Grand County Community Wildfire Protection Plan

Prepared for:
Grand County Colorado
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I. Introduction

The creation of the Grand County Community Wildfire Protection Plan is a continuation and enhancement of the Grand County Fire Plan which was completed in 2002 as a direct result of the National Fire Plan. The impetus for completing a Community Wildfire Protection Plan (CWPP) in Grand County has never been greater due to the enactment of the Healthy Forest Restoration Act (HFRA). This landmark legislation includes the first meaningful statutory incentives for the US Forest Service (USFS) and the Bureau of Land Management (BLM) to give consideration to the priorities of local communities as they develop and implement forest management and hazardous fuel reduction projects.

A local citizen advisory committee was established to assist Grand County in developing this CWPP. The advisory committee consists of interested parties who represent municipal government, local fire authority, homeowners associations, private property owners and managers, law enforcement, Colorado State Forest Service, US Forest Service, and the Bureau of Land Management.

Grand County is an active member of the Front Range Fuels Treatment Partnership and has adopted their recommendations of creating a county wide CWPP. The Grand County CWPP will serve as an "umbrella" document to the many localized CWPP's currently being developed by homeowner associations, fire protection districts, and municipalities. These community based CWPP's will appropriately identify in finer detail their unique issues and situations.

The primary goal of the Grand County CWPP is to further expand a localized definition and boundary for the wildland-urban interface (WUI). In addition, the CWPP will encourage the continued engagement of willing private property owners in meaningful wildland fire mitigation activities that are both economically feasible and ecologically sustainable. This CWPP will offer additional opportunities for diverse local interests to collaborate with federal and state land managers in shaping fuels treatment priorities on surrounding federal and non-federal lands.

Whenever possible, private land mitigation work will be complimented by public land projects. The desired outcome will affect a greater number of acres on the landscape that will enhance protection for communities in the WUI and critical infrastructure from catastrophic wildland fire. Priorities for fuel treatment may also include critical watersheds, public water and power facilities and highly valued recreation areas.

Within Colorado, wildland fire statistics show that the overall size and cost of wildland fire is increasing at an unprecedented rate. In Grand County as in the rest of the western United States, fire has been suppressed for the past 75-100 years. In addition, regional climate and dominant forest types support extended fire regime intervals. As Grand County transitions from a rural county to more of a suburban county, population density increases as does the expansion of the WUI into forested areas. This coupled with the

rapid mortality of our lodgepole pine forest from MPB infestations continue to increase wildland fire hazards.

I.1 Executive Summary

The Healthy Forests Initiative was announced by the White House in 2002 to implement the core components of the National Fire Plan Collaborative Approach for Reducing Wildfire Risks to Communities and the Environment -10 year Comprehensive Strategy. The Plan calls for more active forest management to reduce the threat of wildland fire in the WUI, the area where homes and communities meet wildland. The Grand County CWPP identifies communities and other WUI areas at risk within the vicinity of federal lands.

Grand County has over 950 subdivisions on record, (6) incorporated municipalities and encompasses 1,865 square miles. It is not practical and is beyond the scope of this CWPP to identify each and every subdivision. Therefore, in an attempt to not become engrossed in detail, the CWPP identifies (3) major project areas; Three Lakes Area, the Fraser Valley, and West Grand. Each project area is unique as it pertains to population density, amount of WUI, topography, geographic features and forest or fuel types.

As of 2006, Grand County continues to endure the largest Mountain Pine Beetle (MPB) epidemic in the state of Colorado. MPB infestations have increased exponentially over the past several years and have infested or currently infest perhaps over 250,000 acres of lodgepole pine forest on both private and public land. The ensuing die-off of large stands of lodgepole pine forest necessitated the need for wildland fire planning and mitigation projects which began in earnest in 2001-2002. Hundreds of small and large private property owners have already implemented fuels reduction work on their properties affecting thousands of acres. Subsequent large scale public land timber sales and fuel treatment projects have begun across the county landscape complimenting mitigation work conducted on private lands.

Grand County has been an active member in a local interagency team collaborating in identifying, developing, and implementing cooperative wildfire mitigation and fuels reduction projects. Members of this team who have jurisdiction in Grand County, include the United States Forest Service (USFS), Bureau of Land Management (BLM), Colorado State Forest Service (CSFS), National Park Service (NPS), State Land Board (SLB), Grand County Fire Protection Districts (FPDs), Colorado Division of Wildlife (DOW), and the Grand County Sheriff's Office. Grand County has been an active participant on the Front Range Fuels Treatment Partnership Roundtable and has participated with the Northern Colorado Mountain Bark Beetle Cooperative.

Grand County has collaborated with its state and federal partners in an educational and outreach effort. These efforts include presentations and tours concerning "Firewise" principles, fuel mitigation sites on public and private lands, areas hard hit by MPB, and ongoing or proposed mitigation sites in the WUI. Target audiences have included Grand

County public, municipalities, media, civic organizations, state and federal policy makers, and natural resource professionals.

The CWPP will continue to build upon the foundation established by the Grand County Fire Plan and provide a road map for implementing wildland fire protection in our communities and WUI areas. Continued collaboration with federal and state land managers in conjunction with the private sector will be key to the success of this plan.

II. Plan Requirements

The requirements for a Community Wildfire Protection Plan as described in the Healthy Forest Restoration Act are:

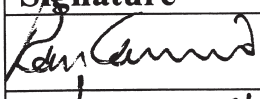
1. Collaboration: A CWPP must be collaboratively developed by local and state government representatives, in consultation with federal agencies and other interested parties.
2. Prioritized fuel reduction: A CWPP must identify and prioritize areas for hazardous fuel reduction and recommend the types and methods of treatment that will protect one or more at-risk communities and essential infrastructure.
3. Treatment of Structural Ignitibility: A CWPP must recommend measures that homeowners and communities can take to reduce the ignitability of structures throughout the area addressed by the plan.

Mutual Agreement

The Healthy Forest Restoration Act requires that three entities must mutually agree to the final contents of a CWPP.
1. The applicable local government (Grand County)
2. Local Fire Protection Districts
3. The state entity responsible for forest management (Colorado State Forest Service)

Compliance

In compliance with the Healthy Forest Restoration Act, the representatives recorded by signature below, mutually agree with the findings and recommendations contained in the plans that follow.

Signature	Date	Organization
	12/1/06	Colorado State Forest Service
	12-5-06	Grand County BOCC
	12.4.2006	President, Grand County Fire Fighters Association

II.1 The Grand County CWPP Advisory Committee

The Grand County CWPP Advisory Committee was created to assist with and oversee the development of the CWPP within the framework of HFRA. The advisory committee members are County residents who represent physical locations, expertise, and community types throughout the County.

Additional support and input to the original Grand County Fire Plan and this CWPP were provided by forest health specialists and fire staff from the USFS, BLM, CSFS, NPS Grand County Sheriffs' Office, Front Range Fuel Partnership, and Grand County Fire Protection Districts. Colorado State University and the Colorado Natural Heritage Program have provided maps, statistics and biological information from the recently completed Grand County Critical Biological Survey. Several Grand County government departments have provided vital information and service to this project that include the GIS and Information Systems Departments, Planning and Zoning, Building and Sanitation, Road and Bridge, Assessors' Office, and Office of Emergency Management. Input, data and suggestions have been taken from local municipalities, HOA's and individual private landowners.

It is the intent of the committee that the Grand County CWPP serve as an "umbrella" document to the many ongoing and future localized CWPP's that are community driven. This plan is designed to be flexible and open ended for future amendments to address changing community values and ecosystem management needs.

Grand County CWPP Advisory Committee Members

Todd Holzwarth, Fire Chief
East Grand Fire Protection District

Rick Cassie, Forester and District NEPA Coordinator
United States Forest Service

Bill Wyatt, Fire Ecologist
Bureau of Land Management

Ron Cousineau, Forester
Colorado State Forest Service

Jennifer Murray, Natural Resource Specialist
Grand County

Wes and Lisa Palmer, Private Landowners, Ranchers and Realty Services
Kremmling, CO

Mandy Hanifen, Private Citizen/co-owner of Wildfire Mitigation Services,
Stillwater Fire Abatement Coalition (Neighborhood Association)
Grand Lake, CO

John Eicher, Private Citizen/Lands and Facilities Manager
YMCA of the Rockies, Granby, CO

Chuck Swanson, Town Engineer, Forest Health Program
Town of Winter Park

II.2 Healthy Forest Restoration

The Healthy Forest Restoration Act was signed into law in November 2003. HFRA provides legislation, tools and certain requirements in preparing a CWPP. The Grand County CWPP will expedite and enhance ongoing and proposed wildland fire mitigation projects in the WUI to meaningful implementation in the following collaborative ways:

1. Provides the opportunity for community input to project planning.
2. Enhances the public land managers ability to reduce wildfire risk in the WUI.
3. Streamlines the approval process for projects on public lands.
4. It is a requirement for future funding opportunities.
5. Public land managers are required to consider CWPP in planning for wildland fire mitigation projects.

II.3 Annual Fire Operating Plan for Grand County

The purpose of the Annual Operating Plan (AOP) is to set forth standard operating procedures, agreed upon procedures, and responsibilities to implement cooperative wildfire protection on all lands within Grand County. Every year the AOP is updated and provides coordination and vital information such as; designated authority, responsibilities, incident command use, communications systems, and fire prevention. The AOP is a critical working document that provides cohesion, accountability and direction to the fire fighting resources in Grand County. (See Appendix 1- AOP) Participants in this AOP consist of the following:

Grand County Sheriff
Local Fire Protection Districts
Grand County Board of Commissioners
Sulphur Ranger District, Arapaho-Roosevelt National Forest

Parks Ranger District, Medicine Bow-Routt National Forest
Yampa Ranger District, Medicine Bow-Routt National Forest
Kremmling Field Office, Bureau of Land Management
Rocky Mountain National Park
Colorado State Forest Service
Northwest Colorado Fire Management Unit

III. Description and Identification of Grand County

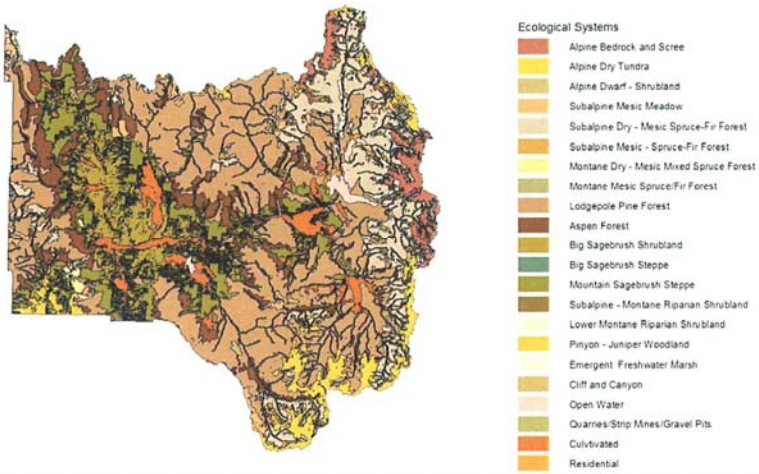
III.1 Physiographic Description

Grand County is located in north central Colorado and is bordered clockwise from the north by Jackson, Larimer, Boulder, Gilpin, Clear Creek, Summit, Eagle, and Routt counties. The County of Grand was chartered in 1874 and encompasses approximately 1,874 square miles. Elevation ranges from 7,300 feet along the Colorado River in the Gore Canyon to 13,553 feet at the summit of Pettingell Peak on the Continental Divide. The principal mountain ranges are; Rabbit Ears Range, Front Range, and Gore Range. The Continental Divide defines the northern and eastern county lines while the Gore Range defines the southwestern boundary.

Grand County is named after the Grand River, the original name of the Colorado River. The headwaters of the Colorado River begin in Grand County. Other significant watersheds in the county include the Fraser River, Williams Fork River and the Blue River. Major reservoirs and lakes include Grand Lake, Shadow Mountain Reservoir, Granby Reservoir, Willow Creek Reservoir, Windy Gap Reservoir, Williams Fork Reservoir and Wolford Mountain Reservoir.

The diversity of climate, geology, elevation, and soils within Grand County leads to a wide range of ecological systems, spanning from alpine tundra at the highest elevations to mountain and big sagebrush shrubland occupying the lowest elevations in west Grand County. The percentage of these ecosystems on the landscape are as follows:

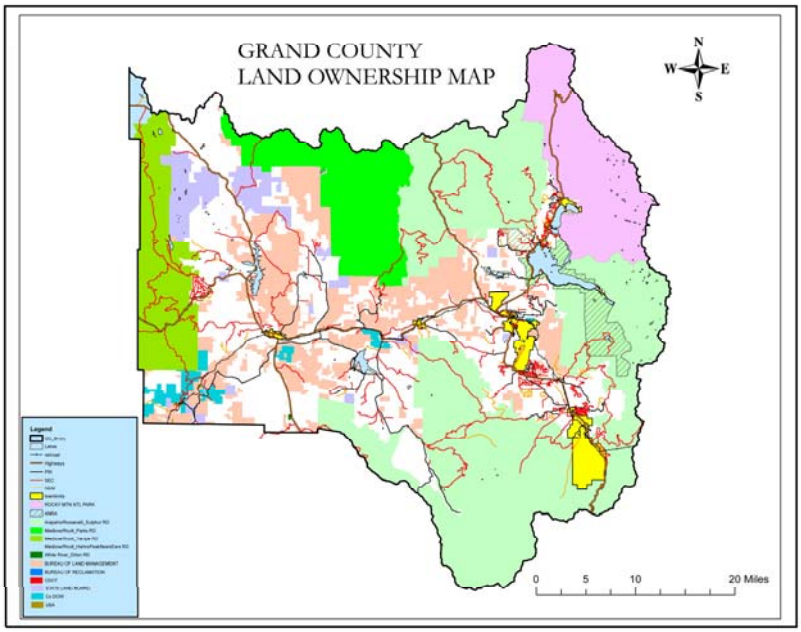
Alpine Bedrock and Dry Tundra: 4%
Alpine Dwarf Shrubland: less than 1%
Subalpine Mesic Meadow: less than 1%
Spruce-Fir Forest: 8%
Lodgepole Pine Forest: 25%
Aspen Forest: 5%
Sagebrush Shrubland and Steppes: 55%
Pinyon-Juniper Woodlands: less than 1%
Montane/Subalpine Riparian Shrubland: less than 1%



III.2 Land Ownership

There are 1,241,123 (more or less) acres in Grand County. Federal and state administered lands encompass approximately 70% of the landmass.

United States Forest Service-571,563 acres
Bureau of Land Management-144,047 acres
National Park Service-96,587 acres
State Land Board- 48,434 acres
Colorado Division of Wildlife-21,507 acres
Bureau of Reclamation-8,985 acres
Private-350,000 acres



III.3 Community Identification

Grand County has six incorporated municipalities; Winter Park, Fraser, Granby, Grand Lake, Hot Sulphur Springs, and Kremmling. There are three unincorporated communities that include; Tabernash, Parshall, and Radium. The estimated population in Grand County in 2004 was 13,253, a 6.5% increase from the 2000 estimate of 12,442 (US Census Bureau). The estimated municipal populations are; Kremmling (1,578), Granby (1,525), Grand Lake (447), Fraser (910) Winter Park (662), and Hot Sulphur Springs (521). The remaining estimated population of 7,610 resides in unincorporated Grand County. An interesting dynamic exists in Grand County in that approximately 63% of homes are 2nd homes or owned by absentee ownership.

III.4 Fire Protection Districts

There are five fire protection districts in Grand County that include East Grand Fire District, Kremmling Fire District, Hot Sulphur Springs/Parshall Fire District, Grand Fire District, and Grand Lake Fire District. While all of the municipalities and much of un-incorporated Grand County have fire protection coverage, large portions of the county are outside of fire district coverage. (See Map attached to Appendix 2) All five FPDs' actively participate in the Annual Fire Operating Plan. Many residents are not aware that their property may be outside of an FPD. Efforts to educate residents outside of FPDs should be continued for a better understanding of FPD response to their areas. The local FPDs have intensified and expanded their training, staffing, recruitment efforts, and in some cases have obtained additional facilities, equipment and fire fighting resources.

III.5 County Economy and Industry

The largest industry in Grand County is tourism and accompanying services provided. It is estimated that two million visitors come to Grand County each year to enjoy a diverse vacation and recreational experience. Tourism activities include but are not limited to; snow skiing, snowmobiling, hunting, fishing, boating, hiking, golf, camping, mountain biking, sightseeing, dining, lodging and shopping. Obviously, all of these tourism activities depend on a healthy forest, beautiful scenery, water quality, and air quality. Property development and construction of commercial, recreation, and home sites has seen a dramatic rise in the last decade. The logging and timber related industries have an increased presence due to the MPB epidemic occurring in Grand County. The Climax Molybdenum Company, Henderson Mine and Mill continue to be an important contributor to the county economy. Remaining production agriculture entities mostly in the western portion of Grand County continue to be a vital component of the county heritage, history, and economy. However, production agriculture is in decline due to land values, commodity market prices, rising operational costs and development pressures.

III.6 Climate

The climate of Grand County is generally sunny year-round. The average summer temperatures range from the low 80°F to the low 40°F although some days can exceed 90°F. The average winter temperatures range from the upper 20°F to 0° with extreme cold temperatures reaching to -50°F. The County's average rainfall and snowfall is approximately 12 inches and 128 inches a year respectively. In addition, Winter Park Resort boasts an average 365 inches of precipitation a year, mostly in snowfall.

IV. Treatment of Structure Ignitibility and Defensible Space

Grand County has adopted the Colorado State Forest Service "**FireWise Community Fire Prevention Partnership"** program and is attached in this section.

Access

When a wildfire threatens, the first few minutes are the most critical for saving your home. Firefighting personnel must be able to immediately locate and safely travel to your home in order to effectively protect it.

Street signs and house addresses must be clearly posted, and roads must be able to accommodate busy traffic. At the same time that fire engines and other emergency equipment are trying to drive into your area, you must be able to escape in your car with your family and valuable personal possessions.

Street Signs and Addresses

Proper identification of your home is essential. During a major wildfire, firefighters from throughout the state (or even the nation) will arrive to assist local firefighters. They will rely on clear street signs and addresses to find your home.

- Street names and addresses should be printed in letters and numbers at least four inches tall on a contrasting color background. They should be visible from all directions of travel for at least 150 feet.
- Signs should be made of fire resistant materials (e.g. metal).
- Each street and road in your area should be labeled and each should have a different name or number.
- Your home should have its own house number which should be in numerical order along your street or road.
- If your house is set back from the street or road, your address should be posted at the entrance of your driveway.
- In situations where more than one home is accessed off a single driveway, all addresses should be posted at the street and at each appropriate intersection along that driveway.

Access to Your House

Even if your street and house are clearly identified for firefighters, precious time can be lost if firefighters have difficulty getting to your house. Narrow roads, dead-end streets, steep driveways and weak bridges can delay firefighters, or prevent them from arriving at all; firefighting equipment is much larger and heavier than your family car or truck.

- Single lane roads or driveways should have turnouts at regular intervals with enough space to allow emergency vehicles and cars to pass.

- Road and street systems must be designed to provide safe emergency evacuation and fire department access. A minimum of two primary access roads should be designed into every subdivision and development.

- All private and public streets should be constructed to provide two traffic lanes, each a minimum of ten feet wide. This is just

enough space for a fire engine and car to pass each other.

- Curves and intersections should be wide enough to allow large fire equipment to easily pass and turn.

- Roads, driveways and bridges should be built to carry at least 40,000 lbs., the average weight of a fire engine. (By comparison, the average family station wagon weighs about 4,000 lbs.)

- Streets and driveways must not be too steep or have sharp curves – this can prevent emergency equipment from gaining access to your home.

- Dead-end streets and long driveways should have turnaround areas designed as either a "T" or a circle large enough to allow fire equipment to turn around.

Each of these steps will give firefighters a chance to find and protect your home. A few minutes delay can make a difference in saving your home. If you have any question about emergency access to your home, including construction widths, grades or strengths, contact your local fire department.

Water supply

Establish Your Emergency Water Supply
Water supply is vital for a fire department to protect a threatened house or extinguish a burning one. Even a **FireWise** house may not be able to survive a wildfire without an emergency water supply. Many jurisdictions require new developments to form or join a community or municipal water system. In these cases, the designed water systems have large storage facilities that generally meet the needs of firefighters.

Your Personal Emergency Water Supply

- A minimum water storage supply of 2,500 gallons is recommended for use in emergencies. If you live in a home isolated from others, you may not have access to an adequate community water system. Cooperation with your neighbors can result in the development of a common emergency water storage facility to provide protection, not only for your home but for others. Finally, as a last resort, you may need to develop your own well.

Construction of a dry hydrant system.

Access To Your Emergency Water Supply

- Once you have established an emergency water supply, you must make sure firefighters can get to it. If your water comes from a well, it is recommended that you have a gasoline-powered generator so firefighters can operate your pump during a power failure.

- For any emergency water supply, the outlet valve must be easily seen and visibly signed from the nearest road. You can obtain specific outlet, valve design and thread requirements by contacting your local fire department.

Defensible space

Your first defense against wildfire is to create and maintain a defensible space around your home. This does **not** mean your landscape must be barren. A defensible space is an area, either man-made or natural, where the vegetation is modified to slow the rate and intensity of an advancing wildfire. It also creates an area where fire suppression operations can occur and helps protect the forest from a structure fire.

A disaster waiting to happen.

This home is more easily defendable.

Defensible Space

Wildfire hazards can be effectively reduced by following these defensible space guidelines developed by the Colorado State Forest Service. (Also see Cooperative Extension Fact Sheet 6.302.)

- The dimensions of a defensible space are subjective and depend on site characteristics, but typically a defensible space, on flat ground, extends a minimum of 75 feet around a home. This distance should be extended if the structure is located on a slope.

- Thin out continuous tree and brush cover around structures. The initial 15 feet around a structure should consist of an area in which all flammable vegetation is removed.
- Beyond the initial 15 feet, trees should be thinned to 10-12 foot crown spacing. Occasionally, clumps of 2 or 3 trees are acceptable for a more natural appearance if additional space surrounds them.
- Mow dry grass and weeds to a height of 6 inches or less for a distance of 30 feet from all structures.

- Prune tree branches within the defensible space up to a height of 10 feet above the ground.
- Dispose of all slash and debris left from thinning by either chipping, hauling away or piling and burning (check with your local fire department for burning restrictions.

- Remove shrubs and small trees, or other potential "ladder" fuels from beneath large trees. Left in place, these fuels can carry a ground fire into the tree crowns.

- Trim branches which extend over roof eaves.

- Remove branches within 15 feet of chimneys.

- Maintain the defensible space annually by removing debris, shrubs and other vegetation which has accumulated during the year.

- Clean pine needles, leaves and other debris from roofs and gutters. This will eliminate an ignition source for firebrands, especially during hot, dry weather.

- Stack firewood and wood piles at least 30 feet from any structure. Clear away flammable vegetation within 10 feet of these wood piles. (Many homes have survived as a fire passed, only to burn later from a wood pile that ignited after the firefighters left.)

This home might not survive a wildfire.

- Place liquefied petroleum gas (LPG) tanks and fuel storage containers at least 30 feet from structures. Clear flammable vegetation from within 10 feet of all such tanks.

Remember, after you have established your **FireWise** environment, you must maintain it regularly. If you have any questions about creating or maintaining defensible space around your home contact your local fire department or Colorado State Forest Service district office.

Trees & shrubs

Firewise Landscaping

Many naturally occurring plants in our area are highly flammable during the summer and can fuel a wildfire, causing it to spread rapidly. Removing flammable native vegetation and replacing it with low-growing, fire-resistive plants is one of the easiest and most effective ways to create a defensible space.

Select landscape vegetation based on fire resistance and ease of maintenance, as well as visual enhance-ment of your property. In general, fire-resistive plants:

- grow close to the ground;
- have a low sap or resin content;
- grow without accumulating dead branches, needles, leaves or other debris;
- are easily maintained and pruned;
- are drought-tolerant in some cases.

If fire-resistive plants are not available, vary the height of your landscape plants and give them adequate spacing. The taller the plants, the more widely they should be spaced. Contact your fire depart-ment, local nursery or Colorado State Forest Service office to find out which fire resistive plants are adapted to the climate in your area. (Additional information is available on Cooperative Extension Fact Sheet 6.305.)

Other Firewise Precautions

After you have created defensible space around your home, additional **FireWise** precautions may be necessary.

- Work with neighbors to clear common areas between houses and prune areas of heavy vegetation that may pose a threat to everyone.

- Avoid planting trees under or near electrical lines (they may eventually grow into or touch the lines in high winds, thus causing a fire).
- If part of your property extends outside of the newly created defensible space and is heavily forested, thin trees to decrease fire hazard and improve forest health.
- Remove dead, weak or diseased trees and trees that are obviously leaning – leaving a healthy mixture of older and younger trees.

Construction design & materials

Make Your House *Firewise*
Your house may be vulnerable to a wildfire because of its design, construction and/or location. When preparing to build, buy or remodel, know what to look for in a **FireWise** home. A few modifications to your construction plans can reduce the chance of your house catching fire, or resist further damage if it does catch fire. Don't let your house become more fuel for a wildfire.

If you are building a new house, evaluate your building site.

- Choose a site away from heavily vegetated areas.

Probably not a wise location for a home.

- Build on the most level portion of the property.
- Avoid ridge tops, canyons and areas between high points on a ridge. These are extremely hazardous locations for houses and fire-fighters because they become natural chimneys, increasing the intensity of the fire.

This location would become a natural chimney during a wildfire.

- Set your structure a minimum of 30 feet back from the ridges or cliffs; increase the distance if the home will be higher than one story.

Building Materials
Use fire-resistive or non-combustible construction materials, combined with design techniques to prevent or slow the penetration of fire beyond your home's exterior. Whenever possible, use brick, rock or stucco – they resist fire much better than wood. If you decide on a wood exterior, it is **especially** important that you follow the **FireWise** practices in this notebook.

Your Roof
Your roof has the largest surface area of your structure and is the most vulnerable part of your house. It can easily catch fire from a wildfire's wind-blown sparks.

Use class A or B roofing materials, such as asphalt shingles, slate or clay tile, or metal.

Siding/walls

- Use fire-resistive or non-combustible construction materials whenever possible. Use a minimum of a Class III flame-spread rated siding material – stone, brick and stucco are best. Walls should be constructed of fire-resistive materials from the ground to the roof overhang.

- Roof eaves extending beyond exterior walls are also susceptible to flame exposure. Limit them in length and box or enclose them with fire-resistive materials.

Foundation

A building's foundation comes in contact with a spreading wildfire before other areas of the structure.

Enclose foundations with concrete block, cement walls, or other fire-resistive building materials.

Windows

Windows are often overlooked as fire hazards, but can be serious risks. The heat from a wildfire may be enough to ignite the furnishings inside your house through the windows.

- Minimize the size and number of windows on the downhill side of the house or the side that would most likely be exposed to a wildfire.

- Consider both size and materials for windows and sliding glass doors. Multi-paned glass provides insulation from trapped air and gives more protection from radiant heat than single-paned glass. It also reduce breakage potential from wind-blown debris.

Other Areas

- Cover exterior attic, soffit and underfloor vents with metal wire mesh (no larger than 1/8 of an inch) to prevent sparks from entering your home through vents.

- Install eave and soffit vents closer to the roof line than the walls.

- Design decks so that they are not located at the top of a hill directly in the line of a fire moving up slope.

- Enclose the undersides of balconies and decks on slopes with fire-resistive materials. If not enclosed, these areas can trap flames and burning embers that can ignite your home.

- Use weed-barrier fabric under deck and balcony areas to keep them free of vegetation.

- Cover chimneys and stovepipes with a non-flammable screen (mesh no larger than 1/2 inch).

Interior safety

Residential sprinkler systems

A fire occurs in 1 out of 10 American homes every year. In wildland areas, the fire from the home may spread into the wildland. Residential Fire Sprinkler Systems are a great asset to home-owners in the Urban Wildland Interface.

Homes in wildland areas usually have a longer fire department response time. In a home with residential sprinklers installed, the fire will be controlled and often extinguished before fire crews arrive. A sprinkler system will reduce the heat and smoke that is generated during a fire, thus allowing a safer environment in which to escape.

A sprinkler system can be designed for any type of water supply. Many homes that are built in wildland areas do not have a domestic water supply available. Water supply for homes usually come from a well. A water tank can be installed to supply the sprinkler system.

Smoke Detectors

Lives can be saved when smoke detectors are properly installed and maintained. Most areas require smoke detector installation for new structures.

Choice of Detectors

- There are several types of smoke detectors available. Some run on batteries, some run on household current and others get their main power source form the household current with a battery back up in the event of a power failure.
- There are several ways smoke detectors detect smoke. Some use an "ionization" sensor which detects slow smoldering fires, some use a "photoelectric" sensor which detects flame and others use a combination of the two.

How Many?

- Minimum protection requires a smoke detector outside each sleeping area and on every level of the home. Be sure everyone sleeping in your home can hear your smoke detector alarms with bedroom doors closed.

- Smoke detectors are not recommended for kitchens, bathrooms, or garages where cooking fumes, steam, or exhaust could set off false alarms, or for attic and unheated spaces, where humidity and temperature changes might affect a detector's operation.

Where to Install

Because smoke rises, mount detectors high on a wall or on the ceiling. Wall mounted units should be mounted 4 to 12 inches from the ceiling. Ceiling mounted units should be mounted at least 4 inches from the nearest wall.

Maintenance

- Test your smoke detectors weekly and replace the batteries twice a year (when you set your clock forward and back, change your batteries). Many battery powered smoke detectors "chirp" or give some type of audible signal when their battery power is low.

- Clean your smoke detectors at least once a year. Dust and cobwebs can reduce a detector's sensitivity to smoke. The life expectancy for any type of smoke detector is about 10 years. If you have smoke detectors that are older than 10 years, they need to be replaced.

Portable Fire Extinguishers

Portable fire extinguishers are your best defense against a small fire. Fire extinguishers for home use are not intended to fight large or spreading fires.

Choosing a Fire extinguisher

All fire extinguishers are labeled using standard symbols for the class of fires they can put out. A red slash through any of the symbols tells you the extinguisher cannot be used on that class of fire.

Class A:

- Ordinary combustibles such as wood, cloth, paper, rubber and many plastics.

Class B:

- Flammable liquids such as gasoline, oil, grease, tar, oil based lacquer, and flammable gas.

Class C:

- Energized electrical equipment including wiring, fuse boxes, circuit breakers, machinery, and appliances.

Extinguisher Size

Portable extinguishers are also rated for the size of fire they can handle. Normally, an extinguisher that has a minimum rating of 2A-10B:C is recommended for each floor level. The larger the number, the larger the fire that the extinguisher can put out. Higher-rated models are often heavier. Make sure you can hold and operate the extinguisher before you buy.

Installation/Maintenance

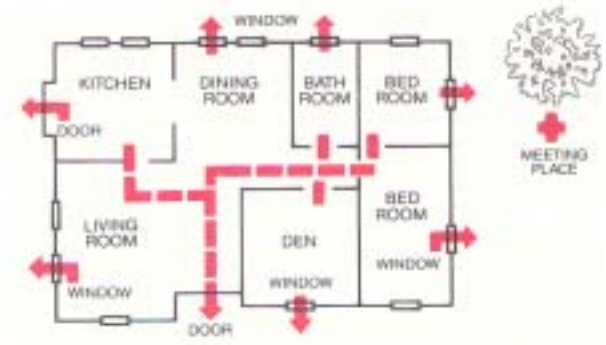
- Extinguishers should be installed in plain view, above the reach of small children, near an escape route and away from stoves and heating appliances.

- Extinguishers require routine care. Read your operator's manual and ask your dealer how your extinguisher should be inspected and serviced.

- Rechargeable models must be serviced after every use. (Service companies are listed in the Yellow Pages under "Fire Extinguishers.") Disposable fire extinguishers can only be used once and must be replaced after use.

Plan Your Escape!

Smoke alarms can cut your risk of dying in a home fire nearly in half, but you have to know what to do when they go off.



Make a plan

- Draw a floor plan of your home, marking two ways out (including windows) of every room, and decide on the best escape routes.

- Pick an outside meeting place (preferably in front of your home), and tell everyone to meet there after they've escaped, so you can count heads and tell firefighters if anybody's trapped inside.

Practice Your Plan

- Every household should have a fire escape plan, but practice is essential; there's no time to lose in a fire emergency.

- Practice your escape plan at least twice a year. Make your exit drills realistic. Pretend that some exits are blocked by smoke or fire and practice using alternative escape routes.

Test Doors before Opening Them

Kneel or crouch and touch the door with the back of your hand. If the door is warm, use another escape route. If it's completely cool, put your shoulder against the door and open it slowly. Be prepared to slam it shut if there's smoke or flame on the other side.

Crawl Low under Smoke

Heat rises carrying smoke with it, so air will be cooler and cleaner near the floor during a fire. If you run into smoke, try another escape route. If you must exit through the smoke, crawl on your hands and knees and keep your head close to the floor.

Stop Drop and Roll

If your clothes catch on fire **"Stop Drop and Roll,"** making sure you cover your face.

Get Out and Stay Out

React immediately! Do not try to rescue possessions or pets and never go back inside a burning building. Call the fire department from a neighbor's phone, a portable phone, or call box after you've escaped. When reporting the fire make sure you give your address, name, closest cross street, and directions if you live in a difficult area to find.

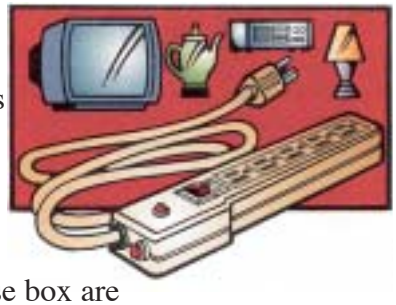
Fire Prevention Checklist Throughout The House

General Safety

- ☐ Keep doors, hallways, and stairs clear of obstructions.
- ☐ Post emergency numbers near the telephone.
- ☐ Do not smoke in bed.
- ☐ Do not put ashtrays on chairs or sofa arms.
- ☐ Do not leave unattended cigarettes burning in ashtrays.

Electrical Safety

- ☐ Get rid of frayed or cracked electrical cords.
- ☐ Do not place electrical cords under rugs, over nails or in high traffic areas.
- ☐ Do not overload electrical outlets or extension cords.
- ☐ Do not place electrical cords near sinks, bathtubs, or ranges.
- ☐ Make sure all fuses in the fuse box are the correct size.
- ☐ Make sure all outlets have cover plates and no exposed wiring.



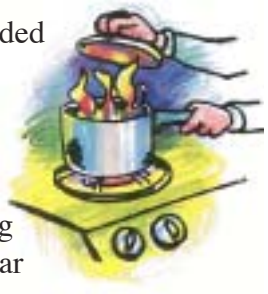
Safety from Alternate Heat Sources

- ☐ Plug heaters directly into the wall socket and unplug when not in use. Do not use extension cords with portable heaters.
- ☐ Do not place heaters where they can be knocked over.

- ☐ Keep flammable materials (such as furniture, clothes, curtains or towels) at least 3 feet from space heaters or stoves.
- ☐ Do not store flammable liquids near ignition sources (heaters, furnaces, hot water heaters or stoves).
- ☐ Clean chimneys yearly.
- ☐ Do not leave heaters unattended or sleep while they are on.
- ☐ Do not use heaters to dry clothes.

Kitchen Safety

- ☐ Do not leave food unattended on the stove. If you must leave the kitchen, take a utensil along with you as a reminder.
- ☐ Do not cook while wearing sleeves that can dangle near burners.



- ☐ Do not let grease build up on your stove or oven.
- ☐ Do not let crumbs build up in your toaster.
- ☐ Do not let curtains hang near your range.
- ☐ Check the kitchen before you go to bed.
- ☐ Turn the oven off.

V. Evacuation

Evacuation is an important component of this CWPP. One of the most commonly asked questions from the public concerns evacuation plans or strategies. The CWPP recognizes safe and timely evacuation as a top priority in citizen protection. Citizen protection is the capability to plan for and execute the safe and effective evacuation and sheltering of an at risk population to an area of safe refuge. The desired outcome is safe refuge and providing for essential services and allowing for citizen re-entry when appropriate.

The key components for successful evacuation include law enforcement, firefighters, Grand County Communications Dispatch, Red Cross, local media, pre-determined refuge/shelter sites, and citizen cooperation. Any ordered evacuation will be under the direction of the Incident Command System and the Incident Commander.

In the event that a wildfire requires evacuation of a certain geographical area the following steps will be implemented upon direction from the Incident Commander:

1. Red Cross will be notified and mobilized.
2. Pre-determined sites will be activated. (example: West Grand or East Grand School Facilities)
3. Local and State Law Enforcement alerted with coordination coming from the Grand County Sheriffs' Office. If needed via Mutual Aid Agreements, other law enforcement entities will respond. (Example: Colorado Division of Wildlife, United States Forest Service, National Park Service and other adjacent County law enforcement.
4. Grand County Communications Dispatch will activate the "Reverse 911 System" for the affected geographic area. The "System" will communicate to land lines with a customized informational message with evacuation routes and refuge/shelter site(s) and will operate with a (3) message process;

   1. READY 2. SET 3. GO.

   READY = Identify and decide what to evacuate with. (Example: important papers, family pictures, pets etc.).
   SET = Pack and load vehicle.
   GO = Evacuate.

5. Red Cross will coordinate citizen accountability when possible.
6. At the discretion of the Incident Commander, citizen re-entry allowed when appropriate and safe.

In the event of threatening wildland fire, it is important to recognize that it is highly unlikely a county wide evacuation would ever become necessary. The more likely scenario would be the evacuation only of certain populated areas threatened by wildland fire.

VI. Community Assessment

The CWPP, in an attempt to not get consumed by detail, will offer general assessments, overviews, and recommendations on large landscapes and project areas. There are three major project areas identified below as: **Three Lakes, Fraser Valley and West Grand**. (See Map attached to Appendix 3) Additional detailed information will be addressed by the localized CWPP's. The Grand County CWPP should provide basic information to assist localized CWPP's in their efforts.

To arrive at this assessment of a project area or community's risk, five primary factors that affect potential fire hazard are assessed: community/subdivision location, population density, defensible space, availability and capability of fire suppression resources and physical conditions (topography, vegetation components, and stands of trees infested with MPB).

Several years ago the CSFS compiled WUI Hazard Assessments on lands in Grand County. These assessments indicate areas of "Red Zone" where present fuels, topography and high value areas intersect. It is the intent of this CWPP to increase the reach or area identified as WUI across the Grand County landscape. (See Map attached to Appendix 3 for expanded WUI area)

VI.1 WUI Definition

The CWPP defines the WUI as populated private land that is located at a minimum of 1.5 miles from public land. In most areas the WUI boundary will expand several miles onto public land. The defined expansion is dependant upon topography, fuel loads and natural or manmade fuel breaks. (See Map.4 Wildland Urban Interface)

VI.2 Project Area Descriptions and Risk Assessments

Three Lakes:
The Three Lakes area is defined by the incorporated communities of Grand Lake and Granby, the west side of Rocky Mountain National Park, the Arapaho National Recreation Area (USFS), portions of the Indian Peaks Wilderness (USFS), Never Summer Wilderness (USFS), Bowen Gulch Protection Area (USFS), BLM managed lands and Sol Vista Ski Area. In addition, within the project area is Lake Granby, Shadow Mountain Reservoir, Grand Lake, Willow Creek Reservoir, and the headwaters of the Colorado River. Classic WUI areas exist in moderate to densely populated sub-divisions of varying sizes. Lodgepole pine (LPP) is the dominant forest species and these stands have been heavily impacted by MPB. In many areas 90-100 % of the mature lodgepole pine trees are dead due to the MPB.

The risk of wildland fire threatening the general Three Lakes area is **moderate to very high.** Private landowners and entire sub-divisions have implemented mitigation efforts

resulting in enhanced fire protection. Several hundred thousand trees and associated slash have been removed and disposed of. In certain places of the Three Lakes project area, vast amounts of mitigation work may be providing the desired affect of fire protection in the WUI. The US Forest Service ANRA project will compliment much of the ongoing and completed mitigation work on private land as will the National Park Service boundary mitigation project. However, vast amounts of dead and dying stands of LPP remain on the landscape on both private and public lands leaving the Three Lakes area very vulnerable.

Fraser Valley:
The Fraser Valley area is defined by the incorporated communities of Winter Park and Fraser, the un-incorporated community of Tabernash and the Winter Park Ski Area. Other defining areas include the James Peak Protection Area (USFS), Fraser Experimental Forest (USFS), Byers Peak Wilderness (USFS), Vasquez Peak Wilderness (USFS), portions of the Indian Peaks Wilderness and BLM managed lands. Other large entities in the area would include the YMCA of the Rockies, the Young Life Camp and Henderson Mill. Classic WUI areas are present in moderate to densely populated sub-divisions of varying sizes. LPP is the dominant forest species and many stands have been hard hit by MPB. In many areas 90-100% of the mature LPP stands are dead due to MPB infestations.

The risk of wildland fire threatening the general Fraser Valley Project area ranges from **moderate to very high.** Private landowners, sub-divisions and municipalities have begun implementing effective mitigation efforts on the landscape. USFS and BLM mitigation projects are at various stages of planning and implementation that will and are complimenting the efforts on private lands. There remains on the landscape and in the WUI, vast stands of LPP that are dead and dying leaving much of the landmass on private and public lands in the Fraser Valley area vulnerable.

West Grand:
The West Grand area includes the incorporated communities of Hot Sulphur Springs and Kremmling, and the un-incorporated communities of Parshall and Radium. Defining geographical features include the Troublesome Basin (USFS), Wolford Mountain (BLM), Gore Canyon, and eastern portions of the Rabbit Ears Range, Williams Fork Reservoir and Wolford Mountain Reservoir. The dominant fuel type in the area is sagebrush shrubland. However, in the higher elevations LPP is the dominant forest species and is showing high mortality rates from MPB. Pinion-Juniper dominates in the southwestern portion of the county near Radium.

The risk of wildland fire threatening the general West Grand Project area is **low to high.** On much of this landscape, the vast amounts of rangeland, production agriculture meadows, and shrub land do not contain heavy continuous fuel loads. Population density in most of this project area is light. However, classic WUI does occur in the Old Park, Bighorn Park, and Copper Creek sub-divisions. Private landowners in each of these sub-divisions have implemented aggressive mitigation efforts. The BLM and USFS have

implemented a multiple year public land mitigation project adjacent to Old Park sub-division. Large scale mitigation projects have occurred on several ranches in the project area, including the Blue Valley Ranch, Grand River Ranch, and Williams Peak Ranch. Public lands adjacent to many of these areas have been severely infested with MPB resulting in continued vulnerability to these WUI and agricultural areas.

Incorporated Communities or Towns

Kremmling: The risk of wildland fire in the community of Kremmling is **low**. The majority of land surrounding Kremmling consists of BLM rangeland, private production agriculture meadows and rangeland. The confluence of the Colorado River and Blue River occurs just southwest of town. In extreme drought conditions, it is conceivable that light ground fuels present in the surrounding rangeland could carry a fire to threaten Kremmling. With the absence of heavy woody fuels this scenario is highly unlikely.

Hot Sulphur Springs: The risk of wildland fire in Hot Sulphur Springs is **low to moderate**. The Colorado River runs just north and through town. Most of the lands immediately surrounding the town are BLM rangelands and private meadows and rangeland. The exception to the grass and shrub land fuels is above town to the south/southwest consisting of smaller stands of LPP on private property and US Forest Service. This threat is mitigated by the fact that fire in general carries uphill and these stands occur up in elevation in relation to the town proper.

Granby: The risk of wildland fire threatening Granby is **low to moderate**. The Fraser River runs through Granby eventually flowing into the Colorado River just west of town limits near Windy Gap Reservoir. The lands surrounding Granby mainly consists of private meadows and rangeland with an ever increasing amount of development in the WUI. These areas do not contain significant amounts of heavy fuel loads. An exception to this description would be portions of the Granby Ranch/Silver Creek developments which are now incorporated into the Town of Granby. In addition, forested BLM and state lands occur to the east of town. The Little HO Ranch and the nearby Legacy Park subdivision continue to implement aggressive mitigation efforts and to a lesser degree, mitigation efforts are occurring sporadically in the subdivisions in and around the Silver Creek area.

Grand Lake: The risk of wildland fire threatening the Town of Grand Lake is **very high**. Portions of the town are protected by Shadow Mountain Reservoir and Grand Lake. However, the town is surrounded in all four directions by dense stands of LPP forests that are dead or dying from MPB infestations. Highway 34 serves as the only artery of ingress and egress for evacuation and movement of firefighting resources. The Town of Grand Lake has implemented an aggressive mitigation program inside of town limits to remove dead and dying trees. The Park Service has begun mitigation projects on certain areas of common boundary areas. The US Forest Service has implemented mitigation measures and timber sale activity in the vicinity in their ANRA project. Many of the adjacent subdivisions are in various stages of mitigation activities complimenting ongoing projects

in the area. Still, Grand Lake remains vulnerable to wildland fire due to the huge volume of dense stands of dead and dying trees remaining. Grand Lake is an active participant in the Grand Lake Fire District CWPP and additional detailed information is available in that document.

Fraser: The risk of wildland fire threatening the town of Fraser is **moderate to high.** Lands surrounding Fraser are varied and include open grass meadows, un-incorporated subdivisions and incorporated developments with dense stands of LPP. The Fraser River flows through the town and a common boundary is shared with the town of Winter Park. Aggressive mitigation efforts are occurring on incorporated developments Cornerstone and Rendezvous. Nearby un-incorporated sub-divisions in the Pole Creek area have implemented aggressive mitigation projects. Other subdivisions in the Ice Box area and Winter Park Ranch area are in the early stages of mitigation. Several hundred acres of forested lands owned by the Denver Water Board are in various stages of forest management and fuel reduction management with the Colorado State Forest Service. Portions of Fraser remain vulnerable to wildland fire due to large volumes of dense stands of dead and dying LPP. Highway 40 serves as the main ingress/egress for evacuation and movement of fire fighting resources. Other routes for transportation movement could include County Road 5 and the future Fraser Valley Parkway (County Road 522). The town of Fraser is actively engaged with the town of Winter Park in developing a Fraser Valley CWPP. Additional detailed information will become available when that document is completed.

Winter Park: The risk of wildland fire threatening the town of Winter Park is **high to very high.** Winter Park is virtually surrounded by dense stands of LPP that occur on both public and private lands. The Fraser River flows through town but offers very little or no protection from fire. Highway 40 serves as the only viable transportation route for evacuation and movement of firefighting resources. As dense stands of LPP occur inside the town limits, the town has implemented an aggressive and very effective tree removal program with town residents. The town has invested in Air Curtain Burner Technology and has successfully disposed of large volumes of woody biomass (slash). The US Forest Service is in various stages of planning and implementation on several mitigation projects that will serve as buffer zones or fire manipulation areas with the intent to reduce fire risk to the Winter Park area. These projects include collaboration with the Winter Park Ski Area mitigation project, Crimson Project, Upper Fraser Valley Project (in collaboration with the BLM), Keyser Creek project and Arrow project. Many of these projects will help mitigate for overall fire risk for Fraser as well. The town remains vulnerable to wildland fire due to the remaining huge volumes LPP stands on the surrounding landscape. The collaborative CWPP being developed by Winter Park and Fraser will provide additional information when that document is completed.

Un-incorporated Communities

Radium: The risk of wildland fire threatening Radium is **moderate to high.** The community is essentially located and banked into a forested area. The Colorado River

flows below the community. Although MPB infested acres are not prevalent in the area at this time, a prolonged drought could substantially increase fire danger in the conifer and shrub land species common in the area. Radium is surrounded by State of Colorado and BLM administrated lands. The State and BLM are currently implementing a 5-10 year fuels reduction program in the general area. County Roads 11 and 1 would serve as evacuation and transportation routes.

Parshall: The risk of wildland fire threatening Parshall is **low.** The Colorado River flows below the community along large swaths of wet irrigated hay meadows. Lands surrounding Parshall are administered by the State of Colorado and BLM. These lands are mostly rangeland and heavy fuel loads are not present.

Tabernash: The risk of wildland fire threatening "old town" Tabernash is **low to moderate.** Tabernash proper is located in the bottom of the Fraser Valley and continuous heavy fuel loads are not present. However, nearby subdivisions in the adjacent uplands that are generally associated with Tabernash have a **high** threat from wildfire (Winter Park Highlands).

VI.3 Critical Infrastructure and Values at Risk

Utility and Communications

There are several thousand acres of susceptible stands within close proximity to major power transmission lines, electric sub-stations, communication towers, and facilities in Grand County. Interruption of power transmission on the major lines can have widespread effects on a regional scale. Increased wildfire risk to communication sites threatens disruption of regional communications and would severely handicap local firefighting, law enforcement and emergency management efforts during an actual wildfire event. The risks of wildland fire threatening utility and communication infrastructure is **high.** (See Appendix 4 for Mountain Park Electric Inc. Information Brochure)

Transportation Corridors

Increased wildfire risk threatens disruption of travel on a regional scale on transportation corridors including State Highways 40, 34, 9, 134, and 125. In the event of an actual wildland fire, evacuation efforts and movement of firefighting resources could be severely hampered or stopped. Rail Road passenger and freight service could be curtailed or stopped.

Developed and High Valued Recreation Areas

There are (2) ski areas within the Grand County assessment area; Winter Park/Mary Jane and Sol Vista. Healthy stands of trees are imperative to the integrity of these ski areas as the stands provide ski run definition and provide aesthetic value to skiers. Healthy tree

stands provide stability for hydrologic flows and stymie erosion potential on steep slopes. Both ski areas are experiencing large scale MPB infestations that are threatening existing stands of lodgepole pine. The Winter Park/Mary Jane Ski area is located primarily on US Forest Service land and a wildfire mitigation program is currently being implemented in collaboration with the US Forest Service. The Fraser Valley Metropolitan Recreation District and the Grand Lake Metropolitan Recreation District have implemented mitigation programs that better protect the integrity of their golf courses, cross country ski trails and compliments ongoing mitigation efforts on adjacent subdivisions. In addition, the YMCA of the Rockies, Young Life (Crooked Creek Ranch) and Devils Thumb Resort have implemented mitigation programs that will enhance protection from wildland fire and compliments mitigation work occurring or planned on public and private land.

There are many developed campground and recreational sites in Grand County located primarily on public lands. Higher wildfire risk resulting from increased fuel loads in and adjacent to these areas threatens the viability of the sites. The safety and property of recreation users, as well as capital improvements are threatened by MPB caused hazard trees and increased wildland fire hazards.

Watersheds

Watersheds in Grand County are at **high** risk due to large amounts of MPB caused tree mortality. Catastrophic wildland fire will increase run off and total stream flows in areas severely burned over. Burned over areas will not provide sufficient vegetation and soil stability to hold peak run-off in check. Sediments loads will increase threatening drinking water, aquatic habitat, fisheries, and channel stability. Reservoirs will be especially prone to increased sediment loads. Reservoirs and lakes within Grand County at highest risk would include Grand Lake, Shadow Mountain Reservoir, Granby Reservoir, Willow Creek Reservoir, Windy Gap, Williams Fork Reservoir and Wolford Mountain Reservoir. (See Appendix 5 for the Colorado Water Science Center and US Geological Survey "Proposal" Rapid Assessment and Effects of Wildfire on West Slope Water Supply Operations of the Colorado Big Thompson Project)

Wildlife Habitat and Fisheries

Catastrophic wildland fire on a large scale will negatively affect many wildlife species on an interim basis. Elk, deer, and moose will loose deep cover associated with dense lodgepole pine forest components. Conversely, available ground vegetation will proliferate after a fire providing these species with abundant forage from grasses, forbs and shrubby species. It is likely that for a period of time, a downward trend will occur for wildlife species such as tree squirrels, and pine martens that are dependent on the conifer forest for habitat and food source. Raptors such as goshawks, coopers hawks, and red tail hawks will potentially struggle with the loss of the conifer forests that provide habitat, food source and habitat for their prey. Migratory songbirds, woodpeckers and flickers will lose habitat that provides for their cover and food source. It should be noted that

these mentioned species are only a small representation of the abundant diversity of wildlife in Grand County. Native wildlife species have evolved with fire and in time should recover as habitat changes evolve and proliferate.

Fisheries could be negatively impacted with the occurrence of large scale wildland fire. Excessive sediment loads and erosion dumping into tributaries, rivers, lakes and reservoirs would impact the viability of fish habitat. On an interim basis, loss of stream bank and riparian vegetation would lead to lack of shade and reduced filter systems resulting in higher water temperatures and poor water quality.

VII. Wildland Fire Mitigation and Fuel Reduction Projects

(Current as of September-2006)

This section will provide information relating to fire mitigation and fuel reduction projects that have been proposed, planned, implemented or even completed in Grand County. The following maps and project descriptions attempt to illustrate the volume and complexity of projects occurring across the Grand County landscape. Included are private land projects and larger projects on lands administered by the US Forest Service, Bureau of Land Management, National Park Service, Colorado State Forest Service and Colorado Division of Wildlife.

It is recognized that this CWPP has attempted to be consistent with current fire planning efforts of the BLM, USFS, NPS, CSFS and the ongoing coordinated efforts of the Grand County Interagency Wildland Fire Mitigation Group. Fire management activities will comply with the policies identified in federal and state regulations and laws pertaining to wilderness, threatened and endangered species, air quality and water quality.

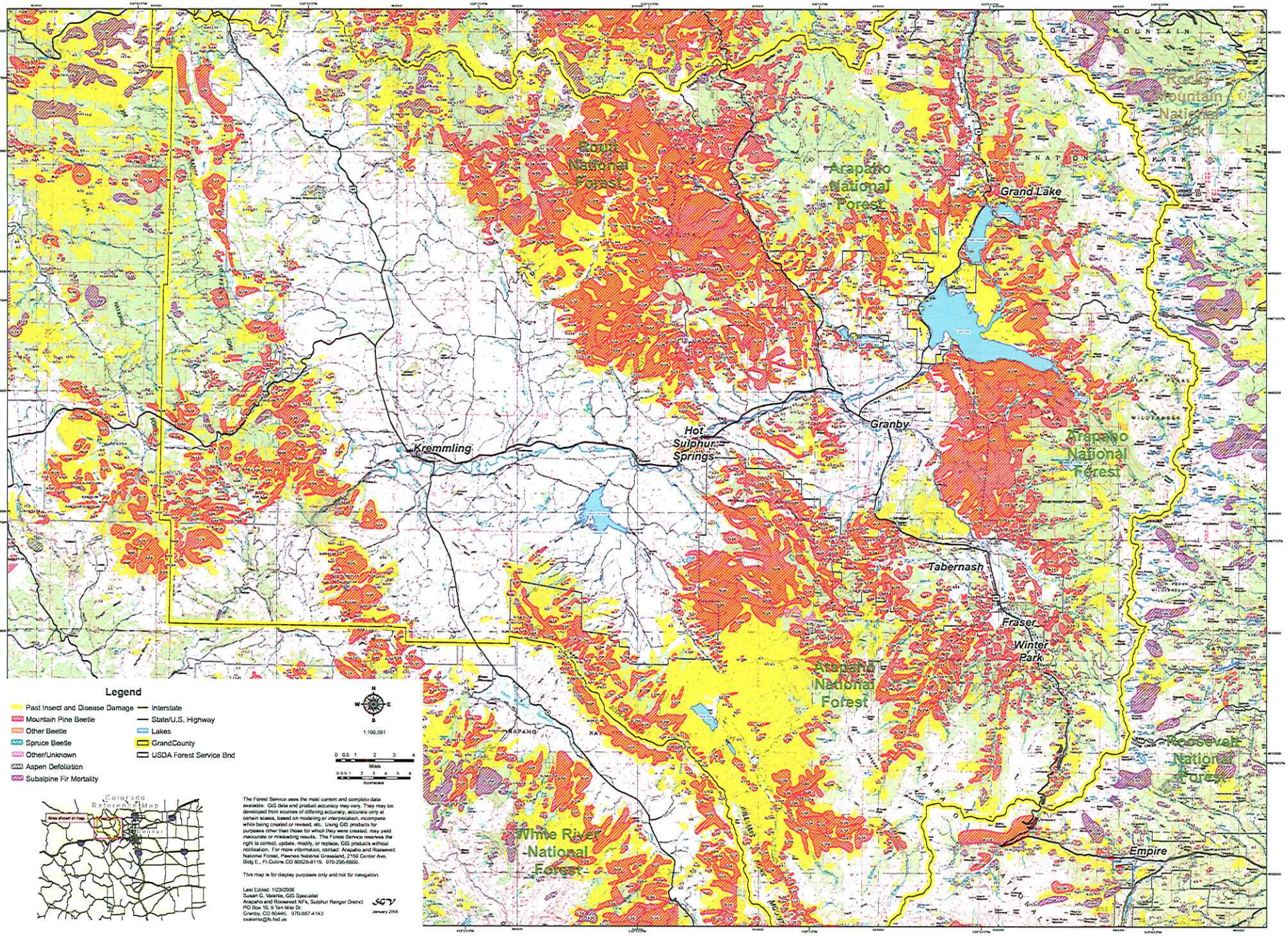
VII.1 Implementation Guidance

The CWPP strives to give public land management agencies additional guidance in the prioritization and implementation of wildland fire mitigation projects within the WUI. Special consideration should be given to values at risk that are situated within or nearby the WUI. These values would include but are not limited to the items listed in the Critical Infrastructure and Values at Risk section (VI.3): densely populated areas, utility and communication infrastructure, transportation corridors, recreation areas, watersheds and critical wildlife habitat.

United States Department of Agriculture
Forest Service

2005 Insect and Disease Damage - Grand County, CO

2005 Insect and Disease Damage
Grand County, CO



Legend

- Past Insect and Disease Damage
- Mountain Pine Beetle
- Other Beetle
- Spruce Beetle
- Other/Unknown
- Aspen Defoliation
- Subalpine Fir Mortality
- Interstate
- State/U.S. Highway
- Lakes
- GrandCounty
- USDA Forest Service Bnd

1:100,591

0 0.5 1 2 3 4 Miles

0 0.5 1 2 3 4 5 6 Kilometers

Colorado Reference Map

Area shown on map

The Forest Service uses the most current and complete data available. GIS data and product accuracy may vary. They may be: developed from sources of differing accuracy, accurate only at certain scales, based on modeling or interpolation, incomplete while being created or revised, etc. Using GIS products for purposes other than those for which they were created, may yield inaccurate or misleading results. The Forest Service reserves the right to correct, update, modify, or replace, GIS products without notification. For more information, contact: Arapaho and Roosevelt National Forest, Pawnee National Grassland, 2150 Center Ave. Bldg E., Ft Collins CO 80526-8119. 970-295-6600.

This map is for display purposes only and not for navigation.

Last Edited: 1/23/2006
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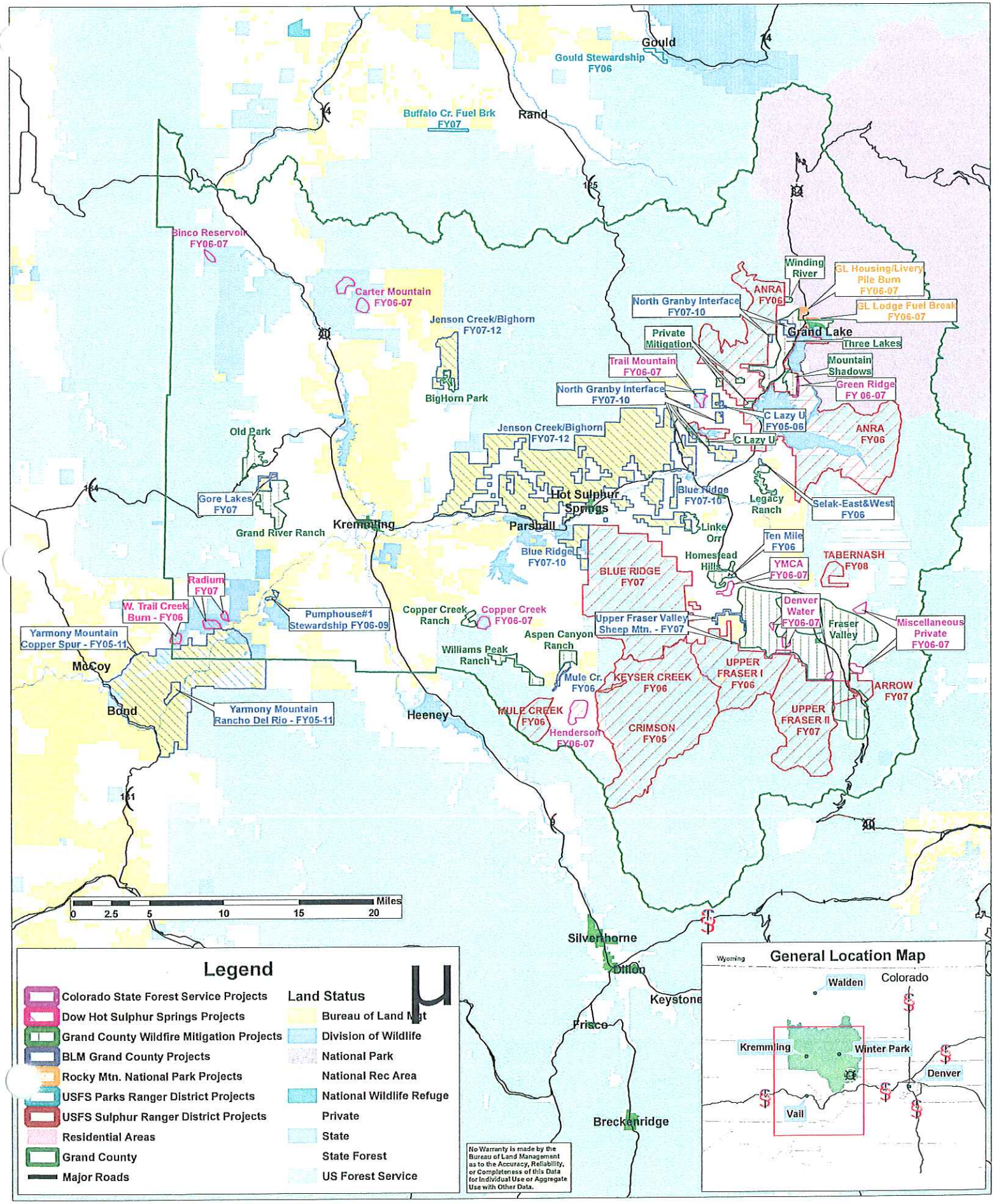
Arapaho and Roosevelt NFs, Sulphur Ranger District
PO Box 10, 9 Ten Mile Dr.
Granby, CO 80446. 970-887-4143
svalente@fs.fed.us

SGV
January 2006

Interagency Fuels - Grand County Planning Areas



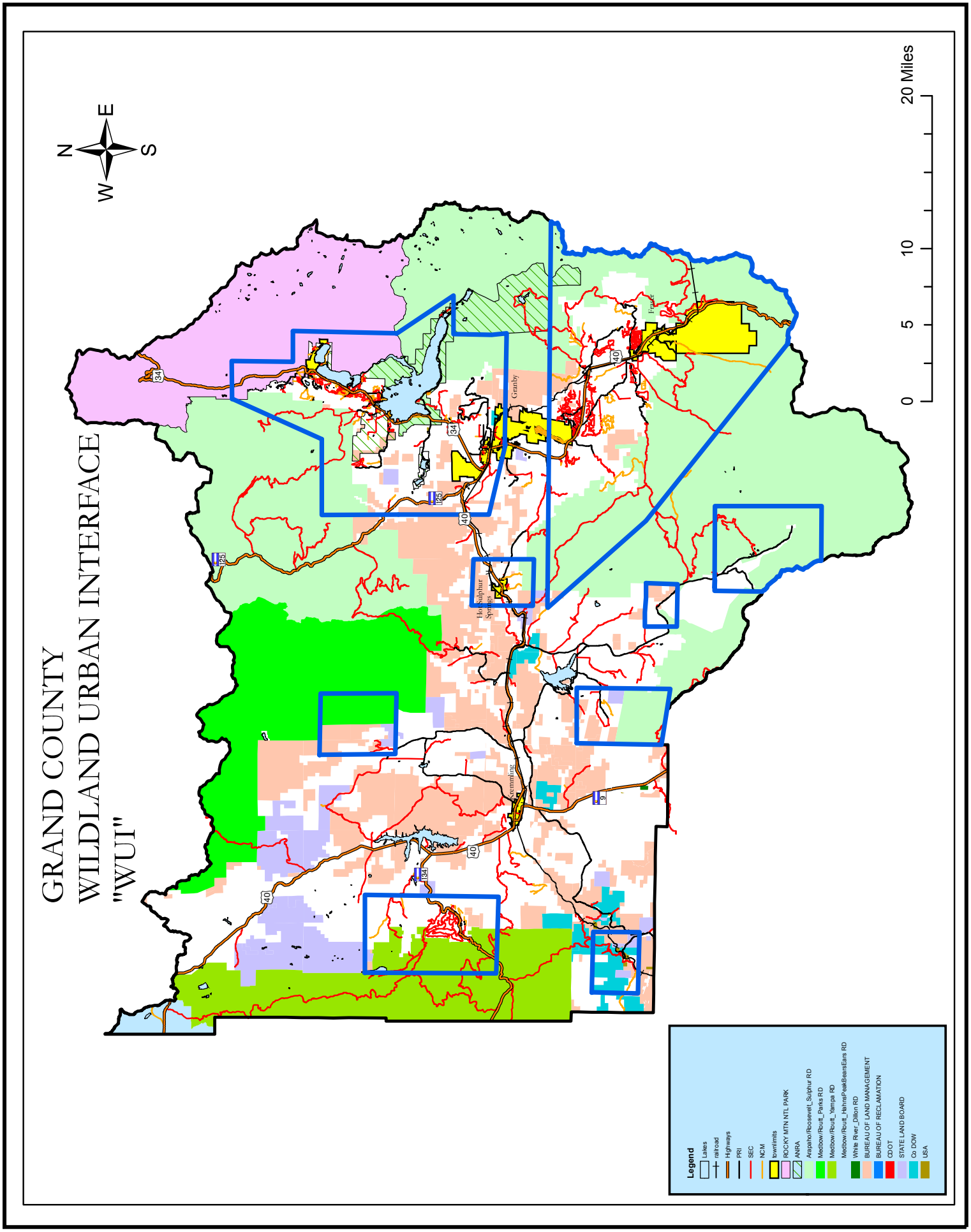
Private Property Wildland Fire Mitigation Sites (Large Scale) 2006

Grand Lake (3 Lakes Area)
Wildacres Sub
Bunte Ranch
Stillwater Abatement Coalition
Shorewood Sub
Grandview Park
Grand Lake Metro Recreation District
Town of Grand Lake
Cairns Ranch
Mountain Shadow Estates
Heritage Ranch
Joslin Ranch
Slash J Slash Ranch
Winding River Area
Playter/Hill
Greenridge Sub
Jim Reed Property
CR41 Project
Grand Lake Lodge Property
Morris King Development Project
Soda Creek Area
Red Top Ditch Development Property

Fraser Valley
Pole Creek Landscape Project Area
Fraser Valley Metro Recreation District
Town of Winter Park
YMCA
Younglife Property
Black Ranch
Northrop Property
McDavid Property
Devils Thumb Ranch
Diamond Bar T Area
Reserve at Elkhorn Ridge Sub
Rendezvous Sub
Grand Park (Cornerstone)
Bortz/Samulson Property
Homestead Hills
Mote/Fornette Property
Denver Water Board (several sites)
Grandma Miller Sub
Stagecoach Meadows
Flora Prop
Zink Prop
Swanson Prop
Fox Prop
Sunset Ridge and Estate
Jones Ranch
Onama Development Project

Williams Fork Area
Henderson Mill
Williams Peak Ranch
3-B's Ranch
Copper Creek Sub
Aspen Canyon Ranch and Subdivision

Granby Area
Ten Mile Estates
Val-Moritz Project
Legacy Park
Henry Property
Little HO Ranch
Quary Ranch and adjacent property
Kremmling Area
Gallagher Ranches
Bighorn Park Sub
Old Park Sub
Blue Valley Ranch
Gore Lakes Sub


GRAND COUNTY
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Hot Sulphur Springs
Kremmling
Fraser
Legend
Lakes
railroad
Highways
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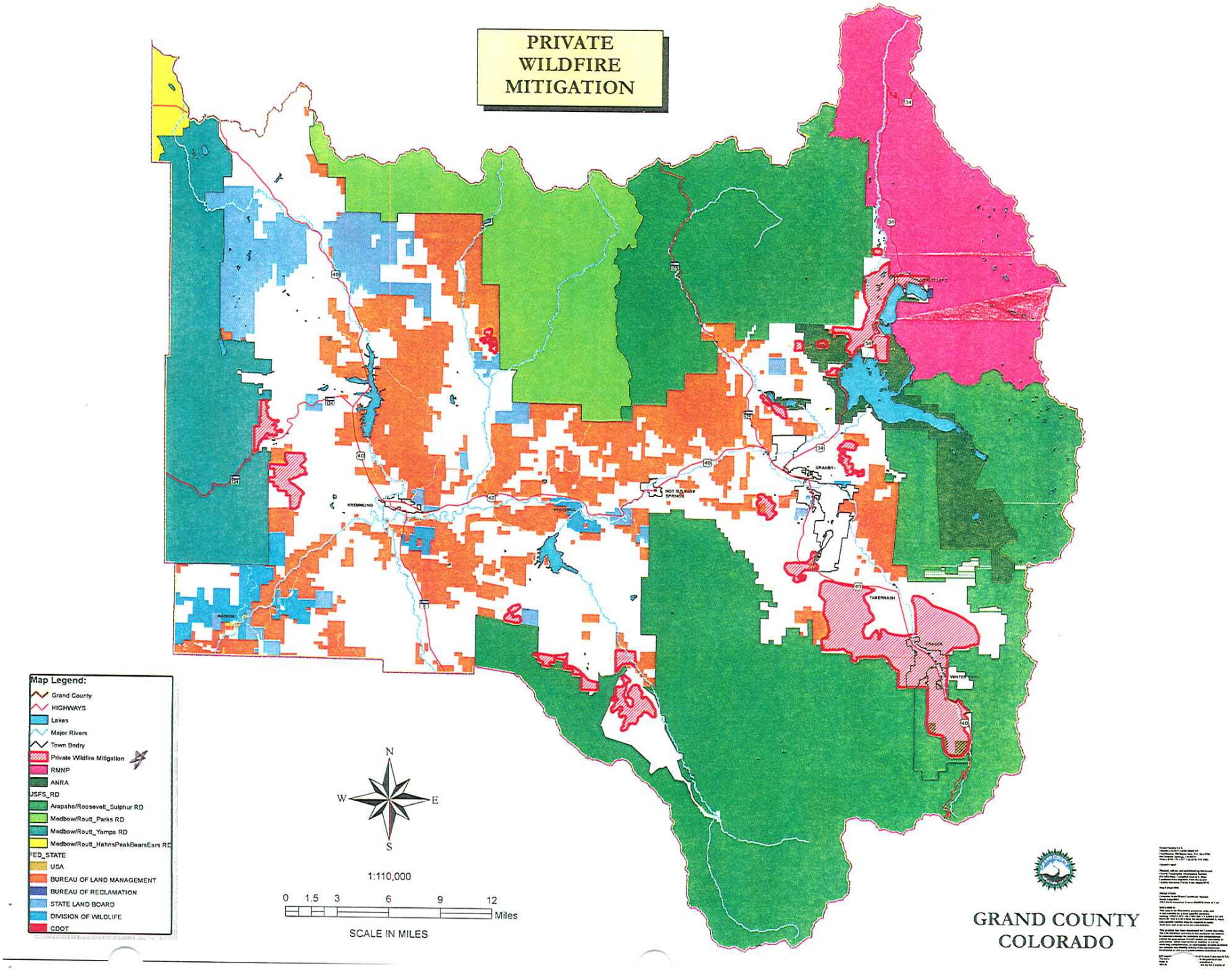
townlimits
ROCKY MTN NTL PARK
ANRA
Arapaho/Roosevelt_Sulphur RD
Medbow/Routt_Parks RD
Medbow/Routt_Yampa RD
Medbow/Routt_HahnsPeakBearsEars RD
White River_Dillon RD
BUREAU OF LAND MANAGEMENT
BUREAU OF RECLAMATION
CDOT
STATE LAND BOARD
Co. DOW
USA


PRIVATE
WILDFIRE
MITIGATION
Map Legend:
Grand County
HIGHWAYS
Lakes
Major Rivers
Town Bndry
Private Wildfire Mitigation
RMNP
ANRA
USFS_RD
Arapaho/Roosevelt_Sulphur RD
Medbow/Routt_Parks RD
Medbow/Routt_Yampa RD
Medbow/Routt_HahnsPeakBearsEars RD
FED_STATE
USA
BUREAU OF LAND MANAGEMENT
BUREAU OF RECLAMATION
STATE LAND BOARD
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Miles
SCALE IN MILES
GRAND COUNTY
COLORADO

Sulphur Ranger District Vegetation Treatment Acres

March 28, 2006

Crimson/Williams Fork Area

- **Crimson EA Decision Acres = Total of 3,800 Acres**
- Bearscat = 761 Acres, 8,301 MBF, 100% harvested)
- Boham (contract) = 668 Acres, 4,950 MBF (40% harvested)
- Simpson (contract) = 785 Acres, 6,600 MBF (55% harvested)
- Kinny (2007 sale) = 250 Acres, 2,500 MBF (not yet offered)
- Keyser Creek Burn = 50 Acres (to be done this spring)
- Ranger Gulch Salvage (2006 sale) = 127 Acres (Will be offered for sale this spring.)

ANRA

- **ANRA EIS Decision Acres = Total of 2,500 Acres**
- ANRA Stewardship Contract (logging begun March 23, 2006) = 1,625 acres, 7,100 MBF
- Cutthroat Salvage (2006 sale, Cutthroat and Greenridge Loop B) = 19 acres, 45 MBF
- Red Top Salvage = 216 acres planned for timber sale, 2006 sale
- Green Ridge Good Neighbor Agreement = 135 Acres (to be administered by CSFS)

Upper Fraser Valley

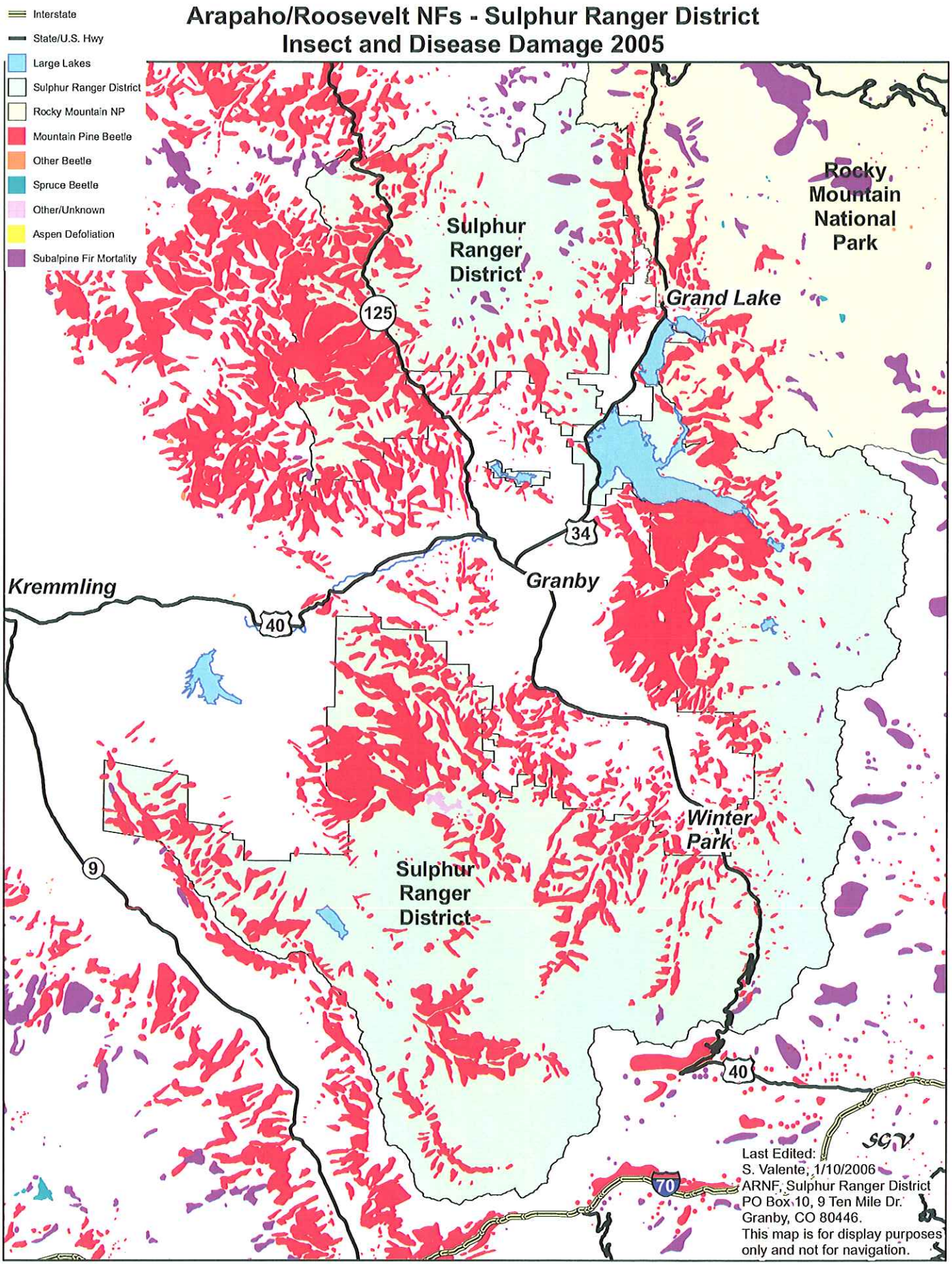
- **Upper Fraser Valley Decision Acres (NFS lands) = Total of 3,748 Acres**
- NFS lands include 1,482 in Fraser Experimental Forest. Approximately 856 of the acres will be non-commercial fuels treatments.
- Additional 596 of fuels treatment on BLM lands analyzed in EA.
- No Contracts prepared yet, but will be broken into two sales.
    - Upper Fraser I (east side, 2006 sale) = 1,047 Acres, 8,600 MBF
    - Upper Fraser II (west side, 2007 sale) = 1,000 Acres, 4,000 MBF
- Winter Park Ski Resort: Approximately 400 acres treated in last two years. Proposes several hundred acres of vegetation treatment over next couple years to respond to the mountain pine beetle epidemic.

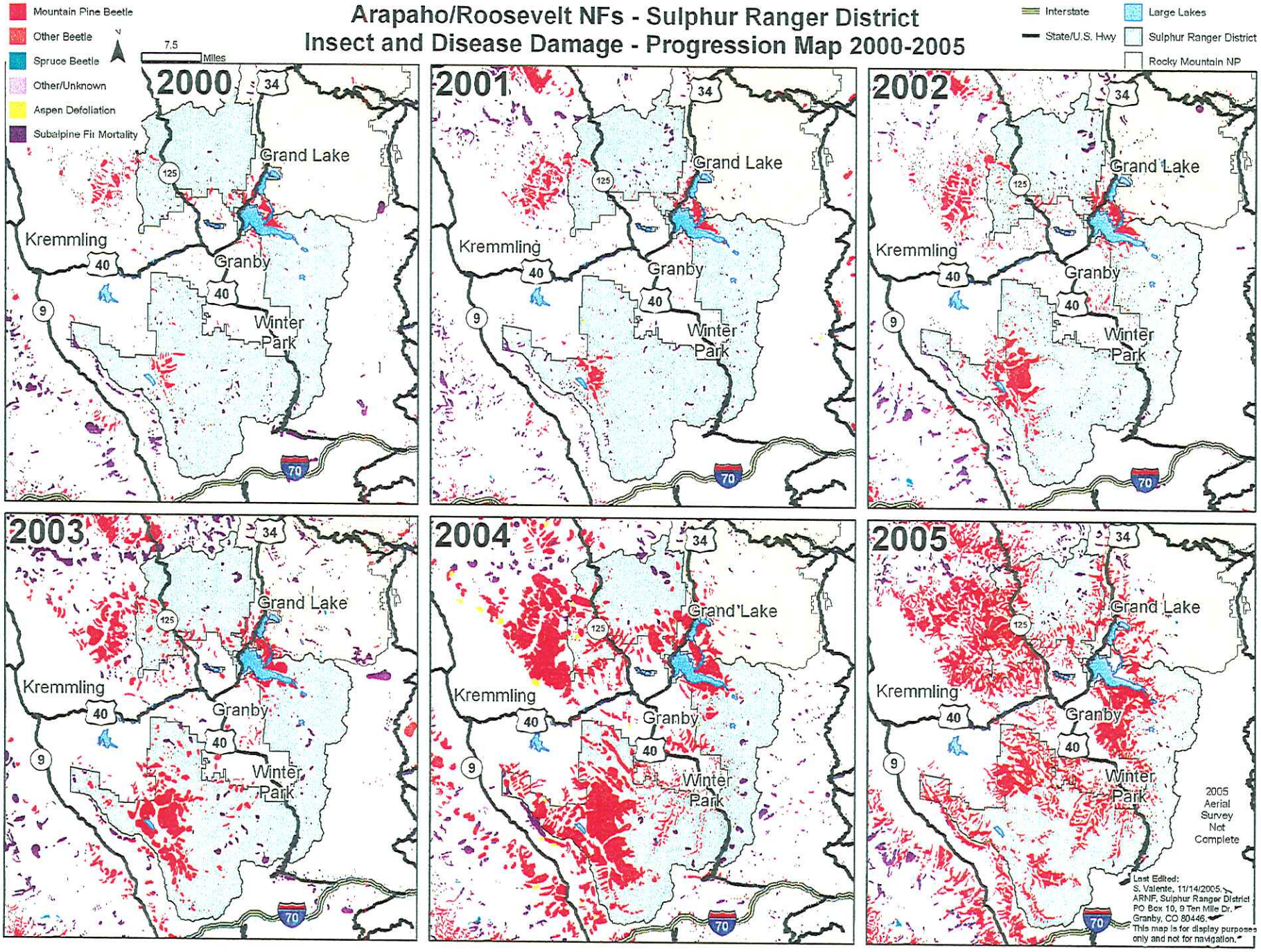
Blue Ridge: Analysis being done now. Environmental Assessment/Decision Notice expected in spring, 2007. Timber sale contract expected to be advertised late summer 2007. Treated acres may include as many as 4,000 acres of mechanical treatment and 4,000 of prescribed burning.

Arrow: Analysis being done now. Decision expected in spring, 2007. Timber sale contract expected to be advertised fall 2007. Approximately 250 acres proposed for treatment.

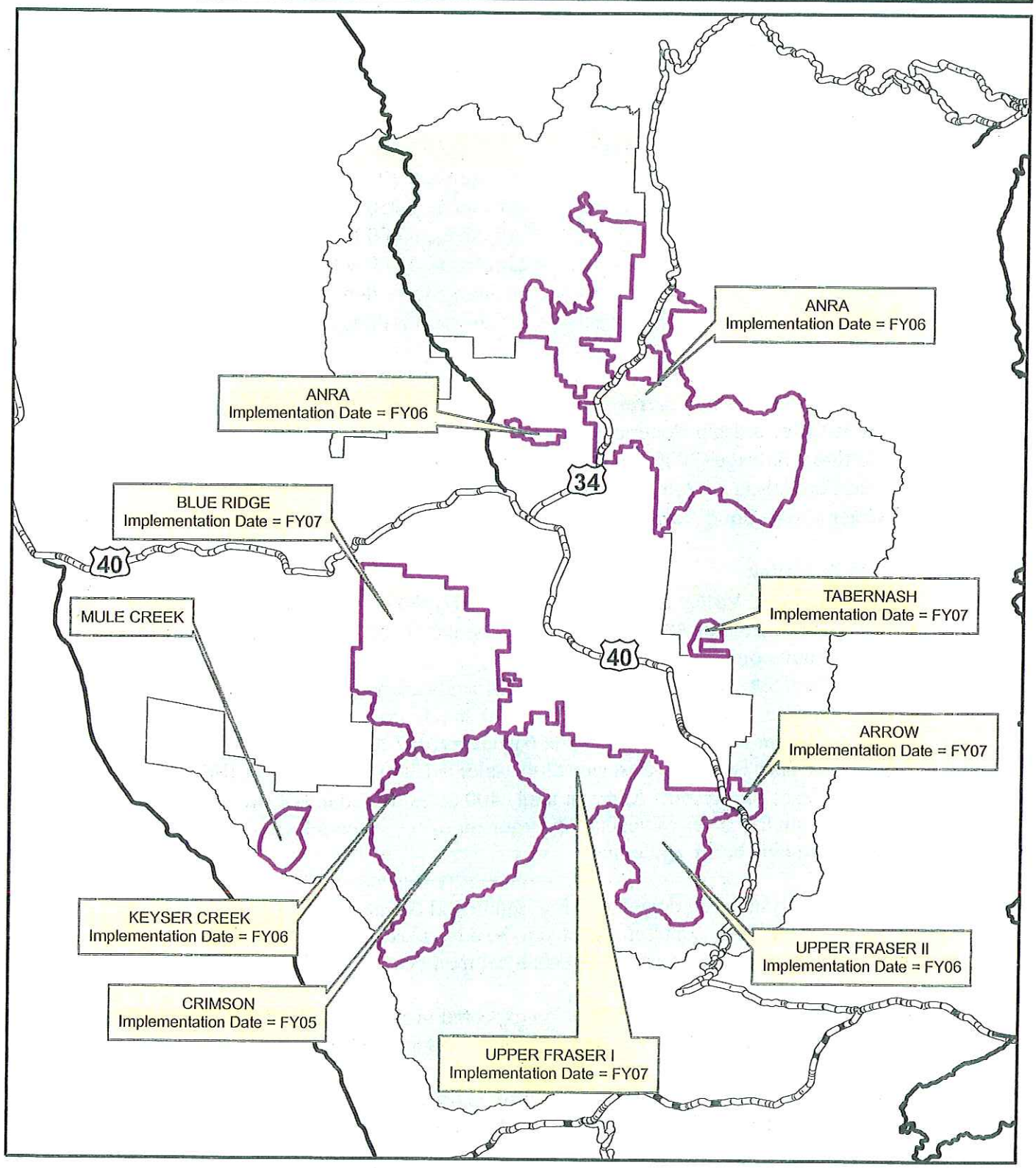
Taberuash: Analysis being done now. Decision expected in spring, 2007. Timber sale contract expected to be advertised fall 2007. Approximately 250 acres proposed for treatment.

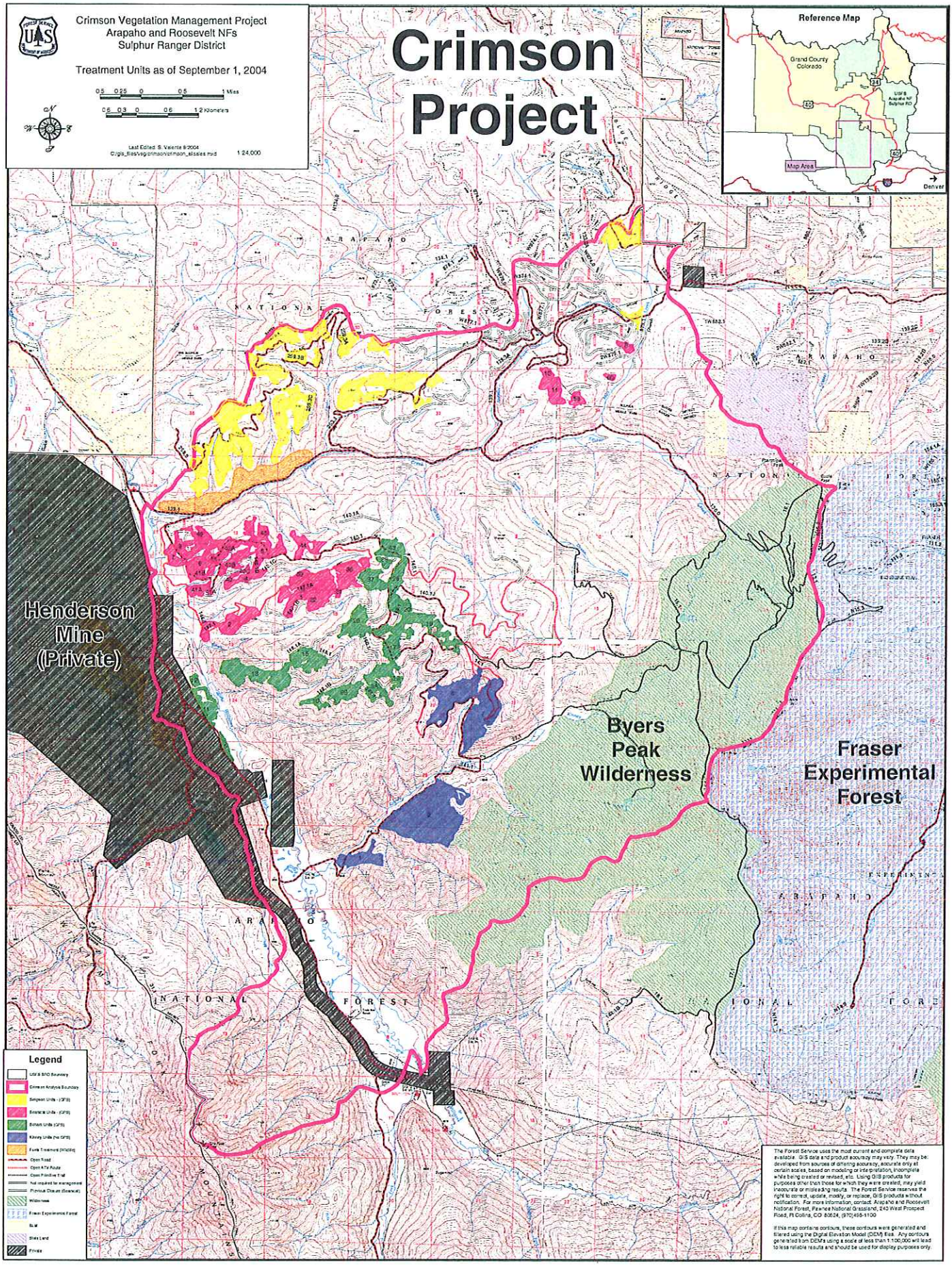
Mule Creek: Potential future project to be done in conjunction with fuels treatment near WAPA powerline.

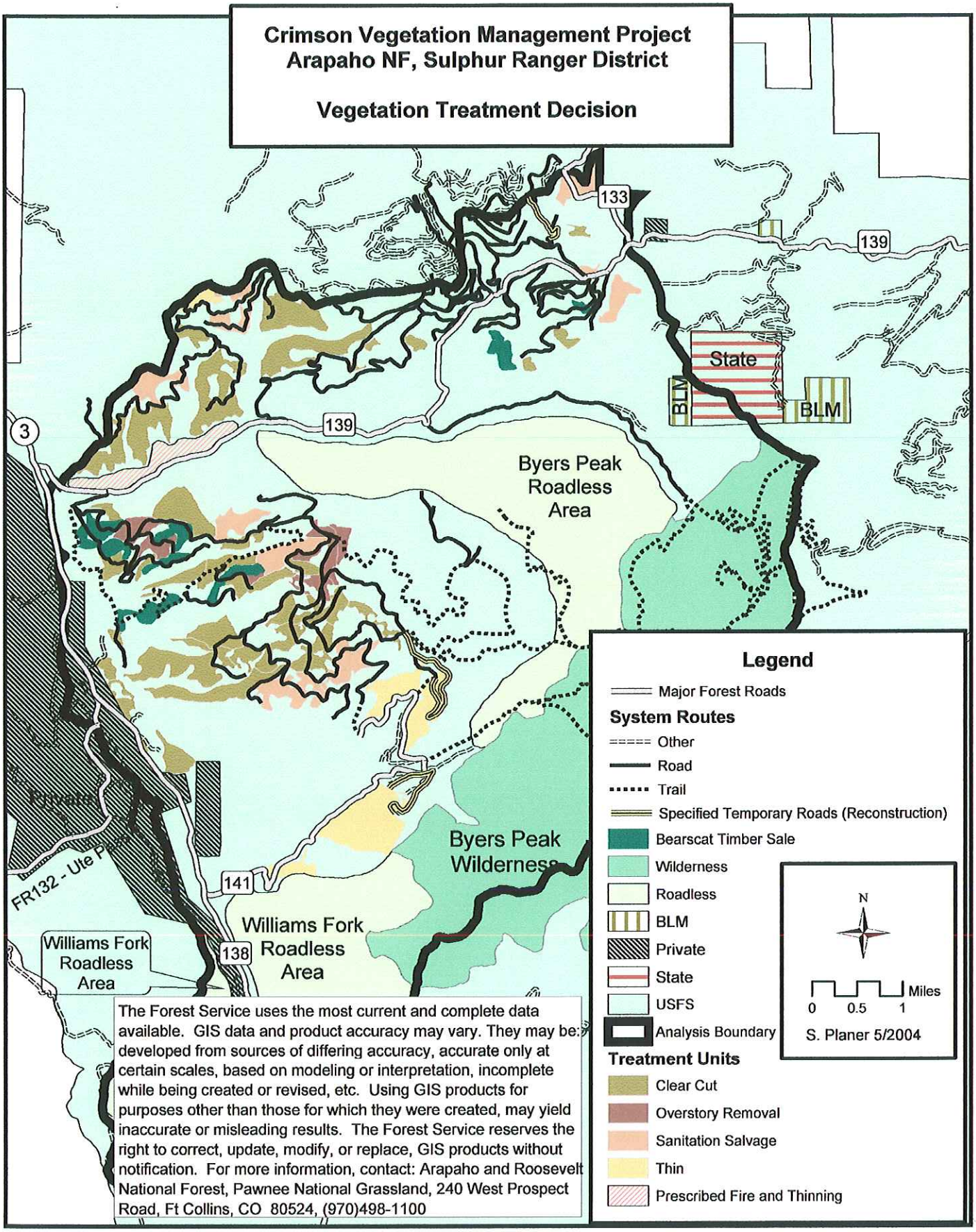

Arapaho/Roosevelt NFs - Sulphur Ranger District
Insect and Disease Damage 2005
Interstate
State/U.S. Hwy
Large Lakes
Sulphur Ranger District
Rocky Mountain NP
Mountain Pine Beetle
Other Beetle
Spruce Beetle
Other/Unknown
Aspen Defoliation
Subalpine Fir Mortality
Rocky Mountain National Park
Sulphur Ranger District
Grand Lake
125
34
Granby
Kremmling
40
Winter Park
9
Sulphur Ranger District
40
70
SGV
Last Edited:
S. Valente, 1/10/2006
ARNF, Sulphur Ranger District
PO Box 10, 9 Ten Mile Dr.
Granby, CO 80446.
This map is for display purposes only and not for navigation.

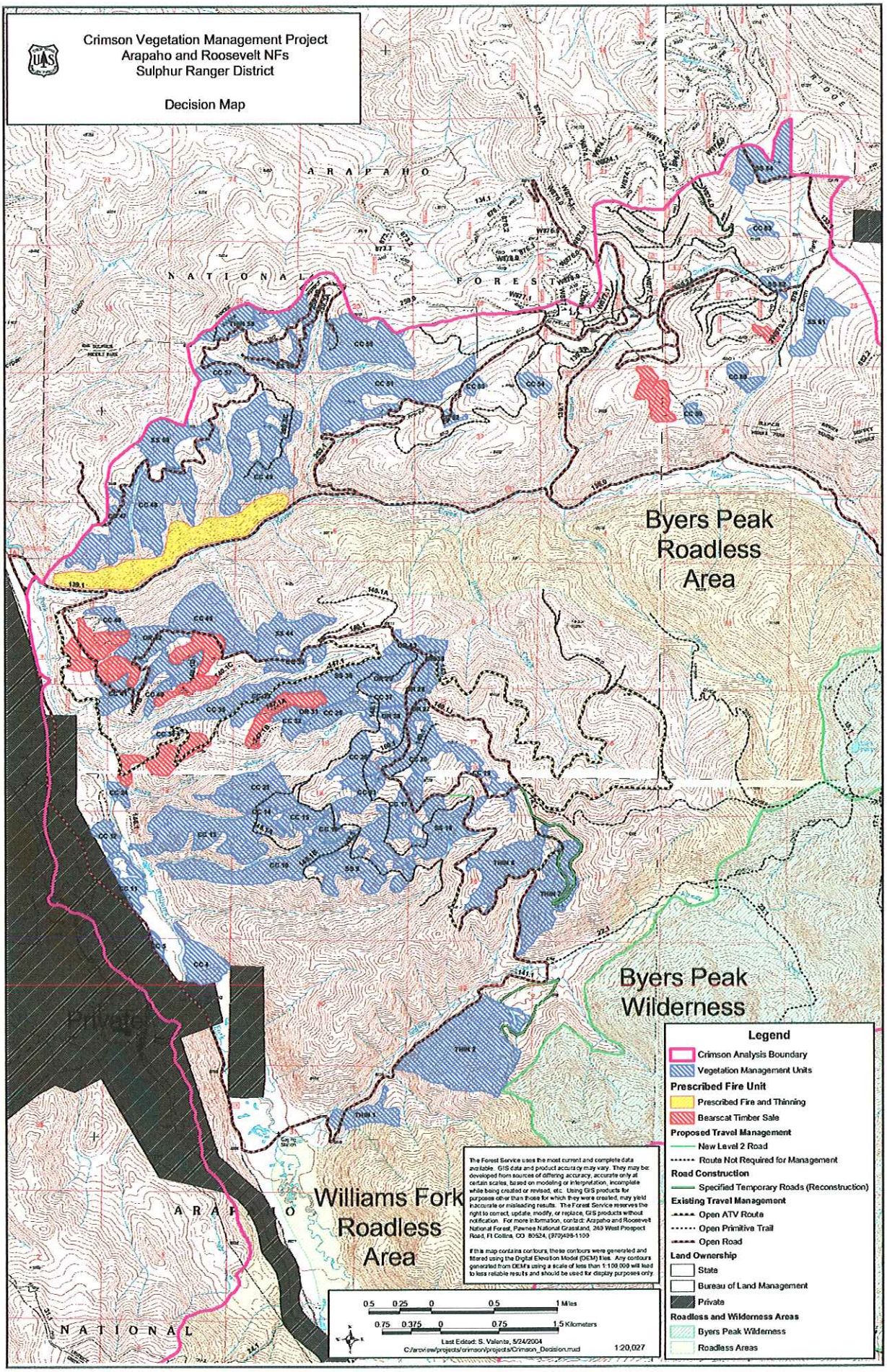

Arapaho/Roosevelt NFs - Sulphur Ranger District
Insect and Disease Damage - Progression Map 2000-2005
Mountain Pine Beetle
Other Beetle
Spruce Beetle
Other/Unknown
Aspen Defoliation
Subalpine Fir Mortality
7.5
Miles
Interstate
State/U.S. Hwy
Large Lakes
Sulphur Ranger District
Rocky Mountain NP
2000
2001
2002
2003
2004
2005
Grand Lake
Kremmling
Granby
Winter Park
34
125
40
9
70
2005 Aerial Survey Not Complete
Last Edited:
S. Valente, 11/14/2005.
ARNF, Sulphur Ranger District
PO Box 10, 9 Ten Mile Dr.
Granby, CO 80446.
This map is for display purposes only and not for navigation.

Fuels Projects - SRD




Crimson Vegetation Management Project
Arapaho and Roosevelt NFs
Sulphur Ranger District
Treatment Units as of September 1, 2004
Crimson Project
Reference Map
Grand County
Colorado
Map Area
Denver
Henderson Mine (Private)
Byers Peak Wilderness
Fraser Experimental Forest
Legend


Crimson Vegetation Management Project
Arapaho NF, Sulphur Ranger District
Vegetation Treatment Decision
133
139
139
3
State
BLM
BLM
Byers Peak
Roadless
Area
Byers Peak
Wilderness
Private
FR132 - Ute Pass
141
138
Williams Fork
Roadless
Area
Williams Fork
Roadless
Area
The Forest Service uses the most current and complete data available. GIS data and product accuracy may vary. They may be: developed from sources of differing accuracy, accurate only at certain scales, based on modeling or interpretation, incomplete while being created or revised, etc. Using GIS products for purposes other than those for which they were created, may yield inaccurate or misleading results. The Forest Service reserves the right to correct, update, modify, or replace, GIS products without notification. For more information, contact: Arapaho and Roosevelt National Forest, Pawnee National Grassland, 240 West Prospect Road, Ft Collins, CO 80524, (970)498-1100
Legend
Major Forest Roads
System Routes
Other
Road
Trail
Specified Temporary Roads (Reconstruction)
Bearscat Timber Sale
Wilderness
Roadless
BLM
Private
State
USFS
Analysis Boundary
Treatment Units
Clear Cut
Overstory Removal
Sanitation Salvage
Thin
Prescribed Fire and Thinning
N
Miles
0 0.5 1
S. Planer 5/2004


Crimson Vegetation Management Project
Arapaho and Roosevelt NFs
Sulphur Ranger District
Decision Map
ARAPAHO
NATIONAL
FOREST
Byers Peak
Roadless
Area
Byers Peak
Wilderness
Private
Williams Fork
Roadless
Area
ARAPAHO
NATIONAL
Legend
Crimson Analysis Boundary
Vegetation Management Units
Prescribed Fire Unit
Prescribed Fire and Thinning
Bearscat Timber Sale
Proposed Travel Management
New Level 2 Road
Route Not Required for Management
Road Construction
Specified Temporary Roads (Reconstruction)
Existing Travel Management
Open ATV Route
Open Primitive Trail
Open Road
Land Ownership
State
Bureau of Land Management
Private
Roadless and Wilderness Areas
Byers Peak Wilderness
Roadless Areas
The Forest Service uses the most current and complete data available. GIS data and product accuracy may vary. They may be developed from sources of differing accuracy, accurate only at certain scales, based on modeling or interpretation, incomplete while being created or revised, etc. Using GIS products for purposes other than those for which they were created, may yield inaccurate or misleading results. The Forest Service reserves the right to correct, update, modify, or replace, GIS products without notification. For more information, contact: Arapaho and Roosevelt National Forest, Pawnee National Grassland, 240 West Prospect Road, Ft Collins, CO 80524, (970)498-1100
If this map contains contours, these contours were generated and filtered using the Digital Elevation Model (DEM) files. Any contours generated from DEM's using a scale of less than 1:100,000 will lead to less reliable results and should be used for display purposes only.
0.5 0.25 0 0.5 1 Miles
0.75 0.375 0 0.75 1.5 Kilometers
Last Edited: S. Valenta, 5/24/2004
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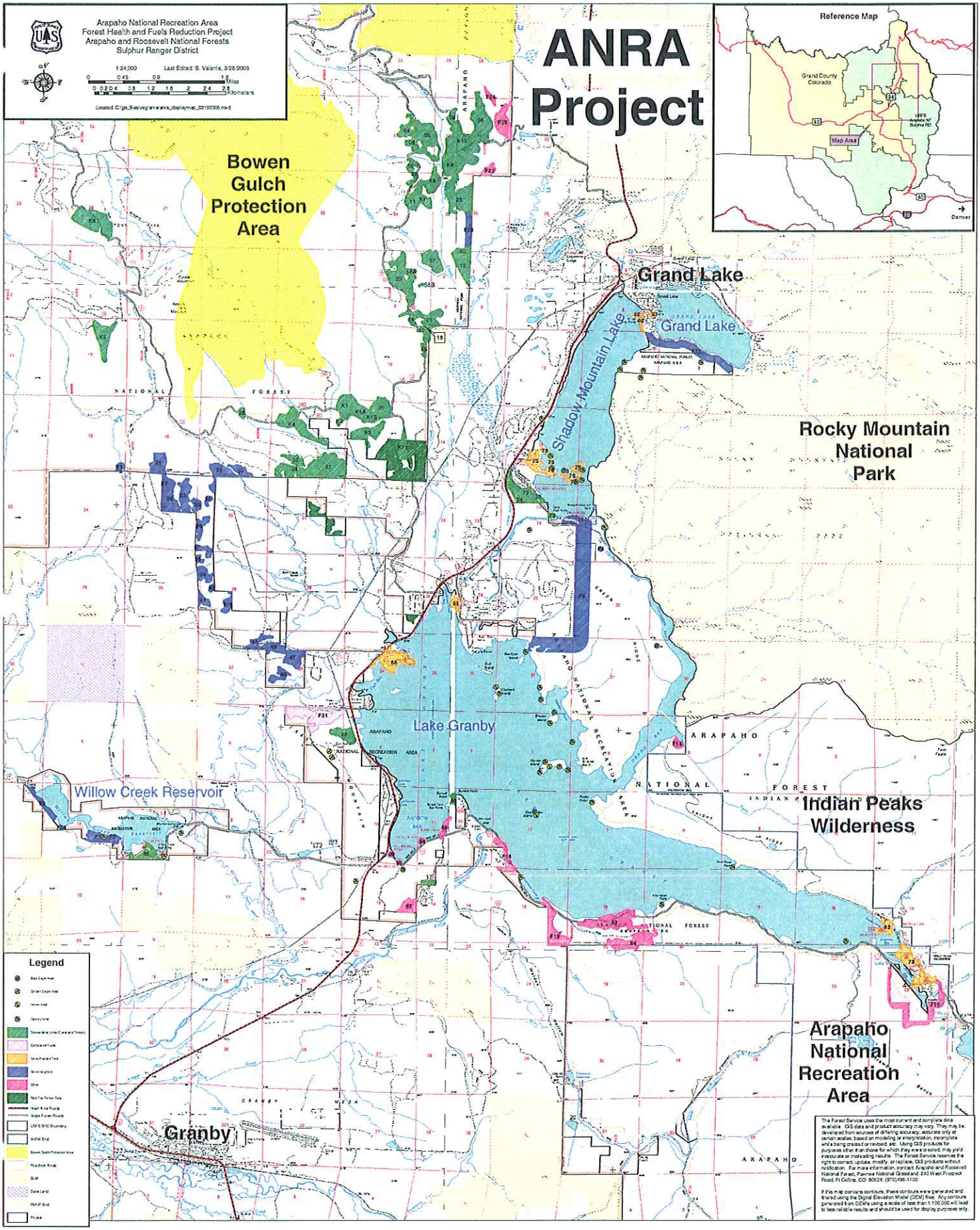
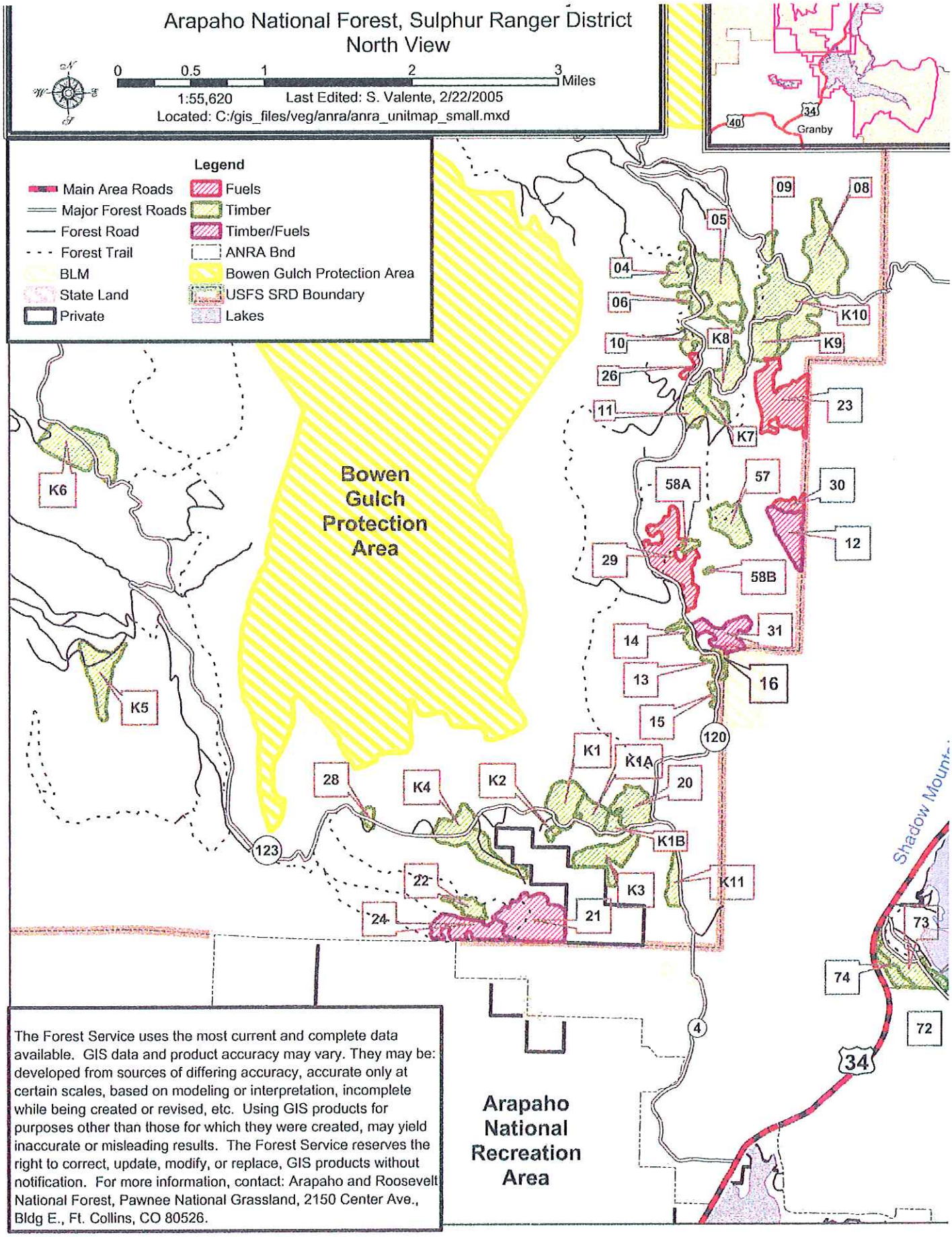
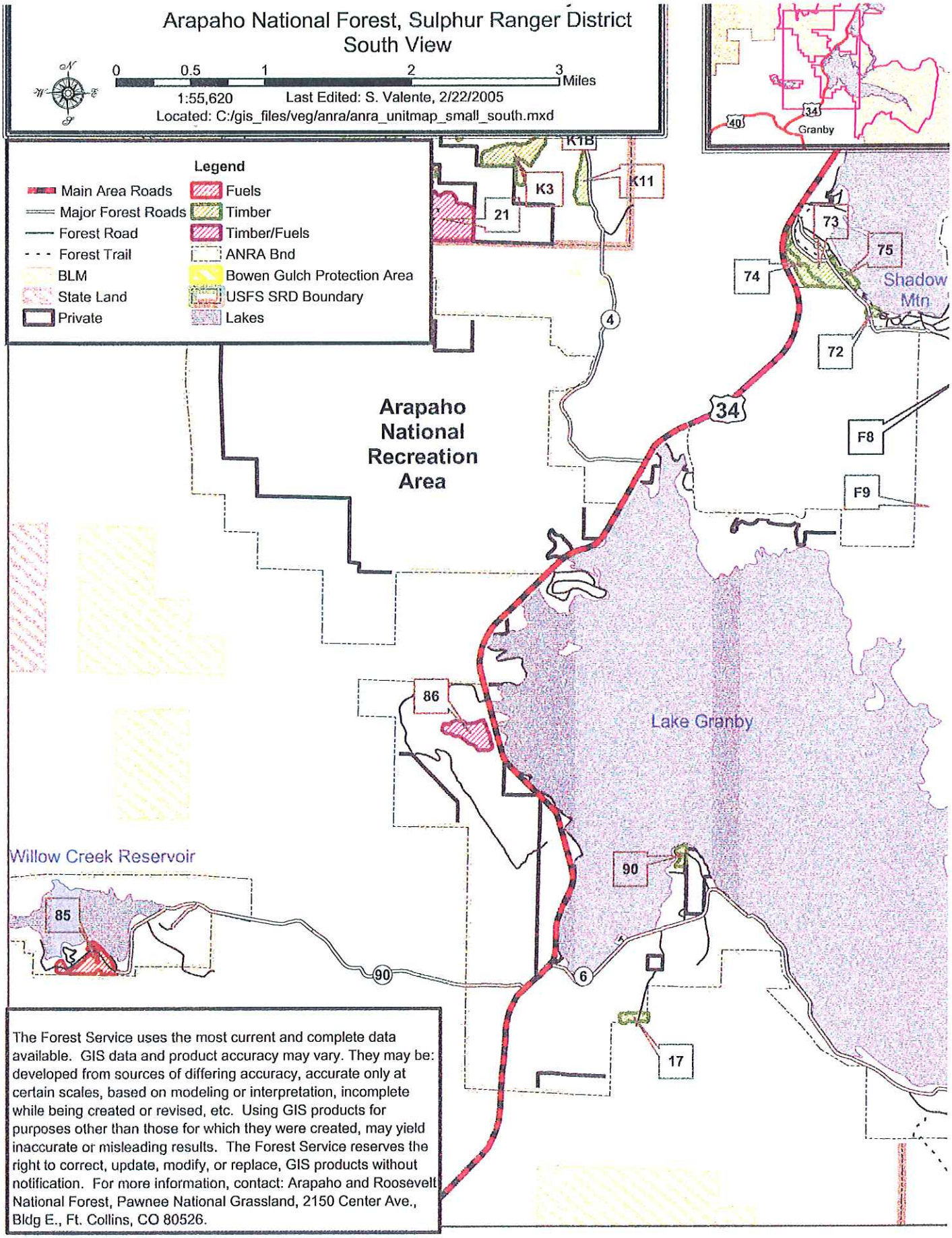
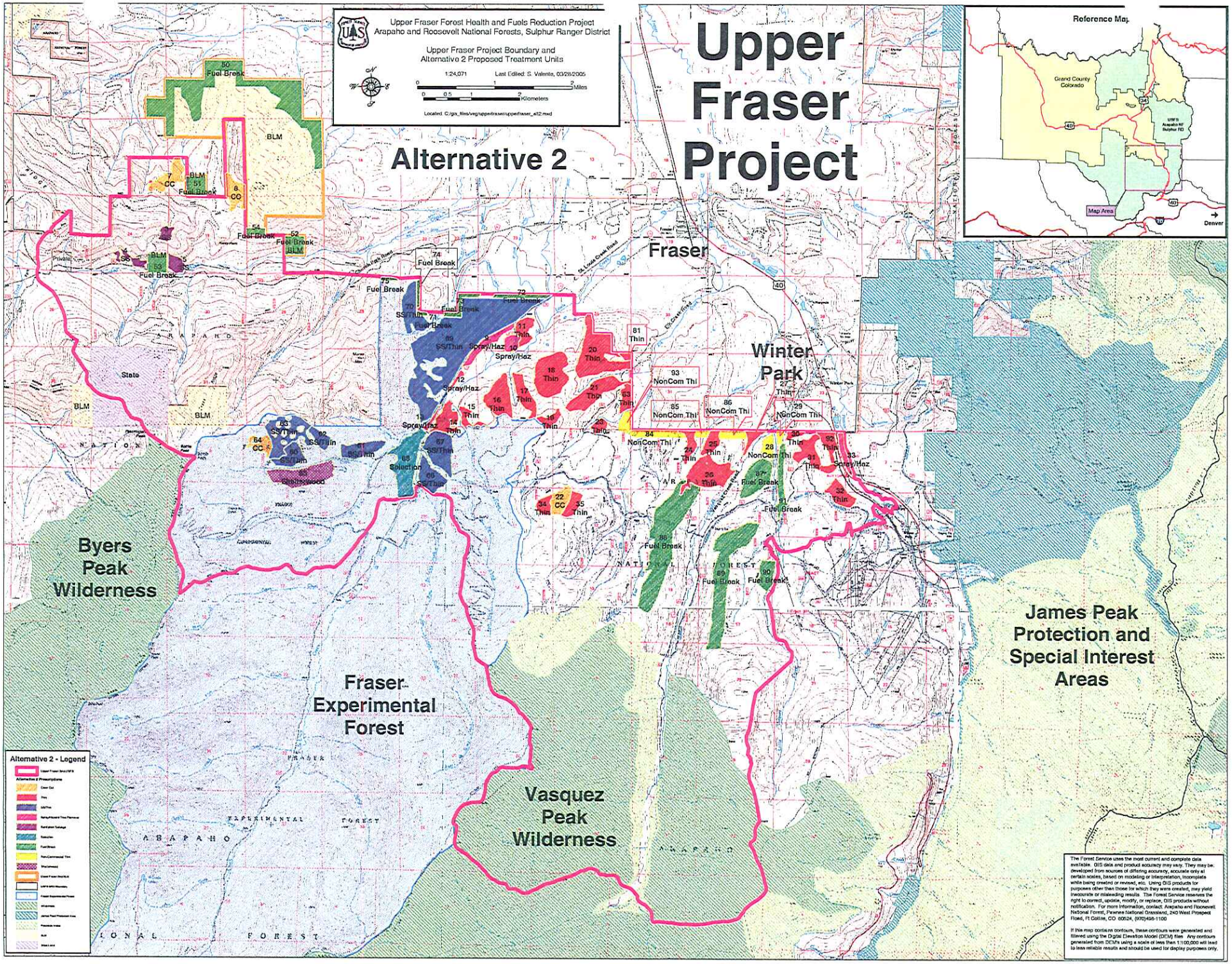
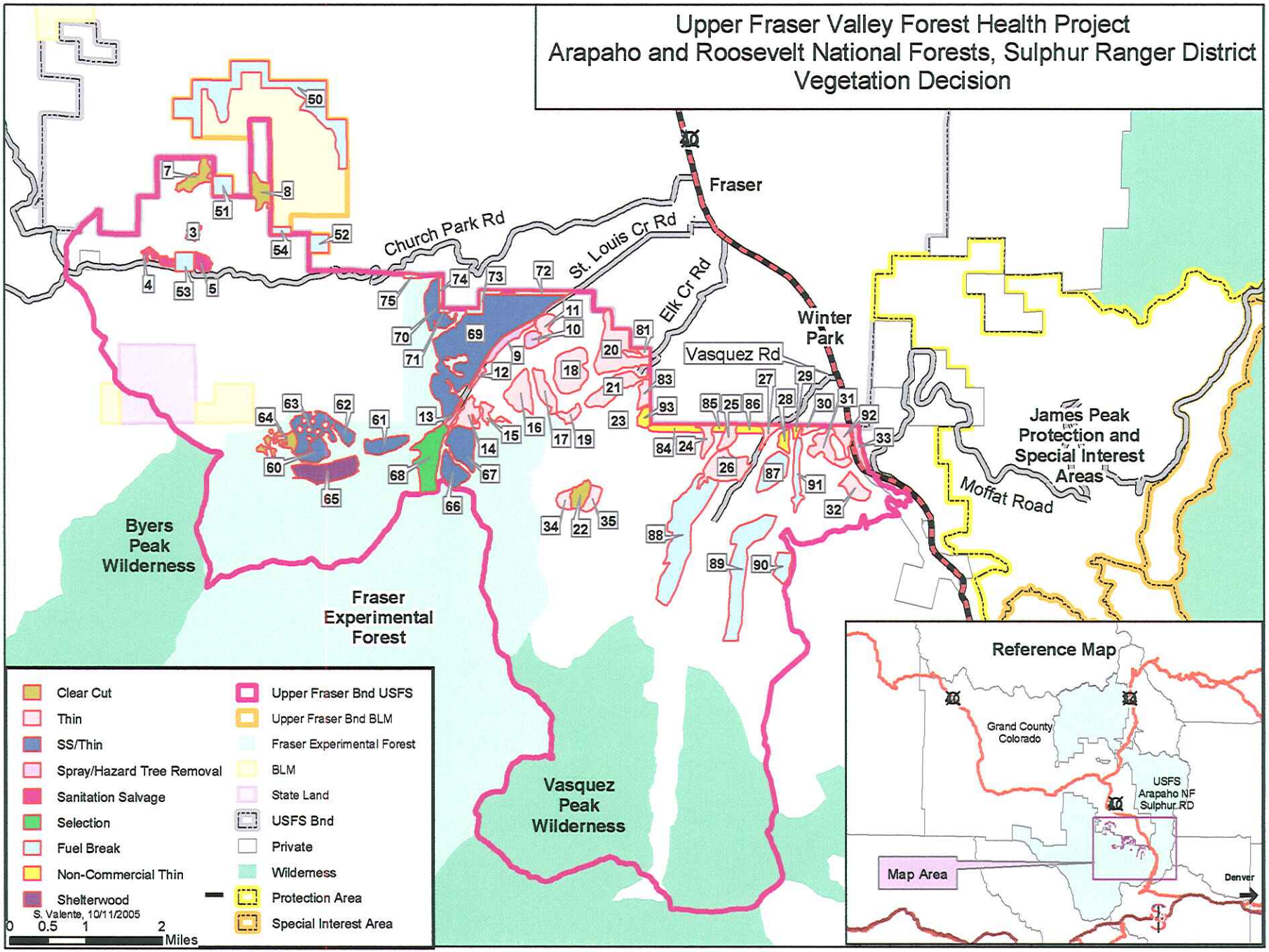
1:20,027

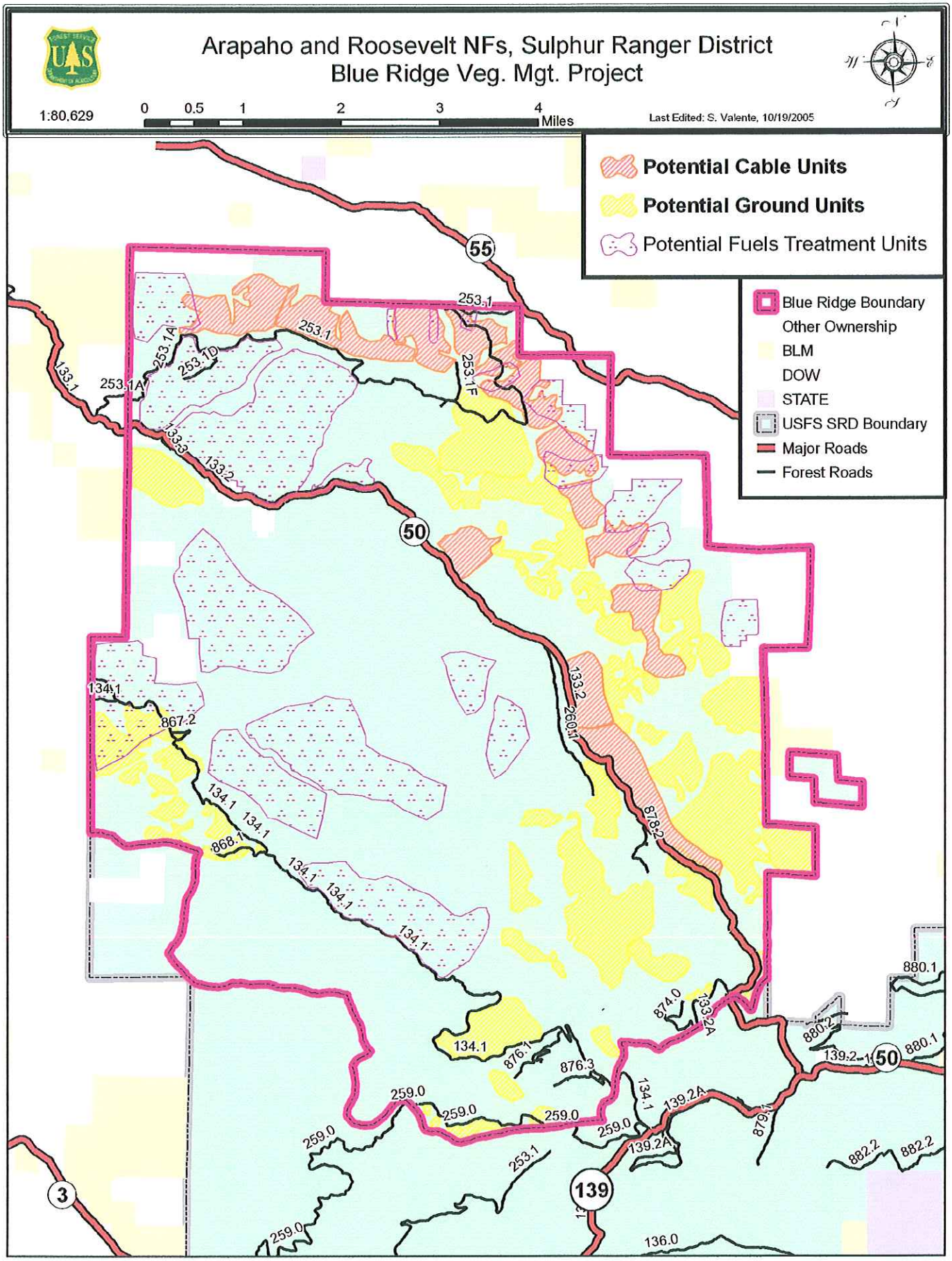

Arapaho National Recreation Area
Forest Health and Fuels Reduction Project
Arapaho and Roosevelt National Forests
Sulphur Ranger District
ANRA Project
Reference Map
Grand County Colorado
Map Area
Bowen Gulch Protection Area
Grand Lake
Shadow Mountain Lake
Rocky Mountain National Park
Lake Granby
Willow Creek Reservoir
Indian Peaks Wilderness
Arapaho National Recreation Area
Granby
Legend

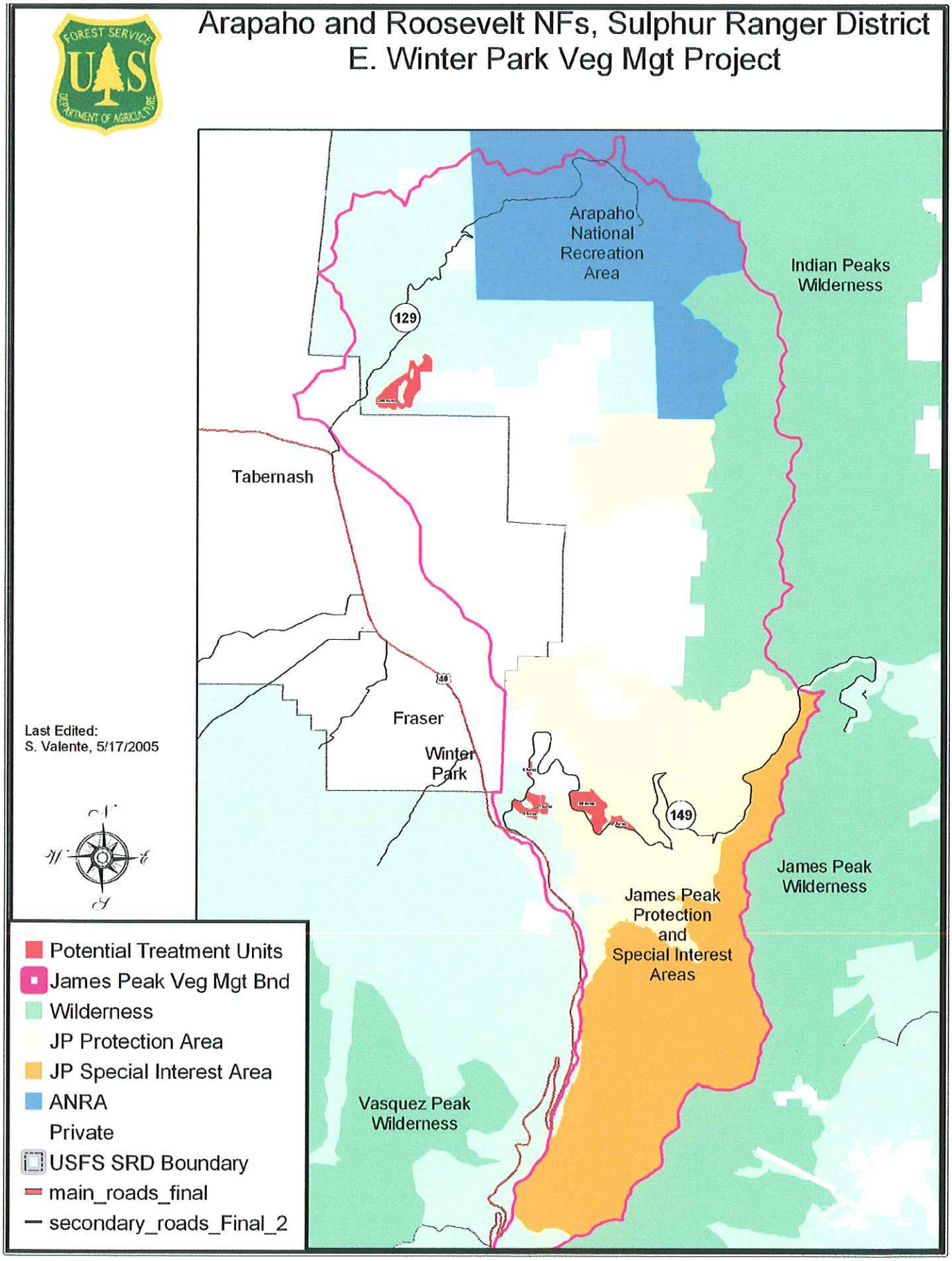

Arapaho National Forest, Sulphur Ranger District
North View
0 0.5 1 2 3 Miles
1:55,620
Last Edited: S. Valente, 2/22/2005
Located: C:/gis_files/veg/anra/anra_unitmap_small.mxd
Granby
Legend
Main Area Roads
Major Forest Roads
Forest Road
Forest Trail
BLM
State Land
Private
Fuels
Timber
Timber/Fuels
ANRA Bnd
Bowen Gulch Protection Area
USFS SRD Boundary
Lakes
Bowen Gulch Protection Area
Arapaho National Recreation Area
Shadow Mount
K1
K1A
K1B
K2
K3
K4
K5
K6
K7
K8
K9
K10
K11
04
05
06
08
09
10
11
12
13
14
15
16
20
21
22
23
24
26
28
29
30
31
57
58A
58B
73
74
72
4
34
40
120
123
The Forest Service uses the most current and complete data available. GIS data and product accuracy may vary. They may be: developed from sources of differing accuracy, accurate only at certain scales, based on modeling or interpretation, incomplete while being created or revised, etc. Using GIS products for purposes other than those for which they were created, may yield inaccurate or misleading results. The Forest Service reserves the right to correct, update, modify, or replace, GIS products without notification. For more information, contact: Arapaho and Roosevelt National Forest, Pawnee National Grassland, 2150 Center Ave., Bldg E., Ft. Collins, CO 80526.

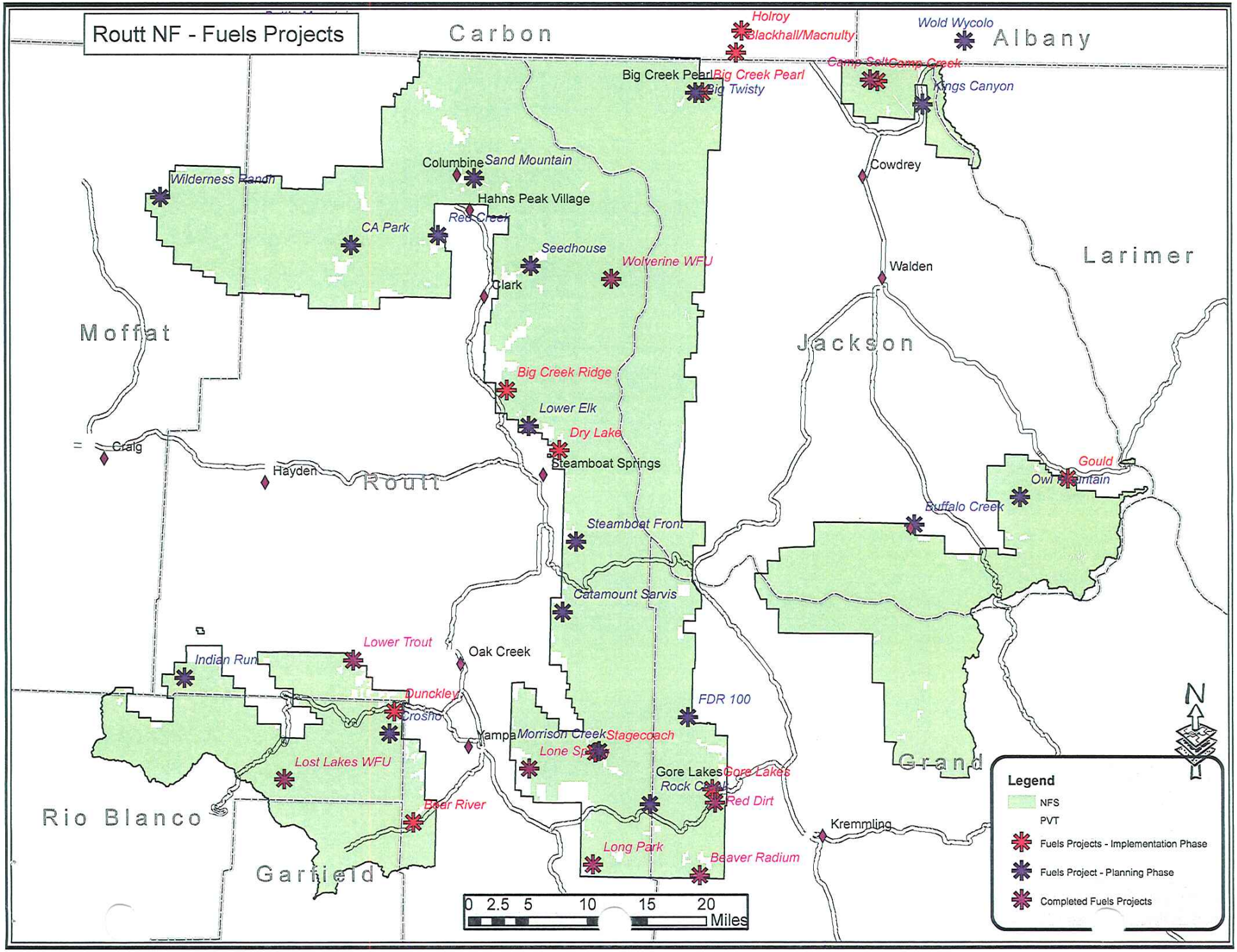

Arapaho National Forest, Sulphur Ranger District
South View
0 0.5 1 2 3 Miles
1:55,620
Last Edited: S. Valente, 2/22/2005
Located: C:/gis_files/veg/anra/anra_unitmap_small_south.mxd
Legend
Main Area Roads
Major Forest Roads
Forest Road
Forest Trail
BLM
State Land
Private
Fuels
Timber
Timber/Fuels
ANRA Bnd
Bowen Gulch Protection Area
USFS SRD Boundary
Lakes
Granby
40
34
K1B
K3
K11
21
73
75
74
Shadow Mtn
72
4
34
F8
F9
Arapaho National Recreation Area
86
Lake Granby
Willow Creek Reservoir
85
90
6
17
The Forest Service uses the most current and complete data available. GIS data and product accuracy may vary. They may be: developed from sources of differing accuracy, accurate only at certain scales, based on modeling or interpretation, incomplete while being created or revised, etc. Using GIS products for purposes other than those for which they were created, may yield inaccurate or misleading results. The Forest Service reserves the right to correct, update, modify, or replace, GIS products without notification. For more information, contact: Arapaho and Roosevelt National Forest, Pawnee National Grassland, 2150 Center Ave., Bldg E., Ft. Collins, CO 80526.

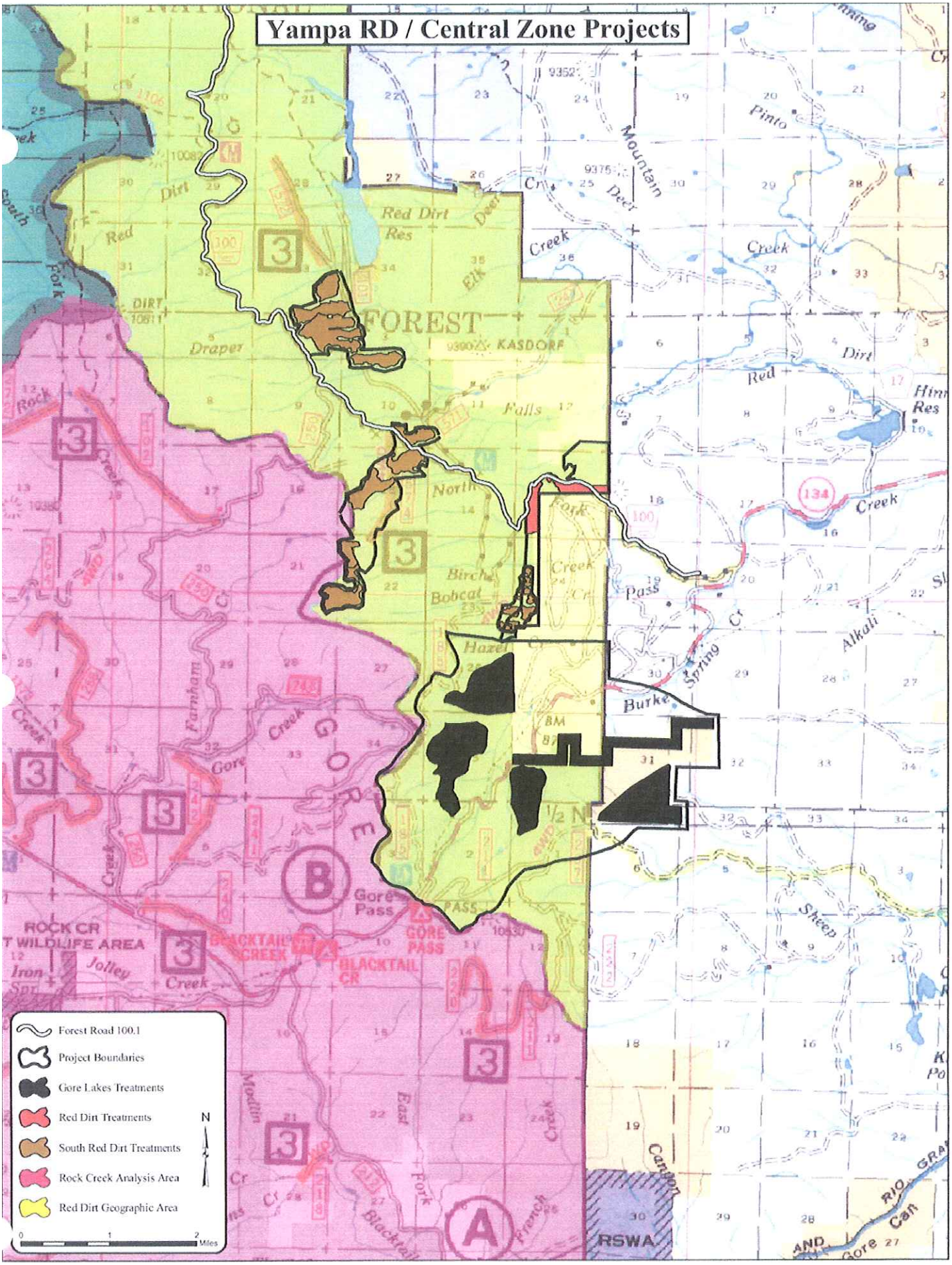

Upper Fraser Forest Health and Fuels Reduction Project
Arapaho and Roosevelt National Forests, Sulphur Ranger District
Upper Fraser Project Boundary and
Alternative 2 Proposed Treatment Units
1:24,071
Last Edited: S. Valente, 03/28/2005
Miles
Kilometers
Upper Fraser Project
Alternative 2
Reference Map
Grand County Colorado
Map Area
Denver
Fraser
Winter Park
Byers Peak Wilderness
Fraser Experimental Forest
Vasquez Peak Wilderness
James Peak Protection and Special Interest Areas
Alternative 2 - Legend

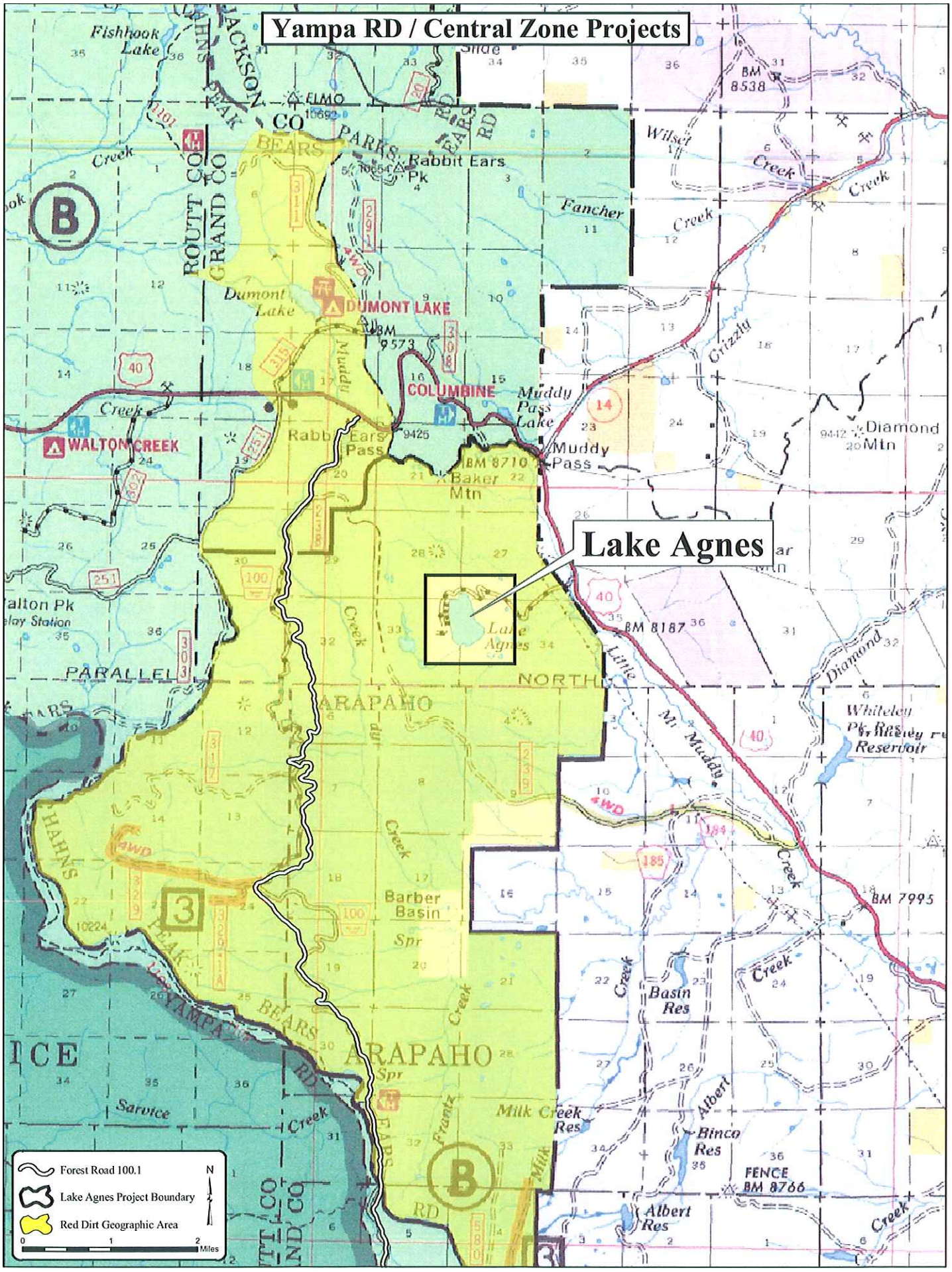

Upper Fraser Valley Forest Health Project
Arapaho and Roosevelt National Forests, Sulphur Ranger District
Vegetation Decision
Fraser
Winter Park
Church Park Rd
St. Louis Cr Rd
Elk Cr Rd
Vasquez Rd
Moffat Road
James Peak Protection and Special Interest Areas
Byers Peak Wilderness
Fraser Experimental Forest
Vasquez Peak Wilderness
Clear Cut
Thin
SS/Thin
Spray/Hazard Tree Removal
Sanitation Salvage
Selection
Fuel Break
Non-Commercial Thin
Shelterwood
Upper Fraser Bnd USFS
Upper Fraser Bnd BLM
Fraser Experimental Forest
BLM
State Land
USFS Bnd
Private
Wilderness
Protection Area
Special Interest Area
S. Valente, 10/11/2005
0 0.5 1 2
Miles
Reference Map
Grand County Colorado
USFS Arapaho NF Sulphur RD
Map Area
Denver


Arapaho and Roosevelt NFs, Sulphur Ranger District
Blue Ridge Veg. Mgt. Project
1:80,629
0 0.5 1 2 3 4 Miles
Last Edited: S. Valente, 10/19/2005
Potential Cable Units
Potential Ground Units
Potential Fuels Treatment Units
Blue Ridge Boundary
Other Ownership
BLM
DOW
STATE
USFS SRD Boundary
Major Roads
Forest Roads
55
50
139
3
253.1
253.1A
253.1D
253.1F
133.1
133.3
133.2
134.1
867.2
868.1
260.1
878.2
874.0
133.2A
880.1
880.2
139.2
876.1
876.3
259.0
139.2A
879.1
882.2
136.0


Arapaho and Roosevelt NFs, Sulphur Ranger District
E. Winter Park Veg Mgt Project
Arapaho National Recreation Area
Indian Peaks Wilderness
129
Tabernash
Fraser
Winter Park
149
James Peak Wilderness
James Peak Protection and Special Interest Areas
Vasquez Peak Wilderness
Last Edited:
S. Valente, 5/17/2005
Potential Treatment Units
James Peak Veg Mgt Bnd
Wilderness
JP Protection Area
JP Special Interest Area
ANRA
Private
USFS SRD Boundary
main_roads_final
secondary_roads_Final_2


Routt NF - Fuels Projects
Carbon
Albany
Larimer
Moffat
Jackson
Routt
Grand
Rio Blanco
Garfield
Holroy
Blackhall/Macnulty
Wold Wycolo
Camp Salt
Camp Creek
Kings Canyon
Big Creek Pearl
Big Creek Pearl
Big Twisty
Columbine
Sand Mountain
Wilderness Ranch
Hahns Peak Village
Red Creek
CA Park
Seedhouse
Wolverine WFU
Clark
Cowdrey
Walden
Big Creek Ridge
Lower Elk
Dry Lake
Steamboat Springs
Craig
Hayden
Gould
Owl Mountain
Buffalo Creek
Steamboat Front
Catamount Sarvis
Lower Trout
Indian Run
Oak Creek
Dunckley
Crosho
FDR 100
Yampa
Morrison Creek
Stagecoach
Lone Spruce
Lost Lakes WFU
Gore Lakes
Gore Lakes
Rock Creek
Red Dirt
Bear River
Kremmling
Long Park
Beaver Radium
0 2.5 5 10 15 20
Miles
N
Legend
NFS
PVT
Fuels Projects - Implementation Phase
Fuels Project - Planning Phase
Completed Fuels Projects


Yampa RD / Central Zone Projects
Forest Road 100.1
Project Boundaries
Gore Lakes Treatments
Red Dirt Treatments
South Red Dirt Treatments
Rock Creek Analysis Area
Red Dirt Geographic Area
N
0
1
2
Miles
FOREST
KASDORF
Red Dirt Res
Gore Pass
ROCK CR
WILDLIFE AREA
BLACKTAIL CREEK
BLACKTAIL CR
GORE PASS
RSWA
Mountain
Pinto
Deer
Creek
Dirt
Red
Fork
Draper
Falls
North
Birch
Bobcat
Haze
Burke
Pass
Spring
Alkali
Sheep
Canyon
Gore
Farnham
Jolley
Iron
Spr
Meadow
East
French
Blackrail
Hinn
Res


Yampa RD / Central Zone Projects
Lake Agnes
Forest Road 100.1
Lake Agnes Project Boundary
Red Dirt Geographic Area
N
0 1 2 Miles

Kremmling Field Office
Interagency Fuels Group

FY06 Projects:
2824

Yarmony Mtn. (Grand, Eagle, & Routt Counties) 27,000 acres Rx/Mx
Mule Creek (Grand Co.) – 34 ac. Completed Mx; 200 acres Rx
Fraser Valley/Sheep Mountain (Grand Co.) 175 Mx
Pumphouse Stewardship (Grand Co.) 82 ac.

2823

Slough Creek (Laramer Co.) – Planning 1,700 acres
Owl Ridge II (Jackson Co.) – 310 acers completed Mx

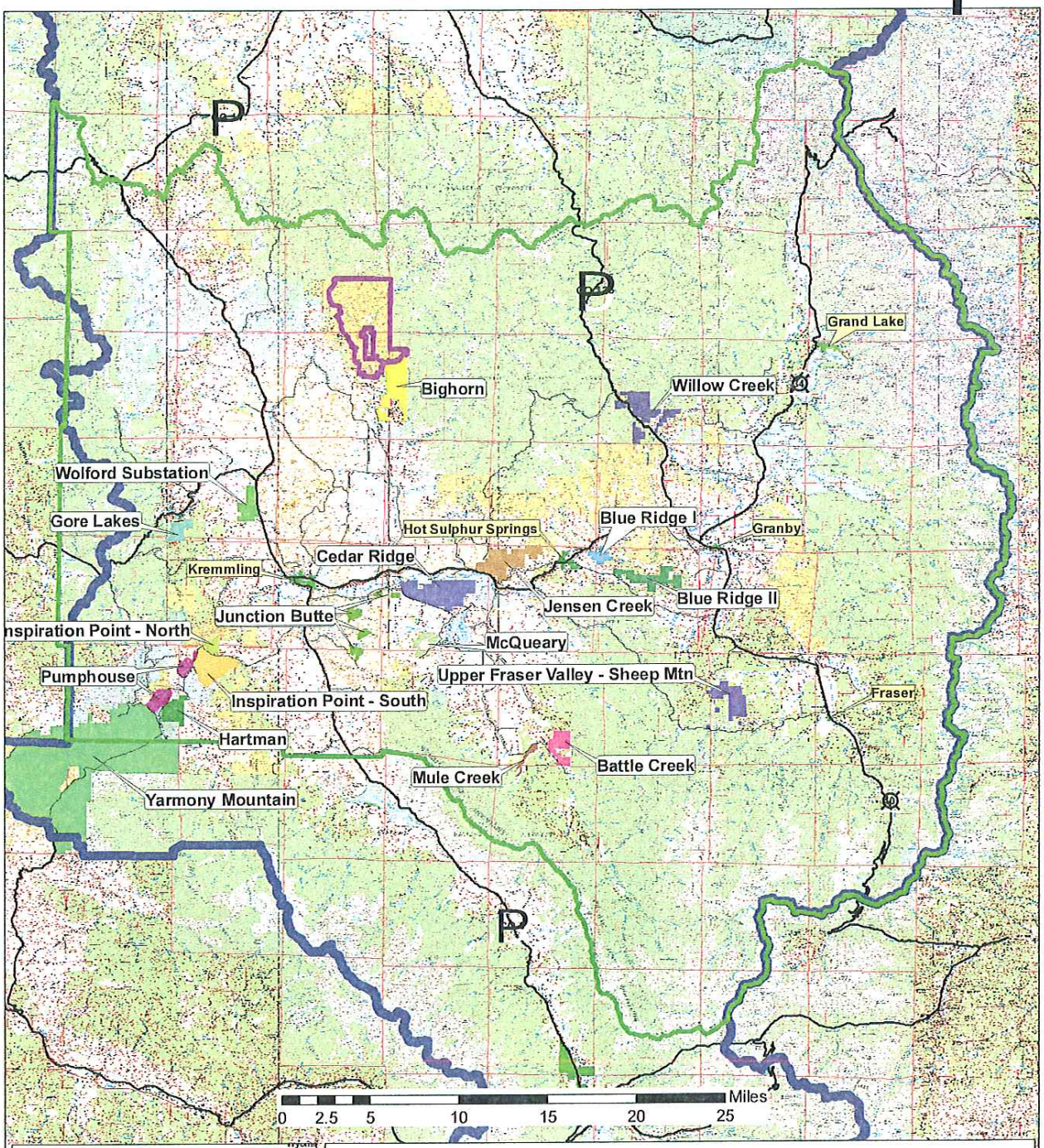
Proposed **FY2007 Projects** based upon submitted 5 Year Fuels Program of Work:
2824

Pumphouse Stewardship (Grand Co.)
Pumphouse Area C (Grand Co.) 68 ac. Rx piles
Gore Lakes (Grand Co.) 127 ac. Rx piles
Yarmony Mountain – 100 Rx, 150 Mx
Fraser Valley/Sheep Mtn. – 174 ac. Mx
Bighorn Subdivision (Grand Co.) – Planning
Jenson Creek (Grand Co.) – Planning
Lake John (Jackson Co.) – Planning

2823

Slough Creek (Laramer Co.) – 200 ac. Mx
Owl Ridge III (Jackson Co.) – 200 ac. Mx
Fisher Draw (Jackson Co.) – Planning
French Creek (Grand Co.) - Planning

Grand County Fuels Treatment Projects - BLM



No Warranty is made by the Bureau of Land Management as to the Accuracy, Reliability, or Completeness of this Data for Individual Use or Aggregate Use with Other Data.

Maps: Walden, Steamboat, vail and Estes Park drg100k
BLM, Kremmling FO JM -1/19/2005
fuels_treatments\plots\GC_Fuels_200601

Legend

1:350,000

Fuels Treatments - Projects

- Gore Lakes FY03-07
- Hartman FY04-05
- Inspiration Point - North FY08-09
- Inspiration Point - South FY03-05
- McQueary FY04-05
- Mule Creek FY05-06
- Pumphouse FY04-07
- Up Fraser Valley - Sheep Mtn FY04-07
- Yarmony Mountain FY05-11
- Junction Butte FY05-06

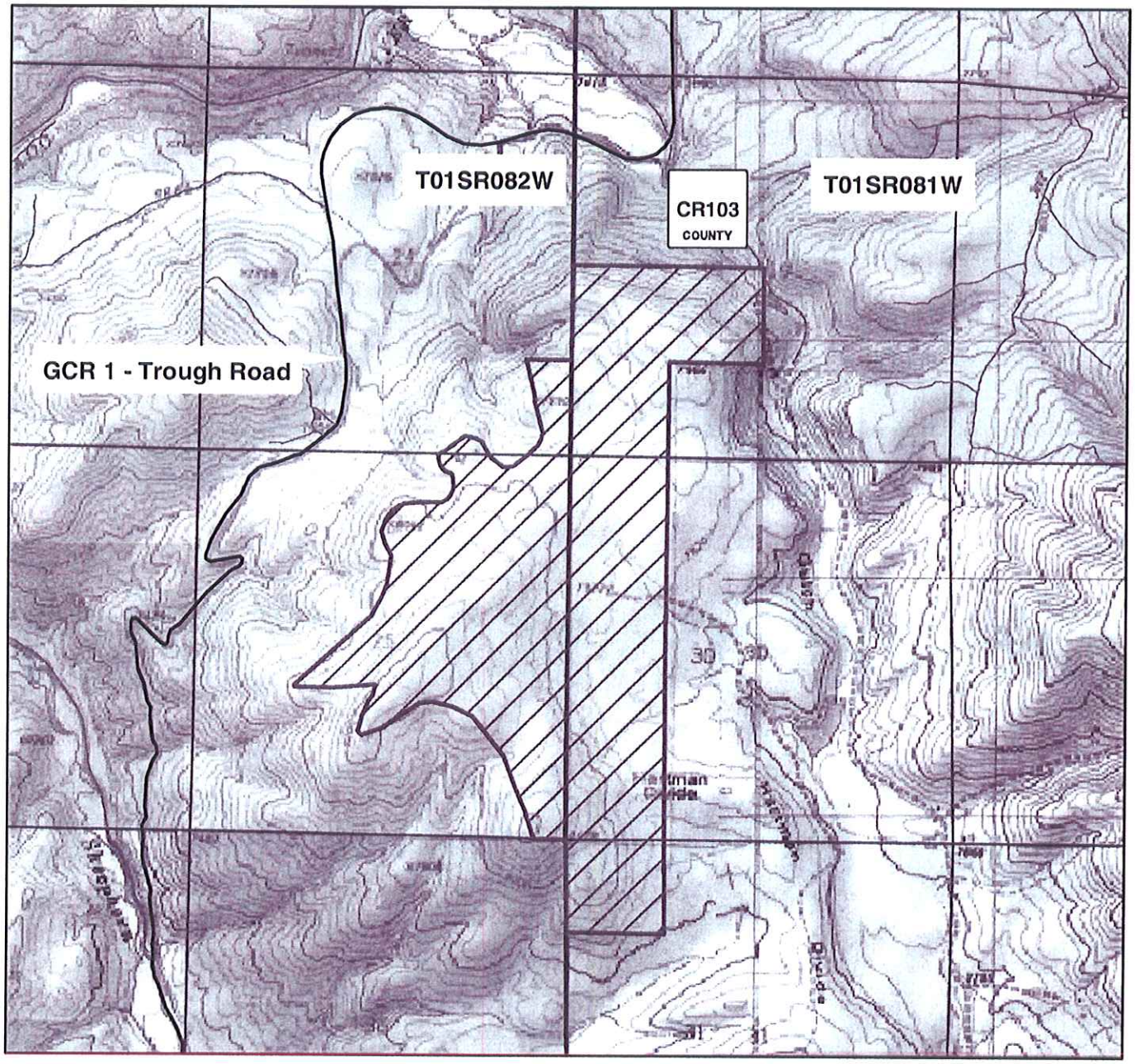
Future Fuels Treatments

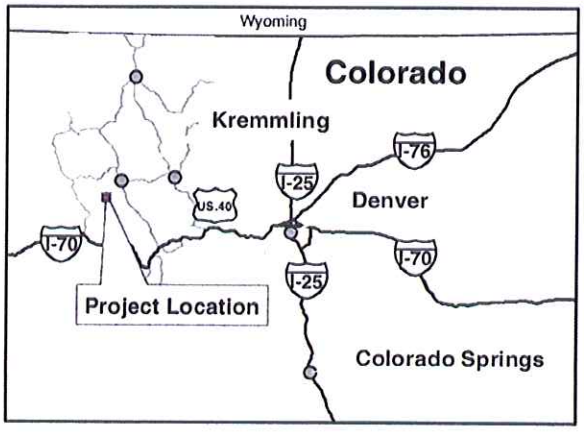
- Battle Creek FY10-12
- Bighorn FY07-09
- Blue Ridge I FY11-12
- Blue Ridge II FY11-13
- Cedar Ridge FY07-10
- Jensen Creek FY07-08
- Willow Creek FY09-12
- Wolford Substation FY09-11

Land Status

- Bureau of Land Mgt
- Divison of Wildlife
- National Park
- National Rec Area
- National Wildlife Refuge
- Private
- State
- State Forest
- US Forest Service
- Grand County
- Kremmling FO Boundary
- Troublesome WSA

Hartman Fuels Treatment - Lawson Aerator





1:24,000

Legend

Mechanical Treatment (581 ac.)

GCR 1 - Trough Road

Other Routes

Land Status

Bureau of Land Mgt

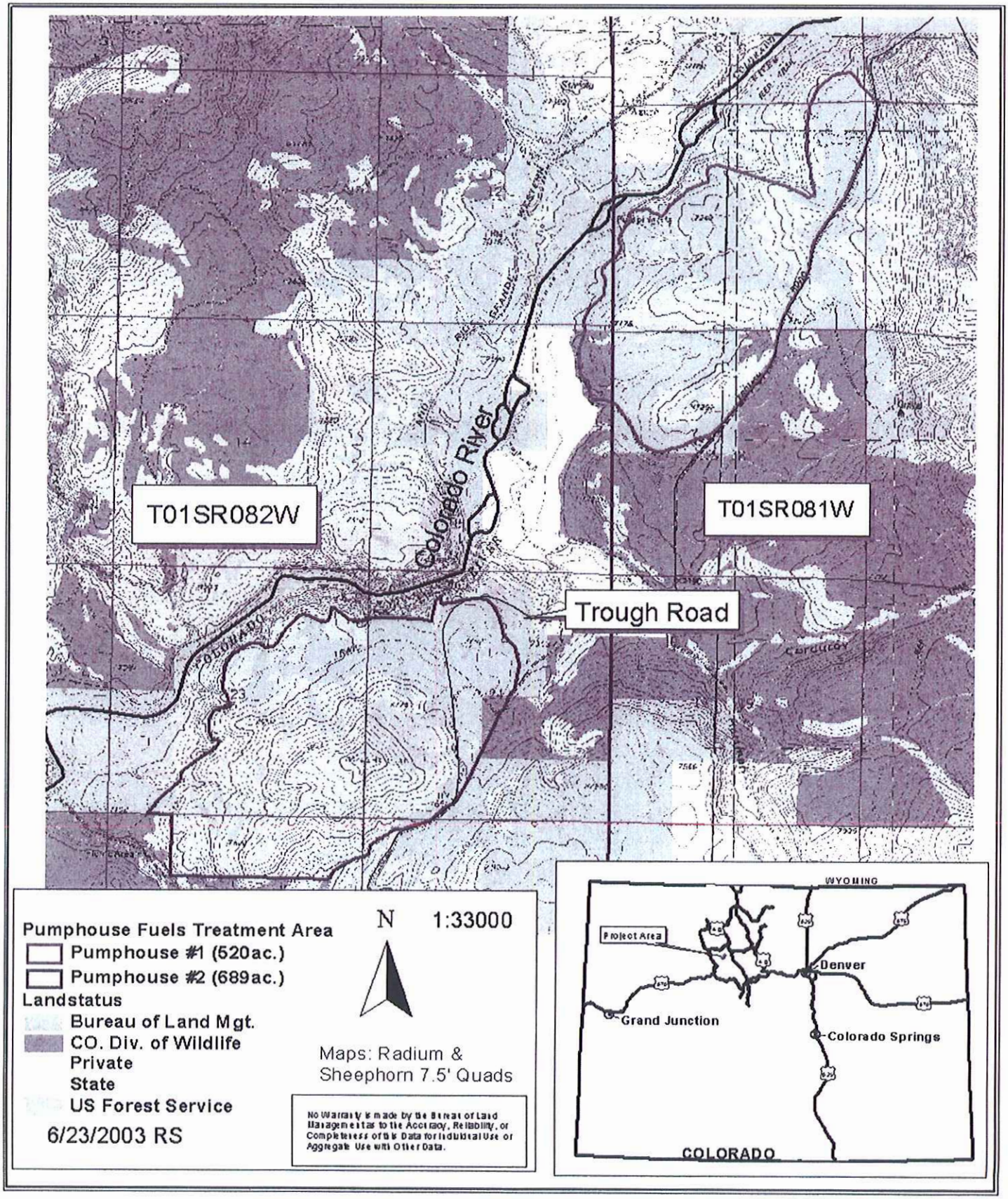
Divison of Wildlife

Private

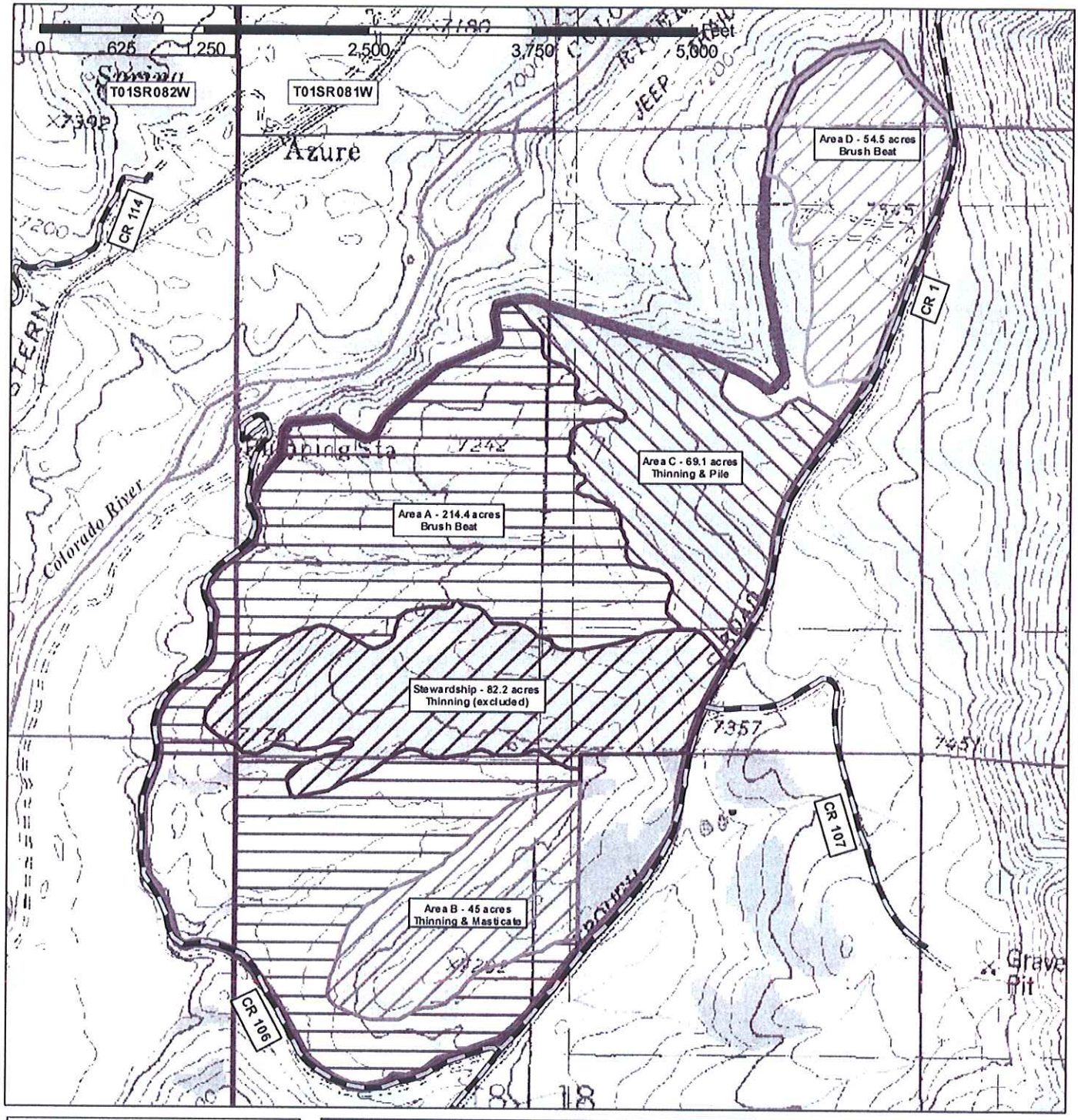
Map: Radium & Sheephorn Mtn Quads
BLM, Kremmling FO
AM-RS/8-3-2004

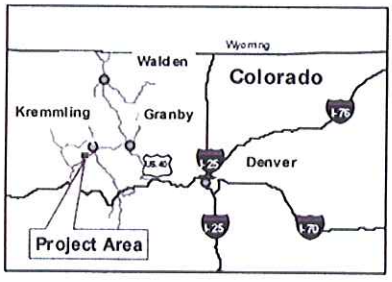
No Warranty is made by the Bureau of Land Management as to the Accuracy, Reliability, or Completeness of this Data for Individual Use or Aggregate Use with Other Data.

Pumphouse Fuels Treatment Areas



North Pumphouse Fuels Treatment
Brush Beating and Thinning (Areas A - D)





Legend

Treatment Areas
- Stewardship - 82.2 acres
- Area A - 214.4 acres
- Area B - 45 acres
- Area C - 69.1 acres
- Area D - 54.5 acres
- Project Boundary - 519 acres

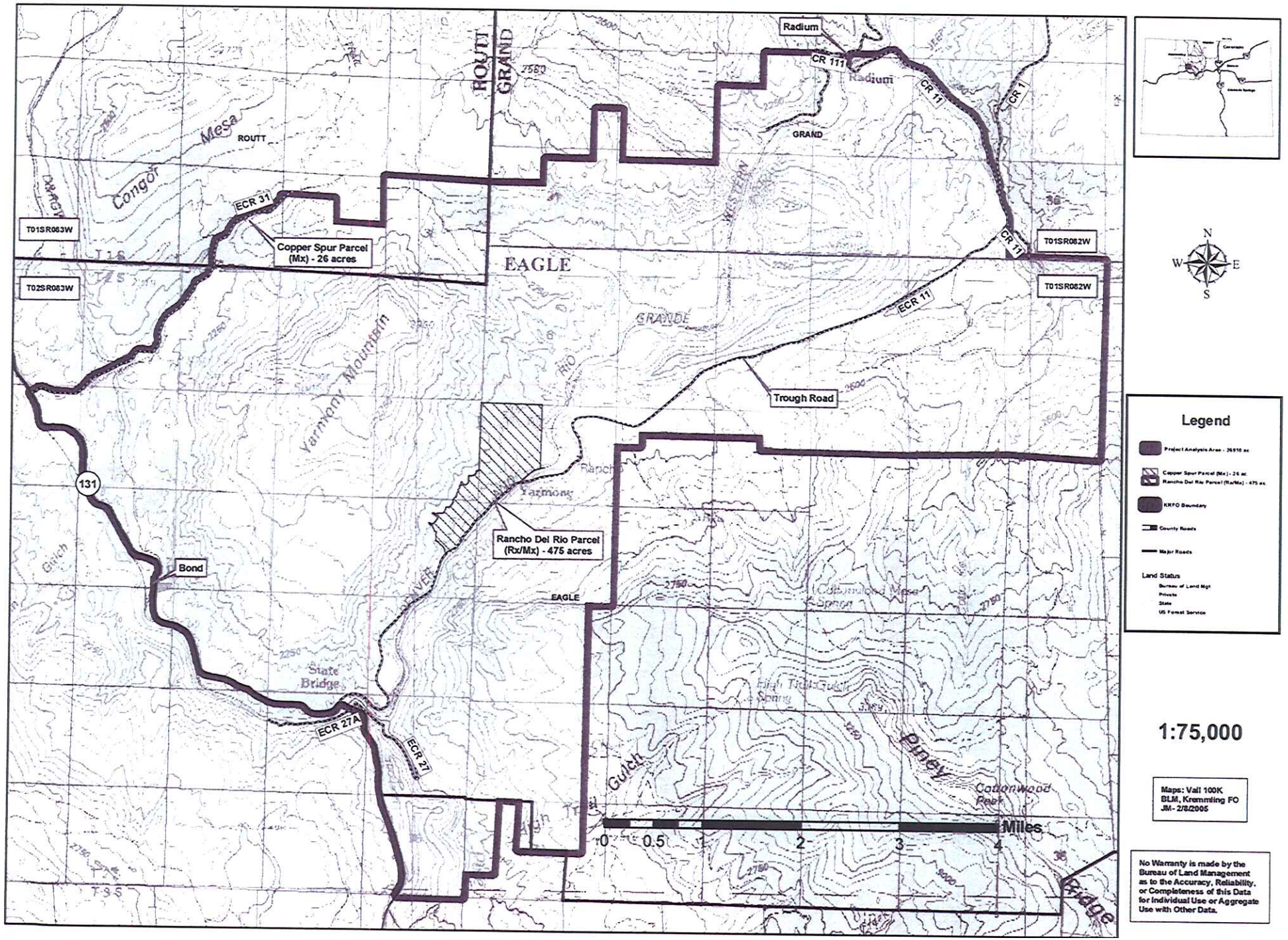
Land Status
- Bureau of Land Mgt
- Divison of Wildlife
- Private
- State
- County Roads

1:12,500

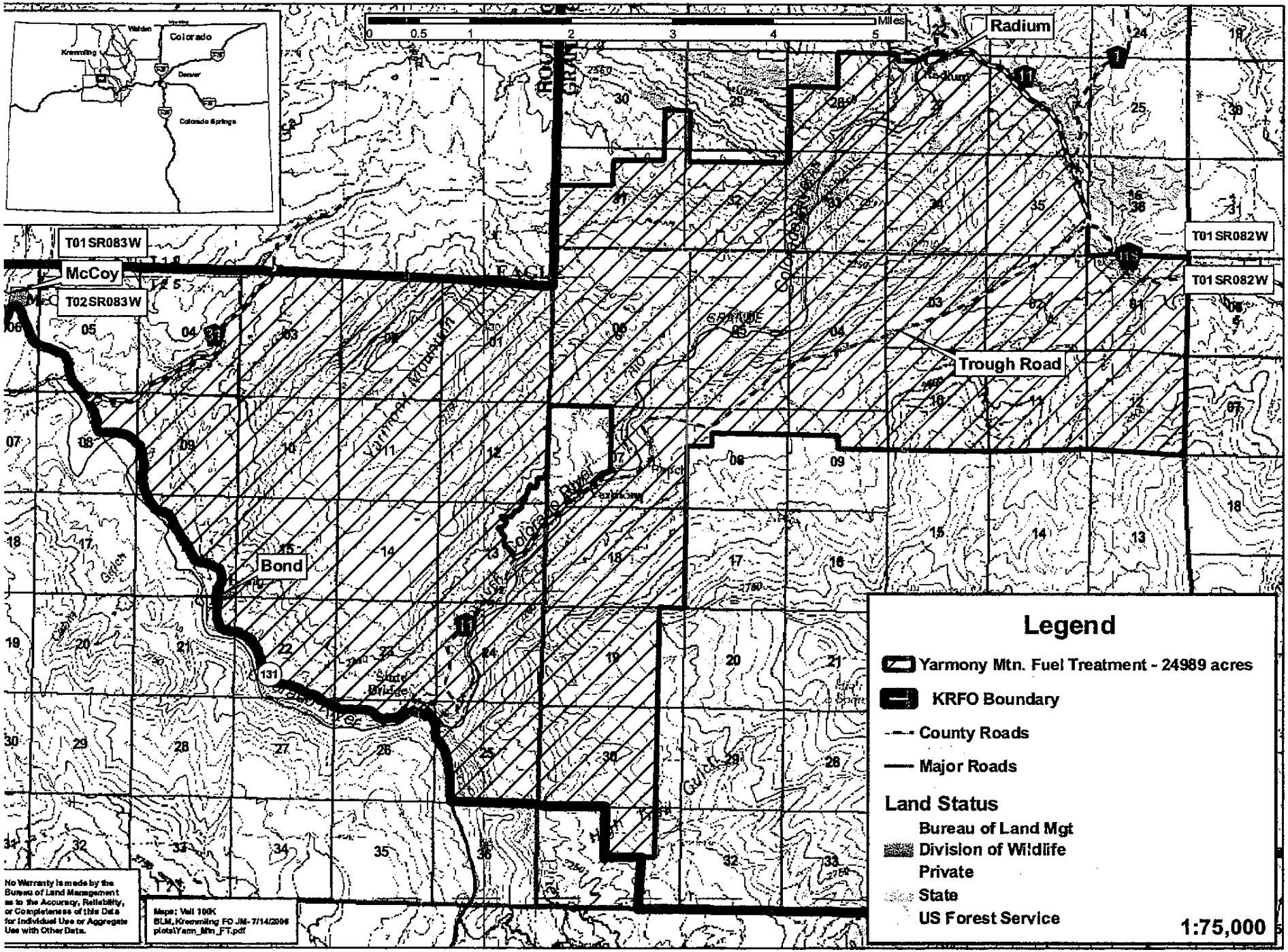
No Warranty is made by the Bureau of Land Management as to the Accuracy, Reliability, or Completeness of this Data for Individual Use or Aggregate Use with Other Data.

Maps: Radium & Sheephorn Mtn. BLM, Kremmling FO - JM - 3/15/2005 Plots\NPumphose_Areas_AtoD.pdf

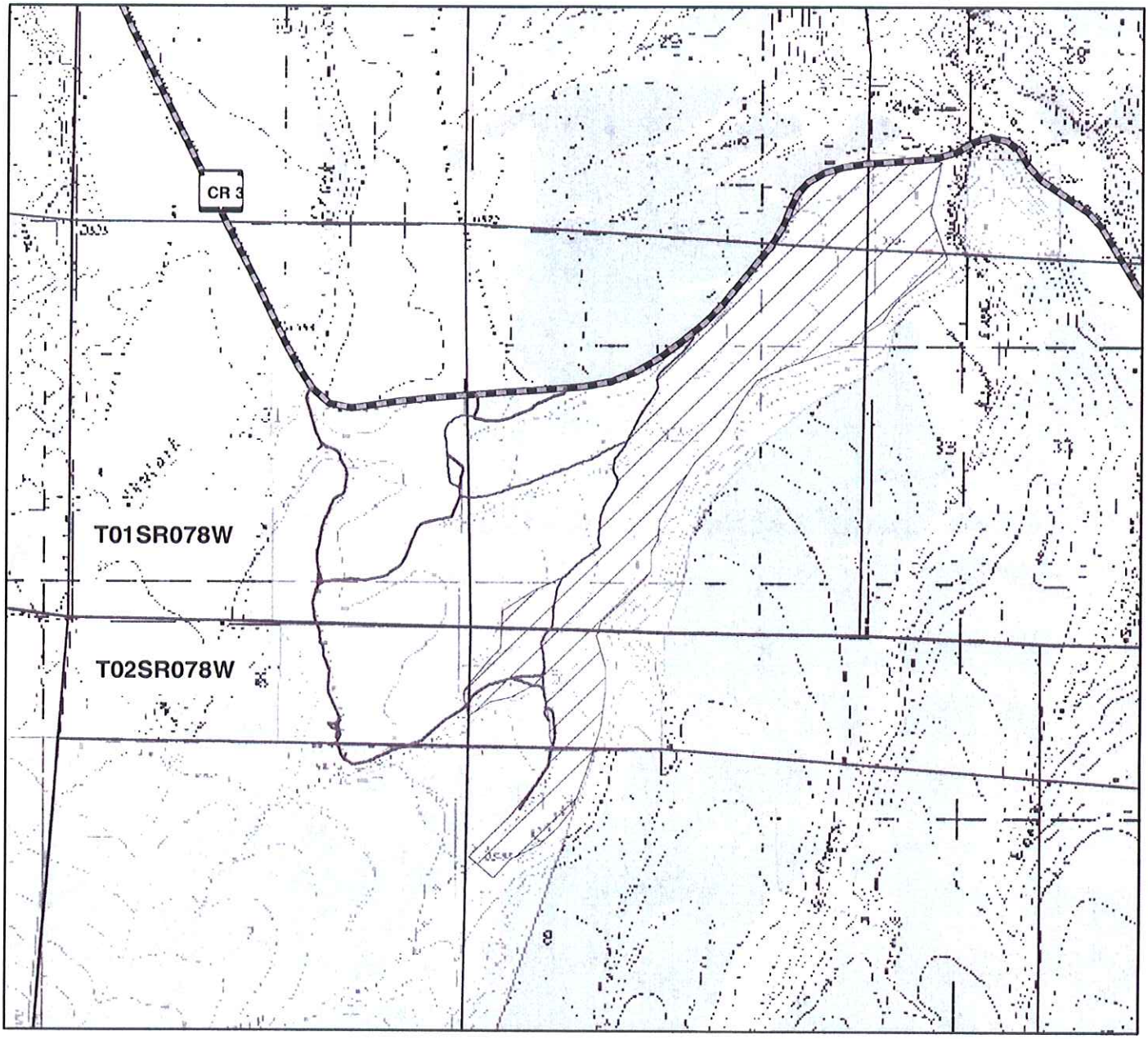
Yarmony Mtn. Fuel Treatment - Project Analysis Area

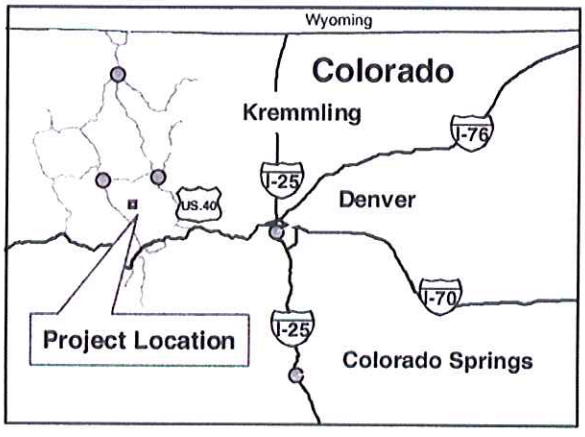


Yarmony Mtn. Fuel Treatment - Project Area



Mule Creek Fuels Treatment Cultural Survey





0 1,050 2,100 4,200 6,300 8,400 Feet

1:24,000

Legend

Project Area (312 ac.)

Routes

County Road
Primitive Road
Closed Route

Land Status

Bureau of Land Mgt
Private
US Forest Service

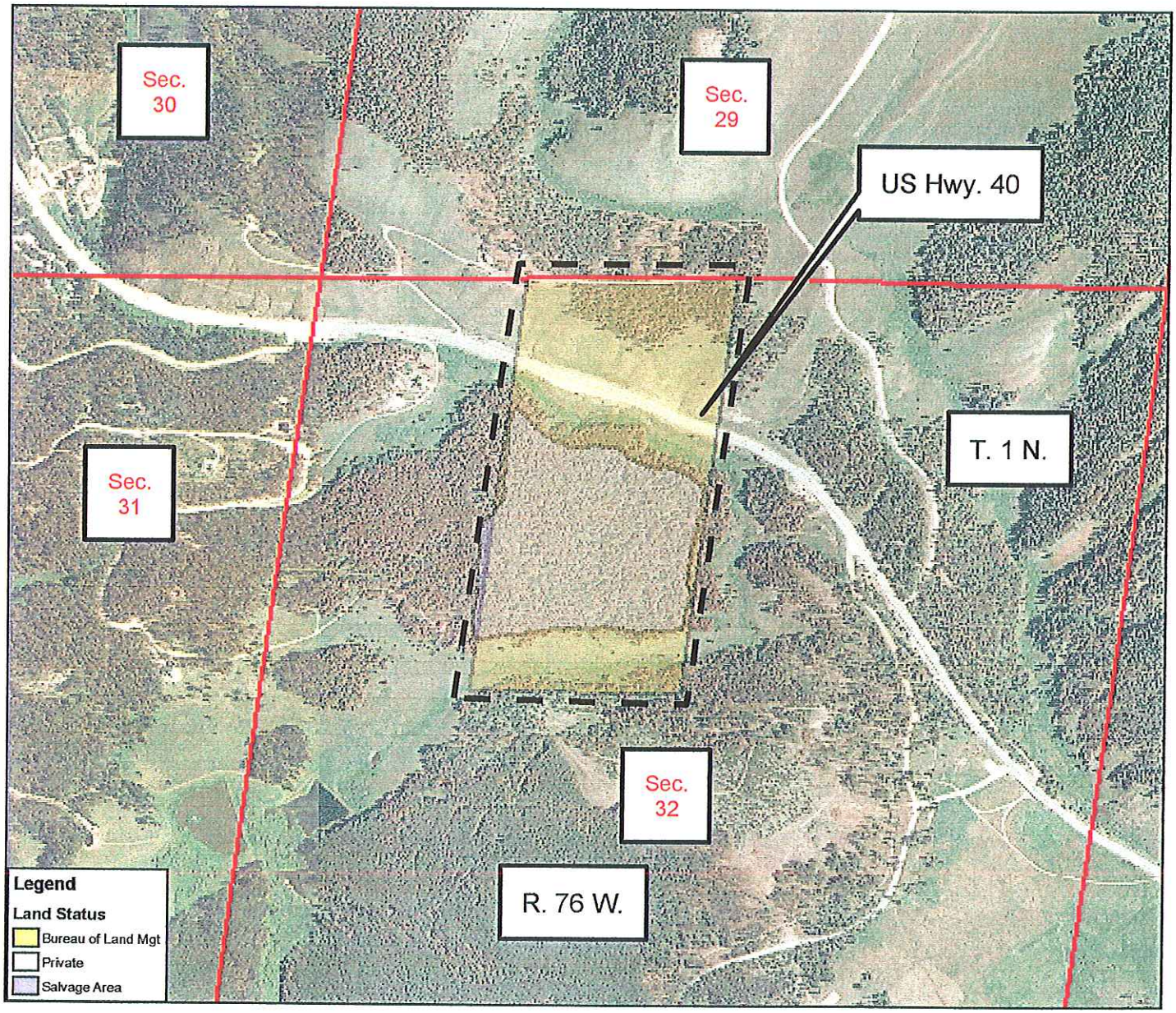
No Warranty is made by the Bureau of Land Management as to the Accuracy, Reliability, or Completeness of this Data for Individual Use or Aggregate Use with Other Data.

Map: Battle Mtn USGS Quad
BLM, Kremmling FO
RS-8-27-2004

Ten Mile Salvage Sale

Contract No. CO120-TS06-3

Exhibit A



Contract Area Boundary

Reserve Area

Cutting Unit =	45 Ac.
Reserve Area =	35 Ac.
	=======
Total Contract Area =	80 Ac.

N

0 500 1,000 2,000 Feet

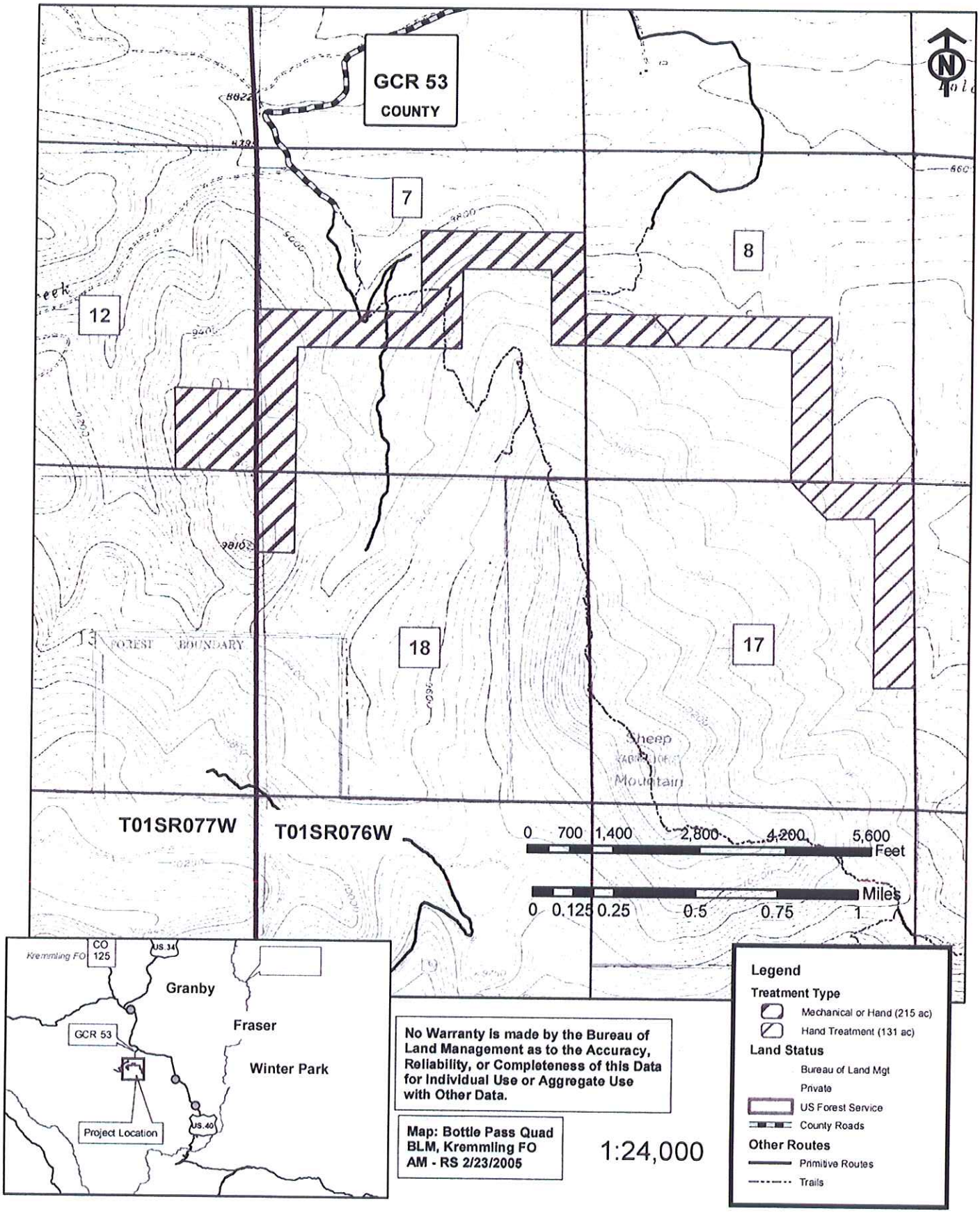
1:12,000

Mapper: RAR
Date: 5/8/2006

BLM, Kremmling FO
USGS Map: Granby

No Warranty is made by the Bureau of Land Management as to the Accuracy, Reliability, or Completeness of this Data for Individual Use or Aggregate Use with Other Data.

Sheep Mountain Shaded Fuel Break



United States Department of the Interior

NATIONAL PARK SERVICE
Rocky Mountain National Park
Estes Park, Colorado 80517

IN REPLY REFER TO:
(L76)

JAN 12 2006

Dear Reader:

Rocky Mountain National Park is proposing to conduct a fuel reduction project along roadsides within the park beginning in the spring of 2006. This management action would reduce wildland fuel accumulations on approximately 150 acres (please refer to the enclosed maps). Crews would utilize chainsaws and hand tools to thin closely spaced trees and brush, limb tree branches five feet off the ground and remove most of the dead and down material within 30 feet of the roadway.

The proposed fuel reduction activities focus on treating existing roadways to improve fire suppression operations and increase firefighter safety when utilizing roadways as a barrier to fire spread. The removal of vegetation may reduce fire intensity and the probability of a fire spreading across the road during low to moderate fire conditions. Placing these treatments along roadways takes advantage of previously disturbed sites and may also decrease the amount of human-caused fire ignitions which frequently occur along heavily traveled roads.

Fuel reduction would help to reduce wildland fire risk and facilitate the reintroduction of fire to the landscape through the use of prescribed fire and wildland fire use for resource benefits. This project will also provide some additional traffic safety benefits. Increased visibility will enhance vehicle safety and may help to reduce traffic accidents involving wildlife. Road damage caused by root systems may also be decreased by removing vegetation.

When the roads in the park were originally constructed, cut slopes and fill slopes along the roadways were devoid of vegetation. Over the years, grasses, trees and shrubs have grown back. Park staff considers the removal of overgrown vegetation along roadways a part of routine maintenance. Therefore, this project is being proposed as a "Categorical Exclusion" from the National Environmental Policy Act (NEPA), and no Environmental Assessment or Environmental Impact Statement would be prepared unless significant concerns are raised about the project during the review period.

We welcome comments on this project, **which must be received by January 31, 2006.** Please submit written comments to the park by any of the following methods:

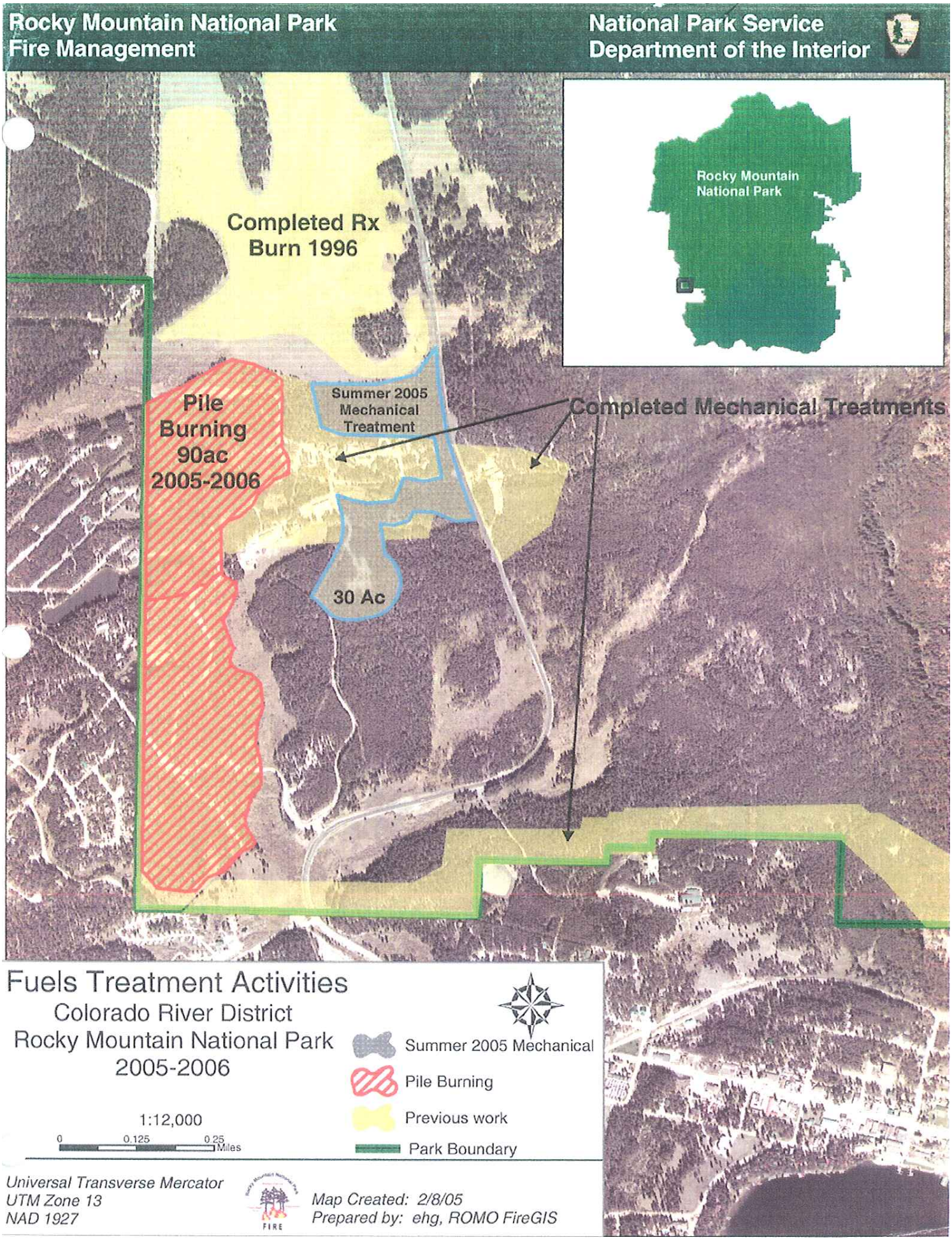
- By mail: Superintendent, Rocky Mountain National Park, Estes Park, CO 80517
- By fax: 970-586-1397
- By e-mail: romo_superintendent@nps.gov
- Hand deliver: Rocky Mountain National Park Headquarters, 1000 Highway 36, Estes Park, Colorado, or to the Kawuneeche Visitor Center, Rocky Mountain National Park , 10618 Highway 34, Grand Lake, Colorado

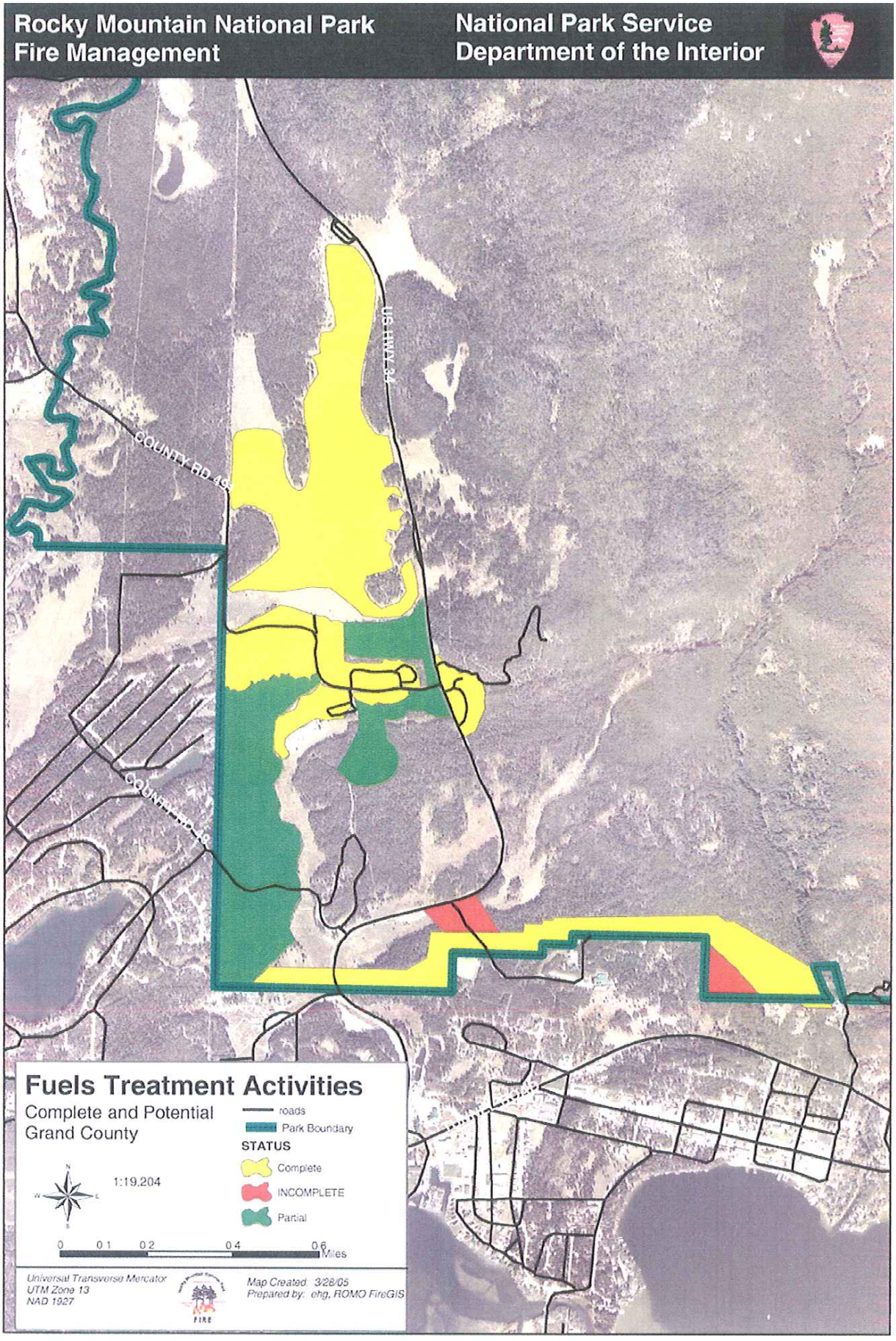
You must include your name and mailing address with any comments you provide. If you have any questions about this project, please contact Scott Sticha, the Fire Information Officer for the park. He can be reached at (970) 586-1264.

Sincerely,

Vaughn L. Baker
Superintendent

Enclosures: Project area maps


Rocky Mountain National Park
Fire Management
National Park Service
Department of the Interior
Rocky Mountain National Park
Completed Rx Burn 1996
Pile Burning 90ac 2005-2006
Summer 2005 Mechanical Treatment
30 Ac
Completed Mechanical Treatments
Fuels Treatment Activities
Colorado River District
Rocky Mountain National Park
2005-2006
1:12,000
0 0.125 0.25 Miles
Summer 2005 Mechanical
Pile Burning
Previous work
Park Boundary
Universal Transverse Mercator
UTM Zone 13
NAD 1927
FIRE
Map Created: 2/8/05
Prepared by: ehg, ROMO FireGIS


Rocky Mountain National Park
Fire Management
National Park Service
Department of the Interior
US HWY 34
COUNTY RD 49
COUNTY RD 43
Fuels Treatment Activities
Complete and Potential
Grand County
roads
Park Boundary
STATUS
Complete
INCOMPLETE
Partial
1:19,204
0 0.1 0.2 0.4 0.6 Miles
Universal Transverse Mercator
UTM Zone 13
NAD 1927
Map Created: 3/28/05
Prepared by: ehg, ROMO FireGIS

VIII. Recommendations

There is no way to completely eliminate the threat of wildland fire in the WUI. The recommendations set forth in this CWPP will improve the probability of protection from catastrophic wildland fire. The recommendations in this CWPP are based upon analysis of current conditions relating to communities, forest health, economics, critical infrastructure, industry, and public awareness throughout the (3) major project areas of Grand County.

- Encourage defensible space as a first priority and promote implementation of larger public land fuel reduction projects where needed to reduce the hazards inherent in WUI areas.
- Increase public awareness of wildland fire risks and hazards in communities and inform homeowners of actions that can reduce those risks and hazards via education/outreach and local media.
- Promote community-wide involvement to effectively reduce the risk of wildland fire in the WUI. Identify and consider critical infrastructure and values at risk in future mitigation planning. (Power transmission lines, communication tower sites, watersheds, County and State Right of Ways for ingress/egress, and recreation sites.
- Identify and promote new state and federal funding sources with state and federal elected officials.
- Identify and lobby for increased forest treatment incentives for private landowners with state and federal elected officials.
- Identify and promote personal and commercial utilization of woody biomass materials.
- Promote and encourage the development of localized CWPPs (Municipalities, HOAs, and Fire Districts).
- Encourage county and municipal Building and Planning Departments to consider incorporating additional “Firewise” recommendations on future developments in WUI areas.
- Identify areas for water storage to enhance firefighting resource capabilities.
- Support and encourage increased contract sizes and duration of public land timber sales or mitigation projects.
- Plan and implement tabletop and field exercises relating to wildland fire and evacuation.
- Explore opportunities for enhanced Reverse 911 notification systems.
- Begin developing a community “vision” of what the future forest will look like.
- Promote and utilize **collaboration and commitment** between the private sector and government entities at the local, state and federal levels.

ANNUAL FIRE OPERATING PLAN

for

GRAND COUNTY

2006

TABLE OF CONTENTS

I. PLAN APPROVALS

This plan will remain in effect until superseded by following years. Participating agencies will meet prior to fire season each year to review and update this plan for official approval.

Agencies approving the continuation of this agreement through May 1, 2007:

BOCC Grand County	Date
Attest: County Clerk	Date
Grand County Sheriff	Date
CSFS District Forester	Date
Forest Supervisor, Arapaho-Roosevelt NF	Date
Forest Supervisor, Medicine Bow-Routt NF	Date
Bureau of Land Management, Kremmling Field Office	Date
Rocky Mountain National Park Superintendent	Date

II. JURISDICTIONS

Jurisdictional boundary lines for USFS, BLM, NPS, and Grand County (private and state) lands are shown on the attached maps, EXHIBIT A.

III. AUTHORITY

Colorado Interagency Cooperative Fire Management Agreement
BLM #1422CAA010010
USFS #01-F1-11020000-052
NPS #H1249010010.
BIA #AG01M000016
FWS #14-48-60139-01-K001
CSFS – No Agreement Number Used
Emergency Fund Contract for Forest and Watershed Fire Control
CSFS form #108
Agreement for Cooperative Wildfire Protection in Grand County
CSFS #109

IV. PURPOSE

The purpose of this wildfire Annual Operating Plan (AOP) is to set forth standard operating procedures, agreed upon procedures, and responsibilities to implement cooperative wildfire protection on all lands within Grand County.

Participants in this AOP consist of the following:
Grand County Sheriff, in behalf of the County and FPD's
Grand County Board of County Commissioners
Sulphur Ranger District of the Arapaho NF (USFS)
Parks Ranger District of the Medicine Bow-Routt National Forest (USFS)
Yampa Ranger District of the Medicine Bow-Routt National Forest (USFS)
Northwest Colorado Fire Management Unit
Rocky Mountain National Park (NPS)
Colorado State Forest Service (CSFS)
Kremmling Field Office (BLM)

All participants of this plan agree to coordinate their wildfire protection activities as outlined herein.

V. DEFINITIONS AND DESCRIPTIONS

A. FIRE PROTECTION RESPONSIBILITIES

Each jurisdictional agency has ultimate responsibility for wildfire protection on its own lands. The Sheriff is responsible for wildfire suppression on all non-federal lands in Grand County. It is clearly and mutually understood that East

Grand Fire Protection District will promptly attack wildfires and follow through on all necessary suppression actions on Denver Water properties within the East Grand Fire Protection District.

B. MUTUAL AID

The mutual aid zone includes all lands within Grand County.

Within the mutual aid zone an assisting agency will, upon request or voluntarily, take initial attack action in support of the jurisdictional agency.

The jurisdictional agency will not be required to reimburse the assisting agency for costs incurred during the mutual aid period.

The mutual aid period extends for 24 hours from the time a wildfire is first reported. The mutual aid period may end earlier by mutual agreement.

No agency will be required or expected to commit resources to assisting another agency to the extent of jeopardizing its own responsibilities, or the security of lands it is charged with protecting. Each agency or department is responsible for providing worker's compensation insurance for its own personnel.

C. MOVE-UP AND COVER FACILITIES

Move-up and cover facilities have not been predetermined; however, the mechanism is in place for fire protection districts to cover each other through the Grand County Mutual Aid and Assistance Agreement.

D. SPECIAL MANAGEMENT CONSIDERATIONS

Denver Water Board Lands

- Notification - When a wildfire occurs on lands owned by Denver Water, the CSFS Granby District representative **must** be notified. The district representative will respond, at his/her discretion, to serve as the landowner's representative on the incident and to facilitate reimbursement.

- Use of Mechanized Equipment - Use of mechanized, earthmoving equipment such as bulldozers, graders, etc., will not be permitted on Denver Water lands without the expressed approval of CSFS or Denver Water.

- Aerial Retardant Use - The use of aerial retardants on Denver Water lands is restricted within 100 feet of lakes, rivers and live streams.

Federal Lands

Suppression within designated Wilderness, Wilderness Study Areas, and/or "roadless" areas, as designated on the map attached as EXHIBIT A, will not be conducted without direct orders from the jurisdictional federal official. Travel within Rocky Mountain National Park is restricted to designated roads.

All personnel at the incident must meet the minimum training requirements of and be equipped to NWCG standards (hardhat, eye protection, nomex shirt and trousers or NFPA 1977 flame resistant equivalent, leather gloves, minimum 8 inch high leather boots with lug soles and a fire shelter). All incident personnel will be qualified for the position that they are assigned to, or be replaced by the end of the mutual aid period or sooner. Those not meeting the standards may at the end of the mutual aid period or sooner be assigned to non-suppression duties. When the mutual aid period is declared over, either by definition or responsible agency request, personnel not meeting NWCG standards will not engage in any suppression activity that requires said standards.

The Northwest Colorado Fire Management Unit implemented a Fire Management Plan in 2002. The plan outlines Appropriate Management Response (AMR) for natural ignitions occurring on lands administered by the Routt National Forest and the BLM within Grand County. All agencies involved in fire management shall adhere to direction and operational procedures outlined in the AMR. All agencies will be provided a copy of the plan upon its completion.

Use of mechanized equipment, such as bulldozers, will not be permitted on federal lands without the expressed approval of the appropriate federal official. For Rocky Mountain National Park, approval must come from the Park Superintendent.

Wildfires within the Fraser Experimental Forest should be confined to as small an area as possible, and a representative of the Fraser Experimental Forest notified at once.

E. RESPONSIBILITY FOR NON-WILDLAND FIRE EMERGENCIES

This plan addresses only wildland fire incidents.

F. REPAIR OF WILDFIRE SUPPRESSION DAMAGE

Rehabilitation of wildfire suppression actions is the responsibility of the jurisdictional agency, unless otherwise agreed to by the unified command at the time of fire close out. Rehabilitation of the fire area is not covered under EFF, it may be authorized by the CSFS Line Officer only when part of the Incident Action Plan during the EFF period.

On Denver Water lands efforts will be made by agencies involved in suppression action to minimize damage through the use of "light on the land" techniques, or through rehabilitation activities conducted at the time of the incident. Examples of these rehabilitation activities would include: water barring firelines; placement of logs or rocks across firelines; etc....

VI. RESOURCE LIST

East Grand Fire Protection District

1-1000 gal. type 4 engine 464 (CSFS)
1-250 gal. type 6 engine 472
1-300 gal. type 6 w/CAFS engine 473
1-2000gal. type 3 water tender 461
1-2000gal. type 3 water tender 463
1-2100 gal. type 3 water tender 465
1-Mobile incident command post 492, phone number (970) 655-7010

Granby Fire Department

1-1000 gal. type 3 engine 321
1-250 gal. type 6 engine 341

Grand County EMS

6-4X4 ambulances
1-4X4 medic rescue truck

Grand Lake Fire Department
See CRRF attached as Exhibit C.

Hot Sulphur Springs-Parshall Fire Protection District

1-1000 gal. type 4 engine 288 (CSFS)
1-1000 gal. type 1 all wheel drive engine 287
1-2500 gal. type 2 water tender 286

Kremmling Fire Department

1-1000 gal. type 3 w/foam engine 415 (CSFS)
1-200 gal. type 6 w/foam engine 413
1-2500 gal. type 3 w/foam engine 414

Northwest Colorado Fire Management Unit

Craig (BLM)
1-20 person type 1 crew, Craig Hot Shots
1-750 gal. type 4 engine, 5 person crew, Engine 419
1-200 gal. type 6 engine, 3 person crew, Engine 611
1-200 gal. type 6 engine, 3 person crew, Engine 612
1-3000 gal. type 2 Water Tender 1

Meeker (BLM)
1-750 gal. type 4 engine, 3 person crew, Engine 416
1-200 gal. type 6 engine, 3 person crew, Engine 612
1-5 person initial attack squad

Steamboat Springs (FS)
1-5 person initial attack squad

Walden (FS)
1-250 gal. type 6 w/foam engine 617
1-1000 gal. port-a-tank w/Mark 3 pump kit

Yampa (FS)
1-250 gal. type 6 engine 618
1-Pacific Mark III pump kit

Rocky Mountain National Park

Estes Park (may be temporarily assigned to Colo. River District as fire danger dictates)
1-550 gal. type 3 engine 341
1-280 gal. type 6 engine 642
1-300 gal. type 6 engine 643
1-150 gal. type 7 engine

USDA Forest Service, Medicine Bow Forest

Encampment
1-250 gal. type 6 engine

Laramie
2-250 gal. type 6 engine

USDA Forest Service, Sulphur District

1-300 gal. type 6 engine 681
1-75 gal. patrol unit P78
1-Pacific Mark III pump kit - Shadow Mountain Village Fire Cache

VII. PROTECTION AREA MAP

EXHIBIT A, Steamboat Springs, Estes Park, Vail and Denver West BLM Surface Management Status maps are used to show jurisdictional boundaries for the purpose of this plan. The Grand County Sheriff is responsible for wildfire control on all state and private lands within Grand County. On federal lands, the agency charged with managing those lands is responsible for fire management.

VIII. FIRE READINESS

A. FIRE PLANNING

The primary purpose of this AOP is to set agreed upon measures for wildfire prevention, readiness, and suppression. Grand County has also prepared an interagency county fire plan to prioritize and guide fire hazard mitigation efforts through fuel reduction.

B. WILDFIRE TRAINING NEEDS AND COORDINATION

NWCG approved wildfire training courses are provided periodically by CSFS, USFS, BLM, NPS, and other agencies. As these courses are scheduled, all cooperators will be informed and invited to participate.

C. INSPECTION SCHEDULES

All engines subject to interagency dispatch will be inspected annually by the owning agency, both engine and equipment, to ensure use and road worthiness.

IX. WILDFIRE SUPPRESSION PROCEDURES

A. INCIDENT COMMAND SYSTEM USE

The Incident Command System (ICS) will be utilized on all wildfires. ICS is a standardized method of managing emergency incidents. It is based on:

- Common organizational structure
- Common terminology
- Common operating procedures
- Known qualifications of emergency personnel

ICS does not infringe on the responsibilities or authority given each agency by statute, but if a transfer of authority is necessary as conditions change, ICS eases the transition since organizational structure and lines of authority are clearly identified. Grand County Incident Management Team guidelines are attached as Exhibit E.

B. DETECTION

Grand County Dispatch in Hot Sulphur Springs (commonly referred to as "Hot Sulphur Dispatch") will receive reports of wildfires from the public and will notify the jurisdictional agency.

C. MOBILIZATION GUIDES

Interagency Dispatch Centers that are party to this AOP maintain mobilization guides. These guides may be useful to the county for obtaining private sector wildfire resources.

D. NOTIFICATION OF FIRES

Assisting agencies making initial attack on wildfires within the mutual aid zone will ensure that the jurisdictional agency is promptly notified through Hot Sulphur Dispatch. The County Sheriff will be notified of all wildfires. If the wildfire is on or threatening state or private land, and is expected to exceed the control capabilities of the county, the CSFS Granby District representative should be notified. If the wildfire is on land managed by BLM or Medicine Bow-Routt National Forest National Forest, Hot Sulphur dispatch will notify Craig Interagency Dispatch Center (CRC). If the wildfire is on NPS land Hot Sulphur Dispatch will notify the Colorado River District office of Rocky Mountain National Park. If the wildfire is on land administered by the Arapaho National Forest, Hot Sulphur Dispatch will notify the Sulphur District of USFS.

It shall be the responsibility of East Grand Fire Protection District to notify the Colorado State Forest Service if Denver Water lands are involved or threatened. *Failure to notify Colorado State Forest Service may jeopardize the opportunity for reimbursement of suppression expenses.*

E. INITIAL ATTACK DISPATCH AREAS

Agencies will make initial attack on wildfires based on which agency is in the best position at the time the wildfire is reported to take the most rapid and effective action.

The initial attack incident commander should size up the wildfire utilizing the Initial Attack Response Guide, FTC Organizer, or CRC Organizer and communicate size up information to the applicable interagency dispatch center.

Red cards are not required for initial attack, but firefighters without red cards will be the first ones released by the jurisdictional agency. In most cases this will occur no later than the next day operational period.

F. DISPATCHING AND RESOURCE ORDER PROCESS

Grand County Dispatch (commonly referred to as "Hot Sulphur Dispatch") in Hot Sulphur Springs will act as dispatch for county and fire protection districts initial attack response. The agency that can take the quickest effective suppression action will be dispatched for initial attack. Notification of all interagency dispatch centers that are, or may be affected, is the responsibility of the incident commander. The jurisdictional agency will assume command of the suppression action at the earliest possible time. The Mutual Aid and Assistance Agreement between all Grand County fire protection districts allows resources to be dispatched anywhere in the county, at the request of a fire protection district representative acting as incident commander.

Fort Collins Interagency Dispatch Center (FTC) is responsible for dispatching and coordination of Rocky Mountain National Park and Arapaho National Forest resources. Craig Interagency Dispatch Center (CRC) is responsible for dispatching and coordination of all other resources within Grand County, beyond the county sheriff's initial attack response. In the event of a wildfire burning on lands of two or more jurisdictional agencies that are normally not dispatched by the same dispatch center, CRC and FTC will, in consultation with local representatives, coordinate and determine which center will do all dispatching. An expanded dispatch, in coordination with CRC and FTC, will be considered for wildfires that escape initial attack.

Use of roads on federal lands presently closed to vehicular travel (outside of wilderness areas) is hereby authorized to all parties to this AOP, when said parties are on a wildfire detection, prevention, or suppression mission. Exceptions are specified in section V.D.

It shall be the responsibility of East Grand Fire Protection District, when responding to a wildfire on Denver Water lands to order needed assistance, or acquire replacements to relieve initial attack crews.

1. UNIFIED COMMAND

If a wildfire crosses, or threatens to cross, jurisdictional boundaries a Unified Command should be formed. The purpose of the Unified Command will be to reach consensus on a common set of incident objectives for implementation by the Incident Commander. The Unified Command will consist of representatives of the following agencies that are affected:

- Grand County - Sheriff or designee.
- Colorado State Forest Service - District Forester or designee.

• Federal land agency involved - Forest Supervisor (USFS) or designee, or Field Office Manager (BLM) or designee, or Park Superintendent (NPS) or designee.

G. REINFORCEMENTS AND SUPPORT

All requests for additional resources beyond initial attack will be made by the applicable agency representative, using appropriate ordering procedures as follows:

• Within the jurisdictional boundaries of Sulphur Ranger District and Rocky Mountain National Park place orders through Fort Collins Interagency Dispatch Center.

• Within the jurisdictional boundaries of Grand County Sheriff, Medicine Bow-Routt National Forest, and BLM place orders through Craig Interagency Dispatch Center.

H. INTERAGENCY PROCUREMENT

Non-federal participants in this plan may purchase fire suppression supplies from GSA through CSFS. Any other loaning, sharing, exchanging, or maintenance of facilities, equipment, or support services will be considered on a case by case basis and must be mutually agreed upon by the concerned parties.

I. COMMUNICATIONS SYSTEMS AND FREQUENCIES

For the purposes of conducting business authorized by this cooperative agreement, all parties to this operating plan agree that assisting agencies may use the jurisdictional agency's radio frequencies as needed to conduct emergency communications on wildfires of the jurisdictional agency. No party to this operating plan will use, or authorize others to use, another agency's radio frequencies for routine daily operations. Fire protection districts on incident management missions, under the auspices of the county, are granted permission to use federal radio frequencies, if needed, to assure safety of the operation. No agency, other than BLM, USFS, and NPS is authorized to transmit on Air Net frequencies unless specifically authorized by user name. Radio frequencies specifically authorized for use are shown in EXHIBIT E.

J. WILDLAND FIRE SITUATION ANALYSIS

Federal agencies are required to complete a Wildland Fire Situation Analysis (WFSA) for all wildfires on federal land that escape initial attack. This procedure requires federal agency unit administrator participation. The CSFS line officer will prepare or review and approve the WFSA for wildfires that have the potential to be designated an EFF fire or affect multiple jurisdictions and have the potential

to go through an extended attack period into a large wildfire situation.

When a wildfire is burning on or threatens to burn on multiple jurisdictions, one WFSA should be prepared that considers all jurisdictions (the whole wildfire). All jurisdictions impacted by the wildfire should participate in the WFSA process.

K. STATE EMERGENCY FIRE FUND (EFF)

1. INTENT

Grand County and Denver Water are members of the State EFF agreement. The purpose of the EFF agreement is to provide funds to cover costs associated with a large wildfire, or multiple wildfires on non-federal lands that the resources of the county cannot handle.

When EFF is implemented, CSFS assumes responsibility and authority for all suppression activity until the wildfire is returned to county responsibility; however, the county must maintain a minimum level of participation after EFF is implemented as outlined in section IX.M.5.b.

2. FUNDING

EFF members contribute annually, based on a CSFS assessment that considers the number of forested acres and valuation of private land.

3. ROLES

a. CSFS DISTRICT FORESTER

Act for State Forester in the absence of an assigned Incident Line Officer; assist Sheriff in completing EFF Analysis Form (CSFS #108A); prepare CSFS Fire Funding Request (CSFS #164); assure Incident Line Officer is aware of local situations and procedures.

b. GRAND COUNTY SHERIFF

Prepare EFF Analysis Form (CSFS #108A) for potential EFF wildfires; sign Assumption of Fire Control Duty Form (CSFS #168) for EFF wildfires; serve as county representative on the Unified Command.

c. GRAND COUNTY COMMISSIONERS

Sign Assumption of Fire Control Duty Form (CSFS #168) for EFF fires.

d. FIRE PROTECTION DISTRICTS

Provide Sheriff with personnel and equipment necessary to meet county resource commitments.

4. UNIFIED COMMAND

All EFF wildfires will utilize a Unified Command consisting of, at a minimum, Grand County Sheriff and CSFS. If land administered by another agency is threatened or involved, that agency will provide a member of the Unified Command as outlined in section IX.G.1.

5. EFF ACTIVATION

Implementation of the Emergency Fire Fund can be done only by the Colorado State Forester upon the recommendation of the local CSFS District Forester, following a request from the Sheriff or his designee. For this reason, it is important that the CSFS district representative be notified immediately of all major wildfires within the county. Should the wildfire surpass, or threaten to surpass the ability of county resources to contain it, EFF implementation can occur only with a CSFS representative on scene.

a. CSFS FORMS

* 108A prepared by County Sheriff and CSFS District Forester (EXHIBIT B).

* 162 & 164 prepared by CSFS District Forester with input from County Sheriff.

* 168 & WFSA prepared by CSFS Line Officer with input from District Forester and Sheriff.

b. COUNTY RESPONSIBILITY

The **minimum** Grand County resource commitment for an on going EFF wildfire is two wildland engines, two structural engines, two water tenders, and one dozer, all with operators. Additionally, Grand County will provide an incident command post and traffic control. It is understood that if the tactics of a given incident do not require some of this equipment, it will not be required on scene.

c. CSFS RESPONSIBILITY

CSFS will provide a District Representative and an Incident Line Officer for each EFF fire. CSFS will act as the fund administrator for all EFF fires.

6. EFF DEACTIVATION

CSFS will transfer responsibility of an EFF fire back to Grand County when the CSFS Line Officer's objectives have been met, and a written plan has been prepared for the next operational period. The County will assume responsibility for all costs after this point. Some of these costs could include, but are not be limited to, type 3 incident management team members, hand crews, and miscellaneous overhead personnel costs, aircraft costs, equipment costs, and logistical support costs.

a. MOP-UP AND PATROL

The county will be responsible for mop-up and patrol, after responsibility of an EFF fire has been transferred back to the county from CSFS, according to an extended incident action plan.

L. POST-INCIDENT ACTION ANALYSIS

Analysis of incidents will be conducted at a level commensurate with the complexity of the incident.

M. OUT-OF-JURISDICTION ASSIGNMENTS

Cooperator equipment availability status for out of county use should now be maintained in ROSS. Cooperators may "self status" in ROSS by requesting a password from Matt Coldwell, Colorado Department of Public Safety (CDPS) at (720) 852-6743. Cooperators who prefer not to "self status" may have CDPS maintain their status by fax: (720) 852-6756 or
Email: ross-status@cdps.state.co.us.

Craig Interagency Dispatch Center (CRC) will continue to dispatch wildfire resources for out of county assignments utilizing ROSS. Since the dispatching process is in transition this year, a courtesy call should be made to CRC each Friday morning that resources will be available for the following week. Cooperators must change status in ROSS and notify CRC immediately of any unexpected status changes.

X. AVIATION PROCEDURES

A. AVIATION REQUESTS AND OPERATION

When aircraft is requested by any agency for suppression efforts, the request must include the following:

- Name and agency of person ordering
- Fire name, location (lat. & long. or section, township, & range), & elevation
- Name and radio frequency of ground contact at the fire
- Other aircraft in the area, including radio frequencies in use
- Aircraft hazards in the area

Requests for aircraft will be made by the responsible official of the jurisdictional agency. For wildfires on non-federal lands, aircraft orders will be made through CRC, and will be authorized by the following county representatives:

- Sheriff
- Undersheriff
- Lieutenant
- On scene Incident Commander

The County Sheriff or his designee will notify the CSFS Granby District representative immediately when aircraft is ordered for county jurisdiction wildfires.

The sending interagency dispatch center will notify the other interagency dispatch center of all air resources dispatched to Grand County.

B. LEADPLANE /AIR ATTACK ACTIVATION

Heavy air tankers are automatically dispatched with a leadplane when one is available.

C. WILDFIRE EMERGENCY RESPONSE FUND

The Wildfire Emergency Response Fund (WERF) operating procedures are attached as EXHIBIT D. Notification of aircraft use under WERF is considered a formal request by CSFS.

D. CSFS SINGLE ENGINE AIR TANKERS

When a combination of factors or events, as agreed to by the Sheriff and CSFS, create a situation that warrants pre-positioning of a SEAT in Grand County, the Sheriff may request pre-positioning through the CSFS Granby District. Factors

may include, but are not limited to, multiple starts within a 24 hour period, high occurrence of dry lightning, or persistent Red Flag Warnings. CSFS will notify participants to this plan when a SEAT is pre-positioned in Grand County. Each agency should follow their normal resource request procedure to request a SEAT for use on an incident, regardless of whether the SEAT is pre-positioned in Grand County or not.

Kremmling FPD will provide ground support when a SEAT is pre-positioned or flying missions from the Kremmling airport. Granby Fire Department will do likewise when a SEAT is operating out of Granby airport. Jet A fuel is stored at both airports.

XI. FIRE PREVENTION

A. GENERAL COOPERATIVE ACTIVITIES

When cooperating agencies determine that the fire danger warrants, fire prevention/suppression patrols may be initiated. If prevention patrol personnel are hired as ADs, they could be required to respond anywhere on the administrative unit, including the Front Range. Volunteer patrol personnel will not be required to respond.

B. INFORMATION AND EDUCATION

1. FIRE DANGER

a. FIRE WEATHER STATION LOCATIONS

The Harbison Meadow fire weather RAWS is located near the Kawuneeche Visitor's Center. Fire weather and fuels information from this station should be similar to most of the lodgepole pine type in Grand County. The Gunsight Pass RAWS is located about 11 miles north of Kremmling. Fire weather and fuels information from this remote automatic weather station should be similar to most of the sagebrush fuel type in Grand County.

b. DATA SHARING AND METHODS

During fire season, CRC prepares a daily briefing that includes weather forecasts, resource status, and incident status. This is available by 1000 hours at:

www.fs.fed.us/r2/fire/crc/dailybrief.htm

During fire season CRC holds a daily conference call briefing.

FTC holds a conference call during fire season on Mondays at 1000 for Planning Levels 1, 2 and daily at 1000 hours for Planning Levels 3,4,5. Contact Paul Mintier, Sulphur FMO or FTC for conference call number and pass code.

The FTC web site is located at:

www.fs.fed.us/r2/arnf/fire/fire.html

c. FIRE DANGER DISSEMINATION

FTC broadcasts weather between 1000 and 1030 hours. Between 1600 and 1630 hours FTC & CRC broadcast the fire danger rating with weather forecast and predicted fire danger rating for the next day. These broadcasts will be on the Arapaho National Forest radio net, Med Bow-Routt National Forest radio net, and BLM radio net.

d. FIRE PREVENTION SIGNS

The Sulphur Ranger District will notify East Grand, Grand Lake, and Kremmling FPDs of changes in fire danger so that signs may be kept current.

2. JOINT OR SINGLE AGENCY PRESS RELEASES

Each agency will prepare and release fire prevention material and media presentations according to its own prevention plans. During a wildfire, a Joint Information Center (JIC) will be maintained in order to prevent a conflict in released material. Where pertinent, all news releases for fire prevention will carry USFS, CSFS, NPS, BLM, fire district or county sheriff by-line.

3. FIREWISE PROGRAM

The FireWise Program promotes awareness of wildland-urban interface issues. The program provides firefighters with uniform information on wildfire threat and hazard mitigation opportunities. In turn firefighters disseminate the information to at risk communities.

4. RED FLAG ANNOUNCEMENTS

The National Weather Service periodically issues " FIRE WEATHER WATCH" and "RED FLAG WARNING" bulletins. When these bulletins are announced, CRC will notify CSFS Granby District and Grand County Dispatch via FAX. Grand County Dispatch will page fire protection

districts for "RED FLAG WARNING" bulletins only. FTC broadcasts these bulletins on the Arapaho radio net frequencies.

C. ENFORCEMENT

1. OPEN BURNING PERMITS

An open burning permit is required by Grand County for prescribed fires on private land. Agencies conducting prescribed fires on other lands will follow the jurisdictional agency's policy and procedures, notify Hot Sulphur Dispatch, and notify the Grand County Department of Natural Resources at (970) 887-2123. Such notification should include the location, timing, and nature of prescribed burns.

2. RESTRICTIONS AND CLOSURES

Decisions about open burning restrictions can be made by the county sheriff, federal land management agencies, and the Governor's office. When contemplating restrictions on open burning or lifting restrictions agencies will advise cooperators of the situation and consider coordinating their actions. The agencies issuing restrictions shall jointly prepare and promptly distribute media releases explaining the restrictions.

Fire restriction criteria from the Northwest Colorado Fire Management Unit and Fort Collins Interagency Dispatch Center will be used to assist in determining the need for burning restrictions and closures. These criteria are based on a number of calculated, field sampled, and quantifiable variables. Local and political parameters will also be considered in determining the need for fire restrictions or closures. The Harbison RAWS will be used for the lodgepole pine type and the Gunsight RAWS will be used for the sagebrush type.

The Sheriff will be responsible for enforcement of burning restrictions and closures on all non-federal lands, and may assist on other lands at the request of the appropriate agency.

3. FIRE INVESTIGATIONS

The jurisdictional agency will have primary responsibility for fire investigation, and any civil or criminal follow up actions taken. Parties to this AOP may request assistance from each other's fire investigators. If a fire investigator is not available locally, one may be requested through the interagency dispatch center utilizing normal ordering procedures.

Initial attack resources are reminded to protect the suspected point of origin to facilitate fire investigation.

XII. FUELS MANAGEMENT AND PRESCRIBED FIRE CONSIDERATIONS

Wildfires resulting from escaped prescribed fires ignited by a party to this Agreement on lands it manages, shall be the responsibility of that party. The party responsible for the prescribed fire will reimburse other parties to this Plan consistent with the terms and conditions contained herein for costs incurred in suppression of such wildfires.

If parties to this Agreement conduct a cooperative prescribed fire, details covering cost sharing, reimbursement, and responsibility for suppression costs, should it escape, shall be agreed upon and documented in the burn plan.

XIII. COST REIMBURSEMENTS

A. REIMBURSABLE COSTS

Costs incurred by an assisting agency for services that exceed initial attack, as described in section IX.E. shall be considered reimbursable. These services must be requested by the jurisdictional agency and resources must check in and check out with appropriate command or documentation personnel. An Emergency Equipment Shift Ticket (OF-297) is required to document equipment time, and an Emergency Firefighter Time Report or Crew Time Report is required to document personnel time. Undocumented personnel or equipment will not be compensated. Resources not ordered by the jurisdictional agency or freelance resources sent by any other agency without jurisdictional agency approval will not be compensated.

Costs incurred by East Grand Fire Protection District on Denver Water lands, for the initial attack period and beyond, and for additional time or efforts which may be requested by the Colorado State Forest Service or Denver Water, shall be considered reimbursable, following approval by the Colorado State Forest Service. An agency that provides a reasonable initial attack response on Denver Water lands when East Grand Fire Protection District is unable to respond, may also request reimbursement.

When a wildfire occurs on lands of more than one agency, and costs are incurred in addition to the initial attack, reimbursement will be based on acres burned within jurisdictions, unless otherwise agreed to by the Unified Command and documented with a cost share agreement. The Unified Command should complete the cost share agreement prior to fire close out. When a fire is accepted by the State as an EFF incident, the Cost Share Principles agreed to by State and federal agencies will apply.

B. REIMBURSEMENT PROCEDURES AND CLAIMS

The county may aggregate expenses for employees and equipment incurred by the county and/or fire districts to suppress wildfires on federal jurisdictions, and may present an invoice for such expenses to CSFS, who will then reimburse the county and subsequently bill the jurisdictional federal agencies.

Federal agencies may submit bills and statements for reimbursements from county and/or fire districts for federal suppression on non-federal lands to CSFS. CSFS will make such reimbursement and subsequently invoice the county or fire district as appropriate.

All CSFS reimbursements to cooperators require invoices to be sent to the Granby CSFS office within 30 days after incident resources are released. The CSFS State Office will make payment as soon as possible after receiving the invoice. Invoices must have proper documentation supporting expenses before the process for payment can be completed. This will include information on personnel time, equipment time, and rates of pay.

Damage or loss claims will be made directly with the incident at the time they occur and prior to demobilization.

Payment for reimbursable costs on Denver Water lands require that CSFS be notified of wildfires by the responding agency. **Failure to notify CSFS will jeopardize the opportunity for reimbursement to the responding agencies.**

Payment for reimbursable costs for wildfires on Denver Water lands must be coordinated through the local CSFS District Office. Requests for reimbursement should be accompanied by a copy of the incident report. Invoices are required to have proper documentation:

- ❑ Invoice memo addressed to the Denver Water Board on the billing agency's letterhead, requesting payment for resources involved in wildfire suppression on the incident located on Denver Water lands. Reference the fire dates and times; legal location; Denver Water land parcel name or location; size of fire; fire number (if assigned by Interagency Dispatch Center); and referring to the attached supporting documentation and costs verifications.

- ❑ Personnel time in the form of: Crew Time Reports; photocopies of **USDA/USDI Fire Time Sheets, Optional Form 288** for personnel from the Federal government (both regular employees and those hired under the AD Plan for Emergency Workers).

- ❑ Equipment Shift Tickets for all equipment; photocopies of Emergency Equipment Rental Agreements or Equipment Use Invoices for equipment

contracted; photocopies of all current Cooperative Resource Rate Forms (CRRFs) that may apply to the equipment or personnel. The equipment or personnel utilized should be highlighted or marked on the CRRFs for cross-reference to the supporting documents.

- ❑ Denver Water will reimburse the assisting agency for the actual costs of supplies and materials used for the fire effort. Complete requests on **Form SF 95; Claims for Damage, Injury Or Death**, as revised.

Reimbursement requests will be reviewed by the local CSFS District Office for verification or correction of actual costs to be paid. When verified, the CSFS District Office will coordinate with the CSFS Special Projects Forester for Denver Water lands, and a recommendation for payment will be forwarded to Denver Water. Payment will be made directly to the requesting agencies from Denver Water. Subsequent payments from the agency or department to its personnel or contractors will follow that entity's internal policy.

C. RESOURCE USE RATES

Cooperative Resource Rate Forms, attached to this operating plan as EXHIBIT C, set forth agreed upon equipment rates. Fire Protection Districts that choose not to complete the Cooperative Resource Rate Form will be required to complete an Emergency Equipment Rental Agreement at the time of the incident and are restricted to the standard Rocky Mountain Area equipment rates.

Each department using the Cooperative Resource Rate Form will provide worker's compensation insurance for all involved department personnel.

XIV. GENERAL PROCEDURES

A. PERIODIC PROGRAM REVIEW

Program reviews will be conducted at the annual fire operating plan meeting February.

B. ANNUAL UPDATING OF PLAN

The annual operating plan will be reviewed each year. A meeting of cooperating agencies will be held by the first week of March. The updated plan will be circulated for signatures prior to May. If no changes are needed, a new cover page with year and signature page will be distributed to all parties along with a statement letter indicating no changes have occurred.

C. MID YEAR CHANGES

Mid year changes are to be avoided; however, if an agency becomes unable to uphold commitments, it should notify all parties to this agreement.

D. RESOLUTION OF DISPUTES

The primary purpose of this operating plan is to ensure appropriate management of wildfires. Any interagency dispute arising from these procedures will be resolved on site by the local Unified Command. When necessary, following the conclusion of the fire incident, a panel of agency representatives other than the participants in the incident will review and resolve the dispute.

XV. DIRECTORY OF PERSONNEL

<u>BLM, Kremmling Field Office</u>	
Business Office	970-724-3000
FAX	970-724-9590
John Ruhs, Field Office Manager	970-531-2540-C
Vacant, Assistant Field Office Manager	970-724-2009-O
<u>Colorado State Forest Service, Granby District</u>	
Business Office	970-887-3121
FAX	970-887-3150
Mike Harvey, District Forester	970-217-6981-C 970-887-2958-H
Ron Cousineau, Assistant District Forester	970-217-7022-C 970-887-3513-H
Hans Rinke, Forester	970-485-0541-C 970-887-1977-H
<u>Colorado State Forest Service, State Office</u>	
Fire Duty Officer, Ft. Collins (24 hour May-October)	970-491-6304

Note: Use only if unable to contact a Granby District representative.

<u>Craig Interagency Dispatch Center (CRC)</u>	
Craig 24 hour number	970-826-5037 970-629-1040-C
FAX	970-826-5051

Cathy Hutton, Center Manager		970-629-1256-C 970-826-0694-H
Website: www.fs.fed.us/r2/fire/rmacc.html		
<u>East Grand Fire Protection District</u>		
Business Office		970-726-5824
FAX		970-726-5938
Todd Holzwarth, Chief		970-655-8230-C 970-726-5832-H
Fire Dispatch		970-725-3311
<u>Fort Collins Dispatch Center (FTC)</u>		
Fort Collins 24 hour number		970-295-6800
FAX		970-295-6801
Irene Mora, Center Manager, pager number		970-490-5291
Assistant Dispatcher, pager number		970-226-7319
Website: http://www.fs.fed.us/arnf/fire/fire.html		
<u>Granby Fire Department</u>		
Dave Boyes, Chief		970-887-3380-O
Fire Dispatch		970-725-3311
<u>Grand County</u>		
Commissioner Duane Dailey	Hot Sulphur Springs	970-531-3240-C 970-725-3240-H
Commissioner James Newberry	Tabernash	970-531-2072-C 970-726-0160-H
Commissioner Nancy Stuart	Granby	970-531-8800-C 970-887-3355-H
Lurline Underbrink Curren, County Manager		970-531-3714-C 970-724-3714-H
Ray Jennings, EMS Chief / Emergency Management Director		970-887-2732-O 970-531-0653-C
Art Castle, EMS / Emergency Management		970-887-2732-O 970-531-0657-C

Mike Stern, EMS / Emergency Management	970-887-2732-O 970-531-2200-C
Billy Sumerlin, DNR Director	970-887-9530-H
Grand County Dispatch	
Hot Sulphur Springs 24 hour number	970-725-3311
FAX	970-725-3227
Grand County Sheriff	
Business Office	970-723-3343
FAX	970-725-3227
Rod Johnson, Sheriff	970-531-1111-C 970-887-3272-H
Walt Eldridge, Undersheriff	970-531-1175-C 970-725-3210-H
Brett Schroetlin, Lieutenant	970-531-2029-C 970-887-9796-H
Grand Lake Fire Protection District	
Business Office	970-627-8428
FAX	970-627-9323
Mike Long, Chief	970-531-0434-C
Duty Captain	970-531-2830-C
Fire Dispatch	970-725-3311
Hot Sulphur Springs-Parshall Fire Protection District.	
George Davis, Chief	970-887-1426-O 970-531-1517-C 970-725-3578-H
Brad White, Assistant Chief	970-281-9890-C 970-725-3421-H
Fire Dispatch	970-725-3311
Kremmling Fire Protection District	
Business Office	970-724-3795
Tony Tucker, Chief	970-724-9502-H 970-531-3380-C

Dan Murphy, Assistant Chief	970-724-9407-O 970-724-9713-H
Fire Dispatch	970-725-3311
<u>Northwest Colorado Fire Management Unit</u> Vacant, FMO	970-826-5030-O 970-326-8627-C
Cliff Hutton, AFMO	970-826-5036-O 970-326-6777-C
Randy Lownes, East Zone FMO	970-723-8204-O 970-819-2891-C 970-218-1192-H
Anne Kiser, Parks District Ranger	970-723-8204-O 970-819-2890-C 843-340-2234-H
Mark Westfahl. East Zone AFMO	970-723-8503-H
Kent Foster, Central Zone FMO	970-870-2142-O 970-846-9322-C
Mark Cahur, Central Zone AFMO	970-870-2214-O 970-846-3824-C 970-879-5631-H
Oscar Martinez, Yampa District Ranger	970-638-4516-O 307-760-4468-C
Lori Kelly, Medicine Bow-Routt Business Office	307-745-2451-O
Scott Wintemute, BLM Business Office	970-826-5027-O 970-326-5536-C
<u>Rocky Mountain National Park</u> Rocky Mountain NP Dispatch, Estes Park	970-586-1399
Intermittent Detailers, FMO	970-586-1287-O 970-586-1318-F 970-622-3142-P

David Niemi, AFMO		970-586-1433-O
		970-227-8770-C
		970-622-3139-P
		970-577-0148-H
Doug Watry, Fuels Management Specialist		970-586-1299-O
		970-577-0557-H
Kevin Michalak, Fire Crew Supervisor		970-586-1259-O
		970-586-1813-H
Scott Sticha, Fire Prevention Specialist		970-586-1264-O
		970-577-0541-H
Michelle Anderson, Fire Program Assistant		970-586-1237
Colorado River District Office, Grand Lake		970-627-3471
<u>USDA Forest Service, Arapaho National Forest-Sulphur District</u>		
Business Office		970-887-4100
Pager #3935 (Grand County Dispatch)		970-725-3311
FAX		970-887-4102
Paul Mintier, FMO		970-887-4128-O
		970-531-0078-C
		970-627-3724-H
	USFS pager	970-204-2950
Thomas Williams, Timber Fire Staff		970-887-4132-O
		970-531-2564-C
		970-887-2075-H
	USFS pager	970-204-2947
<u>USDA Forest Service, Fraser Experimental Forest</u>		
Business Office Fort Collins		970-498-1100
Fraser		970-726-5220

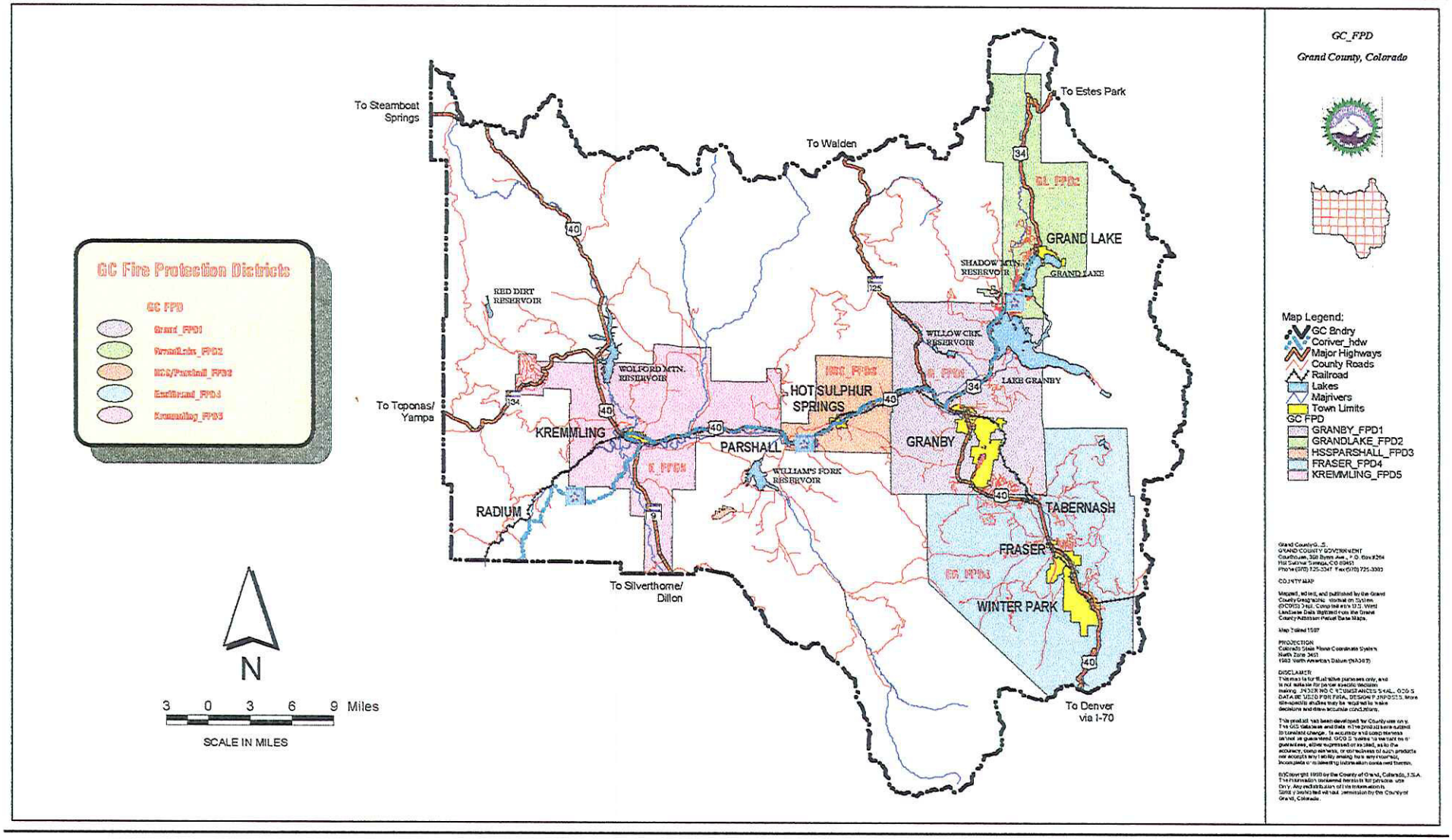
EXHIBIT E

RADIO FREQUENCIES FOR INTERAGENCY WILDLAND FIRES IN GRAND COUNTY

* FERN will be the primary interagency check-in channel for initial attack*

Name	RX	RX TONE	TX	TX TONE	PURPOSE
SO Green (Grouse)	153.815		155.715	156.7	HSS Dispatch
LG Grouse Mtn Rptr	155.115		153.995	156.7	HSS Dispatch
LG Table Mtn Rptr	155.115		153.995	167.9	HSS Dispatch
*FERN	154.280		154.280		Tactical
FERN 2	154.295		154.295		Tactical
FERN 3	154.265		154.265		Tactical
Public Safety Dir	155.685	156.7	155.685	156.7	Tactical
SO Red Direct	153.815		153.815	167.9	Tactical
East Grand	154.160		154.160		Tactical
Granby Fire	154.445		154.445		Tactical
Grand Lake Fire	154.340		154.340		Tactical
Kremmling Fire	150.775		150.775		Tactical
Arapaho Work Net	164.100		164.100		Tactical
RM Fire Direct	164.425		164.425		Tactical RMNP
SO Blue (Chaucey)	153.815		155.715	167.9	Long distance Tac
Public Safety Rptr	155.685		158.820	156.7	Long distance Tac
Kremmling Fire Rptr	150.775		154.310	156.7	Long distance Tac
Arapaho Net	169.875		170.475	131.8	FTC Daily Broadcast
BLM Blue Ridge Rptr	168.425		169.625	173.8	CRC
BLM Yarmony Rptr	168.425		169.625	186.2	CRC
Routt Rabbit Ears Rptr	169.600		164.9125	107.2	CRC
Routt Parkview Rpts	169.600		164.9125	146.2	CRC
BLM Kremmling	168.425		168.425	186.2	Kremmling F.O.
RM Red Mtn. Rptr	166.300	127.3	166.900	156.7	RMNP west rptr
RM Shadow Rptr	166.300	127.3	166.900	103.5	RMNP west rptr
USFS Sulphur Direct	169.875		169.875		Interagency Com
BLM fire tac	172.775		172.775		Interagency Com
Cadastral Work	168.400		168.400		Interagency Com
Routt Work Net	168.350		168.350		Interagency Com
NPS Work	168.350		168.350		Interagency Com
RM West Direct	166.300	110.9	166.300	110.9	ROMO Dispatch

See map on page D-2 for AIR TO GROUND frequencies.


GC Fire Protection Districts
GC FPD
Grand_FPD1
GrandLake_FPD2
HSS/Parshall_FPD3
Fraser_FPD4
Kremmling_FPD5
To Steamboat Springs
To Walden
To Estes Park
To Toponas/ Yampa
To Silverthorne/ Dillon
To Denver via I-70
GRAND LAKE
SHADOW MTN. RESERVOIR
GRAND LAKE
RED DIRT RESERVOIR
WILLOW CRK. RESERVOIR
WOLFORD MTN. RESERVOIR
HOT SULPHUR SPRINGS
LAKE GRANBY
KREMMLING
PARSHALL
GRANBY
WILLIAMS FORK RESERVOIR
RADIUM
TABERNASH
FRASER
WINTER PARK
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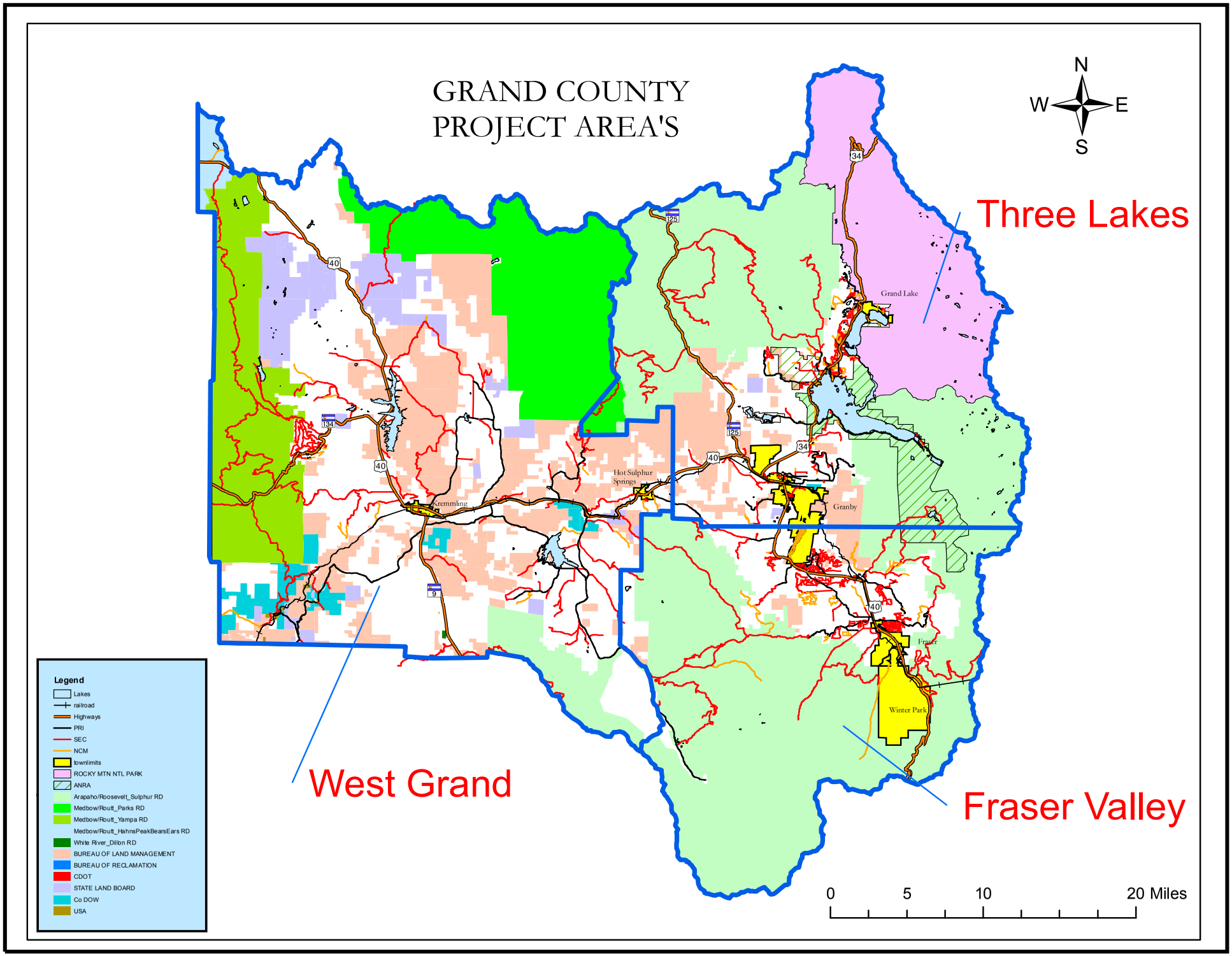
SCALE IN MILES
GC_FPD
Grand County, Colorado
Map Legend:
GC Bndry
Coriver_hdw
Major Highways
County Roads
Railroad
Lakes
Majrivers
Town Limits
GC FPD
GRANBY_FPD1
GRANDLAKE_FPD2
HSSPARSHALL_FPD3
FRASER_FPD4
KREMMLING_FPD5
COUNTY MAP
PROJECTION
DISCLAIMER


GRAND COUNTY
PROJECT AREA'S
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Three Lakes
West Grand
Fraser Valley
Grand Lake
Hot Sulphur Springs
Kremmling
Granby
Fraser
Winter Park
Legend
Lakes
railroad
Highways
PRI
SEC
NCM
townlimits
ROCKY MTN NTL PARK
ANRA
Arapaho/Roosevelt_Sulphur RD
Medbow/Routt_Parks RD
Medbow/Routt_Yampa RD
Medbow/Routt_HahnsPeakBearsEars RD
White River_Dillon RD
BUREAU OF LAND MANAGEMENT
BUREAU OF RECLAMATION
CDOT
STATE LAND BOARD
Co DOW
USA
0
5
10
20 Miles

WHAT IF...

A forest fire starts; the power goes out. Can you use a water hose to protect your home? What if a power line starts a fire? Some things you should know:

Electric Service and Reliability During a Wildfire

1. If you need electricity to power **critical health/safety equipment, you need to have a backup generator** (or backup pump for water supply). Example: spare oxygen tank, etc.

2. If you own a well, live in a rural area and lose electric service during a fire, it is likely that **you will not be able to use a garden hose to protect your property unless you have a backup generator**. Electricity is needed to pump water.

3. Our power suppliers' (Western Area Power Administration and Tri-State Generation and Transmission Association) overhead transmission lines, substations and MPEI's distribution lines are **vulnerable to outages during wildfires, even if your service is miles away from the fire.**

4. Learn to **manually operate your garage door**.

5. Turn electrical equipment off – including sensitive electronics – except 1 light bulb (to signal when power is restored). Leave a second porch light on to signal firefighters that power is on.

6. Assemble **emergency supplies**, including:
   - ❑ Battery-powered radio and spare batteries (tune into 930 AM, 106 FM, 91.9 FM or 95.1 FM)
   - ❑ Flashlight (don't use candles or other fire-starting devices)
   - ❑ ½ tank of fuel in vehicles (gas pumps won't work during a power outage)
   - ❑ Backup arrangement to keep perishable foods chilled (open refrigerator and freezer doors only when necessary)

Public & Firefighter Safety

1. **Fallen power lines** may be energized or may re-energize after a momentary outage. Lines may continue arcing on the ground, igniting a fire. If this happens, immediately call 911. **If a tree falls into a power line, call 911 immediately.**

2. **Never touch a power line or a suspended cable**. Do not use water on any electrical fire.

3. **Never connect a generator directly to your electric service**; this creates a hazard for line workers. The State Electrical Code requires all generators to be equipped with a transfer (or double-throw safety) switch to ensure safety.

4. MPEI may **cut off power to lines during extremely hazardous conditions** or may be directed to do so by local firefighting officials to protect lives and property.

5. Maintain a **minimum clearance of 10 feet** for all persons/equipment/tools/ materials from power lines and power conductors. Contact MPEI to secure other arrangements at least two business days in advance if clearances are a problem.

Unless you have a backup generator, the power may be out during a wildfire. With no power, you will not be able to use water hoses to protect your property.

Mountain Parks Electric, Inc. (MPEI) hopes its members are not exposed to a major wildfire. However, in the eventuality of a catastrophic fire, please follow these safety guidelines.

Power Line Clearances for Trees and Vegetation

1. Overhead power distribution lines require a **10-foot clearance from trees and vegetation**.
2. MPEI **routinely clears trees within power line easements** to maintain safety and reliability. Clearing cycles vary, depending on tree species, annual growth rates, etc.
3. Hazard trees – e.g. a dead tree, a tree leaning toward a power line – may be topped **if it is outside MPEI's easement**. For example: a dead 100-foot tall tree with a trunk that is 70 feet from a line may be a hazard tree outside MPEI's easement. Following best practices, a utility would top such a hazard tree, leaving cleanup and disposal to the property owner.
4. In MPEI's service area, **lodgepole pine, subalpine fir, and Engelmann spruce trees** are susceptible to damage and uprooting by high winds (i.e. "windthrow").
5. Make sure that trees pose **no threat to power lines or fire access roads**. Call MPEI at 887-3378 to report any insufficient clearances or areas of concern near power lines.

Underground Electric Power Lines

1. Following MPEI policy (Tariff 305.5), if you wish to convert overhead power lines to underground lines, you must pay for the cost of conversion. Generally, the minimum cost to convert to **underground lines is $130,000 per mile (but can be more expensive depending on the circumstance), excluding transformer costs.**
2. Converting overhead to underground power lines may **take 6-12 months for design and construction** (due to the time required for ordering and receiving materials & scheduling installers). Federal permits and environmental procedures could add 2 years or more to the process. Easements & local permits are also required prior to installation.
3. Recent wildfires in the Western United States, which created intense heat near electrical equipment, damaged underground cables and equipment. Although underground power lines and equipment are less prone to damage, **these facilities are not immune to the effects of an intense wildfire and may fail**.

Wood/Biomass Energy Projects

1. Together with Grand and Jackson County officials, **MPEI is assessing the feasibility of producing heat and/or electricity from wood or wood byproduct combustion**.
2. Small-scale projects (50 kilowatts) are estimated to produce electricity at 22 cents per kilowatt-hour, **more than four times the 2006 wholesale power cost for MPEI.**
3. **Ten steps required for developing projects are**: a feasibility study, community support, long-term wood (fuel) commitment, siting and infrastructure, economic due diligence, developer and equity partner, energy purchase contract, secure financing, engineering design, construct project.

References & Links:

- **Creating Wildfire Defensible Zones**
  www.ext.colostate.edu
- **Firewise Communities**
  www.firewise.org/index.php
- **Rocky Mountain Wildland Fire Information Recommended Web Sites**
  www.rockymountainwildandfire.info/websites.htm
- **Fire Safe Council**
  www.firesafecouncil.org
- **Wildfire … Are You Prepared? (FEMA and U.S. Fire Administration)**
  www.usfa.fema.gov/downloads/pdf/publications/wildfire.pdf

Mountain Parks Electric, Inc. (MPEI) hopes its members are not exposed to a major wildfire. However, in the eventuality of a catastrophic fire, please follow these safety guidelines.

WATER RESOURCES DIVISION
CENTRAL REGION
COLORADO WATER SCIENCE CENTER
Proposal

A. TITLE: Initial Rapid Assessment of Potential Effects of Wildfire on West-Slope Water-Supply Operations of the Colorado-Big Thompson Project

Presented to Northern Colorado Water Conservancy District

B. PROPOSAL AUTHORS: Michael R. Stevens (USGS CWSC), Kip Bossong (USGS CWSC), Doug Druliner (USGS CWSC), and Earl Cassidy (USGS CWSC)

C. PROBLEM:

Awareness of hazards associated with wildfire in the forests of Colorado has increased, putting focus on values at risk in the watersheds which can include, reservoirs, lakes, and water conveyances critical to the water supply to hundreds of thousands of people in the State. The Colorado-Big Thompson project (CBT) and its Three Lakes collection system, which is managed by the Northern Colorado Water Conservancy District (NCWCD), is an example of a critical water-supply that is at risk from post-fire hydrologic hazards. The risk of wildfire in the Three Lakes watershed is heightened by extensive infestation of the mountain pine beetle *(Dendroctonus ponderosae)* that is continuing to impact thousands of acres of forested land.

Wildfire is a natural part of forest ecosystem maintenance and occurs regularly in an unmanaged landscape. The Three Lakes watershed has been developed over more than a century into a wildland urban interface (WUI), where homes, businesses, and roads, and water supply systems are adjacent to fuel-rich forests. To manage potential damages, forest managers were encouraged to extinguish forest fires over a period of decades. Besides allowing greater development of the WUI and promoting a false sense of security, this forest management practice has contributed to a buildup of forest fuels, greater continuity of over-mature timber stands, and greater potential for human-caused ignition sources.

In addition to obvious hazards of direct burning of structures in the forest and the WUI, a variety of hydrologic hazards are generally present in the immediate post-fire and long-term post-fire period. Fire removes the vegetative cover (canopy, understory, and duff) that intercepts rainfall energy, which protect soils from erosion. The heat of wildfire can alter soil properties producing additional near-surface hydrophobicity and combustion of the moisture-holding organic soil layer. These effects of fire on the basic controlling factors of watershed runoff generally cause increased runoff, large flood peaks, and erosion. In some terrains debris flows also are a potential hazard. As a consequence, sediment and vegetative debris are transported to stream channels with the runoff where additional bank and channel erosion may contribute more sediment and debris. The displaced sediment and debris can have destructive impacts on the Three Lakes water collection and conveyance facilities in the northeast corner of Grand County. Other consequences, perhaps less damaging in terms of physical property, are post-fire problems associated with water quality and ecosystem health, which are important values for water supply customers, users of the streams that convey those supplies, and local communities.

Assessment methods for determining the potential for fire-related debris flow and flooding can be useful both in pre-fire planning and post-fire response. Applying hazard assessment models before the occurrence of wildfires can be used to identify basins sensitive to wildfire and those basins that have the potential to generate significant floods and post-fire debris flows. Models also can be used to predict the transport and deposition of post-fire flood debris through stream systems to lakes and reservoirs. Information gained from these models can be used to direct protection efforts during a fire incident, prioritize pre-fire preparation activities, and guide post-fire data collection and field mitigation efforts.

D. OBJECTIVES:

The objectives of the proposed investigation are:

1) Compile available GIS data that will help to assess factors relating to post-fire hazards in the Three Lakes watershed.

2) Identify sub-watershed basins that if burned may result in debris flows, and estimate the runoff volumes likely to be produced.

3) Develop, through coupling existing watershed, sediment, and channel process models, a tool for estimating amounts of sediment that would be eroded from burned sub-watersheds and transported to the Three Lakes System.

4) (Optional, after completion of 1-3 above): Identify through the construction of a dynamic reservoir model, (a) how sediment fractions and other chemical by-products from wildfire would be transported through the Three Lakes System, (b) determine the impact of transported sediment and fire chemical by-products on current water quality and aquatic biota in the Three Lakes system, and (c) identify reservoir management options that could reduce the transport, and chemical and biological impact of sediment and chemical byproducts of from wildfire.

E. RELEVANCE AND BENEFITS

This proposed work addresses aspects of the USGS Fire Science Thrust initiative and Issue 6, Hydrologic Hazards, of the USGS's Strategic Directions for WRD, 1998-2008. Developing and utilizing tools to identify the effects of severe and widespread landscape alterations of wildfire on runoff characteristics and associated flooding, erosion, and debris flow potential is one of the Colorado Water Science Center's (CWSC) priority science topics. This work also will benefit land owners and managers in the Three Lakes watershed, which is believed to be at elevated risk of wildfire due to a growing Mountain Pine Beetle Infestation and overly dense forest growth. The NCWCD will benefit from this work in particular, because the District has a critical need to understand the likely impact of post-fire flooding and sediment deposition on it's Three Lakes water collection system and to make timely preparations to minimize the impact on that system.

F. APPROACH:

The approach to the proposed investigation would be conducted in three phases.

Phase I (2006):

1) Assessment of current available GIS data for the Three Lakes System that includes vegetation, extent of mountain pine beetle infestation, fire fuels, and potential burn severity, topography,

soils, geology, precipitation, snowmelt, and storm data. The USGS Rocky Mountain Geographic Science Center (RMGSC) would provide much of this information. Also included is a cursory geomorphic assessment of selected streams in the form of photos, cross sections, and stream slope estimates. These data will be used to support activities in Phase II of this work and to compare estimate stream erosion with actual.

2) The potential for and magnitude of post-fire debris flows will be estimated for Three Lakes sub-watersheds areas of 5 to 25km^2, which comprises about 65% of the Three Lakes drainage system. Cannon's debris flow model (Susan Canon, oral commun., 2006) will be used to determine volumes of material (water, sediment, and debris), which incorporates basin area with slope greater than 30%; area of basin burned at moderate to high severity; and total storm precipitation amount based on 2-25 year recurrence interval storms. The probability of debris flows occurring also will be determined using Cannon's model, which is a function of basin area with greater than 30 percent slopes, basin ruggedness, percent of basin burned at moderate and high severity, average storm rainfall intensity, percent clay in soil, and the soil-liquid limit. Much of the input data needed for this model will be obtained from available sources including STATSCO soils coverages, geological maps, digital elevation maps, land-use maps, and the NOAA rainfall atlas for the western US. Input data will be refined as more detailed data becomes available largely through RMGSC's work in the area this year with the Forest Service's Missoula Fire Lab, who is developing an economics-based model for incident fire response. The debris estimates will be completed as soon as possible in FY2006 and will be used to create preliminary maps showing the watersheds, debris-flow probabilities, and range of debris-flow volumes for selected design storms and burn scenarios. These preliminary maps will be made available to the NCWCD as soon as they are quality assured to aid in their hazard mitigation activities.

Phase II (2006-2007):

1) If funding is available, incorporate the Fire Enhanced Runoff and Gully Initiation Model (FERGI) into the Modular Modeling System (MMS), which implements the USGS Precipitation Runoff Modeling System watershed model (PRMS). FERGI is an USDA/FS hill-slope runoff and erosion model that estimates the probability of runoff generation amounts and gully initiation positions on hill slopes after a fire using topography, soils, fire severity, and weather data inputs. The resultant watershed-sediment model will be linked with a suitable channel transport/process model that has yet to be identified and may be very detailed or relatively general in nature.

2) The linked hill-slope runoff/erosion and channel transport models will be applied to the Three Lakes sub-watersheds identified initially as having significant post-fire debris flow potential and will be used to produce comprehensive estimates of post-fire runoff and sediment loads that would be delivered to the Three Lakes System under different burn and precipitation scenarios. These activities will be coordinated with work that will be done by scientists of the National Research Program (NRP), who will be doing similar work for Mesa Verde National Park and with the RMGSC's work on incident fire response, which will provide the opportunity to share databases and fire hazard predictions.

Phase III (Potentially 2008-2009):

A possible third phase of fire-hazard work could involve the development of a spatially explicit reservoir model for the Three Lakes Systems. The applicability of this phase of activity will be determined after the completion of Phase II activities. The reservoir model would account for the mechanics of reservoir operation and evaluation of management scenarios. The model would couple hydrodynamics with particle tracking to predict how sediment introduced to the Three

Lakes system would move. The model also can be used to couple hydrodynamics with advection, dispersion, and kinetics that makes it possible to simulate transport of materials and chemical reactions in the system, permitting the evaluation of the impacts of post-fire sediment and chemical loads to the system.

G. PRODUCTS:

Phase I: Preliminary results of the debris flow modeling will be presented to the NCWCD as soon as they are available (target June 2006). A USGS on-line report will be produce by December 2006. The report will show the results of debris flow modeling for small (5-25 km^2) sub-watersheds in the drainage that will include estimated probabilities and volumes of debris flows (combined water, sediment, and rocks, and plant detritus) produced by a hypothetical post-fire runoff events.

Phase II: Preliminary results of the linked watershed-sediment erosion and channel transport models will be shared with NCWCD as the results become available. A USGS Scientific Investigations Report containing the results of the watershed-sediment erosion and channel transport model will be published by late winter 2008.

H. WORKPLAN – Phase I and II

Workplan Element	FY-2006				FY-2007				FY-2008			
Phase I-Debris flow model												
Assessment of available data												
Debris flow modeling												
Debris flow web report												
Phase II-Erosion-transport model												
Research models												
Couple erosion-channel model												
Model construction												
Model runs												
Report preparation												

I. BUDGET and FUNDING:

Aligned objectives and resources from the Fire Science Thrust Initiative will bring additional USGS in kind resources to the project from the NRP and the RMGSC for Phase I and II activities, which are not shown in the following table. estimates for Phase II work will be developed at the conclusion of Phase I. Budget estimates for Phase III work will be determined at the conclusion of Phase II.

GROSS COSTS—PHASE I	FY-2006	FY-2007	TOTAL
CATEGORY			
111- Salary	40,800	14.000	54,800
210- Travel	400		400
222E- Vehicles	400		400
240- Printing and reproduction		4,000	4,000
260- Supplies and materials	400		400
Total	42,000	18,000	60,000

J. PERSONNEL:

NAME	CLASSIFICATION
Mike Stevens	Hydrologist
Kip Bossong	Hydrologist
Rob Runkel	Research Hydrologist
Steve Char	Hydrologist

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