APPENDIX D – Evacuation Planning Guidelines

Background

The growth of urban development in forested wildland areas in recent years has resulted in a potentially hazardous situation. People are attracted to forested areas seeking solitude and to escape the pressures of everyday life. Large land holdings have been subdivided into small, affordable acreages for cabin sites or remote homes. The new generation of small lot landowners value individual trees and have often built their cabins under the cover of or within these overstocked forests. Cabins are constructed on prominent points or ridge tops for the view or they are tucked into the forest canopy seeking solitude. In order to minimize the impact of their presence on the land driveways are often narrow with inadequate opportunities to turn around at the building site. At the same time, wildfires have been aggressively suppressed allowing dead fuels to accumulate to alarming levels and young trees to establish in crowns and move rapidly under windy conditions. Little attention has been paid by landowners to the potential destruction capacity of an uncontrolled wildfire.

In an emergency wildfire situation that threatens the lives and property of residents in the area, the county sheriff, fire suppression teams and land managing agencies, may recommend that residents evacuate to a safe area. Prior evacuation planning is essential to implement this action effectively.

By definition, evacuation is a protective action – moving people from a place of danger to a place of relative safety. It is a temporary mass movement of people that collectively emerges in coping with threats to area residents and visitors.

An Evacuation Plan will facilitate the orderly evacuation during an emergency wildfire situation. Step by step actions provide critical information and guidance for fire suppression and law enforcement personnel during an emergency situation. Each subdivision, home site development area or land owner association should be strongly encouraged to develop an evacuation plan for their area that identifies potential evacuation routes and critical information (locked gates, inadequate bridges, etc) for a variety of wildfire threat scenarios.

Critical Contacts

Contact	Phone Number
Hinsdale County Sheriff	(970) 944-2291
Hinsdale County Emergency Management Director	(970) 275-3010
Lake City Fire Chief	(970) 596-6684
Colorado State Patrol	(970) 245-8800
Colorado State Forest Service	(970) 641-6852
Colorado Division of Wildlife	(970) 641-7060
Colorado State Office of Emergency Services	
Gunnison Field Office BLM	(970) 641-0471
Montrose Interagency Dispatch Center	(970) 249-1010
Gunnison National Forest – Gunnison Ranger District	(970) 641-0471
Rio Grande National Forest – Divide Ranger District	(719) 657-3321
Pueblo Interagency Dispatch Center	(719) 553-1600
San Juan National Forest – Pagosa Ranger District	(970) 264-2268
Durango Interagency Dispatch Center	(970) 385-1386
Federal Emergency management Agency	
Local News Media	

Check List When Potential for Evacuation Exists

1) Close back country roads and trails at trail heads
2) Post on bulletin boards information regarding fire danger
3) Set up a local Information Center where residents and visitors can access up-to-date information and status regarding wildfires that pose a threat to the area
4) Provide routine updates on wildfire conditions for local radio and television stations as the threat increases
5) When the fire suppression team and land managing agencies (BLM, US Forest Service and Colorado State Forest Service) believe evacuation may become necessary, notify the Hinsdale County Sheriff and County Emergency Preparedness Directors
6) Fire suppression team and land managing agency managers should meet and coordinate with the Sheriff and County Emergency Preparedness Directors to decide if an evacuation is necessary. The decision to evacuate should be made and implemented well before the evacuation needs to be complete. Local conditions and the fire's rate of advance will dictate timing and trigger points
7) The Sheriff, after consultation with the land managing agencies and County Emergency County Emergency Preparedness Director makes the decision to evacuate the threatened area and implements the actual evacuation
8) Notify residents and visitors of the Order to Evacuate
    - Siren to alert visitors in the back country Law enforcement patrol vehicles with public address systems announce evacuation order
    - House-to-house verification that threatened home site developments are completely evacuated
    - Law enforcement vehicles and ATVs drive back country roads and trails to assure evacuation

- Use one color flagging to mark secondary roads/trails at their junction with the primary road (evacuation route) when notification is in progress then change to another color when verification is complete on that road/trail.

9) Drive evacuation routes installing free standing traffic control signs at key road intersections an opening locked gates or cutting fences to allow exit.
10) CSFS notify Federal Emergency Management Agency (FEMA)
11) Notify Colorado State Patrol Assign law enforcement to direct traffic at critical road junctions

The officer in charge of the evacuation will make the decision regarding which evacuation route to use at the time. Depending on the situation the decision may be to use any or all of the routes to evacuate the threatened area.

Emergency Evacuation Routes

Primary emergency evacuation routes are suggested but should be validated with landowners and land management agencies involved prior to the onset of an emergency need for evacuation. These primary evacuation routes should provide multiple opportunities for evacuating traffic to exit the area. Hazardous fuel concentrations should be treated along primary evacuation routes by creating shaded fuelbreaks to reduce canopy cover to 40 percent or less and treat slash and combustible debris within 200 to 300 feet of either side of the road. Tributary roads should be identified in local developments and treated similarly to facilitate a safe and orderly evacuation.

WUI COMMUNITY	WAYS IN/OUT	ROAD ID
Cebolla	2	Road 788 South or Road 3036 North/CR50
Henson	1	BLM 3303/CR20 to Lake City; BLM 3323/CR23/FS877 (Nellie Creek to CR20 to Lake City)
Hermit Lakes	1	RGFS 515/CR10 to Hwy 149
Lost Trail (Rio Grande)	1	RGFS 520/CR18 to Hwy 149
Lower Lake Fork	2	Highway 149
Pearl Lakes	1	RGFS 515/516/CR10 SE to Hwy 149
Piedra Palisade	1	SJFS 600 – South End SJFS 631 – Piedra/Sand Bench/Mosca Roads SJFS 633 – McManus Road SJFS 636 – Toner Road SJFS 638 – Palisade Lake Road SJFS 640 – Williams Creek Road SJFS 644 – Poison Park Road SJFS 714 – Kleckner Lane SJFS 899 – South End SJFS 987 – South End SJFS 997 – Chubb Draw Road
Ptarmigan Meadows		Hwy. 149 North & South
Oleo		GFS 729/CR17-Oleo Ranch/Quiet Valley Road/Packer Gulch

Upper Lake Fork		BLM 3303/CR30 (Cinnamon Pass Road)
S Lazy U		RGFS 521 & 520 to Hwy. 149 RGFS 520.2-Box Canyon to Hwy 149
Box Canyon		RGFS 520.2-Box Canyon to Hwy 149

Estimated Time to Implement an Evacuation
The decision to evacuate a threatened area must be made well in advance of the time the fire is expected to threaten residents, visitors and facilities.

Fire Behavior and Evacuation Timing
Spread Component (SC) is the key fire danger component to monitor. The spread component is a numerical value derived from a mathematical model that integrates the effects of wind and slope with fuel bed and fuel particle properties to compute the forward rate of spread at the head of the fire. Output is in units of feet per minute. A spread Component of 31 indicates a worst-case, forward rate of spread of approximately 31 feet per minute.

The inputs required in to calculate the SC are wind, slope, fine fuel moisture (including the effects of green herbaceous plants), and the moisture content of the foliage and twigs of living, woody plants.

Since characteristics through which the fire is burning are so basic in determining the forward rate of spread of the fire front, a unique SC table is required for each fuel type.

When considering spotting, the rich diversity of fuel types scattered throughout the County, and the likelihood of wind, it may be prudent, when fire danger is Very High, to consider starting an evacuation process when fires are burning within 10 miles of down-wind subdivisions or home site development areas (urban interface area). Knowing the SC for the most prevalent fuel type between where the fire is and where the home site developments are can best refine this judgment call. With a SC of 44 a fire will cover 2 miles or more within 4 hours. If the SC is 22 the fire will cover at least one mile within 4 hours and 2 miles within 8 hours. If the SC is 11 the fire will cover two miles within 16 hours. If the SC is 5 the fire can cover two miles within 32 hours.
Remember the lessons of some Colorado fires:

- The Buffalo Creek Fire ran nearly eleven miles in 4.5 hours
- The Hayman Fire ran at least 16 miles in one afternoon

Timing
Evacuation planning needs to take into account how long it will take to notify residents that an evacuation is necessary, how long it will take for them to get ready and start driving out of the area and then how long it takes to actually drive to a safe area. This determination should be made locally for each development area or subdivision and then validated before it is used during an emergency.

Every situation will be different but it is reasonable to estimate the minimum time required to be no less than 4 hours to complete the process. As much as three hours may be required to notify residents and visitors and get them started moving and another hour to get everyone out of the area. Residents and visitors closest to the advancing threat should be notified first. Once they are driving out of the area it will take them up to an hour in most cases to exit the area if traffic is flowing at a rate of 10 to 20 miles per hour.

Driving time should be measured on each of the potential evacuation routes by driving at a conservative speed depending on road conditions and how many people are expected to be evacuated to approximate how long it would take to drive the route during an evacuation providing traffic was moving at about that rate. The following table displays the type of information that needs to be incorporated in the Evacuation Plan.

Travel Time for Evacuation Routes

Beginning Point	Ending Point	Time Required	Miles Traveled	Average Speed

GPS Locations for Critical Features and Facilities – This table provides GPS coordinate locations for critical points referred to.

Feature	GPS Location

Recommendations

- Establish and sign Safety Zones in areas where evacuation notification and implementation will be problematic and notify locals as to their location.
- Negotiate agreements with neighboring private land owners and land managing agencies to allow evacuation across their property on their roads and through their locked gates.
- Negotiate an agreement to thin fuels along the evacuation route between the subdivision or home development area and safe areas.
- Upgrade roads on evacuation routes by widening curves, providing water bars to prevent erosion and thinning fuels along these emergency exits.
- Construct and store freestanding ―Fire Exit Directional Signs‖ or ―Evacuation Route‖ for use in marking evacuation routes.
- Develop a specific evacuation procedure and assign responsibilities to County staff.