was not provided access to railroad environmental records, although CDPHE has reviewed the information that Southern Pacific has provided on reported spills and lead ballast investigations. A pre-Phase I ESA report has been prepared that discusses the environmental conditions identified during the records review and field reconnaissance trips. The pre-

Phase I ESA is included in Appendix E. This report addresses the findings of the completed tasks, a discussion of all existing and potential contamination sources, as well as recommendations for further investigations or remedial action, including appropriate cost estimates. All findings are plotted on a site map in the Map Appendices.

2. Hazardous Sites/Areas of Concern

The ESA identified numerous sites through environmental records searches. Those sites that may be of environmental concern to trail users are discussed below. Additional environmental records for solid waste landfills and cleanup sites, Resource Conservation and Recovery Act notifiers, Underground Storage Tank lists and Leaking Underground Storage Tank lists were located and reviewed. However, those sites considered of minimal environmental concern to potential trail users are not discussed.

SUPERFUND SITES

• California Gulch

The California Gulch site comprises approximately 18 square miles, including the town of Leadville and much of the adjacent mining district in Lake County. The Leadville area was the site of extensive mining, milling and smelting operations beginning about 1860. Contaminants of concern are heavy metals associated with acid mine drainage, and mining, milling, and smelter wastes from previous operations. The heavy metals include lead, arsenic, cadmium, and zinc. Soils, surface water, and groundwater have been impacted by contaminant releases. The potential exposure routes associated with the California Gulch Superfund Site are inhalation, ingestion, and dermal contact.

• Eagle Mine

The Eagle Mine site consists of the Eagle Mine and associated mining wastes between Gilman and Minturn, Eagle County. These wastes include two large tailings ponds, five roaster piles, and several waste rock piles associated with mine portals in the town of Gilman. The major contaminants of concern are heavy metals associated with the mining wastes, including lead, zinc, manganese, cadmium, arsenic and copper. Soils, surface water, and groundwater have been impacted by the site. The potential exposure pathways associated with the Eagle Mine Site are inhalation, ingestion, and dermal contact to waste rock, refined mining wastes, and roaster pile materials. Exposures to asbestos within the buildings are also a potential risk. In addition to concerns about exposure to contamination, there are numerous mine-related safety hazards in the area such as rock falls, deteriorating buildings, and mine adits near the rail lines. CDPHE and EPA believe that the proposed abandonment of the rail line will remove some of the institutional controls which currently limit public access, in turn increasing exposure potential to the public.

• Lincoln Park-Cotter

The Lincoln Park-Cotter site is an NPL site located near Cañon City. Radioactive residues from uranium ore processing have caused soils contamination. A railroad spur extends from Cañon City to the Cotter Corporation property. Cotter used the railroad to ship materials and there may have been spillage. There is potential contamination of soils due to radioactive materials and heavy metals. Substances that are possibly present are uranium, radium-226, thorium-230, and heavy metals. While potential risks exist from the Lincoln Park-Cotter site, three of the four areas of concern are located a significant distance away from the railroad corridor. Hauling by rail may have taken place from the Lincoln Park-Cotter site, resulting in potential spillage along the rail line.

SOME KNOWN SPILLS AND RELEASES

The derailments that occurred in 1989 at mile post 287, in 1994 at mile post 283, and in 1996 at mile post 286 are currently undergoing remedial corrective action. Substances reported spilled include soda ash, sulfuric acid, diesel fuel, crude oil, ethylene glycol, and taconite. A number of reported fuel oil spills have occurred in the Mintum Yard from 1994 to 1996. The reported release include diesel oil, and Magnesium Chloride.

Spills or releases from the SP's rail lubricators along the rail lines are a concern. The specific areas where the lubricators are located have considerable amounts of lubricant in the ballast and along the immediate rail area. The material would be a concern to trail users and pet owners who may be traveling along the track grade.

OTHER CONCERNS

Large numbers of used and broken railroad ties were present along the corridor. Other debris, including hardware, grease containers, concrete rubble, old machinery, an old rail car, and miscellaneous metal junk were present along the rail line. Old barrels were present along the Malta siding. The railroad has applied herbicide on a yearly basis in order to keep vegetation away from the rail track. Areas of dead or stressed vegetation were present intermittently along the corridor. A few old mine portals, some with varying amounts of waste rock spilled nearby, were present intermittently along the corridor. Material that appeared to be coal cinders from previous steam engine operation is spread along the ground beyond the rail bed intermittently along the corridor. Along significant portions of the corridor, ballast materials appeared to be crushed slag, apparently from the Leadville slag piles.

F. Land Ownership Patterns

In 1881-83, the federal government granted an easement to the railroad across federal lands between Pueblo and Dotsero with a standard 200-foot wide right-of-way. These easements contained a reversionary clause stating if and when the corridor ceased to be used as a railroad, the land would revert back to the federal government. Land homesteaded after the arrival of the railroad is still subject to this federal reversion of the rail corridor. In most cases where the land was already privately owned before 1881, the railroad purchased a 50-100 foot right-of-way which it still owns in fee title today.

1. Status of Railroad Corridor Ownership

Considerable confusion exists surrounding land ownership of the railroad right-of-way, due in large part to the numerous means by which the railroad right of ways were granted, purchased, and otherwise acquired. As if that is not enough, land grants, land sales, and numerous homestead acts have come and gone since the original railroad right-of-way was constructed, creating an intricate overlay of transactions. Finally, almost all of this happened in a distant past, making it difficult to follow step by step today.

The 178-mile rail right-of-way is owned by the railroad in fee title and/or perpetual use easement or has been granted a perpetual use right-of-way through federal lands. This right-of-way varies in width from 50' to 200' (see the Map Appendices for corridor land ownership patterns). According to railroad records, the ownership is:

- **Less than 1% is in use easement from a private landowner to the railroad.** These easements would appear to be valid until abandonment occurs and then these portions would revert to the present surface owner. Under railbanking these easements would continue in affect to maintain the integrity of the right-of-way.

- **Approximately 22% is held by the railroad in fee title.** This fee land would need to be purchased from the railroad or be given to the trail management agencies under a railbanking scenario.

- **About 77% was granted to the railroad and would revert to federal or state ownership if abandonment occurs.** These lands would be continued as a rail right-of-way within the railroad grant under a railbanking scenario. A large portion of these lands are adjacent to either Bureau of Land Management or U. S. Forest Service lands.

STATE LAND GRANTS

Some of the federally granted lands along the right-of-way have also been granted to the State of Colorado subsequent to the railroad grant. These state grants are held to the conditions of the original railroad grant, which means they would potentially revert to the state if abandonment occurs. Under a railbanking scenario, these lands would remain subject to the federal railroad grant.

Some of the federally granted lands along the right-of-way have also been granted to private individuals under the Homestead Act, Livestock Grazing Act, etc. subsequent to the railroad grant. These other grants are held to the conditions of the original railroad grant, which means they would potentially revert to the federal government if abandonment occurs. Under a railbanking scenario, these lands would remain subject to the federal railroad grant.

COUNTY BOUNDARIES

There are four counties along the 178-mile railroad right-of-way. The railroad right-of-way crosses three boundary lines. The Fremont/Chaffee county boundary is at MP 211 just east of Salida. The Chaffee/Lake county boundary is at MP 258 north of Granite. The Lake/Eagle county boundary is at MP 281 atop Tennessee Pass.

2. Existing Utility and Other Easements

Generally there are three main surface easement categories for SP. The first is for private roadways and crossings. The second contains public roadways and crossings. The third category is reserved for pipelines and polelines, including gas, oil, water, sewer, storm drainage, wireless transmission, electricity, telephone, and telegraphic. Typically, all surface and air easements would transfer to the new corridor owner, while mineral rights are retained by the railroad. According to SP all water rights have been severed.

There are numerous existing utility and other miscellaneous easements along the railroad corridor. Most of these easements would transfer to the new title owner of the corridor. Southern Pacific has gone through a variety of billing procedures for easements over the years. One easement may have been obtained with a one-time charge, another easement may have paid for the rights on a monthly basis, and still another easement may have been charged annually. The current fee structure SP charges for pipeline, wire, and other crossings is:

Handling Fee: $475
One time charge for use: $2,500
Documentation preparation charge for contractor right of entry: $1,000
Flagman per day of construction, if required: $500

FIBER OPTICS EASEMENTS

For the 178-mile corridor between Dotsero and Cañon City, there is an existing fiber optic easement agreement between Southern Pacific Transportation Company and Southern Pacific Telecommunications Company, now known as Qwest. Although there are no fiber optic facilities currently in place, the easement is exclusive to Qwest for the 99-year life of the contractual agreement. Unlike other easements this contract would not transfer with the fee title of the corridor.

G. Socio-economic Characteristics and Public Opinion

1. Socio-economic Characteristics by County

The potential loss of railroad service to communities along the Tennessee Pass corridor is part of a long-term change in Colorado's economy. Both the loss of the railroad and the potential gain of a recreational trail need to be viewed in the context of local as well as statewide trends. Some socio-economic characteristics of the four counties along the SP rail corridor are provided in this section. For more detailed information on demographics, see Appendix F. Demographics information and tables were provided by Colorado Department of Local Affairs.

The four counties which encompass the railroad corridor have gone through many economic changes over the years. They experienced their first big growth spurts during the mining booms and then further developed economically with the help of the railroad. However, in the recent past mining and railroad activities have declined, while tourism and recreation activities have significantly increased. Recreation and tourism was listed, according to the Department of Local Affairs, as a leading source of income for three of the four counties. Fremont County did not list recreation and tourism, which may be attributed to the prison system being the main employment center for the county. Populations are growing consistently in each county, and increasingly people are finding their employment through the services sector instead of agriculture, mining, and manufacturing.

EAGLE COUNTY

Eagle County is considered one of Colorado's top ten fastest growing counties. The 1995 population is 28,692, and has been growing at an average annual 5.25%, the highest rate compared to all four counties, and is projected to grow to approximately 36,800 for the year 2000. Presently, 60.6% of the population is employed in service related business, while only 3.5% is employed in agriculture, mining, or manufacturing areas. The remaining 35% works in other categories like government, construction, and real estate. Retail sales in Eagle County grossed $901.61 million in 1994, the highest of all four counties.

LAKE COUNTY

The population in Lake County is concentrated in the Leadville area and experienced its greatest growth and decline in the mining era. Leadville (incorporated 1878) is the county seat and the largest National Historic Landmark District in Colorado. Through the 1990's, Lake's population has been moderately increasing at an average 2.2%, and in 1995 numbered 6,722. By the year 2000, Lake County's population is projected to grow to approximately 7,500. Presently, almost half the population (48.1%) works in retail, wholesale, and service employment sectors. Agriculture, mining, and manufacturing employ 11.1% of the county and other sectors provide work for the remaining 40.8%. 1994 total retail sales were $50.46 million, the lowest of all four counties.

CHAFFEE COUNTY

Chaffee County is located in the heart of the Rocky Mountains and is known for hosting thousands of whitewater boating enthusiasts every year. The county seat is Salida (incorporated 1891), which features a Historic District with turn of the century architecture. The 1995 population of Chaffee County is 14,785, and has been on the upswing through the 1990's with a 2.96% annual average increase in growth. The projected population for the year 2000 is estimated at 17,000. Over half (51.5%) of Chaffee County's work force is employed in service sectors like retail and wholesale trade. 7.6% of the population works in agriculture, mining, and manufacturing and 37.8% work in other miscellaneous employment sectors. Chaffee county grossed a moderate $193.64 million in retail sales for 1994.

FREMONT COUNTY

The Arkansas River extends the entire 60-mile width of Fremont County and is home to the natural wonder of the Royal Gorge. Cañon City (incorporated 1872), located at the mouth of the Royal Gorge, is the county seat. Due to unexpected influx of new residents, Fremont's population growth projections are always in need of updates. The 1995 population of Fremont County is 39,951, and has been estimated at an average 4.15% growth rate for 1990-1995. The population is projected to reach about 49,000 people by the year 2000. The residents of Fremont are mostly employed in the retail, wholesale, and service sectors (45%). Agriculture, mining, and manufacturing sectors provide 10.4% of the employment. The rest of the population works in other various employment sectors. The 1994 total retail sales was $306 million for the county.

2. Public Opinion

During the course of the feasibility study, State Parks and the Steering Committee conducted several efforts to gauge public opinion about the potential conversion of the rail corridor into a trail, should continued rail service not be possible. The overall response was one of concern over loss of rail service, but very positive about preservation of the corridor through railbanking and interim trail uses. Landowners along the corridor that border private property voiced several concerns centered around the issue of private property rights and the potential for liability and trespass exposures.

OPEN HOUSES

In April, 1996, State Parks and the Steering Committee hosted four open houses in each of the counties along the Tennessee Pass railroad line. The open houses were structured to provide the public with information on the abandonment process; inform attendees on railbanking and the trail concept; and solicit comments on the constraints and opportunities of a potential trail.

Support for the trail concept was overwhelming among the members of the public who attended the open houses. The attendees consistently commented that it was of utmost importance to preserve the rail corridor, and that the trail concept was the best solution if rail service was eliminated. Many felt the recreational and scenic opportunities of a trail were enormous. The primary concerns among adjacent landowners who attended were: trespassing on private land; litter and vandalism; and the belief that property owners are paying taxes on the corridor when it traverses their land. For proponents, the concerns were: how the trail would be managed; what types of uses would be allowed on the corridor; and how the trail would be maintained and operated.

SURVEYS AND RESULTS

In addition to the open houses, the study team conducted three surveys: Adjacent Landowners, Recreational Users, and Business Opportunities (all three surveys and complete results can be found in Appendix F).

• Adjacent Landowner Survey

In order to gain a better understanding of adjacent landowner concerns, State Parks staff worked with the Steering Committee to survey landowners immediately adjacent to the corridor. In addition to the surveys, each adjacent landowner received a letter detailing the railroad acquisition process, descriptions of abandonment and railbanking, and a report on right-of-way rights in railroad abandonment's. This mailing was an effort to inform the property owners of railbanking opportunities and of potential legal proceedings and their rights during the transfer of ownership of the railroad corridor to a new owner.

The Steering Committee asked questions pertaining to length of time property has been owned, primary use, their opinion regarding a trail concept, concerns and opportunities regarding a trail, if they would use the trail and if so, for what use.

• Results

Surveys were sent to 533 adjacent landowners. One hundred eighty-two responses were received from the four counties involved. In general, responses indicate that 49% are in favor of a trail concept, 37% are against a trail concept and ll % are unsure. Loss of privacy was a concern of 53% of the responses and litter and liability problems a concern of 8% of the responses. Further results are stated in Appendix F.

• Recreational Users Survey

A Recreational User Phone survey was conducted to develop a clear understanding of the trail's potential. Information was gathered from recreational users. The study team agreed that the best information could be gathered from people who live and recreate in the vicinity of the Heart of the Rockies Corridor. Members of the public to be surveyed were gathered from various recreation group contact lists such as snowmobilers, runners, horseback riders, anglers, ATV users, and general recreation enthusiasts.

Questions asked pertained primarily to the areas the user was familiar with. Some of the questions were general, like how far the respondent lives from the proposed trail, how often they would use it, and for what activities. Other questions asked for suggestions of loops or connections with existing trails, and ideas on trail access points. These potential trail users were also asked what the primary uses of the trail should be, what uses should be restricted, and in which areas should these restrictions apply.

• Results

One hundred responses were logged for the Recreation User survey. In general, responses indicate that 58% would use a proposed trail for walking/hiking, 54% for biking, and 52% would use the trail once or more a week. Motorized restriction was recommended by 71% of the responses. Further results are stated in appendix F.

- **Business Survey**

The final survey was sent to businesses listed on Chamber of Commerce mailing lists from seven Chamber offices within the four counties. In addition to the survey, each business received information explaining the study being done on railbanking the rail corridor, recreational potential for this rail line, economic benefits of a rail-trail, and a rail-trail questions and answers sheet prepared by the Rails-to-Trails Conservancy.

The Steering Committee asked questions pertaining to location of business, positive or negative impacts of a trail on their business, positive and negative impacts for the business community, if the trail would result in a commercial venture for their business and would the trail increase employment for their business.

- **Results**

Information was sent to 1,707 businesses within the four counties. As of October 10, 1996, 282 responses have been logged from each of the following Chamber of Commerce areas: Salida, Eagle Valley, Buena Vista, Minturn, Leadville, Cañon City, and Avon/Vail.

In general, responses indicate that 63% feel there would be positive impacts for their own business if there was a trail, and 94% feel there would be positive impacts for the business community in general. Businesses that would use the trail as a commercial venture comprised 22% of the responses, and 31% felt that the trail would directly lead to an increase in their business. From the top five comments regarding a proposed trail in the seven business communities, 195 stated that a trail would increase recreational opportunities in the business community and bring increased economic benefits to the business community.

CHAFFEE COUNTY TRAILS ALLIANCE SURVEY

Two thousand surveys were mailed to Chaffee County registered voters in early April 1996. The mailing list was composed of every third name on the alphabetic list of voters. All respondents were asked general questions, with additional questions for residents and those who own property in the City of Salida or the town of Buena Vista.

A total of 412 surveys were returned for a response rate of approximately 20%.

A brief section was included regarding the railroad abandonment and the railbanking trail proposal. The survey included three general questions asking respondents if they would like to see the corridor kept intact by development of a trail, positive or negative effects on the possible expanded economy if a trail is established, and how important input is from citizens, adjacent land owners, user groups and local business people when planning this trail.

- **Results**

In general, responses indicate that 65.3% would like to see the corridor kept intact by developing a trail along the corridor.

H. Existing Rail Corridor Infrastructure

1. Bridges

There are a total of 119 bridges, with a total span of 6,937 feet. The bridges fall into six categories based on their type of construction:

1. Ballast Deck Trestle
2. Deck Plate Girder
3. Deck Truss
4. Open Deck Trestle
5. Through Plate Girder
6. Through Truss

Different bridge types require different treatments to prepare them for trail use. There will be four principal methods of conversion:

- **Treatment type 1 (29 total):** Adding a trail surfacing material, such as crushed rock, only. Bridges and box culverts that are low enough to need resurfacing only, not safety handrails.

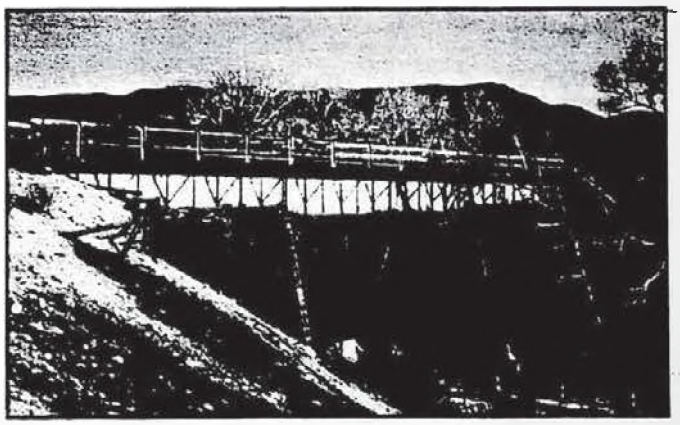
  These structures are either wood or concrete box construction with a surface covered with ballast rather than wood planks.

Fremont County:	10 bridges;	256 feet
Chaffee County:	7 bridges;	186 feet
Lake County:	3 bridges;	40 feet
Eagle County:	9 bridges;	1,226 feet

- **Treatment type 2 (74 total):** Adding a trail surfacing material such as crushed rock, and side railings.

  Higher bridges that need both resurfacing and safety handrails. These structures are either wood or concrete box construction, or wood or steel trestle construction, with a surface covered with ballast rather than wood planks.

Fremont County:	39 bridges;	1,737 feet
Chaffee County:	17 bridges;	624 feet
Lake County:	8 bridges;	496 feet
Eagle County:	10 bridges;	674 feet

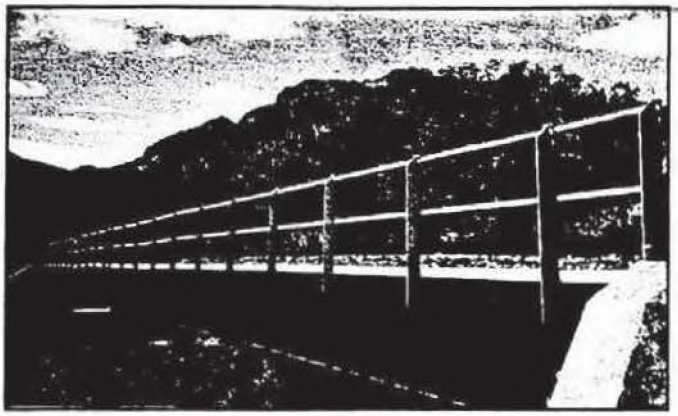


One of the larger steel trestles along the corridor.

- **Treatment type 3 (11 total):** Surfacing the bridge with wood decking. Wood or steel trestles that have safety handrails in place.

  These structures have an open deck of railroad ties and need surfacing with wood planks. Existing safety handrails may also need some improvements.

Fremont County:	3 bridges;	326 feet
Chaffee County:	4 bridges;	552 feet
Lake County:	2 bridges;	151 feet
Eagle County:	2 bridges;	72 feet



A typical steel girder bridge on the railroad.

- **Treatment type 4 (4 total):** Surfacing the bridge with wood decking and side railings. Wood or steel trestles with no safety handrails in place.

  These structures have an open deck of railroad ties and need surfacing with wood planks plus the addition of safety handrails.

Fremont County:	1 bridge ;	72 feet
Chaffee County:	3 bridges;	492 feet
Lake County:	0 bridges;	0 feet
Eagle County:	0 bridges;	0 feet

2. Railroad Tunnels

Tunnels provide an interesting and unusual experience for trail users, and are often one of the most popular features of rail trails. The tunnels have been well-maintained by the railroad over their long life. However, an engineering inspection will be needed to ensure that trail users can be safely accommodated. In addition, drainage along the tunnel sides to keep the trail dry will need to be checked after removal of the rails.

A typical tunnel with cut rock portal.

The four shorter tunnels between Cañon City and Sage should receive enough natural light to be easily traversed by trail users. The Tennessee Pass tunnel, at nearly a half-mile long, will require that trail users have flashlights or bicycle headlights to see their way. A railroad tunnel three-quarters of a mile long has been in use by trail visitors for thirty years on Wisconsin's Elroy-Sparta Trail.

Total number of tunnels = five
Total length of tunnels = 4,102 feet

Red Hill Tunnel (Segment Four) MP 206.33 near Point Barr
- Cut Rock with portal reinforcements approximately 506' in length
- USGS Quad Map: Howard
- Recreational Placering Site

Tennessee Pass Tunnel (Segment Ten) MP 281.48 near Lake/Eagle County Border
- Cut Rock with portal reinforcements approximately 2550' in length
- USGS Quad Map: Leadville North

Pando Tunnel (Segment Twelve) MP 286.55 near Tennessee Pass
- Approximately 242' in length
- USGS Quad Map: Pando

Belden Tunnel (Segment Thirteen) MP 296.06 near Gilman
- Approximately 396' in length
- USGS Quad Map: Minturn

Rock Creek Tunnel (Segment Thirteen) MP 296.82 near Gilman
- Approximately 408' in length
- USGS Quad Map: Minturn

3. Culverts

There are 896 culverts identified by the railroad along the Tennessee Pass line from Canon City to Sage. The total length of culverts is 36,502 feet, 6.91 miles. Maintenance of culverts is an important issue for operations of a trail in the corridor. Steep terrain, spring snowmelt run-off, and summer storms all conspire to load drainages and culverts that could cause flooding and damage to the culvert and trail bed if not properly maintained.

Corrugated metal pipe comprises 42% of the types of culverts, reinforced concrete pipe comprises 39%. No other type of culvert accounts for more than one percent on its own, but they are: cast iron pipe, treated wood box, concrete box culvert, vitreous clay pipe, wrought iron pipe and metal plate pipe.

4. Canals and Ditches

At various points along the corridor, irrigation canals and ditches cross under and/or run alongside the railbed, or in several cases run within the rail corridor. With the help of Steering Committee member Denzil Goodwin and several water commissioners, an assessment of these ditches was conducted.

There are 22 ditches, canals, and aqueducts within or in close proximity to the Railroad Corridor (50' to 200'), totaling approximately 33,950 feet. The ditches vary in depth and width and carry various quantities of water, for the most part in warmer seasons. We did not list those ditches below 2 cubic feet per second flows. See Appendix G for a specific list of canals and ditches.

Ditch owners are concerned that trail users would likely be exposed to safety hazards, raising the potential for liability claims. The initial assessment is that approximately 19,550 feet have safety concerns, e.g. no fencing or inadequate fencing. These ditches cross under the rail corridor 21 times usually through concrete or steel pipes. There are many of the river headgates for these ditches also within or immediately adjacent to the rail corridor. There are approximately 8,350 feet of fence that may need building or rebuilding, including fencing around some of the headgates.

There may be opportunities with some ditch companies to form partnerships to improve fencing or bury ditches in pipes for improved safety and mitigate some concerns over liability claims.

5. Road/Highway Crossings

The corridor has a total of 76 locations where a trail would cross a public or private road. Most of the major highway crossings already feature grade separations by way of overpasses or underpasses. Additional grade separations do not appear to be necessary for the remainder of the corridor, but crossings at busy city streets and county roads may require special treatment with signs and signals. All crossings would require special treatment for signage and marked crossings on the trail and on the roads. See Appendix G for a list of the specific crossings.

Types of crossings include:

State/federal highways:	16 crossings	(14 with grade separations)
County Roads:	20 crossings	(1 with grade separation)
City Streets:	9 crossings	(1 with grade separation)
Farm/private roads:	31 crossings	(2 with grade separations)
Totals:	**76 crossings**	**(18 with grade separations)**

IV. RAIL TO TRAIL ANALYSES

A. Recreational Resources Analysis

The rail trail on the former Santa Fe Railway corridor in Cañon City parallels the Arkansas River.

1. Linkages with Other Trails in the Region

A trail within the Tennessee Pass corridor would provide many opportunities to link the multitude of intersecting trails as well as for providing possible alternative trail connections. Perhaps the most exciting trail connection would be to fill in the missing link between two of Colorado's most popular trails: the Glenwood Canyon Trail at Dotsero and the Vail Pass Trail at Minturn. This would create a smooth, accessible trail of over 100 miles between Keystone, Breckenridge, and the Dillon Lake area through the Vail Valley and on to Glenwood Springs. If efforts to preserve another rail line for trail and transit use are successful, the trail could continue all the way to Aspen, an additional 40 miles. Linking three of Colorado's most important ski and summer resort areas, this route through the mountains would attract international attention.

To add to its value, the trail would link to the rest of the Heart of the Rockies Corridor at Minturn, continuing scenic miles over Tennessee Pass and all the way down the Arkansas River to Cañon City. A trail to this point would undoubtedly generate the demand to complete it 35 miles further east to Lake Pueblo State Park where existing trails continue along the Arkansas into downtown Pueblo. The resulting trail and recreation corridor would give visitors a new way to experience Colorado's great outdoors: a magnificent cross-section of scenery, wildlife, and historic communities.

A list of 25 trail connections, beginning at Cañon City and continuing west and north along the corridor to Eagle County, is included in Appendix D.

2. Accommodating a Variety of Trail Users

The question asked in this analysis is:

- **Can different types of trail use be accommodated within the corridor?**

Trail use issues to be considered:

• Multiple Use

The basic goal of the trail should be to accommodate a variety of users. The key to success is ensuring compatibility, through design techniques, management, regulation, and education. On all parts of the trail it should be possible to allow hiking, bicycling, and horseback riding. Where the trail may be simply packed natural soil or existing roadbed, all these uses may be easily accommodated. Where the trail is asphalt, concrete, or crushed rock, a separate primitive trail should be developed for horses. In some areas such a separate trail may be useful for bird watchers or anglers as well. Where feasible, a width of 10-12 feet will allow for two hikers to walk side-by-side with enough room for bicycles to pass. Signs, brochures, and trail personnel would all reinforce the message of multiple use and courtesy.

The types of uses to be included in the trail corridor will be determined utilizing a thorough analysis of:

- **physical aspects of the corridor**
- **opportunities and recreation policies on adjacent public lands**
- **wildlife and habitat considerations**
- **desires of local communities and residents**
- **existing off-highway vehicle routes on adjacent public lands**

• Motorized Use— Summer

These uses include trail motorcycles ("dirt bikes"), all-terrain vehicles (ATVs), and possibly four-wheel drive vehicles. There are two opportunities for these off-highway vehicles (OHVs) to potentially use the trail. The first is at designated trailheads where the available facilities may be used by all types of recreationists. The second opportunity is for OHVs to use identified trail access points to cross the trail to reach other roads and trails. There may also be specific sections identified that would provide improved access to motorized routes where OHVs less than 40 inches in width could travel in the corridor for short distances to reach these other routes. Comments from the public and steering committee members show that motorized use would not be supported over the whole of the corridor. Therefore, use of the entire corridor by OHVs is not an option being considered.

• Motorized Use— Winter

Snowmobiling is popular in the Leadville, Camp Hale, and Vail Pass areas. The opportunity for snowmobiles to use the corridor would concentrate in the Minturn to Leadville section and the Leadville to Railroad Bridge (north of Buena Vista) section. The question being asked is whether this route is compatible to both snowmobilers and cross-country skiers. Currently the nearby Shrine Pass Road (connects at Red Cliff) and the Hagerman Pass road (starts just west of Leadville/Malta) are being used by both snowmobilers and skiers. The portion of the corridor from Red Cliff to Camp Hale could in a similar way be shared by both user groups. The existing Vail Pass Task Force could serve as a model of multiple-use for winter recreation in a nearby area.

Analysis of those trail segments proposed for motorized use should be conducted to determine whether undesired conflicts with wildlife will occur. Where such conflicts are likely to occur with potential for significant impacts to wildlife, closure to motorized use should be recommended. Similarly, motor vehicle use may be inappropriate at sites designated for watchable wildlife, environmental education and interpretation purposes. See Chapter IV, Section 1, for further discussion.

• Trail Surfacing

The initial concept is an improved trail with a surface of finely crushed stone ("crusher fines") which is typical of most rail trails nationwide. The Breckenridge to Vail paved bicycle path is another model to consider. Where communities have the desire and the funding for a paved trail, this option should be considered. Concrete is preferred for its maintenance-free life span of decades, but local conditions and costs may make asphalt the choice of paving. The corridor is wide enough in most places to accommodate a hard-surface trail with a parallel soft-surface trail for runners and/or horses. While crusher fines are suitable for all trail uses including wheelchairs, in heavily used urban areas like Salida and Buena Vista, paving may be more appropriate.

• Commuting by Trail

Commuting potentials are probably greater in Eagle Valley than anywhere else along the Heart of the Rockies corridor. Not only would this trail corridor connect the towns of Minturn and Red Cliff in the Minturn Valley with the population centers along the Eagle Valley, it would directly connect these rapidly expanding population centers of Eagle Valley, Avon, Edwards, and Eagle. The trail corridor also runs close to Beaver Creek and Gypsum and will reach, via other trail systems in progress, the towns of Vail and Glenwood Springs. Most of Eagle Counties population of 28,000 live in these communities and are currently using I-70, Hwy 6, Hwy 24 and the Vail Trail System to commute. The Vail Trail System is currently only along a very small eastern portion of the County, leaving most commuters the only option of using the high speed and congestion of Highways. The opening of a trail corridor which helps join ten communities could be a valuable option to people who would prefer an alternate to driving vehicles.

Commuting potentials are also good in the Arkansas Valley. As communities expand with increasing growth and new housing areas developing, the trail corridor provides a connection for school children and school, developments and towns, town and recreation opportunities outside of town. This trail linkage has no fast moving vehicular traffic, and an easy grade, making it safe and convenient for everybody.

• Whitewater Boating Safety

Portaging and scouting will be made possible on many rapids where it is currently either impossible or illegal due to trespass on the railroad corridor. Access for authorized rescue vehicles, currently unavailable, will be possible.

Trail Head and Access Sites

To provide access to the trail corridor, trail head access points will be constructed. These sites will manage access impacts, provide corridor fish and wildlife information, provide necessary facilities, and provide for convenient, appropriate access points to the corridor.

3. Accommodating Persons with Disabilities

A key benefit of the rail corridor is its potential for accommodating persons with disabilities. Even at the maximum gradient of 3% the railbed is far less than the 5% maximum required for accessibility to buildings. As a way of enabling people in wheelchairs to move through a very scenic landscape, trails along the corridor could add important recreation opportunities.

A goal of recreational development within the rail corridor should be to improve access for the disabled. Some specific considerations would include:

- Involving disabled trail enthusiasts in identifying areas of the corridor with both easy access and recreation interest.
- Developing trails in these priority locations using materials which will provide a firm, well-drained surface acceptable to disabled users.
- Developing as much as possible of the remaining corridor with a trail that is reasonably smooth and barrier free, even though it may be more challenging to some disabled users.
- Providing information on accessibility and levels of difficulty via signs, maps, and brochures about the trail.
- Developing good accessible routes to the rail-trail from parking areas and other recreation facilities.
- Encouraging communities and private tourism interests to make facilities available for the disabled, such as rest areas, benches, drinking fountains, and accessible restrooms.
- Identifying potential projects for accessible fishing and wildlife watching.
- Involving disabled trail users in the long-term development and management of the corridor.

The Americans With Disabilities Act encourages the improvement of recreation opportunities for persons with a wide variety of disabilities. The law provides standards for access to buildings, parking areas, recreation programs, transportation, etc. It does not, however, specify standards for trails and recreation within a natural setting. The distinction is between an access route to a building or facility, and a recreational trail, which may be anything from a paved walkway to a steep, rocky mountain path. No specific standards are required for recreational trails, although the advisory Access Board has developed materials encouraging a continuum of levels of accessibility from the most urban (parking and visitors' center building) to the most remote (primitive trails in a wilderness setting).

4. Special Use Permits on the Corridor

Outfitter concession services would be managed according to the Colorado State Parks Concession Services Manual and Eagle County policies, respectively. These concessions might include: guided bicycle trips and horseback rides, food concessions, guided fishing trips, and any other commercial activity. Currently within Arkansas Headwaters Recreation Area (AHRA) all commercial rafting outfitters are charged 5% of their gross receipts from all sales while all other concession services, such as photography companies, are charged 4.5% of their gross receipts from all sales. The rafting concessionaires are charged .5% more to pay for the rationing program managed by AHRA.

5. Railroad Liability and Insurance Issues Affecting Recreational Uses

Union Pacific may require that the state purchase a $5,000,000 insurance policy to cover the commercial general liability of the railroad company. The railroad's concern is that they may be liable for the soundness of railroad structures in the corridor even though the state will possess the fee title of the structures.

B. Biological Resources Analysis

1. Fish and Wildlife

Questions asked in this analysis are:

- ***How would trail uses of the corridor affect access to public lands for fish and wildlife recreation?***
- ***How could trail use affect fish and wildlife habitat and populations?***
- ***Are there trail design or management options that could avoid or minimize potential impacts of trail users?***

As outlined in the Chapter III, Section D corridor inventory section of this study, the corridor passes through extensive and varied fish and wildlife habitat. As a result, trail use of the corridor would afford a wide range of fishing, hunting and wildlife recreation/education opportunities. Yet the Colorado Division of Wildlife's (DOW) initial analysis also points to concerns about potential impacts on sensitive species.

In order to adequately address these opportunities and concerns, State Parks and DOW agree that a detailed planning process must precede a conversion of the corridor to trail uses. Potential management actions that will be addressed in that planning process are outlined at the end of this section.

For the purpose of analyzing trail use on existing natural resources in the study area, the Colorado Division of Wildlife has delineated the corridor into seven reaches):

1. Eagle-Lake Counties Reach.
   - Section One: From the Eagle River in Gypsum south and east to the Continental Divide at Tennessee Pass (approximately 55 miles).
   - Section Two: South from Tennessee Pass through the Arkansas Headwaters Recreation Area to the exit of Twin Lakes Reservoir (approximately 24 miles).

2. Granite Reach. The area south of Lake Creek and Buena Vista to the confluence of Chalk Creek and the Arkansas River (approximately 30 miles).

3. Browns Canyon Reach. The area south of Chalk Creek to the boat ramp on G Street in Salida (approximately 18 miles).

4. Salida Reach. From the boat ramp on G Street in Salida to Vallie Bridge north of Coaldale (approximately 20 miles).

5. Coaldale to Cotopaxi Reach. The area east of Vallie Bridge through Coaldale to the Cotopaxi Bridge (approximately 5 miles).

6. Texas Creek Reach. Eastward from the Cotopaxi Bridge to the bridge at Parkdale (approximately 23 miles).

7. Cañon City Reach. From the bridge at Parkdale east to the terminus of the western section of the trail at Cañon City (approximately 9 miles).

FISH AND WILDLIFE RECREATION OPPORTUNITIES

• Fishing and Hunting Access

The future corridor management plan will provide for a thorough analysis, an inventory, description of management actions, etc. for public fishing access along the corridor. This part of the plan will involve federal, state, and local agencies, as well as the general public on assessing where fishing access improvements will be desired and managed. The plan will also carry out an analysis of potential impacts and mitigation to the fishery conditions within the rivers and streams where increased fishing will occur.

• Fishing Opportunities

All public lands along the railroad corridor adjacent to rivers or streams will provide for public fishing access once the rail corridor is converted to a trail. Public lands along these streams not readily available presently due to railroad access restrictions will now be available to the general public for fishing. Potentially this represents approximately 75 additional miles of stream access for public fishing along the railroad corridor; 15 miles along the Eagle river and 60 miles along the Arkansas river.

Railroad fee title lands adjacent to rivers or streams that are purchased for trail use will also provide for additional public fishing access. These lands, where they interface with waterways, will provide substantial new lands available for fishing.

• Hunting Opportunities

Hunting is a popular recreation activity surrounding much of the corridor area. Approximately 77% of the corridor, which is adjacent public land, will provide improved access for hunting once the corridor opens as a public trail. Guidelines to provide for safe trail use and cooperation between trail users and hunters, using the corridor for access to hunting lands, will be established as part of the future management plan.

• Watchable Wildlife Opportunities

Colorado has more than 960 species of animals in wildlife habitat, many of which can be seen along the railroad corridor. A trail along this rail corridor would offer year-round opportunities for people to see, learn about and enjoy wildlife through watchable wildlife interpretive stations and viewing areas. The watchable wildlife program in this area will combine the public's growing interest in wildlife-related outdoor recreation with wildlife conservation. Educational outreach through interpretive signs and viewing sites will further give people the opportunity to become advocates for conservation in the future.
Today, tools such as watchable wildlife programs, have become an integral part in managing animal species and habitat, and in many cases is critical to aiding in their survival.

Numerous watchable wildlife opportunities exist for the trail planning area. Many animals including the abundant mule deer live year round in the Arkansas and Eagle River Valleys. Other species, such as elk and pronghorn antelope spend winter in the Arkansas valley and both summer and winter in the Eagle Valley. Elusive bobcats and mountain lions are year-round residents but are seen only occasionally.

Excellent opportunities exist to view the Rocky Mountain bighorn sheep, Colorado's state mammal, along the Arkansas river between Wellsville and Parkdale and in Browns Cañon. Ruby Mountain, Browns canyon's northern gateway, provides access to the 6,660 acre Browns Canyon Wilderness Study Area and abundant watchable wildlife opportunities. Vallie Bridge to Parkdale, where public land predominates along the Arkansas river, is also a prime area for wildlife viewing, especially bighorn sheep. A Watchable Wildlife Exhibit already exists at Five Points Recreation Site, near Pinnacle Rock.

Many different species of birds inhabit and migrate through the valley, including the endangered peregrine falcon. The bald eagle is a winter migrant to the Arkansas and Eagle River Valleys and is commonly seen along the railroad corridor, as well as on the eastern plains along many irrigation reservoirs. The golden eagle is prevalent along the Eagle river where it can often be seen nesting and feeding. In addition, educational opportunities exist in wetland and riparian areas associated with the railroad right-of-way.

Interpretive stations, exhibits and wildlife viewing signs will be used throughout the rail corridor for educational and management purposes and will be coordinated locally through the CDOW Watchable Wildlife program. Approximately six interpretive stations plus signs could be strategically placed throughout the corridor, costing a total of $200,000 to $250,000.

FISH AND WILDLIFE MANAGEMENT ISSUES

• Bighorn Sheep

DOW's primary concern about trail uses of the corridor is potential impacts on bighorn sheep, which take advantage of extensive and relatively isolated BLM and US Forest Service lands on parts of the north and east sides of the river from Cañon City to Twin Lakes. Many of the reaches on this 90-mile segment of the corridor support year-round use by the sheep, which are especially attracted to the Arkansas River due to the limited availability of water and succulent plants elsewhere in the arid lands above the river.

DOW research indicates bighorn sheep are sensitive to unpredictable disturbances and can have difficulty coping with environmental change. Because they tend to maintain a loyalty to home ranges, they are not good dispersers. While they are capable of habituating to regular disturbances (like trains coming through at regular intervals), they could have difficulty adjusting to irregular and unpredictable events characteristic of trail use.

The research documents several potential effects of increased stress that a succession of encounters with trail users might cause. Factors such as changes in protein and fat metabolism, heart rates and energy expenditures can lead to reductions in immune response, reproductive rates and survivability. Sheep may react to trail users by avoiding currently utilized water, food, and resting resources near the river, contributing to the environmental stress. Appendix H cites some of this research.

DOW recommends that measures be taken to avoid such potential effects through doing pre-trail studies and by taking management actions which will alleviate anticipated impacts. A list of potential actions follows in the section entitled "Potential Wildlife Management Actions."

• Mule Deer

A very important staging area for winter migration exists just to the east of the rail line near Dowd's Junction. In the Granite Reach (Twin Lakes to School Section), mule deer utilize the area east of the river for winter range and are of concern due to low population levels. Another extensive winter range is located within the Browns Canyon to Salida reach. Guzzler development may also benefit mule deer in this area.

• Pronghorn Antelope

Pronghorn antelope are generally not found in close proximity to the railroad right of way, but can utilize the Sand Park area northwest of Salida on the east side of the river, mostly during severe winters. They migrate from near Buena Vista and from South Park. During extremely severe winters, pronghorn antelope will move south out of the South Park area on the east/north side of the river to Coaldale and congregate along the railroad right of way.

- **Elk**

The railroad right of way traverses elk winter range and severe winter range in the Eagle County Reach. Elk use also becomes quite extensive during the winter in the Brown's Creek area of the Browns Canyon to Salida reach.

- **Black Bear**

Much of the corridor along the Arkansas River to Parkdale is used by black bear. Preventive measures (i.e. bear-proof dumpsters and trash cans) and educational measures should be instituted to minimize human/bear conflicts and interaction.

- **Mountain Lion**

Most of the reach from Buena Vista to Parkdale is prime mountain lion habitat, and preventive and educational measures should be instituted to minimize human/mountain lion conflicts and interactions.

- **Bald Eagle**

Bald eagles use the Arkansas River from the Granite Reach south to Cañon City as winter range. In the Eagle River drainage, bald eagles winter along the entire stretch. Trail use is not perceived to be a problem except for site-specific concerns associated with winter concentration areas and roost sites, particularly in the area of the Browns Canyon to Salida Reach and near winter roost sites close to Gypsum and Eagle. Seasonal restrictions on human encroachment should be considered.

- **Golden Eagle**

Golden eagle nest sites have been documented along the Eagle/Lake Counties Reach, from the Granite Reach south to Salida, and from the Texas Creek Reach south to Cañon City. Management efforts should be made to prevent disturbance during courtship and mating, incubation, hatching, and nestling rearing stages until such time that young have fledged. Seasonal restrictions on human encroachment should be considered.

- **Peregrine Falcon**

Several active aeries (nest sites) exist within the Parkdale to Cañon City Reach on both sides of the Arkansas River. Rock climbing should be controlled at least seasonally to protect nesting peregrine falcons.

- **Prairie Falcon**

Nest sites occur in the Eagle/Lake Counties reach. Seasonal restrictions on human encroachment should be considered.

- **Red-tailed Hawk and Great Horned Owl**

Nest sites occur in the Eagle/Lake Counties reach. Buffer areas around these sites should be considered.

FISHERIES

DOW anticipates no real direct impact to fish populations from increased access by trail users, since fishing regulations can be adjusted and enforced according to levels of fishing pressure. A large increase in numbers of anglers could affect satisfaction with the recreational experience of fishing quality waters. DOW is concerned about potential degradation to the riverbank and associated riparian habitat caused by trail users. DOW also raises a concern about drainage from toxic waste sites located along the railroad right-of-way. Section IV. C describes recommendations that should accommodate this concern.

FISH AND WILDLIFE MANAGEMENT PLANNING PROCESS

State Parks and DOW agree that a detailed planning process must precede a conversion of all or parts of the corridor to trail uses. DOW recommends that the following potential management actions should be examined during that process. The results will be included in the overall corridor management plan that will be adopted prior to opening the corridor to trail uses.

POTENTIAL WILDLIFE MANAGEMENT ACTIONS

- **Trail access/rest station points.** Place strategically to avoid wildlife sensitive areas.
- **Motorized vehicle use.** Consider limitations to motorized use to confine use to access points to cross the trail to reach other roads and trails, or to travel short distances in the corridor to reach other routes. Closure areas should be identified for especially sensitive habitat areas, including winter snowmobile closures in sensitive winter range.
- **Dog controls.** Consider closure to dogs in wildlife sensitive areas and require dogs on leash in all other areas.
- **Alternate water sources.** Consider the installation of guzzlers off of the trail to be used as alternatives to the river as a water source, especially for bighorn sheep and mule deer.
- **Seasonal closures.** Certain trail segments might be closed to protect wildlife during critical life cycles, such as birthing or wintering.
- **"Hospital Zone" restrictions.** Consider daily hours and types of use in designated trail segments to protect wildlife.
- **Discontinuous trail.** Consider permanent closures of some sections of corridor if wildlife impacts are so serious that mitigation measures would be ineffective.
- **Trail relocations.** Consider relocating trail to avoid wildlife impacts, such as rerouting to the other side of the river corridor.
- **Interpretive sites.** Place strategically to inform the public how their actions will determine health or survival of wildlife and habitat.
- **Watchable wildlife sites.** Place to enhance wildlife viewing and education in a way that is not detrimental to wildlife resources.
- **Education.** Maximize education opportunities with schools using interpretive and watchable wildlife sites and by identifying natural area study sites.
- **Trail uses.** Consider wildlife needs when determining which segments of trail will be open for foot, bike, horse and motorized uses.
- **Enforcement.** Recognize need for an enforcement plan and adequate resources to implement the plan.
- **Off-trail uses.** Restrict access to areas adjacent to the trail which might result in wildlife and habitat disturbance.
- **Research and studies.** Design and implement studies pre- and post-trail construction to determine impacts and guide trail use restrictions. Conduct human dimensions research to explore opinions and preferences on the potential management actions listed in this section. Establish GIS formats and products for use in analysis, in addition to illustrations.
- **Habitat improvement actions.** Identify and implement opportunities to improve fish and wildlife habitat, such as wetlands restoration/creation.

OPPORTUNITIES TO IMPROVE FISH AND WILDLIFE HABITAT

Wetland and riparian plant community restoration at many areas along the corridor could improve fish and wildlife habitat. In addition, revegetation of lands along the corridor could occur, in particular along the river where in the past the railroad has sprayed both herbicides and pesticides, allowing for greater sources of food for fish and wildlife and improved habitat.

Rock placement in certain sections of the rivers would improve fisheries habitat by creating backwater areas for spawning and feeding, as well as improve fishing.

Habitat improvement opportunities and actions will be addressed in the wildlife management planning process described above.

2. Effects on Plant Species and Communities

The questions asked in this analysis are:

- Are there plants or plant communities that could be affected by trail use?
- Are there trail design or management options that could avoid or minimize trail user impacts?

LEGAL ISSUES

Should federal funds be involved in constructing this trail, the American peregrine falcon occurrence in the Royal Gorge will require informal consultation with the U.S. Fish and Wildlife Service (USFWS) under the Endangered Species Act (16 USC 1531 et. seq.). The Colorado Division of Wildlife will also be involved. Possible management actions could include seasonal closures or some type of enclosure to hide trail users from the falcon's nest.

The corridor currently passes through wetland and riparian communities near Tennessee Pass. Any expansion of the trail bed or creation of parking facilities in wetland communities would require notification to the U.S. Army Corps of Engineers (USACE), to comply with Section 404 of the Clean Water Act (33 USC 1251 et. seq.). Should dredge and/or fill of wetlands communities occur from these types of activities, the proper permits will be obtained prior to commencing activity. This assures that sequencing, i.e. avoidance, minimization and mitigation of wetland communities and impacts are undertaken.

Should federal funds be involved in constructing this trail, other environmental reports may be necessary, such as an Environmental Assessment, an Environmental Impact Statement (EIS), and/or a wetland report with mitigation efforts. The Colorado DNR will work in a cooperative venture with the federal lead agency. In addition, state agencies are statutorily required by legislation known as "Senate Bill 40" to consult with DOW on potential impacts to stream habitats. This requirement would be satisfied during the course of the fish and wildlife management planning process described in Section 1 of this chapter.

TECHNIQUES FOR MANAGING AND IMPROVING VEGETATION

This project will provide a unique opportunity to introduce trail users to many elements of the natural world, from river ecology and geomorphology, to rare plants and watchable wildlife. Some trail design elements intended to facilitate user education, as well as protect the natural environment for the enjoyment of future users, are discussed below.

Educational kiosks should be an important part of trail design. Kiosks would educate trail users to help protect the fragile, dry environment of the middle Arkansas River Basin and lower Eagle River Basin. Users would be alerted to the extremely rare Arkansas Canyon stickleaf, Arkansas River feverfew, Harrington's penstemon, Brandegee wild buckwheat, and other rare plant species. They would be instructed to appreciate these and other plants with their eyes and cameras only—no flower-collecting. Should the

USFWS deem it appropriate, signs may also be erected near the peregrine falcon nest asking trail users not to pause in or explore that area but to enjoy the falcons from a viewing area (created in a sheltered place at a distance from the nest area). Anglers would be asked to pay attention to the fish they may catch, for some (the greenback cutthroat trout and Colorado cutthroat trout) are rare and must be returned to the water immediately. Signs would educate bird enthusiasts about the possible bird occurrences throughout the trail, especially near riparian areas where bird density can be quite high.

Landscape ecology should be discussed at other points along the trail. The nature of stream morphology should be highlighted and explained along the route. Information would be provided discussing the processes behind the rocky, treeless riparian environments of Royal Gorge and Brown's Canyon, the patchy cottonwood forests near Buena Vista, the braided channel found near Tennessee Park, and the narrow, steep topography of the upper Eagle River. As the trail leaves the river channel and winds through terrestrial environments, the role of fire should be a broad educational theme, outlining the different burn intervals of piñon-juniper woodlands, ponderosa pine woodlands, lodgepole pine, quaking aspen and spruce-fir forests. The ecology and successional nature of forests and woodlands, especially aspen stands and lodgepole pine, should be an ancillary topic.

As part of the trail design, riparian vegetation should be protected in some areas and rehabilitated in others. In order to better understand the range of variability in riparian systems along the trail corridor, a complete survey of the right-of-way should first be conducted. This inventory will help understand which areas are sensitive to human use, and which less so. Once the trail is in use, good quality riparian areas will be monitored for social (i.e., unplanned) trails. These trails can quickly degrade riparian conditions by thinning vegetation and increasing erosion. Should it be determined that social trails from the main trail to the river are developing in such an area, a hardened trail should be established in the riparian area and users will be reminded to remain on the trail to avoid fragmenting the understory. Hardened fishing areas should also be developed as necessary. Should additional social trails develop and continue to degrade conditions, they should be rehabilitated and closed.

At some sites, such as the Arkansas River near Missouri Hill, users may be restricted from sensitive riparian areas possibly by fencing (or brush and rock), but educated about why the area is sensitive (e.g., erosion potential, wildlife resources, etc.). Should it be determined that high trail use (i.e., excessive trail traffic) is forcing users off-trail, potential visitors will be encouraged to visit other, less crowded segments of the trail. At Little Cottonwood Creek and Cottonwood Creek (just north of Browns Canyon), off-highway vehicles, which are currently degrading these high quality small-stream riparian areas, should be discouraged pending approval from the Bureau of Land Management. Hiking trails may be developed at these locations.

Where riparian conditions have been severely degraded, such as below Red Cliff, willows and wetland undergrowth should be re-established to try to restore the river's native condition. Willows can be established by planting cuttings from willows found in the general area. Wetland dependent herbaceous plants such as bulrush, cattail, reed grass, and spikerush can be established by plugs or seeds (seeds can be introduced by hand broadcast or drilling). Hydrology and climate will be the greatest determinants of reclaimed plant species and cover. Reclaimed riparian areas should be monitored for three years to determine success. Leafy spurge will be the most prolific weed in the riparian areas and should be controlled by limited herbicide application.

Where the railbed passes through terrestrial environments it should be revegetated with a mixture of grasses native to that area. Broadcast seeding will be the preferred method. Reclaimed terrestrial areas should be monitored for three years. Numerous weeds could become problems in these revegetation efforts, but knapweed is the most prolific and should be aggressively controlled (by herbicide application) because of the severe impacts its spread would have on adjacent rangelands.

Where revegetation projects have been initiated, users will be restrained from the area through the use of signs and obstructions.

C. Hazardous Substances Analyses

Much of the land bordering the railroad right-of-way is Federal land; thus the abandonment of these lines may cause a reversion of this corridor to either the State of Colorado or the United States. Therefore, the State of Colorado, along with EPA Region VIII and CDPHE maintain that it is the responsibility of the railroad companies to characterize all environmental conditions along the rights-of-way of the rail lines proposed for abandonment, and to remediate any of these environmental conditions that pose a threat to human health or the environment prior to the approval of the corridor abandonment by the Surface Transportation Board. In addition, further investigation of the identified areas of concern must be conducted through a Phase II Audit prior to the approval of the abandonment by the Surface Transportation Board.

If title passes to the State of Colorado the new Company, which emerges from the consolidation of the Union pacific/Southern Pacific, would be held liable for past contamination created by the predecessor Companies, pursuant to CERCLA § 107.

The pre-Phase I ESA recommendations initially identify potential sources of contamination and associated environmental liabilities that may impact Colorado State Park's decision to pursue conversion of the corridor into recreational trails.

RECOMMENDATIONS

Several potential environmental contaminant problems have been identified that require further investigation in order to evaluate whether they potentially could interfere with the health, safety, and enjoyment of future corridor users. For those portions that ultimately may be transferred or railbanked, clarification of how environmental issues will be resolved is needed. The Preliminary Phase I ESA report recommends supplemental actions be taken in order to further characterize the environmental hazards and liabilities associated with the corridor. The recommendations include performance of a Phase II Environmental Assessment and additional review of records associated with identified environmental hazards.

The Phase II Environmental Assessment should include, at minimum:

1. A site survey for radioactive residues along the rail corridor near Cañon City.
2. Investigation of the degree and extent of contamination due to the wayside lubricators located along the rail corridor. Materials used for lubrication should be identified and characterized to determine potential harmful effects to human health or the environment.
3. Sampling and characterization of spill materials along the corridor where spills are present at the time of investigation. Small spills of unidentified materials were observed throughout the corridor during the field reconnaissance, and appear to have been a routine occurrence.
4. .Random sampling and characterization of rail bed materials to evaluate whether rail bed materials contain levels of hazardous materials. Some contamination may be present in rail bed materials due to small spills from past rail traffic, creosote or other preservatives applied to railroad ties, or PCBs associated with railroad utilities.
5. Sampling and characterization of residual coal cinders along the corridor to determine if any potential hazard exists associated with exposure to the cinders from historic coal usage by trains.
6. Characterization of the degree and extent of herbicide residuals along the corridor. Southern Pacific routinely has applied herbicides along the corridor to control vegetative growth. These herbicide applications may be of concern to some trail users.

Additional review is necessary of environmental records associated with known environmental problems, such as the Superfund and identified spill sites located along the corridor. Since the degree and extent of areas requiring mitigation have not been defined, continued review of the investigation and mitigation efforts will be necessary in order to evaluate cleanup levels against potential recreation exposure scenarios. This review should include:

1. **A review of the California Gulch feasibility study and associated risk assessment for the lead slag piles near and along the Malta to Leadville line.** This review should evaluate the exposure scenarios and factors used to see if they are consistent with those expected if the railroad corridor is converted to trail usage. The information will be useful both in evaluating "how clean is clean" for corridor areas impacted by slag materials, and the degree of cleanup needed to achieve these levels, as well as in determining whether additional surfacing or covering will be necessary in those portions of the corridor containing lead slag.

2. **A review of available records associated with the reported spills near mile post 287.** In at least one case, mitigation efforts and efforts to further define impacted areas are still under way. Since the degree and extent of areas requiring mitigation have not been defined, continued review of the investigation and mitigation efforts will be necessary. Additional investigation work may be necessary to define adequately degree and extent of contamination. Also, cleanup levels and extent of cleanup will need to be evaluated against potential recreational exposure scenarios.

3. **A review of existing requirements and recommendations for the California Gulch and Eagle Mine Superfund sites to determine whether on-going Superfund issues may impact trail construction, timeframe, usage, or safety. These include:**

    a. A requirement for a feasibility study on D&RGW's three slag piles, and on a number of slag piles it does not own, as well as for remediating its three slag piles, performing a reconnaissance on the Harrison Reduction Works property, and performing a field reconnaissance, feasibility study and remediation on the railroad easement through town, if necessary.

    b. CDPHE and EPA Region VIII believe that abandonment of the rail line is a changed use that triggers the need to conduct a remedial investigation and possibly a clean-up of this portion of D&RGW's operable unit at the California Gulch Site.

    c. Contamination from mining wastes at the Eagle mine site need to be further characterized and may require remediation. The areal extent of remaining mine wastes must be evaluated to determine what if any impacts the remaining waste has on the water quality of the Eagle River. The Rock Creek and other areas of the canyon need to be further investigated to ensure that no other drums and associated waste have been disposed of improperly.

    d. CDPHE and EPA believe that the proposed abandonment of the rail line will remove some of the institutional controls which currently limit public access to the Eagle Mine site, in turn increasing exposure potential to the public. A risk assessment, with remedial actions for identified unacceptable risks, should be performed.

4. **If radioactive materials are present near Cañon City, a search should be conducted for similar risk assessment information concerning recreational exposure scenarios and factors associated with exposures to radioactive materials.**

In addition, the Post Environmental Assessment prepared by the Surface Transportation Board states that "On rail line segments to be abandoned, the rails, ties, ballast, structures, buildings, and ancillary equipment (i.e., communications, signals) would generally be removed by UP/SP." (p.3-23). Clarification as to the amount of removal anticipated by UP/SP, and the sections where that removal would occur, would improve greatly the ability to estimate costs associated with trail conversion.

D. Socio-Economic Resources Analysis

1. Trail Effects on the Local Economy

The questions asked in this analysis are:

- **How would the local economy be affected if the railroad is abandoned?**
- **How would the local economy be affected by conversion of the rail corridor to trail purposes?**

The conclusion reached in many other railroad abandonment cases is that development of a trail will have an over-all positive economic impacts on local communities. While an in-depth, comprehensive economic analysis is beyond the scope of this study, the following analyses will provide an overview of potential effects of rail-to-trail conversion. This study is based on the experience of other rail trails, as well as on the tourism potential of the affected counties. When compared to complete abandonment of the Tennessee Pass corridor, it is apparent that a rail trail would benefit the local economy.

The impact on the tax base is also discussed. Railroad abandonment would result in a loss of property tax revenue, but a successful trail should provide a gain in sales tax revenue. An additional but smaller gain in county revenue would result from Payments in Lieu of Taxes where private land is purchased by state or federal agencies.

CURRENT PROPERTY TAX PAYMENTS

Where lands within the railroad corridor are owned in fee title by the railroad, the railroad is paying taxes to the county on the lands and railroad improvements on those lands.

Where lands within the railroad corridor are held under lease by the railroad from a private owner, in almost all cases the railroad is paying taxes to the county on the lands and the railroad improvements on those lands. In a very few cases, however, the private landowner may be paying property taxes on the land within the right-of-way. Each case needs to be reviewed by the landowner to determine if they are in this situation. In almost all cases, the county assessors have stated that landowners should not be paying property taxes on the land within the railroad right-of-way.

Where lands within the railroad corridor are held under lease by the railroad from the state railroad improvements are taxed at an assessed rate and paid to the county. The state land within the right-of-way is not taxed.

Where lands within the railroad corridor were granted to the railroad from the Federal Government railroad improvements are taxed at an assessed rate and paid to the county. The federal land within the right-of-way is not taxed.

COUNTY PROPERTY TAX BASE IMPACTS

During the course of the study, concern was frequently voiced about the loss of property taxes paid by the railroad. It should be noted that the assessment based on active rail service is much higher than the agricultural or residential property tax on properties adjacent to the railroad. Counties collect the property taxes for the value of the rails in their counties, as well as of the private railroad cars which traverse over the tracks.

If the corridor is broken up and sold, these property tax revenues would be greatly reduced due to the loss of rail service. Moreover, because about 77% of the corridor would revert to the federal and state governments, the expected property taxes would be reduced further. According to the Governor's Rail corridor Use Committee study counties will experience losses of property tax as a result of the railroad abandonment.

Property tax receipts of the 1% of the corridor that would revert back to private landowners and of the 22% of the corridor that the railroad may sell to private land owners will result in very little recovery of the overall property taxes lost. Valuation methods vary considerably from county to county, the estimated receipts are based on rough agricultural and residential rates, and are probably high.

County Property Tax Losses Due to Railroad Abandonment:		**Estimated County Property Tax Receipts With 23% of the Corridor in Private Ownership (valuation from $1.24 to $3.24 per acre):**		
Chaffee County	$ 73,900	Chaffee County	~195 acres	$ 242 to $ 632
Eagle County	$ 65,200	Eagle County	~211 acres	$ 262 to $ 684
Fremont County	$ 79,100	Fremont County	~172 acres	$ 214 to $ 557
Lake County	$ 69,200	Lake County	~202 acres	$ 251 to $ 655
TOTALS	**$287,400**		**~780 acres**	**$ 969 to $2,528**

Generally, the counties will lose under 5% of their property tax base. For example, in 1995 the railroad property tax payments made up only 1.17% of Lake County's total property tax and 3.49% of Fremont's total property tax base. It is difficult to determine what programs will be most affected by the revenue loss since the county revenues are directly put into a general fund and then allocated to specific programs each fiscal year. However, the general consensus among county officials is that most of the lost revenue will affect the school districts.

PAYMENT IN LIEU OF TAXES

Even though the counties will lose a property tax base from the railroad when they abandon the line, the counties will receive some compensation for the land if it is purchased by either state or federal agencies for the interim trail uses. The Payment in Lieu of Taxes (PILT) Act was passed by Congress in 1976 as a way of compensating local governments for federally owned land. A corresponding law was adapted at the state level in Colorado to allow the state to pay its own local governments for lands owned by the state.

If Colorado State Parks pursues land purchases in this railroad corridor, it will likely approach Great Outdoors Colorado for funding for the land purchase. GOCO is required by Article XXVII, Section 10 of the Colorado Constitution and by enabling statutes to make PILT payments equal to the percent GOCO contributed to the purchase price of land. In other words, if GOCO contributes 75% of the money to acquire the corridor, then GOCO will be responsible for 75% of the PILT payment to the counties. Since state agency PILT payments are based on agricultural values of property acquired, each of the counties would receive less than $100 annually in PILT payments.

REGIONAL RETAIL BENEFITS

The development of a trail on the Southern Pacific rail corridor would have a positive impact on the tourism economy of the affected counties. With the increase of visitors to the region, retail businesses in particular would experience a rise in revenues. In a 1993 survey of visitors to the Arkansas Headwaters Recreation Area, Colorado State Parks calculated that each visitor spent an average of $30.26 in direct expenditures on a trip to the park, $16.47 of which was spent at or nearby the park. It could reasonably be expected that the expenditure patterns of trail users would be similar.

Based on an estimated annual 300,000 - 400,000 trail user visitor-days (150,000 - 200,000 from Tennessee Pass to Sage and 150,000 - 200,000 from Tennessee Pass to Cañon City), economic impacts were calculated. As the chart below illustrates, total increased revenues for businesses in the county would be $4.9 - $6.6 million. In many analyses such as this one, economists factor in a multiplier rate, based on estimated turn-over of expenditures in the regional economy. This analysis does not do so, and could thus be regarded as a conservative estimate.

With the increased retail spending by the potential trail users, the sales tax base in the municipalities and counties will also increase. Based on trail user regional expenditures, increases in tax collections for local sales taxes only were calculated for each county. Again, the estimates in the chart below can be regarded as conservative due to no inclusion of a turn-over factor. Sales tax increases in Fremont, Chaffee and Lake counties would offset the decline in railroad property tax collections by about one-half. In Eagle County, the property tax decline would be offset more than twice.

	Expenditure Increases	Sales Tax Increases
Fremont County	$ 823,500 - 1,098,100	$ 27,500 - 36,700
Chaffee County	$ 823,500 - 1,098,100	$ 32,100 - 42,800
Lake County	$ 823,500 - 1,098,100	$ 32,900 - 43,900
Eagle County	$ 2,470,500 - 3,294,000	$139,500 - 181,000
Region Total	$ 4,941,000 - 6,588,300	$232,100 - 306,400
Statewide Total	$ 9,078,000 - 12,104,000	$287,340 - 378,100*

*Increases in State Sales Tax collections

TRAIL CONSTRUCTION AND OPERATIONS EXPENDITURES

In addition to the above expenditures, there will be gains for the regional economy as a result of expenditures for trail and trailhead construction, capital equipment and annual expenditures to operate the trail. This study does not analyze impacts on the regional economy, but it is reasonable to assume that those expenditures will take place primarily in the region. In Chapter V, these expenditures are estimated at:

Trail Construction:	$5,389,500 - 9,383,500
Capital Equipment:	$1,050,000
Annual Operations:	$440,000 - 567,000

2. Trail Effects on Adjacent Landowner Properties

Questions asked in this section are:

- **How will a trail, instead of a railroad, effect property values?**
- **What are ways to minimize recreational activities to adjacent landowners?**

TRAIL EFFECTS ON PROPERTY VALUES

As with any modification of the landscape by development or zoning, landowners want to know the direct implications of the changes on their property values and overall quality of life. The land of property owners adjacent to the railroad corridor is assessed based on an active railroad line running near or through it.

Several studies have been completed over the last decade documenting property values of lands adjacent to rail-trail projects. Studies have consistently found property values either maintain or increase in their assessed value. For example, the 1995 study *The Effects of Greenways on Property Values and Public Safety* looked at five urban and suburban trails in the Denver metropolitan area and found that trails increase the desirability of a property. Some key findings are based on interviews of:

Real estate agents:

73% believed a home adjacent to a trail would be easier to sell

55% believed that a home adjacent to a trail would sell for more than a comparable home in a different neighborhood

Residents of single family homes adjacent to a trail:

57% believed the trail-side location would increase the selling price of the home

29% believed that the trail would make the home easier to sell

Residents of single family homes within one block of a trail:

89% believed that trail would make the home easier to sell, or would have no effect

TRAIL EFFECTS ON ADJACENT LANDOWNERS

In addition to seeking out areas of concern among resident corridor landowners, the Steering Committee researched several rail-to-trail projects across the country. It became quite clear that concerns and issues are practically identical, here and abroad. It is also clear that rail trail managers and corridor residents around the country have been able to manage these issues and activities to the overall satisfaction of those concerned. There is much in the 10,000 miles of existing rail trails that can help us to work together here to solve our problems as well. Some common issues and concerns are litter, trespass, inappropriate parking for trail access, privacy, existing easements, livestock, noxious weeds, fencing, noise, vandalism, public safety and law enforcement, irrigation ditches, fires, firearms, and hunting.

Management responses to these very real concerns are possible as shown in research of other trail corridors. These management practices are developed more thoroughly in the Management Responsibilities and Policies section in Chapter V.

LEGISLATION TO MINIMIZE IMPACTS OF TRAIL USE ON ADJACENT LANDOWNERS

Although the corridor is being considered for public use and would thus fall under the jurisdiction of state laws and governmental immunity, there are many possible impacts on adjacent landowners with the conversion of the corridor to a trail. Colorado State Parks and Eagle County will identify each of these concerns and cooperate with property owners to minimize any impacts. Two examples of potential problem areas for private adjacent landowners are a golf course in Eagle County which the corridor runs directly through, and private property cliffs backing up to the railroad that trespassers like to rock climb. Each of these situations raises liability questions of the landowners.

LANDOWNER LIABILITY AND THE RECREATIONAL USE STATUTE

All fifty states in the United States have passed recreational use statutes (RUS) designed to encourage landowners to open their property without charge to the public for recreational use and protect them from related law suits. In Colorado this means adjacent landowners who open their property for recreational use to the public, without a fee, are covered under the state's RUS limitation on liability.

Basically there are two kinds of liability protection to adjacent landowners under the RUS. The first is a limit on the duty of care, or obligation, owed by the landowner to recreational users. There are generally three types of users: trespasser, invitee, and licensee. The lowest duty of care is owed the trespasser. Unless the landowner can be shown to be "wilfully and wantonly" negligent, there is no liability to the landowner.

The second type of liability protection is a dollar limitation on the landowner's liability. This protection is possible when a landowner invites people onto their property (an invitee) without collecting a fee. In the event an accident occurs and the landowner is found liable, the limitation is consistent with the limitations found in the Colorado Governmental Immunity Act: $600,000 maximum per incident with two or more people or $150,000 per person, per incident. While the RUS does not grant the landowner full "immunity," it does place a cap on the duty of care the landowner can be held liable for. In the event that a landowner collects a fee from individuals (or licensees) to access their property, there are no limits of liability available.

COLORADO'S RECREATIONAL USE STATUTE

Colorado's Recreational Use Statute encourages owners of land in rural areas to make their land and water available for recreation purposes by limiting their liability:

> C.R.S. 33-41-101. Legislative declaration: The purpose of this article is to encourage owners of land within rural areas to make land and water areas available for recreational purposes by limiting their liability toward persons entering thereon for such purposes.

Analysis by the Colorado Attorney General's office (see Appendix I) indicates that Colorado's RUS statutes do not completely address all the key issues in an assertive and comprehensive manner. First of all, property owners are only covered in classified "rural" areas. Next, it is difficult for the courts to assess whether a landowner has opened his/her property for public recreational use. Finally, there is concern regarding the monetary responsibilities of the landowner if a law suit developed.

ATTRACTIVE NUISANCE LEGISLATION

Another area of concern is that currently the Colorado Recreational Use Statute does not limit the liability of landowners for maintaining an attractive nuisance. An attractive nuisance is defined as something that would attract a child under the age of fourteen onto a property and then cause injury to the child. Anyone over the age of fourteen is presumed competent enough to ensure their own safety. Examples of attractive nuisances along the corridor may be old mines, irrigation ditches, etc. As Club 20's 1996 "Missing Links" study notes, the current policy of regarding irrigation canals as attractive nuisances is a strong disincentive for ditch companies to allow trail uses in ditch corridors. However, this policy seems to be inconsistent with case law that determines that water in its natural state is not an attractive nuisance.

PROPOSED LEGISLATION

During the 1996 Colorado General Assembly, the House considered a bill to clarify and amend the current Colorado Recreational Use Statute. House Bill 1315 proposed to change the existing RUS language to target the aforementioned concerns on limited liability. The bill was postponed during the session, but a new version will likely be re-introduced in 1997. Colorado State Parks, along with many local government agencies, will follow this future legislation and encourage a more comprehensive RUS.

E. Effects on Land Uses and Development Analysis

Questions asked in this analysis are:

- **To what extent might trail use of the corridor affect land uses adjacent to the corridor?**
- **Are there mechanisms in place to facilitate future land use decisions on adjacent properties in a manner consistent with trail uses?**

An analysis was conducted by the Land Use Resource Center to review existing zoning and land use restrictions along the Corridor and to assess the consistency of such restrictions with the various trail options. In obtaining this information we relied principally on information supplied directly by the communities along the Corridor. A letter was sent to representatives of each community requesting their opinions about possible inconsistent land uses, possible inappropriate development spawned by a trail, etc. The following information on existing land use conditions was largely supplied by Corridor communities, and is not the product of independent review or analysis.

1. Possible Inconsistent Land Uses

Corridor communities were asked to identify existing or future land uses along the corridor that may be inconsistent with the placement or operation of a trail. There were relatively few responses to this inquiry, as follows:

• Eagle County

Eagle County identified the fact that the current rail runs through the Eagle Springs Golf Course, which is a private, controlled access golf course. The County felt that there could be safety concerns in routing a trail through the fairways. The County also stated that the golf course management was concerned that the trail would allow unauthorized access to the course. Eagle County also identified some potentially contaminated areas that might be inconsistent with the placement of a pedestrian trail (see section IV. C for discussion of hazardous materials issues).

• Fremont County

Fremont County identified the easements that allow the operation of the Royal Gorge incline and aerial tramway. The County noted that the corridor is narrow at the point of the easement, and expressed concerns about how the corridor could accommodate both a trail and the uses permitted by the easement.

• Chaffee County

Chaffee County expressed the concern of some that the "esthetics of whitewater rafting in primitive Brown's Canyon would be lost if there was a trail through it."

2. Possible Inappropriate Development

Corridor communities were asked to identify inappropriate future development that may be brought about by the creation of a trail (see generally the discussion of access discussed below). There were relatively few responses to this inquiry, as follows:

• Fremont County

Fremont County identified a gravel quarry that borders the corridor. While it could be the site of additional mining activity, it is not clear whether the placement of a trail would somehow promote such activity.

• Eagle County

Eagle County identified areas east of Gypsum and east of Eagle, both parallel to State Highway 6 that currently have limited development potential because of access restrictions caused by the rail. The County believes that potentially unwanted development could occur in such area if access were available across the rail corridor.

3. Access Issues

The rail throughout the corridor has been in place for more than a century. The very existence of the rail has doubtlessly affected adjacent development in numerous ways. One of those ways is by the restriction of access across the rail. Specifically, certain lands that are adjacent to public roads have had limited access to the public road because of the rail's location between such land and the road. The elimination of the rail, in a complete abandonment scenario, could open up access, and allow new development to take place. In a rail-banked scenario, the granting of access across a trail would have to be done in a manner that new crossings would not limit the ability for rail to return to the corridor.

CURRENT SITUATION

There are currently two different authorities that control access over, under and across the corridor: one is the corridor owner, and the other is the Public Utilities Commission (PUC). The corridor owner, now Union Pacific Railroad, has no special obligation to grant access across the corridor, and may do so in accordance with its own policies. According to railroad representatives, in recent years such access easements are rarely granted except with a grade separation (i.e., an overpass or underpass), which causes access across the rails to be an expensive proposition.

The PUC's approval is required for any public rail crossing. According to PUC representatives, during the last 20 years they have rarely approved any public crossings that did not utilize a grade separation. The combination of PUC approval requirements and rail operator's discretion have in recent years made it very difficult and costly to obtain access across the rail corridor. This, effectively, has limited the development potential for land separated from public road access by the rail corridor.

RAIL-BANKED SCENARIO

- **PUC Access Regulation.** The theory behind railbanking with interim trail use is to preserve the rail corridor so as to allow the possible return and resumption of rail use. The PUC does not regulate or control access across a rail-banked corridor that lacks current rail use. But if rail use seeks to return to the corridor in the future, the PUC would then require that all public crossings comply with PUC standards.
- **Federal Access Regulation.** The federal Surface Transportation Board (STB) states that once a corridor enters a rail-banked status, the STB does not assert regulatory control over the corridor. Thus, neither the STB nor any other federal agency regulates the granting of access easement across rail-banked corridors.

  Counsel for the Rails to Trails Coalition said that she has never seen a case where it was argued that inappropriate access easements were being granted across a rail-banked corridor. She stated her belief, however, that if such occurred, private parties along the corridor could argue that the corridor was no longer appropriate for railbanking , and could petition the STB to terminate the corridor's rail-banked status. This could have significant consequences, in that such a termination could cause the reversion of the corridor to underlying public and private land owners.
- **Possible Mandated Access.** As noted above, private land owners typically have no obligation to provide access easements for adjacent lands. Thus it could be argued that the ultimate owner of the corridor (a county or state agency, for example), need never grant an access easement for adjacent lands.

  There are, however, principles that require the government to provide private parties with reasonable access to public ways. A land owner could seek to expand these principles to say that the government must provide reasonable access across (as opposed to on) public ways, so long as such access is consistent with public health and safety. In order to avoid this type of argument, it is likely that future decision

regarding requests for access across the corridor should be predicated upon health and safety concerns, such as protecting the safety of trail users or preserving the integrity of the corridor to accommodate the return of rail. Conversely, it would be unwise to deny access across the corridor solely to prevent adjacent land from being developed.

RAIL WITH TRAIL SCENARIO

On portions of the corridor that include a trail alongside the rails, the access situation would be essentially the same as the current situation. The only potential change would be a case where the new rail use was much less frequent than the current main line use. In that case, access across the corridor would likely be more freely granted, especially if the right-of-way owner was a county or state agency.

FULL ABANDONMENT SCENARIO

Under a complete abandonment scenario, issues regarding access across the corridor would be governed by applicable state and local law for private landowners who acquire fee title to abandoned lands. For lands reverted to public ownership, it could again be argued that a governmental owner of the trail corridor owes some duty to grant reasonable access across the corridor.

4. Assurance of Future Appropriate Land Uses

If a trail is placed within the corridor, it is desirable that future land use and development adjacent to the corridor be consistent with and complementary to trail use. It is important that communities along the corridor work closely with the agencies managing the corridor to appropriately integrate the trail with adjacent land uses.

COMMUNITY TOOLS CURRENTLY IN PLACE

Corridor communities were asked to identify land use tools or other mechanisms that were currently in place, and that could be used to assure that future development in the vicinity of the corridor was appropriate for the operation of a trail. There were relatively few responses to this inquiry, described below. The other counties along the corridor lack such zoning or building code requirements, and would thus have few tools available for corridor protection.

- **Eagle County**

Eagle County noted that in the immediate future it will be adopting a new land use code that will include a Sensitive Lands Overlay Zone, which could be utilized to protect the corridor. Under its current land use code the County has no site review over development that is already zoned and platted. In the case of land for which a zoning change or platting is requested, the County has considerable discretion in deciding on the form and amount of development that will be allowed. Additionally, Eagle County has an operating land trust (the Eagle Valley Land Trust) and a county-wide Open Space Committee, both which could become involved in the protection of the corridor. Finally, Eagle County has currently budgeted a limited amount of funds to be used for open space protection.

- **Lake County**

Lake County currently has in effect a Scenic Conservation Overlay (SCO) that applies to land that includes a portion of the corridor. Pursuant to the SCO the County has the ability to review site development with respect to certain aesthetic matters. Additionally, the SCO includes larger setbacks from the highway, which setbacks could also protect portions of the corridor.

OTHER TOOLS CURRENTLY IN PLACE

In addition to the community-based tools referenced above, there are currently in place several other tools which could be used for corridor protection, as follows:

• Top of Rockies Scenic Byway

The scenic byway covers a portion of the corridor from Twin Lakes to Minturn. The scenic byway is currently in the process of finalizing a Corridor Management Plan that includes protection and preservation elements. To the extent that the corridor shares the same view shed with the scenic byway, the protection/preservation efforts of the byway may also serve to protect the corridor.

• USFS/BLM Plans

A significant portion of the corridor passes through lands owned and managed by the BLM and USFS. All of such lands are subject to agency management plans which include visual quality objectives. By working closely with the agencies, the parties can attempt to establish visual quality objectives that are consistent with and protective of trail uses of the corridor.

OTHER POSSIBLE PROTECTION ALTERNATIVES

There has recently been a great deal of discussion and information sharing in Colorado regarding tools and techniques for land protection. For political and other reasons the full range of protection tools and techniques may not be acceptable to all communities along the corridor. The following are several protection strategies that could be voluntarily adopted by communities along the corridor, and that involve relatively little governmental involvement or intrusion of private property rights.

Access Control

As discussed above, the owner/operator of the corridor will, to some extent, control access to land separated from the public road by the corridor. To the extent that access across the corridor is permitted, it can be done in a way consistent with the protection of the corridor. At the same time, in order to avoid potential claims of unreasonable denial of access, this power should be exercised sparingly, and in close concert with the protection of health and safety.

Setbacks

Most communities have development setback provisions in their zoning and/or subdivision codes. Corridor communities could modify these setback requirements in the vicinity of the corridor, and require that development could not take place in close proximity to the corridor. In order to protect private property rights, the requirement could contain an exception for situations where a property owner would be prevented from reasonable development by the setback.

Zoning Overlay

A zoning overlay is an additional layer of zoning that places specific restrictions on development in sensitive areas. It is particularly useful for protecting linear resources that cross many different zoning areas. For that reason, it is one of the principal tools utilized to protect scenic byways. Lake County has had such an overlay in effect with respect to certain of its most scenic roads, and it has produced little controversy. Such an approach could be expanded in Lake County, and adopted in other corridor communities, so as to fine tune the development controls applicable to the corridor.

Comprehensive Plans

Many of the communities along the corridor already have in place master or comprehensive plans that describe the anticipated future development within the community. One of the most important things these plans do is describe the types of zoning that can be expected to be granted in certain areas of the

community. These plans can also direct where utilities and other infrastructure will be provided so as to accommodate development. Each of the corridor communities could modify their existing plans, or adopt new plans, that recognize the existence of the trail within the corridor, and that encourage future development consistent with the trail.

5. Use of Land Exchanges

Approximately 40% of Colorado is made up of various public lands, including those owned by the BLM, USFS and State Land Board. When addressing any public undertaking that requires the use or acquisitions of new lands, it is useful to determine whether existing public lands can be traded for the newly required lands. The administrative costs associated with accomplishing such exchanges are often far less than the cost of direct acquisition of the new lands.

SPECIFIC POSSIBILITIES

• BLM & USFS

Approximately 77% of the mountain leg of the corridor passes through, or in the case of an abandonment would revert back to, BLM & USFS lands. Thus 22% of the corridor mainly consists of a narrow ribbon of land owned in fee by the railroad. Both the BLM & USFS have exchange programs that allow them to dispose of low resource value lands in exchange for lands of a higher resource value. The BLM, in particular, has identified vast amounts of lands throughout Colorado that are available for disposal in connection with such exchanges.

Union Pacific has agreed to donate much of the rail corridor, for trail purposes, to the agency doing the railbanking. If efforts ultimately fail to attract replacement rail service in the rest of the corridor in Eagle County, it may be appropriate to buy this portion for interim trail uses via railbanking. There may be other UP lands adjacent to the donated section that the state or local governments might want to purchase for trailheads or other recreational facilities. In circumstances where donation is not a possibility, land exchanges could be a possible alternative to outright purchase.

For example, the BLM could dispose of excess lands and trade the value of those lands for UP's interest in the corridor. In so doing, UP could either receive the excess BLM lands, or the lands could be sold to a third party, and the sale price paid to UP. This would allow funds that would have been used to acquire the corridor to be used for trail improvements. Obviously, such an approach could succeed only with a strong commitment by the BLM and the eventual trail manager.

Alternatives to a large-scale land exchange would be smaller U. S. Forest Service or BLM land exchanges for corridor access, parking, etc. These land exchanges would be particularly applicable where the required lands were surrounded by or adjacent to existing federal lands.

• State Land Board Exchanges

The State Land Board (SLB) owns more than two million acres of land across Colorado. Additionally, the SLB is authorized to exchange its lands for more desirable lands in a manner similar to that used by the federal agencies. It may appear that such exchanges could be used to acquire land in and around the corridor. Most SLB land, however, is in trust for schools, and is thus not available for exchanges designed to promote natural resource and recreational ends.

However, the SLB also controls a separate portfolio of approximately 250,000 acres of lands known as Saline and Internal Improvement Lands ("S&I Lands"). These lands are not in a constitutional trust for the benefit of schools, but have rather been placed in a trust by the legislature for the benefit of Colorado State Parks. Specifically, S&I Lands could be traded to UP or a third party, and the value from that transaction exchanged for new lands within the corridor, which would thereafter be designated as S&I Lands.

V. FUTURE MANAGEMENT ALTERNATIVES

The corridor along the Eagle Rriver through Eagle County.

POSSIBLE OUTCOMES

Even though the merger has been approved, there are still several possible outcomes that will affect the ultimate use and condition of the corridor. The top priority of communities along the corridor and the State of Colorado is to continue rail service along the entire corridor. However, no definite outcome may yet be foreseen. For the purpose of outlining the most likely outcomes, the study team chose three alternatives:

A. Rails to Trails	**conversion of the entire corridor to trail uses.**
B. Rails with Trails	**conversion of parts of the corridor to trail uses while parts remain in rail service.**
C. No New Trails	**a variety of circumstances may lead to this outcome.**

The Steering Committee concluded that if rail service is not continued along the entire length of the corridor, interim trail development by way of railbanking is the next best outcome. The following descriptions of the three potential alternatives outcomes focuses primarily on Alternative A - the Rails to Trails alternative. If the final outcome instead results in Alternative B - Rails with Trails - then much of the detailed Alternative A analyses will still be applicable.

A. The Rails to Trails Alternative

This recommended trail(s) alternative is based on the premise that an operating railroad is not a viable option at this point in time. The recommendation is also based on the understanding that this action is not competitive with any railroad operations that may become possible now or in the future.

1. Overview of Trail Planning Requirements

A wide range of types of trail development can be accommodated in a railroad corridor. Specific trail development would depend on several main factors:

- **funding available**
- **trail user and community needs**
- **physical conditions of the corridor**
- **type and amount of use**

Typical levels of development would include:

• Urban areas:	**Concrete or asphalt paving, 8-12 feet wide**
• Relatively high-use areas:	**Crushed rock fines or screenings, 8-12 feet wide, compacted to provide a firm, well-drained surface.**
• Low-use or remote areas:	**Natural compacted earth left after ballast rock has been removed or graded to the side.**

2. Corridor Development and Management Plan Elements:

Before definite decisions can be reached on the scope of trail development, the Steering Committee feels strongly that a detailed, long term Corridor Development and Management Plan must be compiled. A collaborative process is envisioned, including participation from local governments, local landowners, recreation and environmental interests, and state and federal agency representatives. While much of the material contained in this Feasibility Study can serve as the basis of the Corridor Development and Management Plan, the Plan should take a more detailed look at the following:

- Analyze and provide for local needs and issues related to recreational development and public use of the corridor.
- Coordinate NEPA requirements with adjacent federal agencies.
- Identify and provide for economic benefits for trail and recreation development.
- Offer a wide range of trail activities including hiking, bicycling, horseback riding, cross country skiing, snowmobiling, and corridor linkages for off highway vehicles.
- Identify and provide opportunities for watchable wildlife, bird watching, nature study, environmental, cultural and historical education; and access for fishing, improved boat safety, and hunting.
- Identify areas of concern with sensitive wildlife, vegetation and other natural features; develop management techniques to minimize impacts and protect these areas through such methods as education, and trail design.
- Identify and provide for opportunities for elderly, families, and disabled by making trail access available for a wide array of recreational activities.
- Identify concerns and issues and develop a range of solutions for safety, land owner rights, access, and corridor management.
- Develop design concepts and guidelines for recreational corridor development to include existing corridor and regional infrastructure, linking communities, neighborhoods, businesses, schools and churches along the corridor.
- Identify a "comfortable capacity" for the trail plan based on a joint function of the trail grade, design, surface type, extent of maintenance, user types and skill levels, as well as the degree of use and safety acceptable to the public.
- Develop a plan to effectively fund, manage, and maintain the corridor and recreation facilities.
- Develop a plan to coordinate with volunteers, local support, and partnerships to develop and manage recreation opportunities with a variety of resources.
- Create a regional trail system, providing links with existing and proposed facilities such as state and local parks, river access areas, public open space, and federal public lands.
- Develop design concepts and identify sections of corridor where recreation could coexist with active rail lines.

SPECIFIC MANAGEMENT PLAN ISSUES:

During the compilation of the Feasibility Study, input from the Steering Committee and from public outreach surfaced specific issues of concern. The Steering Committee recommends that the following issues be addressed as follows:

- **Prior agreements:** Trail managers should seek out and honor appropriate prior agreements between landowners, municipalities, others, and the railroad concerning drainage, irrigation ditch maintenance, stock crossings, and corridor access.
- **Crossing Points:** Consideration should be given to landowners who have property on both sides of the corridor. Changes in land use requiring additional crossings should be reviewed and coordinated with the appropriate planning and zoning authorities. Guidelines for right-of-way encroachment which promote cooperation between adjacent landowners and trail managers should be established. Emphasis should be placed upon preserving the integrity of the trail.
- **Trespass:** To prevent trespass, signs should be posted at trailheads and at key points along the trail corridor informing trail users of adjacent private property and instructing them to respect private lands by staying on the trail. Trail head maps should be installed showing the public where public and private property is, and where legal trail access is located. Trail signs that are located on public and private property boundaries should inform trail users when they are entering and leaving private lands. Trespassers should be prosecuted.
- **Privacy:** Fencing or privacy screening by mutual agreement may be appropriate where homes are immediately adjacent to the trail. Trees and shrubs may be used for screening as well.
- **Litter:** Information providing corridor regulations, use, and care should be placed at all trailheads. Litter will be specifically identified as a serious problem and infraction. Management presence, regular maintenance of the corridor, and the presence of other trail users would also reduce litter problems.
- **Vandalism:** Information providing corridor regulations, use, and care should be placed at all trailheads. A schedule of public safety patrols should be developed to prevent vandalism. A schedule of routine maintenance should be maintained to repair any vandalism along the corridor trail.
- **Livestock:** Information should be made available at all trail heads regarding the importance of livestock to the community and to local landowners. Management presence and the presence of other trail users would also reduce problems caused to livestock.
- **Noxious Weeds:** Trail managers should be responsible for weed control on the trail right-of-way. Weed control will be coordinated with individual county weed management programs.
- **Fencing:** Fencing along the corridor is important to the overall management of this trail corridor. Good fences make good neighbors and corridor fences will need to be maintained according to state law.
- **Public Safety and Law Enforcement:** In order to make the trail corridor safe and enjoyable for trail users, and landowners, as well as to protect the natural resources, regular patrolling of the corridor will be necessary.
- **Noise:** Undue noise will be unacceptable. Even though the noise of trail users will be significantly less than trains, signs and brochures should insure that trail users are aware of the problems caused by their unnecessarily loud noises, not just for residents, but also for wildlife and other trail users.
- **Plants and Wildlife:** Trail users will need to be well informed of the potential impacts their activities, and at times their presence, has upon wildlife, bird, and plant species and communities in the corridor. Pets, where allowed, should be required to be on a six foot leash. Likewise, trail users need to be made aware of the opportunities to observe and learn about these resources as well.

- **Parking:** To minimize inappropriate parking, and to direct users to the proper access locations, parking should be provided at established trail heads. In areas where parking and trail access is inappropriate, no parking or access should be permitted. Coordination with county authorities will be necessary to determine appropriate locations.
- **Picnicking and Camping:**. As a means of controlling litter, noise, livestock problems, and loss of privacy, picnicking should be permitted on the trail corridor only in established areas. Camping should be allowed only at designated campgrounds along the corridor, and should also be accommodated through adjacent public and private lands and facilities.
- **Fires:** Fires should be permitted only in designated and suitable locations on the trail corridor.
- **Firearms:** Shooting of firearms should not be permitted on, from, or across the trail corridor.
- **Hunting:** The trail corridor will provide hunting access to both public lands and private lands (for which permission to hunt has first been obtained). However, due to the irregular nature of land ownership, the number of trail users, and the proximity at times of the corridor to highways, houses, and other frequently occupied facilities, there should be no hunting on, from, or across the trail corridor.
- **Trapping:** Trapping should not be permitted within the trail corridor without the permission of the trail manager.
- **Hours of Use:**. No limitation on hours of use should be established unless the need arises. In such instances, trail use may be limited to the corridor itself, to certain hours of the day, and/or to certain seasons of the year dependent upon specific identified wildlife needs.

TRAIL USER MANAGEMENT POLICIES

Trail construction should be such that as many types of uses as possible will be permitted. The trail will be shared by all generally recognized non-motorized recreation uses, such as: walking, jogging, bicycling, horseback riding, and cross country skiing. Motorized use should be permitted as outlined below.

With these numerous uses comes the need for trail etiquette among and between all trail users, as well as respect and courtesy for landowners, wildlife, and the natural resources. Trail head signing, both informational and regulatory should be posted. Signing along the trail should be kept to a minimum, but nonetheless, should be placed where necessary. Trail use information should be available, describing the trail, its features, land ownership, service availability, and necessary trail etiquette. Trail etiquette which states how users should yield to each other should be according to the following commonly accepted guidelines:

- All pedestrians yield to equestrians.
- All bicyclists yield to pedestrians and equestrians.
- All equestrians be aware of others and allow them to go by.
- In general, cross country skiers stop or slow to allow snowmobilers to pass.
- Snowmobilers slow and pass skiers safely and courteously.
- Snowmobiling should be permitted north of Railroad Bridge and south of Minturn when snow depth is six inches or more, unless wildlife management concerns determine otherwise.

- Connecting trail corridor sections should be identified and signed for such use that allows recreational off highway vehicles (OHV's) less than 40 inches in width to travel on the trail in order to get from one OHV area to another. Speed limits should be posted in these areas, as well as signing alerting other trail users of this use. In these OHV connecting corridor segments, all OHV's yield to all other users.
- All other motor vehicles should not be permitted except for authorized emergency and service vehicles. All others should be kept in established parking lots or on designated roadways.
- Special events should be approved by the trail manager prior to occurrence.
- Commercial operation should be approved and permitted by the trail manager prior to commercial activity on the trail corridor. Policy regarding commercial activity on the trail corridor should be established.
- Once the trail is in operation, trail use should be monitored to determine if all allowed uses are compatible and otherwise occurring successfully. If problems are identified, additional trail requirements or use limitations should be instituted.

3. Development, Operation, and Maintenance Costs

Costs to convert the corridor are summarized in this section, and include the following three major categories of expenditures:

- **Corridor acquisition costs**
- **Trail and trailhead design and construction costs**
- **Operation and maintenance costs**

CORRIDOR ACQUISITION COSTS

No or minimal corridor acquisition costs are anticipated as a result of an August, 1996, agreement between Union Pacific President Dick Davidson and Governor Romer. They negotiated additional commitments that went beyond their original March, 1996 Letter of Intent that outlined the framework for the merger of the railroads. Union Pacific generously agreed to donate 109 miles of the 178 mile corridor to the state if no replacement rail operator could be located during the originally agreed upon one year time period from the time of the merger.

The potentially donated section includes the 109 miles from Cañon City to Malta, just south of Leadville. Of that 109 miles, trestles, bridges, and culverts would be left in place but tracks and ties would be removed from Parkdale to Malta. In the remainder of the donated section, the 9 miles from Cañon City to Parkdale through the Royal Gorge, tracks and ties will be left in place for the potential of another rail operator, presumably a tourist train. The stretch from Malta to Sage (69 miles) will be subject to further negotiation with potential rail operators.

This means that there will be no acquisition costs for the corridor, unless no buyer surfaces for the Malta to Sage segment. In that case, it is hoped that Union Pacific may be amenable to considering donation of that section, as well.

If further analysis indicates that additional Union Pacific real estate along the donated corridor is desirable for such items as trailhead or campground development, the railroad may be open to negotiation. In that instance, the amount of land desired would be minimal, and land exchanges may be a viable alternative.

DESIGN AND CONSTRUCTION OF TRAIL AND TRAILHEADS

The 178-mile length of the proposed trail means that opening the entire corridor to recreation will carry a substantial price tag. Its placement in a largely natural and scenic environment means that most visitors will expect a less-developed trail. However, limited sections of the trail in more urbanized areas may lend themselves to a paved bikeway much like the Summit County or Vail Pass paved trail systems, which have prove to be very popular with visitors. If the goal is to open as much as possible of the trail as soon as possible, then low-cost development methods should be used. The trail surface and facilities may be developed in a series of planned phases. While developing many miles of trail at once can provide an economy of scale, the reality of available funding must also be addressed.

The following costs were developed for a basic 8-12 foot wide trail with an improved surface but not paved. Local communities may wish to upgrade the trail and its facilities in special use areas and stretches of trail within towns. Improved paving or more elaborate facilities may be added at any time after the initial trail development, when funding may be available. These costs also exclude hazardous material remediation. It is assumed that any hazards which would affect trail users would be identified before the corridor was acquired, and that remediation would be funded separately.

Some costs of trail development are easily quantified, such as standard stop signs. Others involving new construction are difficult to pinpoint. Therefore, a range of potential construction costs are presented below. Factors which would have a potentially major effect on development costs include:

- availability of suitable crusher fines for surfacing
- length of access to remote work sites along the corridor
- use of prison or community service labor
- donations of materials, professional services, or volunteer labor
- the presence of concrete bridges requiring surface treatment
- economies of scale based on the great length of the potential trail
- possible engineering problems with some of the tunnels and bridges
- potential value of ballast and other salvageable materials
- construction industry conditions at time of bids
- size of the total trail development project at time of bids
- scope of work required to remediate hazardous material sites

Taking these variables into account, the following estimates illustrate the range of likely trail development costs in several categories:

- **Base preparation and grading:**
  - From $18,000 to $180,000
  - Low estimate assumes that railroad salvage operations will require only minor adjustments
  - High estimate assumes that grading will need to be done on 100% of the corridor
- **Geotextile material 8 to 12 feet wide:**
  - Total cost from $18,000 to $80,000
  - placed between the bladed ballast and the next layer of crushed rock surfacing, including placement of the material
- **Crushed rock ("crusher fines") surfacing:** 8-12 feet wide, including material, hauling, spreading; and compacting:
  - From $1,780,000 to $2,670,000
  - Low estimate assumes that good material is readily available and that the size of the project will attract lower-than-average bids
  - High estimate assumes that material cost is higher than average and that the distance of hauling to work sites will significantly affect labor cost

- **Bridge treatment, including handrails and decking as necessary:** railings only (3531'), wood deck only (1101'). both deck and railings (564')
  - From $250,000 to $350,000
  - Low estimate assumes that low-cost labor will be available and that bridge treatment will be straightforward
  - High estimate assumes contract labor with some bridges needing higher-than-average cost treatment.
- **Road crossings, including warning signs**
  - From $76,000 to $150,000
  - Low estimate assumes installation of warning signs only
  - High estimate assumes barriers or other more elaborate facilities will be needed at some county road crossings
- **Trailheads, including parking, signs, toilets, and access bridges**
  - From $2,750,000 to $4,250,000
  - Low estimate assumes that costs of improvements will be minimized, with less emphasis on provision of water, sanitary facilities, distances between trailheads and parking. Fewer major access bridges over the Arkansas River would be built.
  - High estimate assumes that the scope of improvements will fully accommodate expectations of a wide range of trail users.
  - Appendix J presents an initial assessment of 33 trailhead access points, development needs and specific cost requirements for the corridor, totaling an estimated $3,800,000.
- **Tunnel inspection and treatments**
  - From $50,000 to $200,000
  - Low estimate assumes low inspection costs and only minor treatment costs
  - High estimate assumes major stabilization costs will be incurred
- **"Watchable Wildlife" facilities, wildlife management, and historic interpretation**
  - From $160,000 to $900,000
  - Low estimate assumes that 20 or fewer historic and wildlife exhibits will be developed, that three "Watchable Wildlife" sites will be developed, and that wildlife management issues will be less complex.
  - High estimate assumes that 40 historic and wildlife exhibits will be developed, that five "Watchable Wildlife" sites will be developed, and that wildlife management issues will be more complex.
- **Revegetation including riparian and terrestrial**
  - From $60,500 to $76,500
  - Low estimate assumes that costs of revegetation will be minimal, with a greater emphasis on volunteer work and less need for professional herbaceous plug planting or much heavy equipment work.
  - High estimate assumes that once the corridor is surveyed, revegetation needs will require much professional time and expenses for planting, heavy equipment needs, and seed drilling.
- **Safety-related improvements**
  - From $227,000 to $527,000
  - Low estimate assumes that either ten or fewer miles will require new fencing, or that fencing materials will be supplied to adjacent landowners, and that treatments for irrigation canals will be fairly easy to accomplish.
  - High estimate assumes that 40 miles will require new fencing and includes significant treatments for irrigation canals where they cross or parallel the trail.

Total estimated costs for development of 178-mile trail on entire Tennessee Pass corridor: $5,389,500 to $9,383,500

EQUIPMENT COSTS:

A variety of equipment (vehicles, maintenance equipment, tools, radios) is required to properly manage and maintain the trail. A preliminary estimate of these costs is $1,050,000 to service the entire 178-mile corridor. For a detailed listing of start up and equipment needs, see Appendix K.

ANNUAL OPERATIONS AND MAINTENANCE COSTS

The multi-use trail proposed for this corridor must be developed in a way that minimizes the cost, frequency, and complexity of both management and maintenance while ensuring long term durability and effectiveness. However, like most recreation facilities, regular inspections and maintenance will be necessary to maintain the quality and safety of the trail and related facilities. The ultimate goal is to maximize the value of the trail both to area residents and visitors, and to the economy of the area.

While much of the maintenance may be done on an as-needed basis, inspections should be conducted on a regular basis. A comprehensive inspection of the entire trail should be made at least twice each year; once in the spring prior to the snow melt and resultant heavy runoff period, and again in the fall prior to the onset of heavy precipitation and subsequent freezing conditions. Additional inspections may be warranted following extraordinary storm events. Maintenance requirements will be ongoing, consisting primarily of ditch and culvert cleaning, vegetation control within the right-of-way, and minor trail surface repair. Maintenance would also include periodic repainting and repair of bridge decking and railings, benches, signs, trailhead facilities, and road crossings.

It will be critical to the operation and maintenance of the rail corridor trail system that sufficient funds are available for its management. Along with that must come an estimated annual budget that will insure the ability to maintain these facilities and provide these services to the degree felt necessary. Annual costs for the trail corridor are estimated at $440,000 to $567,000 annually. See Appendix K for specific details.

4. Financing Trail Development, Operations, and Maintenance Costs

Funding for the acquisition, development, and management of a trail in the Tennessee Pass corridor would likely come from a wide variety of funding sources. While grants could amount to a significant part of the total funding, it should be kept in mind that a match is typically required. A successful funding strategy would rely on partnerships among all levels of participants involving donated materials, labor, and professional services as well as cash. One of the key future actions recommended by the Steering Committee is to develop and implement a funding plan. For the three main categories of expenditures, the following funding sources could be pursued along with others as opportunities arise:

- **Corridor Acquisition Costs**
  - negotiation with the railroad
  - Colorado Department of Transportation ISTEA Enhancements funding
  - County funds
  - Great Outdoors Colorado grants
  - private sector interests

- **Trail Construction and Capital Equipment Costs**
  - local community and county funds
  - Colorado State Parks funds
  - State Trails Program grants
  - Great Outdoors Colorado grants
  - private sector interests

- Colorado Department of Transportation ISTEA Enhancements funding
- Colorado Historic Society grants
- Colorado Department of Local Affairs Energy Impact grants
- sale of any surplus assets from corridor acquisition
- Volunteers for Outdoor Colorado and other volunteers
- Colorado Department of Corrections
- U. S. Army and National Guard units
- local school, college and university programs

- **Operations and Maintenance Costs**
  - trail user fees
  - private sector interests
  - local community and county funds
  - Colorado State Parks funds
  - easements and rights of way access fees
  - concessions contracts and special use permits
  - volunteers
  - Colorado Department of Corrections

FINANCING OPERATING AND MAINTENANCE COSTS

In considering the feasibility of trail uses of the corridor, it is important to determine whether there are sufficient and dependable sources of funds for on-going operation and maintenance costs. These sources will be dependent upon which agencies and communities, or combination of agencies and communities, will be ultimately responsible for the management of the corridor.

Following is one alternative. It is based on the premise that management of the rail corridor will entail new costs and require new funding sources, above and beyond those currently in place, for any agency or community. As such, a user fee is a cornerstone of any funding alternative. This alternative focuses on the outcome contemplated elsewhere in this study: dividing management responsibilities between Eagle County for the corridor from Tennessee Pass to Sage, and the Arkansas Headwaters Recreation Area for the corridor from Tennessee Pass to Cañon City.

Fee structures can take a variety of forms, and would be subject to the outcome of the Corridor Development and Management Plan that would be developed for the trail. State Parks anticipates it would consider the following potential items when developing a fee structure for the Tennessee Pass to Cañon City section:

- User fees to be paid at self serve stations at trail heads and existing AHRA recreation sites (again self serve). A Daily Parks Pass purchased in this manner would be good in both the AHRA and the trail corridor.
- Annual and Aspen Leaf State Park Passes would be honored for trail use.
- An annual "Trail" Pass could be developed for those users wanting to use the trail only, without access to the remainder of AHRA facilities.
- Special fees, such as trailhead parking charges.
- Town of Buena Vista management of the corridor within the town limits.

• Example

This example is based on projected trail use from Tennessee Pass to Sage of 150,000 to 200,000 visitors per year, and also 150,000 to 200,000 visitors per year from Tennessee Pass to Cañon City. It also assumes Eagle County and its towns would develop a similar fee structure as State Parks, although that decision has not been reached. Eagle County fee collections are estimated at a lower number since no campground fees or State Parks pass sales are anticipated for this stretch.

	Lake, Chaffee, and Fremont Counties	Eagle County
User Fees	$210,000 - $271,000	$185,000 - $246,000
Projected annual O&M Costs	$220,000 - $277,000	$220,000 - $290,000
Projected annual shortfall	$6,000 - $67,000	$26,000 - $105,000

In this example, the shortfall would be covered by a combination of the sources listed above (e.g., community and agency funds, private sector, volunteers, easement and right of way access fees, concession contracts)

IMPACTS OF VOLUNTEERS

Even as a conceptual project, this corridor study has benefitted from many volunteers and interested citizens. Volunteers can also make significant contributions both to the development and long-term maintenance of the trail. The U. S. Forest Service has "Adopt-a-Trail" programs in place in many areas involving a wide variety of trail users. An important example is the Colorado Trail, which runs across national forest land from near Denver to Durango. Volunteers in groups or clubs, as well as individuals, have adopted the entire 470-mile trail (over 50 separate segments), some very remote. Volunteers are responsible for clearing limbs and brush from the trail, sawing logs that have fallen across the tread, maintaining water bars and switchbacks, packing out litter, installing signs, and watching out for potential problems. These volunteers also perform a valuable service in visiting with other trail users and passing on suggestions and comments.

Opportunities will be identified to give corridor area residents a chance to work on the project if the trail proposal becomes viable. Some specific areas of assistance for which volunteers would be recruited are:

- close examination of the corridor and adjacent land uses
- meeting with adjacent landowners
- serving on steering committees for development and management
- engineering studies of bridges, culverts, and tunnels
- conducting members of the public on tours of the potential trail
- developing ideas on environmental education and historic interpretation
- speaking to civic, church, and school groups about the trail project
- helping develop "Adopt-a-Trail" programs to assist with trail construction and maintenance
- maintaining "Friends of the Trail" as an independent support group

B. Rails with Trails

1. Concepts

The concept of including trails in an active rail corridor is a means of expanding recreation opportunities while allowing continued rail service. The rails with trails option may also include railbanking if rail service continues on only a portion of the corridor. A detailed study of the rails with trails option will be undertaken if some form of rail service (i.e. tourist, commuter, or freight operator) continues on the rail corridor and the operator(s) agree to allow trails in the corridor along with rail service.

A popular paved trail in the right-of-way of the Durango & Silverton Railroad near Durango's high school.

DETERMINING FACTORS

Whether any trails in the corridor could be developed would depend on the circumstances of the railroad purchase, who the new railroad operator is, and whether the new owner wishes to cooperate with recreation interests. One obstacle to the rails with trails concept has been the reluctance of private railroad companies to incur what they perceive as increased liability exposure due to increased public use of the corridor.

The rails with trails alternative would also be determined by the width and topography of the right-of-way and the existence of alternative trail routes. Each of these various outcomes would result in a different variation on the theme of developing a trail adjacent to an active railroad line, usually within the 50 to 200-foot wide right-of-way.

A few sections of the corridor, such as the Royal Gorge (10 miles), Brown's Canyon (12 miles), parts of Bighorn Sheep Canyon between Salida and the Royal Gorge, and parts of the line on Tennessee Pass, are clearly impractical for rails with trails due to such factors as steep topography, narrow width of level space, and narrow right-of-way. Additional analyses to determine potential alternative routes in these sections will be explored if the rails with trails option is the final outcome.

2. Design and Use Considerations

- Keep the trail as far as possible from the tracks.
- Avoid any sensitive adjacent land uses and riparian and wetland areas.
- Locate trail to avoid impacts to riparian vegetation and to associated wildlife.
- Use grade variations, vegetation, and ditches as much as possible to provide separation between trail and tracks.
- Determine most cost-effective type of fencing to use where the tracks must be very close to the trail and other separation cannot be achieved.
- Determine standards for minimum distance from tracks to the trail before fencing will be required.
- Determine trail width, surface, and use most appropriate to the space available for the trail.
- Clarify responsibilities for both trail managers and railroad operators.
- Identify alternative trail routes where the railroad right-of-way cannot practically include trails.

3. Analysis

The rails with trails outcome could be an attractive blend of transportation and recreation that could expand on the economic benefits of railroad service alone. While it is clear that many sections of the right-of-way are too narrow for fast freight service and a wide, multi-use trail, other sections would be ideal for shared use. At this point the outcome of the rail options is unknown because of the uncertainty of abandonment. The possibility of different kinds of service on different sections of the corridor is also an uncertainty. However, if a rails with trails project emerges as the most likely outcome of the merger, the development funds discussed under the rail to trail option section (alternative A above) would certainly cover this scenario as well.

RECOMMENDATIONS:

- **Continue to investigate rails with trails projects elsewhere in the United States.**
- **Discuss rails with trails possibilities with potential rail operators of the corridor.**
- **Analyze in more detail the specific sections of the corridor which have more rails with trails potential.**

C. No New Trails

A possible outcome is that no trails would be developed within the Tennessee Pass railroad corridor.

1. Continued Railroad Ownership and/or Rail Service

If the abandonment is not approved, Union Pacific or a private operator (such as a tourist, commuter or freight operator) would continue to own the corridor. It is possible that rail service would continue, either with the present fast, heavy freights on a frequent schedule, or in some scaled-down form with fewer trains, such as tourist service. Any continuing heavy freight rail service under Union Pacific or another major railroad ownership would most likely preclude any recreational access to the corridor. Only sale to a government agency or a short line operator dependent on public funding would provide a reasonable chance of a rails-with-trails option.

The other possibility is that rail service could be discontinued entirely, yet Union Pacific would still own and maintain the corridor for emergency service or possible future use.

2. Dispersal of the Properties that Make Up the Corridor

If the corridor is abandoned but railbanking is denied, Union Pacific would have the option of selling off the 22% of the right-of-way it owns in fee title. The real estate is in the form of several hundred individual linear parcels. The railroad's parcels appear to be mixed in with a larger number of parcels that would revert to the federal or state governments. All of these reversions would have to be litigated or settled in court, and the process could take many years and cost a great deal of money and time. The federal agencies could decide to make this litigation a very low priority, or simply put the issue on hold.

IMPLICATIONS FOR THE FUTURE OF THE "NO NEW TRAILS" ALTERNATIVE

If eventual removal of the tracks takes place, and railbanking is not successful, it is unlikely that the corridor would remain intact. Implications would include:

• Local communities

County or municipal governments could acquire portions of the rail corridor for public purposes. Either type of agency would have to purchase the property from UP as none of the corridor would revert to local or county governments. Parcels owned by the railroad (22% of corridor lands) could be sold in fee. Most of the remaining parcels (77% of corridor lands) would revert to the state or federal governments, for whom one option would be to sell or give property to local governments.

• State and federal agencies

The majority of the corridor would revert to the federal government and a smaller amount to state agencies. Establishing this ownership could be both costly and time-consuming, and decisions would have to be made on how to proceed. Some of the federal reversions would form continuous rights-of-way for stretches of several miles, and could have potential for access or recreation.

• Adjacent landowners

Portions of the rail corridor which are owned in fee by the railroad would likely be sold, but not necessarily to adjacent landowners. Factors such as appraised value, asking price, and development or access potential could bring in outside buyers. The railroad could also choose to sell many parcels to a single buyer rather than to many individual landowners. Some portions may be suitable for public or private roads or utilities. Adjacent landowners who buy portions of the right-of-way would be able to use the additional property according to existing land-use regulations.

Only very small portions of the rail corridor (1% of corridor lands) would revert to adjacent landowners, who would then have to institute legal proceedings to claim the property.

VI. FUTURE ACTION RECOMMENDATIONS

The overall recommendation of the Steering Committee is that the rail corridor should be converted to trail uses if no replacement rail service can be secured. The Steering Committee recommends ten actions to form the foundation of the rails to trails conversion.

1. Prepare a detailed Corridor Management Plan before opening the corridor to trail use.

Much of the information in this feasibility study will serve as the basis for proceeding to more fully developed plans for a wide range of factors. A multi-disciplinary team comprised of resource professionals, user groups and community leaders should create the Plan. The Plan should focus on facility development plans and costs, operations responsibility and costs, delineation of the trail for user groups, mitigation or resource improvement objectives, environmental education objectives and historic preservation objectives.

2. Adopt strategies to control potential effects of trail use on adjacent landowners.

These strategies should focus on management and design methods to control potential impacts on private property owners, including trespass, trash, protection of privacy, fencing, livestock disturbance, noise and safety. Colorado's Recreation Use Statutes should be amended to afford more liability protection for landowners.

3. Pursue opportunities to link the corridor trail with other outdoor resources.

The region surrounding the corridor abounds with other outdoor recreation opportunities that would complement the trail and encourage trail visitors to extend their stays in the area. At least 25 other trails intersect or pass nearby the corridor, and efforts should be made to partner with trail managers to finance and construct trail links and access facilities. Natural allies to diversify the experience of regional summer and winter visitors are ski areas in Eagle and Summit Counties and two Scenic Byways, Top of the Rockies from Twin Lakes to Leadville, and the Gold Belt Tour from Cripple Creek to Cañon City.

4 Develop strategies to avoid or minimize impacts on the corridor's biological resources.

The Colorado Natural Heritage Program developed recommendations to avoid impacts on the threatened and endangered plant and animal species in the corridor, centered on education programs to guide trail user behavior. CNHP also developed guidelines for best management practices of plant communities, including control of noxious weeds. DOW's primary concern on fish and wildlife management is potential impacts on the Bighorn Sheep herds that inhabit the corridor, especially regarding interference to access to the Arkansas River as a water source. A collaborative process to pinpoint areas of concern and to define use restrictions and/or mitigation actions should be pursued prior to using the corridor for trail purposes.

5. Pursue preservation and interpretation of the historic and cultural resources of the corridor.

The State Historical Preservation Office recommends that the whole corridor should be eligible for historic designation either through the federal or state processes. Results of consultants' work for the railroads will guide future applications for historic designation to the National Register of Historic Places if this action is pursued. Standards and guidelines established by the Secretary of the Interior would be followed to preserve and protect the corridor's historic resources. Grants through the Colorado Historic Society should be pursued for protection and interpretive costs. Estimated costs for interpretation of historic resources with wayside exhibits are up to $200,000.

6. Secure the resources to fund the capital and operations costs of the corridor.

Capital costs for acquisition and trail development are estimated at up to $6.4 million to $10.4 million, and annual operating costs of $440,000 to $567,000. This feasibility study was financed largely by a Great Outdoors Colorado planning grant to provide a basis for evaluating the project's qualifications for a GOCO Legacy Grant. By January, 1997, the corridor partners will establish a funding plan including matches for the GOCO application process. Operations costs should be funded through a combination of user fees, state and local agencies, and sale of access easements to the corridor.

7. Ensure that hazardous materials are cleaned up to a standard that will accommodate public uses of the corridor.

Additional investigation work may be necessary to adequately define the degree and extent of contamination along the corridor right-of-way. To date, evaluation of environmental conditions, in accordance with prescribed standards, has not been adequately completed due to the inability to access the railroad records. Cleanup levels and extent of cleanup will need to be evaluated against potential recreational exposure scenarios. The extent of cleanup will affect costs associated with trail construction. Compliance with federal and state law by the railroad companies is necessary to ensure all sources of contamination and associated environmental liabilities are identified and remediated prior to title passage to the State of Colorado.

8. Pursue legislative actions that will enhance the conversion of the corridor to trail uses.

Colorado's Recreational Use statute should be amended to strengthen liability protections for adjacent landowners. Trail managers should team up with local governments and recreation user groups to renew efforts to work with the General Assembly to pass this legislation. The corridor partnership should also work with the General Assembly's Transportation Legislation Review Committee, which is addressing railway abandonments statewide.

9. Pursue land exchange transactions with the railroads that would yield mutual benefits.

The potential exists for a variety of land exchanges between the railroads and federal, state and local interests within and outside the corridor. Many of the railroad's resource management goals compliment the goals of various divisions within the Colorado Department of Natural Resources. The success of potential acquisitions by way of exchanges are contingent on the final operations plan to be developed by Union Pacific, as well as by other prospective railway operators that may be identified within the conditional one-year time schedule set by the Surface Transportation Board.

10. Develop volunteer network for construction and operations of the trail.

Volunteers, school programs, and alternative labor sources can also make significant contributions both to the development and long-term maintenance of the trail. Opportunities will be identified to give local residents, schools, and agencies a chance to work on the project if the trail proposal becomes viable.

UNITED STATES OF AMERICA
SURFACE TRANSPORTATION BOARD

+++++

VOTING CONFERENCE

IN THE MATTER OF:

UNION PACIFIC CORPORATION, UNION PACIFIC RAILROAD COMPANY, and MISSOURI PACIFIC RAILROAD COMPANY	Finance Docket No. 32760
- CONTROL AND MERGER -	
SOUTHERN PACIFIC RAIL CORPORATION, SOUTHERN PACIFIC TRANSPORTATION COMPANY, ST. LOUIS, SOUTHWESTERN RAILWAY COMPANY, SPCSL CORP., AND THE DENVER AND RIO GRANDE WESTERN RAILROAD COMPANY.	

Wednesday, July 3, 1996

ICC Building
12th & Constitution, N.W.
Hearing Room A
Washington, D.C.

The above-entitled matter came on for hearing, pursuant to notice, at 10:00 a.m.

BEFORE:
LINDA J. MORGAN, Chairman
J. J. SIMMONS, III, Vice Chairman
GUS A. OWEN, Commissioner

EMPLOYMENT (INCLUDING PROPRIETORS) BY INDUSTRIAL DIVISIONS, 1970 - 1982

LAKE COUNTY

Industry	1970	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
Total Employment - Jobs	4348	3841	4131	4580	5047	5189	5441	5412	5725	5900	5822	4042
Total Wage & Salary Emplymnt	4085	3551	3840	4245	4684	4874	5108	5073	5361	5505	5447	3682
Total Proprietors	263	290	291	335	363	315	333	339	364	395	375	360
Farm Proprietors	0	0	0	0	0	0	0	0	0	0	0	0
Non-Farm Proprietors	263	290	291	335	363	315	333	339	364	395	375	360
Farm Employment	0	0	0	0	0	0	0	0	0	0	0	0
Agricultural Serv., Forestry	0	11	14	12	15	16	16	15	16	18	18	16
Mining	2429	1961	2173	2571	3004	3198	3353	3328	3519	3634	3499	1932
Construction	198	47	54	70	65	89	166	110	190	108	126	84
Manufacturing	21	20	23	22	20	25	25	27	30	31	23	24
Trans., Comm., & Public Util	****	****	****	****	****	****	****	****	****	****	****	****
Wholesale Trade	0	10	11	12	29	46	41	25	22	30	30	27
Retail Trade	523	514	541	525	503	508	539	577	565	561	579	477
Finance, Insurance, Real Est	83	117	107	120	134	132	134	135	163	193	186	183
Services	****	****	****	****	****	****	****	****	****	****	****	****
Government & Govt. Enterpr.	630	688	648	627	609	565	529	538	535	570	594	577
Federal Government, Civil.	51	37	30	32	30	33	45	42	44	36	46	51
Federal Government, Milit.	33	30	30	30	31	28	26	25	25	28	34	37
State and Local Government	546	621	588	565	548	504	458	471	466	506	514	489

EMPLOYMENT (INCLUDING PROPRIETORS) BY INDUSTRIAL DIVISIONS, 1982 - 1993

LAKE COUNTY

Industry	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Total Employment - Jobs	4042	2629	2990	2908	2535	2281	2345	2430	2553	2655	2618	2509
Total Wage & Salary Emplymnt	3682	2248	2586	2475	2081	1804	1765	1903	1997	2064	2009	1875
Total Proprietors	360	381	404	433	454	477	580	527	556	591	609	634
Farm Proprietors	0	0	0	0	0	0	0	0	0	0	0	0
Non-Farm Proprietors	360	381	404	433	454	477	580	527	556	591	609	634
Farm Employment	0	0	0	0	0	0	0	0	0	0	0	0
Agricultural Serv., Forestry	16	13	24	29	30	36	26	20	20	24	28	15
Mining	1932	633	****	****	577	342	226	326	348	349	282	220
Construction	84	70	74	74	77	82	114	118	134	167	151	183
Manufacturing	24	24	27	****	****	****	26	39	86	144	93	43
Trans., Comm., & Public Util	****	****	****	****	****	****	****	****	****	****	79	72
Wholesale Trade	27	29	27	****	****	****	****	****	****	****	52	48
Retail Trade	477	463	464	471	449	445	466	459	473	483	490	479
Finance, Insurance, Real Est	183	173	152	138	125	110	109	104	113	120	127	136
Services	****	****	473	504	523	512	617	591	593	642	706	680
Government & Govt. Enterpr.	577	546	555	555	547	549	574	593	614	621	610	633
Federal Government, Civil.	51	58	56	55	58	53	56	64	59	59	62	61
Federal Government, Milit.	37	35	33	34	34	27	26	25	24	23	24	23
State and Local Government	489	453	466	466	455	469	492	504	531	539	524	549

**** indicates that the data has been suppressed to avoid disclosure of confidential information.

The CMA agreement further provides, however, that the term "new facilities" does not include expansions of or additions to existing facilities or load-outs or transload facilities. We recommend that the Board modify this provision in two respects: first, by requiring that BN/Santa Fe be granted the right to serve new facilities on both SP-owned and UP-owned track over which BN/Santa Fe will receive trackage rights; second, by requiring that the term "new facilities" shall include transload facilities, including those owned or operated by BN/Santa Fe. These modifications will help to assure that the BN/Santa Fe trackage rights will indeed allow BN/Santa Fe to replicate the competition that would otherwise be lost when SP is absorbed into UP.

(5) The CMA agreement provides a post-merger procedure by which a shipper can raise a claim that the merger deprived it of a build-out/build-in option. We recommend that the Board modify this procedure in two ways: First, by making this procedure applicable to all shippers; second, by removing the time limit to which this procedure is subject. These modifications will allow BN/Santa Fe to replicate the competitive options now provided by the independent operations of UP and SP.

We further recommend that the Board clarify that a shipper invoking this procedure need not demonstrate economic feasibility; the only test of feasibility is whether the line is actually constructed. And we further recommend that the Board provide that any technical disputes with respect to the implementation of this build-out/build-in remedy may be resolved either by arbitration or by the Board.

(6) The CMA agreement provides that, immediately upon consummation of the merger, applicants must modify any contracts with shippers at 2-to-1 points in Texas and Louisiana to allow BN/Santa Fe access to at least 50 percent of the volume. We recommend that the Board modify this provision by extending it to all 2-to-1 points incorporated within the BN/Santa Fe agreement, not just 2-to-1 points in Texas and Louisiana. The extension of this provision to all 2-to-1 points will help ensure that BN/Santa Fe has immediate access to a traffic base sufficient to support effective trackage rights operations.

(7) With respect to storage-in-transit facilities, the CMA agreement provides: First, that BN/Santa Fe shall have equal access to Dayton Yard for storage-in-transit of traffic handled by BN/Santa Fe under the BN/Santa Fe agreement; and second, that applicants shall work with BN/Santa Fe to locate additional storage-in-transit facilities on the trackage rights lines as necessary.

Various parties have criticized these provisions as inadequate, and we think that these provisions can and should be strengthened. We therefore recommend that the Board order that the BN/Santa Fe agreement be modified to require that in addition, BN/Santa Fe shall have access to all SP Gulf Coast storage-in-transit facilities on

economic terms no less favorable than the terms of UP/SP's access, for storage-in-transit of traffic handled by BN/Santa Fe under the BN/Santa Fe agreement.

(8) We recommend that the Board condition approval of the merger by establishing oversight for five years to examine whether the conditions imposed by the Board have effectively addressed the competitive issues they were intended to address. The oversight condition we envision will include an explicit statement by the Board that it is retaining jurisdiction to impose additional remedial conditions if and to the extent it determines that the conditions already imposed have not effectively addressed the competitive harms caused by the merger.

Applicants have consented to oversight to confirm that the BN/Santa Fe agreement has effectively addressed competitive issues; but we think that any such oversight should properly consider whether all conditions imposed by the Board have effectively addressed competitive issues.

(9) Various parties have expressed concerns that BN/Santa Fe will not provide the vigorous competition that is the premise of the BN/Santa Fe agreement. We recommend that the Board address these concerns in two ways: First, by making clear that the Board expects that BN/Santa Fe will compete vigorously for the traffic opened up to it by the BN/Santa Fe agreement; second, by imposing upon BN/Santa Fe a common carrier obligation with respect to the traffic opened up to it by the BN/Santa Fe agreement. We further recommend that the Board make clear that the competition provided by BN/Santa Fe will be one of the key matters that will be considered in the oversight proceeding. And we further recommend that the Board require that BN/Santa Fe submit a progress report and an operating plan on October 1st of this year, and further progress reports on a quarterly basis thereafter.

(10) Various parties have expressed concerns that BN/Santa Fe may not immediately commence the trackage rights operations made possible by the BN/Santa Fe agreement. We recommend that the Board address these concerns in two ways: first, by acknowledging that, to some extent, immediate commencement of trackage rights operations may not be physically possible; but second, by making clear that the Board expects that, as soon as reasonably practicable, BN/Santa Fe will commence trackage rights operations in the key corridors opened up by the BN/Santa Fe agreement. The key corridors we have in mind are the Houston-New Orleans corridor, the Houston-Memphis corridor, and the Central corridor. We further recommend that the Board make clear that a failure to conduct trackage rights operations in these corridors could result in termination of BN/Santa Fe's trackage rights and substitution of another carrier or in divestiture.

(11) We recommend that the Board impose as a condition the terms of the Utah Railway agreement. This recommendation reflects our view that, for certain coal

shippers, the rights provided for in the Utah Railway agreement will ameliorate the competitive harms that would be generated by an unconditioned merger.

(12) We recommend that the Board condition approval of the merger by granting Tex Mex the trackage rights sought in its Sub-No. 13 responsive application; these trackage rights would run over UP/SP lines from Robstown and Corpus Christi to Houston, and on to a connection with KCS at Beaumont. We further recommend that the Board grant the terminal trackage rights in Houston sought by Tex Mex in its Sub-No. 14 terminal trackage rights application. These recommendations reflect our belief that such trackage rights are required to ensure the continuation of an effective competitive alternative at Laredo and to ensure the continued provision of essential services to shippers located on Tex Mex.

We further recommend that these trackage rights be restricted to traffic having a prior or subsequent movement on the Laredo-Robstown-Corpus Christi line, that Tex Mex and applicants be permitted to negotiate the terms and conditions of these trackage rights, and that Tex Mex be permitted to operate via these trackage rights immediately following consummation of the merger.

(13) With respect to traffic moving from and to Lake Charles, West Lake Charles, and West Lake, Section 4(b) of the second supplemental agreement dated June 27 provides as follows: that BN/Santa Fe shall have the right to handle traffic of shippers open to all of UP, SP, and KCS at Lake Charles and West Lake, and also traffic of shippers open to SP and KCS at West Lake Charles; provided, however, that such rights shall be limited to traffic from, to, and via New Orleans, and from and to points in Mexico via the border crossings at Eagle Pass, Laredo, and Brownsville. We recommend that the Board expand BN/Santa Fe's single line access to this traffic by removing the proviso; the principal effect of this recommendation will be to allow BN/Santa Fe to handle traffic moving to Houston and to other points on BN/Santa Fe. We further recommend that the Board expand BN/Santa Fe's joint line access to this traffic by allowing BN/Santa Fe to interchange this traffic at Shreveport and Texarkana with KCS; the principal effect of this recommendation will be to substitute a post-merger KCS-BN/Santa Fe joint-line routing via Texarkana and Shreveport for the pre-merger KCS-UP joint-line routing via Texarkana.

(14) With respect to Texas Utilities Electric, we recommend that the Board condition the merger by requiring that BN/Santa Fe be allowed to interchange TUE's coal trains with KCS at Texarkana and Shreveport. Without this condition, all but one of TUE's Powder River Basin routings would involve UP/SP, and the one that would not be excessively circuitous.

(15) With respect to Dow at Freeport, we recommend that the Board preserve Dow's existing SP build-out option by providing that trackage rights will be granted to a carrier to be named by Dow, subject to Board approval, over UP's line from

Texas City to Houston and over UP's or SP's line from Houston to connections with KCS and BN/Santa Fe at Beaumont, with the right to connect to the build-out line in the vicinity of Texas City in order to serve Dow and any other shippers located on the build-out line. Although this condition preserves an SP AP build-out option, the trackage rights will run over the UP line from Texas City to Houston because the SP line is being abandoned.

(16) With respect to the Capital Metropolitan Transportation Authority, we recommend that the Board condition the merger by providing Giddings-Llano shippers a Class I connection at Giddings. The potential competition that exists today rests upon an SP connection at Giddings; and this potential competition can be preserved by providing that the operator of the Giddings-Llano line is to be regarded as a 2-to-1 short line for purposes of Section 8i of the BN/Santa Fe agreement, the so-called "omnibus" provision. We further recommend that the Board note that applicants will be held to their representation that they will allow BN/Santa Fe to establish a connection at Elgin, if and when operations are reactivated over the Smoot-Elgin segment. We further recommend, however, that the Board note that CMTA has a right to a single connection with BN/Santa Fe, either at Elgin or at Giddings, but not to two such connections, and that CMTA will therefore be required to choose between Elgin and Giddings, unless the parties agree otherwise.

(17) With respect to Entergy Services and its affiliates, we recommend that the Board condition approval of the merger by requiring that the BN/Santa Fe agreement be amended to permit BN/Santa Fe to serve the White Bluff plant via a build-out line between White Bluff and Pine Bluff, if and when that line is constructed. This recommendation is designed to preserve the build-out status quo at White Bluff.

(18) With respect to the City Public Service Board of San Antonio, we recommend that the Board impose a condition allowing BN/Santa Fe to serve Elmendorf Station via CPSB's existing trackage rights agreement with SP. This recommendation is designed to preserve the pre-merger status quo respecting the CPSB trackage rights.

(19) With respect to Union Carbide Corporation, we recommend that the Board condition the merger by granting BN/Santa Fe trackage rights over SP's Victoria-Lavaca line between the UP main line and a point near Kamey. This recommendation is designed to preserve the build-out status quo at the Seadrift Plant.

(20) Applicants have made numerous representations to the effect that certain points will be covered, certain services will be provided, and so on. By way of example, applicants have represented, with respect to the City Public Service Board of San Antonio, that the BN/Santa Fe agreement will be amended to clarify that Elmendorf is a covered point. That is one particular representation; there are many others. We recommend that the Board condition approval of the merger by requiring applicants to adhere to the various representations they have made. We would note, of course, that to

the extent these recommendations are reflected in the second supplemental agreement dated June 27, nothing further needs to be done.

(21) We recommend that the Board determine that the terms of the UP/SP Merger Agreement with respect to the purchase of the SPR common stock are fair both to the stockholders of UPC and also to the stockholders of SPR.

(22) We recommend that the Board note that the securities request contained in the lead docket, respecting approval or exemption of securities issuances to finance UP/SP common control, terminated by force of law effective January 1, 1996.

(23) We recommend that the Board exempt, in the Sub-No. 1 docket, the trackage rights provided for in the BN/Santa Fe agreement and included in the Sub-No. 1 notice filed November 30, 1995. These trackage rights are vital to the competitive service that BN/Santa Fe will provide, and we believe that the trackage rights class exemption can be invoked with respect to trackage rights provided for in a settlement agreement.

(24) We recommend that the Board direct applicants and BN/Santa Fe to file, no later than seven calendar days prior to the effective date of the decision approving the merger, an additional class exemption notice covering the trackage rights that will be added to the BN/Santa Fe agreement in accordance with the amendments required by the CMA agreement. These trackage rights are also vital to the competitive service that BN/Santa Fe will provide, but were not included in the Sub-No. 1 notice filed November 30.

(25) We recommend that the Board direct applicants and Utah Railway to file, no later than seven calendar days prior to the effective date of the decision approving the merger, a class exemption notice covering the trackage rights provided for in the Utah Railway settlement agreement. These trackage rights are vital to the competitive service that Utah Railway will provide.

(26) We recommend that the Board exempt, in the Sub-No. 2 docket, the line sales provided for in the BN/Santa Fe agreement. These line sales are an important part of the arrangements provided for in the BN/Santa Fe agreement.

(27) We recommend that the Board exempt, in the Sub-Nos. 3, 4, 5, 6 and 7 dockets, the common control by applicants of The Alton and Southern Railway Company, the Central California Traction Company, the Ogden Union Railway and Depot Company, the Portland Terminal Railroad Company and the Portland Traction Company.

(28) We recommend that the Board exempt, in the Sub-No. 8 docket, common control of UP and the two motor carriers controlled by SP, and common control of SP and the one motor carrier controlled by UP.

(29) We recommend that the Board grant in the Sub-No. 9 docket the application filed by applicants and BN/Santa Fe for an order permitting BN/Santa Fe to use two segments of KCS track in Shreveport and one segment of KCS track in Beaumont. The order has been sought under section 11103, which allows the Board to require terminal facilities owned by one railroad to be used by another if the use is practicable and in the public interest, and will not substantially impair the ability of the owning carrier to handle its own traffic. The segments involved in the Sub-No. 9 docket are essential to the planned BN/Santa Fe operations in the Houston-to-Memphis and Houston-to-New-Orleans corridors.

(30) With respect to the proposed abandonments and discontinuances of the two segments of the Tennessee Pass Line, we recommend that the Board deny the abandonments but grant the discontinuances. We are recommending denial of the Tennessee Pass abandonments because there is some risk that Tennessee Pass traffic cannot be rerouted successfully via Moffat Tunnel. We are, however, recommending approval of the Tennessee Pass discontinuances because local traffic on the Tennessee Pass Line is minimal. Our recommendations will allow a commonly controlled UP/SP an opportunity to demonstrate that Tennessee Pass traffic can be rerouted successfully; but our recommendations will also preserve the Tennessee Pass corridor until such time as that demonstration has been made.

(31) We recommend that the Board approve all other abandonment and discontinuance requests made by applicants. The 15 lines subject to this recommendation are presently used primarily, in a few instances exclusively, for overhead traffic, and the evidence demonstrates, with respect to each such line, that this overhead traffic can be rerouted by a post-merger UP/SP. The local traffic generated by these 15 lines is minimal; in a few instances, it is nonexistent, and these lines simply cannot be sustained by the limited amounts of local traffic they generate.

(32) We recommend that the Board impose the standard labor protection conditions: for the merger, the line sales, and the terminal railroad control transactions, New York Dock; for the trackage rights, Norfolk and Western; and for the abandonments and discontinuances, Oregon Short Line.

(33) With one exception, we recommend at this time that the Board impose the various mitigation measures recommended in the Post-environmental Assessment that was served on June 24, 1996. The one exception relates to the Tennessee Pass line: if the Board adopts our recommendation to deny the abandonment but to approve the

discontinuance, the mitigation measures recommended in the post-EA will have to be adjusted accordingly.

(34) We recommend that the Board find that the UP/SP merger, subject to the recommended environmental mitigation measures, will not significantly affect the human environment, and we further recommend that the Board find that an environmental impact statement is not required.

(35) Finally, we recommend that the Board deny all requests for conditions except those we have specifically indicated should be granted in whole or in part.

We would be glad to take any questions.

CHAIRMAN MORGAN: Thank you. We all get training here in how to read fast.

You have run through many conditions. The key to many of these conditions is to try, as I understand it, to preserve the competition that exists today at points that become 2-to-1 points post-merger?

MR. MARKOFF: Yes.

CHAIRMAN MORGAN: Obviously the staff, in coming up with these conditions, looked at the CMA agreement and felt it was not adequate.

Could you summarize where you found the CMA agreement to be inadequate?

MS. FARR: I would like to have Lou Mackall speak to that.

MR. MACKALL: One of the problems with the CMA agreement was that the traffic rights under it only covered what have been designated as 2-to-1 points. There are other shippers at 1-to-1 points that also enjoy the fact that they have a second carrier near them, although the second carrier does not serve them directly.

We addressed those problems, as CMA does, by expanding build-in and build-out options, by expanding transloading options and new facility options, that kind of thing that are in the CMA agreement.

But the problem with the CMA agreement is that it did not cover, for the most part, people that weren't members or had restrictions or who could take advantage of these options.

So we basically broadened the type of things that are in CMA to cover all the shippers that are affected by the merger.

CHAIRMAN MORGAN: So if a shipper today had a build-out option, it would have one post-merger?

MR. MACKALL: We tried to replicate the impact of direct competition that happened in the Florida merger.

CHAIRMAN MORGAN: Now the plastics industry, of course, had several issues they were concerned about. You have indicated a condition related to storage in transit facilities which I know is of importance to the plastics and petrochemical industries.

Are we amending a provision that is already in one of the other agreements?

MR. MARKOFF: There is a provision in the CMA agreement regarding storage and transit facilities, and we are recommending that provision be expanded.

CHAIRMAN MORGAN: So that as I heard you when you read it, all shippers would have – would be able to work with BN/Santa Fe in getting access to all of the current SP storage and transit facilities; is that correct?

MR. MARKOFF: Yes.

CHAIRMAN MORGAN: Now, you also discussed an arbitration process that is under the CMA agreement that would continue as a condition here.

Do you have any concerns about how that arbitration process is going to work?

MR. MARKOFF: The arbitration, under arbitration, or before the Board, only for technical questions that come up, because the basic question that applicants have been talking about is feasibility. We made it quite clear that there is no test of feasibility. The line gets built; it is feasible. If it doesn't get built, it is not feasible, there is nothing to dispute.

CHAIRMAN MORGAN: In other words, under the CMA agreement, there was a requirement for feasibility.

MR. MARKOFF: There was no specific requirement for feasibility, but the applicants made clear they were under the impression that that was implicit in the CMA agreement. We are making clear no.

Surface Transportation Board
1201 Constitution Ave., N.W.
Washington, D.C. 20423-0001

NEWS

FOR RELEASE
Wednesday, July 3, 1996
No. 96-44

Contact: Dennis Watson
(202) 927-5350
TDD (202) 927-5721

SURFACE TRANSPORTATION BOARD APPROVES MERGER OF "UNION PACIFIC" AND "SOUTHERN PACIFIC" RAILROADS IN OPEN VOTING CONFERENCE

Surface Transportation Board (Board) Chairman Linda J. Morgan, Vice Chairman J.J. Simmons III, and Commissioner Gus A. Owen today voted to grant, with conditions, the merger application of the Union Pacific Corporation and its subsidiaries[1] (collectively, "UP") and the Southern Pacific Rail Corporation and its subsidiaries[2] (collectively, "SP"). This transaction will produce the largest rail carrier in the United States in geographic scope, and will yield important benefits both for the rail network and for the shippers and the communities that it serves.

Transportation Benefits of the Merger

The Board's statutory function in reviewing rail mergers is to balance the benefits of the merger against any competitive

[1]Union Pacific Railroad Company and Missouri Pacific Railroad Company.

[2]Southern Pacific Transportation Company, St. Louis Southwestern Railway Company, SPCSL Corp. and the Denver & Rio Grande Western Railroad Company.

—MORE—

harm that cannot be mitigated by conditions. Here, the Board determined that the potential competitive harm, which can and will be mitigated, is heavily outweighed by the broad-based, positive effects of the merger, which will be passed through to shippers in terms of lower rates and better service.

The merged railroad will realize direct, quantifiable cost savings for itself and its shippers of over $620 million a year, produced principally by the attainment of shorter, more efficient routes. Shippers will also benefit directly from two new single-line routes on the west coast "I-5 Corridor," so-called because it parallels Interstate Route 5, from Canada to Mexico; and by substantially shorter, and more efficient, single-line routes between many city pairs for major traffic flows, especially over the Central Corridor. The Board noted that the applicants have pledged $1.3 billion for investments in improved infrastructure and service.

The merger also will solve the problem posed by the service decline and capital inadequacy of SP. UP will infuse SP with capital, permitting its service to be upgraded, and permitting UP/SP to compete effectively with the newly merged, more efficient BNSF.

Conditions to Address Competitive Harm

The applicants recognized that their merger proposal would alter the competitive balance in markets that they serve. To minimize the anticompetitive effects of the merger, applicants offered approximately 4000 miles of trackage rights to Burlington Northern/Santa Fe (BNSF), to replace the service formerly provided by SP. In response to various claims that these trackage rights would not permit BNSF to compete effectively with UP/SP, applicants increased and improved these rights in a settlement agreement with the Chemical Manufacturers Association (CMA). The Board imposed the trackage rights and CMA agreement as conditions to the merger, and also added conditions that substantially expanded upon the improvements brought about by the CMA agreement.

In conditioning the merger, the Board preserved various competitive options that shippers had prior to the merger. Its action will permit shippers served by UP/SP to truck shipments for transloading to any point on the routes over which BNSF has trackage rights. Similarly, any shippers served by the merged carriers that are willing to invest in a spur line to build out to a former SP or UP line will be freely permitted to do so to access the BNSF trackage rights service or, if BNSF is not present at that point, to access the junction of another

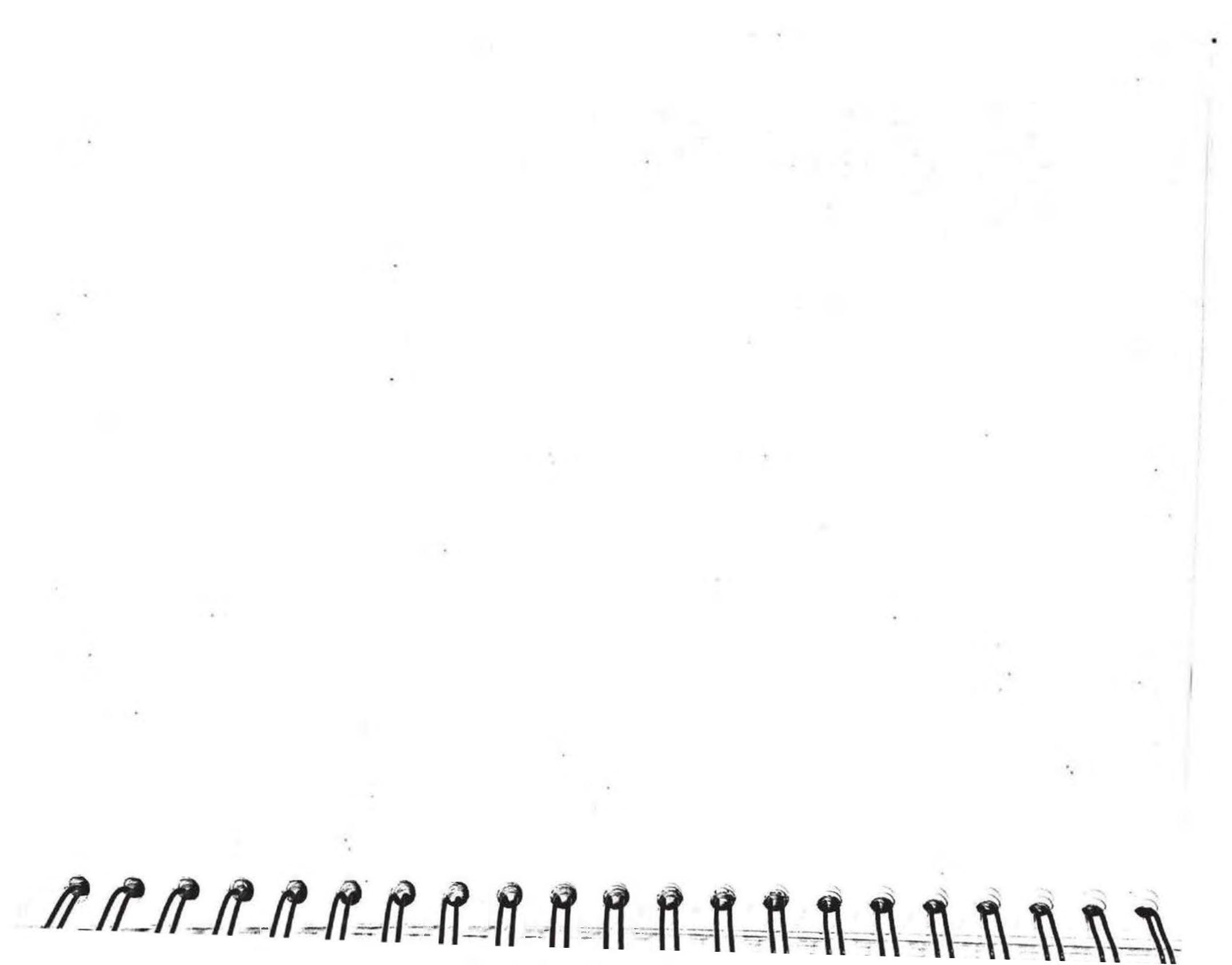
—MORE—

competing railroad. This so-called build-out option will be available without any time limitation. BNSF will be permitted to serve any new facilities on the BNSF trackage rights segments over either UP or SP lines, and will have access to all former SP storage-in-transit facilities in the Gulf Coast region, of particular importance to the plastics and petrochemical industries. To assure further that BNSF will have sufficient traffic to support efficient operations, applicants will be required to make available to BNSF half of the volume of freight that they have under contract at all the points formerly served by both UP and SP that BNSF serves over trackage rights. The Board imposed a common carrier obligation on BNSF to assure that it vigorously exercises the rights that have been made available to it here. Finally, conditions were imposed to preserve competition for the movement of Western coal as well as the shipment of grain and other shipments into Mexico.

The Board also imposed a condition requiring oversight of the merger for 5 years to assure that no competitive problems develop. It noted as part of this oversight that the Board's imposition of further remedies such as divestiture or further trackage rights would be pursued if necessary. As a first step in the oversight process, the Board ordered BNSF to submit a progress report and an operating plan for its trackage rights by October 1, 1996. In addition, the applicants and BNSF are to submit quarterly reports on their operations.

The Board's action was taken in Union Pacific Corporation, Union Pacific Railroad Company, and Missouri Pacific Railroad Company—Control and Merger—Southern Pacific Rail Corporation, Southern Pacific Transportation Company, St. Louis Southwestern Railway Company, SPCSL Corp., and The Denver and Rio Grande Western Railroad Company, Finance Docket No. 32760.

###



APPENDIX B

LETTER OF INTENT WITH UNION PACIFIC

Letter of Intent
between
The State of Colorado and Union Pacific Railroad Company

Concept:

The State of Colorado and the Union Pacific Railroad enter into a letter of intent to systematically explore how opportunities, occasioned by the railroad's abandonment of the Tennessee Pass and Towner-NA Junction lines, can be maximized for the people of Colorado. A cooperative process will be put in place allowing both the issues of recreational trail development and alternative rail service to be explored over the next year.

Goal #1 **Hold lines "harmless" for period of time so that alternative rail service can be explored.**

- The UP will continue to serve active shippers on both routes for at least six months after merger, and in any case until improvements referenced in the Operating Plan are completed on the KP line east of Denver so as to avoid congestion on the Moffat system. At a minimum, rail will be left in place for at least one year after merger while other rail options are explored. This schedule can be modified by mutual agreement of the State of Colorado and the UP.
- The UP will work cooperatively with state and local officials during this period and provide technical assistance to assist in their evaluation of future rail potential.
- Where appropriate and upon a request from the Governor, the UP will participate in any segment-specific task force.
- For 12 months after merger, if a viable rail service option develops, the UP will sell that route to the new entity for net liquidation value.

Goal #2 **Explore the potential of a 350 mile recreational trail from the Kansas border to Denver.**

- The UP will participate in a recreational trails working group which will work toward development of the Plains-to-Mountains recreational trail. During the time it is participating in the working group, the UP agrees to maintain the integrity of the corridors so that a trail option remains viable.

- The working group will be headed by the Department of Natural Resources and will include agencies identified by the state, and in consultation with the UP, third party subject matter experts.

- The working group will conduct a review of the two lines and identify recreational opportunities, ongoing liability issues and any potential problems presented by a trail system.

- The working group will review segments of the Tennessee Pass and Towner-to-NA Junction possessing a credible opportunity for ongoing rail service in order to determine how such rail activities can co-exist with a recreational trail.

- The UP agrees to review the line segment between Canon City and NA Junction to determine if trail activities can co-exist with any anticipated railroad activities.

- The UP agrees that the most acquisition of the rights-of-way will cost for use as a recreational trail will be the net liquidation value. This amount is estimated to be $902,000 Sage - Leadville $378,000 Malta - Canon City $450,955 NA - Towner, for a total of $1,730,955.

- The working group will explore mutually agreeable ways to reduce the costs of a rails-to-trails acquisition through land exchanges between the State of Colorado and the UP. One possible example is at the SP's North Yard facility, in Metro Denver which is partially located on land owned by the state. Consideration of land exchanges could also go beyond the Tennessee Pass and Towner-NA Junction routes. In any case, land exchange opportunities are not viewed as "deal breakers" in developing a trail system.

- The working group would coordinate its activities with the Colorado Department of Public Health and Environment, Attorney General, other state agencies; the U.S. Environmental Protection Agency, and other federal/local agencies to clarify potential environmental issues and lines' long-term responsibilities.

This letter of commitment is entered into this 21st day of March, 1996.

Roy R. Romer
Governor

Richard K. Davidson
Chairman
Union Pacific Railroad Company

APPENDIX C

FEDERAL AND STATE HISTORIC DESIGNATION PROCESSES

APPENDIX C

FEDERAL AND STATE HISTORIC DESIGNATION PROCESSES

Federal Historic Designation Process

There are three general steps to Section 106 of the Historic Preservation Act. First, the resources that may be eligible for historic preservation must be identified. Next, it must be determined what resources are actually eligible for historic designation. Finally, it needs to be determined what effects proposed actions will have on the eligible properties. SP/UP consultants will complete these steps in the reports submitted with the Environmental Assessment to the Surface Transportation Board. The consultants worked closely with both federal and state historic officials to determine historic eligibility and the effects the abandonment would have on the properties.

If Colorado State Parks and Eagle County decided to designate the eligible properties, they would need to apply to the National Register of Historic Places for approval which generally takes six months. The Secretary of Interior is responsible for establishing standards to guide all eligible and listed historical properties. In the Secretary's "Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings" standards are applied to projects taking into consideration economic and technical feasibility.

Design Issues for Historic Preservation
If portions or the whole corridor were to be designated a historical landmark, many design, maintenance, and retrofitting regulations would apply to the trail management. All preservation projects must adhere to the "Standards for Rehabilitation." This document provides general guidelines to provide general technical assistance. Unlike the standards listed above, the guidelines are not codified as program requirements. Guidelines are available for:

1. Identify, Retain, and Preserve
2. Protect and Maintain
3. Repair
4. Replace
5. Design for Missing Historic Features
6. Alterations/Additions to Historic Buildings
7. Health and Safety Code Requirements

A number of these categories would pertain to the corridor. For example, many of the bridges have historical significance but will need to be retrofitted for trail use. The Guidelines state, "Some exterior and interior alterations to the historic building are generally needed to assure its continued use, but it is most important that such alterations do not radically change, obscure, or destroy character-defining spaces, materials, features, or finishes." Colorado State Parks and Eagle County would need to work closely with the

State Historical Preservation Officer to determine the proper bridge designs which ensure people's safety while also preserving the historical significance of the structures.

Another consideration for historical sites is the costs of signage. For example, special signage would be appropriate for each historic site to provide interpretive opportunities for the visitors. The costs for the signs would be approximately $1500 per plague ($500 production and $1000 for artwork). Other historic interpretation exhibits may be developed. Total costs are estimated at up to $250,000.

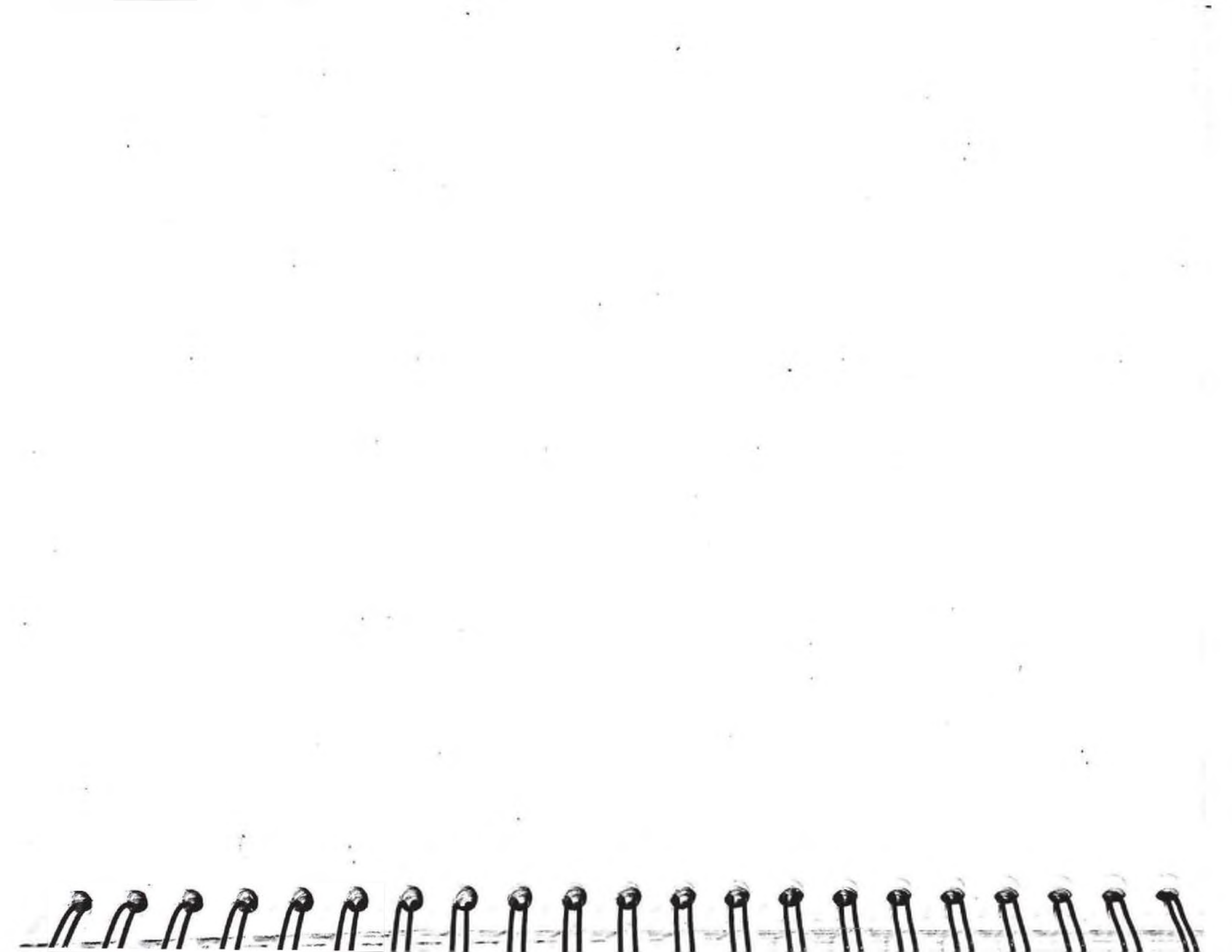
State Historic Designation Process

The state also has a historical designation process based on the standards set forth at the federal level. Grants are available for $5,000 - $100,000 per project with cash and/or in-kind matches from the applicant. Eligible projects fall into three categories: acquisition and development projects, education projects, survey and planning projects. New construction and general operating costs are not eligible for funding. The application process takes approximately six months start to finish.

The benefits of designating the corridor as a historical property are many. First and foremost, the corridor would be protected and preserved for future generations to learn about railroads and Colorado's history. Secondly, with historical designation the managing agency would be able to apply to several new funding sources specifically designed for historic preservation. Colorado State Parks and Eagle County must weigh the responsibilities required and then keep in mind the timing process associated with historical designation. Both the state and federal application process take six months to complete, thus if any grants were to be sought for development of the trail then the historic application process needs to start at least a half year earlier.

APPENDIX D

REGIONAL TRAIL LINKAGES



APPENDIX D

REGIONAL TRAIL LINKAGES

A list of 25 potential connections to other local and regional trail systems, beginning at Cañon City and continuing west and north along the corridor to Eagle County.

o **Tunnel Drive (City of Cañon City):** Cañon City has proposed an alternate trail connection along Tunnel Drive from the city limit west to the point of railroad abandonment. This connection is approximately 3 miles, has three tunnels and two bridges, and would not only provide an access to Cañon City, but someday could connect with the city's River Walk Trail.

o **Rainbow Trail (USFS):** There are two possible access points to the Rainbow Trail. One access is in the Coaldale area, across the Arkansas River at Vallie Bridge, two miles south on Hwy. 50, then five miles up Hayden Creek Rd. The other access is one mile east of Salida, across the Arkansas River at County Rd. 102 bridge, .5 miles south on Hwy. 50, then 5.5 miles up County Rd. 101 (Bear Creek Rd.).

o **Salida Trail System (City of Salida):** The Salida Trail System begins two blocks from the proposed Heart of the Rockies Trail access point at F street bridge. The Salida Trail System has 4.5 miles of trail in four completed segments which will eventually make a loop of 7.5 miles through the city.

o **Buena Vista Trail System (Town of Buena Vista):** The future Buena Vista Trail System along Cottonwood Creek could provide access on trails to town and would access the Heart of the Rockies Trail at the Main Street bridge.

o **Midland Bike Trail (BLM):** The Barbara Whipple Trail (Town of Buena Vista), which connects with Buena Vista to the east via the Main Street bridge across the Arkansas River, provides access to the Midland Bike Trail, which follows the old Midland Railroad Grade

o **Buffalo Meadows Trail (USFS):** Trail access to the Buffalo Meadows Trail would be directly off the corridor north of Buena Vista at county road 371, turn on county road 375.

o **Morris Creek Trail (USFS):** Seven and a half miles north of Buena Vista is the trailhead to the Morris Creek Trail and access to the Collegiate Peaks Wilderness Area.

o **Pine Creek Trail (USFS):** Trail access to Pine Creek Trail is eleven miles north of Buena Vista on FR 388. This trail is also access to the Collegiate Peaks Wilderness Area.

o **The Colorado Trail (USFS):** A trail visitor could take Independence Pass Road (Lake County Rd. 82.) two miles to the east and not only access the Colorado Trail as it

circumvents Twin Lakes, but also follow a trail starting on the southeast side of Twin Lakes to Interlocken, an historic hotel site.

o **Turquoise Lake Trail (USFS):** The Turquoise Lake Trail can be accessed outside Leadville by taking the Turquoise Lake Road (6th Street) two miles west to the dam. The trail starts at the dam and goes counter clockwise around the lake.

o **Mineral Belt Trail System (City of Leadville):** In the Leadville area the abandonment of the Railroad spur into town would be a valuable connection to the Leadville Historic District, with connections to their Mineral Belt Trail System. The Mineral Belt will be 10.5 miles when complete, with the first 3.5 miles (connecting town to the Community Mountain College and their fitness course) projected for completion in August, 1996.

o **Tenth Mountain Division Hut System (USFS):** At the top of Tennessee Pass a Heart of the Rockies Trail visitor will be able to turn southwest to connect to the Tenth Mountain Division Hut System. The trailhead is actually above the Tennessee Pass Tunnel on the Colorado Trail, requiring a further investigation of how the two trails could access each other. There are four huts that could be accessed via the corridor form Tennessee Pass to Red cliff: The Tenth Mountain Division Hut, Vance's Cabin, Jackal Hut and Fowler Hillard Hut.

o **The Colorado Trail (USFS):** Approximately two miles to the north of Tennessee Pass the Colorado Trail crosses the Proposed Heart of the Rockies Trail. As the Colorado Trail takes off to the west it very shortly follows another abandoned Railroad bed. To the east the Colorado Trail crosses Hwy. 24 following FR. Rd. 726 north into Camp Hale, it then turns to the east leaving the valley on an old jeep road along Cataract Creek.

o **Two Elk Creek Trail (USFS):** This is the main trail out of the Minturn Valley to the east, it goes 2.5 miles up to Vail Mountain Category 3 (Vail's 3rd stage of expansion). From the Vail back bowls one can ski into Minturn by way of Two Elk Creek Trail. The access is one mile down Cemetery road in Minturn.

o **Cross Creek Trail (USFS):** The Cross Creek Trail accesses the Holy Cross Wilderness Area via Cross Creek. The best parking and access 1.5 miles up Tigiwon Road, which is at the south end of the Minturn Valley.

o **Martin Creek Trail (USFS):** Martin Creek Trail is one of many from the Minturn area which accesses the Holy Cross Wilderness Area. It departs from Minturn 200 yards west of Hwy. 24 across from Cemetery Road.

o **West Grouse Trail (USFS):** West Grouse Creek Trail starts in Minturn at the Vet Clinic and goes southwest to the Turquoise Lake Area.

o **Meadow Mountain Trail (USFS):** This is a high mountain trail which skirts the Beaver Creek Ski Area and eventually goes to Holly Cross Wilderness Area. The trailhead is at the USFS district office to the north of Minturn at the intersection of I-70 and Hwy. 24.

o **North Vail Trail (City of Vail):** As the Minturn Valley enters the Eagle Valley and Hwy. 24 meets the I-70 corridor the North Vail Trail is under construction. This trail will connect the Eagle Valley, the proposed Heart of the Rockies Trail and all points east to the Vail Trail System. This paved bikeway also continues 32 miles over Vail Pass to reach the Summit County trail system, Breckenridge, Dillon, and Keystone.

o **June Creek Trail (USFS):** June Creek Trail goes north up the June Creek drainage on FR. Rd. 717, which intersects I-70 between Avon and Edwards. It is access to the Red & White Mountain Area and eventually loops down into Vail.

o **Berry Creek Trail (USFS):** Berry Creek also is a drainage trail which goes to the Red & White Mountains and on to Vail. It's access point is north out of Edwards on a County Road.

o **Squaw Creek Trail (USFS):** This trail out of the Eagle Valley runs south to the Holy Cross Wilderness Area and on to the New York Mountains. It can be accessed 3-4 miles south on County Road 23, west of Wilmore.

o **Eagle County Fairgrounds Trail (Eagle County):** This trail can be accessed in the town of Eagle to the west of the I-70 interchange.

o **Gypsum Trail (City of Gypsum):** Two and a half miles past the Sage siding on Hwy. 6 is the Gypsum trail system.

o **Glenwood Canyon Trail (Colorado Dept. of Transportation):** At Gypsum the I-70 frontage road continues west six miles to Dotsero where it connects to the 16-mile Glenwood Canyon Trail. This concrete bikeway runs all the way through the scenic canyon to the town of Glenwood Springs where it meets the Roaring Fork Greenway and other trails.

APPENDIX E

PRELIMINARY PHASE I
HAZARDOUS MATERIALS ASSESSMENT

FINAL DRAFT PRELIMINARY PHASE I ENVIRONMENTAL SITE ASSESSMENT
SOUTHERN PACIFIC RAIL CORRIDOR TRAIL PROJECT

1. INTRODUCTION AND PURPOSE:

This Preliminary Phase I Environmental Site Assessment (ESA) is to identify recognized environmental conditions in connection with the Southern Pacific rail corridor along Segment A extending 69.1 miles of rail line stretching from Gypsum to Leadville and 109 miles of rail line stretching from Malta to Canon City. This ESA is being conducted in accordance with the ASTM guidance document Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process. This ESA is preliminary and will not be inclusive of all requirements of the ASTM guidance. The ESA will identify potential sources of contamination and associated environmental liabilities that may impact Colorado State Park's decision to pursue conversion of the rail line segments into recreational trails.

Real estate transactions today are normally preceded by a due diligence audit of the property. Recommended practices have been established by the American Society for Testing and Materials (ASTM), to conduct environmental audits of property in a phased approach to determine if there are any specific or potential environmental and human health concerns. As such, this practice is intended to permit a potential buyer/user to satisfy one of the requirements to qualify for the innocent landowner defense to Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) liability: that is, the practices that constitute "all appropriate inquiry into the previous ownership and uses of the property consistent with good commercial or customary practice" as defined in 42 USC § 9601(35)(B). This appropriate inquiry, also known as due diligence process, has become an acceptable practice to identify and quantify environmental and human health exposure liabilities.

As a potential title owner responsible to show "all appropriate inquiry," Colorado State Parks has conducted a Preliminary Phase I Environmental Site Assessment (ESA) over the corridor, as part of the feasibility study. The Colorado Department of Public Health and Environment (CDPHE), acting as a consultant for State Parks, performed the Pre-Phase I. The ESA identifies potential sources of contamination and associated environmental liabilities that may impact Colorado State Parks' decision to pursue conversion.

While performing the ESA, CDPHE reviewed available state and Environmental Protection Agency (EPA) environmental records for facilities located within, adjacent, or close to the railroad corridor, and took field reconnaissance trips along the corridor segments. CDPHE was not provided access to railroad environmental records, although CDPHE has reviewed the

not provided access to railroad environmental records, although CDPHE has reviewed the information that Southern Pacific has provided on reported spills and lead ballast investigations. A draft ESA report has been prepared that discusses the environmental conditions identified during the records review and field reconnaissance trips. This Preliminary Phase I ESA identifies potential sources of contamination and associated environmental liabilities that may impact Colorado State Park's decision to pursue conversion of the rail line segments into recreational trails.

1.1 Limitations:

Since the corridor extends approximately 178 miles and no mapping system exists that locates environmental sites by proximity to the railroad corridor, the location of known environmental sites in relationship to the corridor has been approximated. In some instances, primarily for underground storage tank sites and some solid waste sites, site locations could not accurately be determined to evaluate proximity to the railroad corridor. In addition, due to the large volume of records associated with some sites, such as the Superfund sites, a detailed review of all records was not performed. Some environmental records in the possession of Southern Pacific were unavailable for review. Southern Pacific also did not make personnel associated with operation and maintenance of the corridor available for interviews.

2. SUMMARY

The ESA identified numerous sites through environmental records searches. Those sites that may be of environmental concern to trail users are discussed below. Additional environmental records for solid waste landfills and cleanup sites, Resource Conservation and Recovery Act notifiers, Underground Storage Tank lists and Leaking Underground Storage Tank lists were located and reviewed. However, those sites considered of minimal environmental concern to potential trail users are not discussed in this summary.

2.1 Superfund Sites

2.1.1 California Gulch

The California Gulch site comprises approximately 18 square miles, including the town of Leadville and much of the adjacent mining district in Lake County. The Leadville area was the site of extensive mining, milling and smelting operations beginning about 1860. Contaminants of concern are heavy metals associated with acid mine drainage, and mining, milling, and smelter wastes from previous operations. The heavy metals include lead, arsenic, cadmium, and zinc. Soils, surface water, and groundwater have been impacted by contaminant releases. The potential exposure routes associated with the California Gulch Superfund Site are inhalation, ingestion, and dermal contact.

2.1.2 Eagle Mine

The Eagle Mine site consists of the Eagle Mine and associated mining wastes between Gilman and Minturn, Eagle County. These wastes include two large tailings ponds, five roaster piles, and several waste rock piles associated with mine portals in the town of Gilman. The major contaminants of concern are heavy metals associated with the mining wastes, including lead, zinc, manganese, cadmium, arsenic and copper. Soils, surface water, and groundwater have been impacted by the site. The potential exposure pathways associated with the Eagle Mine Site are inhalation, ingestion, and dermal contact to waste rock, refined mining wastes, and roaster pile materials. Exposures to asbestos within the buildings are also a potential risk. In addition to concerns about exposure to contamination, there are numerous mine-related safety hazards in the area such as rock falls, deteriorating buildings, and mine adits near the rail lines. CDPHE and EPA believe that the proposed abandonment of the rail line will remove some of the institutional controls which currently limit public access, in turn increasing exposure potential to the public.

2.1.3 Lincoln Park-Cotter

The Lincoln Park-Cotter site is an NPL site located near Ca_on City. Radioactive residues from uranium ore processing have caused soils contamination. A railroad spur extends from Ca_on City to the Cotter Corporation property. Cotter used the railroad to ship materials and there may have been spillage. There is potential contamination of soils due to radioactive materials and heavy metals. Substances that are possibly present are uranium, radium-226, thorium-230, and heavy metals. While potential risks exist from the Lincoln Park-Cotter site, three of the four areas of concern are located a significant distance away from the railroad corridor. Hauling by rail may have taken place from the Lincoln Park-Cotter site, resulting in potential spillage along the rail line.

2.2 Some Known Spills and Releases

The derailments that occurred in 1989 at mile post 287, in 1994 at mile post 283, and in 1996 at mile post 286 are currently undergoing remedial corrective action. Substances reported spilled include soda ash, sulfuric acid, diesel fuel, crude oil, ethylene glycol, and taconite. A number of reported fuel oil spills have occurred in the Minturn Yard from 1994 to 1996. The reported release include diesel oil, and magnesium chloride.

Spills or releases from the SP's rail lubricators along the rail lines are a concern. The specific areas where the lubricators are located have considerable amounts of lubricant in the ballast and along the immediate rail area. The material would be a concern to trail users and pet owners who may be traveling along the track grade.

2.3 Other Concerns

Large numbers of used and broken railroad ties were present along the corridor. Other debris, including hardware, grease containers, concrete rubble, old machinery, an old rail car, and miscellaneous metal junk were present along the rail line. Old barrels were present along the Malta siding. The railroad has applied herbicide on a yearly basis in order to keep vegetation away from the rail track. Areas of dead or stressed vegetation were present intermittently along the corridor. A few old mine portals, some with varying amounts of waste rock spilled nearby, were present intermittently along the corridor. Material that appeared to be coal cinders from previous steam engine operation is spread along the ground beyond the rail bed intermittently along the corridor. Along significant portions of the corridor, ballast materials appeared to be crushed slag, apparently from the Leadville slag piles.

Much of the land bordering the railroad right-of-way is Federal land; thus the abandonment of these lines may cause a reversion of this corridor to either the State of Colorado or the United States. Therefore, it is necessary to conduct an investigation of any contamination along the railroad lines and to remedy it before title passes or reverts to the State or the United States. Any past or potential releases of hazardous substances, pollutants or contaminants, and any other associated environmental problems, must be handled appropriately, in a manner protective of human health and the environment.

3. SITE DESCRIPTION

3.1 Location:

Segment A extends 69.1 miles of rail line stretching from Gypsum to Leadville and 109 miles of rail line stretching from Malta to Canon City. The area is described by map appendix pages 5, 10, 15, and 19..

3.2 Site and Vicinity Characteristics:

Section IV of the Feasibility Study contains discussions of the topographic characteristics, land ownership patterns, socio-economic characteristics, infrastructure, land use, recreation resources, biological resources, historic and cultural resources of the corridor. These characteristics are also described in the associated map appendix.

3.3 Description of Improvements:

Throughout the corridor, typical railroad construction includes rail line set on railroad ties "floating" in ballast materials. Through time, the railroad had replaced ties as they are damaged and added ballast. Through this routine and periodic addition of ballast, the rail bed grade may

have risen in elevation. Due to routine train hauling, in addition to the original rail bed construction, the railroad bed has been compacted and reworked to provide a competent surface that can support normal train loadings far in excess of any expected recreational trail usage. Rail infrastructure, including bridges and tunnels, is described in Section IV D of the Feasibility Study.

3.4 Current Uses and Past Uses of the Property:

The rail corridor is currently in use by Southern Pacific Railroad for rail transportation. The rail corridor property identified has been in the possession of the railroad since 1883. See Section IV B of the Feasibility Study for additional information on development and ownership of the railroad corridor.

3.5 Current and Past Uses of Adjoining Property:

The current and past uses of adjoining properties are identified on map appendix pages 5, 10, 15, and 19. A description of adjacent land use is included in Section IV E of the Feasibility Study.

4. RECORDS REVIEW

Reasonably ascertainable records were obtained from the appropriate state, federal, and local authorities for review. Records reviewed include the following categories:

4.1 Environmental Records

4.1.1 Federal NPL and CERCLIS site lists

The federal CERCLIS database contains sites that have been identified to US EPA for investigation for placement on the National Priorities List (NPL). Once a site is identified and placed on CERCLIS, an investigation for environmental hazards is conducted. US EPA searched the CERCLIS database for active sites in the following counties: Prowers, Bent, Otero, Crowley, Pueblo, Fremont, Chaffee, Lake, Fremont, and Eagle. A total of 26 sites were identified in this search, including the four NPL sites discussed further below. When the remainder of these 26 sites were located on maps, all were found to be located at distances greater than 0.5 miles from the railroad corridor.

Two NPL sites are located along the railroad corridor, as well as one proposed NPL site located near the rail corridor and one NPL site is located in Canon City before the corridor section begins. These sites include the California Gulch site, located at Leadville, the Eagle Mine site, located near Eagle, the Smeltertown site located near Salida, and the Cotter site located in Canon City.

4.1.1.1. California Gulch

4.1.1.1.1 Background and History

The California Gulch Superfund Site comprises approximately 18 square miles and is located in and near Leadville, Colorado. The California Gulch Site was listed on the NPL in 1983. Between the 1860's and the present, the area has supported a variety of mining and mineral processing activities, including the mining, milling, and smelting of silver, gold, zinc, lead, and copper. Hundreds to thousands of mining and processing operations have been undertaken in the vicinity of the Site. No viable mining operations currently exist within the California Gulch site boundaries. The past 130 years of mining activity have extensively altered the area, both above and below ground. The key subsurface feature is the Yak Tunnel, a drainage tunnel built to dewater, allow exploration of, and provide access to, underground mines in the area.

The land surface in the area has also been disturbed with abandoned mining structures and surface workings dotting the landscape surrounding Leadville. Additionally, extensive shallow placer mining in the stream bed and floodplains of California Gulch has completely overturned and reworked the upper layers of soil and rock. The major surface features at the California Gulch Site are the numerous waste piles produced by mining and mineral processing activities. Three types of waste piles are present: waste rock, tailings and slag. Waste rock is rock with little economic value produced during mine excavation. Tailings are wastes created by milling of mineralized rock for extraction of the commercially valuable minerals. Slag is a waste product from smelting operations. These three waste types have different physical and chemical properties.

D&RGW owns and has owned property within the California Gulch Site containing waste piles which have released various hazardous substances into the environment. D&RGW acquired miles of railroad easements throughout the California Gulch Site and a substantial portion of the "Poverty Flats" area as a railyard. In 1962, D&RGW acquired three slag piles in the California Gulch Site with an aim to use the slag in its ballast operations: the main pile associated with ASARCO's Arkansas Valley smelter, the pile associated with the LaPlata/Bi-Metallic smelter, and the slag pile and adjacent property of the prior Harrison Reduction Works. D&RGW subsequently arranged with a salvage contractor, Orin Dietrich, to screen material at the Arkansas Valley pile. D&RGW then used the larger sized material for railroad ballast on its rail lines throughout the region. Dietrich was allowed to keep the leftover "fines" for his own purposes; Dietrich in turn sold the fines for use as road sanding material within the California Gulch Site. The location of the California Gulch Site, identified waste piles, and areas of contaminated soils are shown on map appendix page 15.

4.1.1.1.2 Contaminants of Concern

Contaminants of concern are heavy metals associated with acid mine drainage, and mining, milling, and smelter wastes from previous operations. The heavy metals include lead, arsenic, cadmium, and zinc. Fact sheets describing health concerns associated with these metals are available from the Colorado Department of Public Health and Environment by calling 303-693-3320. Soils, surface water, and groundwater have been impacted by contaminant releases.

4.1.1.1.3 Potential Exposures and Receptors

The potential exposure routes associated with the California Gulch Superfund Site are inhalation, ingestion, and dermal contact. The Malta to Leadville spur runs through the Arkansas Valley pile area containing the slag crushing and screening operation. The area surrounding the spur is covered with lead slag of various sizes. Trail users could inhale dust from the lead slag crushing operation, ingest slag fines, or come in dermal contact with slag materials. The spur also runs through residential areas of Leadville where lead concentrations in soil range from 2000 parts per million (ppm) to in excess of 5000 ppm. Portions of the spur area, in particular the Arkansas Valley pile area, also contain large amounts of building demolition debris, abandoned machinery, and some abandoned buildings. The debris, machinery, and buildings may be significant physical hazards to trail users. If the rail line is abandoned, the public access to the rail corridor and associated areas mentioned above will most probably increase.

4.1.1.1.4 Summary

A consent decree between D&RGW and US EPA requires that the D&RGW would be required to perform a remedial investigation on a number of slag piles, a feasibility study on stockpiled fine slag, and on a number of slag piles it does not own, a reconnaissance on the Harrison Reduction Works property, and a field reconnaissance, feasibility study and remediation on the railroad easement through town, if necessary.

Risk assessment and remedial investigation data shows that slag "fines," the small particles which result from the breaking or splintering of large slag pieces, may present a risk to sensitive human and ecological populations. Fortunately, to date, health risk to recreational and commercial/industrial users of D&RGW properties at the California Gulch Site has been shown to be minimal. However, should the future use of the rail line transecting the Town of Leadville change to more frequent use or residential use, the risks associated with that changed use may need to be reconsidered and the concentration of heavy metals from slag fines in the soil within or adjacent to the rail line right-of-way may require remediation. CDPHE and EPA Region VIII believe that abandonment of the rail line is a changed use that triggers the need to conduct a remedial investigation and possibly a clean-up of this portion of D&RGW's operable unit at the California Gulch Site.

4.1.1.2 Eagle Mine

4.1.1.2.1 Background and History

The Eagle Mine Site is located near Minturn, Colorado. See map appendix page 19. The site consists of the Eagle Mine and associated mining wastes between Gilman and Minturn, Eagle County. These wastes include three large tailings piles, five roaster piles, and several waste rock piles associated with mine portals in the town of Gilman.

Ore deposits in the Eagle Mine area were first mined in the 1870's. From approximately 1916 to 1983, lead-zinc and copper-silver ores were mined from the Eagle Mine. From approximately 1929 to 1931 and then again from approximately 1941 to December, 1977, sulphide ores were processed through an underground flotation mill at Belden which produced lead and zinc concentrates for shipment by rail to smelters. Tailings material was also discharged by gravity flow to disposal areas several miles from the mine. Tailings were placed in three tailings piles at the site. Earlier waste material was also deposited in areas known as the Roaster Piles. The Eagle River, a major water source as well as a source of fish and other aquatic life, has been adversely impacted by the mining activities of the last century.

Viacom International Inc., under the oversight of CDPHE, has been conducting a remediation of the site, pursuant to a Consent Decree and Remedial Action Plan entered by the United States District Court in 1988. In September, 1990, EPA Region VIII undertook a Feasibility Study Addendum to determine if additional work should be required. That document resulted in the issuance of a Record of Decision in 1993. The State of Colorado, EPA Region VIII and Viacom have entered into a three-party Consent Decree for the completion of additional work at the site and has been approved by the U.S. District Court in June 1996.

One of the primary focuses of the remediation of the Eagle Mine Site has been the restoration of water quality and associated aquatic communities in the Eagle River. The primary activity of the ongoing remediation at the Eagle Mine Site has been the removal of mine wastes from areas known as the Old Tailings Pile, the New Tailings Pile, Rex Flats and the Roaster Piles. The mine wastes and other contaminated materials were removed and placed in the New Tailings Pile, now called the Consolidated Tailings Pile. As portions of the Consolidated Tailings Pile are regraded and compacted, those portions are covered with a multi-layer clean soil cover. The areas from which contamination has been removed have been regraded, treated to lower the acidity, and reseeded with native species.

There are five areas of concern should the rail line be abandoned. They are the Belden area, Roaster Pile No. 3, Roaster Pile No. 5, Rock Creek, and the Railroad Grade construction. The Belden area lies along the banks of the Eagle River, immediately adjacent to a portion of the railroad line which is proposed for abandonment. Belden is comprised of several buildings that

were used during the mining operations. The primary structures are the Copper Tipple, the Belden drying house buildings, storage tanks and other miscellaneous buildings. The Belden drying house buildings were used to dry and store the lead and zinc product from the underground milling process. These buildings are on land owned by the United States, but managed and operated by SP pursuant to a land grant from the United States Congress.

In October, 1991, CDPHE and EPA Region VIII conducted a comprehensive site investigation to identify any improperly disposed of materials in the Belden area. Substantial spillage of the milling product was observed in the drying house buildings. Additionally, approximately 150 cubic yards of milling product was observed in the storage bins. A grab sample of the milling product was collected and sent to the CDPHE laboratory for analysis. The results showed extremely high levels of heavy metals such as lead, iron, zinc, manganese and cadmium, as well as arsenic and copper.

There is also considerable solid waste along the siding in the Belden area. This solid waste consists of empty buckets and barrels, old railroad ties and hardware and various other materials. These objects have been observed migrating into the Eagle River. In addition, some of the buildings in Belden may contain asbestos insulation or siding.

Roaster Pile No. 3 was located along the south bank of the Eagle River slightly west of the Belden mill complex. Roaster Pile No. 3 was removed and transported to the Consolidated Tailings Pile in 1989. Approximately 38,000 cubic yards of mine waste and underlying soils were excavated. Part of Roaster Pile No. 3 was observed during the removal activities to extend under the railroad grade to the east of the pile location. The roaster material was observed against the east end of the railroad abutment and continued beneath the main line towards the Belden railroad tunnel. The lateral extent of the Roaster Pile is unknown. At the time of the excavation of Roaster Pile No. 3, the railroad expressed concern about further excavation to completely remove the mine waste. The State and the consultant for Viacom who performed the remediation agreed to excavate as much of the contaminated material as possible, but leave a stable embankment adjacent to the abandoned railroad grade. Roaster material is believed to continue under the railroad main line and is contained by wooden cribbing on the Eagle River side. The cribbing appears stable, but may require maintenance to prevent further migration of mine waste. EPA Region VIII and CDPHE believe that there could be as much as 1000 cubic yards of mine waste material present in the Roaster Pile No. 3 area. This contamination is believed to be contributing to the metal levels in the Eagle River, although the full nature and extent of the impact from this source is not known. If the railroad line is abandoned, there is the potential that this mine waste may become exposed and migrate into the Eagle River if not properly managed.

Roaster Pile No. 5 was a historic tailings pile located approximately 200 yards into the mouth of the Eagle River canyon near the confluence with Bishop Gulch. Approximately 5,000 cubic

yards of mine waste and underlying contaminated soils were excavated from this area in the fall of 1988. Mine waste and other forms of contamination were observed under the abandoned railroad grade along the east side of the Eagle River. This contamination was not removed at that time because of concern by the railroad that further excavation would impact the abandoned grade which serves as an access road to the Belden area.

There are two railroad grades that access the Eagle River canyon and continue to the Belden area. The west grade currently carries the railroad main line. The east grade has been abandoned and currently functions as an access road to the Rock Creek and Belden areas. During construction of the Rock Creek culvert in 1989, several crushed drums were uncovered along the abandoned grade south of the mouth of Rock Creek, on railroad right of way. The railroad was notified. Conversations with railroad employees revealed that the railroad had used this area to dispose of similar waste in the past. Analytical results of the residual materials determined them to be primarily lubricants, but solvents were also present.

Historic mining operations in the Gilman district preceded the construction of the railroad through the river canyon. It is believed that the railroad grade may have been built on top of waste rock as well as refined mining waste. Neither EPA Region VIII nor CDPHE have characterized the railroad grades.

4.1.1.2.2 Contaminants of Concern

The major contaminants of concern are heavy metals associated with the mining wastes, including lead, zinc, manganese, cadmium, arsenic and copper. Soils, surface water, and groundwater have been impacted by the site. Fact sheets describing health concerns associated with these metals are available from CDPHE at 303-692-3320.

4.1.1.2.3 Potential Exposures and Receptors

The potential exposure pathways associated with the Eagle Mine Site are inhalation, ingestion, and dermal contact to waste rock, refined mining wastes, and roaster pile materials. Exposures to asbestos within the buildings are also a potential risk. In addition to concerns about exposure to contamination, there are numerous mine-related safety hazards in the area such as rock falls, deteriorating buildings, and mine adits near the rail lines. Currently, the Belden area is not readily accessible to the public. In order to access the area, it is necessary to drive down a dirt road and pass through a locked gate. This access has been intentionally restricted by Viacom during remedial construction activities at the site. Trail users may be drawn to the attractive nuisances of the buildings, some of which are located directly adjacent to the rail corridor. Mine adits are visible from the rail corridor and, although locked, may also be attractive to trail users. Mining wastes are present adjacent to the corridor, and on top of the canyon walls adjacent to the rail corridor. Rock falls, including mining waste materials from the canyon walls, are a

definite possibility. There is also very expensive monitoring equipment relating to the ongoing remediation in that area that could be vandalized.

4.1.1.2.4 Summary

Mining wastes are known to be present beneath, along, and above the rail line. If the railroad line is abandoned, there is the potential that this mine waste will become accessible allowing potential exposure hazards to trail users, and migrate into the Eagle River and degrade surface water quality if not properly managed. The various sources of contamination need to be further characterized and may require remediation. EPA Region VIII and CDPHE maintain that the areal extent of remaining mine wastes must be evaluated to determine what; if any; impacts the remaining waste has on the water quality of the Eagle River and potential future human exposure.

All solid waste associated with property owned or operated by the railroad must be identified and disposed of properly. EPA Region VIII and CDPHE are concerned that there may be additional buried drums in Rock Creek and other areas of the canyon. This area needs to be further investigated to ensure that no other drums and associated waste have been disposed of improperly. If additional drums are found, these need to removed and disposed of appropriately.

None of the parties involved in the ongoing remediation have performed a risk assessment of the Belden area. The Eagle Mine site has had limited remedial focus along and near the rail line because rail line operation has limited public access to the Eagle Mine area. CDPHE and EPA believe that the proposed abandonment of the rail line will remove some of the institutional controls which currently limit public access, in turn increasing exposure potential to the public. Removal of the institutional controls will also result in mine waste currently located on property controlled by the railroad to potentially migrate into the Eagle River and degrade surface water quality. A risk assessment, with remedial actions for identified unacceptable risks, should be performed.

4.1.1.3 Smeltertown

4.1.1.3.1 Background and History

The Smeltertown Site, located one mile northwest of Salida, Colorado, on the eastern bank of the Arkansas River, was proposed for inclusion on the NPL in February 1992. The Smeltertown Site covers about 120 acres and includes three operable units (OUs): a historic wood treating facility (the former Koppers, Inc. site), the historic smelting operation, and the Colorado Zinc Company (CoZinCo) facility. Past operations on the site included metals smelting for gold, silver, copper, and lead from 1902 to 1920, and the creosote treatment of railroad ties by Koppers, Inc., and others from 1926 to 1946. CoZinCo processes zinc sulfate as animal feed supplement and soil

fertilizer. The Smeltertown Site is surrounded by residences and a variety of industries. The Smeltertown Site is located at a distance greater than one mile away from the railroad corridor, on the opposite side of the Arkansas River.

During its first year of operation, the smelter purchased and processed ore to produce gold, silver, lead, and copper. The downwind impacts from smelter emissions included vegetation destruction east on the Mosquito Mountains. Downwind ranchers and residents also complained of animal mortality and crop destruction. The smelter began purchasing pollution permits from nearby ranchers and residents in 1915 which allowed the smelter to continue releases, including from the stacks. During the smelter operation, molten slag was disposed of along the Arkansas River to the west of the smelter. Cinder material was also disposed of along the Arkansas River directly south of the smelter. These features are still evident at the Site. The ore storage areas were reportedly north of the smelter facility. The site has been cleared of most remnants of past activity. The only structures remaining are the plant office building and a water storage tank, both on the upper terrace.

A portion of the Site was used by a series of railroad tie treating companies (Koppers and its predecessors), beginning in 1924 and ending in 1953. The CoZinCo facility has been in operation since 1977 at its current location. The CoZinCo facility is presently used to manufacture a zinc sulfate soil amendment. Zinc sulfate monohydrate is produced at the facility by treating galvanizing wastes with sulfuric acid. The facility is currently under a Resource Conservation and Recovery Act (RCRA) order issued by the Colorado Department of Public Health and Environment (CDPHE) to monitor and mitigate releases from the operating units at the facility. A number of source areas at the facility have been closed under RCRA orders.

4.1.1.3.2 Contaminants of Concern

Soils, groundwater, and air have been impacted from wastes generated at the site. In addition to lead, chemicals of potential concern include arsenic, polychlorinated biphenyls, pentachlorophenol, zinc, and cadmium. Surface soils are contaminated with metals in the downwind direction of the smelter. Groundwater zinc concentrations exceed 3.0 mg/L in the area south of the smelter and CoZinCo subsite. Lead and manganese concentrations in the regional groundwater at the historic wood treating subsite and CoZinCo subsite exceed risk-based values.

4.1.1.3.3 Potential Exposures and Receptors

Public access to the slag and/or cinder piles is restricted. The slag and cinders do not pose an immediate threat to human health and the environment. Concentrations of arsenic, lead, and zinc in the smelter subsite surface soils pose a risk to both plants and invertebrates. The surface soil concentrations of zinc are also of concern to higher trophic organisms such as birds. Zinc

concentrations associated with the downwind surface soils are of concern to plants, invertebrates, and birds.

4.1.1.3.4 Summary

While potential risks exist from the Smeltertown site, the facility is located a distance greater than one mile away from the railroad corridor. The railroad corridor is also on the opposite side of the Arkansas River. Since contaminant concentrations in surface soils are believed to be negligible at this distance, risks to trail users should also be minimal. Exposures to contaminated groundwater by trail users are very unlikely. Additional investigation of the Smeltertown site for railroad corridor use is not warranted at this time.

4.1.1.4 Lincoln Park - Cotter

4.1.1.4.1 Background and History

The Lincoln Park - Cotter site is an NPL site located near Canon City. A railroad spur extends from Canon City to the Cotter Corporation property. Cotter used the railroad to ship materials and there may have been some spillage along the railroad corridor. Some elevated readings have been found along the railroad spur and near the Canon City 4th Street Bridge station, located along the main D&RGW line. The 4th Street bridge station, where ore was unloaded, has been cleaned and turned into a park. The Oro Verde transfer station along the spur has also been cleaned. Some contamination has been found at the Prospect Heights transfer station, also along the spur. Materials handled at these sites were uranium ores associated with the Cotter Milling operation in Canon City.

The locations of these four sites are identified on an attached map. Site A, alleged to have been an old Berta Brothers truck parking facility, is located adjacent to a steep sided intermittent wash north of US Highway 50 and east of the drive-in, near a gas storage facility and adjacent to a mobile home sales outlet. Trucks previously containing uranium ore may have been washed out into the ravine during the 1960's. Site B, alleged to have been an old railroad loading area is located West of state highway 143, southwest of the old mercantile in Prospect Heights. Congo raffinates and spent catalysts could have been handled there.

Site C, which may have been a railroad loading area, is located east of the Fourth St. bridge, 200 feet north of the north bank of the Arkansas River, near the railroad station. Concrete structures and mounded earth indicate that the area was utilized for loading. An unusual assortment of unnatural materials are present at this site, some of which could be Raschig Rings, and other items could well be spent petroleum catalysts. The ownership of the land apparently is the Denver and Rio Grande Western Railroad, although this has not been verified.

Site D, which may have been a loading area for spent catalysts and Congo raffinates, is located West of State Highway 143, South of Prospect Heights and North of the OroVerde industrial park. A small access road enters a loading facility, apparently currently used. Spilled coal was visible, as well as Congo Raffinates.

4.1.1.4.2 Contaminants of Concern

There is potential contamination of soils due to radioactive materials and heavy metals. Radioactive residues from uranium ore processing have caused soils contamination. Substances that are possibly present are uranium, radium-226, thorium-230, and heavy metals.

4.1.1.4.3 Potential Exposures and Receptors

The sites are readily accessible to the public both residents of Canon City and tourists. The probability of casual contact is rated as moderate to high and chances of mineral collectors taking samples should not be discounted. There also exists a concern of direct contact and erosion of contaminated materials into the Arkansas River.

4.1.1.4.4 Summary

While potential risks exist from the Lincoln Park-Cotter site, three of the four areas of concern are located a significant distance away from the railroad corridor. Hauling by rail may have taken place from the Lincoln Park-Cotter site, resulting in potential spillage along the rail line. Except for potentially spilled contaminants originating from these three locations, the risks to trail users should come from Site C. A site survey for radioactive residues along the rail corridor near Canon City may be warranted. Additional review of Site C sampling information should be conducted to determine the level of risk present.

4.1.2 RCRA Generators and Transporter, Storage, and Disposal Facilities

The Resource Conservation and Recovery Act (RCRA) Subtitle C regulates management of hazardous wastes. RCRA databases exist for facilities identifying themselves as generators and for transporters, storage facilities, incinerators, and disposal facilities (TSDs). CDPHE searched its RCRA databases for the following counties: Eagle, Summit, Lake, Chaffee, Park, Fremont, Crowley, Kiowa, and Pueblo. No TSDs were found in the database. A total of 52 RCRA generators were identified. These sites were located on maps to determine if they are on the railroad property or adjoining properties. Of these 52 generators, 37 sites were located at greater distances away from the railroad corridor. Of the remainder, four were identified as being located on the railroad property or adjoining properties, and an additional 11 sites were identified for which proximity to the railroad has not been determined. These 15 sites are included in Table 4.1.3A. This table identifies facility name, address, generator status, and waste types

RCRA

FACILITY	ADDRESS	COUNTY	GEN Qaunt	WASTE CODES	COMMENTS
Denver & Rio Grande Western	Lower F St., Salida	Chaffee	Small	D001, D002, D007	
Buena Vista Correctional Facility	Hwy 24 and 285, Buena Vista	Chaffee	Small	U061	Conditionally Exempt
Leadville Auto Salvage	Hwy 24, Leadville	Lake	Small		Non-Notifier
Minturn Railyard	160 Railroad Ave., Minturn	Eagle	Small	D001, U051	
Hascall Haines Chevrolet-Oldsmobile	Hwy 50, Salida	Chaffee	Small	F002, F004	Conditionally Exempt
Salida Motors	Hwy 50, Salida	Chaffee	Small	D027, D035, D039, D040	Conditionally Exempt
Clydes Auto Body and Painting	Hwy 50, Salida	Chaffee	Small	F003, F005	Conditionally Exempt
Colorado Dept. of Transportation	Hwy 24, MP 196, Buena Vista	Chaffee	Small	F001,F002,F003,F004,F005	Also Transporter/Own Wastes
				D001,D002,D008,D035	/Highway
Colorado Dept. of Transportation	Hwy 24, MP 212.53, Buena Vista	Chaffee	Small	F001,F002,F003,F004,F005	
				D001,D002,D008,D035	
Colorado Dept. of Transportation	Hwy 24 MP 176.84, Leadville	Lake	Small		
Cloud City Amoco	2009 North Poplar, Leadville	Lake	Small		
USWest Leadville	411 Poplar, Leadville	Lake	Small	D002, D006, D010	
USBOR-Leadville Treatment Plant	749 Highway 91 N, Leadville	Lake	Very Small	D001	
Colorado Dept. of Transportation	Hwy 6, MP 173.01, Dowd Jct	Eagle	Small	F001,F002,F003,F004,F005	
				D001,D002,D008,D035	
Public Service Company	Hwy 6, Avon	Eagle	Small	F001,D001	

Listed Hazardous Waste Codes

F001 - Halogenated Degreasing Solvents
F002 - Halogenated Solvents
F003 - Non-Halogenated Solvents
F004 - Non-Halogenated Solvents
F005 - Non-Halogenated Solvents

U051 - Creosote
U061 - DDT

Non-listed Hazardous Waste Characteristics

D001 - Ignitability
D002 - Corrosivity

EP Toxic Contaminants

D006 - Cadmium > 1.0 mg/L
D007 - Chromium > 5.0 mg/L
D008 - Lead > 5.0 mg/L
D010 - Selenium > 1.0 mg/L
D027 - 1,4-Dichlorobenzene > 7.5 mg/L
D035 - Methyl ethyl ketone > 200.0 mg/L
D039 - Tetrachloroethylene > 0.7 mg/L
D040 - Trichloroethylene > 0.5 mg/L

-Sites on Adjoining Property

-Site Location not determined

generated. Since all of the sites in Table 4.1.3.A are either small or very small quantity generators, little useful information other than that presented in the table was available in the CDPHE files.

4.1.4 ERNS

The Emergency Response Notification System (ERNS) database includes records of hazardous substance spills that have been reported. US EPA searched its ERNS database for reported spills in the following counties: Prowers, Bent, Otero, Crowley, Pueblo, Fremont, Chaffee, Lake, and Eagle, using the keywords Southern Pacific or Denver Rio Grande. EPA noted that these keyword searches may not necessarily disclose spills by other railroads using Southern Pacific tracks. Several hundred spills were identified. For those incidents appearing to be in the immediate vicinity of the railroad corridor, EPA printed out ERNS reports and forwarded the reports to CDPHE. The ERNS reports were located on maps to determine if they are on the railroad property. If the spill occurred on railroad property, the report was flagged for further review and investigation. A total of 9 spills were found to be on the railroad corridor. Five of these occurred in the Minturn Railyard. Table 4.1.4A identifies these spills along with the materials spilled and quantity if known.

4.1.4.1 ERNS CASE # 960122 Tennessee Pass

On February 21, 1996, a Southern Pacific train derailed approximately six miles north of Tennessee Pass near Camp Hale and Redcliff, Colorado. The derailment resulted in the spill of approximately 54,000 gallons of 92% to 95% sulfuric acid, an unknown quantity of triethylene glycol, and an unknown quantity of fuel oil. Thirty-two rail cars had derailed, six containing sulfuric acid with two of these six leaking. The acid had spilled across the highway and traveled at least 1000 yards along the highway before disappearing under the snow. No impacts to the Eagle River were reported at the time of the preliminary assessment.

Magnesium hydroxide was used to neutralize the acid in the area near the highway. Surface water sampling was to have taken place through June of 1996. Eagle River pH measurements were near normal ranges. Soil sampling in the acid flow paths show impacted soil at 2 feet below ground surface. The soil pH ranges from 1.5 to 2.75 standard units (su) while native soils have a pH of approximately 6 su. An estimated 100,000 pounds of calcium hydroxide was to be applied to the hillside to neutralize soil pH between the rail and Highway 24 by March 12, 1996.

4.1.4.2 ERNS Case # 941097 Tennessee Pass

On November 22, 1994, a train wreck occurred at the Mitchell Creek site, located adjacent to Highway 24 on Tennessee Pass, approximately 12 miles north of Leadville. The train consisted of four diesel locomotives and 55 hopper cars carrying a cargo of milled taconite. Taconite is a

Table 4.1.1.A

CERCLIS	
SITE	**ADDRESS**
Smeltertown	9000 County Rd. #152, Salida
California Gulch	South of CY-Yak Tunnel Downstream, Leadville
Eagle Mine	3.5 Miles South East of Gilman, Gilman
Lincoln Park-Cotter	Canon City

Table 4.1.4.A

ERNS			
CASE #	**Spill Location**	**Material**	**Quantity**
960122	Highway 24, Tennesse Pass MP	Sulfuric Acid	54000 Gal.
941097	MP 286.3, 12Mi North of Leadville	Taconite, Diesel Oil	Unknown
89089	1 Mi South of Pando in Yoder Gulch	Sulfuric Acid	27000 Gal.
940527	US Forest Service Property	Sulfuric Acid, Crude Oil	27000, 12000 Gal.
950474	Mintum Railyard MP 302	Magnesium Chloride Brine	Unknown
940422	Mintum Railyard, MP 302	Oil, Diesel	Unknown
940587	Mintum Railyard, MP 302	Oil, Diesel	5 Gal.
950095	Mintum Railyard, MP 302	Oil, Diesel	Unknown
960171	Mintum Railyard, MP 302	Oil, Diesel	2500 Gal.

milled iron ore consisting of marble-size semi-round pellets of silica-rich iron oxide which is highly stable with minimal potential for leaching iron or affecting pH. Three of the locomotives derailed, releasing an estimated 4,000 to 7,000 gallons of diesel fuel into Mitchell Creek. The taconite spilled adjacent to the railroad tracks and into Piney Gulch and its wetlands. The diesel fuel contaminated a portion of the South Fork of the Eagle River and creek-side soils. Booms and absorbent pads were used in the river and marsh to collect floating product and minimize contaminant migration.

4.1.4.3 ERNS Case # 89089 Yoder Gulch

The 1989 Derailment at Mile Post 287 involved sulfuric acid (initial reported quantity of 10,000 gallons later revised to 27,000 gallons), 9,000 gallons of diesel fuel, 12,000 gallons of crude oil and an undetermined amount of soda ash (sodium carbonate). The soda ash involved in the derailment was utilized during the emergency response in an attempt to neutralize the sulfuric acid, in order to remove the cars and rebuild the track. The remaining soda ash was buried along the shoulder of the rail line. Snow melt and rain water runoff have been seeping through the fill area where the soda ash was buried. This has resulted in a leaching of the material out of the toe of the fill. The resulting soda ash solution flows off site, down the mountain side and towards Highway 24. The soda ash solution leaches out organic mass from the soil as it moves down the mountainside. The resulting runoff area has damaged or dead vegetation. It is not clear whether the damaged or dead vegetation was caused by the soda ash or if it was impacted by the sulfuric acid.

Efforts have been made to collect the soda ash runoff mixture at two locations; the toe of the fill along the rail line and at the site adjacent to Highway 24. The soda ash solution and organic material are flowing into, under, and around the collection area at the toe of the fill and down the mountain to a lined collection unit located on the north side of Highway 24. The collected liquid material is periodically pumped out of the collection unit into tank trucks. The material is then transported to the Pando Rail Yard at Mile Post 288.5 where it is released to the ground.

4.1.4.4 ERNS Case # 940527 Camp Hale

Case # 940527 is not a separate spill incident, but a report based on continued follow up complaints from the spill on February 7, 1989 discussed in section 4.1.4.3 above. The complaints cite dark water discharging directly into the Eagle River, impoundments overflowing, piping split from freezing, discolored vegetation, mounds of white material and sticky tar balls around the site, and seeping liquid from fill material underneath track flowing towards the Eagle River. The reports indicate that the Denver & Rio Grande Railroad is working to clean up the site with the US Forest service in lead.

4.1.4.5 Minturn Railyard

On May 1, 1994, a locomotive derailment occurred resulting in the release of approximately 1,800 gallons of diesel fuel. Eighty cubic yards of visually stained soil was excavated and disposed of off-site. A diesel fuel stained area approximately 15 feet wide and 225 feet long between the tracks was covered with granular peat. The granular peat was intended to preferentially absorb the diesel fuel and enhance biodegradation of the diesel fuel on site. Sampling results showed a limited area of soils exhibiting concentrations of Total Extractable Petroleum Hydrocarbons (TEPH) greater than the Remedial Action Category III (RAC III) guideline of 500 parts per million (ppm). This area of affected soil is located approximately 450 feet east of the Eagle River. Concentrations of benzene, toluene, ethylbenzene, and xylene (BTEX) compounds were below the RAC I concentration guideline of 20 ppm. CDPHE recommended a remediation level of RAC I for the TEPH concentrations because of the spills proximity to the Eagle River.

4.1.5 Solid Waste

Solid waste landfills and cleanup sites are managed through Colorado state regulatory authority. Some railroad spills are cleaned up under solid waste authority. CDPHE searched its available solid waste records for the for the following key words: Union Pacific, Southern Pacific, railroad, railcar, siding, railway, and Highways 50, 285, 24, 6, and I-70. Over one hundred solid waste files were identified. Of these, three sites were found to be located on or adjacent to the railroad corridor. These sites are listed in Table 4.1.5.

4.1.6 State leaking UST and registered UST lists

Underground storage tanks (USTs) are regulated through the Colorado Department of Labor, Oil Inspection Section. Databases containing information on reported leaking USTs and registered USTs are maintained. Database searches for leaking and registered USTs located in the designated counties were requested from the Oil Inspection Section of the Colorado Department of Labor and Employment. The OIS searched its registered UST database and leaking UST database for the following counties: The numbers of identified registered USTs and leaking USTs for each county are described in Table 4.1.6A. Additional searches using the key words Union Pacific and Southern Pacific were conducted: no sites were identified located along the railroad corridor. Due to the large number of sites and the difficulty in determining exact locations, these sites were not located on corridor maps.

4.2 Physical Setting

The physical setting of the railroad corridor is described in Section IV of the Feasibility Study.

Table 4.1.5.A

SOLID WASTE

Facility	Address	County	Comments
Southern Pacific Lines Minturn Spill	Minturn Railyard 4, Minturn	Eagle	
Southern Pacific Lines Minturn Spill	Minturn Railyard 4E, Minturn	Eagle	
B and B Excavating	Hwy 6, Eagle	Eagle	Sand and Gravel Mining
Eagle Mill & Mine		Eagle	Mill Waste
New Jersey Zinc Eagle Mine		Eagle	Impoundment
Avon	½ Mile East of Town	Eagle	
Edward	½ Mile West of Town	Eagle	
Gilman		Eagle	
Minturn	Southeast end of Town	Eagle	
Redcliff		Eagle	
Dowd Junction Landfill		Eagle	**
Gypsum Landfill		Eagle	**
Wolcott Landfill		Eagle	**
Cotter Mill		Fremont	** Mill Waste
Howard	Area 1/3 Mile Northwest	Fremont	**
Chaffee County SWDS Salida BLM		Chaffee	** Landfill
Tenderfoot Mt. Pit		Chaffee	** Landfill
Leadville SWDS		Lake	** Landfill
AS&R Mill		Lake	** Mill Waste
Resurrection Mill		Lake	** Mill Waste

** Proximity to Railroad Corridor undetermined.

Table 4.1.6.A

STORAGE TANKS

County	Leaking	Registered	Total
Chaffee	30	125	155
Eagle	46	144	190
Fremont	45	66	111
Lake	13	50	63

Section IV A describes topography; infrastructure is described in Section IV D; recreational resources are described in Section IV F; and biological resources in Section IV G.

4.3 Historical Use

Historic and cultural resources of the railroad corridor are described in Section IV I of the Feasibility Study.

4.4 Railroad Records

Requests have been made of Southern Pacific Railroad to review their environmental records. Records included in the request are: spill/emergency response records, including records concerning the degree and extent of spill impacts and cleanup performed; documentation concerning any solid waste management/disposal activities along the corridor; any product loss records from the corridor; any environmental monitoring results associated with railroad activities along the corridor; any sampling or analysis of waste materials along the corridor; and any information related to disposal or migration of hazardous substances along the corridor. Requests have also been made to interview the railroad's designated emergency responders and roadmasters for the corridor. The majority of this information has not been made available for review.

5. SITE RECONNAISSANCE AND INTERVIEWS

The site reconnaissance trip for Segment A was taken on July 29, 1996. The reconnaissance trip began in Canon City and traveled along the rail corridor through Gypsum. The reconnaissance confirmed the conditions described above for the California Gulch and Eagle CERCLA sites, well as identified other areas of concern. Information previously described in other sections will not be repeated here.

Along the Segment A corridor are approximately sixty wayside lubricators used to lubricate the rails along curved sections. The lubricant has been described as a grease with high silicon content. The wayside lubricators function by squirting the lubricant onto the train wheels as they approach or traverse a curve. The lubricants are distributed by the train wheels along the track in that area. In addition, lubricants are deposited onto ties, ballast, and the railbed between and along both sides of the rail corridor for distances estimated at greater than 50 to 100 feet along the track. The lubricants appear to be brought to the wayside lubricators in lidded 5-gallon buckets and barrels. Empty buckets and barrels that may or may not have originated as lubricant containers were observed along the track at wayside lubricator locations. Since the rail corridor follows the Arkansas and Eagle Rivers, contamination from the lubricant areas potentially could be migrating to surface water.

Large numbers of used and broken railroad ties were present along the corridor. In some sections, stacks of railroad ties were present at 100 to 200 foot intervals. At some locations, used rails had been left along the railroad corridor after they had been replaced. In other locations, replacement rails were placed along the railroad corridor in preparation for removal of the existing rails. Other debris, including hardware, grease containers, concrete rubble, old machinery, an old rail car, and miscellaneous metal junk were present along the rail line. Old barrels were present along the Malta siding.

Utility lines are located along the railroad corridor. The power lines are believed to be for the use of the railroad, including a signal maintenance line and dispatcher communications lines. Portions of the utility lines, particularly in steep areas such as the Royal Gorge Canyon, appeared to be close enough to the ground for a hiker to come in contact with if they attempted to. In addition, "slide fences", consisting of several strands of electric fence strung along canyon sidewalls, were in place in order to send signals if rock slides occur. The utility lines and slide fences could pose electrical and physical hazards if left in place.

The railroad has applied herbicide on a yearly basis in order to keep vegetation away from the rail track. Areas of dead or stressed vegetation were present intermittently along the corridor. A few old mine portals, some with varying amounts of waste rock spilled nearby, were present intermittently along the corridor. Mine portals and waste rock were noted at Mile Posts 209.7, 259,

Beginning at approximately Mile Post 209.6, small piles of white material were observed spilled on the railroad track. The piles were perhaps one foot in diameter and occurred at irregular intervals of 15 to 20 miles apart. Additional piles were observed at Mile Post 255. Several of these spills were observed in the Minturn Railyard.

Near Buena Vista, what appears to be coal cinders from previous steam engine operation is spread along the ground beyond the rail bed. The cinders extend at least 50 feet beyond the rail bed. The coal cinders are present beyond Buena Vista through Americus, and present intermittently beyond. Coal cinders may have been present in the wooded areas surrounding the Malta siding.

Prior to Mile Post 221, ballast appeared to be primarily natural crushed rock similar to granite. Near this Mile Post, ballast materials appeared to be crushed slag, apparently from the Leadville slag piles. Lead slag ballast continued throughout the remainder of the corridor through Gypsum. At Leadville, the lead slag crushing and operation was in process. The area surrounding the spur near the operation is covered with lead slag of various sizes for several acres. The ground is black with slag and slag fines that have choked out any vegetation. This area also contains large amounts of building demolition debris, abandoned machinery,

abandoned cars, wood, and some abandoned buildings. The reconnaissance trip did not continue into Leadville as the high-rail vehicle could not proceed through the slag fines along the spur.

Interviews of railroad staff were not conducted as access to these personnel was not provided.

9. SITE MAPS

Site maps have been prepared showing the location of the environmental sites identified. The maps also depict adjacent land ownership patterns and the width of right-of-way based on available information. These maps are included in the map appendix at pages 5, 10, 15, and 19.

10. RECOMMENDATIONS

Several potential environmental contaminant problems have been identified that require further investigation in order to evaluate whether they potentially could interfere with the health, safety, and enjoyment of future corridor users. For those portions that ultimately may be transferred or railbanked, clarification of how environmental issues will be resolved is needed. The Preliminary Phase I ESA report recommends supplemental actions be taken in order to further characterize the environmental hazards and liabilities associated with the corridor. The recommendations include performance of a Phase II Environmental Assessment and additional review of records associated with identified environmental hazards.

The Phase II Environmental Assessment should include, at minimum:

1. A site survey for radioactive residues along the rail corridor near Canon City.

2. Investigation of the degree and extent of contamination due to the wayside lubricators located along the rail corridor. Materials used for lubrication should be identified and characterized to determine potential harmful effects to human health or the environment.

3. Sampling and characterization of spill materials along the corridor where spills are present at the time of investigation. Small spills of unidentified materials were observed throughout the corridor during the field reconnaissance, and appear to have been a routine occurrence.

4. Random sampling and characterization of rail bed materials to evaluate whether rail bed materials contain levels of hazardous materials. Some contamination may be present in rail bed materials due to small spills from past rail traffic, creosote or other preservatives applied to railroad ties, or PCBs associated with railroad utilities.

5. Sampling and characterization of residual coal cinders along the corridor to determine if any potential hazard exists associated with exposure to the cinders from historic coal usage by trains.

6. Characterization of the degree and extent of herbicide residuals along the corridor. Southern Pacific routinely has applied herbicides along the corridor to control vegetative growth. These herbicide applications may be of concern to some trail users.

Additional review is necessary of environmental records associated with known environmental problems, such as the Superfund and identified spill sites located along the corridor. Since the degree and extent of areas requiring mitigation have not been defined, continued review of the investigation and mitigation efforts will be necessary in order to evaluate cleanup levels against potential recreation exposure scenarios. This review should include:

1. A review of the California Gulch feasibility study and associated risk assessment for the lead slag piles near and along the Malta to Leadville line. This review should evaluate the exposure scenarios and factors used to see if they are consistent with those expected if the railroad corridor is converted to trail usage. The information will be useful in evaluating "how clean is clean" for corridor areas impacted by slag materials, and the degree of cleanup needed to achieve these levels. This review also could be useful in determining whether additional surfacing or covering will be necessary in those portions of the corridor containing lead slag.

2. A review of available records associated with the reported spills near mile post 287. In at least one case, mitigation efforts and efforts to further define impacted areas are still under way. Since the degree and extent of areas requiring mitigation have not been defined, continued review of the investigation and mitigation efforts will be necessary. Additional investigation work may be necessary to define adequately degree and extent of contamination. Also, cleanup levels and extent of cleanup will need to be evaluated against potential recreational exposure scenarios. Extent of cleanup will affect costs associated with trail construction.

3. A review of existing requirements and recommendations for the California Gulch and Eagle Mine Superfund sites to determine whether on-going Superfund issues may impact trail construction, timeframe, usage, or safety. These include:

    a. A requirement for a feasibility study on D&RGW's three slag piles, and on a number of slag piles it does not own, as well as for remediating its three slag piles, performing a reconnaissance on the Harrison Reduction Works property, and performing a field reconnaissance, feasibility study and remediation on the railroad easement through town, if necessary.

b. CDPHE and EPA Region VIII believe that abandonment of the rail line is a changed use that triggers the need to conduct a remedial investigation and possibly a clean-up of this portion of D&RGW's operable unit at the California Gulch Site.

c. Contamination from mining wastes at the Eagle mine site need to be further characterized and may require remediation. EPA Region VIII and CDPHE maintain that the areal extent of remaining mine wastes must be evaluated to determine what if any impacts the remaining waste has on the water quality of the Eagle River. The Rock Creek and other areas of the canyon need to be further investigated to ensure that no other drums and associated waste have been disposed of improperly. If additional drums are found, these need to removed and disposed of appropriately.

d. CDPHE and EPA believe that the proposed abandonment of the rail line will remove some of the institutional controls which currently limit public access to the Eagle Mine site, in turn increasing exposure potential to the public. A risk assessment, with remedial actions for identified unacceptable risks, should be performed.

4. If radioactive materials are present near Canon City, a search should be conducted for similar risk assessment information concerning recreational exposure scenarios and factors associated with exposures to radioactive materials.

In addition, the Post Environmental Assessment (PEA) prepared by the Surface Transportation Board states that "On rail line segments to be abandoned, the rails, ties, ballast, structures, buildings, and ancillary equipment (i.e., communications, signals) would generally be removed by UP/SP." (p.3-23) Clarification as to the amount of removal anticipated by UP/SP, and the sections where that removal would occur, would improve greatly the ability to estimate costs associated with trail conversion (e.g., areas needing resurfacing, type of resurfacing needed, width needing resurfacing, areas needing fencing or other access restrictions, etc.).

The PEA in Appendix G recommends that evaluation of factors in addition to those described in the ASTM guidance be performed as a part of a due diligence process. While some of these factors can be evaluated without access to railroad records, many (evaluation of product in rail yards, past management practices for disposing of spent batteries, transformers at rail facilities, utilities along the rail line, etc.) cannot be adequately evaluated without access to railroad records. To date, the factors requiring access to railroad records have not been included in the preliminary phase I audit.

All solid wastes along the railroad corridor must be identified and disposed of properly. Potential methods to control access to attractive nuisances such as abandoned buildings, mine entrances, and waste rock piles should be investigated. Other physical hazards that should be considered include the utility lines and slide fences.

APPENDIX F

SOCIO-ECONOMIC TRENDS AND SURVEYS

APPENDIX F

SOCIO-ECONOMIC TRENDS

Socio-Economic demographics information and tables were provided by Colorado Division of Local Affairs.

1. Population Trends

The population of the four counties is expected to continue to grow at a moderate pace through the year 2020. According to projections from the State Demographer in the Colorado Department of Local Affairs, annual growth rates from 1994-2000 are expected to average less than 2% annually. Even this modest rate would result in a 40.1% increase from the 1994 study area population of 84,428 to a 2020 population of 118,713. Of the four counties, Eagle will experience the highest growth while Fremont will have the lowest.

Population Projections for Counties: Average Annual Percent Change:

County	1990	1994	2000	2020	1980-85	1985-90	1990-94	1994-2000	2000-20
Chaffee	12,684	14,472	16,028	21,214	-1.30	0.57	3.15	1.72	1.41
Eagle	21,928	26,938	32,474	47,001	5.94	4.21	4.96	3.16	1.87
Fremont	32,273	36,500	37,594	41,637	1.72	0.60	2.94	0.49	0.51
Lake	6,007	6,515	7,123	8,861	-4.88	-2.54	1.93	1.50	1.10

Note: The text in Chapter III, Section G contains 1995 population estimates and Year 2000 that vary from the numbers above. The revised estimates in the text derive from new draft population figures from the State Demographer.

The median age of the counties is neither young nor old, but centers around the 30-40 year old mark. This generally means the population of the counties is at an active, established point in their lives.

County	Median Age - 1990 Census
Chaffee	37.1
Eagle	30.6
Fremont	37.7
Lake	31.2

2. Employment and Income Trends

The unemployment rate in the four counties is higher in Lake and Fremont counties than in Chaffee and Eagle counties. [All employment demographics provided by the Colorado Division of Local Affairs 1993 county statistics.]

County	1990 Employment	1992 Employment	1994 Employment
Chaffee	5,463	5,673	6,469
Eagle	12,144	12,986	15,003
Fremont	12,134	12,979	14,681
Lake	2,669	2,629	3,037
Colorado	1,678,003	1,712,000	1,912,002

F-1

County	1990 Unemployment	1992 Unemployment	1994 Unemployment
Chaffee	377 (7%)	416 (7%)	314 (4.9%)
Eagle	557 (5%)	963 (7%)	688 (4.6%)
Fremont	793 (7%)	1,174 (9%)	874 (6%)
Lake	228 (9%)	313 (12%)	220 (7.2%)
Colorado	87,005 (5%)	108,002 (6%)	84,002 (4%)

The median household income in 1989 varied dramatically from county to county. Fremont county had the lowest median household income at $19, 988 while Eagle county's median household income was $36,931. This discrepancy can be contributed largely to Eagle County's thriving resort industry, based around the ski areas.

County	Median Household Income (1989 Census)
Chaffee	$21,174
Eagle	$36,931
Fremont	$19,988
Lake	$24,708
Colorado	$30,140

Again, Eagle County's per capita income is much higher than the rest of the counties. At $25,800 in 1993, Eagle is approximately 55-80% higher than the other counties whose average per capita income varies between $14,068 - $16,600.

County	Per Capita Income - 1993
Chaffee	$14,890*
Eagle	$25,800
Fremont	$14,068*
Lake	$16,660
Colorado	$21,498

* When Chaffee County and Fremont County per capital income statistics are revised to exclude prison populations, the per capita incomes changes to: Chaffee County - $15,811, Fremont County - $16,360.

3. Retail and Wholesale Trends

The retail sales in each county provide a good general picture of its overall economy. Lake County has the lowest gross retail sales at $50.46 million while Eagle County grossed $901.61 million in 1994.

County	1990 Retail Sales (in millions)	1992 Retail Sales	1994 Retail Sales
Chaffee	$123.42	$152.38	$193.64
Fremont	192.64	242.23	306.55
Lake	42.96	46.87	50.46
Eagle	588.90	642.02	901.61
Colorado	43,036.76	51,225.59	66,661.68

Retail trade employment greatly outweighs wholesale trade employment in each county. Wholesale trade employment falls between 1-2% in 1993 while retail trade employment varies between 17-22% within the counties. Compared to other service employment categories, including agriculture, mining, and manufacturing, retail trade employment provides the majority of employment opportunities within each county.

County	1993 Wholesale Trade Employment	1993 Retail Trade Employment
Chaffee	2.5%	22%
Eagle	1.2%	22.3%
Fremont	1%	17.7%
Lake	1.9%	19.1%

In 1993, retail trade earnings accounted for over 17% of the earnings in Chaffee and Eagle counties and approximately 11% in Lake and Fremont counties. The wholesale trade earning were substantially lower falling between approximately 0.7 - 2.8% for the four counties.

County	1993 Wholesale Trade Earnings (in millions)	1993 Retail Trade Earnings (in millions)
Chaffee	2.73 (2.5%)	19.35 (17.7%)
Eagle	8.59 (1.5%)	98.38 (17.5%)
Fremont	1.98 (.7%)	30.44 (11.1%)
Lake	1.32 (2.8%)	5.35 (11.2%)

Recreation and tourism was listed, according to the Department of Local Affairs, as a leading source of income for three of the four counties. Fremont County did not list recreation and tourism, which may be attributed to the prison system being the main employment center for the county.

County	Leading Source of Income
Chaffee	Recreation and Service
Eagle	Tourism and Agriculture
Fremont	Government and Service
Lake	Mining, Government, and Tourism

EMPLOYMENT (INCLUDING PROPRIETORS) BY INDUSTRIAL DIVISIONS, 1970 - 1982

EAGLE COUNTY

Industry	1970	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
Total Employment - Jobs	3633	4407	5143	5859	6431	7184	7864	8834	9983	11048	11867	12410
Total Wage & Salary Emplymnt	3066	3561	4119	4745	5260	5838	6285	7092	8036	8854	9414	9883
Total Proprietors	567	846	1024	1114	1171	1346	1579	1742	1947	2194	2453	2527
Farm Proprietors	127	123	124	118	121	123	125	124	125	130	133	140
Non-Farm Proprietors	440	723	900	996	1050	1223	1454	1618	1822	2064	2320	2387
Farm Employment	227	206	214	216	205	193	195	189	183	219	227	237
Agricultural Serv., Forestry	39	41	46	48	60	68	72	79	90	137	146	141
Mining	440	323	296	275	274	257	243	56	50	47	51	35
Construction	298	419	617	570	460	620	867	955	1209	1211	1565	1433
Manufacturing	306	208	178	205	265	279	279	296	304	296	312	305
Trans., Comm., & Public Util	88	105	113	128	143	135	160	187	237	259	262	288
Wholesale Trade	0	0	0	10	33	32	33	45	62	77	95	101
Retail Trade	614	963	1194	1278	1549	1869	1980	2408	2655	2892	2996	3227
Finance, Insurance, Real Est	210	391	603	726	750	857	947	1034	1256	1459	1700	1704
Services	889	1176	1266	1731	1941	2087	2248	2683	2979	3198	3292	3700
Government & Govt. Enterpr.	520	571	609	672	743	787	840	902	958	1253	1221	1239
Federal Government, Civil.	66	64	56	61	67	75	104	128	136	129	115	125
Federal Government, Milit.	30	32	33	36	37	38	37	35	38	43	54	69
State and Local Government	424	475	520	575	639	674	699	739	784	1081	1052	1045

EMPLOYMENT (INCLUDING PROPRIETORS) BY INDUSTRIAL DIVISIONS, 1982 - 1993

EAGLE COUNTY

Industry	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Total Employment - Jobs	12410	12884	14379	15000	15091	15761	17234	18866	20669	21308	22432	23997
Total Wage & Salary Emplymnt	9883	10159	11468	11855	11710	12156	13127	14800	15929	16324	17328	18907
Total Proprietors	2527	2725	2911	3145	3381	3605	4107	4066	4740	4984	5104	5090
Farm Proprietors	140	149	153	154	157	160	160	161	156	152	149	151
Non-Farm Proprietors	2387	2576	2758	2991	3224	3445	3947	3905	4584	4832	4955	4939
Farm Employment	237	254	247	238	248	248	254	252	252	223	221	230
Agricultural Serv., Forestry	141	148	167	164	138	142	183	185	222	241	260	286
Mining	35	35	35	68	92	89	86	98	76	83	78	73
Construction	1433	1401	1489	1504	1529	1682	1785	2221	2509	2411	2566	3066
Manufacturing	305	331	334	384	398	427	494	430	421	346	464	490
Trans., Comm., & Public Util	288	315	400	367	392	427	559	586	603	610	638	668
Wholesale Trade	101	113	164	197	207	187	209	220	229	241	244	296
Retail Trade	3227	3269	3556	3741	3401	3488	3805	4333	4580	4770	5028	5358
Finance, Insurance, Real Est	1704	1792	2096	1941	1897	2027	2390	2482	2560	2566	2642	2820
Services	3700	3946	4604	5100	5472	5651	6042	6582	7662	8141	8544	8893
Government & Govt. Enterpr.	1239	1280	1287	1296	1317	1393	1427	1477	1555	1676	1747	1817
Federal Government, Civil.	125	122	112	102	104	105	107	109	119	111	114	116
Federal Government, Milit.	69	74	76	83	90	75	82	85	91	94	98	98
State and Local Government	1045	1084	1099	1111	1123	1213	1238	1283	1345	1471	1535	1603

Source: U. S. Bureau of Economic Analysis. Table prepared by the Colorado Division of Local Government, June, 1995.

EMPLOYMENT (INCLUDING PROPRIETORS) BY INDUSTRIAL DIVISIONS, 1970 - 1982

CHAFFEE COUNTY

Industry	1970	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
Total Employment - Jobs	3165	3704	3962	4130	4305	4532	4756	4801	5032	5202	5204	5205
Total Wage & Salary Emplymnt	2356	2760	2970	3055	3162	3330	3469	3477	3665	3768	3788	3670
Total Proprietors	809	944	992	1075	1143	1202	1287	1324	1367	1434	1416	1535
Farm Proprietors	124	112	108	102	117	131	143	146	141	140	144	145
Non-Farm Proprietors	685	832	884	973	1026	1071	1144	1178	1226	1294	1272	1390
Farm Employment	178	145	138	132	155	175	202	215	194	211	211	206
Agricultural Serv., Forestry	35	14	18	22	18	20	20	23	20	19	17	17
Mining	47	23	28	37	57	48	51	56	76	85	104	82
Construction	142	252	352	379	280	308	410	441	447	561	527	470
Manufacturing	60	63	82	78	103	131	142	166	170	157	149	136
Trans., Comm., & Public Util	235	236	229	252	242	243	205	204	202	195	186	184
Wholesale Trade	12	24	25	29	73	100	97	119	134	107	106	155
Retail Trade	854	1034	1091	1065	1111	1141	1194	1156	1229	1238	1235	1210
Finance, Insurance, Real Est	212	250	293	310	306	312	339	338	349	368	377	362
Services	601	817	821	887	970	1032	1061	1012	1077	1130	1174	1264
Government & Govt. Enterpr.	789	846	885	939	998	1022	1035	1071	1134	1131	1118	1119
Federal Government, Civil.	142	141	143	140	135	135	142	146	142	136	119	104
Federal Government, Milit.	49	46	40	47	47	43	42	40	42	43	52	58
State and Local Government	598	659	694	752	808	844	851	885	950	952	947	957

EMPLOYMENT (INCLUDING PROPRIETORS) BY INDUSTRIAL DIVISIONS, 1982 - 1993

CHAFFEE COUNTY

Industry	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Total Employment - Jobs	5205	5257	5401	5516	5671	5697	5937	6036	6104	6422	6507	6601
Total Wage & Salary Emplymnt	3670	3623	3774	3876	4058	4111	4113	4368	4423	4645	4685	4845
Total Proprietors	1535	1634	1627	1640	1613	1586	1824	1668	1681	1777	1822	1756
Farm Proprietors	145	154	154	161	160	164	164	164	159	156	153	154
Non-Farm Proprietors	1390	1480	1473	1479	1453	1422	1660	1504	1522	1621	1669	1602
Farm Employment	206	220	213	214	217	219	223	221	219	201	198	203
Agricultural Serv., Forestry	17	17	26	39	51	64	65	56	64	68	****	57
Mining	82	60	60	66	62	63	33	31	30	56	****	44
Construction	470	499	567	500	494	419	383	390	388	454	468	516
Manufacturing	136	130	139	148	182	193	240	245	311	361	342	394
Trans., Comm., & Public Util	184	186	182	184	177	160	173	180	187	190	190	207
Wholesale Trade	155	153	149	163	154	154	182	188	129	136	129	164
Retail Trade	1210	1163	1229	1228	1321	1320	1327	1349	1346	1344	1372	1451
Finance, Insurance, Real Est	362	338	338	357	368	363	429	420	363	356	360	412
Services	1264	1390	1416	1482	1518	1493	1554	1556	1637	1817	1894	1785
Government & Govt. Enterpr.	1119	1101	1082	1135	1127	1249	1328	1400	1430	1439	1423	1368
Federal Government, Civil.	104	103	87	76	76	75	78	79	86	79	79	02
Federal Government, Milit.	58	57	56	59	61	50	51	51	52	51	53	49
State and Local Government	957	941	939	1000	990	1124	1199	1270	1292	1309	1291	1237

Source: U.S. Bureau of Economic Analysis; table prepared by the Colorado Division of Local Government, June 1993

EMPLOYMENT (INCLUDING PROPRIETORS) BY INDUSTRIAL DIVISIONS, 1970 - 1982

LAKE COUNTY

Industry	1970	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
Total Employment - Jobs	4348	3841	4131	4580	5047	5189	5441	5412	5725	5900	5822	4042
Total Wage & Salary Emplymnt	4085	3551	3840	4245	4684	4874	5108	5073	5361	5505	5447	3682
Total Proprietors	263	290	291	335	363	315	333	339	364	395	375	360
Farm Proprietors	0	0	0	0	0	0	0	0	0	0	0	0
Non-Farm Proprietors	263	290	291	335	363	315	333	339	364	395	375	360
Farm Employment	0	0	0	0	0	0	0	0	0	0	0	0
Agricultural Serv., Forestry	0	11	14	12	15	16	16	15	16	18	18	16
Mining	2429	1961	2173	2571	3004	3198	3353	3328	3519	3634	3499	1932
Construction	198	47	54	70	65	89	166	110	190	108	126	84
Manufacturing	21	20	23	22	20	25	25	27	30	31	23	24
Trans., Comm., & Public Util	****	****	****	****	****	****	****	****	****	****	****	****
Wholesale Trade	0	10	11	12	29	46	41	25	22	30	30	27
Retail Trade	523	514	541	525	503	508	539	577	565	561	579	477
Finance, Insurance, Real Est	83	117	107	120	134	132	134	135	163	193	186	183
Services	****	****	****	****	****	****	****	****	****	****	****	****
Government & Govt. Enterpr.	630	688	648	627	609	565	529	538	535	570	594	577
Federal Government, Civil.	51	37	30	32	30	33	45	42	44	36	46	51
Federal Government, Milit.	33	30	30	30	31	28	26	25	25	28	34	37
State and Local Government	546	621	588	565	548	504	458	471	466	506	514	489

EMPLOYMENT (INCLUDING PROPRIETORS) BY INDUSTRIAL DIVISIONS, 1982 - 1993

LAKE COUNTY

Industry	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Total Employment - Jobs	4042	2629	2990	2908	2535	2281	2345	2430	2553	2655	2618	2509
Total Wage & Salary Emplymnt	3682	2248	2586	2475	2081	1804	1765	1903	1997	2064	2009	1875
Total Proprietors	360	381	404	433	454	477	580	527	556	591	609	634
Farm Proprietors	0	0	0	0	0	0	0	0	0	0	0	0
Non-Farm Proprietors	360	381	404	433	454	477	580	527	556	591	609	634
Farm Employment	0	0	0	0	0	0	0	0	0	0	0	0
Agricultural Serv., Forestry	16	13	24	29	30	36	26	20	20	24	28	15
Mining	1932	633	****	****	577	342	226	326	348	349	282	220
Construction	84	70	74	74	77	82	114	118	134	167	151	183
Manufacturing	24	24	27	****	****	****	26	39	86	144	93	43
Trans., Comm., & Public Util	****	****	****	****	****	****	****	****	****	****	79	72
Wholesale Trade	27	29	27	****	****	****	****	****	****	****	52	48
Retail Trade	477	463	464	471	449	445	466	459	473	483	490	479
Finance, Insurance, Real Est	183	173	152	138	125	110	109	104	113	120	127	136
Services	****	****	473	504	523	512	617	591	593	642	706	680
Government & Govt. Enterpr.	577	546	555	555	547	549	574	593	614	621	610	633
Federal Government, Civil.	51	58	56	55	58	53	56	64	59	59	62	61
Federal Government, Milit.	37	35	33	34	34	27	26	25	24	23	24	23
State and Local Government	489	453	466	466	455	469	492	504	531	539	524	549

**** indicates that the data has been suppressed to avoid disclosure of confidential information.

EMPLOYMENT (INCLUDING PROPRIETORS) BY INDUSTRIAL DIVISIONS, 1970 - 1982

FREMONT COUNTY

Industry	1970	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
Total Employment - Jobs	6953	7463	7925	8412	8578	8860	9399	9934	10330	10358	10639	10841
Total Wage & Salary Emplymnt	5414	5671	6095	6472	6549	6729	7128	7595	7983	7955	8239	8335
Total Proprietors	1539	1792	1830	1940	2029	2131	2271	2339	2347	2403	2400	2506
Farm Proprietors	195	194	199	197	243	280	313	339	339	349	359	378
Non-Farm Proprietors	1344	1598	1631	1743	1786	1851	1958	2000	2008	2054	2041	2128
Farm Employment	306	295	314	330	366	393	438	462	448	516	535	562
Agricultural Serv., Forestry	0	20	33	38	29	34	35	40	39	26	31	31
Mining	331	321	298	184	179	167	179	216	340	344	298	221
Construction	334	420	508	486	426	416	658	935	653	529	570	603
Manufacturing	721	753	843	1012	1087	1092	1110	1169	1233	1160	1285	1198
Trans., Comm., & Public Util	281	339	368	399	384	415	382	396	423	423	414	386
Wholesale Trade	94	100	77	83	99	103	90	119	125	130	146	176
Retail Trade	1003	1323	1467	1528	1489	1508	1522	1551	1645	1695	1718	1854
Finance, Insurance, Real Est	501	523	529	654	740	698	744	730	745	798	686	699
Services	1508	1697	1786	1923	1930	2170	2412	2454	2531	2532	2708	2846
Government & Govt. Enterpr.	1786	1672	1702	1775	1849	1864	1829	1862	2148	2205	2248	2265
Federal Government, Civil.	105	94	97	106	120	114	138	160	191	189	188	157
Federal Government, Milit.	110	105	110	106	109	101	94	90	98	94	111	126
State and Local Government	1571	1473	1495	1563	1620	1649	1597	1612	1859	1922	1949	1982

EMPLOYMENT (INCLUDING PROPRIETORS) BY INDUSTRIAL DIVISIONS, 1982 - 1993

FREMONT COUNTY

Industry	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Total Employment - Jobs	10841	11236	11243	11345	11535	11642	12241	12261	12512	12561	13395	14133
Total Wage & Salary Emplymnt	8335	8646	8638	8703	8896	9003	9235	9337	9446	9336	10094	10871
Total Proprietors	2506	2590	2605	2642	2639	2639	3006	2924	3066	3225	3301	3262
Farm Proprietors	378	407	413	422	427	437	438	438	427	418	410	413
Non-Farm Proprietors	2128	2183	2192	2220	2212	2202	2568	2486	2639	2807	2891	2849
Farm Employment	562	606	592	582	600	604	617	611	608	553	546	562
Agricultural Serv., Forestry	31	32	47	71	94	139	129	113	114	125	128	121
Mining	221	196	208	197	255	186	182	192	173	165	148	154
Construction	603	632	586	650	655	509	493	504	529	512	686	750
Manufacturing	1198	1189	1199	1174	1139	1164	1195	1194	1106	1065	1243	1191
Trans., Comm., & Public Util	386	382	396	388	364	377	400	366	385	386	452	460
Wholesale Trade	176	180	173	185	181	175	142	137	141	147	141	143
Retail Trade	1854	1882	1913	1851	1861	1935	2101	2107	2261	2288	2368	2506
Finance, Insurance, Real Est	699	667	659	642	622	582	630	607	613	637	643	675
Services	2846	3161	3086	3128	3175	3222	3437	3446	3481	3580	3756	3718
Government & Govt. Enterpr.	2265	2309	2384	2477	2589	2749	2915	2984	3101	3103	3284	3853
Federal Government, Civil.	157	150	152	157	158	155	151	150	160	164	252	639
Federal Government, Milit.	126	132	135	141	147	124	128	129	133	132	138	127
State and Local Government	1982	2027	2097	2179	2284	2470	2636	2705	2808	2807	2894	3087

Source: U. S. Bureau of Economic Analysis. Table prepared by the Colorado Division of Local Government, June, 1995

ADJACENT LANDOWNERS SURVEY RESULTS

533 surveys sent out -- 182 surveys returned

| Chaffee County was sent 200 - 95 returned 48%

| Fremont County was sent 126 - 57 returned 45%

| Lake County was sent 76 - 16 returned 21%

| Eagle County was sent 131 - 14 returned 11%

Questions asked:

1. HOW LONG HAVE YOU OWNED YOUR PROPERTY?

	1-5 years	6-15 years	16-25 years	26 + years
Chaffee	27	28	19	19
Fremont	25	17	8	7
Lake	6	4	3	3
Eagle	13	1	0	0
Totals	71	50	30	29
%	39%	27%	16%	16%

(2 no response)

2. WHAT IS THE PRIMARY USE OF YOUR PROPERTY?

	Home	Farm	Ranch	Land	Vacation	Business	Rental
Chaffee	43	1	7	12	18	12	1
Fremont	34	2	1	10	9	0	1
Lake	5	0	1	8	1	0	1
Eagle	12	0	0	0	0	2	0
Totals	94	3	9	30	28	14	3
%	52%	2%	5%	16%	15%	8%	2%

Heart of the Rockies Historic Corridor
TRAIL FEASIBILITY STUDY

MAP APPENDICES

TABLE OF CONTENTS

6. **DO YOU HAVE ANY CONCERNS REGARDING A TRAIL?**

	Privacy	Litter	Liability	Other
Chaffee	54	8	5	27
Fremont	29	5	2	21
Lake	7	2	4	4
Eagle	6	0	1	7
Totals	96	15	12	59
%	53%	8%	7%	32%

7. **WOULD YOU USE THIS TRAIL?**

	Frequently	Occasionally	Never	Dna
Chaffee	20	24	26	25
Fremont	10	24	2	21
Lake	3	6	5	2
Eagle	9	3	2	0
Totals	42	57	35	48
%	23%	31%	19%	27%

8. **FOR WHAT USE?**

	Walk	Bike	Fish	Horse	Motorized	Other
Chaffee	39	26	19	3	0	13
Fremont	27	17	14	5	1	10
Lake	7	8	3	1	2	4
Eagle	9	11	1	0	0	7
Totals	82	62	37	9	3	34
%	36%	27%	16%	4%	2%	15%

(of 227 responses)

4. ESTIMATED USE OF TRAIL

	Once or more per week	Once a month	Once or twice a yr	Never
Chaffee	14	6	4	7
Fremont	15	7	2	1
Lake	13	4	3	4
Eagle	10	1	6	3
Totals	52	18	15	15
%	52%	18%	15%	15

5. LIKELY AREAS OF TRAIL USE

	RGor	BigH	Sal	BV	Tennessee	Min	Eagle	All
Chaffee	2	4	14	14	3	0	1	9
Fremont	14	12	5	6	1	0	0	5
Lake	0	0	0	11	17	7	3	0
Eagle	0	0	0	1	7	9	10	1
Totals	16	16	19	32	28	16	14	15
%	16%	16%	19%	32%	28%	16%	14%	15%

6. SHOULD THERE BE ANY RESTRICTIONS ON USE?

	Motorized	Non-Motorized	Dogs	Horses	None
Chaffee	26	1	1	1	7
Fremont	16	1	1	0	6
Lake	18	0	0	0	4
Eagle	11	2	2	1	4
Totals	71	4	2	2	21
%	71%	4%	2%	2%	21%

7. **WOULD YOU USE VEHICLE LESS IF A TRAIL?**

	No	Yes	Uncertain	Dna
Chaffee	17	12	1	1
Fremont	11	11	2	1
Lake	15	6	0	3
Eagle	5	8	2	5
Totals	48	37	5	10
%	48%	37%	5%	10%

BUSINESS SURVEY

Business Survey Summary - As of October 10, 1996

	Surveys Returned	%	Surveys Sent	%	Response Percentage
Eagle Valley	33	12%	142	8%	23%
Avon/Vail	59	21%	430	25%	14%
Mintum	14	5%	90	5%	16%
Leadville	34	12%	172	10%	20%
Buena Vista	37	13%	250	15%	15%
Salida	65	23%	297	17%	22%
Canon City	40	14%	326	19%	12%
TOTALS	282		1,707		17%

1. **HOW FAR FROM THE PROPOSED TRAIL CORRIDOR IS YOUR BUSINESS LOCATED?**

	Less than a mile	1 - 5 miles	Greater than 5 miles
Eagle	25	6	2
Avon\Vail	31	20	8
Mintum	14	0	0
Leadville	14	17	3
Buena Vista	29	4	4
Salida	45	18	2
Canon City	20	20	0
Totals	178	85	19
%	63%	30%	7%

2. **WOULD THERE BE POSITIVE IMPACTS FOR YOUR BUSINESS IF THERE WERE A TRAIL?**

	Yes	No	Dna*
Eagle	14	16	3
Avon/Vail	40	18	1
Mintum	12	2	0
Leadville	15	16	3
Buena Vista	27	10	0
Salida	44	20	1
Canon City	26	14	0
Totals	178	96	8
%	63%	34%	3%

3. **WOULD THERE BE NEGATIVE IMPACTS FOR YOUR BUSINESSS IF THERE WERE A TRAIL?**

	Yes	No	Dna*
Eagle	0	32	1
Avon\Vail	1	58	0
Mintum	0	14	0
Leadville	3	31	0
Buena Vista	8	29	0
Salida	4	60	1
Canon City	5	35	0
Totals	21	259	2
%	7%	91.8%	1.2%

*Did not answer

4. **WOULD THERE BE POSITIVE IMPACTS FOR THE BUSINESS COMMUNITY IN GENERAL IF THERE WERE A TRAIL?**

	Yes	No	Dna*
Eagle	29	3	1
Avon\Vail	57	1	1
Mintum	14	0	0
Leadville	34	0	0
Buena Vista	36	1	0
Salida	61	4	0
Canon City	34	6	0
Totals	265	15	2
%	93.9%	5%	1.1%

5. **WOULD THERE BE NEGATIVE IMPACTS FOR THE BUSINESS COMMUNITY IN GENERAL IF THERE WERE A TRAIL?**

	Yes	No	Dna*
Eagle	2	30	1
Avon\Vail	2	56	1
Mintum	0	14	0
Leadville	4	30	0
Buena Vista	4	32	1
Salida	5	58	2
Canon City	6	34	0
Totals	23	254	5
%	8%	90%	2%

*Did not answer

6. **WOULD YOUR BUSINESS EVER WANT TO TAKE PEOPLE ON THE TRAIL AS A COMMERCIAL VENTURE?**

	Yes	No	Dna*
Eagle	3	28	0
Avon\Vail	13	38	0
Minturn	3	7	0
Leadville	7	26	0
Buena Vista	9	23	0
Salida	13	42	0
Canon City	6	26	0
Totals	54	190	0
%	22%	78%	0%

7. **WOULD A PROPOSED TRAIL LEAD TO AN INCREASE IN YOUR BUSINESS?**

	Yes	No	Dna*
Eagle	7	23	1
Avon\Vail	16	32	3
Minturn	7	1	2
Leadville	10	22	1
Buena Vista	12	18	2
Salida	15	40	09
Canon City	9	22	1
Totals	76	158	1
%	31%	65%	4%

*Did not answer

Top five comments regarding proposed trail in the seven business communities:

1. Would increase recreational opportunities in community - 126 comments - 45%
2. Would increase economy in the community - 95 comments - 34%
3. Would make a great bicycle trail - 18 comments - 6%
4. Less noise and disturbance than railroad - 11 comments - 4%
5. Could cause litter, traffic, and trespass problems - 13 comments - 5%

RAILROAD AND TRAIL SECTION RESULTS
(taken from Chaffee County Rails Alliance Survey)

1. If the railroad along the Arkansas River is abandoned and no buyer is found, would you like to see the corridor kept intact by developing a trail along the corridor? **(363 resp.)**:

| Yes (237 resp. =65.3%) | No (*67 resp. =18.5%*) | Not sure (*58 resp. =16%*)

Breakdown of "no's":
54.5% =Salida
1.5% =Poncha Spgs.
7.5% =Buena Vista
36% =Chaffee County

2. A trail along the corridor would probable prove to be quite popular, given its length, recreational opportunities and scenic beauty. It would likely attract many visitors. Economic impacts of the trail could include an increase in property values and additional businesses catering to visitors. Would this expansion of a tourist-based economy have a positive or negative effect, in your opinion? **(361resp.)**

| Very pos.: *114 resp. =31.6%* | Somewhat neg.:*35 resp. =9.7%* | Neutral:*55 resp. =15.2%* | Somewhat pos..:*97resp. =26.9* | Very neg.:*57 resp. =15.8%*

3. How important is input from local citizens, affected land-owners, user groups and local business people in the planning for this possible trail?**(358 resp.)**

| Very important:*298 resp. =83.2%* | Moderately important: *53 resp. =14.4%*
| Not important: *7 resp. =2%*

APPENDIX G

CORRIDOR INFRASTRUCTURE

APPENDIX G

CORRIDOR INFRASTRUCTURE

1. CULVERTS

There are 896 culverts identified by the railroad along the Tennessee Pass line from Cañon City to Sage. The total length of culverts is 36,502 feet, 6.91 miles.

Total Corridor	Lake, Chaffee, Fremont County	Eagle County
896 culverts	554 culverts	342 culverts
36,502'	21,363'	15,139'
6.91 miles	4.05 miles	2.87 miles
Diameter:	Diameter:	Diameter:
largest- 192"	largest- 144"	largest- 192"
smallest- 6"	smallest- 6"	smallest- 6"
average- 39"	average- 38"	average- 36"
Length:	Length:	Length:
longest- 208'	longest- 200'	longest- 208'
shortest- 10'	shortest- 10'	shortest- 14'
average- 41'	average- 40'	average- 44'

Corrugated metal pipe comprises 42% of the types of culverts, reinforced concrete pipe comprises 39%. No other type of culvert accounts for more than one percent on its own, but they are: cast iron pipe, treated wood box, concrete box culvert, vitreous clay pipe, wrought iron pipe and metal plate pipe.

2. CANALS & DITCHES

At various points along the corridor, irrigation canals and ditches that cross under and/or run alongside, or in several cases run within the rail corridor. We have carried out an assessment of these with the help of Denzil Goodwin and several water commissioners. Ditch owners are concerned that trail users would likely be exposed to safety hazards, raising the potential for liability claims.

There may be opportunities with some ditch companies to form partnerships to improve fencing or bury ditches in pipes for improved safety and mitigate some concerns over liability claims.

There are 22 ditches, canals, and aqueducts within or in close proximity to the Railroad Corridor {50' to 200'}. The ditches vary in depth and width and carry various quantities of water, for the most part in warmer seasons. We did not list those ditches below 2 cubic feet per second flows. There is a total of approximately 33,950 feet of ditches, canals, etc. adjacent to the rail corridor and 19,550 feet have safety concerns, i.e. no fencing or inadequate fencing. These ditches cross under the rail corridor 21 times usually through concrete or steel pipes. There are many of the river headgates for these ditches also within or immediately adjacent to the rail corridor. There are approximately 8,350 feet of fence that may need building or rebuilding, including fencing around some of the headgates.

The following table shows some really basic information on these 22 ditches:

Segment	Canal/ Ditch & CFS right	Crosses under RR	Length along RR	Canal/ Ditch Owner	USGS Quad Map	Comments
1	Hydraulic Ditch 77 ft	yes {intake box close to RR}	2500' {in two places}	Hydraulic Dicth Co	Royal Gorge	Potentially need to fence all or part of this ditch & intake box for safety!

3	Rogers Ditch 2 ft	yes {intake box close to RR}	2700' {in two places}	Rogers Ditch Co	How-ard	May need to fence the intake box for safety!
4	Plea-sant Valley Ditch 10 ft	yes {intake box close to RR}	3500' {in three places}	Plea-sant Valley Ditch Co {Goodwi n}	How-ard	Need to fence the intake box for safety!
5	Salida Ditch 20 ft	yes {intake box close to RR}	3200' {in one place}	Salida Ditch Co	Sal-ida West	May need to fence the intake box & portions of the ditch for safety! Also should consider a shared project with two ditch companies to bury this ditch into a pipe...in conjunction with the Sunnyside Ditch for about 1500'! {potential cost of burying this 1500' of pipe would be about $85 per foot or $127,500}
5	Sunny-side Park Ditch 29 ft	yes {intake box close to RR}	1500' {in one place}	Sunnysid e Park Ditch Co	Sal-ida West	May need to fence the intake box & portions of the ditch for safety! Also should consider a shared project with two ditch companies to bury this ditch into a pipe...in conjunction with the Salida ditch for about 1500'! {see cost estimate above}
5	Will-iams Hamm Ditch 17 ft	yes	300' {in one place}	Williams Hamm Ditch Co	Sal-ida West	Need to assure that this fenced portion along the ditch remain for safety!

7	Bray Ditch 13 ft	yes	50' {in two places}	Bray Ditch Co	Buena Vista East	Need to assure that these small fenced portions along ditch remain for safety!
7	Trout Creek Ditch 20 ft	yes	50' {in one place}	Trout Creek Ditch Co	Buena Vista West	Need to assure that this small fenced portion of ditch remain for safety!
8	River-side Ditch 26 ft	yes	100' {in one place}	River-side Ditch Co	Har-vard Lakes	Need to fence this small portion of ditch for safety!
9	Mayo Ditch 12 ft	yes	50' {in one place}	Sold to Front Range Wtr Inter-est	Lead-ville South	Need to fence this small portion of ditch for safety!
10	Crystal Lakes Ditch above Malta 7 ft	yes	2500' {in one place}	USFS	Lead-ville South	
12	Nottin-gham & Pueder Ditch 92 ft	yes	2000' {in one place}	Nottin-gham & Pueder Dicth Co	Min-turn	Need to assure that this ditch remains fenced for safety! The headgate will need to be fenced better for safety!
12	Grace Park Ditch 31 ft	no	1200' {in one place}	Grace Park Ditch Co	Min-turn	Need to assure that this ditch remains fenced for safety!
12	Eagle Ditch 14 ft	no	600' {in one place}	Eagle Ditch Co	Min-turn	Need to assure that this ditch remains fenced for safety!

1 2	Empire Zinc Ditch 37 ft	yes	1000' {in one place}	Empire Zinc Co	Min-turn	Need to assure that this ditch remains fenced for safety!
1 3	Metcalf Ditch 100 ft	yes	2500' {in two places}	Met-calf Ditch Co	Edwar -ds	Need to assure that this ditch remains fenced for safety!
1 3	Howard Ditch 48 ft	yes	2000' {in one place}	Howard Ditch Co	Edwar -ds	Need to assure that this ditch remains fenced for safety!
1 4	O'Neil & Holland Ditch 21 ft	yes	800' {in one place}	ONeil & Holl-and Ditch Co	Wol-cott	Need to assure that this ditch remains fenced for safety!
1 5	Warren Ditch 65 ft	yes {in two places}	2000' {in one place}	Warren Ditch Co	Wol-cott	Need to assure that this ditch remains fenced for safety!
1 6	Wilk-inson Ditch 30 ft	yes {in two places}	900' {in one place}	Wilk-inson Ditch Co	Eagle	Need to assure that this ditch is fenced from the rail/trail for safety!
1 6	CKP Ditch 20 ft	yes {in two places}	4500' {in two places}	CKP Ditch Co	Eagle	Need to assure that this ditch remains fenced from the rail/trail for safety! The headgate structure is also adjacent to RR & may need safety fencing!

Totals	Crosses under RR – 21 Length adjacent to RR – 33,950' Length adjacent to RR with safety concerns – 19,550'	Comments: There are two ditches that we should consider placing in pipes, 8350 ft of fencing we should build, and 9 headgate structures to fence out!

Road/Highway Crossings

(All road/highway crossings of the RR between Canon City & Sage Siding)

Segment location	Approximate MP location	Description of Crossing (gravel road, paved road, etc.)	Ownership of Crossing	USGS Quad Map
One	MP 169.73	Paved highway overpass US 50	Public (CDOT)	Royal Gorge
One	MP 171.22	Farm gravel road near Parkdale	Private (Harvey)	McIntyre Hills
Two	MP 180.32	Farm road underpass crossing	Private (CR 27)	Echo
Two	MP 184.01	County gravel road at Texas Creek	Public (Fremont CR 69)	"
Two	MP 186.25	Farm gravel road near Texas Creek	Private (Shelton)	"
Three	MP 191.71	County gravel road crossing at Red Gulch near Cotopaxi	Public (Fremont CR 12)	Cotapaxi
Three	MP 195.70	County gravel road crossing at Coaldale	Public (Fremont CR 6)	"
Four	MP 198.16	County gravel road crossing near Vallie Bridge	Public (Fremont CR 45)	"
Four	MP 201.52	County gravel road crossing underpass + Intermittent Streambed	Public (Fremont Cr 47)	Howard
Four	MP 201.97	Farm gravel road crossing	Private (Johnson-Badget)	"
Four	MP 202.07	Farm road crossing	Private (Goodwin)	"

Four	MP 202.20	Farm road crossing	Private (?)	Howard
Four	MP 203.91	County gravel road crossing near Howard	Public (Fremont CR 45)	"
Four	MP 207.81	Farm road crossing near Swissvale	Private (Hura)	Wellsville
Four	MP 208.71	County gravel road crossing near Wellsville	Public (Fremont CR 45)	"
Five	MP 215.99	County paved road crossing on Ute Trail Road	Public (Chaffee CR 175)	Salida West
Five	MP 216.28	Farm road crossing {could not locate!}	Private (?)	"
Five	MP 216.50	County paved road crossing near Scangas	Public (Chaffee CR 156)	"
Five	MP 217.30	Farm road crossing	Private (Multiple family homes)	"
Five	MP 218.90	County gravel road crossing near VFW	Public (Chaffee CR 155)	"
Five	MP 219.51	Farm gravel road crossing	Private (Multiple family homes)	"
Five	MP 220.13	County gravel road crossing	Public (Chaffee CR 190)	"
Five	MP 222.00	County gravel road crossing {county maint ends at Stone Bridge}	Public (Chaffee CR 191)	"
Six	MP 232.75	Farm road crossing	Private (?)	Nathrop
Seven	MP 234.86	County gravel road crossing	Public (Chaffee CR 300)	Buena Vista East

Seven	MP 235.31	County road crossing	Public (Chaffee CR 301)	Buena Vista East
Seven	MP 237.59	Highway crossing overpass at Johnson Village	Public (CDOT US 285)	"
Seven	MP 238.62	State Prison at Buena Vista Crossing (appears to be closed off?)	Public (DOC road)	"
Seven	MP 239.17	City Street crossing	Public (Buena Vista City Baylor Drive)	Buena Vista West
Seven	MP 240.34	City Street crossing	Public (Buena Vista City Main Street)	"
Seven	MP 240.54	City Street crossing	Public (Buena Vista City Arkansas Ave)	"
Eight	MP 249.45	County road crossing near Morrison Creek Crossing {good trailhead access}	Public (Chaffee CR 371)	"
Eight	MP 250.85	Farm road crossing near Scotts Bridge	Public (Chaffee revoked CR ..may still be public road ?)	"
Eight	MP 254.17	Farm road crossing	Private (Mason)	Granite
Nine	MP 257.29	County road crossing in Granite	Public (Chaffee CR 398)	"

Ten	MP 263.80	Farm road crossing near Kobe	Private (?)	Leadville South
Ten	MP 264.05	County gravel road crossing at Kobe close to Pan Ark Lodge	Public (Lake CR 55)	"
Ten	MP 264.50	Farm road crossing near Pan Ark Lodge	Private (?)	"
Ten	MP 266.50	Farm road crossing	Private (Peat Moss Road)	"
Ten	MP 266.69	Highway Crossing Overpass	Public (CDOT US 24)	Leadville South
Ten	MP 269.21	Farm road crossing	Private (Smith)	"
Ten	MP 270.75	Highway crossing near Malta Siding	Public (CDOT Highway 300)	"
Ten	MP 272.67	County road crossing	Public (Lake CR 4)	"
Ten	MP 273.76	County road crossing near Turqouise Lake Rec Area	Public (Lake Mt View Road)	Leadville North
Ten	MP 276.54	Highway crossing overpass	Public (CDOT US 24)	"
Eleven	MP 288.78	Highway crossing overpass	Public (CDOT US 24)	Pando
Eleven	MP 293.58	City crossing (Pedestrian O'pass)	Public (Red Cliff)	Red Cliff
Eleven	MP 293.64	City street overpass	Public (Red Cliff City Pine Street)	"

Twelve	MP 294.13	Highway crossing overpass	Public (CDOT US 24)	Minturn
Twelve	MP 294.14	City street crossing	Public (Red Cliff City Water Street)	"
Twelve	MP 298.20	Highway crossing overpass	Public (CDOT US 24)	"
Twelve	MP 300.82	City Street crossing	Public (Minturn City Cemetery Road)	"
Twelve	MP 301.65	City street crossing	Public (Minturn City Taylor St.)	"
Thirteen	MP 302.96	City Street crossing	Public (Minturn City Old Hwy.)	"
Thirteen	MP 303.32	Highway crossing overpass	Public (CDOT I-70)	"
Thirteen	MP 304.24	Paved road uderpass	Private (Cliffside Village apts.)	"
Thirteen	MP 305.93	Highway crossing overpass	Public (CDOT I-70)	"
Thirteen	MP 306.58	Farm Road crossing	Private (Nottingham rd.)	Vail West
Thirteen	MP 308.01	Highway crossing overpass	Public (CDOT I-70)	Edwards
Fourteen	MP 310.76	Road crossing	Rrivate (S.L. Miller)	"

Fourteen	MP 310.88	Road crossing	Private (S.L. Miller)	"
Fourteen	MP 312.07	Highway crossing overpass	Pulic (CDOT I-70)	"
Fourteen	MP 314.26	County road crossing	Public (County Wilmore rd.)	Wolcott
Fourteen	MP 316.02	Highway crossing overpass	Public (CDOT I-70)	"
Fourteen	MP 318.98	Highway crossing overpass	Public (CDOT S.H. 131)	"
Fifteen	MP 321.36	Highway crossing overpass	Public (CDOT I-70)	"
Fifteen	MP 322.51	Farm rd. crossing	Private (Horn Ranch)	"
Fifteen	MP 325.80	Farm rd. crossing	Private	Eagle
Fifteen	MP 326.75	Ranch rd. crossing	Private	"
Sixteen	MP 327.59	Dirt rd. crossing	Private (Brooks)	"
Sixteen	MP 328.64	Highway crossing (underpass)	Public (CDOT I-70)	"
Sixteen	MP 328.85	Paved rd.	Private (Ping Lane)	"
Sixteen	MP 329.57	Paved rd.	Private (King Rd.)	"
Sixteen	MP 330.43	Paved rd.	Private (Home rd.)	"

Sixteen	MP 331.00	Dirt rd.	Private (B&B Excavating)	
Sixteen	MP 3311.69	Ranch rd.	Private (Eagle Ranch)	Gypsum
Totals		76 crossings	47 public & 29 private	

APPENDIX H

WILDLIFE RESEARCH SOURCES

APPENDIX H

WILDLIFE RESEARCH SOURCES

During the course of the Feasibility Study, the Colorado Division of Wildlife (CDOW) supplied substantial quantities of wildlife and wildlife habitat data. No attempt is made here to identify the sources of all of that data. Due to CDOW's concerns about potential effects of trail use on bighorn sheep in the corridor, specific references are cited on bighorn sheep research, only.

1. Definition and discussion of stress
   Stress: Changing Environments and the Effects on Desert Bighorn Sheep by James R. DeForge, Society for the Conservation of Bighorn Sheep in Upland, CA, in Desert Bighorn Council 1981 Transactions, a Compilation of Papers Presented at the 25th Annual Meeting.

2. Increased energy expenditures
   Factors Influencing Heart Rate in Free-Ranging Bighorn Sheep: A physiological approach to the study of wildlife harassment, by Robert A. MacArthur, Ronald H. Johnston and Valerius Geist, in Desert Bighorn Council 1981 Transactions, a Compilation of Papers Presented at the 25th Annual Meeting.

3. Decreased resistance to disease
   Cardiac Frequency: a potential predictor of blood cortisol levels during acute and chronic stress exposure in Rocky Mountain bighorn sheep (ovis canadensis), by Henry J. Harlow, E. Tom Thorne, Elizabeth S. Williams, E. Lee Belden and William A. Gern, in Desert Bighorn Council 1981 Transactions, a Compilation of Papers Presented at the 25th Annual Meeting.

4. Minimal viable populations
   What is Minimum Viable Population Size?, panel discussion - Moderator, Paul Krausman; Panel members, James Bailey, Vernon Bliech, Don Armentrout, Bob Ramey, in Desert Bighorn Council 1992 Transactions, a Compilation of Papers Presented at the 36th Annual Meeting.

5. Mountain Sheep Habitat Use in the Arkansas River Canyon, Colorado, by Dale F. Reed, Jack Vayhinger, Stanley R. Ogilvie, Erik B. Brekke, Thomas P. Huber. Colorado Division of Wildlife in cooperation with the Bureau of Land Management, 1994.

6. Impacts to Bighorn Sheep Resulting from Increased Human Use in the Arkansas River Canyon, by Jim Backstrand, Colorado Division of Wildlife, not dated.

APPENDIX I

ATTORNEY GENERAL OPINION ON LIABILITY ISSUES

LIABILITY STATUTE ISSUES FOR RECREATION AND TRAILS

TO: Lawrence A. DeClaire
Senior Assistant Attorney General
Natural Resources Section

FROM: Timothy J. Carrier
Lee Corbin
Law Clerks
Natural Resources Section

DATE: December 19, 1994

INTRODUCTION

This memorandum addresses two questions:

1. The extent to which a landowner may be liable when the landowner allows public recreation on his land - especially where he has granted an easement or lease to a public entity for a recreational purpose. The statute that governs in this area is the State's Recreational Use Statute. C.R.S. § 33-41-101, *et seq.* (see page 18-A).

2. Whether a trail is considered a highway under the Colorado Governmental Immunity Act or the State may otherwise be viewed as having waived sovereign immunity as concerns public recreation trails.

(Research was done using Lexis/Westlaw, A.L.R., C.J.S., C.R.S., and C.R.S.A.)

SHORT ANSWER

The Colorado Recreational Use Statute (RUS) is a potentially strong weapon against liability for the landowner who grants an easement to a public entity for a recreational purpose. In its present form it has some provisions that need amending if greater liability protection is to be afforded. Once the RUS is clarified through the amendment process it will be a statute that provides significant protection form liability to the landowner. Until the changes are made, the prudent landowner should exercise some caution when granting an easement to a public entity.

A literal reading of the Colorado Governmental Immunity Act makes it unlikely that courts would consider recreational trails to be "highways" such that there would be a waiver of sovereign/governmental immunity for dangerous conditions on such

trails. However, such waiver might well be found if recreational trails are deemed to be "public facilities located in [a] park or recreation area."

OUTLINE

I. THE EXTENT TO WHICH A LANDOWNER WILL BE LIABLE WHEN THE LANDOWNER GRANTS AN EASEMENT TO A PUBLIC ENTITY FOR A RECREATIONAL PURPOSE.

A. WHAT PROTECTIONS DOES THE RUS OFFER?

Colorado's RUS does not grant "immunity" from liability to landowners who allow public recreation on their land. "Immunity" would mean the landowner cannot be held liable. Rather, the statute offers two types of limitation on a landowner's liability - and even these limitations are subject to conditions (such as not charging a use fee) as discussed below.

The first type of liability protection is a limit on the duty of care owed by the landowner to recreational users. Generally, the types of people who enter upon another's land are classified into three categories: (1) invitee, who enters land on business of mutual interest or on the owner's representation that the public is requested or expected to enter; (2) licensee, who enters land for own interest but with permission (and includes social guests); and (3) trespasser, who enters without permission. The statutory definitions of these three categories of persons and the duty of care owed to each by a landowner is set forth in § 13-21-115, C.R.S. (1987 & 1994 Supp.). The lowest duty of care is owed the trespasser.

Section 33-41-103(1)(b) of the RUS provides that a landowner's allowing public recreational use of his land, without charge, does not thereby confer the status of invitee or licensee on the recreational user. The implication of this provision is that the only duty of care owed the recreational user is that owed a trespasser - *i.e.*, the user would only recover "damages willfully or deliberately caused by the landowner," § 13-21-115(3)(a), C.R.S. Note, however, that the landowner could nonetheless otherwise effect the legal status of the recreational users on his property - for example, by renting him recreational equipment on the property. *See*, for example, Smith v. Cutty's, Inc., 742 P.2d 347 (Colo. App. 1987).

Section 33-41-103(1) further limits the duty of care owed by the landowner to a recreational user by providing that the landowner's allowing use of his property for public recreation does not constitute an "assurance that the premises are safe for any purpose."

The second type of liability protection offered by the Colorado RUS is a dollar limitation on a landowner's liability when the public recreation is pursuant to a lease, easement, or other rights to recreational use granted to a public entity. *See* § 33-41-103(2), C.R.S. In the event a landowner were to be found liable, this provision puts a dollar "cap" on such liability. The limitation is made consistent with the limitations in § 24-10-114 of the Colorado Governmental Immunity Act (currently $600,000 maximum per incident, with a separate limitation of $150,000 per person). Like subsection (1), the liability limitations of subsection (2) of 33-41-103 are subject to certain stated conditions.

Apparently there has been some concern that the 1988 addition of the dollar limitation in subsection (2) of 33-41-103 - by acknowledging liability is possible - somehow revoked the liability protection of subsection (1). There are legal arguments to counter such an interpretation. First of all, there is no express

repeal of subsection (1) and statutory repeals by implication are not favored. People v. James, 178 Colo. 401, 497 P.2d 1256 (1972). Further, if separate clauses within a statute may be reconciled by one construction but would conflict under a different interpretation, a construction which results in harmony rather than inconsistency should be adopted. People v. District Court, Second Judicial Dist., 713 P.2d 918, 921 (Colo. 1986). The two subsections can both be given effect without any conflict. Finally, review of the legislative histories of the 1988 addition of subsection (2) and the 1989 amendment of the subsection reveal no intent to change the duty of care established in subsection (1). The legislative hearings in 1988 indicate a legislative intent was largely to put a dollar cap on potential liability to help assure that insurance premiums would be affordable for the private owner of recreational properties such as Standley Lake and Barr Lake, the use of which was granted to public entities.

The 1989 amendment merely removed the limitation on the subsection's applicability to only water-based recreational property. Again, there was no discussion of repeal or limitation of the subsection (1) liability protection.

If landowners and recreation managers are not comfortable that these legal arguments answer the concern that the subsequent adoption of subsection (2) may impact the provisions of (1), language could be added to the statute clarifying that (2) was in no way intended to effect the liability protections afforded under subsection (1).

B. WHAT LANDS ARE AFFORDED PROTECTION?

The first problem that a landowner will run into trying to utilize the protection afforded by the Colorado Recreational Use Statute (RUS), is whether his land is covered by the statute. The initial problem under § 33-41-101 (the legislative declaration) is whether or not its use of the word "rural" limits the protection of the RUS to land in rural areas. That section provides:

> The purpose of this article is to encourage owners of land within rural areas to make land and water areas available for recreational purposes by limiting their liability toward persons entering thereon for such purposes.

(Emphasis added). The use of this seemingly limiting term does not, however, appear elsewhere in the statute.

We found no Colorado or other state case law on point where a court has stated that because a statute says "rural" that urban or suburban lands are not protected. The area where litigation has arisen is when the RUS makes no urban/rural distinction. In these cases the courts are divided as to whether the statute applies to both areas. For courts that have held their state's RUS applies to both rural and urban/suburban land, *see* Syrowik v. Detroit, 119 Mich. App. 343, 326 M.W.2d 507 (1982) (court held that drawing an artificial line between what was rural and urban would do violence to the statute and the intent of the legislature); Rivera v. Philadelphia Theological Seminary of St. Charles Borromeo, Inc., 326 Pa. Super. 509, 474 A.2d 605 (1984) (court held that, where statute silent,

nothing unreasonable about applying it uniformly to urban, suburban, or rural land); *but see* Gibson v. Keith, 492 A.2d 241 (Del. Sup. Ct. 1984) (where statute silent on urban/rural, court held that statute was limited to essentially undeveloped land and water areas and not to urban or residential areas improved with swimming pools, tennis courts, and the like); Ratcliff v. Mandeville, 502 So. 2d 566 (La. 1987) (where statute silent on urban/rural court held that land must be undeveloped, nonresidential rural or semi-rural for the statute to apply); Walker v. City of Scottsdale, 786 P.2d 1057 (Ariz. App. 1989) (statute providing limited liability to owners of "agricultural, range, mining, or forest lands and other similar lands" not include bike path through greenbelt area of urban residential neighborhood). While the cases are mixed when there is no distinction between urban or rural land, the Colorado RUS expressly states that "rural" landowners are to be afforded protection. C.R.S. § 33-41-101. Trails running through both rural land and urban or suburban land could find the protection of the RUS only extended to that portion of the trial that is deemed to run through "rural" land. Trails wholly within urban and suburban areas may be without the protection of the RUS altogether. By memorandum of January 28, 1988, the Colorado Attorney General's Office advised the Division of Wildlife and Division of Parks and Outdoor Recreation that if they wanted to clarify that the RUS applied statewide, the agencies should seek to have the term "rural" struck from the statute and/or seek other clarifying amendments to it.

C. HAS LAND BEEN OPENED UP TO THE PUBLIC FOR RECREATION?

A critical issue that arises when trying to assess protection under the RUS, is whether or not the landowner has opened up his land to use by the public for recreation. The research for this memorandum turned up no case law in Colorado on this point. However, the language of the statute is fairly precise. Section 33-41-103(1) requires a landowner to, either directly or indirectly, invite or permit a person, without charge, onto their land for a recreational purpose to enjoy the protection of the RUS. In Coursey v. Westvaco Corp., 790 S.W.2d 229 (Ky. 1990), the Supreme Court of Kentucky ruled that their RUS (almost identical to Colorado's) did not require formal dedication of the land for recreational purposes. It merely required that it be "reasonably inferable that landowner intended to permit..." recreational use. Certainly then a landowner's expressly granting an easement or lease to a public entity for the specific purpose of public recreational use would be akin to a dedication and strongly indicate protection of Colorado's RUS. And to do so in a written instrument would provide documentary evidence of permissive public use.

D. FEE CHARGED FOR USE OF LAND.

Under the Colorado RUS protection is not afforded the landowner that charges a fee to the public to enter the land. If a landowner attempts to charge individuals entering that land for recreational purposes, regardless of whether or not the landowner has granted an easement, the landowner will lose the protection of the RUS. Sections 33-41-103(1) and 33-41-104(1)(b). This limitation on the ability to charge does not include money paid by a public entity to lease or receive an easement over the land. Section 33-41-104(1)(b).

E. MAINTAINING AN ATTRACTIVE NUISANCE.

The Colorado RUS also does not provide protection for maintaining an attractive nuisance. Section 33-41-104(1)(c). An attractive nuisance is something that would attract a child onto the land and cause that child injury. The courts have stated that the thing causing the injury, the attractive nuisance, must be what brought the child onto the land, not merely discovered after the child has wandered onto the land. Denver Tramway Corp. v. Garcia, 154 Colo. 417, 390 P.2d 952 (1964). The object that caused the attraction must be an unusual thing which is unusually and extraordinarily attractive, not an ordinary matter. Hayko v. Colorado & Utah Coal Company, 77 Colo. 143, 235 P. 373 (1925). The statute that deals with landowner liability states that in order for the doctrine of attractive nuisance to apply the child must be under 14 years of age. Section 13-21-115(2), C.R.S.

Many trails in Colorado pass along side bodies of water. The law in Colorado as pertains to attractive nuisance and water is: streams and other bodies of water in their natural state, while attractive to children, do not form the basis for an attractive nuisance contention. Denver Tramway Corp. v. Callahan, 112 Colo. 460, 150 P.2d 798 (Colo. 1944). Ponds, pools, lakes, streams, and other waters embody perils that are deemed to be obvious even to children of tender years; and as a general proposition no liability attaches to the proprietor by reason of death resulting therefrom to children who have come upon land to bathe, skate, or play. Phipps *et al.* v. Mitze, 116 Colo. 288, 180 P.2d 233 (Colo. 1947); *but see* Windsor Reservoir & Canal Co. v. Smith *et ux*., 82 Colo. 497, 261 P. 872 (1927) (in dicta, court implies that even if case had been tried on attractive nuisance theory, child would not be imputed with appreciation of hidden danger of false bank that gave way leading to his death by drowning).

F. LAND USE FOR BUSINESS OR COMMERCIAL ENTERPRISE.

Landowners who use their land for a business or commercial enterprise are not afforded the protection of the statute when the injury received by the user is incidental to the commercial use of the land. Section 33-41-104(1)(d), C.R.S. However, when the land has been leased or an easement granted to a public entity, the RUS states that the land leased or granted shall not be considered land upon which a business or commercial enterprise is being carried on. Section 33-41-104(1)(d), C.R.S. This is a very significant section. It indicates that if a commercial landowner does not grant an easement or lease land to a public entity, they enjoy no liability protection under this statute for injuries received by recreational users incidental to the commercial activities the landowner performs on the land. *See* Smith v. Curry's, Inc., supra.

G. WILLFUL OR MALICIOUS FAILURE TO GUARD OR WARN.

Protection of the RUS is not available for damages resulting from willful or malicious failure of the landowner to guard or warn against a known dangerous condition, use, structure, or activity likely to cause harm. Section 33-41-104(1)(a). This treats the recreational user like a trespasser to whom only this low duty of care is owed. C.R.S. § 13-21-115(3)(a). The failure to guard or warn need not be malicious, a willful failure will satisfy the statute. While our research turned up no

case law on what constitutes a willful or malicious failure to guard or warn in Colorado under the RUS, other states have litigated this question and there is Colorado law concerning willful and malicious acts in other contexts.

1. **Where willful or malicious failure not found:** State's use of chain to close access road prior to the closing time when passenger on motorbike struck and was injured by chain shortly before closing, Wilkins v. State, 165 A.D.2d 514, 568 N.Y.S.2d 236 (1991). Railroad employee's occasional inspection of abandoned railway bed and knowledge that it was occasionally used by ATV operators did not rise to level of "willful or malicious failure" to guard or warn against the dangerous condition (a snow and ice wall was constructed on the abandoned railway bed by a third party to slow down motorized vehicles), Gardner v. Owasco River Ry., Inc., 142 A.D.2d 61, 534 N.Y.S.2d 819 (1989), *appeal denied*, 74 N.Y.2d 606, 544 N.Y.S.2d 820, 543 N.E.2d 543 (1989). Man walking in national forest fell into hot spring when ground underneath him gave way, court found, applying California law, that there was no willful or malicious conduct on the part of the government due to the fact that the area had been fenced off and warning signs posted, Simpson v. United States, 564 F. Supp. 945 (C.D. Cal. 1982). In suit for wrongful death, caused by a flash flood on flood plain in national recreational area, court ruled, applying Nevada law, that there was no evidence that there was design, purpose, and intent to do wrong and inflict injury on the part of the government, Ducey v. United States, 523 F. Supp. 225, (D. Nev. 1981). In wrongful death action against irrigation company arising out of death of swimmer who was swept under water while swimming in irrigation ditch and died, allegation that irrigation company failed to take reasonable action to protect public in face of knowledge of unreasonably dangerous condition failed to bring case for willful or malicious conduct, which in context of act requires knowledge of a dangerous condition, knowledge that serious injury will probably result, and failure to take any action in the face of such knowledge, Golding v. Ashley Cent. Irrig. Co., 793 P.2d 897, 13 Utah Adv. Rep. 3 (Utah 1990).

2. **Where willful or malicious failure found:** Motorcyclist was injured when the dirt road he was riding on disappeared due to removal of a culvert over a dry wash bed. Summary judgment against plaintiff precluded on issue of "willful and malicious failure to guard or warn" exception to Arizona RUS where genuine issues of material facts remained as to whether the Forest Service was aware of the washed-out road, knew of the use of the road by recreationalists, knew of the danger presented by the washed out road, and failed to post any warnings of washed-out roadway or otherwise guard against dangerous condition, Miller v. United States, 945 F.2d 1464 (9th Cir. Ariz. 1991). Lower court erred in granting nonsuit in case where son drove his car into deep strip mining pit that abutted access road, where it was shown that owner knew of existence of strip mining pit, of danger presented by it, and was aware that people came onto premises; and issues of whether pit on dark night was obvious to driver, who knew of its existence and was familiar with area, was question for jury, as was question of whether owner made reasonable efforts to make conditions safe or warn public of danger posed by property, Baran v. Pagnotti Enterprises, Inc., 586 A.2d 978 (Pa. Super. 1991). United States was properly held liable for "willful failure to guard or warn" for injuries sustained by minor in hot spring on government property where it failed to post sign despite its knowledge of danger of persons being burned presented by spring in area indicated by sign to be open to public (court applied Nevada law), McMurray v. United States, 918 F.2d 834 (9th Cir. Nev, 1990). Summary

judgment for defendant landowner denied where motorbike operator sued landowner for placing a cable across a trail, court found that the state recreational use statute would not apply if it was shown that the landowner deliberately created or knowingly consented to the creation of the hazard causing the injury where such consequence was foreseeable, Krevices v. Ayars, 141 N.J. Super 511, 358 A.2d 844 (1976).

3. **Willful and malicious as defined in Colorado:** Malicious has been defined in Colorado as intentionally causing harm without just cause, or being motivated by a mischievous purpose, a design to injure, or any ill-will. Crum v. Groce, 192 Colo. 185, 556 P.2d 1223 (1976); Schtul v. People, 96 Colo. 217, 40 P.2d 970 (1935). C.J.S. defines malice as,

> [s]omething more than a deliberate attempt to do a wrong, or an intent to do the actual harm resulting from a wrongful act, and refers to a state of mind of cruelty, hostility, or revenge, although not against any particular persons ... it is not necessary that accused intended the actual harm resulting, all that is required to show malice is a conscious disregard of a known and substantial risk of the harm which the statute is intended to prevent.

54 C.J.S. *Malicious or Criminal Mischief*, § 4. Willful conduct has been defined as, "one done intentionally, knowingly, and purposely, without justifiable excuse, as distinguished from an act done carelessly, thoughtlessly, heedlessly, or inadvertently." People v. Forgey, 770 P.2d 781 (Colo. 1989).

It should be noted that the Colorado Government Immunity Act preserves the sovereign immunity of public entities for injury caused "[b]y the natural condition of any unimproved property, whether or not such property is located in a park or recreation area or on a highway, road, or street right-of-way." C.R.S. § 24-10-106(1)(e) (emphasis added). A pubic entity would presumably therefore enjoy immunity from liability for damages resulting from a natural condition even if there was a failure to warn of such condition.

H. LIABILITY FOR PUBLIC ENTITY MANAGEMENT OF LAND.

A major concern of landowners is that they may be sued for injuries sustained by the recreational user when the cause of the injuries resulted from the public entity's use of the easement. The RUS addresses this problem by exempting the landowner from any liability due to the public entity's management of the land for recreational purposes. C.R.S. § 33-41-103(2)(d). While research found no case law yet on this section, possible problems surround the interpretation of the word "management." Does it mean only those affirmative acts done to the land by the public entity, such as grating, paving, construction, *etc.*? The courts could interpret it to mean failure to act as well; failure to clear debris from trails, failure to keep trail free of snow, water *etc.* The answer to these questions will come either from the courts or amending the act. The addition of a statutory definition of "management" could clarify the extent of the protection offered the landowner by this provision. (See recommended language below.)

I. DEFEND AND HOLD HARMLESS PROVISIONS.

Many public entities which have leased land from property owners agree in the contracts to "defend and hold harmless" the property owners from lawsuits. Although this phrase suggests the landowner will be protected from liability, a reading of the entire contract provision often reveals that the protection is limited. Typically, the public entity will defend and hold harmless only for those acts or omissions of the public entity itself and of its public employees which occurred or are alleged to have occurred during the performance of the employees' duties and within the scope of their employment, excluding their willful and wanton behavior. The public entity is prohibited by article XI, § 1 of the state constitution from becoming "responsible for any debt, contract, or liability of any person, company or corporation, public or private" and is not free to undertake payment of claims based on the landowner's or a third party's negligence. (There is a line of cases to the effect that this constitutional proscription is inapplicable to obligations incurred for a "public purpose." *See, for example,* Gude v. City of Lakewood, 636 P.2d 691, 695 n.2 (Colo. 1981). But this exception does appear to have been expanded sufficiently enough to clearly encompass indemnification of another's negligent acts or omissions. And there are statutory as well as constitutional limitations on a public entity's ability to defend landowners and others.) (See next paragraph.)

Section 24-30-1510(3)(e), C.R.S., of the Risk Management Act authorizes a state agency to defend and hold harmless a state agency's lessor under limited conditions (lease for state purposes, only state's negligence covered, *etc.*). But this statutory authority of the State to defend and hold harmless does not appear to extend to grants of easements to the State.

Finally, a distinction should be made between an agreement to "defend and hold harmless" and one to "indemnify." An agreement to "defend and hold harmless" is generally viewed as creating an obligation to provide a legal defense - which may be done by the guarantor's hiring attorneys. An agreement to "indemnify" may be construed as allowing the guarantee to hire its own legal counsel and look to the guarantor for reimbursement.

J. LIABILITY INSURANCE.

Despite the significant liability protection that the Colorado RUS can provide, a landowner who makes his property available for public recreation may want the additional liability protection of a commercial liability insurance policy because of the particular circumstances of the public use arrangement.

Such insurance is usually purchased by the landowner himself; but it may be purchased by the public entity - possibly with the public entity as the named insured and the landowner as an "additional insured" or "additional named insured." In the former case, it has been common for the landowner to charge sufficient rent to cover his insurance premium.

The phrases "additional insured" and "additional named insured" do not have a fixed meaning in the insurance industry and the provisions of each policy need to be carefully reviewed to understand the rights of an additional insured or additional named insured under the policy. Normally the policy does not cover

negligence of either an additional insured or an additional named insured. There are often exclusions and limitations in such endorsements. Typically, an additional insured is not even entitled to notice of cancellation of the policy. The provisions are, of course, negotiable, but additional premiums may be required to vary "standard" policies. The point is that a policy should read in its entirety with no assumptions based on the landowner's being identified as an "additional insured" or "additional named insured."

K. CONCLUSIONS.

The landowner who allows public recreation on his property - especially one who does so by granting an easement or lease to a public entity for a recreational purposes - would have almost total protection from liability for injuries received by recreational users under the Colorado RUS if some changes are made to the statute. Four changes are recommended:

(1) elimination of the words "rural areas" from C.R.S. § 33-41-101 and substitution of "Colorado" in their place. This will clear up any ambiguity the courts might have as to whether urban and suburban land are covered under this statute;

(2) addition of language to § 33-41-103(2) to clarify that the dollar limitations on potential liability in § 33-41-103(2) are meant only as additional protection to landowners in the unlikely circumstance that they are found liable under the RUS and are not intended in any way to effect the protections of § 33-41-103(1);

(3) addition of a broad definition of "management" to § 33-41-103(2)(e) to read something like:

"Management" means the entire range of activities undertaken to control, direct, allow, and administer the protection, development or non-development, operation, maintenance, repair, and use of properties for public recreational purposes.

(4) addition of a provision to provide that attorney's fees would be awarded to the prevailing party by the addition of an amendment to read something like:

The prevailing party in any civil action by a recreational user for damages against a landowner who allows the use of his property for public recreation purposes shall recover the costs of the action together with reasonable attorney's fees as determined by the court.

This last provision should help dissuade the majority of frivolous lawsuits that many landowners fear will be brought against them if they grant an easement or lease to a public entity for a recreational purposes. Often landowners appreciate that there is little likelihood they would ever be held liable for injuries to members of the public who use their land for recreation; but are nonetheless reluctant to allow public use of their land because of fear they may still have to pay attorneys to successfully defend a law suit.

With these changes the landowner would have a powerful weapon against any lawsuit brought by a recreational user for injuries sustained on their property. The major remaining sources of potential liability would be for willful or malicious failure to guard or warn, § 33-41-104(1)(a); maintaining an attractive nuisance, § 33-41-104(1)(c); and charging a fee for use of the land, § 33-41-104(1)(b). The simple solution to these three areas are that the landowner: (1) not charge anyone to use the land for recreational purposes (fees received from public entity for the easement or lease are exempt from this prohibition); (2) not create any unnatural condition on the easement or lease property that has the potential to injure a recreational user without considering appropriate measures to guard or warn the recreational users (signs, barriers, *etc.*); and (3) not maintain an attractive nuisance (machinery, equipment, materials, *etc.*) that may entice and injure a child under the age of 14.

The final *caveat* is that the scarcity of case law in Colorado makes it difficult to predict how a court will interpret the RUS as it is or when it gets amended. Most other state courts, however, have been interpreting their RUS most favorably toward the landowner who opens his land to the public for recreational purposes. However, until the changes suggested are made and some case law develops, the prudent landowner should exercise caution when granting an easement or lease to a public entity.

II. IS A TRAIL CONSIDERED A PUBLIC HIGHWAY/ROAD OR A PUBLIC FACILITY IN A RECREATION AREA FOR PURPOSE OF THE GOVERNMENTAL IMMUNITY ACT?

One issue for public entities operating recreational trails in Colorado is whether their sovereign immunity[1] as to such operation has been waived by the Colorado Governmental Immunity Act. The question usually comes up as one of whether a recreational trial is a "public highway or road" since public entities are liable for "dangerous conditions of a public highway, road, or street...." However, there is a question of possible waiver of immunity elsewhere in the statute sa well.

---

[1] The phrases "sovereign immunity" and "governmental immunity" are often used synonymously. Sometimes, however, "sovereign immunity" is used only as concerns the United States and the several state governments and "governmental immunity" in connection with local governmental entities. No distinction is attempted in this memorandum.

A. THE GOVERNMENTAL IMMUNITY ACT.

The Governmental Immunity Act (G.I.A.) waives sovereign immunity for, among other things, a dangerous condition of a public highway, road, or street and of a public facility located in a park or recreation area. The pertinent provisions where this immunity is waived, § 24-10-106(1)(d) and (e), C.R.S., read as follows:

> (1) A public entity shall be immune from liability in all claims for injury which lie in tort ... except as provided otherwise in this section. Sovereign immunity is waived by a public entity in an action for injuries resulting from:
>
> ....
>
> (d) (I) A dangerous condition of a public highway, road, or street which physically interferes with the movement of traffic on the paved portion, if paved, or on the portion customarily used for travel by motor vehicles, if unpaved, of any public highway, road, street, or sidewalk within the corporate limits of any municipality, or of any highway which is a part of the federal interstate highway system or the federal primary highway system, or of any highway which is a part of the federal secondary highway system, or of any highway which is a part of the state highway system on that portion of such highway, road, street, or sidewalk which was designed and intended for public travel or parking thereon. As used in this section, the phrase "physically interferes with the movement of traffic" shall not include traffic signs, signals, or markings, or the lack thereof. Nothing in this subparagraph (I) shall preclude a particular dangerous accumulation of snow, ice, sand, or gravel from being found to constitute a dangerous condition in the surface of a public roadway when the entity fails to use existing means available to it for removal or mitigation of such accumulation and when the public entity had actual notice through the proper public official responsible for the roadway and had a reasonable time to act.
>
> ....
>
> (e) A dangerous condition of any public hospital, jail, public facility located in any park or recreation area maintained by a public entity, or public water, gas, sanitation, electrical, power, or swimming facility. Nothing in this paragraph (3) or in paragraph (d) of this subsection (1) shall be construed to prevent a public entity from asserting sovereign immunity for an injury caused by the natural condition of any un-

improved property, whether or not such property is located in a park or recreation area or on a highway, road, or street right-of-way.

....

B. THE SUPREME COURT OF COLORADO'S INTERPRETATION OF "HIGHWAY" UNDER THE G.I.A.

We found no Colorado case law addressing the issue of whether the phrase "public highway, road, or street" in § 24-10-106(1)(d), C.R.S., includes recreational trails for purposes of the G.I.A. Literally read, § 24-10-106(1)(d) does not include trails unless they are considered to be a highway, road, or street. (They would not appear to be "sidewalks" as that term is defined in § 24-10-103(6), C.R.S.) In Bloomer v. Board of County Commissioners of Boulder County, 799 P.2d 942 (Colo. 1990) (*overruled by* Bertrand v. Board of County Commissioners, *see below*), the State Supreme Court held that the provision did not include county roads in its waiver of governmental immunity and that it covered only four types of roads:

> (1) any public highway, road, street, or sidewalk within the corporate limits of any municipality;
>
> (2) any highway which is a part of the federal interstate highway system or the federal primary highway system;
>
> (3) any highway which is a part of the federal secondary highway system;
>
> (4) any highway which is a part of the state highway system on that portion of such highway, road, street, or sidewalk which was designed and intended for public travel or parking thereon.[2]

---

[2] The court in Bloomer refers in road types (2) and (3) to the "federal interstate, primary and secondary highway systems"; these designations are no longer used. In December of 1991, Congress passed the Intermodal Surface Transportation Act (ISTEA), P.L. 102-240. This Act did away with the old designations of highways and now they are collectively referred to as the National Highway System. The Act states that the National Highway System shall consists of the interstate system and "[o]ther urban and rural principal arterials and highways [including toll facilities] which provide motor vehicle access between such an arterial and a major port, airport, public transportation facility, or other intermodal transportation facility." 23 U.S.C. § 103(b)(2)(B). The decision of what roads get classified as part of the National Highway System is left up to the states pending final approval of the United States Secretary of Transportation. 23 U.S.C. § 103(b)(2)(B). While the Act provides no further definition of what exactly the arterials and highways are, and research reveals no case law, the purpose of the Act is to develop a transportation system that is economically efficient, "[a]nd will move people and goods in an energy efficient manner." P.L. 102-240, § 2. Trails being used primarily for recreation and not commerce are most likely not intended to be

The Supreme Court's decision in Bloomer that there was no waiver of governmental immunity as concerns county roads was based in part on the Court's view that sovereign/governmental immunity was the common law of Colorado and that therefore exceptions to immunity should be strictly construed. The Court, however, reversed this position in Bertrand v. Board of County Commissioners of Park County, 872 P.2d 223 (Colo. 1994), expressly overruling Bloomer to the extent it was inconsistent. In Bertrand, the Court held a road grader to be a "motor vehicle" for purposes of the G.I.A., reasoning that sovereign/governmental immunity was not the common law of Colorado, that the legislature's grant (reestablishment) of such immunity changed the state's common law, and that therefore a public entity's immunity had to be strictly construed.

What Bertrand may mean for trails is that it is more likely than before that the courts could view trails as being "highways or roads" for purposes of the G.I.A., such that a "dangerous condition" on a recreational trail operated by a public entity would be considered a circumstance where sovereign/governmental immunity has been waived. This is by no means an inevitable result.

C. OTHER DEFINITIONS OF "HIGHWAY".

In interpreting the meaning of the terms of a statute, effect should be given to legislative intent. To ascertain that intent, terms used in the statute should generally be given their plain and ordinary meaning; and interpretation of the terms of one statute by reference to their definition in another unrelated statute or other legal context is an unreliable means of ascertaining legislative intent. Bertrand at 228.

---

included as part of the National Highway System.

Type (4), in the Bloomer decision, waives immunity for any highway which is part of the state highway system." "State highway system" is defined as, consisting,

> [o]f the federal-aid primary roads, federal-aid secondary roads and the interstate system, including extensions thereof within urban areas, plus an amount not to exceed five percent of the mileage of such systems which may be declared to be state highways by the state highway commission while not being any part of any federal system.

C.R.S. § 43-2-101(1). While the state statute has not been amended to reflect the passage of ISTEA, it is likely that the state highway system will consist of those highways that are part of the National Highway System in addition to the five percent that the state may designate as such. Tom Talmadge, Director of Financial Management and Budget Office, Colorado Department of Transportation, states that his office does not view trails as part of the state highway system or the National Highway System. Talmadge states the only roads which can received federal highway funds are considered by his office as being part of the state or federal highway systems. Trails not being eligible for funds are therefore not viewed by Talmadge's office as being part of the system.

Nonetheless, courts attempting to define the words used in a statute do often refer to such words' definition elsewhere. It is therefore possible that courts in attempting to determine the meaning of the terms "highway" and "road" as used in the G.I.A. may look to other statutes or court decisions. So despite the narrow context of the immunity waiver for a dangerous condition on a public highway in the G.I.A., it is conceivable that a court could conclude that recreational trails are "highways" for the purposes of waiver of sovereign/governmental immunity. Consider the following definitions.

Colorado's "Uniform Motor Vehicle Act," articles 1 through 4 of title 42, concerning vehicles and traffic, define "highway" at § 42-1-102(43) as follows:

> (43) "Highway" means the entire width between the boundary lines of every way publicly maintained when any part thereof is open to the use of the public for purposes of vehicular travel or the entire width of every way declared to be a public highway by any law of this state.

(Emphasis added).

Article 2 of title 43, concerning highways and highway systems, at § 43-2-201, C.R.S., declares certain "roads" to be "public highways." It provides:

> 43-2-301. Public highways. (1) The following are declared to be public highways:
>
> (a) All roads over private lands dedicated to the public use by deed to that effect, filed with the county clerk and recorder of the county in which such roads are situate, when such dedication has been accepted by the board of county commissioners. A certificate of the county clerk and recorder with whom such deed is filed, showing the date of the dedication and the lands so dedicated, shall be filed with the county assessor of the county in which such roads are situate.
>
> (b) All roads over private or other lands dedicated to public uses by due process of law and not heretofore vacated by an order of the board of county commissioners duly entered of record in the proceedings of said board;
>
> (c) All roads over private lands that have been used adversely without interruption or objection on the part of the owners of such lands for twenty consecutive years;
>
> (d) All toll roads or portions thereof which may be purchased by the board of county commissioners of

> any country from the incorporators or charter holders thereof and thrown open to the public;
>
> (e) All roads over the public domain, whether agricultural or mineral.

The courts interpreting C.R.S. § 43-2-201 have ruled:

- Highways and roads do not have to be accessible to motor vehicles. Shively v. Board of County Commissioners of Eagle County, 148 Colo. 353, 411 P.2d 782 (Colo. 1966).

- A road may steadily deteriorate and still be a public highway provided the public still uses it. Shively, supra.

- Public highways used adversely for twenty years can include footpaths. Simon v. Pettit, 651 P.2d 418 (Colo. App. 1982).

D. CHARACTERISTICS OF PARTICULAR TRIAL.

Recreational trails, of course, vary in their physical characteristics and use. Article 2 of title 33 of the Colorado Revised Statutes, concerning recreational trails, for example, defines the term at subsection (5) of 33-11-103, C.R.S. as follows:

> (5) "Recreational trail" means a trail which is used for recreational purpose, such as hiking, horseback riding, snowshoeing, cross-country skiing, bicycling, or the riding of motorized recreational vehicles along routes of scenic, natural, historic, geologic, or water-oriented interest.

The definition includes not only narrow footpaths but trails for motorized vehicles. So there is the possibility a court could make distinctions and find some to be "highways or roads" but not others.

E. TRAILS AS "FACILITY ... IN PARK OR RECREATION AREA."

Even if recreational trails are not "highways" for the purpose of the G.I.A., sovereign/governmental immunity may be waived concerning dangerous conditions on such trails if a trail is ruled to be "public facility located in [a] park or recreation area" under § 24-10-106(1)(e), C.R.S.

A man-made recreational trail running through a city park or state recreation area may well fall within the definition of a "public facility located in [a] park or recreation area," although "public facility" is not defined in the G.I.A. At least one state district court accepted this view in a suit filed by a biker injured on a trail in a state part. (The State was ultimately found free from liability. There was no appeal and therefore no reported case law.) On the other hand, a public trail through private property is arguably distinguishable as not being in a park or recreation area (although it could be argued that the strip of land on which the trail is located is

itself a "recreation area"). The call is closer for a trail through some public lands where multi-use policies may add outdoor recreation as a supplemental use of lands not formally designated as "parks" or "recreation areas."

Text of Colorado Recreational Use Statute §§ 33-41-101 thru -105, C.R.S.

33-41-101. Legislative declaration.

The purpose of this article is to encourage owners of land within rural areas to make land and water areas available for recreational purposes by limiting their liability toward persons entering thereon for such purposes.

33-41-102. Definitions.

As used in this article, unless the context otherwise requires:

(1) "Charge" means a consideration paid for entry upon or use of the land or any facilities thereon or adjacent thereto.

(2) "Land" also means roads, water, watercourses, private ways, and buildings, structures, and machinery or equipment thereon, when attached to real property.

(3) "Owner" includes, but is not limited to, the possessor of a fee interest, a tenant, lessee, occupant, the possessor of any other interest in land, or any person having a right to grant permission to use the land, or any public entity as defined in the "Colorado Governmental Immunity Act", article 10 of title 24, C.R.S., which has an interest in land.

(4) "Person" includes any individual, regardless of age, maturity, or experience, or any corporation, government or governmental subdivision or agency, business trust, estate, trust, partnership, or association, or any other legal entity.

(4.5) "Public entity" means the same as defined in section 24-10-103 (5), C.R.S.

(5) "Recreational purpose" includes, but is not limited to, any sports or other recreational activity of whatever nature undertaken by a person while using the land, including ponds, lakes, reservoirs, streams, paths, and trails appurtenant thereto, of another and includes, but is not limited to, any hobby, diversion, or other sports or other recreational activity such as: Hunting, fishing, camping, picnicking, hiking, horseback riding, snowshoeing, cross country skiing, bicycling, riding or driving motorized recreational vehicles, swimming, tubing, diving, spelunking, sight-seeing, exploring, hang gliding, rock climbing, kite flying, roller skating, bird watching, gold panning, target shooting, ice skating, ice fishing, photography, or engaging in any other form of sports or other recreational activity.

33-41-103. Limitation on landowner's liability.

(1) Subject to the provision of section 33-41-105, an owner of land who either directly or indirectly invites or permits, without charge, any person to use such property for recreational purposes does not thereby:

(a) Extend any assurance that the premises are safe for any purpose;

(b) Confer upon such person the legal status of an invitee or licensee to whom a duty of care is owed;

(c) Assume responsibility or incur liability for any injury to person or property or for the death of any person caused by an act or omission of such person.

(2) (a) The total amount of damages which may be recovered from a private landowner who leases land or a portion thereof to a public entity for recreational purposes or who grants an easement or other rights to use land or a portion thereof to a public entity for recreational purposes for injuries resulting from the use of the land by invited guests for recreational purposes shall be:

(I) For any injury to one person in any single occurrence, the amount specified in section 24-10-114 (1) (a), C.R.S.;

(II) For an injury to two or more persons in any single occurrence, the amount specified in section 24-10-114 (1) (b), C.R.S.

(b) The limitations in this subsection (2) shall apply only when access to the property is limited, to the extent practicable, to invited guests, when the person injured is an invited guest of the public entity, when such use of the land by the injured person is for recreational purposes, and only during the term of such lease, easement, or other grant.

(c) Nothing in this subsection (2) shall limit, enlarge, or otherwise affect the liability of a public entity.

(d) In order to ensure the independence of public entities in the management of their recreational programs and to protect private landowners of land used for public recreational purposes from liability therefor, except as otherwise agreed by the public entity and a private landowner, a private landowner shall not be liable for a public entity's management of the land or portion thereof which is used for recreational purposes.

(e) For purposes of this subsection (2) only, unless the context otherwise requires:

(I) "Invited guests" means all persons or guests of persons present on the land for recreational purposes, at the invitation or consent of the public entity, and with or without permit or license to enter the land, and all persons present on the land at the invitation or consent of the public entity or the landowner for business or other purposes relating to or arising from the use of the land for recreational purposes if the public entity receives all of the revenues, if any, which are collected for entry onto the land. "Invited guests" does not include any such persons or guests of any person present on the land for recreational purposes at the invitation or consent of the public entity or the landowner if the landowner retains all or a portion of the revenue collected for entry onto the land or if the landowner shares the revenue collected for entry onto the land with the public entity. For the

purposes of this subparagraph (II), "revenue collected for entry" does not include lease payments, lease-purchase payments, or rental payments.

(II) "Land" means real property, or a body of water and the real property appurtenant thereto, which is leased to a public entity or for which an easement or other right is granted to a public entity for recreational purposes. "Land", as used in this subsection (2), does not include real property, buildings, or portions thereof which are not the subject of a lease, easement, or other right of use granted to a public entity.

(II.5) "Lease" or "leased" includes a lease-purchase agreement containing an option to purchase the property. Any lease in which a private landowner leases land or a portion thereof to a public entity for recreational purposes shall contain a disclosure advising the private landowner of the right to bargain for indemnification from liability for injury resulting from use of the land by invited guests for recreational purposes.

(III) "Recreational purposes" includes, but is not limited to, any sports or other recreational activity of whatever nature undertaken by an invited guest while using the land, including ponds, lakes, reservoirs, streams, paths, and trails appurtenant to, of another and includes, but is not limited to, any hobby, diversion, or other sports or other recreational activity such as: Fishing, picnicking, hiking, horseback riding, snowshoeing, cross country skiing, bicycling, swimming, tubing, diving, sight-seeing, exploring, kite flying, bird watching, gold panning, ice skating, ice fishing, photography, or engaging in any other form of sports or other recreational activity, as well as any activities related to such sports or recreational activities, and any activities directly or indirectly resulting from such sports or recreational activity.

(f) Nothing in this subsection (2) shall limit the protections provided, as applicable, to a landowner under section 13-21-115, C.R.S.

33-41-104. When liability is not limited.

(1) Nothing in this article limits in any way any liability which would otherwise exist:

(a) For willful or malicious failure to guard or warn against a known dangerous condition, use, structure, or activity likely to cause harm;

(b) For injury suffered by any person in any case where the owner of land charges the person who enters or goes on the land for the recreational use thereof; except that, in case of land leased to a public entity or in which a public entity has been granted an easement or other rights to use land for recreational purposes any consideration received by the owner for such lease, easement, or other right shall not be deemed a charge within the meaning of this article nor shall any consideration received by an owner from any federal governmental agency for the purpose of admitting any person constitute such a charge;

(c) For maintaining an attractive nuisance;

(d) For injury received on land incidental to the use of land on which a commercial or business enterprise of any description is being carried on; except that in the case of land leased to a public entity for recreational purposes or in which a public entity has been granted an easement or other rights to use land for recreational purposes, such land shall not be considered to be land upon which a business or commercial enterprise is being carried on.

33-41-105. Article not to create liability or relieve obligation.

(1) Nothing in this article shall be construed to:

(a) Create, enlarge, or affect in any manner any liability for willful or malicious failure to guard or warn against a known dangerous condition, use, structure, or activity likely to cause harm, or for injury suffered by any person in any case where the owner of land charges for that person to enter or go on the land for the recreational use thereof;

(b) Relieve any person using the land of another for recreational purposes from any obligation which he may have in the absence of this article to exercise care in his use of such land and in his activities thereon or from the legal consequences of failure to employ such care;

(c) Limit any liability of any owner to any person for damages resulting from any occurrence which took place prior to January 1, 1970.

APPENDIX J

POTENTIAL TRAILHEAD DEVELOPMENT SITES

APPENDIX J

POTENTIAL TRAILHEAD DEVELOPMENT SITES

The following summary of potential access points has been put together considering the following priorities:

1) Capitalize upon existing private businesses and existing recreation sites;
2) Existence of already constructed corridor access, i.e., bridges;
3) Management of locations and trail sections that will attract use and if not managed, create problems for local land owners;
4) Safety and reasonable spacing of access points for trail users;
5) Limiting trail use through extended distance between access points;
6) Recognition of areas of special interest;
7) Reduction of management costs and time requirements;
8) The ability to share and complement management objectives with others;
9) Limiting access at locations where concentrations of traffic are not desirable;
10) Increasing access at locations where it is desirable.

Mileage's shown with the following access points are calculated as the distance from the preceding location, that is, Parkdale is 4.4 miles from the inclined railway. A site name, brief description, additional trail needs, and development costs are provided for each access point. There are many more road crossings and other possible access points than are listed here. This list is intended to be an initial assessment of the access points that are most suitable, based on the above priorities. These sites are subject to change as a Corridor Management and Development Plan is compiled.

The initial assessment reveals 19 possible corridor access points shown from Cañon City to Tennessee Pass. This corridor reach is 120 miles long, with an average of 6.3 miles between access locations. Six of these access points are on already existing AHRA recreation sites. Three of these sites have very little facility development on them at this time. All six will need significant enhancement to absorb this additional use. The primary advantage is that management is confined to an already existing location. In total the AHRA will have 13 new recreation access sites with a total of 19 newly developed sites. The AHRA currently has 13 developed recreation sites.

The initial assessment shows 11 possible corridor access points shown from Tennessee Pass to Gypsum. This corridor reach is 52.3 miles long, with an average of 4.7 miles between access locations.

1) Mile 0. Cañon City – Santa Fe Depot. Cañon City is currently developing this site. Site has water, restrooms, parking, roads, picnic tables, and immediate access to downtown Cañon City, with all associated facilities and services.
–ADDITIONAL TRAIL NEEDS: The primary need is to connect the Cañon City trail

corridor to the end of the abandoned SP rail corridor, a distance of approximately 2 miles; signing – information, trail map, regulations.
–COST: $ 3,000 for signing. Connecting trail easement may be necessary to purchase. However, this is unknown at this time.

2) – 1 mile. Fee Station – located at the outskirts of Cañon City, near the end of the abandoned SP rail corridor.
–ADDITIONAL TRAIL NEEDS: Fee station.
–COST: $ 5,000.

3) – 3.5 miles. Inclined Railway – Royal Gorge.
–ADDITIONAL TRAIL NEEDS: Signing – information, trail map, regulations; Fee Station.
–COST: $ 5,000.

4) – 4.4 miles. Parkdale Recreation Site. Site has acceleration, deceleration, and turning lanes, and is an already existing recreation site within the AHRA.
–ADDITIONAL TRAIL NEEDS: Foot bridge across the Arkansas River, vault toilet, well, picnic tables, extended road and parking, signing, fee station.
–COST: $ 218,950.

5) ~15 miles. Texas Creek Recreation Site. Newly purchased AHRA Rec Site with railroad access. Immediately accessible restaurant, general store, telephone, and gasoline.
–ADDITIONAL TRAIL NEEDS: Extended road, parking, vault toilet, water, picnic tables, signing, fee station.
–COST: $ 132,450.

6) ~7.8 miles. Cotopaxi. Recreation and Public Purpose Lease Site to the Cotopaxi School District. Close proximity to restaurant, general store, telephone, and gasoline.
–ADDITIONAL TRAIL NEEDS: Extended road, parking, vault toilet, well, picnic tables, signing, fee station, screening for local residents along rail corridor.
–COST: $ 163,950.

7) – 3.8 miles. Coaldale. Close proximity to restaurant, general store, telephone, gasoline, and commercial campground.
–ADDITIONAL TRAIL NEEDS: Extended road, parking, vault toilet, picnic tables, signing, fee station.
–COST: $ 53,700

8) – 3.1 miles. Vallie Bridge Recreation Site. An already existing recreation site within the AHRA off of Fremont County Road # 45, within site of highway 50.
–ADDITIONAL TRAIL NEEDS: Extended road, parking, vault toilet, well, picnic tables, signing, fee station.
–COST: $ 147,450.

9) ~ 6.2 miles. Howard. Close proximity to restaurant, general store, telephone, gasoline, and motel.
-ADDITIONAL TRAIL NEEDS: Extended road, parking, vault toilet, well, picnic tables, signing, fee station.
-COST: $ 95,450.

10) ~ 5.1 miles. Wellsville. County road access to railroad on BLM property.
-ADDITIONAL TRAIL NEEDS: Extended road, parking, vault toilet, well, picnic tables, signing, fee station.
-COST: $ 68,750.

11) ~6.7 miles. Salida. Immediately adjacent to downtown Salida, with all associated facilities and services.
-ADDITIONAL TRAIL NEEDS: Extended road, parking, vault toilet, water, picnic tables, signing, fee stations.
-COST: $ 104,700.

12) ~ 9.3 miles. Stone Bridge Recreation Site. An already existing recreation site within the AHRA.
-ADDITIONAL TRAIL NEEDS: Easement across Stone Bridge for trail corridor access. This easement would not be for motor vehicle traffic, only for foot, horse, bicycle, and other allowed trail uses. All motor vehicles would be required to park in the Stone Bridge parking lot. Increased parking, well, picnic tables, signing, screening, and fencing.
-COST: $ 131,250.

13) ~12.8 MILES. Fisherman's Bridge Recreation Site. An already existing recreation site within the AHRA.
-ADDITIONAL TRAIL NEEDS: .3 mile connecting trail from Fisherman's Bridge to the railroad corridor along Chaffee County road # 301. Extended road, parking, vault toilet, well, picnic tables, signing, fee station.
-COST: $ 135,950.

14) ~ 5.7 miles. Buena Vista. Rail corridor passes through downtown Buena Vista, with all associated facilities and services.
-ADDITIONAL TRAIL NEEDS: Parking, vault toilet, water, landscaping, picnic tables, signing. Fee stations will be located on both the north and south outskirts of Buena Vista. Management of this portion of the corridor will be by the City of Buena Vista, in coordination with the AHRA.
-COST: $ 189,700.

15) ~ 6.7 miles. Railroad Bridge Recreation Site. An already existing recreation site within the AHRA.
-ADDITIONAL TRAIL NEEDS: Extended road, parking, vault toilet, well, campground, picnic tables, signing, fee station.
-COST: $ 304,700.

16) ~ 5.3 miles. Scott's Bridge. US Forest Service property with railroad access. Adjacent private property is much desired for important river access, however, it is currently unavailable. Acquisition efforts by the Forest Service continue.
–ADDITIONAL TRAIL NEEDS: Extended road, parking, vault toilet, well, campground, picnic tables, signing, fee station.
–COST: $ 339,700.

17) ~ 5.6 miles. Granite. Close proximity to restaurant, general store, telephone.
–ADDITIONAL TRAIL NEEDS: Extended road, parking, vault toilet, water, picnic tables, screening and fencing, signing, fee station.
–COST: $ 124,700.

18) ~ 2.4 miles. Balltown. Close proximity to restaurant, motel, telephone, additional trails access.
–ADDITIONAL TRAIL NEEDS: Extended road, parking, vault toilet, water, picnic tables, signing, fee station.
–COST: $ 94,700.

19) ~ 10.8 miles. Malta. Intersection of several additional trails occurs at this location, BLM lands.
–ADDITIONAL TRAIL NEEDS: Extended road, parking, vault toilet, water, picnic tables, signing, fee station.
–COST: $ 94,700.

20) ~ 11.1 miles (from Twin Lakes). Leadville D & RG Spur. Leadville trailhead, on edge of downtown Leadville, with all associated facilities and services.
–ADDITIONAL TRAIL NEEDS: Extended road, parking, vault toilet, water, land landscaping, picnic tables, signing, fee station.
–COST: $ 179,700.

21) ~ 11.3 miles. Tennessee Pass. Continental Divide.
–ADDITIONAL TRAIL NEEDS: Extended road, parking, vault toilet, water, picnic tables, signing, fee station.
–COST: $ 133,950.

22) Throughout this reach there will need to be additional signing and information available at many other access points not listed above. This signing is necessary to insure that all trail users will be aware of the opportunities and requirements of trail use.
–ADDITIONAL TRAIL NEEDS: Signing.
–COST: $ 25,000.

Total estimated cost of the above facility development, from Cañon City to Tennessee Pass, is $ 2,727,450.

23) ~ 7.3 miles. Camp Hale. Or ~ 9.1 miles. Pando. Both sites are USFS land and suitable. Camp Hale has an established campground and picnic area, however, at Camp Hale, trail users would have to cross Highway 24 to access the rail corridor.
–ADDITIONAL TRAIL NEEDS: Extended road, parking, vault toilet, water, picnic tables,

signing, fee station. These costs are for Pando. Camp Hale's costs would be similar, but the money would be devoted primarily to a highway crossing.
–COST: $ 133,950.

24) ~ 5.3 miles. Red Cliff. Close proximity to downtown Redcliff with all associated facilities and services. Access would be at county road crossing of the rail corridor.
–ADDITIONAL TRAIL NEEDS: Extended road , parking, vault toilet, water, picnic tables, signing, fee station.
–COST: $ 94,700.

25) ~ 4.9 miles. Two Elk Creek Trail. Existing USFS trailhead.
–ADDITIONAL TRAIL NEEDS: Extended road, parking, vault toilet, water, picnic tables, signing, fee station.
–COST: $ 69,700.

26) ~ 1.7 miles. Minturn. Close proximity to downtown Minturn and all associated facilities and services.
–ADDITIONAL TRAIL NEEDS: Extended road, parking, vault toilet, water, landscaping, picnic tables, signing, fee station.
–COST: $ 134,700.

27) ~ 7.7 miles. Avon. Close proximity to downtown Avon with all associated facilities and services.
–ADDITIONAL TRAIL NEEDS: Extended parking, vault toilet, water, landscaping, picnic tables, signing, fee station.
–COST: $ 115,450.

28) ~ 6 miles. Wilmore Lake. State land board land, leased to DOW.
–ADDITIONAL TRAIL NEEDS: Extended parking, vault toilet, water, picnic tables, signing, fee station.
–COST: $ 99,700.

29) ~ 5.8 miles. BLM park. BLM land, currently with camping but no facilities.
–ADDITIONAL TRAIL NEEDS: Extended road, parking, vault toilet, water, picnic tables, signing, fee station.
–COST: $ 99,700.

30) ~ 8.6 miles. Chambers Park, Eagle. Close proximity to downtown Eagle with all associated facilities and services.
–ADDITIONAL TRAIL NEEDS: Extended parking, vault toilet, water, picnic tables, landscaping, signing, fee station.
–COST: $ 119,700.

31) ~ 3.7 miles. Sage. End of rail service, beginning of trail corridor.
–ADDITIONAL TRAIL NEEDS: Extended road, parking, vault toilet, water, picnic tables,

signing, fee station.
–COST: $ 85,400.

32) ~ 3.3 miles. Gypsum. A trail connection may be desirable to connect the residents and businesses of Gypsum to the rail corridor. Rails with trails may be possible in this location.
–ADDITIONAL TRAIL NEEDS: Extended road, parking, vault toilet, water, picnic tables, signing, fee station.
–COST: $ 119,700.

33) Throughout this reach there will need to be additional signing and information available at many other access points not listed above. This signing is necessary to insure that all trail users will be aware of the opportunities and requirements of trail use.
–ADDITIONAL TRAIL NEEDS: Signing.
–COST: $ 25,000.

Total estimated cost of the above facility development from Tennessee Pass to Gypsum is $1,097,700.

Total estimated cost of facility development of both reaches, from Cañon City to Gypsum is $3,825,150.

APPENDIX K

OPERATION AND MAINTENANCE COSTS

ESTIMATED ANNUAL RAIL CORRIDOR OPERATIONS AND MAINTENANCE COSTS

Maintenance needs vary depending on a variety of factors:

- the level of use of the facility
- weather that affects wear and deterioration
- special problems or risks that develop unexpectedly

The maintenance requirements of the proposed trail can be grouped as follows:

1. Trail structure and surface, including the pavement or surface material, and the trail embankment;
   - Seal cracks and holes in paved trail sections
   - Fill surface damage, control vegetation, and maintain a smooth trail surface on crushed rock sections
   - Control erosion of the trail surface and embankment

2. Bridges and trestles, including the existing primary structure and ties, and proposed decking and guard rails;
   - inspecting for potential problems and structural integrity
   - repairing damage to deck planks and handrails
   - applying paint or preservatives

3. Trail-related facilities and amenities, including picnic areas, water facilities, restrooms, parking areas, benches, and signage;
   - cleaning and maintaining water and sanitary facilities
   - keeping signs current and legible
   - maintaining structures
   - seasonal openings and closures

4. Trail right-of-way, including adjacent drainage ditches, and culverts with associated inlet and outlet works, and all natural and supplementary vegetation.
   - culvert cleaning and repair
   - controlling shrubs and tree branches that encroach on the trail
   - controlling noxious weeds
   - controlling destructive erosion within the right-of-way
   - pick up litter and control dumping within the right-of-way

5. Road crossings
   - signing on roads and on trails
   - striping and painting road and trail surface

Staffing needs also depend on a variety of factors:

- level of presence desired for information and education, safety patrols and law/regulation enforcement
- choices between contracted or in-house services for maintenance operations (signing, mowing and weed control, proper drainage control, trail and trailhead repair, safe road and bridge crossings, necessary fence repair, restroom cleanliness and grounds cleanup.
- availability of existing staff

The following is a projected annual budget that will accomplish the functions and roles identified above. It is based on Colorado State Parks estimates, using in-the-field experience and prevailing state wage scales. It is anticipated that a likely outcome would be State Parks' management of the corridor from Tennessee Pass to Cañon City in conjunction with Arkansas Headwaters Recreation Area operations. The projections for Eagle County, which is anticipated to be the Tennessee Pass to Sage section trail manager, are based on the State Parks estimates and the expectation that greater population intensity in this section will entail more intense management requirements. Both estimates are based on similar trail construction standards.

Actual operating and maintenance costs will be dependent on the outcome of the Corridor Management and Development Plan that would be adopted prior to conversion to trail uses. As such, the cost ranges presented below should be regarded as estimates only.

PROJECTED ANNUAL OPERATIONS AND MAINTENANCE BUDGET

	Tennessee Pass to Cañon City	Tennessee Pass to Sage
TOTAL REQUIREMENT	$220,000 - $277,000	$220,000 - $291,000
Full time staff	$90,000 - $126,000	$90,000 - $126,000
Seasonal workers	$80,000 - $90,000	$80,000 - $99,500
Maintenance and operation*	$50,000 - $61,000	$50,000 - $65,500

* See following page for detail

MAINTENANCE AND OPERATING COST BREAKDOWNS

The maintenance and operation cost ranges for each trail section are based on the following projected breakdown. A variety of circumstances could alter actual costs, including actual demands on the repair portions of the budget and the availability of volunteer services. Therefore, a range of costs was selected based on the following estimates.

	Tennessee Pass to Cañon City	Tennessee Pass to Sage
Vehicles:		
Ranger ($.12/mi x 10,000)	$ 1,200	$ 1,370
Maintenance	$ 1,800	$ 2,050
Manager	$ 1,200	$ 1,370
9 SWP	$ 5,200	$ 5,930
Tractor	$ 3,000	$ 3,420
2 1/2 Ton Dump Truck	$ 3,000	$ 3,420
Motor Grader	$ 3,500	$ 3,500
Tractor/grader/truck rpr./maint.	$ 2,400	$ 2,650
Trash, toilet, custodial	$ 1,400	$ 1,600
Phone	$ 1,200	$ 1,370
Postage	$ 500	$ 570
Office supplies	$ 900	$ 1,030
Office utilities	$ 600	$ 690
Training	$ 800	$ 900
Uniforms	$ 1,300	$ 1,480
Tool and equipment repair	$ 1,000	$ 1,140
Tool and equipment purchase	$ 1,500	$ 1,710
Supplies - const./maint.	$ 500	$ 570
Supplies - patrol/safety	$ 800	$ 900
Signing	$ 1,500	$ 1,710
Bridge Maintenance	$ 3,000	$ 3,140
Fencing	$ 2,000	$ 2,700
Mowing	$ 1,500	$ 1,710
Water test	$ 500	$ 570
Weed control	$ 4,500	$ 5,130
Grading - parking/trail	$ 3,000	$ 3,420
Drainage maintenance	$ 2,000	$ 2,560
Road crossing maintenance	$ 1,500	$ 1,710
Toilet pumping	$ 10,000	$ 7,500
TOTAL	$ 61,300	$ 65,820

CAPITAL COSTS FOR OPERATIONS AND MAINTENANCE EQUIPMENT

The total estimate for one-time purchases of capital equipment for corridor operations and maintenance is $1,050,000 for the entire corridor. The total estimated below is for one of the sections, Tennessee Pass to Cañon City. It is assumed costs will be roughly equal for both Tennessee Pass to Cañon City and Tennessee Pass to Sage. The most likely difference could be an increased cost in Eagle County for either office purchase or rent.

1 - 2 ton dump truck	$ 42,000
1 - Low Boy Trailer	$ 8,000
1 - 4x4 Tractor with Front Loader Backhoe	$ 52,500
Mower	$ 6,400
Scraper & Terrace Blade	$ 5,000
Sprayer	$ 4,500
1 - Motor Grader	$ 95,000
2 - 4x4 utility vehicles (patrol package) (annual lease)	$ 8,280 / yr.
1 - 3/4 ton 4x4 pickup (annual lease)	$ 4,452 / yr.
2 - 1/2 ton 4x4 pickups (1 patrol package) (annual lease	$ 7,584 / yr.
1 - Utility trailer	$ 2,700
2 - Pressure sprayers ($1080 ea.)	$ 2,160
4 - ATV's with ATV trailers	$ 27,916
4 - Mountain Bikes ($850 ea.)	$ 3,400
2 - Cross Country Skis	$ 500
Power hand tools	$ 4,000
Hand tools	$ 3,200
1 - Chain saw	$ 360
2 - Weed eaters	$ 650
1 - Arc welder	$ 4,000
1 - Acetylene torch	$ 525
6 - Vehicle radios	$ 5,586
Vehicle public safety equipment	$ 3,600
5 - Hand held radios	$ 3,265
4 - Computers / Software	$ 8,500
5 - Telephones	$ 2,870
3 - Cell phones	$ 204
1 - Fax	$ 1,150
1 - Copy machine ($168/mo.)	$ 2,116/yr.
1 - Slide projector	$ 680
1 - Camera / lenses	$ 800
Office Furnishings / Supplies	
Chairs, desks, file cabinets, shelving, etc.	$ 9,450
OFFICE SPACE and SHOP SPACE	
Construction	$195,000
or Rent ($700/month)	$ 8,400 / yr.
TOTAL	$524,748

Heart of the Rockies Historic Corridor
Southern Pacific Railroad
Trail Feasibility Study

Geographic Information System (GIS) MAP APPENDICES

The attached maps represent data developed for this trails feasibility study. These maps are a representation of the coverages and information available thus far.

Research for this project is assisted by geographic information systems (GIS) to effectively provide information to the public about a trails feasibility along the rail corridor. GIS is being used to expose and resolve some potential conflicts by analyzing and displaying specific information, such as railroad right of way and adjacent land ownership, rare/uncommon plant and animal species, hazardous waste sites, wildlife, other trail connections, bridges, roads, etc. The results of this analysis will provide alternatives to such decisions as, locating trail access points and watchable wildlife stations.

Geographic data were acquired from several federal, state and county agencies. These data were developed at several scales and with various accuracies. When using these data, the variable scale and accuracies should be considered.

Further detailed maps and information will be compiled for a Future Management and Development Plan if trail uses of the corridor are implemented.

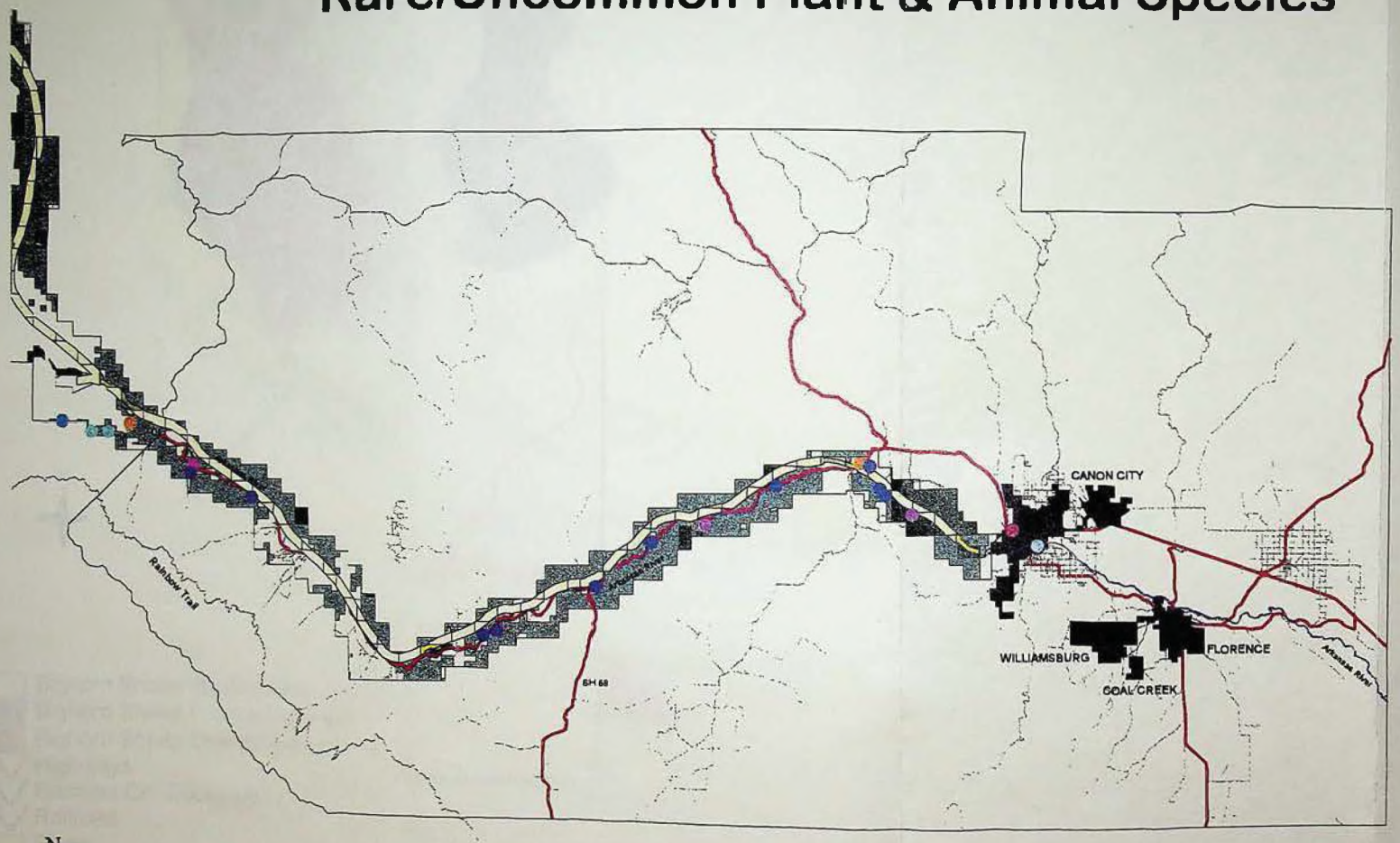
Maps produced by Colorado State Parks

Heart of the Rockies Historic Corridor
TRAIL FEASIBILITY STUDY

MAP APPENDICES

TABLE OF CONTENTS

Fremont County
Land Ownership
Rare/Uncommon Plant & Animal Species



N

14 0 14 Miles

Rare/Uncommon Plants & Animals
- ARKANSAS CANYON STICKLEAF
- ARKANSAS DARTER
- BOREAL TOAD
- BRANDEGEE WILD BUCKWHEAT
- CANYON BOG-ORCHID
- DEGENER BEARDTONGUE
- GOLDEN BLAZING STAR
- GREAT BLUE HERON
- HARRINGTON BEARDTONGUE
- LYNX
- MONTANE RIPARIAN FORESTS
- MOSSY VALVATA
- PURPLE LADY'S-SLIPPER
- ROCK-LOVING NEOPARRYA
- STRIGOSE EASTER-DAISY
- TOWNSEND'S BIG-EARED BAT

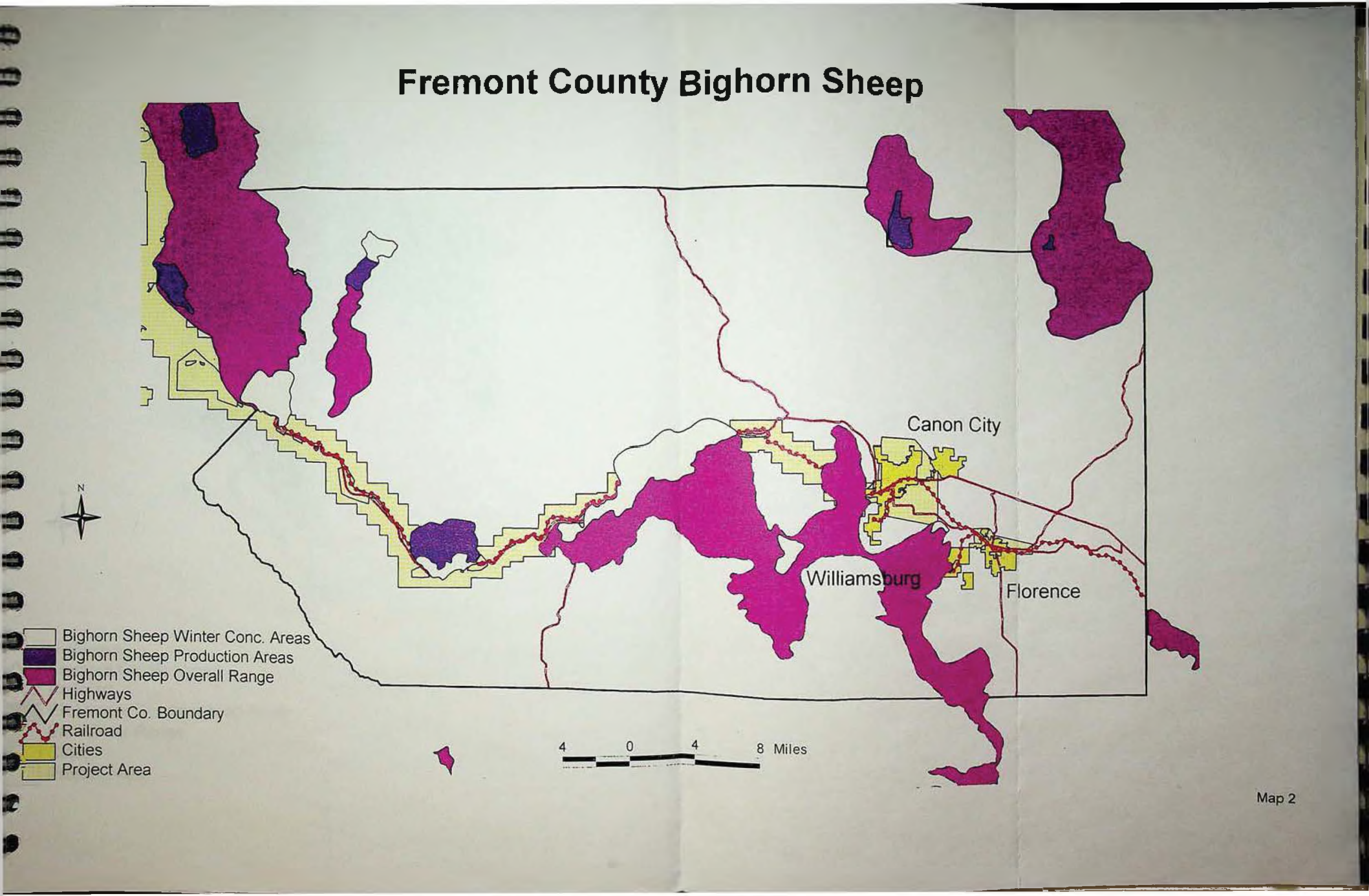
Rail Corridor Right of Way
- Federal Ownership
- Private Ownership
- State Ownership
- Trails
- Arkansas River
- Fremont Co. Boundary
- Cities
- Local Roads
- Highways
- Functionally Classed Roads

Land Ownership
- BLM
- STATE
- USFS
- PRIVATE

Fremont County
Land Ownership
Rare/Uncommon Plant & Animal Species

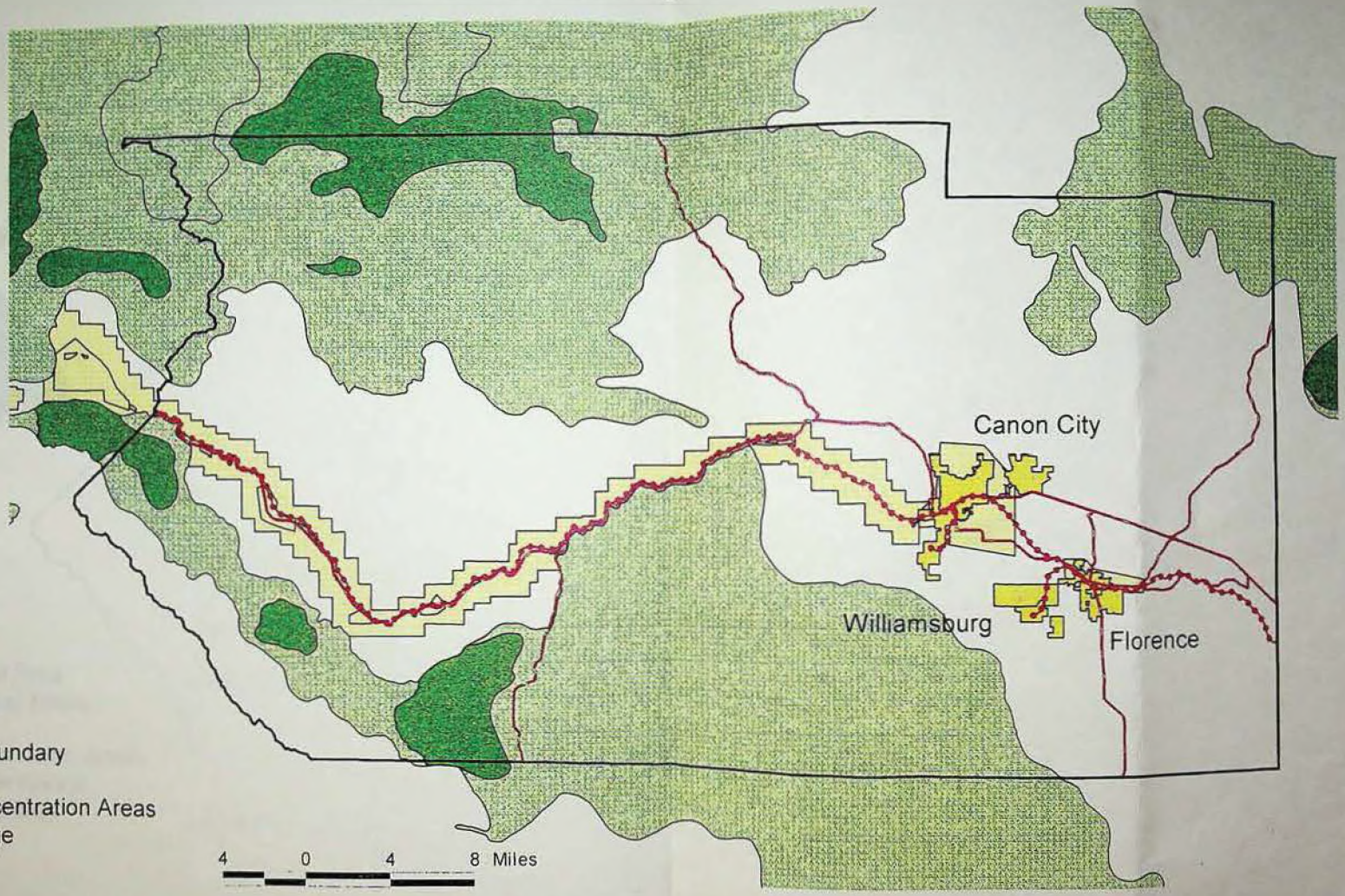
Map 1

Fremont County Bighorn Sheep



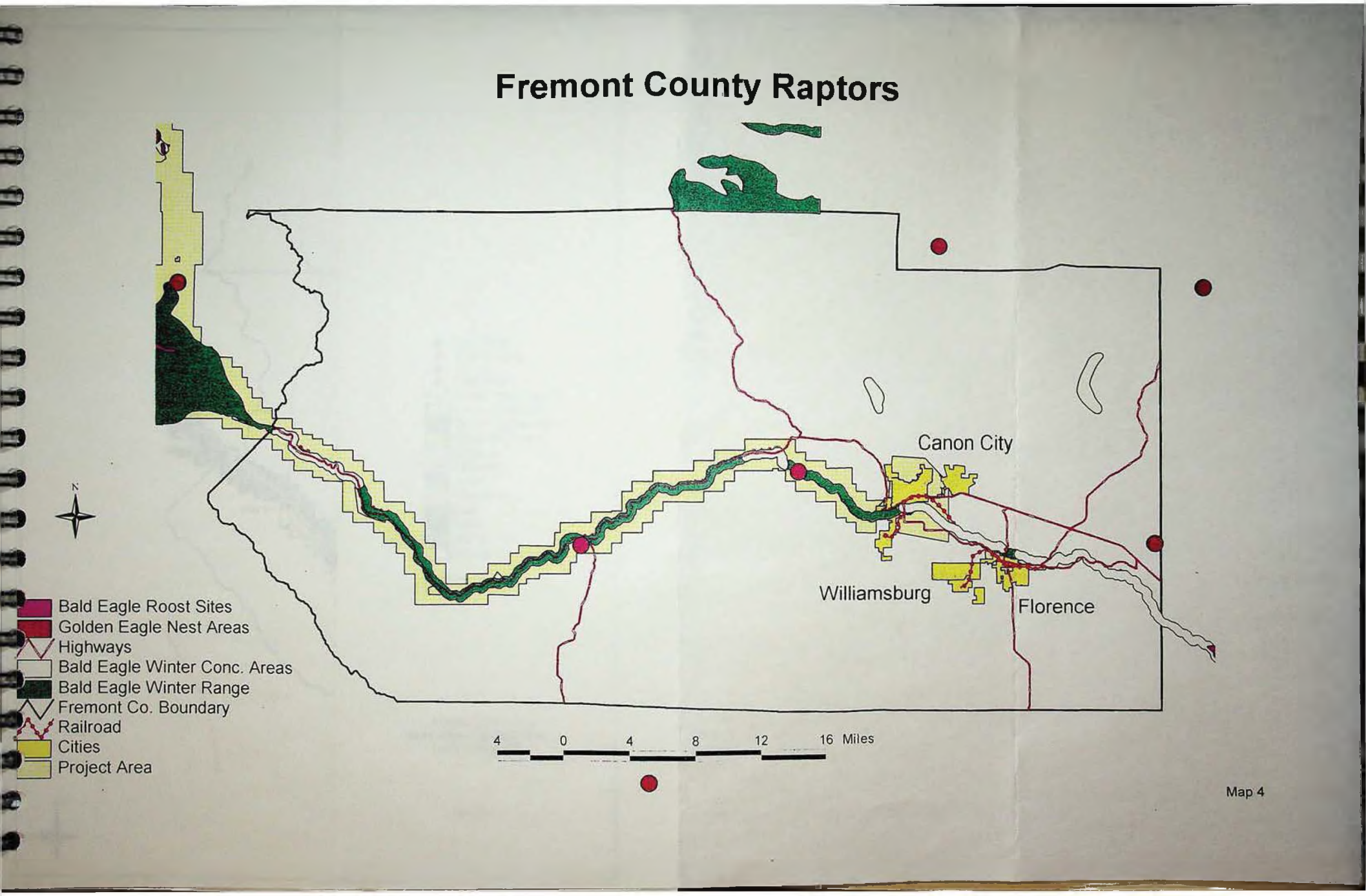
Map 2

Fremont County Winter Elk Range



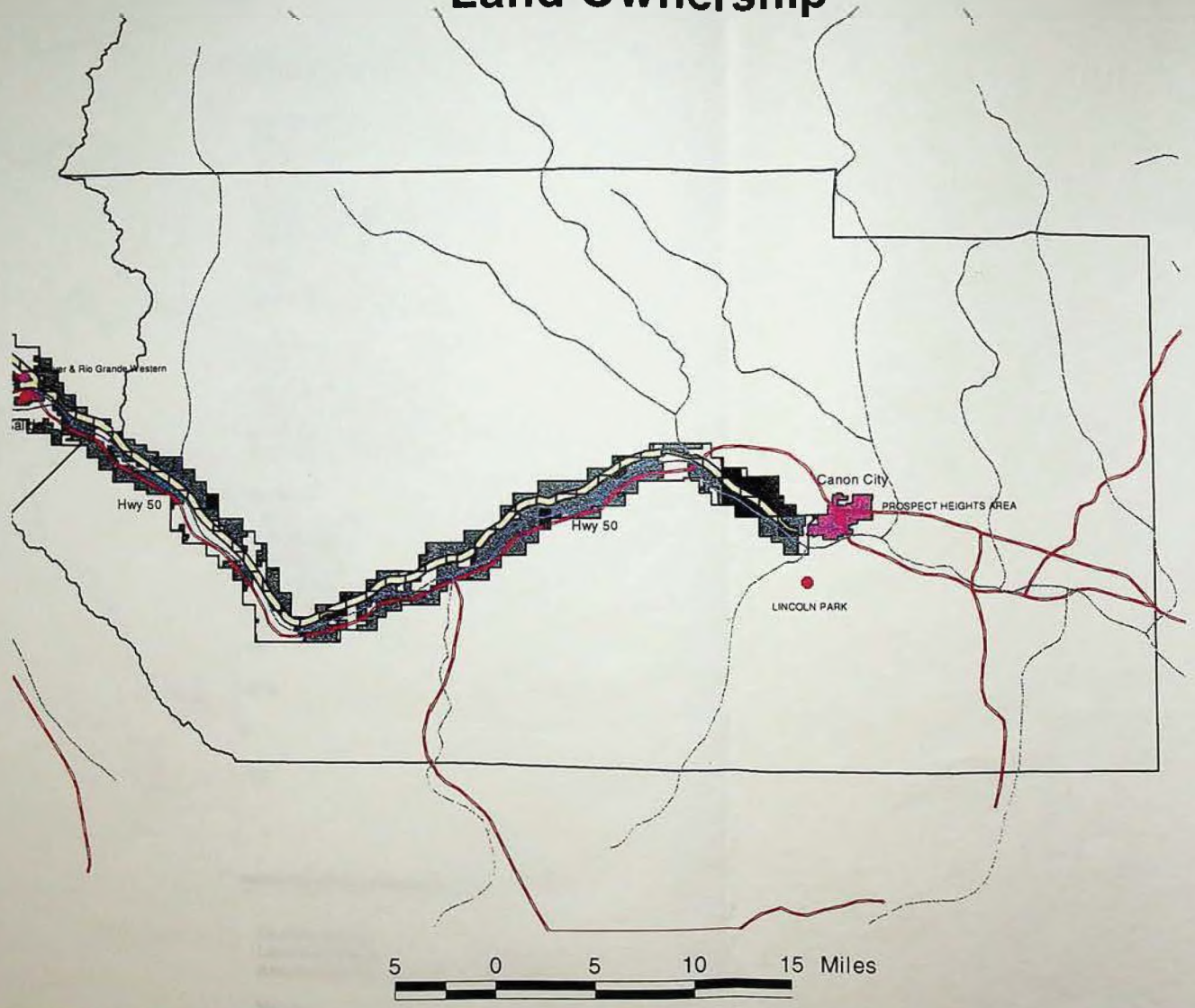
Map 3

Fremont County Raptors



Map 4

Fremont County
Hazardous Materials Sites
Land Ownership



- Haz. Spills
- Solid Waste
- RCRA
- CERCLIS

Rail Corridor Right of Way
- Federal Ownership
- Private Ownership
- State Ownership

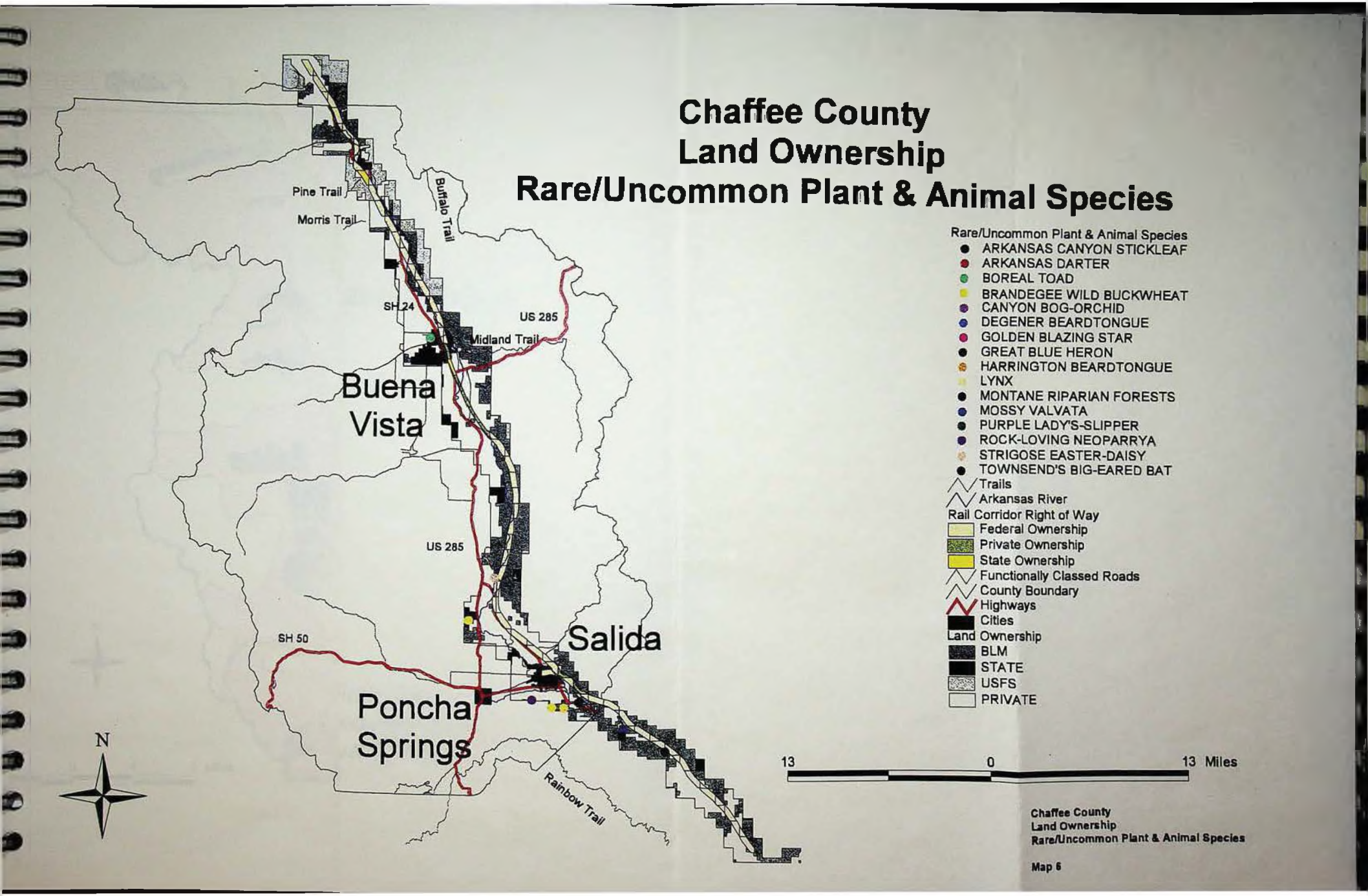
- Streams
- Highways
- Cities

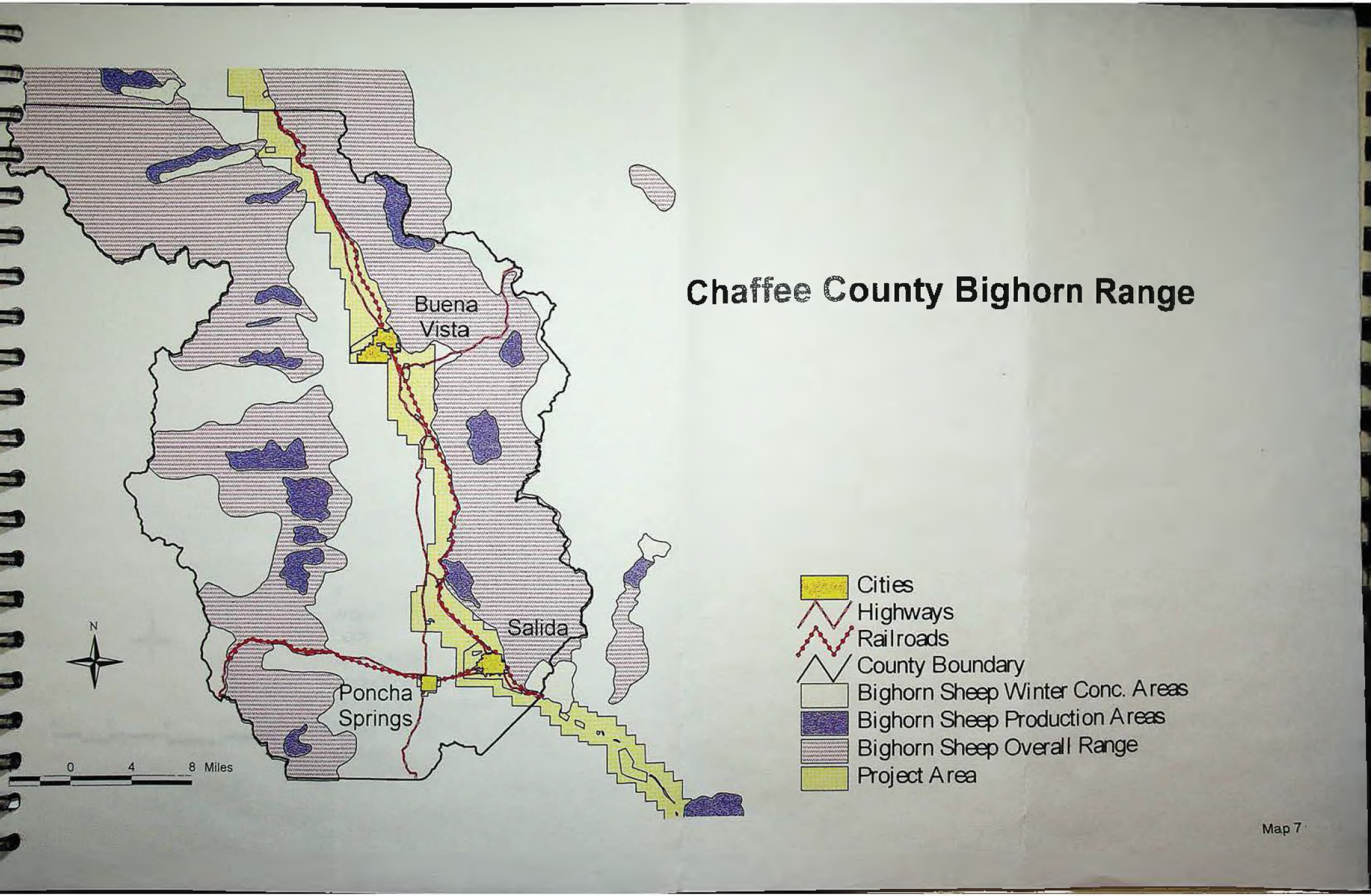
Land Ownership
- BLM
- State
- USFS
- Private

- County

Fremont County
Hazardous Materials Sites
Land Ownership

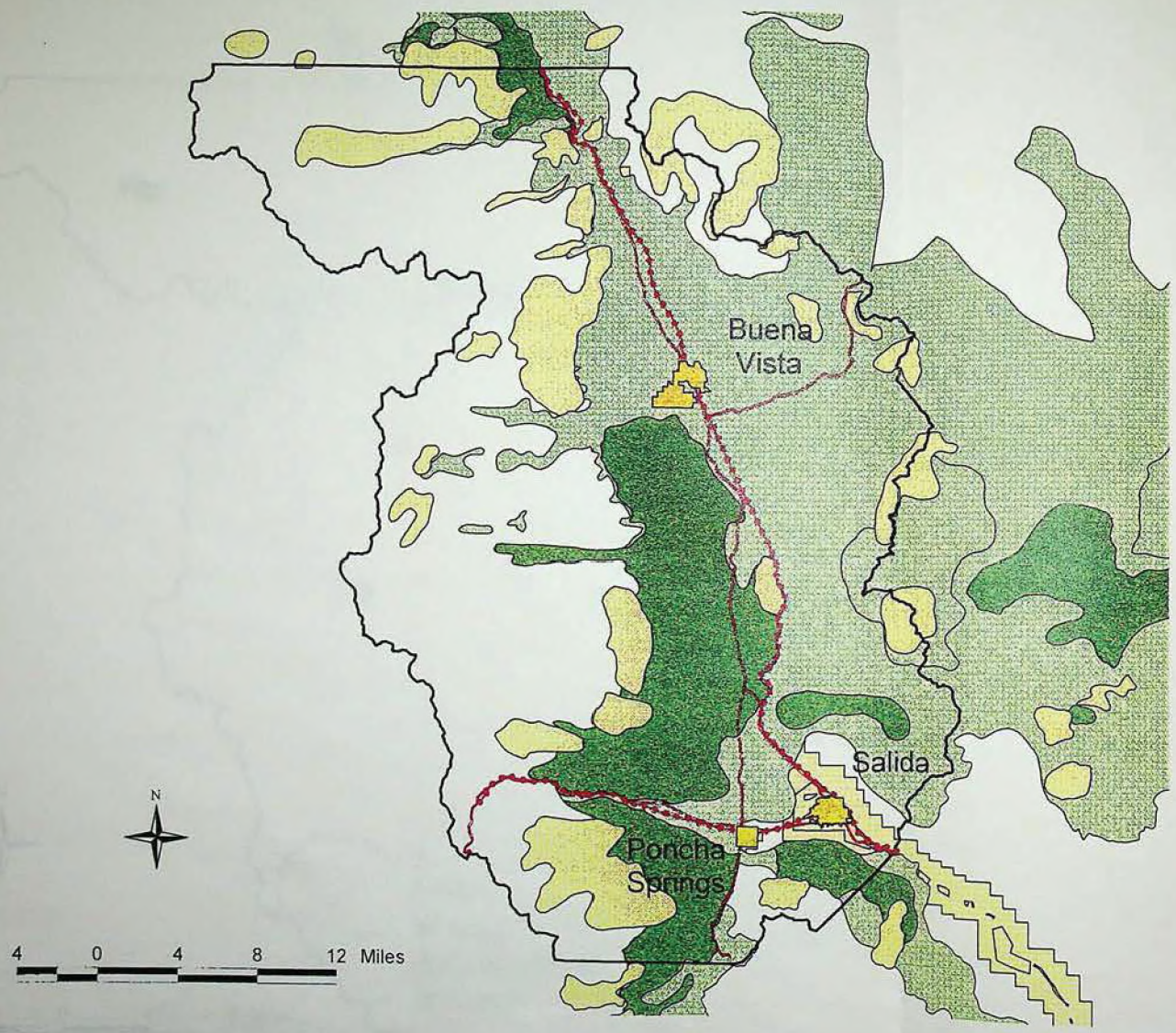
Map 5


Chaffee County
Land Ownership
Rare/Uncommon Plant & Animal Species
Pine Trail
Morris Trail
Buffalo Trail
SH 24
US 285
Midland Trail
Buena Vista
US 285
SH 50
Salida
Poncha Springs
Rainbow Trail
N
Rare/Uncommon Plant & Animal Species
ARKANSAS CANYON STICKLEAF
ARKANSAS DARTER
BOREAL TOAD
BRANDEGEE WILD BUCKWHEAT
CANYON BOG-ORCHID
DEGENER BEARDTONGUE
GOLDEN BLAZING STAR
GREAT BLUE HERON
HARRINGTON BEARDTONGUE
LYNX
MONTANE RIPARIAN FORESTS
MOSSY VALVATA
PURPLE LADY'S-SLIPPER
ROCK-LOVING NEOPARRYA
STRIGOSE EASTER-DAISY
TOWNSEND'S BIG-EARED BAT
Trails
Arkansas River
Rail Corridor Right of Way
Federal Ownership
Private Ownership
State Ownership
Functionally Classed Roads
County Boundary
Highways
Cities
Land Ownership
BLM
STATE
USFS
PRIVATE
13 0 13 Miles
Chaffee County
Land Ownership
Rare/Uncommon Plant & Animal Species
Map 6


Chaffee County Bighorn Range
Buena Vista
Salida
Poncha Springs
N
0
4
8 Miles
Cities
Highways
Railroads
County Boundary
Bighorn Sheep Winter Conc. Areas
Bighorn Sheep Production Areas
Bighorn Sheep Overall Range
Project Area

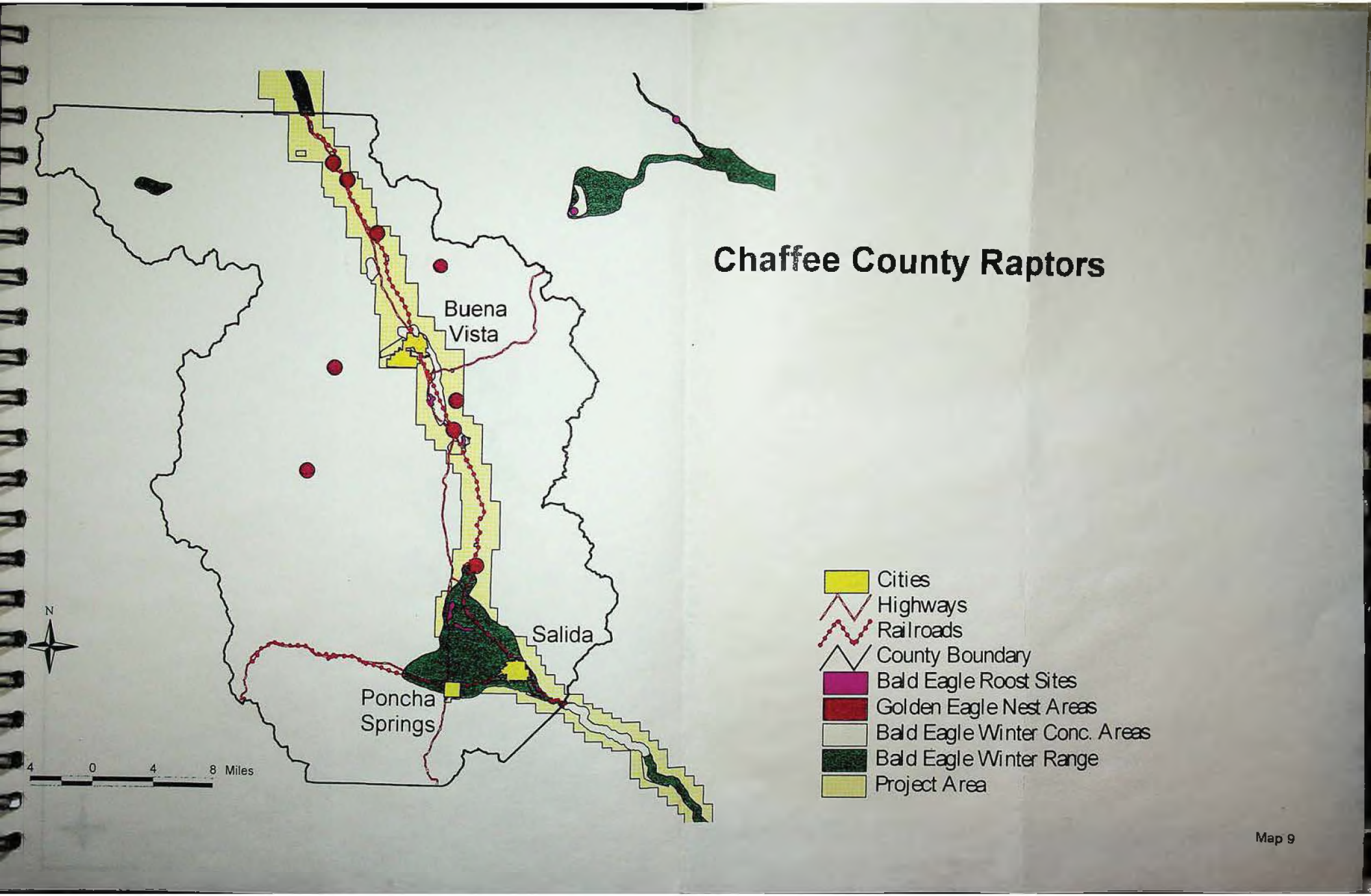
Map 7

Chaffee County Winter Elk Range



- Cities
- Highways
- Railroads
- County Boundary
- Elk Production Areas
- Elk WInter Concentration Areas
- Elk Winter Range
- Project Area

Map 8


Chaffee County Raptors
Buena Vista
Salida
Poncha Springs
N
4 0 4 8 Miles
Cities
Highways
Railroads
County Boundary
Bald Eagle Roost Sites
Golden Eagle Nest Areas
Bald Eagle Winter Conc. Areas
Bald Eagle Winter Range
Project Area

Map 9

Chaffee County
Hazardous Materials Sites
Land Ownership

- Haz. Spills
- Solid Waste
- RCRA
- CERCLIS

Rail Corridor Right of Way
- Federal Ownership
- Private Ownership
- State Ownership

- Streams
- Highways
- Cities

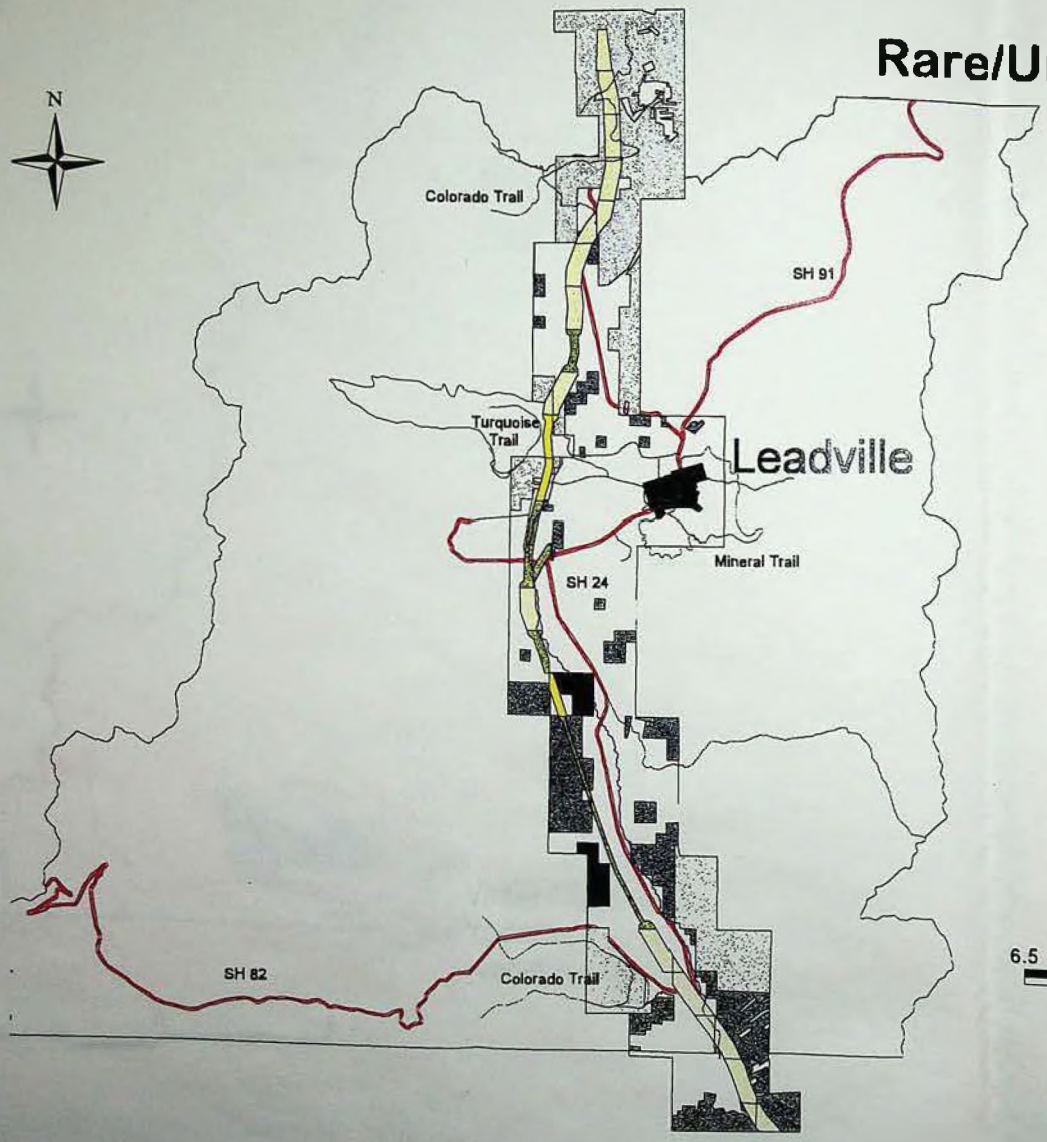
Land Ownership
- BLM
- State
- USFS
- Private

- County

Chaffee County
Hazardous Materials Sites
Land Ownership

Map 10

Lake County
Land Ownership
Rare/Uncommon Plant & Animal Species



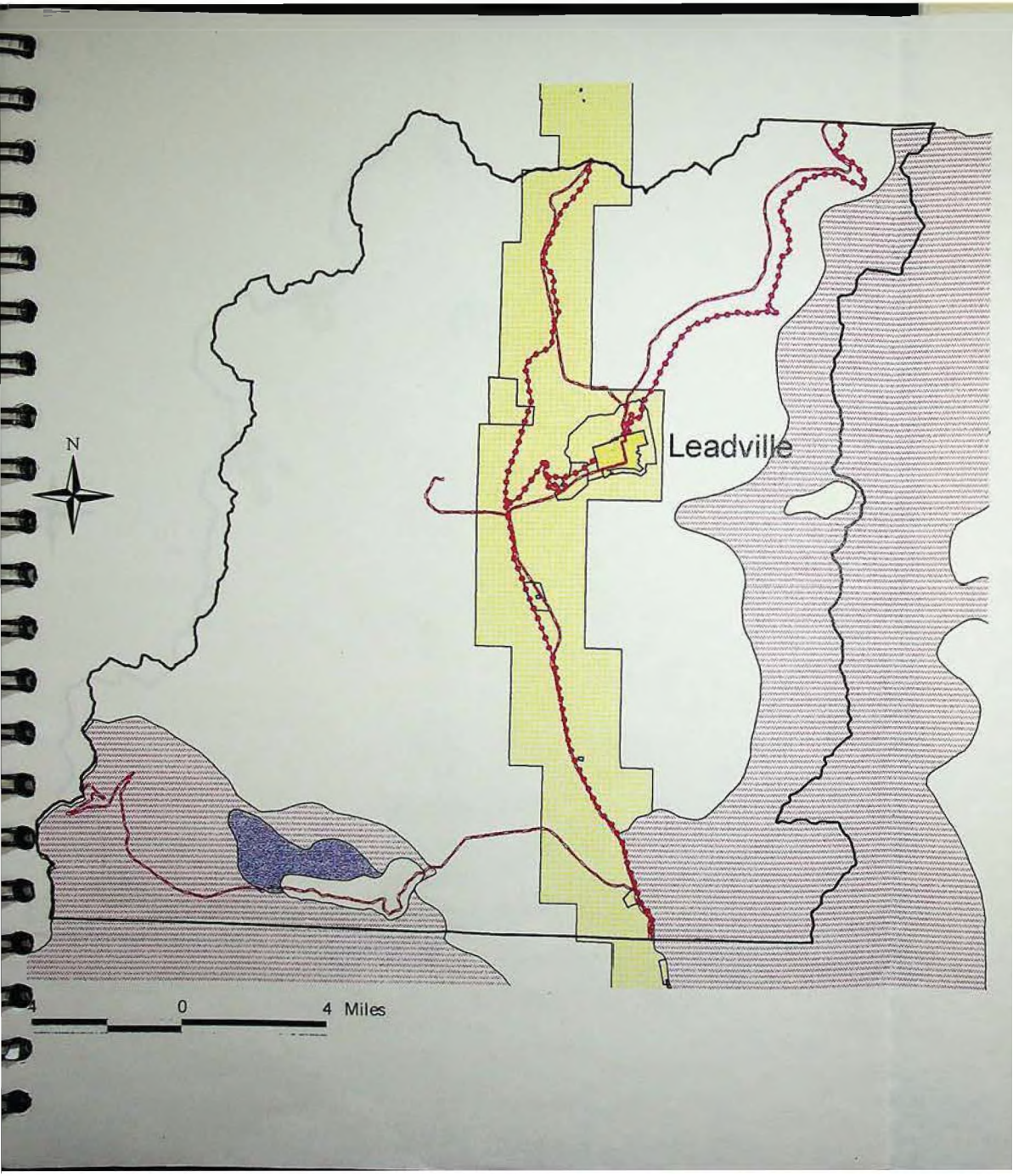
There are no rare/uncommon plant or animal species within the project area in Lake County according to the CO Natural Heritage Program.

Trails
Arkansas River
Leadville
Rail Corridor Right of Way
Federal Ownership
Private Ownership
State Ownership
Land Ownership
BLM
STATE
USFS
PRIVATE
Functionally Classed Roads
Highways
County Boundary

6.5 0 6.5 Miles

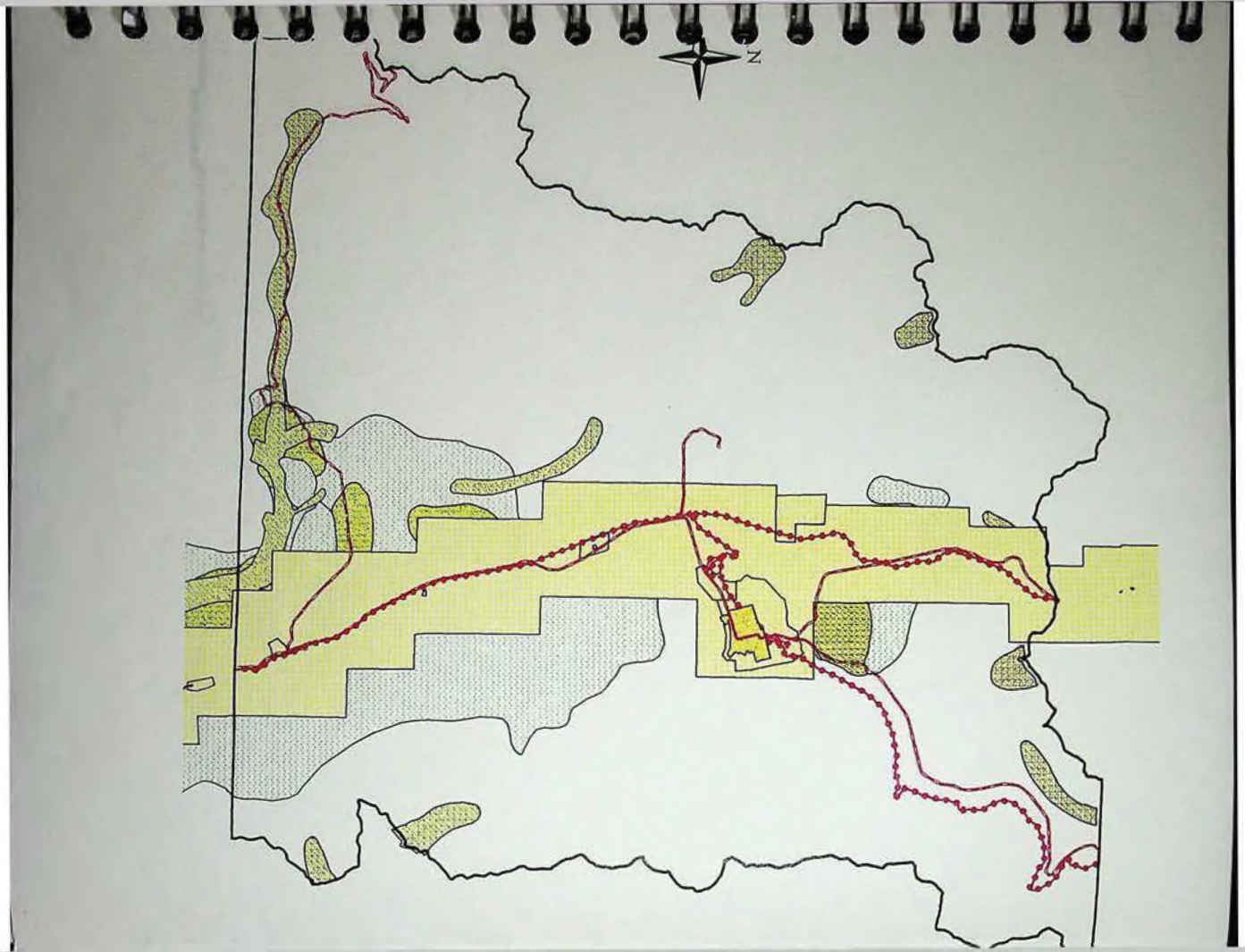
Lake County
Land Ownership
Rare/Uncommon Plant & Animal Species

Map 11

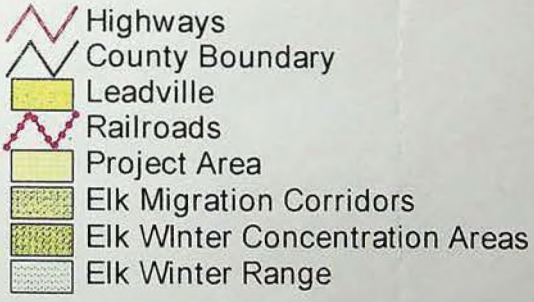

N
Leadville
0
4 Miles

Lake County
Bighorn Range

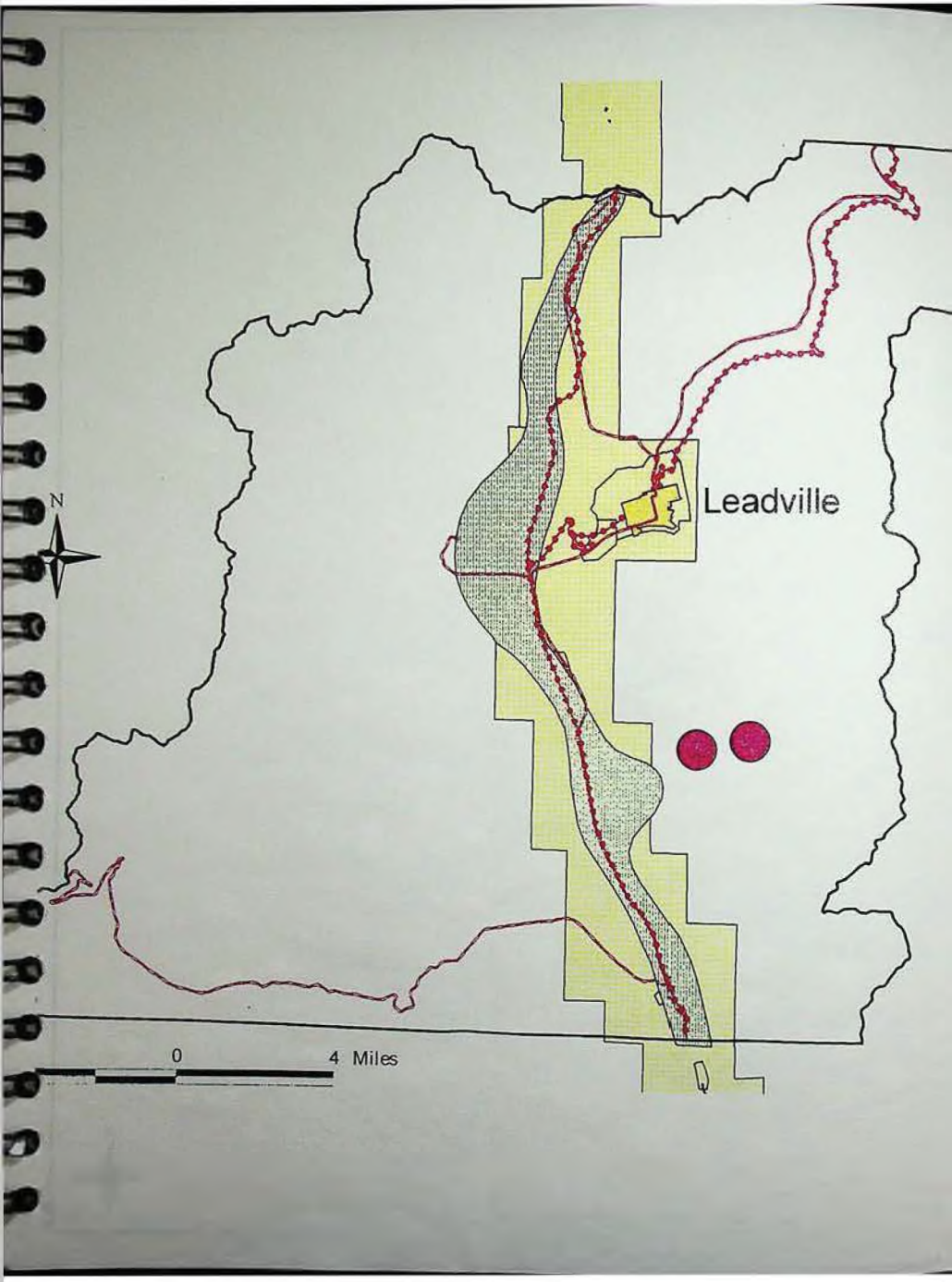
Map 12


N

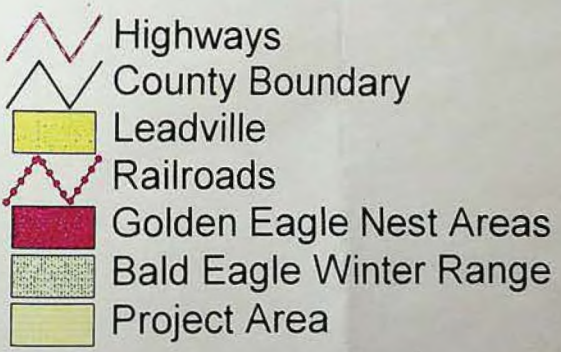
Lake County
Winter Elk Range



Map 13

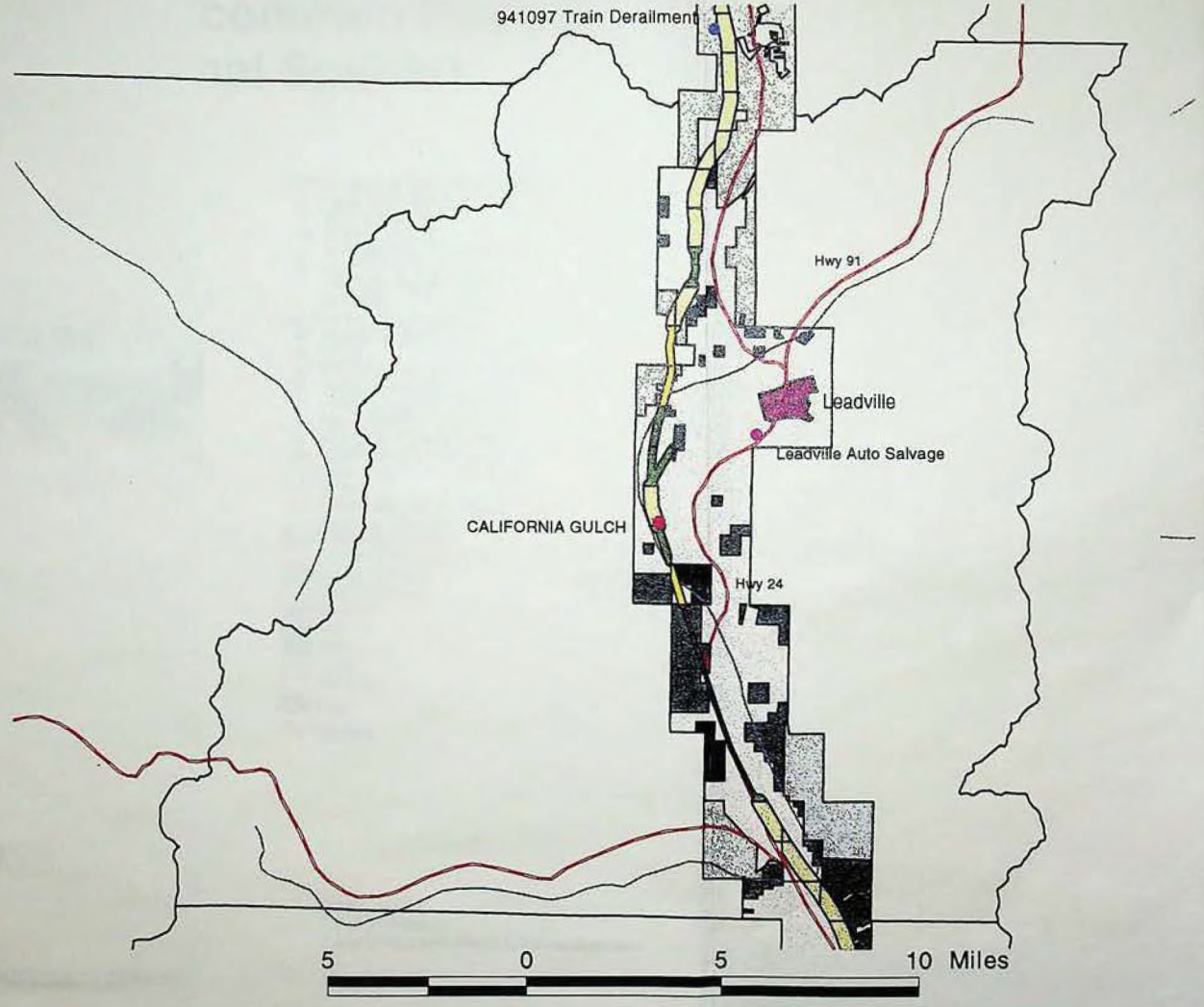

N
Leadville
0
4 Miles

Lake County Raptors



Map 14

Lake County
Hazardous Materials Sites
Land Ownership



- Haz. Spills
- Solid Waste
- RCRA
- CERCLIS

Rail Corridor Right of Way
- Federal Ownership
- Private Ownership
- State Ownership

- Streams
- Highways
- Cities

Land Ownership
- BLM
- State
- USFS
- Private

- County

Lake County
Hazardous Materials Sites
Land Ownership

Map 15


SH 131
GYPSUM
I 70
Eagle River
EAGLE
June Trail
AVON
MINTURN
REDCLIFF
SH 82
BASALT
10
0
10 Miles

Eagle County
Land Ownership
Rare/Uncommon Plant & Animal Species

Rare/Uncommon Plant & Animal Species
- ARKANSAS CANYON STICKLEAF
- ARKANSAS DARTER
- BOREAL TOAD
- BRANDEGEE WILD BUCKWHEAT
- CANYON BOG-ORCHID
- DEGENER BEARDTONGUE
- GOLDEN BLAZING STAR
- GREAT BLUE HERON
- HARRINGTON BEARDTONGUE
- LYNX
- MONTANE RIPARIAN FORESTS
- MOSSY VALVATA
- PURPLE LADY'S-SLIPPER
- ROCK-LOVING NEOPARRYA
- STRIGOSE EASTER-DAISY
- TOWNSEND'S BIG-EARED BAT
- Eagle River
- Trails
- Functionally Classed Roads
- Eagle Co. Boundary

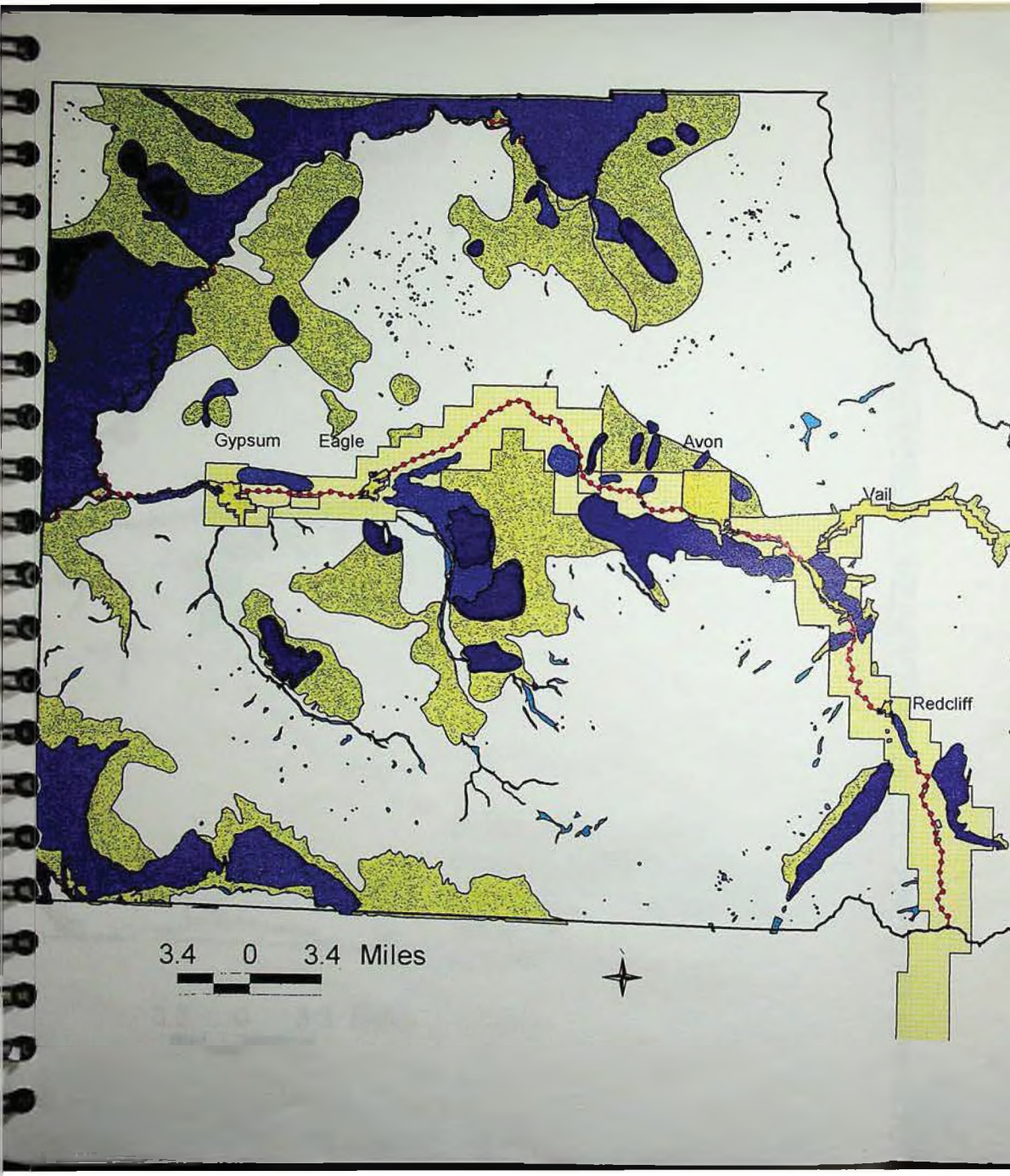
Rail Corridor Right of Way
- Federal Ownership
- Private Ownership
- State Ownership

Land Ownership
- BLM
- STATE
- USFS
- PRIVATE
- Cities
- Highways

N

Eagle County
Land Ownership
Rare/Uncommon Plant & ~~Animal Species~~

Map 16

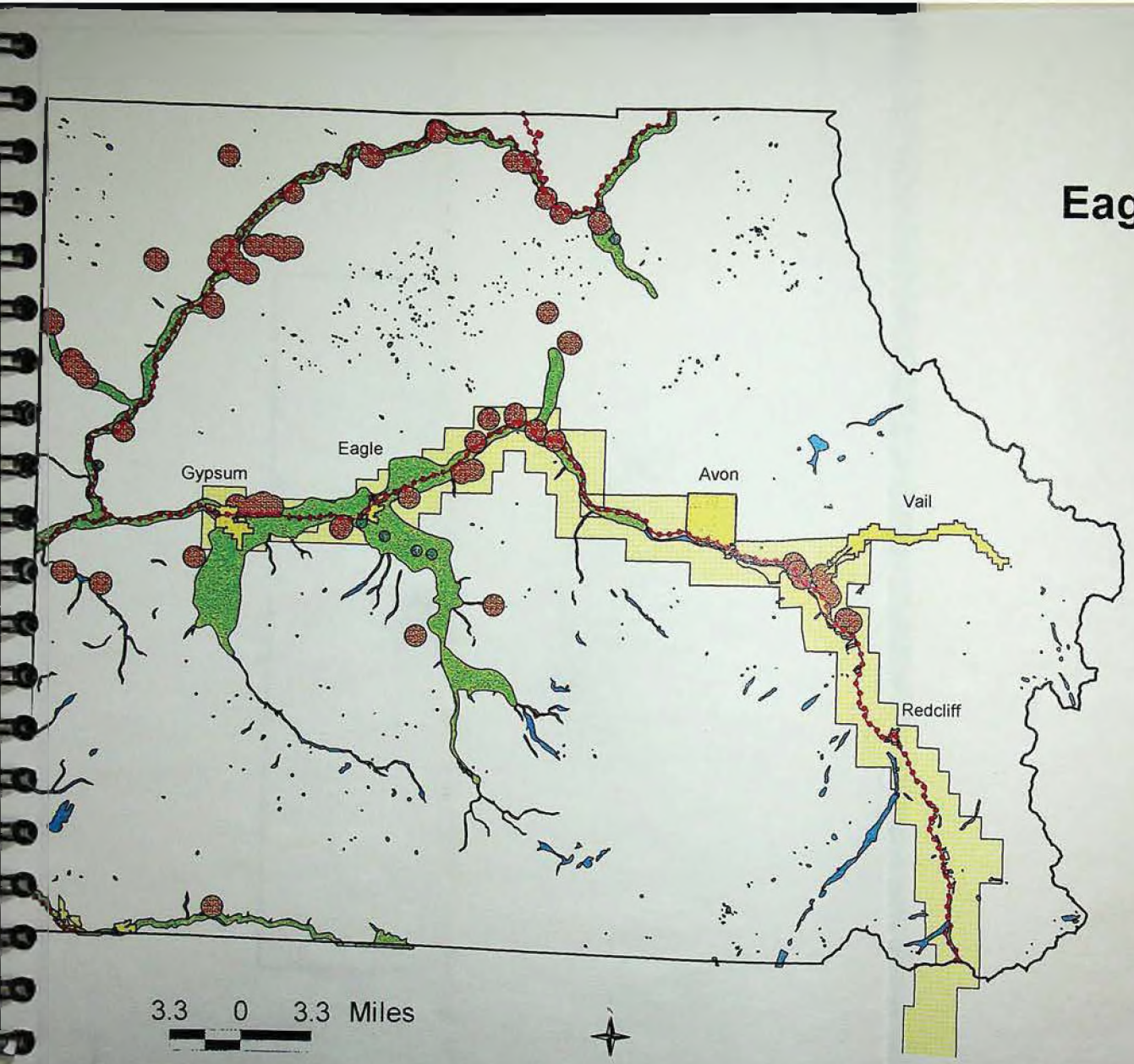

Gypsum
Eagle
Avon
Vail
Redcliff
3.4 0 3.4 Miles

Eagle County
Elk Winter Range

- Cities
- Elk Winter Conc. Areas
- Elk Severe Winter Range
- Eagle Co. Boundary
- Railroad
- Project Area
- Elk Winter Range 95
- Riparian areas

Map 17

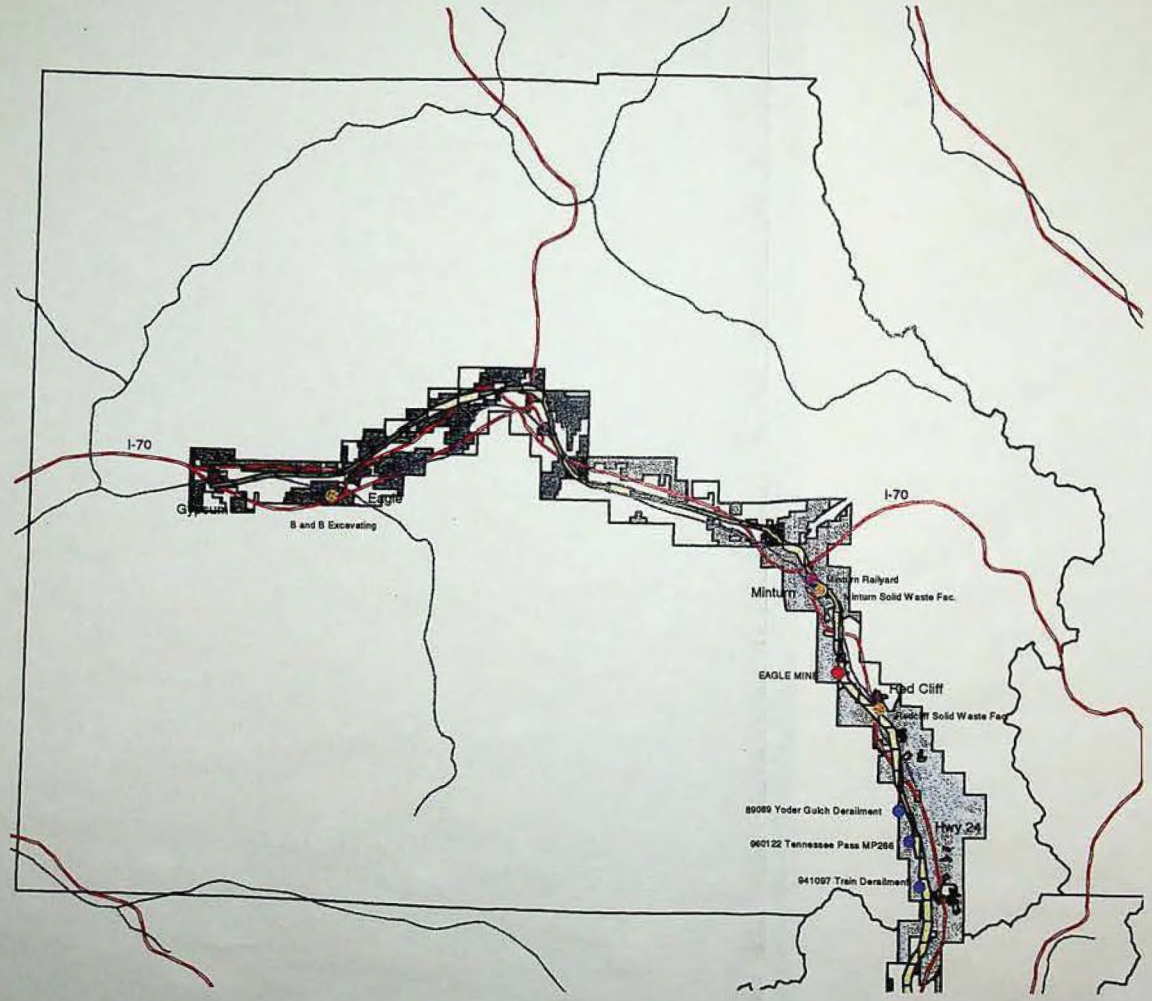
Eagle County Raptors



- Railroad
- Eagle Co. Boundary
- Cities
- Golden Eagle Nest Sites
- Bald Eagle Roost Sites 96
- Bald Eagle Winter Range 96
- Riparian areas
- Project Area

Map 18

Eagle County
Hazardous Materials Sites
Land Ownership



- Haz. Spills
- Solid Waste
- RCRA
- CERCLIS

Rail Corridor Right of Way

- Federal Ownership
- Private Ownership
- State Ownership
- Streams
- Highways
- Cities

Land Ownership

- BLM
- State
- USFS
- Private

- County

Eagle County
Hazardous Materials Sites
Land Ownership

Map 19