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Mesa County Fire Plan

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Introduction

The Grand Junction District of the Colorado State Forest Service takes pleasure in the delivery of this Mesa County Fire Plan. This plan was funded by the Bureau of Land Management, through Mesa County, and meets the requirements of C.R.S. 30-11-124 for a county fire plan.

There are two primary components of this plan: the GIS mapping portion and the text sections that deal with: Colorado State Law, various scenarios, agreements, regulations, standards, and analyses.

The GIS mapping section graphically identifies those areas in the county that are at highest risk for wildfire due to fuels, topography, past occurrence and values (homes and infrastructure) at risk. There are various data layers that can be superimposed to facilitate different analysis purposes. The federal land (USFS, BLM, NPS) polygons identifying their integrated fire management objectives are included. These federal land polygons have been used to determine several areas where federal/private suppression objectives may be integrated, particularly where indirect suppression opportunities might be considered.

This plan differs from others, particularly that of Moffat County. In Moffat County's fire plan much effort and expense went into surveying private landowner attitudes about allowing wildfires to burn on their lands (only slightly more than 50% of the landowners responded to the survey). As this Mesa County fire plan points out, if one adheres to state law in Colorado, the attitude of the private land owner is immaterial because it is the county sheriff that is responsible for fire suppression or management on private land.

Any survey of landowner attitudes can only be accurate for that moment the survey was done. A survey will not allow for changes in: ownership, attitude towards fire, change in land use, fuels, weather, and topography effects on burning conditions. Because of these variables the landowner would still have to be contacted in every case of proposed fire use. Liability questions are still unresolved for the landowner participating in fire use. Moffat County's plan and initial implementation cost in excess of \$317,000. The Moffat County Commissioners have found it too expensive to maintain without continued federal funding ([Daily Sentinel](#) 1/17/04).

The Mesa County fire plan was done with the end user in mind. Landowners in the high wildfire hazard areas were contacted for input, but this document is tailored for use by the sheriff and any Incident Management Teams (IMTs) that may be called in to help the sheriff manage a wildfire that exceeds county capability. Designated concentrations of homes in high fire hazard areas are mapped and all agreements and laws applicable to the sheriff and his interactions with federal and state wildfire partners are thoroughly explored.

The role of fire use by the sheriff has been analyzed, and for Mesa County there is no desire by the sheriff to train, equip, staff, or pursue the tremendous financial obligations of managing fire on the private or state lands within his responsibility. The resource benefits of fire use by federal agencies are acknowledged. However, federal land management agencies have the financial backing of the Federal Fire Fund and the National Fire Plan. These have provided federal agencies equipment, staffing expertise, liability protections and stable funding for managed fire programs. Without access to the same funding, sheriffs in Colorado cannot "play in the same league" as their federal fire management partners. For this reason, in Mesa County, a policy of full suppression of all wildfires under the sheriff's jurisdiction is modified only by the identification of certain areas where the lack of risk to improvements will allow consideration of indirect rather than direct attack options. This option would be considered from a cost-saving perspective of the sheriff, rather than one of resource benefit.

Review of Colorado State Statutes concerning wildfires:

This review, written by John Denison, Colorado State Forest Service, District Forester, contains interpretations of Colorado State Laws that may differ from other analyses by other people. Additionally, Denison interjects some history of application of these laws and the agreements that are tied to them. This opinion and history is based on over 30 years experience with wildfire in Colorado and around the country, 26 of those years based in Mesa County. In most cases the entire text of the statute or agreement is not cited, only the relevant portion being discussed. Boldface highlighting is meant to facilitate finding portions needed in a hurry.

The most important state statute for county sheriffs regarding wildfires is **C.R.S. 30-10-513 Sheriff in charge of forest or prairie fire - expenses**. Interestingly, this law doesn't mention when or where, just any forest or prairie fire. Since 1903 when this law was first passed, the federal lands have been set aside under federal protection and thus seen to be exempt from this county responsibility. This law is the "unfunded mandate" that gives the sheriff the responsibility "for controlling and extinguishing such fires..." Significantly, the wording was changed to controlling *or* extinguishing by **HB 1283** (more on this later). **C.R.S. 30-10- 512 Sheriff to act as fire warden** clearly designates the sheriff as in charge of forest and prairie fires within the sheriff's county.

There have been several State Attorney General opinions issued in response to various questions surrounding 30-10-513: Since fire protection districts (FPD) have been formed, the question of authority over a fire within a FPD has been asked. **C.R.S. 32-1-1002** gives the chief of the fire department "authority over the supervision of all fires within the district, *except as otherwise provided by law,...*" (emphasis mine). It is this caveat that is interpreted to give the sheriff ultimate authority over forest and prairie fires within a FPD. Commonly, FPDs handle routine wildfire suppression within their districts and rely on the sheriff to summon additional assistance as needed, utilizing his authority **in C.R.S. 30-10-513** to "call to their aid such persons as they deem necessary."

Occasionally, in counties other than Mesa, a fire chief has made the interpretation of state law that the fire district and its fire department is only responsible for structure fires and not forest or prairie (wildland) fires which are the sheriff's responsibility. There is little credibility to this argument when it is pointed out that the fire district taxes both the land and the improvements (structures). Additionally, the county pays annually into the EFF (almost eleven thousand dollars per year in the case of Mesa County) specifically to protect fire districts from the costs of suppression liability of a major wildfire. Should a district desire to pursue this argument they might be prepared to give up their land tax base to the sheriff's department as well as coverage by the EFF.

The relationship between fire departments and the sheriff was recently further enhanced and defined by **C.R.S. 30-10-513.5 Authority of sheriff relating to fires within unincorporated areas of the county – liability for expenses**. This law enables a sheriff to *request* assistance from a FPD (significantly not a VFD *volunteer* fire department) or municipality in controlling and (later changed to *or*) extinguishing a fire

on private property. This is significant because it helps the sheriff fulfill his duties to provide county-wide forest and prairie fire suppression by utilizing FPDs outside of their district boundaries. The FPDs are not *required* to respond, and by so doing jeopardize protection responsibilities within their own districts, but if they do, they may recover costs from the landowner directly, or failing that, through the county treasurer as property taxes. The sheriff is further protected in **C.R.S. 30-10-513.5** from **liability for failure to secure fire protection services**. Similarly, **C.R.S. 30-15-401.5 (9) Fire Safety Standards**, does not require the county commissioners to provide any fire protection services to any area of the county

C.R.S. 30-10-513 also provides that “The **state forester may assume the duty** with concurrence of the sheriff.” (emphasis mine) This most frequently occurs when the county participates in the **Emergency Fire Fund (EFF)**, the fire surpasses the county’s capability, and the fire is approved for EFF consideration by the state forester. However, a county that is not an EFF participant may seek assistance from the state in suppressing a large wildland fire, and the state (usually the Governor) may ask the Colorado State Forest Service (CSFS) to assist. Typically, the sheriff will assign the authority over to the Colorado State Forest Service who in turn will assign it to an Interagency Management Team (IMT). Once the fire is brought back into a level that can be safely assumed back by the sheriff and the county, the assumption of duty is reversed. It is important to note that there is no obligation by the CSFS to accept the fire duty nor is their one by the county sheriff to seek CSFS assistance.

C.R.S. 30-10-513 goes into some detail about **how to pay for forest and prairie fires**, and clearly it is the county commissioners (rather than the sheriff) that “may make such appropriation as it may deem proper for the purpose of controlling fires in its county.” The county commissioners are empowered to levy a tax (subject to the approval of the voters) “...in any one year is limited to the amount raised by one mill or five hundred thousand dollars, whichever is less.” It is this authority that is used by EFF participating counties to pay the annual EFF assessment, which is based on 1/100th of a mill of the assessed valuation and the number of private “watershed” acres in the county, capped at \$25,000/yr./county. Mesa County paid \$11,451 into the EFF in 2004

Recent changes to C.R.S. 30-10-513 (30-10-513.5, 23-30-204, 23-30-205, 23-30-301, 23-30-304, 23-30-305): In 2000, via **H.B. 1283**, small changes with significant impacts were made to C.R.S. 30-10-513 (and the other statutes listed above). A recent (7/23/01) state attorney general opinion says “In fact, the 2000 amendments were quite minor.” I would disagree. This bill and its amendments to existing statutes modified the authority of sheriffs from one of “controlling **and** extinguishing such fires” to one of “controlling **or** extinguishing such fires” (emphasis mine). The intent is to allow prescribed and natural ignition fires to burn when there are natural resource benefits and the sheriff is comfortable in assuming the duty of “managing” rather than extinguishing wildfires.

Section 8. Part 1 of article 11 of title 30, C.R.S. was amended by the addition of a new section: **30-11-124 Fire planning authority**. This provided for the implementation (if desired) of the above **changes in C.R.S. 30-10-513** through a **County Fire Plan** (for

which there is no required standard). County policies regarding fire management, prescribed burning, and natural ignitions were to be addressed in such a County Fire Plan. Policy for “the conditions under which prescribed or natural ignition fires shall be managed” were to be clearly defined and “developed in coordination with the county sheriff, the Colorado State Forest Service, and the appropriate state and local governmental entities.” It is interesting to note that the C.R.S. 30-11-124 fire planning authority is **only for “lands owned by the state or county.” Private lands can be considered only if private landowners enter into memoranda of understanding with the Board of County Commissioners to include their lands, within the county under the fire management plan.** The language in those memoranda of understanding might be critical in establishing liability should a “managed fire” go amok and cause damages or casualties. This statute provides that: “Counties may purchase an indemnification insurance policy and private landowners who enter into memoranda of understanding with the board shall have the opportunity to opt into such a policy.” Counties and private landowners should closely examine such a policy and its provisions of coverage.

C.R.S. 30-11-124 states, “Any county that adheres to a county fire management plan shall be accorded liability protection pursuant to Article 10 of Title 24, C.R.S.” Whether or not this would apply to private property owners with “memoranda” is questionable. **Article 10 of Title 24, C.R.S. is the “Colorado Governmental Immunity Act”** and should be of little comfort to anyone who has looked into it. This Act has been overruled in 3 state Supreme Court decisions and has a limit of only \$150,000/incident/person. It does what it says – it provides governmental immunity, not *personal* liability immunity or protection. It might be successfully argued that the “management” of fire would come under the “dangerous condition” exemption to this Act. In the many examples of escaped “managed fires” and wildfires that have caused personal and/or property damage, the first thing investigated are the qualifications of those in charge of the fire. Absent proper qualifications “willful or wanton” negligence may be proven and is also exempted by the act.

For the above reasons some counties have taken the opportunity, in the development of a County Fire Plan, to clearly state that they do not have the manpower, equipment, training or financial resources to participate in a “managed fire” program opportunity as provided for by the revised **C.R.S. 23-30-305 Section 5.**

In **C.R.S. 23-30-304 State responsibility determined**, (also amended by H.B. 1283) states that “The state forester shall determine, in consultation with local authorities and with the approval of the governor, geographic areas of the state, including wildland – urban interface areas, in which the state has a financial responsibility for managing forest fires.” To avoid any confusion: ***There are none*** (emphasis mine). There has been no budgeting to enable this statute though the language remains should there be some in the future.

Other sections of state law where the state forester is mentioned relative to wildfire:

For this analysis the “state forester” is the Director of the Colorado State Forest Service (CSFS). The 17 districts scattered throughout the state and their personnel are agents of the state forester. In this role the CSFS is also an agent of the governor. CSFS is also an agent of the state board of agriculture through the Department of Natural Resources (C.R.S. 23-30-302) and an agent of the state board of land commissioners through its relationship as a division of Colorado State University.

State statutes (C.R.S. 23-30-202, 203, 204 et. al.) and direction to the CSFS is clear: If a county sheriff calls CSFS for assistance on a wildfire, CSFS will respond.

C.R.S. 23-30-204 Forest fires- duty of the sheriff to report. States that “It is the duty of the sheriffs of the various counties of the state to report as soon as practicable the occurrence of any fire in any forest in the state, either on private or public lands, to the board or its authorized agent, and, upon receiving notice from any source of a fire in any forest, it is the duty of the agent of the board to aid and assist in controlling or extinguishing the same, if necessary.”

Most often this assistance from CSFS will take the form of strategic and tactical advice and may progress to an analysis for possible activation of the Emergency Fire Fund in participating counties. **CSFS has no direct fire suppression capability** (or responsibility), but has several programs that make fire equipment available to sheriffs, VFDs, and FPDs on an on-loan or cost-sharing basis. Because of this “aid and assist” role of the CSFS, rather than the usurpation of the direct suppression responsibilities of sheriffs, fire departments and other agencies such as the USFS and BLM, CSFS does not need the report of every fire. **It is common practice and the desire of CSFS to be notified of only wildland fires that may threaten to exceed the capabilities of the county, if on private or state land, and/or a wildfire on federal lands that threatens to burn onto sheriff’s jurisdictional land (private or state lands).**

C.R.S. 30-10-513 provides that: “The state forester may assume the duty with the concurrence of the sheriff.” This language has been interpreted to mean such “duty” is not the jurisdictional legal responsibility of the sheriff regarding forest and prairie fires, but only the fire control duty for a specific fire or complex of fires. Such an assumption must be consensual by *both* the sheriff and the state forester (CSFS representative). In the event of the assumption of duty by the state forester there is a formal agreement for the assumption that details sharing of costs up to and after the assumption. Such an assumption facilitates the next step, which is usually the delegation of authority for managing the fire to a qualified interagency Incident Management Team (IMT). **The sheriff should remain engaged with the fire and should do so via active participation in a Unified Command that gives direction to the IMT.**

As a fire is brought under control and discussion begins about reversing the assumption of duty and turning the fire back to the county and the sheriff. The sheriff needs to be certain the fire is in a condition that the county's resources (fire departments and any other county resources involved) can handle it. In addition to the general criteria below see the more specific "turn back standards" in the Scenario later in this report.

Criteria used for the transfer of fire control duty back to the county are:

- Fire spread is contained by fireline, natural barriers, or cold-trailed edges.
- Line Officer's objectives have been met. (Line officers are agency representatives).
- Written plan exists to guide the sheriff for the next operational period.

In other words the fire is brought back within the county's functional capabilities. Note that there is no financial consideration by the state for either the assumption of duty by the state forester or the subsequent turn back of that duty to the county. There is ample provision in state statute (C.R.S. 30-10-513, 23-30-305) for counties to levy special taxes specifically to "prevent, control, or extinguish such fires anywhere in the county..." and "payment for the operation and maintenance of fire-fighting equipment, and sharing the cost of managing fires." The fact that a county may not have adequately budgeted for wildfire suppression is not a decision criterion for the CSFS. **C.R.S. 23-30-307**

Limitation of state responsibility: "Nothing in this part 3 shall be construed to authorize any county fire warden, fireman, or county officer to obligate the state for payment of any money." Decisions whether to accept a fire from a county and/or turn back a fire to a county is a resource based decision. Is the fire at a stage where the resources of the county can handle it?

C.R.S. 23-30-308 Emergencies: This statute gives the governor broad powers to close to the public and prohibit or limit all burning on all lands (even federal) under conditions of extreme fire hazard. Commonly called a "Governor's burn ban." Has been used rarely in the past and is not well received by federal land managers without extensive previous communication.

C.R.S. 18-13-109 Firing woods or prairie: This and other statutes are careful to preserve the right of open burning lawfully conducted in the course of agricultural operations. Even during a county-wide burn ban (**C.R.S. 30-15-401 General regulations**), agricultural burning can be legal if not specifically excluded by a county ordinance. Similarly, the county commissioners and sheriff can ban the *use* of fireworks during periods of high fire danger and just recently, also the *sale* of fireworks (**C.R.S. 12-28-101 (8)**). See the Fire Restrictions section of this plan.

C.R.S. 23-30-310 Wildfire emergency response fund – creation. This allows for a special fund of money appropriated by the state legislature, administered by CSFS, to "provide funding for the first aerial tanker flight to a wildfire at the request of any county sheriff, municipal fire department, or fire protection district." Commonly referred to as the "**WERF**" agreement. Additionally, **C.R.S. 23-30-303** Funds available: "The governor's emergency fund, or other funds available to the Colorado state forest

service, may be used for the purpose of preventing and suppressing forest fires, in accordance with the provisions of part 21 of article 32 of title 24, C.R.S.” This statute has been used several times in the past to allow the governor’s emergency fund to reimburse the (participating county funded) Emergency Fire Fund (EFF) up to a zero level (from a deficit).

C.R.S. 30-28-136 Referral and review requirements, C.R.S. 30-28-106 Adoption of master plan, C.R.S. 31-23-206 Master plan, C.R.S. 24-65.1-302 Function of other state agencies, and C.R.S. 24-65.1-202 Criteria for administration of areas of state interest. All these statutes relate to the designation of the CSFS as the response agency for the determination of wildfire hazard areas for purposes of land use planning and the formulation of suggested regulations to counties for dealing with wildfire hazards.

Agreements pertaining to county wildfires

To more efficiently handle wildfires, avoid duplication, and cooperate with other wildfire management and suppression agencies, agreements between state, county and federal agencies are common and encouraged.

C.R.S. 23-30-305 Cooperation by counties “The boards of county commissioners may, in their discretion, cooperate and coordinate with the governing bodies of organized fire districts, fire departments, and municipal corporations; with private parties; with other counties; with the state forester; with the United States secretary of the interior; with the United States secretary of agriculture; and with an agency of the United States government in the management and prevention of forest fires. Such boards of county commissioners are authorized to participate in the organization and training of rural fire-fighting groups, in the **payment for the operation and maintenance of fire-fighting equipment, and in sharing the cost of managing fires.**”

The link for counties and sheriffs to enter into cooperative agreements for fire control with federal firefighting agencies is through the Annual Operating Plan as specified in the Interagency Cooperative Fire Protection Agreement. This agreement is with the USDA, USFS (U.S. Dept. of Agriculture, U.S. Forest Service), USDA BLM and NPS (U.S. Dept. of Interior Bureau of Land Mgmt., and National Park Service, the BIA (Bureau of Indian Affairs), and the State of Colorado, State Board of Agriculture, Colorado State Forest Service (CSFS). The CSFS is charged with calling all agencies together for the Annual Operating Plan.

The Agreement for Cooperative Wildfire Protection is the agreement between each county and the Colorado State Forest Service that serves as the link to cooperation between the counties and the federal fire fighting agencies because **C.R.S. 23-30-206** and **C.R.S. 23-30-305** say nothing about the authority of counties to enter into agreements with federal agencies for wildland fire suppression. Mesa County signed

their Agreement for Coop. Fire Prot. on February 28, 1989 (see the Agreements Appendix).

The Annual Operating Plan (AOP) is the key document and is signed by the sheriff in his role as the fire warden for the county. This strategy enforces the leadership role in wildfire for the sheriff and eliminates the need for every fire department in a county to sign. In counties, such as Garfield with 7 FPDs, having every FPD sign an AOP would involve an approval by the FPD board and each district's attorney. This was attempted for a short time in Pitkin County (4 FPDs), but it is very difficult to get everyone to agree on the same language on a timely basis before fire season. The federal agency signatories to this AOP are not interested in potentially negotiating a different AOP with every fire department within their area of coverage. The purpose of the AOP is to have all parties with a firefighting role in a county meet before the fire season to discuss any issues from the past season or the coming season. Occasionally modifications are made to the AOP to address these issues, but more frequently only an updating of the Mobilization Plan is needed. The **Mobilization Plan** is a listing of personnel, equipment, and contact information, which facilitates mobilization of county resources in a mutual aid situation.

Agreements pertaining to wildfire specifically with the Colorado State Forest Service:

Emergency Fire Fund (EFF): In 2003 Forty three counties and the Denver Water Board in Colorado paid into this insurance type fund that can pay for catastrophic wildfires on state and private land that exceed a participating county's resources. Prior to 1994, the EFF paid out over \$1.25 million on qualifying EFF fires in 16 years. In 1994, 2000, and again in 2002, an unprecedented number of EFF fires were declared and millions of dollars expended through the EFF fund. **EFF funding must be requested by the county sheriff, and can only be approved by the state forester.** The criteria is one of lack of county resources to fight the fire, not one of cost. If the sheriff thinks a fire will exceed the county's resources the CSFS needs to be notified immediately for an on-scene evaluation. There is a minimum commitment of equipment for EFF consideration. In Mesa County the minimum commitment is: 2 dozers, 2 water tenders, and 5 engines (4 engines for the west end of the county). Alternate resources can be negotiated dependant on resources appropriate for the fire. The reason for this minimum commitment is to reduce the subjectivity of judging the county's "full commitment" on the EFF evaluation. Once a fire is declared an EFF fire the county must continue to be fully committed. The EFF is a necessary link to FEMA funds. Federal agencies cannot obligate EFF funds. There has been occasion when a county believes EFF funding has been unfairly withheld. If this happens, the important thing to remember is to get the fire out as quickly and efficiently as possible, and worry about who pays what later. There is a mechanism for appeal of the state forester's decision regarding EFF funding.

Wildfire Emergency Response Fund (WERF): This new (for 2003) statute (**C.R.S. 23-30-310**) allows state funding for aerial tankers. The fund pays for the first load

(retardant, water, and/or foam) from a single or multi engine air tanker for a fire on private or state land requested by a sheriff or fire department. A helicopter may be requested instead of an air tanker. In the case of a helicopter, the fund will pay for the first hour of rotor time including the pilot (rarely used in Mesa Co. due to the BLM Rifle helicopter considered as a mutual aid resource). The fund will not pay for ferry time to bring an aircraft in from out of state, nor will it pay for lead planes, aerial observation platforms, or additional personnel such as helitac crew. See the Appendix for WERF operating procedures and more details on use.

CSFS Single Engine Air Tanker (SEAT) contract: For a number of years the CSFS has contracted with SEATs, and for the first time, in 2003, the BLM in Grand Junction had a SEAT under contract for the season. The state SEATs may be stationed anywhere in the state dependant on fire danger. In 2003 one of the state SEATs was stationed in Grand Junction for most of the summer because of the elevated fire danger here. It was used extensively both by the BLM and on 3 of the 4 EFF fires in the area. A county sheriff may request the state SEAT to be stationed locally, but must compete with other requests statewide dependant on fire danger.

Common elements of many Annual Operating Plans:

All AOPs follow a common outline specified in the Interagency Coop. Fire Prot. Ag. The advantage to this is for firefighters and Incident Mgmt. Teams from outside the area to be able to quickly find information in the AOP, which will affect the “rules of engagement” for the area (county) covered by the AOP. Not every item may be addressed in every AOP, but the organizational layout is the same.

All AOPs address **Mutual Aid** (sometimes referred to as Reciprocal aid). This will specify the conditions under which each agency will assist in another jurisdiction without charge. Typically, the way mutual aid works (and its defined purpose) is to dispatch the closest resources to a fire as quickly as possible regardless of jurisdiction. An extended attack and/or a large fire may require resources beyond the capability of the jurisdictional agency. Federal agencies usually have a maximum of 24 hours that they can assist outside of their jurisdiction, but often they may limit the mutual aid period to a shorter time outside of one mile beyond the common boundary. Because of the extent of intermingled federal and private land ownership in **Mesa County, the mutual aid period is 24 hours, after the initial report of the fire, county-wide, between all agencies.** Occasionally, in the past, a different administrator for the National Monument (National Park Service) will want the 24 hour period only within one mile of the park boundary, but currently NPS personnel can respond county-wide.

Even with mutual aid, there is language in all AOPs that says an agency is not obligated to provide mutual aid “...if by so doing would impair the Party’s ability to provide effective emergency services within its own service area.” This clause is often used when an agency has other fires or emergencies they are dealing with.

Nothing obligates an agency to extend the full 24 hours of mutual aid without charge, nor end mutual aid after only 24 hours. Often a federal agency will extend the non-reimbursable mutual aid period they contribute beyond 24 hours, especially if the fire is within one mile of its boundary and/or there is extreme fire danger (red flag conditions). Occasionally, a federal agency may start a volunteer fire department's pay status sooner than 24hrs. after the initial report of the fire as a way of helping them out.

***All mutual aid resources are not defined in the Mesa County AOP.** This omission is one that might be desired to specify in the future. The reason it has not been defined in the past is there has not been a problem with the use of mutual aid due to the very **high level of interagency cooperation that exists**. There is flexibility allowed by *not* strictly defining mutual aid resources. It is understood that any uncommitted engines and their crew, of all agencies, are a mutual aid resource. Additionally the BLM assigned **helicopter based in Rifle** has been considered a mutual aid resource for many years. If this helicopter is committed to another fire and/or another contract helicopter is based out of Rifle this resource may not be mutual aid (but often the BLM has extended mutual aid to helicopters other than their "regular ship"). Air tankers are never, and fire crews only rarely, considered a mutual aid resource. While it may seem nebulous as to what is and isn't considered a mutual aid federal resource and when, it has most often worked to the advantage of the county and its fire departments to leave this undefined. This situation may change with changing personnel in charge of making these decisions.

Federal agencies, with their specialized wildfire suppression capabilities, more often give than request mutual aid. However, large water hauling tenders that fire departments and county road departments often have is one item they do occasionally need. A county sheriff may consider filling a request by a federal agency for a large water tender with county road equipment rather than from a fire department particularly under red flag conditions when fire departments will be stretched to cover their own areas. I know of one case during an extreme fire period where a sheriff met a request from the BLM for a tender on a private land fire by hiring a private contractor. The BLM said they would finish moping up the fire on private land if the county could get them a water tender. This is another example of great interagency cooperation to get the job done.

Unified Command is another common element to AOPs. Multi-jurisdictional fires are common and typically are large fires that burn on lands of more than one agency's responsibility. The system to deal with such fires is the Unified Command system of ICS. Agency representatives, from each jurisdiction involved, agree on common objectives and strategy to be incorporated into a single Incident Action Plan, which is then implemented by a single Incident Commander. This single incident commander concept differs from national ICS definitions and California and Florida's practice of using multiple Incident Commanders under Unified Command. It may be necessary to explain this difference to an out of region IMT. In practice, IMTs are almost always more comfortable with the **single IC concept of Unified Command**.

It is important to set up a Unified Command on multi-jurisdictional fires if any inter-agency billing is anticipated. Agencies ordering resources for a multi-jurisdictional fire will be responsible for the costs of those resources unless approved and cost sharing agreed on by an established Unified Command. **Details on reimbursable costs and cost-sharing alternatives are in the Annual Operating Plan (AOP).**

Cost Reimbursements: The above language under Unified Command is further strengthened in the Cost Reimbursements section of the AOP:

Local agencies do not have authority to obligate federal agencies to pay for expenses incurred in fire suppression. Similarly, federal agencies do not have authority to obligate the state or counties to pay for any federal expense incurred in fire suppression (even when on private or state lands) without an agreement in place. The rule “if you order it, you pay for it” generally applies.

This language is to protect the county and avoid past situations where federal fire fighting personnel may order (often aircraft) resources, and expect the county to pay for them. Cost-sharing agreements must be set up early and reviewed often for needed changes during a fire. AOPs have **3 options for cost sharing** beyond the mutual aid period that gives all agencies tremendous flexibility:

- a. Each agency assumes its own costs as expended by it in the fire control effort.
- b. Division of fire costs based upon ownership and/or acreage percentages.
- c. Each agency agrees to a portion of the suppression costs.

All three of these options have been used in Mesa County for wildfires over the years. Option b. is most often used once the fire goes to EFF, whereas the other two options are most frequently used on non-EFF fires. These 3 options allow managers the greatest possible latitude in order to tailor reimbursement agreements to the particular incident and situation. Again, Mesa County has enjoyed very favorable treatment from particularly the BLM in recent past years regarding assistance with wildfires on private land without reimbursement. This has not always been the case, and federal agencies are not always going to be able to extend such assistance.

All payments between federal and local agencies are made through the CSFS for all state EFF fires or at the request of either federal or local agencies. If it is possible for direct payment on small after-mutual-aid reimbursements; there is no need to involve CSFS.

Because of the reimbursements through CSFS arrangement, and the **unique status of “cooperator” as opposed to “contractor” on federal fire assignments**, the CSFS has developed the **Cooperative Resource Rate Form (CRRF)**, popularly known as the “surf” form. All county and fire department equipment should be signed up annually on this form if they ever expect to be reimbursed on a wildfire after the mutual aid period.

On a large fire, it is frequent that the fire is being run by an IMT from outside of the area. Having a CRRF for your equipment is like “spreading oil on troubled waters” to the finance section of IMTs unfamiliar with the “cooperator” relationship. Cooperators only attempt to recover costs on a fire, while contractors need to make a profit as well. The fire will pay cooperator damages and losses to equipment – not so with contractors. **CRRF rates are actual cost** and isn’t subject to bidding competition as with contractors.

Other common elements of AOPs cover: rehabilitation after a wildfire, integration of personnel as an interagency management group, communications procedures and authority for each agency to use the other’s frequencies for emergencies with FERN (154.280 MHz) as the common frequency, the common use of a Wildland Fire Situation Analysis (WFSA) as a tool to select strategic alternatives, fire prevention and prescribed fire coordination, red flag warning procedures, and procedures for AOP changes and dispute resolution.

A typical scenario Mesa County might be involved in with an escalating wildfire: Guidelines for interaction

In this scenario a wildfire starts on private land and quickly spreads further on private land, endangering homes, as well as to adjacent BLM lands. This scenario provides guidelines for the sheriff to be thinking of in order to maintain a level of interaction and competency with a rapidly moving emergency situation.

Routine fires on private and state land are normally handled by the jurisdictional fire department. The sheriff usually becomes involved when a wildfire (as opposed to a structural or car fire) starts to exceed the capability of the local fire department and more resources are needed. Typically the county dispatch center is appraised of the situation and advises the sheriff. The sheriff’s role is usually a strategic rather than a tactical one. In Mesa County the sheriff’s department has a functional wildland fire capability with their wildfire engines and trained and experienced fire staff. They are often involved on wildfires prior to and keep the fire from exceeding local capability.

A call through the **Interagency Dispatch Center** (257-4800) in Grand Junction for **mutual aid** with the BLM and other federal agencies should be one of the first things done. Remember the **BLM helicopter in Rifle** is a mutual aid resource and can be used for 24 hrs. after the initial report of the fire without charge to the county. BLM, USFS, and NPS engine crews are also mutual aid resources. A strategic decision may be for the sheriff to utilize federal mutual aid resources for the first night shift and then bring in the VFDs and RFDs as fresh troops the next day when the mutual aid period expires. **The sooner plans are made for a multi-shift incident, the better.** The **county dispatch center** should be notified to determine availability of additional equipment through county fire departments and the **county road department** for water tenders, maintainers, (with associated transport). Since there is no Mesa County owned dozer capability, it may be a good idea for the dispatch center to have a list of **private contractors** that can provide large dozers if needed.

Call for one **retardant drop** from the Interagency Dispatch Center because the first load will be paid for by the **WERF** agreement. Assign a sheriff dept. individual on-site to evaluate the need for additional drops and give this person full authority to order additional loads. Be aware that retardant aircraft often have “trouble” hearing anything except “load and return” so, the **sheriff’s Air Tanker Coordinator** needs to be aware that the most effective use of air tanker drops is during the beginning stages of a fire, and at the same time have the ability to recognize when retardant drops are either not needed or ineffective. The chain of command for this individual is through the Air Tactical Group Supervisor (if filled) via the Interagency Dispatch Center. Air tanker drops will **not be effective on “running crown fires”** that spread through the crowns of trees driven by wind or moving up steep slopes. They are **extremely effective on** relatively flat ground in light fuels, or as reinforcement to a fuelbreak, or in areas where the drop can be quickly followed up by engines and hand crews.

Since the WERF has been activated, the **CSFS fire duty officer (FDO) must be paged**. As the fire threatens to exceed the county’s capability with a full mutual aid page-out, the sheriff needs to consider an EFF request. **The CSFS FDO must be on-site and meet with the sheriff as soon as possible for an EFF evaluation**. The sheriff should be sure that the county’s minimum commitment (as identified in the AOP) or equivalent is also on the scene or in route. Access to a fax machine and/or internet access close to the fire scene will greatly facilitate the EFF request process. Digital photos of the fire transmitted to the state forester have been shown to facilitate a favorable EFF determination for the county.

This scenario now involves BLM lands and their jurisdictional needs must be considered. **Federal agencies may have a problem with heavy equipment** such as the county’s dozers building fireline on their lands. Dozers are often the quickest way to build highly effective fireline. The sheriff must firm at this point if there is a realistic chance of stopping the fire by building dozer line on federal land and the dozers are on scene, ready for deployment. Dozer line combined with air tanker retardant drops can be a very effective tool in the early stages of a fire if terrain, fuels, and burning conditions permit their safe use. The argument by federal land managers against the use of heavy equipment is the rehabilitation of a dozer line (for instance) is more difficult than the damage the fire would have done. There is little validity to this argument if such tactics will limit the size of the fire and/or potentially save structures or valuable resources.

In the recent past, once federal firefighters became involved on a wildfire they wanted the fire department and county personnel off the front lines of the fire. The assumption was that county fire fighters were not equipped, trained, or experienced enough to not be a safety hazard to other fire fighters. This presumptive attitude has largely disappeared, but occasionally it will surface particularly with Incident Management Teams from outside of Colorado. Should this attitude surface in the early stages of a fire; **it may be necessary for the sheriff to take a leadership role to remind other agencies and/or individuals in whose jurisdiction they will be working**. The

“correct “ technique is to thank the individuals or team for coming to assist you and state that “here are the fire departments that will be working with you as part of their jurisdiction.” If legal liability issues are then brought up they can be reminded that local fire departments can serve as part of a “structural protection group” without being “red-carded.” **Ask for CSFS assistance should this problem arise.**

At this point the sheriff needs to inquire about a **Unified Command** being set up since multiple jurisdictions are involved and there likely will be cost-sharing involved *even if local agency fire managers say they can cover all costs.* **Local fire managers have been over-ruled on cost-sharing agreements by their state fire managers in the past!** The sheriff has full authority and every reason to be fully involved with strategic and tactical decisions being made by whoever is commanding the fire and the Unified Command is the avenue for that involvement. Without a Unified Command the AOP says the county is not liable for cost-sharing fire suppression.

Now there will probably be some discussion about the preparation of a **Wildfire Situation Analysis (WFSA)** (pronounced “woofsa”). Federal fire management people on the fire will have this on their computers and will want to fill it out themselves, which is fine except.....this is an **extremely important document** because it describes strategic alternatives for suppressing the fire, and is used as the guide for management teams that will be in charge of the fire. If this document has already been prepared without the sheriff’s involvement and the sheriff is asked to sign it, immediately ask for a **revision of the WFSA that includes the sheriff’s input.** The sheriff should ask the CSFS FDO for assistance with his input on the WFSA to be certain the county’s concerns and objectives are adequately addressed.

Before an IMT is actually ordered there should be a discussion among those with jurisdictional authority as to **what level of IMT (either a 1 or 2) should be ordered.** Only rarely does an incident go directly from the local agencies to a Type 1 team without transitioning through a Type 2 team first (the South Canyon Fire in 1994 is an example of one that did). A Type 2 team comes with a full complement of trainees and in 2004 amounts to over 45 people. Such a mobilization, with all of its infrastructure support, makes for an expensive incident. **An alternative is to order a “short” Type 2 team.** The short team concept used to be used more in the past than recent years, but it is still a viable concept (in checking with the G.J. Interagency Dispatch Center and Steve Hart, Type 1 IC for Colorado). With a short Type 2 team you will get seven to nine people including the section chiefs and others the team IC feels as critical. The IMT must agree to send a short team

The fire in this scenario has now been approved for **EFF funding**, and the CSFS FDO is preparing a **Transfer of Authority (sometimes called a Delegation of Authority)** for the management of the fire from the sheriff to the CSFS. In addition to the sheriff’s signature on this document, a county commissioner’s (BOCC) signature is required. It is up to the sheriff to assist the CSFS FDO in obtaining the BOCC signature. This document will have a date and time on it, and costs assumed by the EFF will be after that time, so it is in the county’s financial interest to expedite this signature process. **It is**

critical that the sheriff recognizes that this transfer of authority does not reduce his involvement with and his role in the Unified Command. The incoming IMT works for the Unified Command and this relationship needs to be established early on. Such a relationship is reinforced by the sheriff's presence at all morning briefings and evening strategy sessions. Once a fire has been approved EFF funding the CSFS will assign a line officer to represent the interests of the state to free up the local CSFS FDO to continue working with the local cooperators (sheriff and fire departments). It is common for an IMT taking over a fire to be assigned an "initial attack zone" in association with their assigned fire because they have the resources in that area to handle any new fire starts. This zone should be defined in the transfer of authority to the IMT. Such a transfer will authorize the IMT to spend county money in the suppression of new fire starts, and any "sideboards" to that authority needs to be in the transfer.

Cost-sharing on an EFF wildfire usually involves splitting costs between agencies based on acreage burned in each jurisdiction. So, even when the fire starts on private land and burns federal land, the "feds" will help pay costs of suppression, **and visa versa**. Cost prior to and after EFF can be significant for a county, but there is some flexibility to negotiate when federal lands are involved too. **Ask for CSFS assistance.**

Typically, the CSFS will then do another **Transfer of Authority from the CSFS to the Incident Management Team (IMT)** that will be brought into manage the fire. Keep in mind that often the IMT that will be running your fire may be from out of state and not familiar with any of the unique Colorado laws (e.g. "Sheriff in charge..."). Again, the IMT needs to be aware of the Unified Command. Its interaction with the team needs to be defined in the briefing to the team. Now would be a good time to review and probably revise the WFSA. **There is no limitation as to how often the WFSA can be revised.** It is important for the sheriff to insist on revision of the WFSA if current tactics are not successful in stopping the fire's spread. **Just because the authority for managing the fire has been transferred does not diminish the sheriff's responsibility for jurisdictional and functional involvement with the fire and the Unified Command.**

This scenario will now assume the IMT has been effective in bringing the fire under control and there is now discussion of turning the fire over to a Type 3 Incident Commander (IC). Usually, (but not always) this will be a local qualified individual that is well known to jurisdictional members of the Unified Command. The duty of the Type 3 IC is to finish the demobilization of the fire while retaining only as many resources as necessary to bring the fire into a state that it can be turned back to the county. The **sheriff should expect the fire is declared "controlled" not just "contained"** and the fire is now in a mop-up and patrol stage, before being asked to take the fire back. "Turn back standards" need to be developed and the Type 3 IC aware of them. **Typical "turn back standards"** that address county concerns in addition to the fire being controlled are (there may be others the federal agencies want):

- 100% mop-up within 2 chains distance of the fire's perimeter.
- 100% mop-up of all spot fires
- 100% mop-up 2 chains distance into any unburned islands within 6 chains of the fire's perimeter.

-Water-bar all dozer lines and pull cat piles apart and scatter within the burned area.

Rehabilitation of the fire cannot be paid by the EFF, because it is only a suppression fund. On private land it is the Natural Resources Conservation Service (NRCS) that has access to funding for burned lands restoration funding. In Mesa County they can be called for a site visit at 242-4511.

The Type 3 IC is expected to prepare a **shift plan for the sheriff** for the first shift after the sheriff takes the fire back. Such a shift plan will detail the resources and strategy suggested for this all-important first shift. It is often necessary for the sheriff to retain a 20 person fire crew to assist with this final mop-up and patrol stage. The cost of this crew would frequently be a county rather than an EFF cost, but this is negotiable.

The most important thing is for the county to be able to demonstrate its diligence in “putting the fire to bed.” If the fire escapes after being declared controlled due to a lack of follow-up in the mop-up and patrol stage, it may be difficult for the sheriff to get more EFF funds to suppress it again. Extended patrol by aircraft (at county expense) is not unusual for remote fires that have been declared out, but red flag conditions continue.

The CSFS role is to assist the county and the sheriff through all of the above steps. If the CSFS FDO can't answer a question the sheriff may have, they will know where to get the answer. In the last several years we have been fortunate to have federal land fire program partners that have been very cooperative with county fire fighting efforts and costs.

Mesa County's Wildfire Program as compared to surrounding counties:

It is useful to make a short comparison of Mesa County's wildfire program to those of surrounding counties. Membership into the EFF is extended to counties dependant on an analysis of the wildfire suppression capability of that county. The governing board of the EFF is composed of member county sheriffs and county commissioners, and they are not interested in extending EFF coverage to counties that will be a liability to the fund. With all the demands for EFF funding in the last few years there is a growing trend towards limited EFF coverage for only some of a fire's costs. For instance, EFF only covering aircraft costs or some crew costs after the mutual aid period are a couple of recent “limited EFF” decisions in the area.

It is a CSFS objective to assist counties in developing a local Incident Management Group (IMG) capability for wildfires. Managing an incident under the Incident Command System (ICS) from its beginning greatly facilitates a transition to a Type 2 or even a Type 1 Incident Management Team (IMT) if the incident escalates and such interagency, nationally qualified teams are necessary. Terminology is important here: An Incident Management Team is interagency, nationally qualified, and meets the

National Wildfire Coordinating Group (NWCG) standards. An Incident Management Group (IMG) is a local group that is managing the incident under ICS principles but may not be fully qualified in all positions under NWCG standards.

The upper Roaring Fork valley has perhaps the most experienced IMG personnel in this area, but Mesa County is catching up fast. The South Canyon Fire (1994) and Coal Seam Fire (2002) were two major fires that transitioned immediately to a Type 1 team from initial management under a local IMG. The Panorama (2002), Monument Gulch (2000), Dry Park (2003), and Snowmass Creek (2003) fires were all fires that were managed by local IMGs for the duration of the fire. Complexity varied from multiple homes being lost (Monument Gulch), and C-130 military aircraft being used for airtankers (Panorama) to a relatively small acreage being burned but high potential due to red flag conditions (Snowmass Creek and Dry Park). Some EFF was used on most of these, but costs were contained due to the efficient use of local IMGs. The full potential of the ICS system has been demonstrated for example: when Pitkin County used ICS for Presidential visits in Aspen, as has Mesa County for the Country Jam concerts for at least the past 5 years.

The Dierich Creek fire (2002) in Mesa County transitioned rapidly to an EFF fire with a Type 2 IMT. This was due to the size and complexity of the incident, the large percentage of federal ownership, plus the fact that a Type 2 IMT was pre-positioned in Mesa County and became involved in another fire (Long Canyon) almost simultaneously with the Dierich Crk. fire. Both fires were managed by this one team as a complex. This was a little unusual since a complex is most often multiple fires in the same general area.

Some differences between Mesa County and the Upper Roaring Fork (Garfield, Pitkin and Eagle Counties) non federal ICS practitioners are: in Mesa County it is the sheriff's office that uses ICS and has a significant wildfire suppression capability, where as in the Upper Roaring Fork valley, the fire departments fill ICS positions and the sheriffs do not have a suppression capability.

Mesa County has been unusual in the number and wide coverage of private land by Volunteer Fire Departments (VFDs) as compared to Fire Protection Districts (FPDs). FPDs are taxing districts with a steady revenue flow whereas VFDs are not and rely on fund-raisers and donations. This has recently changed with the successful transition by both Lands End and Gateway into FPDs. Glade Park and DeBeque remain VFDs though DeBeque has some steady income through the town of DeBeque.

There is significant acreage of private lands in Mesa County that has no VFD or FPD fire protection, and thus are reliant on the sheriff's department for wildland fire suppression. These areas do not have any coverage for structural fire suppression nor emergency medical service (EMS).

Areas without coverage in Mesa County that seem to have the most frequent problems regarding fires are: private land in the Housetop Mesa Estates area along C.R. 306 in

Mesa County but at the Garfield County line, private land outside DeBeque VFD's loosely defined area of coverage, and areas north of Fruita FPD towards Baxter and Douglas Pass. The Housetop Mesa Estates area has had several solutions proposed for both fire and EMS coverage by the Grand Valley FPD who is working with Mesa County's emergency manager. DeBeque VFD will usually respond up Roan Creek the short distance before the Garfield County line, and Fruita FPD has frequently responded to wildfires way into Garfield County up to Douglas Pass.

Garfield County has a much more severe problem than Mesa County with private land without fire protection from either VFDs or FPDs. The entire west end of Garfield County From Parachute and its Grand Valley FPD's boundaries to the Utah state line contains thousands of acres of private and state land without fire protection. Unlike Mesa County, the Garfield County Sheriff has no fire fighting functional capability. The Mesa County Sheriff's office has 3 engines of its own and many officers with NWCG qualifications and several years experience as wildland fire fighters. Garfield County has a history of more severe wildland fires and more and larger EFF fires than Mesa County, but they have been fortunate with timely EFF declarations that have spared the county significant costs. They may not continue to be so fortunate. With no fire fighting capability at the sheriff's office, and no coverage by fire departments, the county commissioners may be facing larger bills for non-EFF qualifying or limited EFF funded fires.

Rio Blanco County is unique in that all of the private land in the county is within either Meeker's or Rangely's FPD. The Rio Blanco Sheriff has no functional fire fighting capability and doesn't really need one with that arrangement. Rio Blanco County has never had an EFF fire.

Delta County has been considered well covered with 5 FPDs that include most of the private and state land in the county. However, recent development pressures are bringing attention to private lands outside of fire protection districts that previously have not been a problem. Fortunately most of the private land outside of FPD boundaries is at high altitude and wildfire occurrence has been rare. Delta County has had one EFF fire (Wake in 1994).

Conclusions and Recommendations:

Mesa County is in good shape for dealing with wildland fire. The sheriff is aware of and comfortable with his role in wildland fire and for a number of years has designated an officer to be in charge of the sheriff's program. The sheriff upgrades the department's equipment regularly, applies for cost-sharing grants to do so, and makes sure the deputies involved in fire suppression get NWCG training. The current sheriff has had experience with EFF fires and is familiar with criteria and concerns that have to be addressed with such fires. Additionally the sheriff has allowed the CSFS the use of one

of their storage facilities and facilitates the repair and maintenance of CSFS Federal Excess Property Program (FEPP) engines stationed in the county.

The fire departments in Mesa County have also taken advantage of recent cost-share funding opportunities to upgrade their wildland capability both in equipment and training. Many fire departments have "red carded" members, or at least they have the NWCG training but are lacking the physical fitness test. The initial attack capability for wildland fires in Mesa County is high, and relatively few fires escape the initial attack suppression effort.

Mesa County enjoys being the home of the largest concentration of federal wildland fire personnel and equipment on the western slope of Colorado. The retardant base and Interagency Dispatch Center and their personnel facilitate a close working relationship between all agencies that deal with wildland fire. The Interagency Fire Advisory Board (IFAB) meets regularly and is composed of all wildland fire partners.

The major wildland fire problem in Mesa County used to be that volunteer fire departments rather than fire protection districts served so much of the private land in the county. It was often uncomfortable to observe how the volunteer departments struggled with donations and fund-raisers to get funding just to operate. The Mesa County Sheriff, County Commissioners, and the Mesa Co. Road Dept. have for many years helped these VFDs with firehouse construction, insurance, fuel, vehicle repair and other areas. With the formation of fire districts by Lands End (Whitewater, Kannah Creek areas) and Gateway (Unawep Canyon), these departments have a stable funding source and the need for such assistance has lessened. This leaves the Glade Park and DeBeque departments as the only VFDs left, and there is little indication of efforts to form districts in either area of coverage. DeBeque is supported financially by the town of DeBeque. Glade Park does not feel the community support or need to form a district. The Glade Park Fire Department is successful with their summer movie fundraisers and subscription donations. Membership on the department and dedication by their firefighters continues to be high, and it is a matter of community pride for them to continue as a volunteer department.

The Mesa County Planning Department has incorporated CSFS recommendations for wildfire fuels hazard reductions into their latest land use code, and does request H.B. 1041 wildfire hazard reviews from the CSFS in areas of wildfire concern.

There is always a concern by the CSFS when a new county sheriff is elected. Unless the new sheriff has been involved with wildfire in the current or another county, it is likely he/she will know little if anything about the sheriff's role in wildfire. It may take several years and some significant fires on private land for the sheriff to fully appreciate his roll. Fortunately, this hasn't been a problem in Mesa Co. with the transition through 3 sheriffs in recent years. The transition from an old sheriff's administration to a new one could be facilitated by the transmission of this document.

Agreements pertaining to county wildfires

To more efficiently handle wildfires, avoid duplication, and cooperate with other wildfire management and suppression agencies, agreements between state, county and federal agencies are common and encouraged.

C.R.S. 23-30-305 Cooperation by counties “The boards of county commissioners may, in their discretion, cooperate and coordinate with the governing bodies of organized fire districts, fire departments, and municipal corporations; with private parties; with other counties; with the state forester; with the United States secretary of the interior; with the United States secretary of agriculture; and with an agency of the United States government in the management and prevention of forest fires. Such boards of county commissioners are authorized to participate in the organization and training of rural fire-fighting groups, in the **payment for the operation and maintenance of fire-fighting equipment, and in sharing the cost of managing fires.**”

The link for counties and sheriffs to enter into cooperative agreements for fire control with federal firefighting agencies is through the Annual Operating Plan as specified in the Interagency Cooperative Fire Protection Agreement. This agreement is with the USDA, USFS (U.S. Dept. of Agriculture, U.S. Forest Service), USDA BLM and NPS (U.S. Dept. of Interior Bureau of Land Mgmt., and National Park Service, the BIA (Bureau of Indian Affairs), and the State of Colorado, State Board of Agriculture, Colorado State Forest Service (CSFS). The CSFS is charged with calling all agencies together for the Annual Operating Plan.

The Agreement for Cooperative Wildfire Protection is the agreement between each county and the Colorado State Forest Service that serves as the link to cooperation between the counties and the federal fire fighting agencies because **C.R.S. 23-30-206** and **C.R.S. 23-30-305** say nothing about the authority of counties to enter into agreements with federal agencies for wildland fire suppression. Mesa County signed their Agreement for Coop. Fire Prot. on February 28, 1989 (see the Agreements Appendix).

The Annual Operating Plan (AOP) is the key document and is signed by the sheriff in his role as the fire warden for the county. This strategy enforces the leadership role in wildfire for the sheriff and eliminates the need for every fire department in a county to sign. In counties, such as Garfield with 7 FPDs, having every FPD sign an AOP would involve an approval by the FPD board and each district's attorney. This was attempted for a short time in Pitkin County (4 FPDs), but it is very difficult to get everyone to agree on the same language on a timely basis before fire season. The federal agency signatories to this AOP are not interested in potentially negotiating a different AOP with every fire department within their area of coverage. The purpose of the AOP is to have all parties with a firefighting role in a county meet before the fire season to discuss any issues from the past season or the coming season. Occasionally modifications are made to the AOP to address these issues, but more frequently only an updating of the

Mobilization Plan is needed. The **Mobilization Plan** is a listing of personnel, equipment, and contact information, which facilitates mobilization of county resources in a mutual aid situation.

Agreements pertaining to wildfire specifically with the Colorado State Forest Service:

Emergency Fire Fund (EFF): In 2003 Forty three counties and the Denver Water Board in Colorado paid into this insurance type fund that can pay for catastrophic wildfires on state and private land that exceed a participating county's resources. Prior to 1994, the EFF paid out over \$1.25 million on qualifying EFF fires in 16 years. In 1994, 2000, and again in 2002, an unprecedented number of EFF fires were declared and millions of dollars expended through the EFF fund. **EFF funding must be requested by the county sheriff, and can only be approved by the state forester.** The criteria is one of lack of county resources to fight the fire, not one of cost. If the sheriff thinks a fire will exceed the county's resources the CSFS needs to be notified immediately for an on-scene evaluation. There is a minimum commitment of equipment for EFF consideration. In Mesa County the minimum commitment is: 2 dozers, 2 water tenders, and 5 engines (4 engines for the west end of the county). Alternate resources can be negotiated dependant on resources appropriate for the fire. The reason for this minimum commitment is to reduce the subjectivity of judging the county's "full commitment" on the EFF evaluation. Once a fire is declared an EFF fire the county must continue to be fully committed. The EFF is a necessary link to FEMA funds. Federal agencies cannot obligate EFF funds. There has been occasion when a county believes EFF funding has been unfairly withheld. If this happens, the important thing to remember is to get the fire out as quickly and efficiently as possible, and worry about who pays what later. There is a mechanism for appeal of the state forester's decision regarding EFF funding.

Wildfire Emergency Response Fund (WERF): This new (for 2003) statute (**C.R.S. 23-30-310**) allows state funding for aerial tankers. The fund pays for the first load (retardant, water, and/or foam) from a single or multi engine air tanker for a fire on private or state land requested by a sheriff or fire department. A helicopter may be requested instead of an air tanker. In the case of a helicopter, the fund will pay for the first hour of rotor time including the pilot (rarely used in Mesa Co. due to the BLM Rifle helicopter considered as a mutual aid resource). The fund will not pay for ferry time to bring an aircraft in from out of state, nor will it pay for lead planes, aerial observation platforms, or additional personnel such as helitac crew. See the Appendix for WERF operating procedures and more details on use.

CSFS Single Engine Air Tanker (SEAT) contract: For a number of years the CSFS has contracted with SEATs, and for the first time, in 2003, the BLM in Grand Junction had a SEAT under contract for the season. The state SEATs may be stationed any where in the state dependant on fire danger. In 2003 one of the state SEATs was stationed in Grand Junction for most of the summer because of the elevated fire danger here. It was used extensively both by the BLM and on 3 of the 4 EFF fires in the area. A

county sheriff may request the state SEAT to be stationed locally, but must compete with other requests statewide dependant on fire danger.

Common elements of many Annual Operating Plans:

All AOPs follow a common outline specified in the Interagency Coop. Fire Prot. Ag. The advantage to this is for firefighters and Incident Mgmt. Teams from outside the area to be able to quickly find information in the AOP, which will affect the “rules of engagement” for the area (county) covered by the AOP. Not every item may be addressed in every AOP, but the organizational layout is the same.

All AOPs address **Mutual Aid** (sometimes referred to as Reciprocal aid). This will specify the conditions under which each agency will assist in another jurisdiction without charge. Typically, the way mutual aid works (and its defined purpose) is to dispatch the closest resources to a fire as quickly as possible regardless of jurisdiction. An extended attack and/or a large fire may require resources beyond the capability of the jurisdictional agency. Federal agencies usually have a maximum of 24 hours that they can assist outside of their jurisdiction, but often they may limit the mutual aid period to a shorter time outside of one mile beyond the common boundary. Because of the extent of intermingled federal and private land ownership in **Mesa County, the mutual aid period is 24 hours, after the initial report of the fire, county-wide, between all agencies.** Occasionally, in the past, a different administrator for the National Monument (National Park Service) will want the 24 hour period only within one mile of the park boundary, but currently NPS personnel can respond county-wide.

Even with mutual aid, there is language in all AOPs that says an agency is not obligated to provide mutual aid “...if by so doing would impair the Party’s ability to provide effective emergency services within its own service area.” This clause is often used when an agency has other fires or emergencies they are dealing with.

Nothing obligates an agency to extend the full 24 hours of mutual aid without charge, nor end mutual aid after only 24 hours. Often a federal agency will extend the non-reimbursable mutual aid period they contribute beyond 24 hours, especially if the fire is within one mile of its boundary and/or there is extreme fire danger (red flag conditions). Occasionally, a federal agency may start a volunteer fire department’s pay status sooner than 24hrs. after the initial report of the fire as a way of helping them out.

***All mutual aid resources are not defined in the Mesa County AOP.** This omission is one that might be desired to specify in the future. The reason it has not been defined in the past is there has not been a problem with the use of mutual aid due to the very **high level of interagency cooperation that exists.** There is flexibility allowed by *not* strictly defining mutual aid resources. It is understood that any uncommitted engines and their crew, of all agencies, are a mutual aid resource. Additionally the BLM assigned **helicopter based in Rifle** has been considered a mutual aid resource for many years. If this helicopter is committed to another fire and/or another contract helicopter is based out of Rifle this resource may not be mutual aid (but often the BLM

has extended mutual aid to helicopters other than their “regular ship”). Air tankers are never, and fire crews only rarely, considered a mutual aid resource. While it may seem nebulous as to what is and isn’t considered a mutual aid federal resource and when, it has most often worked to the advantage of the county and its fire departments to leave this undefined. This situation may change with changing personnel in charge of making these decisions.

Federal agencies, with their specialized wildfire suppression capabilities, more often give than request mutual aid. However, large water hauling tenders that fire departments and county road departments often have is one item they do occasionally need. A county sheriff may consider filling a request by a federal agency for a large water tender with county road equipment rather than from a fire department particularly under red flag conditions when fire departments will be stretched to cover their own areas. I know of one case during an extreme fire period where a sheriff met a request from the BLM for a tender on a private land fire by hiring a private contractor. The BLM said they would finish moping up the fire on private land if the county could get them a water tender. This is another example of great interagency cooperation to get the job done.

Unified Command is another common element to AOPs. Multi-jurisdictional fires are common and typically are large fires that burn on lands of more than one agency’s responsibility. The system to deal with such fires is the Unified Command system of ICS. Agency representatives, from each jurisdiction involved, agree on common objectives and strategy to be incorporated into a single Incident Action Plan, which is then implemented by a single Incident Commander. This single incident commander concept differs from national ICS definitions and California and Florida’s practice of using multiple Incident Commanders under Unified Command. It may be necessary to explain this difference to an out of region IMT. In practice, IMTs are almost always more comfortable with the **single IC concept of Unified Command**.

It is important to set up a Unified Command on multi-jurisdictional fires if any inter-agency billing is anticipated. Agencies ordering resources for a multi-jurisdictional fire will be responsible for the costs of those resources unless approved and cost sharing agreed on by an established Unified Command. **Details on reimbursable costs and cost-sharing alternatives are in the Annual Operating Plan (AOP).**

Cost Reimbursements: The above language under Unified Command is further strengthened in the Cost Reimbursements section of the AOP:

Local agencies do not have authority to obligate federal agencies to pay for expenses incurred in fire suppression. Similarly, federal agencies do not have authority to obligate the state or counties to pay for any federal expense incurred in fire suppression (even when on private or state lands) without an agreement in place. The rule “if you order it, you pay for it” generally applies.

This language is to protect the county and avoid past situations where federal fire fighting personnel may order (often aircraft) resources, and expect the county to pay for them. Cost-sharing agreements must be set up early and reviewed often for needed changes during a fire. AOPs have **3 options for cost sharing** beyond the mutual aid period that gives all agencies tremendous flexibility:

- a. Each agency assumes its own costs as expended by it in the fire control effort.
- b. Division of fire costs based upon ownership and/or acreage percentages.
- c. Each agency agrees to a portion of the suppression costs.

All three of these options have been used in Mesa County for wildfires over the years. Option b. is most often used once the fire goes to EFF, whereas the other two options are most frequently used on non-EFF fires. These 3 options allow managers the greatest possible latitude in order to tailor reimbursement agreements to the particular incident and situation. Again, Mesa County has enjoyed very favorable treatment from particularly the BLM in recent past years regarding assistance with wildfires on private land without reimbursement. This has not always been the case, and federal agencies are not always going to be able to extend such assistance.

All payments between federal and local agencies are made through the CSFS for all state EFF fires or at the request of either federal or local agencies. If it is possible for direct payment on small after-mutual-aid reimbursements; there is no need to involve CSFS.

Because of the reimbursements through CSFS arrangement, and the **unique status of “cooperator” as opposed to “contractor” on federal fire assignments**, the CSFS has developed the **Cooperative Resource Rate Form (CRRF)**, popularly known as the “surf” form. All county and fire department equipment should be signed up annually on this form if they ever expect to be reimbursed on a wildfire after the mutual aid period. On a large fire, it is frequent that the fire is being run by an IMT from outside of the area. Having a CRRF for your equipment is like “spreading oil on troubled waters” to the finance section of IMTs unfamiliar with the “cooperator” relationship. Cooperators only attempt to recover costs on a fire, while contractors need to make a profit as well. The fire will pay cooperator damages and losses to equipment – not so with contractors. **CRRF rates are actual cost** and isn’t subject to bidding competition as with contractors.

Other common elements of AOPs cover: rehabilitation after a wildfire, integration of personnel as an interagency management group, communications procedures and authority for each agency to use the other’s frequencies for emergencies with FERN (154.280 MHz) as the common frequency, the common use of a Wildland Fire Situation Analysis (WFSA) as a tool to select strategic alternatives, fire prevention and prescribed fire coordination, red flag warning procedures, and procedures for AOP changes and dispute resolution.

A typical scenario Mesa County might be involved in with an escalating wildfire: Guidelines for interaction

In this scenario a wildfire starts on private land and quickly spreads further on private land, endangering homes, as well as to adjacent BLM lands. This scenario provides guidelines for the sheriff to be thinking of in order to maintain a level of interaction and competency with a rapidly moving emergency situation.

Routine fires on private and state land are normally handled by the jurisdictional fire department. The sheriff usually becomes involved when a wildfire (as opposed to a structural or car fire) starts to exceed the capability of the local fire department and more resources are needed. Typically the county dispatch center is apprised of the situation and advises the sheriff. The sheriff's role is usually a strategic rather than a tactical one. In Mesa County the sheriff's department has a functional wildland fire capability with their wildfire engines and trained and experienced fire staff. They are often involved on wildfires prior to and keep the fire from exceeding local capability.

A call through the **Interagency Dispatch Center** (257-4800) in Grand Junction for **mutual aid** with the BLM and other federal agencies should be one of the first things done. Remember the **BLM helicopter in Rifle** is a mutual aid resource and can be used for 24 hrs. after the initial report of the fire without charge to the county. BLM, USFS, and NPS engine crews are also mutual aid resources. A strategic decision may be for the sheriff to utilize federal mutual aid resources for the first night shift and then bring in the VFDs and RFDs as fresh troops the next day when the mutual aid period expires. **The sooner plans are made for a multi-shift incident, the better.** The **county dispatch center** should be notified to determine availability of additional equipment through county fire departments and the **county road department** for water tenders, maintainers, (with associated transport). Since there is no Mesa County owned dozer capability, it may be a good idea for the dispatch center to have a list of **private contractors** that can provide large dozers if needed.

Call for one **retardant drop** from the Interagency Dispatch Center because the first load will be paid for by the **WERF** agreement. Assign a sheriff dept. individual on-site to evaluate the need for additional drops and give this person full authority to order additional loads. Be aware that retardant aircraft often have "trouble" hearing anything except "load and return" so, the **sheriff's Air Tanker Coordinator** needs to be aware that the most effective use of air tanker drops is during the beginning stages of a fire, and at the same time have the ability to recognize when retardant drops are either not needed or ineffective. The chain of command for this individual is through the Air Tactical Group Supervisor (if filled) via the Interagency Dispatch Center. Air tanker drops will **not be effective on "running crown fires"** that spread through the crowns of trees driven by wind or moving up steep slopes. They are **extremely effective on** relatively flat ground in light fuels, or as reinforcement to a fuelbreak, or in areas where the drop can be quickly followed up by engines and hand crews.

Since the WERF has been activated, the **CSFS fire duty officer (FDO) must be paged**. As the fire threatens to exceed the county's capability with a full mutual aid page-out, the sheriff needs to consider an EFF request. **The CSFS FDO must be on-site and meet with the sheriff as soon as possible for an EFF evaluation**. The sheriff should be sure that the county's minimum commitment (as identified in the AOP) or equivalent is also on the scene or in route. Access to a fax machine and/or internet access close to the fire scene will greatly facilitate the EFF request process. Digital photos of the fire transmitted to the state forester have been shown to facilitate a favorable EFF determination for the county.

This scenario now involves BLM lands and their jurisdictional needs must be considered. **Federal agencies may have a problem with heavy equipment** such as the county's dozers building fireline on their lands. Dozers are often the quickest way to build highly effective fireline. The sheriff must firm at this point if there is a realistic chance of stopping the fire by building dozer line on federal land and the dozers are on scene, ready for deployment. Dozer line combined with air tanker retardant drops can be a very effective tool in the early stages of a fire if terrain, fuels, and burning conditions permit their safe use. The argument by federal land managers against the use of heavy equipment is the rehabilitation of a dozer line (for instance) is more difficult than the damage the fire would have done. There is little validity to this argument if such tactics will limit the size of the fire and/or potentially save structures or valuable resources.

In the recent past, once federal firefighters became involved on a wildfire they wanted the fire department and county personnel off the front lines of the fire. The assumption was that county fire fighters were not equipped, trained, or experienced enough to not be a safety hazard to other fire fighters. This presumptive attitude has largely disappeared, but occasionally it will surface particularly with Incident Management Teams from outside of Colorado. Should this attitude surface in the early stages of a fire; **it may be necessary for the sheriff to take a leadership role to remind other agencies and/or individuals in whose jurisdiction they will be working**. The "correct" technique is to thank the individuals or team for coming to assist you and state that "here are the fire departments that will be working with you as part of their jurisdiction." If legal liability issues are then brought up they can be reminded that local fire departments can serve as part of a "structural protection group" without being "red-carded." **Ask for CSFS assistance should this problem arise.**

At this point the sheriff needs to inquire about a **Unified Command** being set up since multiple jurisdictions are involved and there likely will be cost-sharing involved *even if local agency fire managers say they can cover all costs*. **Local fire managers have been over-ruled on cost-sharing agreements by their state fire managers in the past!** The sheriff has full authority and every reason to be fully involved with strategic and tactical decisions being made by whoever is commanding the fire and the Unified Command is the avenue for that involvement. Without a Unified Command the AOP says the county is not liable for cost-sharing fire suppression.

Now there will probably be some discussion about the preparation of a **Wildfire Situation Analysis (WFSA)** (pronounced “woofsa”). Federal fire management people on the fire will have this on their computers and will want to fill it out themselves, which is fine except.....this is an **extremely important document** because it describes strategic alternatives for suppressing the fire, and is used as the guide for management teams that will be in charge of the fire. If this document has already been prepared without the sheriff’s involvement and the sheriff is asked to sign it, immediately ask for a **revision of the WFSA that includes the sheriff’s input**. The sheriff should ask the CSFS FDO for assistance with his input on the WFSA to be certain the county’s concerns and objectives are adequately addressed.

Before an IMT is actually ordered there should be a discussion among those with jurisdictional authority as to **what level of IMT (either a 1 or 2) should be ordered**. Only rarely does an incident go directly from the local agencies to a Type 1 team without transitioning through a Type 2 team first (the South Canyon Fire in 1994 is an example of one that did). A Type 2 team comes with a full complement of trainees and in 2004 amounts to over 45 people. Such a mobilization, with all of its infrastructure support, makes for an expensive incident. **An alternative is to order a “short” Type 2 team**. The short team concept used to be used more in the past than recent years, but it is still a viable concept (in checking with the G.J. Interagency Dispatch Center and Steve Hart, Type 1 IC for Colorado). With a short Type 2 team you will get seven to nine people including the section chiefs and others the team IC feels as critical. The IMT must agree to send a short team

The fire in this scenario has now been approved for **EFF funding**, and the CSFS FDO is preparing a **Transfer of Authority (sometimes called a Delegation of Authority)** for the management of the fire from the sheriff to the CSFS. In addition to the sheriff’s signature on this document, a county commissioner’s (BOCC) signature is required. It is up to the sheriff to assist the CSFS FDO in obtaining the BOCC signature. This document will have a date and time on it, and costs assumed by the EFF will be after that time, so it is in the county’s financial interest to expedite this signature process. **It is critical that the sheriff recognizes that this transfer of authority does not reduce his involvement with and his role in the Unified Command**. The incoming IMT works for the Unified Command and this relationship needs to be established early on. Such a relationship is reinforced by the sheriff’s presence at all morning briefings and evening strategy sessions. Once a fire has been approved EFF funding the CSFS will assign a line officer to represent the interests of the state to free up the local CSFS FDO to continue working with the local cooperators (sheriff and fire departments). It is common for an IMT taking over a fire to be assigned an “initial attack zone” in association with their assigned fire because they have the resources in that area to handle any new fire starts. This zone should be defined in the transfer of authority to the IMT. Such a transfer will authorize the IMT to spend county money in the suppression of new fire starts, and any “sideboards” to that authority needs to be in the transfer.

Cost-sharing on an EFF wildfire usually involves splitting costs between agencies based on acreage burned in each jurisdiction. So, even when the fire starts on private land and

burns federal land, the “feds” will help pay costs of suppression, **and visa versa**. Cost prior to and after EFF can be significant for a county, but there is some flexibility to negotiate when federal lands are involved too. **Ask for CSFS assistance**.

Typically, the CSFS will then do another **Transfer of Authority from the CSFS to the Incident Management Team (IMT)** that will be brought into manage the fire. Keep in mind that often the IMT that will be running your fire may be from out of state and not familiar with any of the unique Colorado laws (e.g. “Sheriff in charge...”). Again, the IMT needs to be aware of the Unified Command. Its interaction with the team needs to be defined in the briefing to the team. Now would be a good time to review and probably revise the WFSA. **There is no limitation as to how often the WFSA can be revised**. It is important for the sheriff to insist on revision of the WFSA if current tactics are not successful in stopping the fire’s spread. **Just because the authority for managing the fire has been transferred does not diminish the sheriff’s responsibility for jurisdictional and functional involvement with the fire and the Unified Command.**

This scenario will now assume the IMT has been effective in bringing the fire under control and there is now discussion of turning the fire over to a Type 3 Incident Commander (IC). Usually, (but not always) this will be a local qualified individual that is well known to jurisdictional members of the Unified Command. The duty of the Type 3 IC is to finish the demobilization of the fire while retaining only as many resources as necessary to bring the fire into a state that it can be turned back to the county. The **sheriff should expect the fire is declared “controlled” not just “contained”** and the fire is now in a mop-up and patrol stage, before being asked to take the fire back. “Turn back standards” need to be developed and the Type 3 IC aware of them. **Typical “turn back standards”** that address county concerns in addition to the fire being controlled are (there may be others the federal agencies want):

- 100% mop-up within 2 chains distance of the fire’s perimeter.
- 100% mop-up of all spot fires
- 100% mop-up 2 chains distance into any unburned islands within 6 chains of the fire’s perimeter.
- Water-bar all dozer lines and pull cat piles apart and scatter within the burned area.

Rehabilitation of the fire cannot be paid by the EFF, because it is only a suppression fund. On private land it is the Natural Resources Conservation Service (NRCS) that has access to funding for burned lands restoration funding. In Mesa County they can be called for a site visit at 242-4511.

The Type 3 IC is expected to prepare **a shift plan for the sheriff** for the first shift after the sheriff takes the fire back. Such a shift plan will detail the resources and strategy suggested for this all -important first shift. It is often necessary for the sheriff to retain a 20 person fire crew to assist with this final mop-up and patrol stage. The cost of this crew would frequently be a county rather than an EFF cost, but this is negotiable.

The most important thing is for the county to be able to demonstrate its diligence in “putting the fire to bed.” If the fire escapes after being declared controlled due to a

lack of follow-up in the mop-up and patrol stage, it may be difficult for the sheriff to get more EFF funds to suppress it again. Extended patrol by aircraft (at county expense) is not unusual for remote fires that have been declared out, but red flag conditions continue.

The CSFS role is to assist the county and the sheriff through all of the above steps. If the CSFS FDO can't answer a question the sheriff may have, they will know where to get the answer. In the last several years we have been fortunate to have federal land fire program partners that have been very cooperative with county fire fighting efforts and costs.

Mesa County's Wildfire Program as compared to surrounding counties:

It is useful to make a short comparison of Mesa County's wildfire program to those of surrounding counties. Membership into the EFF is extended to counties dependant on an analysis of the wildfire suppression capability of that county. The governing board of the EFF is composed of member county sheriffs and county commissioners, and they are not interested in extending EFF coverage to counties that will be a liability to the fund. With all the demands for EFF funding in the last few years there is a growing trend towards limited EFF coverage for only some of a fire's costs. For instance, EFF only covering aircraft costs or some crew costs after the mutual aid period are a couple of recent "limited EFF" decisions in the area.

It is a CSFS objective to assist counties in developing a local Incident Management Group (IMG) capability for wildfires. Managing an incident under the Incident Command System (ICS) from its beginning greatly facilitates a transition to a Type 2 or even a Type 1 Incident Management Team (IMT) if the incident escalates and such interagency, nationally qualified teams are necessary. Terminology is important here: An Incident Management Team is interagency, nationally qualified, and meets the National Wildfire Coordinating Group (NWCG) standards. An Incident Management Group (IMG) is a local group that is managing the incident under ICS principles but may not be fully qualified in all positions under NWCG standards.

The upper Roaring Fork valley has perhaps the most experienced IMG personnel in this area, but Mesa County is catching up fast. The South Canyon Fire (1994) and Coal Seam Fire (2002) were two major fires that transitioned immediately to a Type 1 team from initial management under a local IMG. The Panorama (2002), Monument Gulch (2000), Dry Park (2003), and Snowmass Creek (2003) fires were all fires that were managed by local IMGs for the duration of the fire. Complexity varied from multiple homes being lost (Monument Gulch), and C-130 military aircraft being used for airtankers (Panorama) to a relatively small acreage being burned but high potential due to red flag conditions (Snowmass Creek and Dry Park). Some EFF was used on most of these, but costs were contained due to the efficient use of local IMGs. The full potential of the ICS system has been demonstrated for example: when Pitkin County used ICS for Presidential visits in Aspen, as has Mesa County for the Country Jam concerts for at least the past 5 years.

The Dierich Creek fire (2002) in Mesa County transitioned rapidly to an EFF fire with a Type 2 IMT. This was due to the size and complexity of the incident, the large percentage of federal ownership, plus the fact that a Type 2 IMT was pre-positioned in Mesa County and became involved in another fire (Long Canyon) almost simultaneously with the Dierich Crk. fire. Both fires were managed by this one team as a complex. This was a little unusual since a complex is most often multiple fires in the same general area.

Some differences between Mesa County and the Upper Roaring Fork (Garfield, Pitkin and Eagle Counties) non federal ICS practitioners are: in Mesa County it is the sheriff's office that uses ICS and has a significant wildfire suppression capability, where as in the Upper Roaring Fork valley, the fire departments fill ICS positions and the sheriffs do not have a suppression capability.

Mesa County has been unusual in the number and wide coverage of private land by Volunteer Fire Departments (VFDs) as compared to Fire Protection Districts (FPDs). FPDs are taxing districts with a steady revenue flow whereas VFDs are not and rely on fund-raisers and donations. This has recently changed with the successful transition by both Lands End and Gateway into FPDs. Glade Park and DeBeque remain VFDs though DeBeque has some steady income through the town of DeBeque.

There is significant acreage of private lands in Mesa County that has no VFD or FPD fire protection, and thus are reliant on the sheriff's department for wildland fire suppression. These areas do not have any coverage for structural fire suppression nor emergency medical service (EMS).

Areas without coverage in Mesa County that seem to have the most frequent problems regarding fires are: private land in the Housetop Mesa Estates area along C.R. 306 in Mesa County but at the Garfield County line, private land outside DeBeque VFD's loosely defined area of coverage, and areas north of Fruita FPD towards Baxter and Douglas Pass. The Housetop Mesa Estates area has had several solutions proposed for both fire and EMS coverage by the Grand Valley FPD who is working with Mesa County's emergency manager. DeBeque VFD will usually respond up Roan Creek the short distance before the Garfield County line, and Fruita FPD has frequently responded to wildfires way into Garfield County up to Douglas Pass.

Garfield County has a much more severe problem than Mesa County with private land without fire protection from either VFDs or FPDs. The entire west end of Garfield County From Parachute and its Grand Valley FPD's boundaries to the Utah state line contains thousands of acres of private and state land without fire protection. Unlike Mesa County, the Garfield County Sheriff has no fire fighting functional capability. The Mesa County Sheriff's office has 3 engines of its own and many officers with NWCG qualifications and several years experience as wildland fire fighters. Garfield County has a history of more severe wildland fires and more and larger EFF fires than Mesa County, but they have been fortunate with timely EFF declarations that have spared the county significant costs. They may not continue to be so fortunate. With no fire fighting capability at the sheriff's office, and no coverage by fire departments, the county commissioners may be facing larger bills for non-EFF qualifying or limited EFF funded fires.

Rio Blanco County is unique in that all of the private land in the county is within either Meeker's or Rangely's FPD. The Rio Blanco Sheriff has no functional fire fighting capability and doesn't really need one with that arrangement. Rio Blanco County has never had an EFF fire.

Delta County has been considered well covered with 5 FPDs that include most of the private and state land in the county. However, recent development pressures are bringing attention to private lands outside of fire protection districts that previously have not been a problem. Fortunately most of the private land outside of FPD boundaries is at high altitude and wildfire occurrence has been rare. Delta County has had one EFF fire (Wake in 1994).

Conclusions and Recommendations:

Mesa County is in good shape for dealing with wildland fire. The sheriff is aware of and comfortable with his role in wildland fire and for a number of years has designated an officer to be in charge of the sheriff's program. The sheriff upgrades the department's equipment regularly, applies for cost-sharing grants to do so, and makes sure the deputies involved in fire suppression get NWCG training. The current sheriff has had experience with EFF fires and is familiar with criteria and concerns that have to be addressed with such fires. Additionally the sheriff has allowed the CSFS the use of one of their storage facilities and facilitates the repair and maintenance of CSFS Federal Excess Property Program (FEPP) engines stationed in the county.

The fire departments in Mesa County have also taken advantage of recent cost-share funding opportunities to upgrade their wildland capability both in equipment and training. Many fire departments have "red carded" members, or at least they have the NWCG training but are lacking the physical fitness test. The initial attack capability for wildland fires in Mesa County is high, and relatively few fires escape the initial attack suppression effort.

Mesa County enjoys being the home of the largest concentration of federal wildland fire personnel and equipment on the western slope of Colorado. The retardant base and Interagency Dispatch Center and their personnel facilitate a close working relationship between all agencies that deal with wildland fire. The Interagency Fire Advisory Board (IFAB) meets regularly and is composed of all wildland fire partners.

The major wildland fire problem in Mesa County used to be that volunteer fire departments rather than fire protection districts served so much of the private land in the county. It was often uncomfortable to observe how the volunteer departments struggled with donations and fund-raisers to get funding just to operate. The Mesa County Sheriff, County Commissioners, and the Mesa Co. Road Dept. have for many years helped these VFDs with firehouse construction, insurance, fuel, vehicle repair and other areas. With the formation of fire districts by Lands End (Whitewater, Kannah Creek areas) and Gateway (Unawep Canyon), these departments have a stable funding source and the need for such assistance has lessened. This leaves the Glade Park and DeBeque departments as the only VFDs left, and there is little indication of efforts to form districts in either area of coverage. DeBeque is supported financially by the town of DeBeque.

Glade Park does not feel the community support or need to form a district. The Glade Park Fire Department is successful with their summer movie fundraisers and subscription donations. Membership on the department and dedication by their firefighters continues to be high, and it is a matter of community pride for them to continue as a volunteer department.

The Mesa County Planning Department has incorporated CSFS recommendations for wildfire fuels hazard reductions into their latest land use code, and does request H.B. 1041 wildfire hazard reviews from the CSFS in areas of wildfire concern.

There is always a concern by the CSFS when a new county sheriff is elected. Unless the new sheriff has been involved with wildfire in the current or another county, it is likely he/she will know little if anything about the sheriff's role in wildfire. It may take several years and some significant fires on private land for the sheriff to fully appreciate his roll. Fortunately, this hasn't been a problem in Mesa Co. with the transition through 3 sheriffs in recent years. The transition from an old sheriff's administration to a new one could be facilitated by the transmission of this document.

Burn Restrictions

Burn or fire restrictions are commonly known as “burn bans” even though they truly do restrict open burning to a few defined exceptions. For the purpose of this discussion “burn bans” and “fire or burning restrictions” will all be synonymous.

First of all, any burn restrictions are far more comprehensible and effective with the general public they are intended for if they are **coordinated between all agencies**. Private land in the county is the focus of this analysis, but the coordination must occur between the county commissioners, sheriff, and fire departments, the U.S. Forest Service (USFS), Bureau of Land Management (BLM), Colorado State Forest Service (CSFS), and the National Park Service (NPS). The goal is a unified message to the public that avoids specific area definitions and distinctions between jurisdictions.

Among the many of powers to regulate given to a board of county commissioners (BOCC) in **C.R.S. 30-15-402**, the **(n.5)** section of this statute is referenced here: “To **ban open fires** to a degree and in a manner that the board of county commissioners deems necessary to reduce the danger of wildfires within those portions of the unincorporated areas of the county where the danger of forest or grass fires is found to be high, based on competent evidence.” New state statutes passed in 2002 comprehensively altered previous state law regarding the imposition of burning bans as well as the sale and use of fireworks. Previously the county commissioners couldn’t restrict the *sale* of fireworks, only the *use* of them. But they can now. Please see the press releases from Colorado Attorney General Ken Salazar in the Appendix for the details.

The “competent evidence” is fortunately easy to establish. In the [Fire Restriction Evaluation Guidelines](#) list below, not all criteria need be met before implementing fire restrictions. These are just guidelines for consideration. **In 2004 the ERC as the primary criteria will be tested by all agencies in Mesa County.**

Fire Restriction Evaluation Guidelines (adapted from Wyoming model)

When weather factors or fire suppression impacts become a concern, the following criteria can be used to determine if a Fire Restriction should be considered by area. Use weather data from weather stations in each Fire Restriction Area to make determination.

1. 1,000 hour fuel moisture content is: <9% below 8,000 ft. <12 % above 8,000 ft.
2. 3 day mean energy release component (ERC) is at 90% or above, in the unit's representative fuel model.
3. Live Fuel Moisture content is: <90% is sagebrush <100% in conifers (P-J type)
4. Palmer Drought Index indicates severe drought conditions.
5. Fire starts are impacting available suppression resources.
6. Area is receiving a high occurrence of human-caused fires.
7. Adverse weather is predicted to continue.

Items 5 and 6 are subjective judgments that can be evaluated by talking to local fire chiefs, local federal agency fire management officers (FMOs).

For items 1-4 and 7 the internet has current information on the following websites:

For national information:

<http://www.nifc.gov/information.html> & <http://www.fs.fed.us/land/wfas/welcome.htm>

For local information:

<http://www.fs.fed.us/r2/rmac.html> & <http://www.blm.gov/colorado/rmafwx/index.html>

The local BLM office (244-3000) for the Interagency USFS – BLM Fire Management Officer, and Interagency Dispatch Center (257-4800) are also good sources for information in Mesa County.

Typically, the chain of events leading to a burn ban are: The sheriff (as fire warden for the county) informally polls the fire chiefs to determine their level of concern with items #5 and 6 above. The BLM, USFS, CSFS, and NPS are contacted and items #1,2,3,4 and 7 are determined if possible. If this research indicates a burn ban is warranted, a recommendation is made to the commissioners. In some counties it is the Emergency Manager that does the research for the sheriff, but Mesa Co. has a designated fire warden that makes the analysis for the sheriff.

Even with the new laws, state statutes may be seen to limit of the power of county commissioners to ban fires only within the *unincorporated* areas of the county. This means that within incorporated areas of the county it is up to each jurisdiction to restrict fires. This is a significant restriction and several counties have “worked around” it.

It *may* be possible for the county commissioner to extend their burn ban authority county-wide by the utilization of **C.R.S. 24-32-2109 (1)** which provides the principal executive officer of the county may declare a local disaster, as defined in **C.R.S. 24-32-2103** to mean “the occurrence or imminent threat of widespread or severe damage, injury, loss of life or property resulting from any natural cause or cause of human origin, including but not limited to fire....” Other counties (e.g. Garfield & Mesa) have adopted a specific county ordinance that enables the sheriff to ban burning countywide (see Appendix). The more restrictive county ordinance takes precedent over state statute.

Mesa County has an ordinance (#7) adopted October 30, 2000 allowing the sheriff to ban open burning (including agricultural burning w/o a sheriff issued permit) within the unincorporated areas of the county. The intent is to provide timely implementation of such a burn ban without having to wait for a regularly scheduled BOCC meeting.

The governor can, and has several times in the past, declared a statewide ban on open burning; an example is in the appendix. Prescribed burning and agricultural burning is almost always excluded from burning restrictions. However, again in 2002, significant new provisions for penalties for allowing a fire to escape one’s own property are contained in **C.R.S. 18-13-109**.

Relevant documents referred to in the above text follow.

Cooperative Resource Rate Forms (CRRF)

The CRRF is a necessity for fire department and county manpower and equipment when they go on a fire that extends beyond the mutual aid period. This document establishes the “cooperator” rather than “contractor” relationship and is necessary if payment from the fire is expected.

A cooperator uses the CRRF to document the cost of their manpower and equipment on a per hour basis. The cooperator (unlike the contractor) is only attempting to recover actual costs, where a contractor also has to build in profit to their rates. Cooperators have the advantage of lost or damaged equipment being replaced by the fire, where contractors must bear such costs as a “cost of doing business.”

The following information contains guidelines for the completion of a CRRF for equipment and typical costs that are used. Not all equipment is listed, but the procedures to set a rate for unlisted equipment are contained here. Likewise if the suggested rate for your equipment does not reflect the true cost to operate that equipment there is a procedure to follow for documenting your actual costs.

The CRRF should be completed prior to fire season for any equipment that might go on a fire. In the past some have “signed up” only their wildfire equipment. Then a large fire such as Coal Seam, Hayman, etc. comes along and they are calling for everything they can get. Without a CRRF - payment is less, slower in coming and there will be delays on getting an assignment at the fire.

The following forms and information is updated periodically and this is current for 2004. All this information and updates can be sent digitally at your request to the Colorado State Forest Service.

Wildfire Hazard Mitigation:

Wildfire hazard mitigation is focused on modifying the *fuels* leg of the fire behavior triangle. The other two legs: *topography* and *weather* generally cannot be modified. We seek to break up the continuity of fuels, both horizontally (across the ground) and vertically (from the ground up into tree crowns). It is continuous fuels, particularly on slopes, that are the greatest hazard. Slopes are a greater hazard because fires on slopes will pre-heat the fuels ahead of the fire, greatly increasing the spread rate.

To mitigate fuel hazards we thin the fuels to break up their continuity. Residual trees will have separation between them dependent on their size and the slope. Pruning the lower limbs of residual trees will break up vertical continuity and reduce the likelihood of a surface fire moving from the ground into the tree crowns.

The following materials detail the standards of fuels mitigation. The 6.302 publication ([Creating Wildfire-Defensible Zones](#)) is the statewide standard. If these standards are followed does not guarantee a home will not burn during a wildfire, anymore than FEMA hurricane constructions standards guarantee a home will withstand every hurricane.

In the past several years National Fire Plan funding has made cost-share funding available to homeowners to mitigate their wildfire fuel hazards. This 50% funding has to be applied for prior to beginning the work, and the work has to be done *to the required standard* to receive the cost-share reimbursement. Contact the Colorado State Forest Service (CSFS) office in Grand Junction for an application.

The current Mesa County wildfire mitigations standards are also included in the following materials.

Fuels mitigation is not the whole story in making a home safe from wildfire. The type of home construction, design, and materials used also play a large role. Peter Slack's [Firewise Construction, Design and Materials](#) is the best work on this subject and is included in this plan. Additional copies of this booklet are available for \$2.00 from the CSFS. Fuels mitigation and firewise home construction can achieve what we call *stand-alone capability*. A home that has "stand-alone capability" means that if a wildfire occurs in the area of such a home, it has a good likelihood of surviving without any further action from firefighters. Not every home will have this capability, but it is the ultimate standard for homes in the urban interface.

Cost-share assistance for private landowners mitigating wildfire hazard fuels:

Since 2001 the Colorado Landowner Assistance Program has provided 50% cost-sharing (up to certain maximums) for landowners to reduce the hazards of wildfire fuels if they do the treatment to a certain standard (the "6.302 standard). Over the years the maximum cost-share and the number of approved practices has been increased. The current practices and rates are:

The following is a list of practices eligible for cost-share reimbursement, and the maximum reimbursable amount for that practice. **Refer to Colorado State Forest Service publication No. 6.302, Creating Wildfire Defensible Zones, for standards and guidelines.** An approved project plan and application are necessary for participation. Cost-share approved is based on available funding. **Tools and Equipment purchased are not reimbursable.**

<u>Practice</u>	<u>Maximum Cost-Share</u>
Defensible space (D-space) <i>Removal of both horizontal and vertical fuel hazard around a home.</i>	\$1,200 per homesite. This includes tree cutting, pruning and slash disposal
Forest Thinning <i>Treatment made to reduce forest density, decreasing heavier fuels, enhancing growth and improving forest health..</i>	\$500/acre
Tree Pruning <i>Removal of branches from a standing tree To remove vertical fuel continuity.</i>	\$75/acre
Interface Broadcast Burn <i>A planned fire within well-defined boundaries to reduce hazardous fuel loading.</i>	\$200/acre
Slash Disposal <i>The removal/treatment of treetops and branches after forest management activities. Include just one method.</i>	
Burning (includes piling)	\$100/acre
Chipping	\$300/acre
Hauling	\$300/acre

Fuel breaks

A wide strip of land, usually 132'-198'wide,

\$1,200/acre This includes tree cutting, pruning and slash disposal

on which vegetation has been removed or reduced.

- These are not-to-exceed amounts and represent 50% of actual cost. The value of wood products generated from these activities must be deducted from total project cost to determine actual cost.
- Use \$_____/hr labor rate if landowner is doing the work.
- Expenses incurred prior to approval of application will not be reimbursed
- For more information contact your local CSFS district office.
- When contractor estimates are over maximum amounts it is encouraged to obtain bids.

Contact the Grand Junction District of the Colorado State Forest Service at 248-7325. In most cases a pre-inspection is necessary to determine the practice is needed, and when you are done a post-inspection will verify the practice was done to standard.

FireWise Program:

The FireWise Program is a national educational program to teach people how to become aware of wildfire and its behavior around the urban interface. There is a national community recognition program that recognizes communities that promote and practice FireWise concepts and principles.

The attached pages are from the FireWise homepage at:

<http://www.firewise.org/co>

This site has many links to information and publications. Many of the publications this website links to as PDF documents are in the Appendix to this plan.

FireWise Communities:

The FireWise Communities Program requirements are the first link on the above general site, also reached directly by going to:

<http://www.firewise.org/co/firewiserequirements.pdf>

They are attached here because this is an important national recognition program that may be linked to future fuels mitigation incentive funding. If a community has nationally recognized FireWise Community recognition they would receive priority for funding.

Firewise Construction Design and Materials by Peter Slack is another publication available on the general Colorado FireWise website. It is an excellent source of building techniques, design and materials for those planning to build or live in the wildland urban interface.

It is recommended that everyone involved in wildfires in the urban interface bookmark the Colorado FireWise website and refer to it often.

September 5, 2003

The Mesa County Fire Plan

The Colorado State Forest Service has contracted with Mesa County to do a Fire Plan for the county. One of the purposes of this fire plan is to define appropriate suppression response for private and state lands in the county, **and we would like your input**. House Bill 1283 (passed in 2000) allows some latitude in suppression of wildfires if a county chooses to “manage” fires for resource benefits rather than fully suppress them. There are several liability concerns with allowing a fire to burn under a managed scenario. Mesa County does not have the manpower, funding, training or equipment to “invest” in managing fires (vs. full suppression) within its responsibility.

We all know that wildfires often burn across private and federal lands. Federal land management partners have fire management resources not duplicated at the state and county level. Fires on federal lands that endanger private interface areas are often more expensive to suppress because direct suppression tactics have to be used. Direct suppression involves a priority of limiting the fire's spread by building line, applying aerial retardant, etc. directly along the burning perimeter of the fire. Another alternative is known as indirect attack, where natural or manmade fuelbreaks are utilized as part of the suppression strategy. In indirect suppression you would reinforce a road, rocky area, etc. with retardant, dozer line or similar techniques, and allow the fire to burn to that fuelbreak. Most often fuels are burned out between the fuelbreak and the main fire as a technique to further widen the fuelbreak and enhance its effectiveness. Indirect suppression tactics are usually significantly less expensive than direct suppression, but they do sacrifice more acres burned.

The enclosed map shows some areas of private land in the Gateway and Pinon Mesa areas that do not have urban interface concerns and are being considered for the possibility of indirect suppression tactics in the event of wildfire in these areas. The way this would work is: in the event of a wildfire in these areas either on private or federal lands, or both: “opportunities for indirect suppression will be *considered* with the intent of sacrificing acres to conserve suppression costs.” If there are no fuelbreaks that can be utilized within a reasonable distance, considering current burning conditions, direct suppression will be the tactic. Perhaps you have other areas for consideration?

The consideration of an indirect attack tactic does not change the full suppression policy of all wildfires in Mesa County.

We value your input on this plan, and we would appreciate hearing from you prior to October 15, 2003.

If you have any questions please contact either John Denison or Kelly Rogers at: 970-248-7325.

Thank you.

John Denison
District Forester

Mesa County Indirect Attack Areas:

The maps that accompany this plan depict BLM/USFS areas (polygons) where different levels of fire suppression will be used in the future. The goal by the federal agencies is to allow wildfire to resume its natural role as a landscape modifying force when possible. When private lands are adjacent to federal lands involved in fire, total suppression will continue unless there are other provisions. Total suppression of all wildfires on all lands has had some unintended consequences ranging from insect epidemics to larger and more difficult to suppress wildfires. It is the dense and continuous nature of trees and brush that results from long-term total fire suppression that causes the above “unintended consequences.”

Federal agencies have a long history of effective fire suppression and more recently the management of fire for resource benefits. Along with this experience is also a secure source of funding for their suppression and management responsibilities. Of course with the management of so powerful a force as fire, mistakes have occurred, and the federal land management agencies have had the backing of the federal government to cover the liabilities of the inevitable mistakes. Counties do not have this same funding.

States and counties do not have the “deep pockets” of the Federal Fire Fund, and states are not allowed to deficit spend by law. Typically counties only minimally budget (if at all) for the fire suppression responsibilities of the sheriff. The county sheriff is charged with the suppression of wildland fires, and recently via H.B. 1283, the language was changed from one of controlling *and* extinguishing to one of controlling *or* extinguishing such fires. C.R.S. 30-11-124 was changed by H.B. 1283 to allow counties with a fire management plan to manage (rather than suppress) fires on lands owned by the state or county. The management of fires on private lands can be considered only if the landowner enters into a memorandum of understanding with the county. This all assumes the county is willing to budget for the training and equipment needed as well as hire experienced people to run a “managed” fire program. A few do this (e.g. Moffat County), but most do not. Mesa County does not have the personnel, training, equipment, liability insurance, or desire to run a managed fire program.

Wildland fires within the jurisdiction of the Mesa County Sheriff will be handled with a full suppression policy.

All suppression tactics will be considered for all wildfires under the jurisdiction of the Mesa Co. Sheriff. Safety is the number one concern, closely followed by cost conservancy. This plan designates certain areas of Mesa County where the private land does not have large concentrations of improvements. In these mapped areas around Pinyon Mesa and southwest of Gateway, indirect suppression may receive emphasized consideration. Such a consideration for indirect suppression would be examined from a safety and cost-saving rather than a resource benefit perspective by the Mesa County Sheriff. The final tactical decision will be based on many factors including but not limited to: safety, fire weather, manpower and equipment availability, other fire activity, landowner concerns, liability issues, etc.

Indirect suppression is understood by Mesa County to mean: Natural or manmade fuel breaks will be used as part of the suppression tactic for the purpose of reducing the cost of suppression and enhancing safety. Rather than directly attacking the fire's perimeter, retardant, dozer line, burning out, etc. may reinforce natural or manmade fuel breaks, and the fire allowed to burn to that fuelbreak. If direct suppression tactics are determined to be more expensive than indirect tactics, then a determination will be made if indirect tactics are appropriate. The criteria for Mesa County is safety and cost-saving rather than resource benefit.

Scenarios:

1. If a natural start (i.e. lightning) fire is burning on private lands, in an area designated for indirect attack consideration, and it is burning towards a BLM/USFS designated C or D Polygon, it may be allowed to burn onto BLM/USFS land if:

- Both the landowner and BLM/USFS want to allow the fire to continue to burn.
- The county and landowner receive BLM/USFS assurance that if the fire is later determined to be other than a "natural" ignition, neither county nor landowner will be liable for any costs of suppression or other damages.
- The BLM will assume all costs of managing and/or suppressing the fire once it has crossed onto their lands.

2. If a natural start fire is burning on C or D polygon BLM/USFS lands towards an indirect attack consideration area of private land, every effort will be made by the BLM to prevent it from getting onto private lands.

The above scenarios may seem inequitable and contrary to federal land management goals, but until such time as Mesa County receives similar funding to run a managed fire program to that of the federal land management agencies, they will not be able to join in fire management for resource benefits.

Mesa County Fire Plan: GIS Map Section

This section of the Mesa County Fire Plan consists of geographic information system (GIS) maps showing the following:

1. A **“Wildland-Urban Interface Hazard Assessment”** for Mesa County. This assessment uses a variety of geographic data sources to produce a Hazard Assessment Map for the entire county, showing areas at highest risk from wildland fire.
2. A **“Communities At Risk”** map, based on the above assessment, identifying communities on private land in Mesa County that are at highest risk of losses due to wildland fire.
3. Maps showing proposed **“Fire Management Zones”** for all lands in Mesa County, for either federal jurisdictions or the Mesa County Sheriff. The fire management zones show the proposed management of fires within pre-identified areas, ranging from full suppression of all fires to potential “fire use” areas on certain federal lands within the county.
4. Areas identified as high priority for **“Potential Fuel Reduction Projects”** within Mesa County.

Mesa County Fire Plan

Wildland-Urban Interface Hazard Assessment

Background

Geographic Information System (GIS) technology is ideally suited to an analysis of wildfire hazard. One of the fundamental concepts taught in all wildland firefighter training is that fire behavior is a function of three factors: fuels, weather, and topography. Using GIS, these three basic factors can be effectively modeled and then “overlaid” with locations of houses or other values at risk, to produce a hazard analysis that is both graphic and informative.

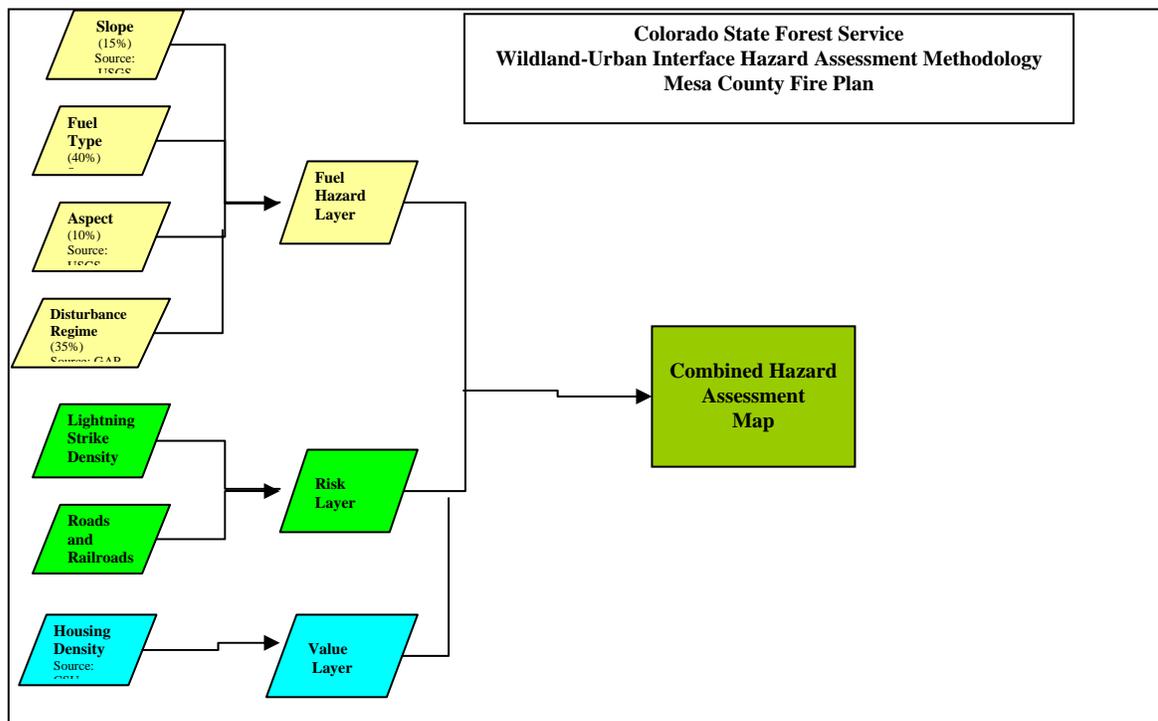
GIS analysis of wildland fire hazard in Colorado began with the “Redzone” project along the Front Range in 1995. This early analysis incorporated slope, aspect, and fuels to produce a simple map showing Colorado’s “Redzone”, or area at highest risk of wildfire. Although this early attempt at mapping provided a good educational tool and a starting point for discussion, the map data used for the Redzone analysis lacked the scale and resolution (or detail) to make it very effective. This was especially true for the western slope of Colorado, where the vegetation, weather, and development patterns can be somewhat different from the Front Range.

In 2002, the Colorado State Forest Service attempted to improve on the Redzone map on a statewide basis. The Colorado Wildland Urban Interface Hazard Assessment builds on the work of earlier hazard methodologies and provides new and updated data to further enhance accuracy and scale. In addition, a better, more accurate housing density layer was created to assist in ranking the wildland urban interface hazard. This latest version of wildfire hazard assessment shows a relative ranking of all areas in the state, regardless of jurisdiction.

Frequently, maps produced from a GIS analysis of this type will basically tell us what we already know. Ask a local fire department chief where the most hazardous areas are in his/her district, and they will likely point to the same areas on the maps that were identified through this analysis. The basic conclusion is that high hazard fuels combined with lots of homes creates areas at risk. The maps, however, are an interesting way of quantifying this conclusion and verifying what we may already know intuitively.

Approach

The Colorado Wildland Urban Interface Hazard Assessment ¹ uses three main layers to determine fire danger: a **Fuel Hazard** Layer, a **Risk** Layer, and a **Values** Layer. The following figure shows the factors that make up each layer, the relative weighting of each factor, and how each layer was combined to form the final hazard assessment map.



1. Fuel Hazard Map Layer

This layer forms the basis of the assessment. It is based on fuel type, slope, aspect, and disturbance regimes of the vegetation. Slope, weighted at 15% of this layer, was determined from USGS digital elevation models (DEM's). Slopes were divided into 4 classes: 0-15% (mild), 6-20% (moderate), 21-40% (steep), and over 41% (extreme). Fuel Type, weighted at 40% of this layer, was interpreted from the Colorado Division of Wildlife GAP vegetation data. Vegetation types were classified as either low, moderate, high, or very high hazard. Aspect, weighted at 10%, was also determined from USGS DEM's and classified as higher hazard on south to southwest-facing slopes. Disturbance Regime, or the average interval between natural burns within each vegetation type, was

¹ Colorado Wildland Urban Interface Hazard Assessment, Skip Edel, CSFS 2002

weighted at 35% of this layer. Disturbance regimes were also interpreted from the GAP data, and were classified as being from short to very long.

The Fuel Hazard Layer Map for Mesa County is shown at the end of this section. It is evident from this layer that Mesa County is composed to a large extent of high hazard fuels and steep slopes (the darker shades on the map). This will come as no surprise to anyone familiar with the vegetation and terrain of the county. Of particular note are the areas around Unaweep Canyon and parts of Plateau Valley, where steep slopes and fuel types such as oakbrush and pinyon-juniper woodlands combine to create high hazard.

2. Risk Map Layer

The Risk Map Layer is designed to show the overall risk of wildland fire ignitions in the county, and was created from a combination of lightning strike density and proximity to roads/railroads. Lightning strike density was compiled from BLM source data, using only positive polarity strikes. Areas were divided into either very low, low, medium, or high lightning frequency. Human activity along roadways and railroads is seen as a significant source of fire ignitions. It was assumed in this analysis that any location within 100 meters of a main road or railroad posed a greater risk of human-caused fires.

The Risk Layer Map (seen at the end of this section) shows low to moderate risk of fire ignition throughout the county. Most of the risk is from lightning strikes, which appear to be closely related to elevation. It is important to note that other significant human-caused ignition sources have not been included in this analysis, such as powerlines, campfires, ditch-burning, etc. These other ignition sources, though significant, are more difficult to assign definite geographic locations and risk to.

3. Values at Risk Map Layer

The Values at Risk Map Layer (at the end of this section) shows roughly where houses are located. There are obviously other values that could have been considered in this analysis such as municipal watersheds, powerlines, fencelines, gas well facilities, critical wildlife habitat, and a host of other things. In the event of a wildfire, protection of houses is of primary importance, and for simplicity, only housing density was considered in this analysis. This map was created by combining parcel data (acquired from county tax assessors), well head location data (acquired from the State Division of Water Resources), and census block data (from the 2000 U.S. Census). Projections were also made for housing densities in 2010 and 2020, to allow for future risk projections. Housing density was classified into 5 categories, ranging from 0-0.004 houses per acre (public or vacant land) to 1 house per acre (high density). Areas over 1 house per acre were classified as urban, and removed (or masked) from this analysis.

As one would expect, housing density in Mesa County is highest near the major population centers. Areas such as the Redlands, Fruita/Loma, and Orchard Mesa are

shown as very dense housing. Of particular note, however, are the relatively high densities of homes in the more rural areas around Glade Park, Unaweep Canyon, Plateau Valley/Mesa/Powderhorn, and Kannah Creek.

4. Combined Hazard Assessment Map

The Combined Hazard Assessment Map (shown at the end of this section) shows the previous 3 layers, with each layer equally weighted and combined graphically to depict the overall hazard, county-wide, on all lands. This combination of fuels, slopes, aspect, disturbance regimes, lightning strike density, proximity to roads and railroads, and housing density shows the areas that are at highest risk of losses of homes due to a wildfire event.

Overall hazard is seen as moderate to high. As expected, the dark red areas of this map represent the most homes, heavier fuels, and steeper ground. Incorporated areas and non-flammable areas were masked in this analysis, and show as white. Note that much of the area in and around Clifton, Central/East Orchard Mesa, Palisade, Fruita, Loma, and Mack is delineated as moderate to high fire hazard. In reality, these are semi-rural residential areas, suburbs or farm properties. Although some wildfire hazard may exist in these areas (particularly during spring ditch-burning season), the risk is moderated substantially by irrigation and/or generally light fuels. Since these areas are outside of city limits, they are ranked high in this analysis based primarily on the housing density.

Mesa County Fire Plan

Communities at Risk Map

The Communities at Risk Map (shown at the end of this section) shows private land in Mesa County that is at highest risk of loss of homes or other values during a wildfire, with each area assigned a community name. This is, in effect, Mesa County's "Redzone" map. There are approximately 330,000 acres within this area, with a population of 14,815 people. Lower elevation desert, irrigated farmland, and urbanized areas were deleted from this map, since the wildfire hazard within these areas is not as significant. Other areas were added to the map, such as the watersheds owned by the City of Grand Junction and the Town of Palisade. Even though the housing density is low on these municipal watersheds, the areas are still at high risk of wildfire because of the detrimental effects that a large fire would have.

Following is a list of the Communities at Risk in Mesa County and a brief description of each area:

- **Glade Park**: includes the area in/around the Glade Park store, the DS Road and BS Road corridors to the Utah line, 16.5 Road, 9.8 Road, 7.4 Road, 6.5 Road, and 5.7 Road. Also includes the subdivisions of Ladder Canyon Ranch, Ladder Creek Ranch, Miller Canyon, Little Park Ranch, and Trail Canyon.
- **Redlands**: Includes a small area of the Redlands bordering the Colorado National Monument.
- **Jacob's Ladder**: Southeast of the Redlands, along the Little Park Road corridor, bordering Colorado National Monument.
- **Unaweeep Canyon/Gateway**: Includes the Highway 141 corridor and the area immediately surrounding the Town of Gateway.
- **Kannah Creek**: Includes the lower section of Land's End Road, Reeder Mesa, and Purdy Mesa.
- **City Watersheds**: Includes property owned by the City of Grand Junction and Town of Palisade as municipal watersheds, on the side of Grand Mesa.
- **Mesa Lakes**: Includes the Sunset Lake Summer Home Group (private homes on USFS land under special permit).

- Mesa/Powderhorn: Includes the Highway 65 corridor from the town of Mesa to Powderhorn Ski Area.
- Molina: Includes the area immediately surrounding the Town of Molina, Georgia Mesa, and Mormon Mesa.
- Collbran: Includes the area around Collbran, the Peninsula Road to Vega Reservoir, 59.5 Road to the USFS boundary, and My Way Ranch subdivision.
- Vega Reservoir: Includes private lands bordering Vega State Park.
- DeBeque: Includes the area south of the Colorado River along the DeBeque cutoff road (45.5 Road) between I-70 and Highway 65.

Mesa County Fire Plan Fire Management Zone Maps

The map at the end of this section shows fire management zones for federal-jurisdiction agencies within Mesa County. These zones are intended to show the “management direction” or anticipated response to fires within the areas identified, as described by the jurisdictional agency. The following agencies within Mesa County furnished data for the creation of this map:

USDA Forest Service, Grand Mesa, Uncompahgre, and Gunnison National Forest
USDA Forest Service, White River National Forest
USDI Bureau of Land Management, Grand Junction Field Office
USDI Bureau of Land Management, Uncompahgre Field Office
USDI National Park Service, Colorado National Monument

Within the zones identified on the map, the following definitions apply on **federal land**²:

“A” Fire Management Zones: Areas where fire is not desired at all. This category includes areas where mitigation and suppression is required to prevent direct threats to life and property. It includes areas where fire never played a large role historically in the development and maintenance of the ecosystem, or because of human development fire can no longer be tolerated without significant loss, or where fire return intervals are very long. Within these zones, all fires will be actively suppressed and no fire is prescribed.

“B” Fire Management Zones: Areas where unplanned wildland fire is not desired because of current conditions. In these areas, fire plays a natural role in the function of the ecosystem, however these are areas where an unplanned ignition could have negative effects unless/until some form of mitigation takes place. Fire suppression within these zones is usually aggressive.

“C” Fire Management Zones: Areas where wildland fire is desired, but there are significant constraints that must be considered for its use. These are areas where fire is a desirable component of the ecosystem, however, ecological, social, or political constraints must be considered. These constraints could include air quality, threatened and endangered species considerations, or wildlife habitat considerations. Ecological and resource constraints along with human health and safety, etc. are utilized in determining the appropriate suppression response on a case by case basis by the incident commander and sub-unit line officer. Areas in this category would generally receive a lower suppression priority in multiple wildfire situations than would “A” or” B” zones.

“D” Fire Management Zones: Areas where wildland fire is desired, and there are few or no constraints for its use. These are areas where unplanned and planned wildland fire may be used to achieve desired objectives such as to improve vegetation, wildlife habitat or watershed conditions. Areas in this category would be the lowest suppression priority in a multiple fire situation.

² *Fire Management Plan, Glenwood Springs Field Office, BLM, 2002*

Several untested liabilities for the county and private landowners exist for a “managed fire” scenario to be implemented in a cooperative fashion between federal, private and state lands. These include: fires moving through one property onto other private ownership; fire starts that are originally determined to be natural but are later found to be human-caused; changes in private or federal land ownership and resultant changes in management objectives; and other complexities. For these reasons, *full suppression is Mesa County’s stated policy for wildfires on private and state lands*. It is possible to modify this policy somewhat in the *tactic* used for suppressing a fire, by choosing either a direct or indirect method of attack, as described in the following section.

The map at the end of this section shows fire management zones for both federal jurisdictions and state/private lands in Mesa County. State/private land fire suppression, which is under the jurisdiction of the Mesa County Sheriff, will fall into one of two categories, both of which assume full suppression of all wildland fire:

“B” Fire Management Zones: Areas in this zone will require aggressive fire suppression on all fires because of proximity to homes or other values at risk. These are areas of private/state land where fires will be actively suppressed using direct control tactics. Direct control involves tactics that suppress the fire along its flaming front. Typically, less acres are burned, but suppression costs are higher with direct suppression tactics.

“C” Fire Management Zones: Within these areas, fires may be suppressed using indirect methods. In the event of a wildfire, natural and manmade fuelbreaks and topographic features that may slow the fire down may be used as part of the suppression strategy, rather than going with full-scale direct control tactics. Indirect suppression tactics may involve mechanical reinforcement of such fuelbreaks and features, and/or the use of aerially applied retardants. Within these indirect suppression areas, more acres may be burned where there are few homes or other values at risk, in order to provide some cost savings in suppression.

Comments were solicited from affected landowners and other interested parties, prior to the final selection of these “indirect fire suppression” areas (see attached letter dated September 5, 2003). No objections were raised from affected landowners. However, both of these management strategies will be assessed at the time of an actual incident and may change according to weather, fuels, topography, smoke management concerns, or a variety of others factors. Specific suppression strategies, as always, will be determined at the time of an incident.

Mesa County Fire Plan Potential Fuel Reduction Project Areas

The map at the end of this section shows areas within Mesa County that have the most potential to achieve cross-boundary fuel reduction objectives. These areas have been chosen in consultation with fire department personnel, the Mesa County Sheriff's office, and local USFS or BLM offices. These areas represent the highest risk of damage to homes (from the Combined Hazard Assessment Map in Appendix D), in combination with areas already planned for fuel reduction projects by the federal agencies within the next 2-3 years. Proposed fuel reduction projects on federal lands are shown in yellow on the map.

These areas should receive highest priority for funding and implementation of fuel reduction projects. Fuel reduction projects should include creation of defensible space zones around structures, thinning to reduce canopy closure in pinyon-juniper and oakbrush, and creation of fuelbreaks through mechanized thinning, rollerchopping, or chipping/mulching. Cross-boundary projects involving private land and USFS, BLM, or state lands should be pursued wherever possible. It is highly unlikely that prescribed burning can be accomplished within these areas due to the close proximity to homes, although some pile burning may be appropriate during safe times of the year.

The areas are summarized as follows:

(1) Glade Park Store: This is the area within a five mile radius of the intersection of DS Road and County Road 16.5 (the Glade Park Store). Primary fuel types are sagebrush and pinyon-juniper woodlands. The area has moderate housing density and is served by an all-volunteer fire department. Opportunities exist for cooperative projects with the BLM and Colorado National Monument (NPS).

(2) Little Park Road: This is the area bordering Little Park road directly south of the Colorado National Monument. Fuels are pinyon-juniper woodlands and sagebrush. This area has moderate housing density, but is slated for heavy future development. Opportunities exist for cooperative projects with the BLM and Colorado National Monument (NPS).



Homes along Little Park Road

(3) Mud Springs: This is an area south of the Glade Park Store, bordering 16.5 road on both sides for about 3-4 miles. This area takes in the "Ponderosa Glade" group of summer homes, as well as some other cabins. Primary fuels are oakbrush and pinyon-juniper. Cooperative projects would be with the BLM.

(4) 9.8 Road: This is the area south of D-S Road along County Road 9.8, near the Miracle Rock Picnic Site (BLM) and south. Primary fuels are pinyon-juniper and sagebrush. This area is surrounded by BLM land, and has a scattering of year-round homes.

(5) 7.4 Road: This area extends along both sides of County Road 7.4, bordering the Little Dolores River. There are many dispersed year-round homes in the area. Fuels are pinyon-juniper and sagebrush. The area is surrounded by BLM lands.

(6) D-S Road: This area borders D-S Road on both sides about 7 miles west of the Glade Park Store. Structures are mostly clumped along D-S Road. Fuels are again primarily pinyon-juniper and sagebrush. To the west and south of this area is BLM land.

(7) D-S Road west: This area includes the D-S Road corridor to the Utah state line, and south along County Road 5.4. There are dispersed year round ranch buildings and homes. Pinyon-juniper and sagebrush predominate. This area is surrounded by BLM lands.

(8) Lower Little Park: This is an area along the Gunnison River southeast of Colorado National Monument. Also known as the Jacob's Ladder area, there are many homes situated on steep terrain. Fuels are relatively light, as this is lower elevation greasewood/saltbush and cheatgrass, with juniper trees interspersed. BLM lands border this area to the west.

(9) Redlands: This area forms the east border of the Colorado National Monument. There are a large number of high-value homes. Fuels tend to be grass/saltbush desert, although there are also pockets of juniper in draws.

(10) Unaweep/Gateway: This is the narrow corridor along State highway 141 through Unaweep Canyon. Housing density is moderate, but there are serious concerns about wildfire in this area due to terrain, fuels, wind patterns, and recent insect and disease activity. Vegetation is pinyon-juniper or oakbrush. USFS and BLM lands border private lands within a mile or so of the bottom of Unaweep Canyon.



Homes along Hwy. 141 in Unaweep Canyon

(11) Vega Reservoir: The area immediately surrounding Vega Reservoir and Vega State Park, this area has several dense summer home developments and some year-round dwellings. Fuels are mostly oakbrush. Surrounding lands are owned by Colorado State Parks, and the BLM.

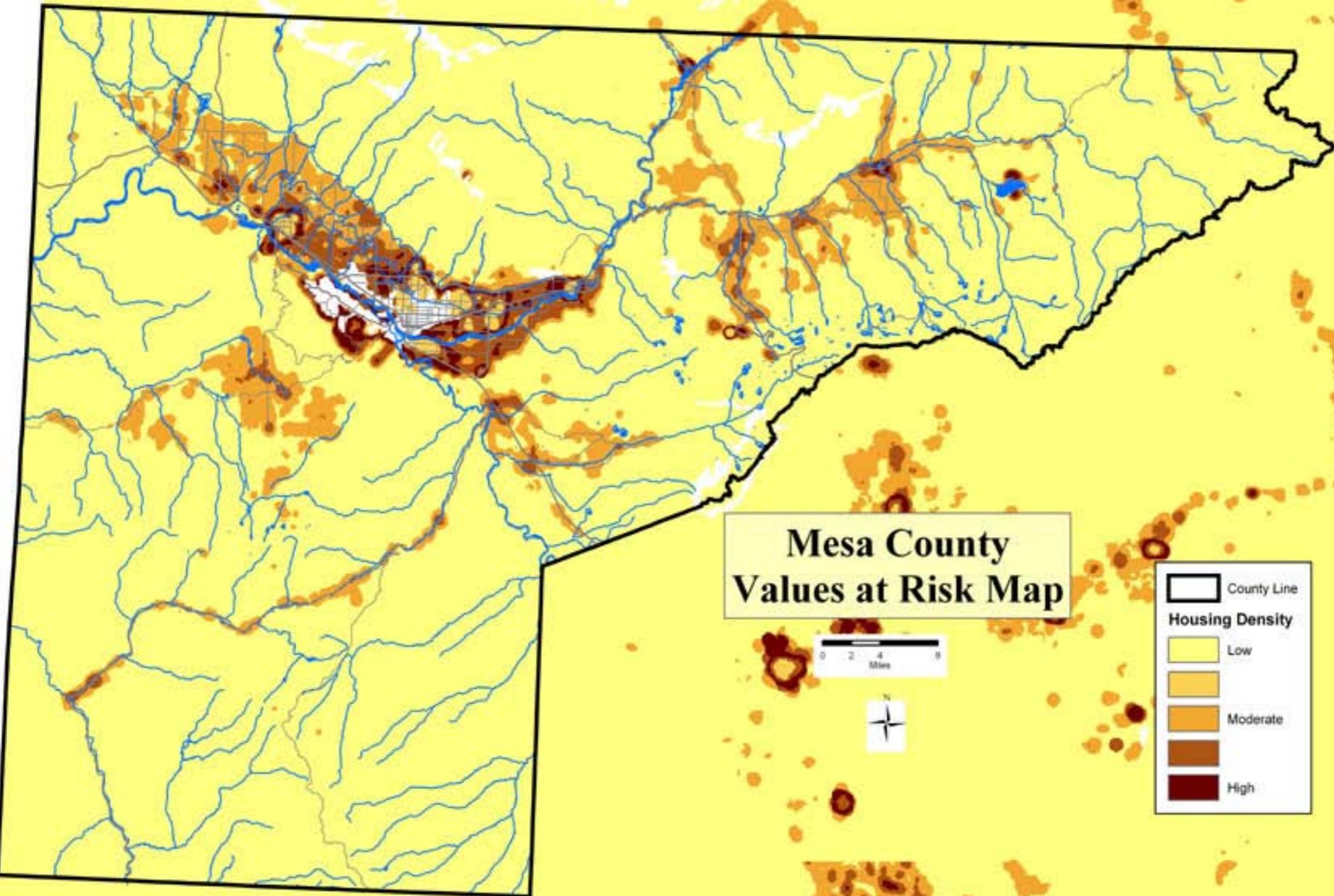
(12) Collbran: The corridor along the Peninsula Road above Collbran, as well as the areas surrounding County Road 58.5, 58.6, and 59. This is primarily an area of ranches and irrigated meadows, but significant risk occurs in pockets of pinyon-juniper and oakbrush. BLM lands are interspersed, with USFS land at the upper elevations.

(13) Molina: This area stretches south from Plateau Creek and State Highway 330 to the USFS boundary. It includes many homes and ranches at moderate density. Fuels are dense pinyon-juniper woodlands and oakbrush. Small tracts of BLM land are interspersed, with USFS land on the south side.

(14) Mesa/Powderhorn: This area borders State Highway 65 from the town of Mesa south to the USFS boundary, including KE 00 road and the town of Molina. There are many dispersed homes and ranches in this area, some surrounded by irrigated meadows but many tucked into the pinyon-juniper or oakbrush hillsides. BLM lands are interspersed, with USFS lands bordering the south side.

(15) DeBeque Cutoff: This area surrounds County Road 45.5 (DeBeque Cutoff Road) between State Highway 65 and the town of DeBeque to the north. There are scattered homes and ranche buildings, with mostly pinyon-juniper fuels. BLM lands are interspersed.

(16) Kannah Creek: This area surrounds the Lands End Road and includes the Reeder Mesa and Purdy Mesa areas. Fuels are mostly lighter grass, sagebrush, and greasewood/saltbush, but there are dense concentrations of homes and ranches. Surrounding lands are BLM, with some USFS land to the east.



Mesa County Values at Risk Map

County Line

Housing Density

- Low
- Moderate
- High



Mesa County Wildfire Risk Map

 County Line

Lightning/Roads/Railroads

 Low

 Moderate

 High

 High



Threatened Area
Not For Public Distribution
Drawn by: S. Rogers 10/04

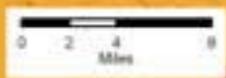


Mesa County Fuel Hazard Map

County Line

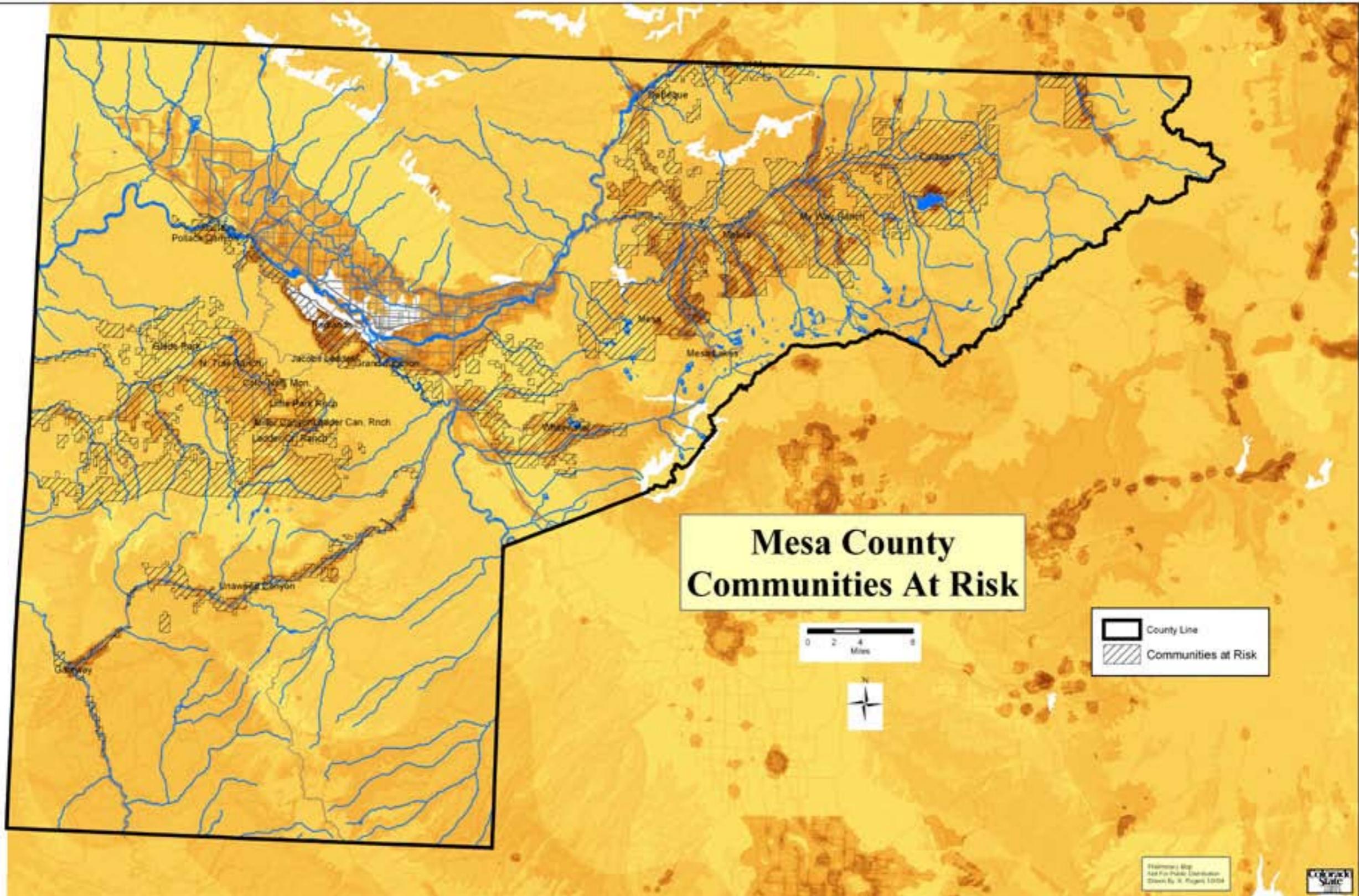
Fuel/Slope/Aspect/Disturbance

- Low
- Moderate
- High



Map Data
Not For Public Distribution
© 2004





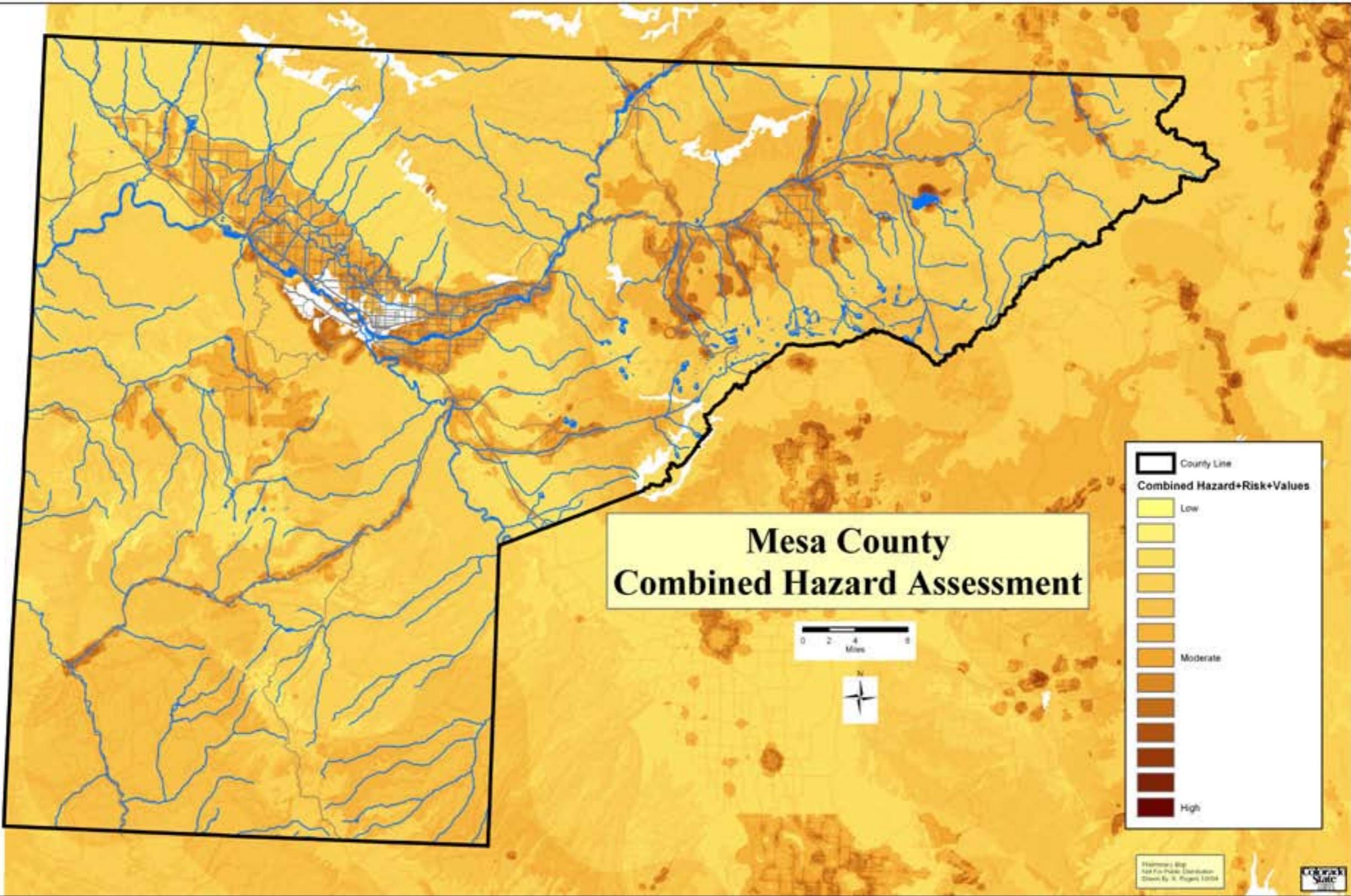
Mesa County Communities At Risk



County Line
Communities At Risk

Hammer's Map
Not For Public Distribution
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Mesa County Combined Hazard Assessment



County Line

Combined Hazard+Risk+Values

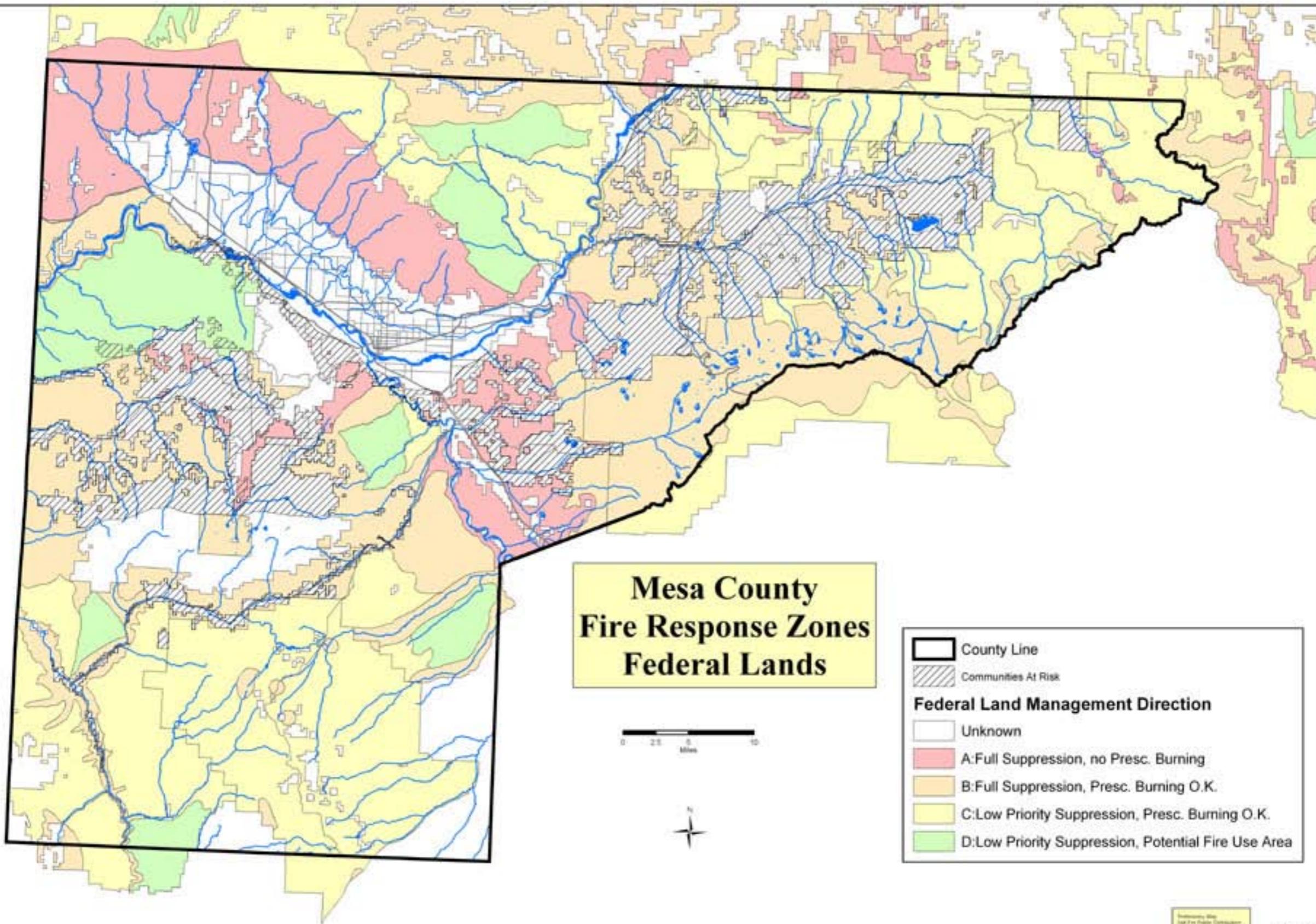
Low

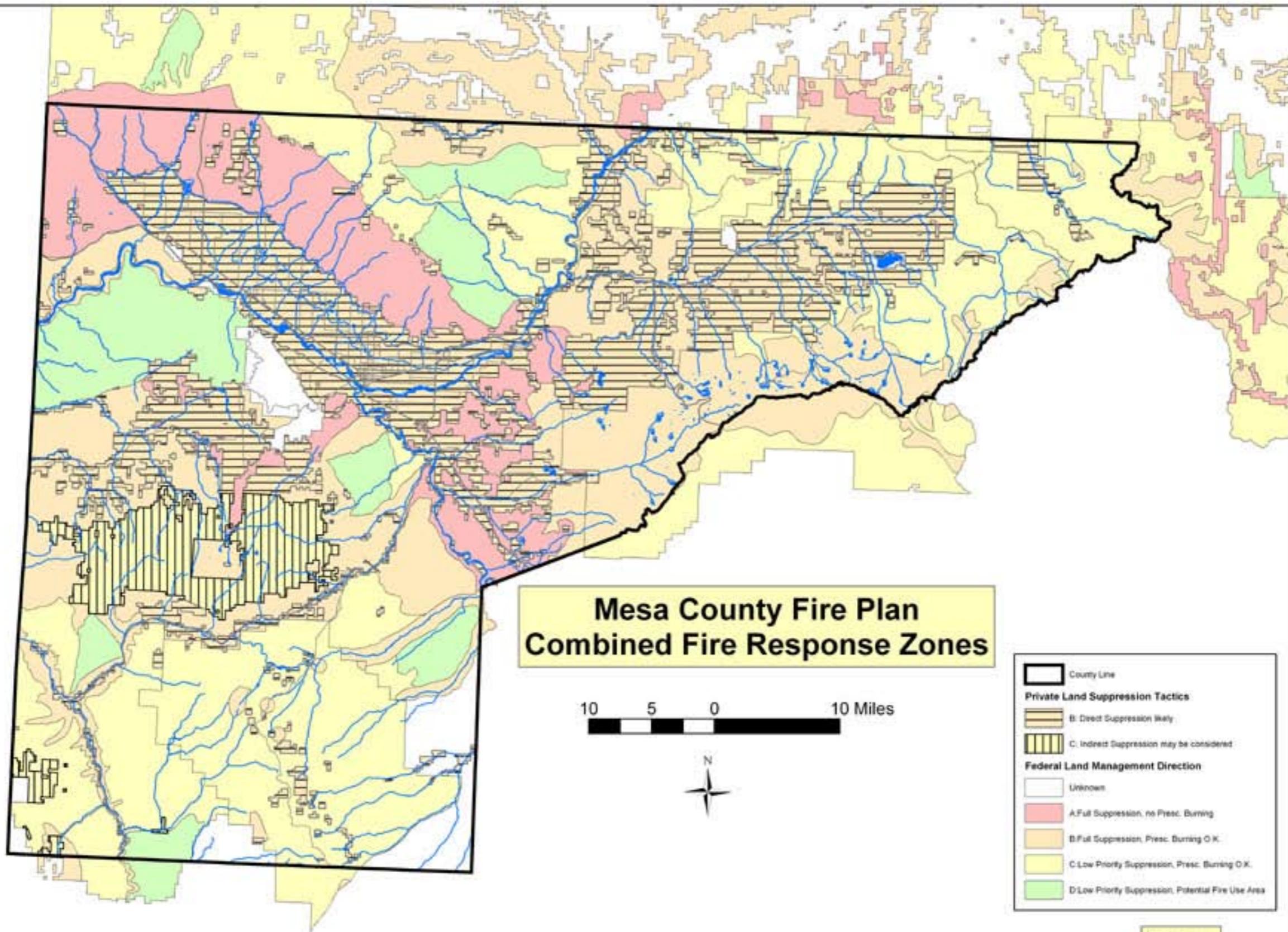
Moderate

High

Hammer's Map
Not For Public Distribution
Drawn By: S. Rogers 10/04







Mesa County Fire Plan Combined Fire Response Zones

10 5 0 10 Miles



- County Line
- Private Land Suppression Tactics**
- B. Direct Suppression Likely
- C. Indirect Suppression may be considered
- Federal Land Management Direction**
- Unknown
- A. Full Suppression, no Presc. Burning
- B. Full Suppression, Presc. Burning O.K.
- C. Low Priority Suppression, Presc. Burning O.K.
- D. Low Priority Suppression, Potential Fire Use Area