2014

Colorado Prescribed Fire Planning and Implementation Policy Guide

Colorado Department of Public Safety
Division of Fire Prevention and Control

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NOTES:

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Preface

Colorado Prescribed Fire Planning and Implementation Policy Guide (2014 Guide) provides standardized procedures specifically associated with the planning and implementation of prescribed fire. The 2014 Guide provides unified direction and guidance for prescribed fire planning and implementation for the agencies of the State of Colorado and furthermore may be incorporated into the operating procedures of county, local and private entities if they so choose.

This 2014 Guide incorporates the Interagency Prescribed Fire Planning and Implementation Procedures Guide of 2013 (Interagency Guide), and will serve as the Prescribed Fire Policy For the State of Colorado with the Department of Public Safety – Division of Fire Prevention & Control as the lead agency for implementation and oversight of this policy.

This 2014 Guide incorporates the necessary components of the Colorado Division of Fire Prevention and Control Prescribed Pile Burning Guidelines and Procedures of 2012 (DFPC Pile Guide), that was established as temporary guidance for implementing low-complexity prescribed fire pile projects following the adoption of Executive Order D 2012-006 in March of 2012 which suspended all prescribed fire operations on state or private lands by state employees until appropriate procedures and policies were in place. Upon approval, the 2014 Guide supersedes the 2012 DFPC Pile Guide.

Introduction

Fire is an essential ecological process in many fire-dependent ecosystems. In large areas of the State of Colorado fire exclusion from these ecosystems has led to unhealthy forest, woodland and rangeland conditions. These areas are at risk of intense, severe wildfires that threaten communities and cause significant damage to key ecological components.

As one component of fire management, prescribed fire is often utilized to alter, maintain, enhance or restore vegetative communities; achieve desired resource conditions; and protect life, property, and values that would otherwise be degraded and/or destroyed by wildfire.

Purpose

The purpose of this policy guidance is to provide consistent state-wide direction, establish common terms and definitions, and identify planning and implementation processes for prescribed fire.

The policy describes what is **minimally** acceptable for prescribed fire planning and implementation for Colorado state agencies and for prescribed burns conducted on state lands in Colorado. The policy guidance is tiered off of the Interagency Guide adopted in 2013; however, it is more state specific than the Interagency Guide in several components. Any user of prescribed fire who chooses to adopt this policy may provide more restrictive standards and policy direction, but must adhere to these minimums.

This policy outlines the process to develop single unit, multiple unit and programmatic plans where the intent is to ignite a unit or units with active perimeter control. Single units are usually implemented over the course of a few days. Multiple or large single units are usually implemented over the course of multiple days to weeks. Programmatic plans are implemented as single or multiple units. Large single or multiple unit and programmatic projects may span several years.

Plans for long-duration, landscape-scale prescribed fires, where the intent is to ignite portions of the unit and allow fire to move across the project area over time may require supplemental information and analysis. This is to address the long-term planning for the prescribed fire where implementation actions may be dependent on fire growth and seasonal changes. Guidance for elements of the Prescribed Fire Plan that may require additional attention is identified in the applicable element section.

Scope

This direction to implement Colorado state policy for state agencies and the respective state-managed lands was also developed so that counties, local cooperators and private landowners may choose to implement and utilize this policy in lieu of creating their own policy or that of the 2013 Interagency Prescribed Fire Planning and Implementation Procedures Guide. While some of these guidelines will not fit all non-state governmental entities, the intent is to include everyone by establishing a standardized planning and implementation policy that might result in a relatively consistent outcome.

Prescribed Fire Program Goals

Colorado's Prescribed Fire Program goals are to:

- Provide for firefighter and public safety as the first priority.
- Ensure that risk management is incorporated into all prescribed fire planning and implementation.
- Use prescribed fire in a safe, carefully planned, and cost-efficient manner.
- Reduce wildfire risk to communities, municipal watersheds and other values and to benefit, protect, maintain, sustain, and enhance natural and cultural resources.
- Utilize prescribed fire to restore natural ecological processes and functions, and to achieve land management objectives.
- Identify risks of not implementing fuels and prescribed fire actions.

Authorities

Pursuant to Section 24-33.5-1203.5, C.R.S., the Director of the Colorado Division of Fire Prevention and Control is directed to promulgate rules as necessary to carry out the duties of the Division of Fire Prevention and Control. Prescribed fire rules are proposed pursuant to this authority and are intended to be consistent with the requirements of the State Administrative Procedure Act, Section 24-4-101, et seq., C.R.S.

Senate Bill 13-083 directed the Division to implement a prescribed burn program in Colorado, including creating minimum standards for conducting prescribed burns on any area in the state, except for prescribed burning conducted by an agency of the federal government, pursuant to Section 24-33.5-1217. To be exempt from these standards, other users of prescribed fire, including local governments and non-governmental organizations must adopt or have already adopted guidelines or standards that are in substantial compliance with the intent of section 24-33.5-1217.5 for prescribed burning under their control.

Senate Bill 13-083 also tasked the Division with implementing a prescribed burning training program for those conducting prescribed burns in the State of Colorado. The purpose of the certification program is

to measure the level of knowledge, skill, and abilities possessed by State employees and also to attest that these individuals meet nationally recognized standards as specified in the National Wildfire Coordinating Group's Wildland Fire Qualification System Guide. These competency-based standards permit evaluation of training programs and promote uniformity in State employee training and skill-based qualification levels.

SB 13-083 also directed the Division of Fire Prevention and Control to develop a voluntary training and certification program for private landowners and their agents to safely and successfully plan, initiate, and complete controlled fire treatments on private land within Colorado.

For Colorado's state agencies and prescribed fires on state lands, prescribed fire projects can only be implemented through an approved Prescribed Fire Plan that is in compliance with this policy. More specific authorities may exist for each particular state agency, county, local entity or private landowner to utilize prescribed fire. All project decisions to use prescribed fire are subject to the jurisdictional agency's analysis, documentation, and disclosure requirements for complying with appropriate state, county, local laws and regulations.

During prescribed fire planning and operations, all agencies will accept each other's standards for qualifications. The minimum qualifications standard is the National Wildland Fire Coordinating Group (NWCG) Wildland and Prescribed Fire Qualifications System Guide, (PMS 310-1). State, county, local cooperators and contractors **working on state agency prescribed fires** must meet the NWCG PMS 310-1 standards unless local agreements or contracts specify otherwise.

The main reference glossary for this Guide is the NWCG Glossary of Wildland Fire Terminology, which is updated annually: http://www.nwcg.gov/pms/pms.htm . In addition, for terminology not found in the aforementioned link, the appendix of this document contains specific definitions.

This Guide is not intended to address interagency business rules. Those engaged in prescribed fire planning and/or implementation should reference specific jurisdictional agency business rules for direction.

Prescribed Fire Planning Process

There are many parent planning documents that may be utilized to ensure quality Prescribed Fire Plans are developed. These documents may be agency or entity specific and a wide variety of these documents may need to be incorporated into the development of a Prescribed Fire Plan depending upon the agency or agencies involved. In the case where multiple agencies are involved in a cooperative project which spans several jurisdictions; a multitude of planning documents may be required to meet the specific needs of each entity. In any case, the development of a Prescribed Fire Plan needs to be thorough and thoughtful.

Agencies and burn planners should understand that the timeframe for planning and approving a Prescribed Fire Plan does not always follow a strict and exact timeframe. The entire process often takes at least six months or longer, depending upon the specific situation.

Although thorough and intensive planning to implement a Prescribed Fire Plan ranging from a simple and low-complexity pile burn all the way up to a highly complex landscape-scale broadcast burn may seem to be an example of "over-kill", one must remain cognizant that short-cutting the planning process will more often than not; result in less than desirable outcomes.

Prescribed fire planning should include a thorough analysis that examines the trade-offs among various treatment alternatives including the no-action alternative. Prior to prescribed fire implementation, the responsible Agency Administrator or designee must first determine that the property owner or other person having legal control of the property has evaluated all realistic alternatives to prescribed burning and conclude that prescribed burning is an appropriate treatment method for the property.

When requested by a property owner, or other person having legal control of a property, the Division shall provide assistance in evaluating alternatives to prescribed burning, such as mechanical treatment. The Division may guide the user through the safe and prudent application of prescribed burning when it is determined to be an appropriate method.

There is an inherent risk in not taking action and it should not be assumed that the no-action alternative is the least-risk alternative. This is more and more the case in today's wildland environments where fire regimes and fire return intervals have been adversely affected by fire exclusion over the past 100+ years or where natural phenomena such as widespread insect and disease outbreaks have accelerated forest and rangeland degradation.

The following table conservatively illustrates in more detail, the planning process timeline (in weeks) for prescribed fires which the Division either takes the lead on or may be involved with for specific tasks:

Table 1, Prescribed Fire Planning Timeframe

WEEK	PLANNING PROCESS BENCHMARK
1	An agency or individual approaches Division with project proposal, location, & basic information.
2-3	The Division's point of contact assigns personnel to recon the project area and gathers data. During this time, basic information is being input into the Division's or similar Prescribed Fire Plan format. The burn planner should complete an initial pre-plan complexity analysis. Also during week two, the jurisdiction will dictate the necessity for a service agreement. Depending on the funding amount and/or landowner, planners should consult DFPC regarding agreement specifics.
4-7	The burn planner completes the Prescribed Fire Plan, including all supporting fire behavior and fuels data analysis. At this point, the burn planner contacts the jurisdictional Agency Administrator to discuss the draft plan which may include a secondary field review. The burn planner and the Agency Administrator will review the initial complexity analysis and if necessary, re-analyze the project's complexity level.
8	Draft review of the Prescribed Fire Plan is complete, and all agreements should be ready for review and signature.
10-12	Area and Regional Fire Management Officers review plan and forward to the assigned technical reviewer. The Technical Reviewer receives plan, begins a technical review in consult with the burn planner and the Area & Regional FMOs. All edits, suggestions and revisions are forwarded to the burn planner within 30 days of receipt. Concurrently, the Agency with jurisdiction applies for a Smoke Management Permit with the Colorado Air Pollution Control Division as well as any other local or county permitting agencies. This includes applying for fire control burning permits with specific counties or other fire authorities.
13-14	The burn planner makes corrections to the burn plan as per the written technical review checklist and returns the corrected burn plan to the technical reviewer for confirmation and signature.
15-16	Final review by preparer and Agency designated specialists.
17-20	Burn plan receives appropriate smoke management and fire control permits.
21-23	Agency Administrator has received all necessary permits and recommendations and approves the project for initiation.
24	Project is ready for implementation.

Implementation Organization and Qualifications

State and Federal Lands:

During prescribed fire planning and operations, State of Colorado agencies will accept federal standards for qualifications. The minimum federal qualifications standard is the NWCG Wildland and Prescribed Fire Qualifications System Guide, (PMS 310-1). In order to participate in prescribed fire planning and implementation operations on state-owned lands, cooperators and/or their designated agents must accept state standards for qualifications.

County, local cooperators and contractors working on federal and state agency prescribed fires must meet the NWCG PMS 310-1 qualifications standards unless local agreements specify otherwise. No less than the minimum implementation organization described in the approved Prescribed Fire Plan may be used for implementation. Any time that a specific skill or qualification level identified on an organization chart for an approved Prescribed Fire Plan is filled with a less qualified individual or is not filled at all; this will be considered a direct failure to follow the requirements of the plan.

The complexity of each prescribed fire or phase of fire(s) on State and/or Federal Lands determines the organization(s) needed to safely achieve the objectives specified in the Prescribed Fire Plan. High, Moderate, and Low-complexity prescribed fires are determined through the required NWCG Prescribed Fire Complexity Rating System Guide (PMS 424). Minimum supervisory qualifications determined by prescribed fire complexity are identified in Table 2:

Table 2: Qualifications requirements related to Prescribed Fire Complexity on NWCG qualified burning projects (all State & Federally administered projects).

	Complexity		
Position	**High**	**Moderate-Low**	**Low**
RXM1	Optional	Optional	Optional
RXM2	Not Allowed	Optional	Optional
RXB1	Required	Optional	Optional
RXB2	Not Allowed	Required	Optional
RXB3	Not Allowed	Not Allowed	Required
FIRB	Optional	Optional	Optional
Holding Specialist: Holding functions will be managed by personnel qualified at the appropriate Incident Command System (ICS) wildland fire operations position as required by complexity, assigned resources, and operational span-of-control. For some projects, there may be no holding requirements or the holding duties may be assumed by the Prescribed Burn Boss.			

Prescribed Fire Burn Boss Type 3 (RXB3):

The following describes the qualifications required for the Prescribed Fire Burn Boss Type 3 (RXB3). The RXB3 position is no longer a listed position in the NWCG Wildland and Prescribed Fire Qualifications System Guide, (PMS 310-1). The NWCG has recognized that agencies may choose to implement the certification and use of the RXB3 position at their discretion.

The Division chooses to adopt this position in order to maintain a logical career pathway for personnel who wish to pursue advancement in prescribed fire and to also provide the quality oversight that is required on prescribed burns, even at the low-complexity level. Many other federal, state, county and local jurisdictions have adopted the RXB3 task book and subsequent qualifications standards. In order to

maintain consistency in qualifications with other federal, state, county and local partners it is essential that Colorado adopts a similar standard for the state administered agencies and that prescribed fire personnel of those agencies adhere to the same qualifications and training requirements.

In addition, the 2013 Interagency Guide identifies the RXB3 as having a moderate physical fitness level. Because the RXB3 is typically a "front line" fire management position and the required qualifications; Firefighter 1 (FFT1) or Incident Commander Type 5 (ICT5) have a physical fitness requirement of arduous, the Division will require all state agency qualified RXB3s maintain the arduous physical fitness rating to rectify this inconsistency.

An RXB3 will only be allowed to implement prescribed fires where the final complexity is rated low. The requirements for Prescribed Fire Burn Boss Type 3 are identified in Table 3.

Note: With the exception of the physical fitness requirement, the following qualification requirements are consistent with the RXB3 requirements specified in the 2013 Interagency Prescribed Fire Planning and Implementation Guide (PMS-484).

Table 3: Requirements for Prescribed Fire Burn Boss Type 3

Required Training:	Intermediate Wildland Fire Behavior S-290
Required Experience:	Satisfactory Performance as Incident Commander, Type 5 (ICT5) **OR** Firefighter Type 1 (FFT1) **AND** Successful position performance as a Prescribed Fire Burn Boss Type 3 (RXB3)
Physical Fitness Level:	Arduous *
Positions That Maintain Currency For RXB3	Prescribed Fire Burn Boss Type 2 (RXB2) Prescribed Fire Burn Boss Type 1 (RXB1) Prescribed Fire Manager Type 1 (RXM1) Prescribed Fire Manager Type 2 (RXM2)
RXB3 Maintains Currency For These Positions:	Firefighter Type 1 (FFT1) Firefighter Type 2 (FFT2)
Other Training That Supports Development of Knowledge and Skills:	Ignition Operations (S-234) Wildland Fire Chain Saws (S-212) Portable Pumps and Water Use (S-211) Smoke Mgmt. & Air Quality for Land Managers Online Training

* Division of Fire Prevention & Control Requirement

No matter the complexity of the prescribed fire project, there is always the potential for an escape or a mishap that requires the immediate response of a qualified Initial Attack Incident Commander (ICT5) or higher, to take control of the situation and to make appropriate and timely decisions. Because an RXB3 may not be a fully qualified Incident Commander (ICT5 or above), it is imperative that a fully qualified Incident Commander (ICT5 or above) be assigned to the prescribed fire project and immediately available to take command in the event that the prescribed fire is declared a wildfire.

Private Lands:

On private lands however, the landowner is not required to follow any standard or any state sanctioned policy. Landowners are encouraged to utilize the NWCG standard, especially if the landowner chooses to

contract with the DFPC or any other state agency since all state personnel are required to adhere to NWCG standards in the execution of their duties during wildland fire and prescribed fire assignments. The Division is developing a Certified Burner Program for private landowners and/or their agents that allow the private land owner and/or their agents to receive prescribed fire training and become certified by the Division to accomplish prescribed burns on their lands.

It is important to note that according to Senate Bill 13-083 which is also known as the "Colorado Prescribed Burning Act", a private landowner or landowner's designee who is certified by the Division as a Certified Burner or qualified by National Wildfire Coordinating Group (NWCG) standards as a Prescribed Burn Boss is not liable for civil damages for acts or omissions made in good faith resulting in damage or injury caused by fire or smoke resulting from prescribed burns they conduct on the landowner's property and in compliance with applicable state laws and local ordinances, unless such private landowner's or designee's acts or omissions are grossly negligent or willful and wanton.

Position Responsibilities

Prior to prescribed fire implementation, thorough planning and review processes must be conducted. All prescribed fire actions must be developed from resource/fire management objectives carried forward from agency or landowner specific management plans or direction. Planned in accord with this type of direction, the Prescribed Fire Plan is then completed, reviewed, and approved before ignition can begin.

The success of any prescribed fire is dependent upon the continuity of open and comprehensive communications among agency administrators, planners, cooperators, dispatch centers and others performing the implementation actions specified in the Prescribed Fire Plan. Any weakness in coordination and communication greatly increases the likelihood of a failure of a prescribed fire.

The Agency Administrator or Landowner has final approval authority for all Prescribed Fire Plans, unless special circumstances warrant higher review and concurrence (such as may occur during higher preparedness levels or for extremely large, complex projects). The Agency Administrator has final approval authority for the Prescribed Fire Plan and the Agency Administrator Ignition Authorization.

The Prescribed Fire Burn Boss has the responsibility to complete the Prescribed Fire GO/NO-GO checklist.

The Prescribed Fire Burn Boss ensures that all prescriptions, permits, staffing, equipment, and other plan specifications are met before, during, and following the prescribed fire.

Every Prescribed Fire Plan must receive a technical review. The Technical Reviewer and Prescribed Fire Plan Preparer must be qualified or have been previously qualified as a Prescribed Fire Burn Boss at an experience level equal to or higher than the complexity being reviewed.

Both the Prescribed Fire Plan Preparer and the Technical Reviewer must be currently NWCG qualified, minus the physical fitness requirement.

Only an RXB1 can review plans at high-complexity. An RXB2 can review plans of moderate to low-complexity. An RXB3 is allowed to function as a Prescribed Fire Plan preparer for a low-complexity plan, but not as a technical reviewer.

Agency or individual unit policy may dictate the need for additional reviews. Interagency Prescribed Fire Plans require approval from all appropriate Agency Administrators and a technical review. Prescribed fire and implementation position roles and responsibilities are as follows:

Agency Administrator:

For the purposes of this policy, the Agency Administrator is defined as the line officer (or designee) of the agency or jurisdiction that has responsibility for the prescribed fire. This may also include the Landowner on private land projects. These usually include but are not limited to: NPS Park Superintendent, BIA Agency Superintendent, USFS Forest Supervisor/District Ranger, BLM District/Field Office Manager, USFWS Project Leader and/or Refuge Manager, State Park Manager, Area Wildlife Manager, etc.

The Agency Administrator is responsible to:

1. Approve Prescribed Fire Plans. On state of Colorado lands, the Agency Administrator must be delegated this authority by the Director of the Division of Fire Prevention and Control. When approving a plan, the Agency Administrator must fully understand the risks associated with it.
2. By their signature, certifies that the Prescribed Fire Plan meets Division and specific agency policy and that it reflects the conditions specified in the project's parent planning documentation.
3. Ensure that only trained and qualified personnel participate in the planning and implementation of the prescribed fire.
4. Ensure that projects are monitored, evaluated, and documented in the Project File.
5. Delegate specific authority to a Burn Boss in writing prior to implementation.
6. Discuss the conditions under which the prescribed fire is to be implemented with the Burn Boss and sign, date, and establish an implementation time period on the Agency Administrator Ignition Authorization.
7. Ensure that coordination with neighbors, cooperators and air quality regulators has occurred.
8. Understand and approve the Prescribed Fire Complexity Analysis (PMS 424).
9. Ensure that all prescribed fires are conducted in accordance with the approved Prescribed Fire Plan and established standards and guidelines.
10. Ensure that periodic reviews and inspections of Agency's specific prescribed fire program are completed.
11. Determine if and when they are to be notified by the Burn Boss that contingency actions are being taken.
12. Report all wildfires resulting from prescribed fires through the chain of command.
13. Declare a prescribed fire a wildfire (if necessary and if responsibility is assigned in the plan).
14. Ensure that prescribed fires declared as wildfires are reviewed according to established guidelines.
15. Ensure that prescribed fires which receive a National Ambient Air Quality Standards (NAAQS) Notice of Violation (NOV) are reviewed according to established guidelines.

Division Director:

For administration of the Colorado State Prescribed Fire Policy, the Director of the Department of Public Safety, Division of Fire Protection and Control or the designated acting will provide program oversight and direction, including policy development, Agency Administrator delegations and promulgation of rules specific to wildland fire management activities.

During periods when Zone or Geographic Area Preparedness Levels are at Preparedness Level 1 (PL-1), the Agency Administrator on state lands responsible for a planned prescribed fire will notify the Director or the designated acting of the desire to ignite a prescribed fire a minimum of 24 hours prior to planned ignition for situational awareness and resource allocation purposes.

During periods when Zone or Regional Preparedness Levels are at Preparedness Level 2 (PL-2), the Agency Administrator on state lands responsible for a planned prescribed fire will consult with the Director or the designated acting for situational awareness and resource allocation purposes when the decision to ignite a prescribed fire project is desired. This consultation must occur 36-48 hours in advance of planned ignition.

During periods of Zone or Regional Preparedness Levels are at or above Preparedness Level 3 (PL-3). The Director or the designated acting will be immediately contacted for concurrence and approval to initiate a prescribed fire project on state administered lands. Generally, when the Zone and/or Geographic Area levels are at PL-3 or above, there are weather or fire conditions and/or resource allocation issues that may influence the approval or disapproval of any new prescribed fire ignition(s).

In the event Geographic Area or National PL levels are at 4 and 5, the Director will need to consult the annually updated Rocky Mountain Geographic Area and National Mobilization Guides for additional guidance prior to concurrence and/or approval of state agency prescribed burns. During periods when advanced PL levels (4 or 5) occur within the Zone or Geographic Area, the Director may require the Agency Administrator on state lands to immediately extinguish any pre-existing prescribed fires and require the assigned Burn Boss sign the Fire Safe Certification on the Prescribed Fire Plan(s).

The Director or designee will convene a formal review team for any prescribed fire that is declared a wildfire on state lands.

The Director or designee will periodically review the prescribed fire program for the State of Colorado to ensure compliance with policy, program consistency and to make any necessary revisions or modifications to the policy.

Fire Management Officer (FMO)/ Prescribed Fire Branch Chief

The Fire Management Officer (FMO)/Prescribed Fire Branch Chief is responsible to the Division Director and coordinates with the Agency Administrator(s) on state lands for planning, implementing and monitoring of the prescribed fire program in accordance with policy and direction.

The FMO/Prescribed Fire Branch Chief is responsible to:

1. Ensure compliance with National, Regional, tribal and local fire policy and direction, as well as applicable state and local laws.
2. Ensure an approved Prescribed Fire Plan exists for each prescribed fire project.
3. Ensure that all prescribed fires are conducted in accordance with the approved Prescribed Fire Plan and established standards and guidelines.
4. Plan the prescribed fire program of work based on the Unit's budget and work plan.
5. Ensure that Preparedness Level Restrictions are followed. At National Preparedness Levels IV and V, prescribed fire implementation is restricted. See the appropriate Geographic Area and National Interagency Mobilization Guides for details.
6. Ensure that both the Prescribed Fire Plan Preparer and the Technical Reviewer are qualified at the level of complexity or higher.
7. Ensure that trained and qualified personnel are available to participate in the prescribed fire program.
8. Assist the Agency Administrator with assigning a Burn Boss and/or Prescribed Fire Manager.
9. Ensure the unit can implement the project(s) and order additional resources as necessary.
10. Participate in prescribed fire to wildfire conversion declarations as warranted.
11. Act as liaison to the Agency Administrator, and update them on the progress of prescribed fires as needed. In addition, this position may act as liaison to other agencies, news media, air quality authorities, transportation agencies and safety officials.
12. Provide coordination, oversight and direction to the assigned Prescribed Fire Manager and/or Burn Boss, dispatch office or other designated fire management personnel.
13. Ensure that projects are monitored, evaluated, and documented as a part of the Project File.
14. Ensure that project accomplishments are reported through the local office and comply with agency and/or local reporting requirements.
15. Ensure that periodic reviews and inspections of the prescribed fire program are completed.

Prescribed Fire Plan Preparer:

For the purpose of this document, the Prescribed Fire Plan Preparer is defined as the individual responsible for the preparation of the Prescribed Fire Plan.

Several people may be involved in the preparation of the Prescribed Fire Plan, but the Prescribed Fire Plan Preparer is responsible for the final plan content. The primary preparer of the Prescribed Fire Plan will sign the signature page. The Prescribed Fire Plan Preparer shall be qualified or previously qualified as a Burn Boss at or above the level of project complexity. At a minimum, NWCG qualifications will be accepted. Burn Boss trainees and their trainers can be co-signers as preparer of a Prescribed Fire Plan. The preparer is responsible to:

1. Prepare the Prescribed Fire Plan in accordance with Division policy and direction and the jurisdictional agency's parent planning documentation.
2. Coordinate with the resource management and/or technical specialists to ensure that the plan meets resource management and operational objectives.
3. Interact with the Technical Reviewer to ensure that all plan elements are adequately addressed.
4. Complete and sign the final Complexity Analysis.

Technical Reviewer:

The Technical Reviewer is responsible for reviewing each Prescribed Fire Plan element for content as well as evaluating the risk and Complexity Analysis to ensure that the stated goals and objectives can be safely achieved. The Technical Reviewer must be qualified as a Burn Boss at or above the level of project complexity. At a minimum, NWCG qualifications will be accepted. The Technical Reviewer should have local knowledge of the area(s), experience burning in similar fuel types, and/or conduct an on-site review.

The Technical Reviewer must be someone other than the Prescribed Fire Plan Preparer.

An off-unit technical review is encouraged to provide an additional independent perspective. It is acceptable for other specialists to assist with the technical review of certain portions of the plan however; a primary Technical Reviewer must be designated as Technical Review signatory. For example, a fire behavior analyst may review the fire behavior calculations; the aviation manager may review the air operations plan; and/or a resource specialist may review impacts to their resource of interests.

It is recommended that at least once every year, each unit should send at least one moderate or high-complexity Prescribed Fire Plan off-unit for a technical review.

The Technical Reviewer is responsible to:

1. Ensure that Prescribed Fire Plans meet the Division's and/or jurisdictional agency's policy and direction.
2. Ensure that the complexity analysis accurately represents the project, so the Agency Administrator understands the identified risks and the mitigating measures enacted. This will require an on-site review in Wildland Urban Interface (WUI) or in high-complexity situations by the Technical Reviewer.
3. Check the prescription parameters by fuel types to ensure that the project, as planned, has a reasonable chance or realistic opportunity of meeting the resource management objectives.
4. Ensure that the fire behavior calculations and/or prescription parameters are appropriate and within the acceptable range.
5. Ensure that the ignition, holding and contingency plans are consistent with the predicted fire behavior.
6. Complete and sign the Technical Review Checklist and the Prescribed Fire Plan signature page.

Prescribed Fire Burn Boss (RXB1/RXB2/RXB3)

The Prescribed Fire Burn Boss is responsible to the Agency Administrator, Prescribed Fire Manager, Fire Management Officer (Area and/or Regional FMO)/Prescribed Fire Branch Chief or the local/county fire management organization(s) for implementing the Prescribed Fire Plan.

The Prescribed Fire Burn Boss is responsible to:

1. Receive a signed Delegation of Authority from the Agency Administrator(s) prior to taking any action.
2. Review the Prescribed Fire Plan prior to implementation and ensure all required elements and objectives are addressed.
3. Field inspect the burn unit to validate Prescribed Fire Plan elements including areas of special concern as well ensuring that holding/contingency plans adequately address expected fire behavior outside the unit(s).
4. Obtain current weather and smoke management forecasts, updates, and special advisories from a National Weather Service meteorologist.
5. Ensure that any required smoke permit(s) or fire control permit(s) have been obtained, are current and that the terms and conditions of permit(s) have been met.
6. Maintain communication with the Agency Administrator, Prescribed Fire Manager, and FMO, Branch Chief and/or local fire management organization.
7. Ensure that the Agency Administrator Ignition Authorization is valid.
8. Take to the field those portions of the Prescribed Fire Plan necessary for completing the briefing and safe project implementation.
9. Complete and sign the Prescribed Fire GO/NO-GO Checklist.
10. Ensure the availability of contingency resources within maximum acceptable response times.
11. Ensure that all operations are conducted in a safe manner and in accordance with the approved plan and established standards and guidelines.
12. Verify qualifications of all assigned personnel.
13. Ensure that all assigned personnel are briefed at the beginning of each operational period and any new personnel arriving to the prescribed fire receive a briefing prior to engaging.
14. Conduct the test fire and document the results.
15. Supervise assigned personnel and direct the ignition, holding and monitoring operations.
16. Manage all other phases of implementation including mop-up and patrol unless otherwise assigned to other qualified personnel.
17. Manage or delegate responsibility for the management of any "incident within the incident."
18. Declare the prescribed fire out unless the responsibility for it is formally passed via a signed delegation of authority to another Prescribed Fire Burn Boss, Prescribed Fire Manager or other designated personnel (Duty Officer) with the local fire management organization(s).
19. Determine when the prescribed fire is not within prescription parameters (both short and long-term) or is not meeting Prescribed Fire Plan objectives. This includes the parameters established in the smoke permit.
20. Declare a prescribed fire a wildfire (if necessary and if responsibility is assigned in the plan).
21. Manage the wildfire as the Incident Commander or oversee the transition to another Incident Commander if a wildfire declaration occurs.
22. Ensure that all monitoring reports are completed.
23. Coordinate with adjacent landowners, cooperators and permitted as designated in the Prescribed Fire Plan.
24. Ensure that adjacent landowners or jurisdictional agencies are contacted prior to ignition as designated in the Prescribed Fire Plan.

Prescribed Fire Manager (RXM1/RXM2)

The Prescribed Fire Manager is responsible for implementing and coordinating assigned prescribed fire activities. A Prescribed Fire Manager may be assigned during periods when multiple simultaneous prescribed fires are being conducted; when multiple prescribed fires will be conducted within a short time frame; or where there is complex interagency involvement.

The Prescribed Fire Manager responsibilities are:

1. Review Prescribed Fire Plans prior to implementation.
2. Monitor all prescribed fire operations.
3. Ensure that all operations are conducted in a safe manner and in accordance with the approved plan(s) and established standards and guidelines.
4. Act as coordinator/liaison among the burn organization(s), FMOs and other offices, agencies, air quality authorities, news media, transportation agencies, safety officials, and interested public.
5. Declare a prescribed fire a wildfire (if necessary and if responsibility is assigned in the plan).
6. Obtain and interpret long-term weather forecasts.
7. Brief the Burn Bosses and direct operational assignments according to policies, priorities and standards.
8. Set priorities for allocation of resources.
9. Ensure the completion of all required documentation including the evaluation and documentation of accomplishments, fire behavior and fire effects, operational procedures, and cost summaries.
10. Provide where possible and economically feasible, to Colorado state employees, access to wildland fire and prescribed fire training courses and/or on-the-job training assignments.

Firing Boss (FIRB)

The Firing Boss reports to the Burn Boss and is responsible for supervising and directing ground and/or aerial ignition operations according to established standards in the Prescribed Fire Plan.

The Firing Boss responsibilities are:

1. Review the Prescribed Fire Plan and field inspect the project area prior to implementation.
2. Provide input to Burn Boss prior to finalizing the Go/No-Go checklist.
3. Brief all assigned personnel on project objectives and ignition operations.
4. Complete the test fire according to the ignition plan at the direction of the Burn Boss.
5. Conduct ignition operations in a safe manner according to the ignition plan.
6. Identify the impacts of ignition on the control and desired fire effects.
7. Coordinate ignition operations with the Holding Specialist.

Firing boss is not a mandatory position for any prescribed fire. Ignition operations and responsibilities may be managed by personnel qualified at the appropriate ICS wildland fire operations standard and as required by the prescribed fire complexity, assigned resources, and operational span-of-control.

For some low to moderate-complexity prescribed fires, the ignition responsibilities may be assumed by the Burn Boss.

Holding Specialist

The Holding Specialist is a supervisory position in command of the holding forces, and reports to the Burn Boss. There is no specific NWCG approved prescribed fire position for this function. This position is assigned by name and title using PMS 310-1 as guidance. Holding functions will be managed by personnel qualified at the appropriate ICS wildland fire operations standard and as required by the prescribed fire complexity, assigned resources, and operational span-of-control.

The Holding Specialist responsibilities are:

1. Review the Prescribed Fire Plan and field inspect the project area prior to implementation.
2. Provide input to the Burn Boss prior to finalizing the Go/No-Go checklist.
3. Brief all personnel on project objectives and holding operations.
4. Conduct holding operations in a safe manner according to the holding plan.
5. Coordinate holding operations with the Firing Boss.
6. Confine the fire to a predetermined area, and oversee mop-up, and patrol.
7. Maintain communication with Burn Boss on holding progress and/or problems.

For some low to moderate-complexity prescribed fires, the holding responsibilities may be assumed by the Burn Boss.

Fire Effects Monitor (FEMO)

The Fire Effects Monitor (FEMO) is responsible for collecting the onsite weather, fire behavior, and fire effects information. This information is necessary for agencies to determine whether the fire is achieving established resource management objectives. The FEMO reports directly to the Burn Boss or designee when assigned to a prescribed fire.

The FEMO responsibilities are:

1. Review the monitoring plan prior to implementation.
2. Identify and initiate photo point records pre and post burn (if applicable).
3. Monitor, obtain, and record weather data.
4. Monitor and record fire behavior data throughout the burn operations.
5. Recon the burn unit/area assigned.
6. Plot the burn area and perimeter on a map.
7. Monitor and record off-site smoke management information when applicable.
8. Monitor first-order fire effects.
9. Provide monitoring summary of the fire.
10. Provide fire behavior and weather information/updates to project personnel as appropriate.

Resource Specialist

The Resource Specialist(s) is responsible for ensuring the prescribed fire project is planned in a manner supporting the jurisdictional unit's resource management goals and objectives.

The Resource Specialist responsibilities according to agency or local policy are:

1. Provide resource management representation in the preparation of the Prescribed Fire Plan.
2. Review Prescribed Fire Plan before each plan is submitted for approval.
3. Evaluate the prescribed fire project in terms of meeting identified resource objectives.

Resource Advisor (READ)

If the Prescribed Fire Plan identifies the use of a READ, they are responsible for ensuring the prescribed fire project is implemented in a manner supporting the jurisdictional agency's resource management goals and objectives. This position is typically assigned by federal agencies to represent the agency's resource management concerns. This position is very similar to the Resource Specialist position previously described. The READ is responsible to the specific Agency Administrator.

The READ is responsible to:

1. Evaluate the prescribed fire project in terms of meeting identified resource objectives.
2. Provide resource information to the Burn Boss.
3. Present information at briefings on resources, priorities, and issues of concern.

4. Coordinate with adjacent landowners, cooperators and other entities as designated in the Prescribed Fire Plan or by the Burn Boss.

Specialized Positions

In addition to the positions discussed above, the positions listed below along with any other specialized positions may be used in prescribed fire planning and/or implementation depending on the scale and complexity of the project. If these positions are used in implementation, the Prescribed Fire Plan should identify where the position fits within the prescribed fire organization.

- Public Information Officer (PIO1/2/3)
- Helitorch Manager (HTMG)
- Plastic Sphere Dispenser Operator (PLDO)
- Helitorch Mixmaster (HTMM)
- Safety Officer (SOF1/2/3)
- Fire Behavior Analyst (FBAN)
- Long-term Analyst (LTAN)
- Strategic Operations Planner (SOPL)
- Incident Meteorologist (IMET)
- Air Quality Specialist (AQSP)

Prescribed Fire Plan Amendment(s)

When changes to a Prescribed Fire Plan are necessary, the plan must be amended to identify the affected sections; the reason for the change(s); and have the changes clearly identified. For amendments, the need for additional technical review will be determined and justified in writing by the Agency Administrator. Amendments take place before ignition. Amendments to the Prescribed Fire Plan require Agency Administrator approval and signature.

Common reasons for amending the Prescribed Fire Plan may include:

- Changes to objectives.
- Changes to complexity.
- Changes to fire behavior prescription parameters.
- Changes to project area boundaries resulting in either an increase or decrease in area.
- Changes in fuels profiles/models due to unforeseen natural phenomena.
- Reduction in required resource capabilities identified in the plan.
- Major changes to ignition methods including ground ignition to aerial ignition; aerial ignition to ground ignition; hand drip torch ignition to terra torch ignition (includes all-terrain vehicle mounted ignition devices); and/or hand ignition from roadways to hand ignition from boats or other watercraft.

Flexibility can be built into the plan that will allow for a range of adjustments during the prescribed fire that can reduce the need for an amendment. When building flexibility, the range of identified options must remain within the scope of the Complexity Analysis.

Examples of flexibility that can be built into a Prescribed Fire Plan:

- The Prescribed Fire Plan may state that on burn day and subsequent days of the prescribed fire, a mix of the number and kinds of resources may be modified as long as standardized production capabilities are not compromised.
- As the prescribed fire progresses from ignition to holding, to mop up and patrol, specified capabilities and/or types of resources may be adjusted. If these flexibilities are built into the

Prescribed Fire Plan, there must be a clear statement as to the work capability requirements of the resources at the various stages of the prescribed fire.

- Minor changes in burn unit boundaries to facilitate holding and/or ignition, as long as the area in question has been analyzed and approved in the agency's parent planning/decision documentation, require no change in holding or ignition resources and is within the project boundaries.
- Additional resources may be assigned to the project without amending the Prescribed Fire Plan if the addition of these resources does not change the complexity of the burn or require additional supervisory positions. These changes must be documented in the daily briefing.

Safety

Within the State of Colorado, including all levels of government; firefighter and public safety is first priority. The Prescribed Fire Plan and all associated activities must reflect this commitment. Every person involved in a prescribed fire is responsible for identifying safety issues and concerns. It is the responsibility of each individual participating in prescribed fire activities to notify their immediate supervisor of any possible misunderstanding of assigned tasks or safety concerns related to the assignment.

Because fire management activities, more often than not, require interagency cooperation and coordination at the highest degree attainable, all state agencies must adhere to interagency principles of operation and adhere to standards set forth by NWCG. These standards were developed based upon past activities that occurred and affected all wildland fire activities, regardless of jurisdiction. In addition, when interagency resources are utilized to accomplish prescribed fire activities, the Prescribed Fire Plan may be required to incorporate specific hazard analysis components to address specific agency policies and requirements of those cooperators.

NWCG established Work/Rest Guidelines and span of control apply equally to wildland and prescribed fire operations. The management of crew, overhead, and support personnel should follow guidelines to assure safe, productive fire operations. This is the responsibility of all supervisory fire management personnel (refer to NWCG Interagency Incident Business Management Handbook, PMS 902).

Exposure to smoke during prescribed fire operations can be a significant safety concern. Research has shown that exposure to smoke on prescribed fires, especially in holding and ignition positions, often exceeds that on wildfires. At a minimum, smoke exposure must be addressed in hazard analyses or equivalents and the Smoke Management and Air Quality element of the Prescribed Fire Plan. Public safety impacts from smoke should be addressed in the Smoke Management and Air Quality element, as well as the Public, Personnel Safety, Medical elements, when applicable.

Transportation and use of any product containing chemicals (drip torch fuel, aviation gas, sphere dispensers, fusees, fuel thickener, etc.) must be in compliance with the Occupational Safety and Health Administration's (OSHA) Hazard Communication Standard (29 CFR 1910.1200) and Department of Transportation Regulations (49 CFR Part 171), as well as any jurisdictional agency-specific guidance. Material Safety Data Sheets (MSDS) for hazardous materials used on projects should be consulted in developing the safety analysis.

The NWCG Interagency Transportation Guide for Gasoline, mixed Gas, Drip Torch Fuel, and Diesel, (PMS 442) establishes interagency guidance for the ground transportation of gasoline, mixed gas, drip-torch fuel, and diesel in agency vehicles driven by agency employees. This Guide is based as closely as practical on the U.S. Department of Transportation (DOT) and U.S. Department of Labor Occupational Safety and Health Administration (OSHA) regulations.

The NWCG Interagency Ground Ignition Guide (PMS 443) was developed to ensure that all ground ignition operations are performed in a safe and efficient manner. The Guide includes information on: Types of ground ignition devices, standards/specifications for equipment, normal and emergency operating procedures for use, and qualifications requirements for operators, hazard analyses, and material safety data sheets for the various fuels used during ignition.

The SAFENET (http://safenet.nifc.gov/) and SAFECOM (http://www.safecomprogram.gov/default.aspx) processes are designed for reporting and correcting unsafe situations and are applicable to prescribed fire applications.

Consider using a Safety Officer on moderate to high-complexity prescribed fires and others where the complexity or other risk analysis shows a potential need.

Risk Management

Risk is the likelihood or possibility of hazardous consequences in terms of severity or probability.

Risks and uncertainties relating to fire management activities must be understood, analyzed, and communicated by all agencies regardless of origin.

Sound risk management is a foundation for all fire management activities, including prescribed fire.

Prescribed fires present an inherent level of risk. There is risk at all levels from decision-makers to on-the-ground firefighters and the public. The overall prescribed fire planning process should include a risk assessment, and reflect an understanding of the interaction of objectives and implementation limitations for the project.

Risks and uncertainties should be assessed in terms of values that could be impacted, how severe the threat may be, and the likelihood of undesirable impacts. Actions should be developed that minimize or eliminate threats and manage risk.

Risk Management is the process whereby management decisions are made and actions taken concerning control of hazards and considered acceptance of remaining risk.

Risk management consists of mitigation strategies and implementation activities to improve outcomes and minimize negative consequences.

For prescribed fire, risk assessment is accomplished with the Complexity Analysis process that identifies, analyzes and characterizes the potential hazards, threats, causes and consequences. The Complexity Analysis identifies critical items, mitigation measures and implementation actions to be addressed in the Prescribed Fire Plan and will acknowledge any remaining unmitigated risk in the final rating.

During the implementation phase of prescribed fires, personnel may encounter uncertain and dynamic conditions, where they must continuously evaluate risks with an eye on maintaining a safe working environment, meeting the prescribed fire objectives (on time, within budget and with available resources) and addressing social and political concerns.

The risk management process identified in the NWCG Incident Response Pocket Guide (IRPG, PMS 461) helps to identify, evaluate and mitigate time sensitive risks and hazards associated with prescribed fire.

Prescribed Fire Plan

The Prescribed Fire Plan is the site-specific implementation document. It is a legal document that provides the Agency Administrator the information needed to approve the plan and the Burn Boss with all the information needed to implement the prescribed fire. Prescribed fire projects must be implemented in compliance with the written plan.

Ecosystems are extremely dynamic and are subject to natural forces that induce "change(s)" over time. These periods of time may span multiples of decades or in some cases less than half of a decade to significantly alter the situation. It is for this reason that all Prescribed Fire Plans under the jurisdiction of Colorado state agencies will remain valid for a period of five years from their approval date. At the end of that time, the "expired" prescribed fire project must be re-evaluated and go through the planning and review process again to ensure that the plan is up to date and addresses any changes on the landscape that may have occurred or are occurring. This will ensure that any issues are appropriately addressed during the new planning cycle. Furthermore, it is recommended that current Prescribed Fire Plans that are three or more years past their approval date receive a Technical Review to ensure compliance with new or modified policies at the state, county and local levels.

All Prescribed Fire Plans for Colorado state agencies that were approved prior to the adoption of this policy must receive a Technical Review to ensure policy compliance.

Because the Prescribed Fire Plan is a legal document, extreme care should be invoked when describing components of the plan especially when using terms that imply mandatory compliance, required compliance or optional compliance.

In essence, the Prescribed Fire Plan can be thought of as an Incident Action Plan (IAP) for a prescribed fire project much like an IAP is the operational plan for a specific period of time on a wildland fire incident.

The components of a Prescribed Fire Plan should be configured to "flow" much like an IAP does on an incident. There are several reasons for this concept. First and foremost, prescribed fire is an inherently dangerous component of wildland fire management and therefore, most of those personnel assigned to implement the prescribed fire are required to be fully qualified wildland firefighters who have considerable knowledge and familiarity with IAPs. Those personnel know where pertinent information necessary to complete their assigned tasks are found and can readily access those important components in the IAP. This is critical, especially when the need to find essential information is time sensitive. Secondly, and most importantly, the IAP format for prescribed fire plans minimizes confusion by placing importance on presenting accurate and concise information without being lost in lengthy and verbose descriptions or narratives.

Prescribed fire plans will vary in their degree of detail. The size and complexity of the prescribed fire project will determine the level of detail required. The Division has developed a dynamic Prescribed Fire Plan template. This template allows for revision and updates which will be maintained on the Division's website. The Division's template is not required; however all state agency Prescribed Fire Plans must meet the 24 elemental requirements of this policy to be in compliance. In any case where a state agency has the lead role or plays a significant role in the planning and implementation of the project, the Division's current Prescribed Fire Plan template should be considered and utilized.

The 2012 Colorado DFPC Pile Burn template has recently been implemented for low-complexity prescribed fire projects however it does have some limitations regarding the amount of critical information it may be able to include. With the adoption of this 2014 Guide, the 2012 Pile Guide will be superseded and no longer valid. It is advisable to utilize the most current Division template for planning

projects at all levels of burn complexity. Any low-complexity pile burn projects that are planned following adoption of this policy should follow the Division's most current prescribed fire template.

The Colorado Burn Plan template is designed much like an Incident Action Plan (IAP) and all of the required and optional forms are patterned after the Incident Command System (ICS) forms currently utilized nation-wide for all types and levels of incidents.

Each Prescribed Fire Plan element must be addressed and then assembled in the sequence identified in the template. Many of the plan elements are linked together and issues in one element can have cascading effects throughout the prescribed fire planning and implementation process. Should an element not apply to a specific Prescribed Fire Plan, not applicable (N/A) may be utilized but must be documented in the Project File. In any case, a qualified Burn Boss should be involved in the burn planning process from conception to final completion.

When designing a prescribed fire project and developing a Prescribed Fire Plan, the following should be considered:

- Attention to project and unit design will resolve many implementation issues and simplify Prescribed Fire Plan development.
- Site specific information is always helpful in any plan development. These include such things as medevac sites, safety zones, water sources, cultural sites, areas with specific resource concerns, structures, gates, fences, etc.
- Always develop a Prescribed Fire Plan from scratch. Avoid "cutting and pasting" from other plans because there are strong tendencies to omit something important if the planners fall into the "cookie cutter" mode.
- It is always important to develop a plan with a wide diversity in viewpoints all the way from project conception to final approval. A Prescribed Fire Plan should always be developed as a team effort.
- Build a plan that captures as much detail as is practical, utilizing supporting documentation and data analysis which can be placed in the appendices of the Prescribed Fire Plan file. Often times a Prescribed Fire Plan is developed and for one reason or another is not implemented for a period of time and when it is finally ready to implement, staffing changes or availability of personnel dictates the need to have personnel implement the plan who have no prior knowledge of the plan's development. Those personnel will have a greater chance of success if they are provided with accurate and quality information.
- It is advisable when developing a Prescribed Fire Plan to utilize a planning area that is sufficient in size to enable the implementation of the project without severe limitations on unit locations, heavy reliance on pre-burn line construction or preparation, large amounts of holding and/or contingency resources, etc. Igniting a prescribed burn in a burn unit which is located adjacent to the planning area boundary not only puts undue pressure on the burn team to maintain control of the burn, it also drives up the complexity and associated costs to implement and ultimately increases the potential for failure.

Programmatic and/or multiple unit Prescribed Fire Plans with similar environmental conditions may be appropriate in some cases. These may be appropriate when a jurisdictional agency is developing area-wide projects or multi-year, phased programs.

Programmatic Low-Complexity Plan can be used for prescribed fire projects having similar fuel types, terrain, and prescription and employ the same types of firing and holding tactics. Site-specific unit information may not be known until implementation. When known, information is incorporated into the burn plan without technical review or amendment. Programmatic plans mostly cover broad areas, such as administrative units (wildlife areas, refuges, field units, parks, districts) and are low-complexity projects only.

Programmatic Moderate/High-Complexity Plan (may be known as a Multiple Unit Plan) are used on prescribed fire projects with multiple ignition units that can be ignited separately or concurrently. Each unit has site-specific information developed for applicable plan elements such as ignition, holding, and contingency prior to technical review and approval.

Long-duration, Multi-Complexity Plans may be used in large landscape scale projects where changes in fuel types and fuel loadings require the development of a long range course of action. In the State of Colorado, this type of Prescribed Fire Plan would be rare except in cases where large expanses of land under federal jurisdictions are involved and include some state-owned lands or scattered and isolated tracts in county, local or private ownership.

If an interagency mixed ownership Prescribed Fire Plan is being prepared, the development of all appropriate elements within the plan will be conducted in an interagency atmosphere. For cooperative burns implemented by entities and involving other jurisdictions, the local Agency Administrator has discretion to use the other entities' Prescribed Fire Plan template(s). Whichever template is used, it must meet the minimum standards of all concerned agencies.

Interagency agreements and/or private landowner agreements are usually required to implement prescribed fire on multiple ownerships. In any case, a thorough planning process must occur to incorporate each involved agencies' specific guidance.

The following are discussions of each individual element required as part of a complete Prescribed Fire Plan and the implementation policy related to the element. It should be noted at this point, that this Colorado State Prescribed Fire Policy deviates from the Interagency Prescribed Fire Planning and Implementation Procedures Guide by inclusion of additional elements within the Colorado policy that are not within the Interagency Guide due to specific guidance received from Colorado Law and Governor's direction.

When "building" the Prescribed Fire Plan Project File, it is advisable to assemble each element and the supporting documentation for those elements in an orderly fashion much as the chapters of a book. When the project is nearing the date of implementation, the appropriate IAP style forms can be reproduced and inserted into a streamlined "field" document which can be utilized by the implementing resources without encumbering them with non-essential reference documentation.

The Burn Boss with delegated authority will have a complete copy of the Project File, including all supporting documentation and maps in his/her possession in the field while assigned to the project.

Element 1: Signature/Cover Page

The following information must be included on the signature/cover page:

- Administrative unit name.
- Prescribed Fire Unit (burn unit)/Project name.
- At a minimum, three dated signatures are required: a Prescribed Fire Plan Preparer, a Technical Reviewer, and an Agency Administrator.
- Additional reviewer signatures, such as resource specialists/advisors may be included as required by agency or local policies.
- Final determined complexity rating(s).
- Prescribed Fire Plan expiration date.
- If the plan needs to be amended, the signed and dated amendments must be attached to the Prescribed Fire Plan.
- Agency and/or local policy may establish a periodic review and revalidation process. The documentation of the periodic review and revalidation should be included on the cover page.

- The Agency Administrator's approval signature indicates that the Prescribed Fire Plan meets agency policy and that it reflects the conditions specified in the parent planning/decision documentation for the project.
- Colorado Division of Fire Prevention & Control requires that a statement and signature block be included on the cover that certifies that the prescribed fire is out and deemed safe. This is to be signed and dated by the delegated Burn Boss of record for the prescribed fire at the time of "Fire Safe Declaration".

  In the case where a Prescribed Fire Plan includes multiple units burned over several months or years, each time a component of the project is completed and declared out, a copy of the cover page will be made so that each Fire Safe Certification can be signed and retained in the Project File.

Element 2: Agency Administrator Ignition Authorization, Burn Boss Delegation of Authority and Go/No Go Decision Documentation

- **Agency Administrator Ignition Authorization:** The Agency Administrator Ignition Authorization is required to be completed prior to ignition. It provides the Agency Administrator's authorization to implement the approved Prescribed Fire Plan.

  The authorization establishes a time period for the implementation of the Prescribed Fire Plan. If ignition of the prescribed fire is not initiated prior to the expiration date determined by the Agency Administrator, a new authorization is required. An "acting" Agency Administrator may sign the Agency Administrator Ignition Authorization, if qualified by agency policy and authority to do so has been delegated to them. A copy of this authorization must be maintained in the Project File.

  If the Prescribed Fire Plan is amended after the Agency Administrator has signed the Ignition Authorization, the authorization must be reviewed and revalidated.

  The Ignition Authorization establishes the Agency Administrator's expectations and provides approval that the prescribed fire may be ignited within the identified time period. It is not intended that the Ignition Authorization be signed at the same time the Prescribed Fire Plan is approved. The Ignition Authorization provides the flexibility for the prescribed fire to be ignited within a specified time period even if the Agency Administrator is unavailable during that time period.

  Prior to signature it is recommended that the Agency Administrator discuss the key items in the template with the jurisdictional fire management authority & Burn Boss. The time period authorized is negotiable among the Agency Administrator, fire management authority and Burn Boss and should reflect the discussion of the key items. Agency and/or local policy may dictate how far in advance of ignition the authorization may be signed. For state agency prescribed fires, the jurisdictional fire management authority is the Regional Fire Management Officer for the Division.

  All Ignition Authorizations will be included in the Project File.

- **Burn Boss Delegation of Authority:** The Agency Administrator is required to delegate authority (by name) to a specific Burn Boss in order to implement a Prescribed Fire Plan. This delegation of authority will include the specific expectations that the Agency Administrator requires of the Burn Boss during the duration of the project until the fire is declared out by the Burn Boss or until the delegation of authority is returned to the agency administrator. In the event a Burn Boss must return delegation to the Agency Administrator and the project remains

active, changes in complexity or is not yet declared out, the Agency Administrator or his/her designated "Acting" will initiate a new delegation of authority to a replacement Burn Boss or to the jurisdictional fire management organization.

All Delegations of Authority and their respective return documentation will be included in the Project File.

- **Prescribed Fire GO/NO-GO Checklist:** Prior to any ignition operations, the assigned Burn Boss will complete and sign the Prescribed Fire GO/NO-GO Checklist. The questions in the template are the minimum standard and agencies may elect to add questions and/or approval signatures. For each day of active ignition on a prescribed fire, a separate daily Prescribed Fire GO/NO-GO Checklist is required.

  The GO/NO-GO Checklist will be discussed and signed by the Burn Boss as well as those responsible for Holding, Ignition, Safety and the Resource Advisor. Additional signatories may include the Aerial Ignition Specialist, Public Information Officer or other key positions if applicable to the specific project situation. This gives all of the Command & General Staff of the prescribed fire a chance to discuss and resolve any emerging issues that may have arisen before the project is initiated.

  All daily GO/NO-GO checklists will be included in the Project File.

Element 3: Complexity Analysis

Sound risk management is a foundation for all prescribed fire planning and implementation activities. Risks and uncertainties relating to prescribed fire activities must be understood, analyzed, communicated, and managed as they relate to the cost of either doing or not doing an activity.

The Prescribed Fire Complexity Rating must be completed utilizing the Prescribed Fire Complexity Rating System Guide.

The purpose of the complexity rating process is to provide:

- Assignment of a complexity rating of high, moderate, or low to the prescribed fire and the level of Burn Boss qualification level.
- Management and implementation personnel a relative ranking as to the overall complexity of a specific prescribed fire project.
- The process that can be used to identify Prescribed Fire Plan elements or characteristics that may pose special problems or concerns, e.g. critical holding points (likely escape points), the need for multiple burn organizations, specialized equipment, special risks or hazards, etc.
- A process that identifies mitigation activities that need to be addressed in the Prescribed Fire Plan for key items listed in the complexity analysis rationales.

A preliminary rating will be determined early in the Prescribed Fire Plan development phase. It will identify potential concerns that may be mitigated during the plan preparation process. Once the Prescribed Fire Plan is nearing completion, the final complexity rating is made. The final complexity rating will be used as a basis for determining the prescribed fire organization, Burn Boss level of qualification and mitigation measures.

The Summary Complexity Rating Rational will clearly justify the prescribed fire organization and Burn Boss level. It must also identify risks from the Complexity Analysis that are rated higher than the Summary Complexity Rating and cannot be mitigated. At a minimum, those risks from the Complexity Analysis that are rated high and cannot be mitigated must be discussed in the Summary Complexity Rating Rationale.

During the development of the Prescribed Fire Plan, it is important for the preparer to develop and document mitigations for any potential hazards that may be manifested during the burn implementation and incorporate these into the complexity rating. By utilizing an Incident Action Plan Safety Analysis (ICS-215a) or similar type of safety risk/hazard analysis in this planning process for moderate and high-complexity level burns, the planner will be better able to identify, document and track the decision process for hazard mitigations and ensure the complexity rating for the project is commensurate with the risks identified.

The Complexity Analysis must be signed by the Prescribed Fire Plan Preparer and the Agency Administrator and attached as an appendix to the Prescribed Fire Plan. The Complexity Analysis Summary will be attached to the Prescribed Fire Plan as Element 3. This summary should include the same summary rationale that is in the Complexity Analysis as plan appendices.

Separate prescriptions and/or burn organizations for different stages of implementation may result in single or multiple complexity analyses and ratings. For example, a plan may have separate prescriptions for spring and fall burning that may require different organizations and constitute the need for additional complexity analyses.

If a prescribed fire complexity changes results in different Prescribed Fire Burn Boss qualifications, a separate complexity analysis is required. For example, for certain prescribed fires conducted over time, progressive or sequential actions may reduce complexity, organization and Burn Boss qualifications, (e.g. a large scale, high-complexity prescribed fire has been black-lined, portions burned and operations suspended for a period of time then resumed to continue or finish the prescribed fire). In this event, the Complexity Analysis and the Delegation of Authority to the Burn Boss must identify what changes or triggers must occur before a change in the Burn Boss qualifications is required.

A single Complexity Analysis may be used to handle multiple phases of implementation or separate burn organizations. Sufficient detail should be included to differentiate between the different elements ratings and provide sufficient rationale to explain the differences. Further, the Complexity Rating Summary must adequately summarize the difference in ratings resulting from assessing the different phases or organizations, and how those differences affect the Summary Complexity Determination.

Any complexity analysis for moderate to long-duration prescribed fires should take into consideration the uncertainty associated with seasonal changes in fuels, weather and protracted drought conditions.

Element 4: Description of the Prescribed Fire Area

Physical Description: This section of the plan will describe the physical features within and adjacent to the prescribed fire project area.

- Prescribed Fire Project Area: The Prescribed Fire Project Area covers the entire area where fire will be ignited and may be allowed to burn under this plan as documented in agencies parent decision documentation and decision. The project area may include multiple ignition units.
- Location**:** Describe the location of the prescribed fire project area and ignition units, including a legal description, Universal Transverse Mercator (UTM) and/or latitude/longitude (decimal degrees; NAD83 preferred), county, and state. Describe the physical, natural and/or human made boundaries, including ignition unit(s) of the prescribed fire project.
- Size: Area, in acres, of the prescribed fire project with a breakdown by ignition unit(s) and/or ownership if applicable.
- Topography: Identify the upper and lower range of elevation, slope(s) – maximum/minimum and average, and aspect(s) of the prescribed fire project area.

Vegetation/Fuels Description: Provide a description of current vegetation and fuels within the project area. Identify any reference materials used and maintain these reference materials in the Project File.

- Describe the structure and composition of the vegetation type(s) and fuel characteristics. The description may include natural or activity fuels, total fuel load (both live and dead) in tons/acre, dead fuel load by time-lag size classes, live fuel load (woody/herbaceous), fuel bed depth, and vertical and horizontal arrangement within the project boundary.
- Describe the percent of the unit composed of each vegetative type and the corresponding fuel model(s).
- Identify conditions (fuels, slope, and aspect) in and adjacent to boundaries that may be a potential threat for escaped fire.

Description of Unique Features and Resources: List and discuss special features, hazards, issues and constraints including those identified in parent planning documentation. Examples may include: fences to protect, power poles, historical/cultural sites, threatened and endangered species or habitat, etc.

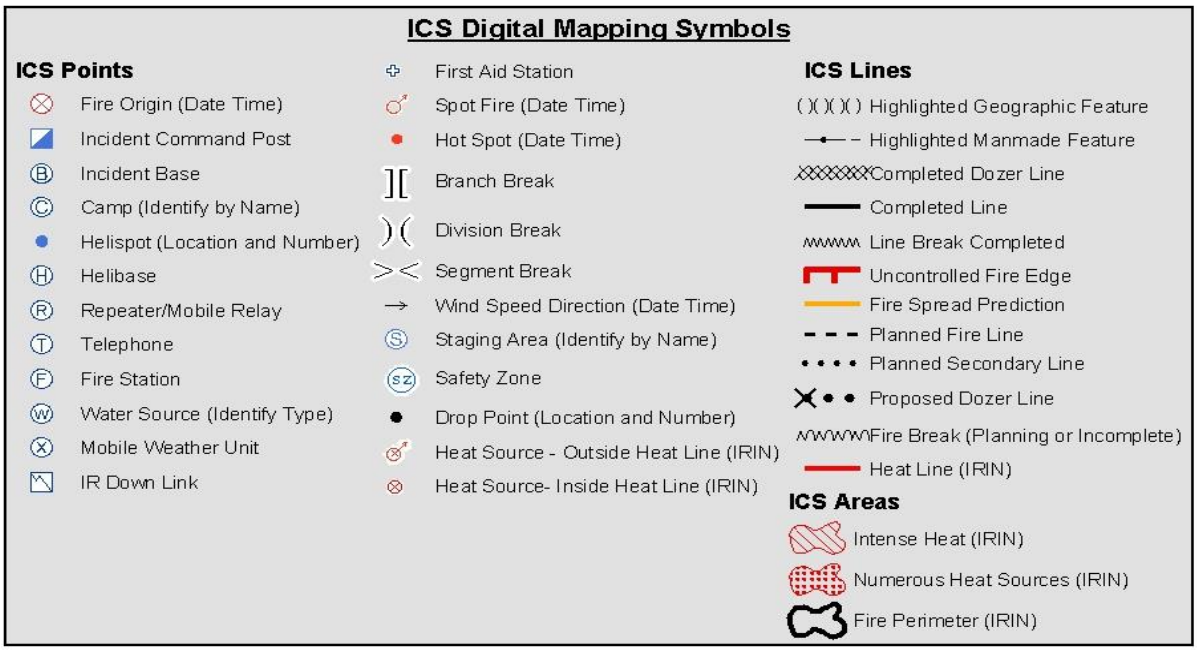
Maps: Maps will be developed and included in the Prescribed Fire Plan. At a minimum, the plan will include a vicinity and project map. The number of maps, map size and scale, legend and level of detail should be appropriate for the complexity of the project.

- Vicinity Map: Map scale will be such that the burn units can be located on the ground and in sufficient detail to guide implementation.
- Project Map(s): The project map(s) identify features in sufficient detail to guide and assist in operational implementation of the prescribed fire. Specific locations of sensitive features such as historical/cultural sites should not be displayed on project maps. The pre-burn briefing should address location and avoidance techniques. All project maps should include any natural barriers that the Prescribed Fire Plan references and should be identified as to the nature of the barrier, i.e., rock, water, talus, riparian areas, etc.
- Briefing Map(s): A large format "wall map" version of the project map is extremely useful for briefing prescribed fire implementation personnel as well as briefing the public and media when holding community or public meetings.
- Fuel Model Map(s): Included to describe the spatial complexity of the fuels. Display the distribution of the fire behavior fuel models or other fuels classifications, such as Fuels Characteristic Classification System (FCCS), within and adjacent to the ignition units as well as the overall project area and outside of the project area. The latter should include enough area to model potential escape scenarios. It is also very important to identify areas of unusual fuel complexes such as masticated fuel beds or areas where fuels loadings significantly deviate from the typical standardized fuel models. Additional maps or location descriptors of past wildfires and/or mechanical fuel treatments are useful information when describing fuel profiles.
- Smoke Impact Map(s): Optional but recommended for projects with critical smoke receptors or significant smoke concerns. This is a large-scale map, which identifies the potential smoke impact areas for the project. State and local air quality authority(s) will define the categories to be considered for the smoke impacts. This type of map is extremely useful to implementation personnel to illustrate the downwind track of the smoke plume and to emphasize the importance of adhering to wind direction parameters that may be identified in the prescription and/or the contingency planning elements of the Prescribed Fire Plan

All maps will include the standard mapping elements: title, name of preparer(s), date, north arrow, scale and legend. The map legend should utilize the standard ICS digital mapping symbols; see Figure 1 on the following page:

Note: The location(s) of Test Fire(s) will be identified on project maps utilizing clear text. In the case where multiple test fire locations are utilized for multi-day projects, the test fire label should also indicate the specific date and time that the test fire was initiated for each location.

Figure 1 – Incident Command System Mapping Symbols



Element 5: Objectives

Describe in clear, concise statements the specific measurable resource and fire objectives for this prescribed fire. Objectives are well defined statements describing how a treatment accomplishes project goals as described through the host agency's planning process and documented in the parent decision document.

Objectives are what drive the prescription development process therefore; Agency Administrators and their resource staff members need to be cognizant of the need to develop these objectives to be Specific, Measurable, Attainable, Realistic and Time sensitive (SMART). Besides being critical to the development of the prescription, objectives are used as a measure of project success, as determined through methods described in the Monitoring Element.

Element 6: Funding

Identify the funding source(s) and estimated cost(s) of the prescribed fire. Itemize by phase if desired. If there is an expectation that the prescribed fire Burn Boss needs to track implementation cost(s), identify the process for tracking expenditures and specify in the Delegation of Authority.

Element 7: Prescription

Prescription is the measurable criteria that define a range of conditions during which a prescribed fire may be ignited to meet Prescribed Fire Plan objectives. The prescription should be developed considering smoke management issues and perimeter control concerns.

Prescription parameters must be observable and measureable. This is a critical component of prescription development. Do not include parameters that cannot be observed or measured by the prescribed fire implementation team during the course of the prescribed fire. The plan prescription will describe a range of low to high limits for the environmental and/or fire behavior parameters required to meet Prescribed Fire Plan objectives. Describe only those parameters needed to identify the acceptable prescription window to meet Prescribed Fire Plan objectives.

In some cases, especially with low-complexity pile burning projects normally executed during the winter months, there is a tendency to identify snow cover by depth (usually in inches) only. This method can often be misleading as snow cover varies in moisture content and/or can settle over time. For example, a prescription identifies a minimum of 6" in snow cover which is obtained one day during a storm. When the Burn Boss prepares to burn the unit two days later, a couple of "sunny" days have caused the snow to settle an inch or two, thereby voiding the prescription. It is much more desirable to state in the prescription: "Adequate snow cover and moisture is present and available to retard any fire spread from the pile to adjacent fuels until the piles have ceased active burning and any applicable mop-up/control operations can be readily initiated."

In many cases, burning under the extremes of all prescriptive parameters would not meet or possibly exceed the desired prescribed fire behavior characteristics and are therefore out of prescription. Empirical evidence (historical evidence or researched data) and judgment may be used to identify or calibrate prescriptions. Weaknesses in modeling can be overridden, but must be justified with empirical evidence and/or verified with actual fire behavior.

Separate prescriptions may be needed for multiple fuel model conditions to address seasonal differences and/or types of ignition (black lining, aerial ignition, etc.). Separate prescriptions may result in multiple complexity ratings and burn organizations. For example, a separate prescription may be needed for black-lining operations if conditions will be significantly different from the primary prescription or if the holding resources differ from those identified for ignition and holding phases. Separate prescriptions may result in the need to identify multiple levels of management, organizational structures, implementation measures, and pre-burn considerations.

If the prescription parameters are being exceeded, the Prescribed Fire Burn Boss must evaluate fire controllability and whether fire effects will meet objectives. The Prescribed Fire Burn Boss must take action to ensure objectives are being met, or take appropriate actions to maintain control of or to secure the fire.

Fire behavior characteristics for fuel models within the maximum spotting distance and/or adjacent to the project boundaries must be considered and modeled. Holding and contingency plans must be developed with the consideration of the predicted fire behavior outside the ignition unit/project area that may occur during the identified prescription window. A short narrative that describes the desired fire behavior identified in the prescription and discusses how it will achieve the desired treatment objectives should be included.

The level of fire behavior modeling and the tools used should be commensurate with the scale and complexity of the fuel beds within the ignition units and landscape. Depending on objectives and conditions, spatial fire models may need to be used in addition to non-spatial modeling to establish the prescription window.

Consider using the skills of a Fire Behavior Analyst (FBAN), a Long-Term Analyst (LTAN), and/or Air Quality Specialist (AQSP) to develop prescriptions for high-complexity or long-duration prescribed fires.

Over the past century increased forest density, active wildfire suppression, increased levels of insect and disease outbreaks and increased development into the wildland urban-interface (WUI) has elevated the

threat of damaging wildfires in Colorado historical proportions. Within the past decade and a half, the application of mechanical fuel treatments has increased state-wide to help mitigate the wildfire threat. One mitigation technique utilized extensively in Colorado included the mastication of various species of fuels. Once these fuels are chipped or chopped up, they are typically deposited on the forest floor in varied depths and concentrations.

Current research on characterizing fuel beds after mastication and the associated fire behavior and/or fire effects of these fuel beds during prescribed fire is mixed. Some studies indicate that masticated fuels do not noticeably affect fire intensity and severity during a prescribed fire while other studies have concluded that masticated fuel beds show potential for greater surface flame lengths and rates of spread. This incongruity or inconsistency is likely attributable to fuel species and treatment type; slash particle size, fuel bed depth, and prevailing weather conditions. In any case, masticated fuels have exhibited high residence times during past burns which may require more time and energy of firefighters to suppress and patrol than lighter surface fuels.

Extra care must be taken when planning or conducting prescribed fires involving heavier fuel loadings and the prescribed fire planner needs to factor their unique characteristics into prescription development as well as holding, mop-up and patrol requirements. It is not uncommon for these heavier fuel loadings to burn high intensities over extended periods of time (days and/or weeks) and present elevated re-burn and spotting potentials.

Include all modeling and/or empirical evidence documentation as an appendix in the Project File.

Prescription Development Considerations:

- The prescription influences multiple elements of the plan, including the ignition plan, the holding plan, the contingency plan, the needed organizations, and determining the complexity of the prescribed fire.
- Failure to consider the potential fire behavior in fuels outside of the ignition units or project area has been identified as a common denominator of escaped prescribed fires.
- Various computer modelling techniques in conjunction with field data aids in the analysis of wind flow across complex terrain for assessing fire movement or critical escape points.
- Prescription development needs to consider the seasonal changes in both live and dead fuel conditions.
- When using the Scott and Burgan dynamic fuel models (RMRS-GTR-153) to write a prescription, be aware that live herbaceous moisture content shifts between live and dead and significantly affects fire behavior. Behave Plus (RMRS-GTR-249) can also be used to see how changing the live fuel moisture affects changes to fire behavior related to fine dead fuel moisture.
- A well written description of expected fire behavior that is based on the ignition pattern and timing, provides additional understanding of calculated fire behavior values by making them realistic and achievable.

Element 8: Scheduling

Identify the general implementation schedule including time of day for ignition, duration of ignition or season(s) and note any constraints (dates, days of the week, nesting season, hunting season, etc.) on when the project may not be conducted. For prescribed fires with multiple ignitions or burn days, estimate project duration.

For multi-unit projects or long-duration burns identify any special sequencing requirements, i.e. Burn Unit #5 must be completed before implementing Burn Unit #12.

The Agency Administrator's ignition authorization may identify additional scheduling constraints.

When implementing prescribed fires on state lands during periods when preparedness levels in the respective Zone or within the Geographic Area are at 3 or above, the Agency Administrator and the Burn Boss for the prescribed fire must receive pre-approval from the Director or the designated acting, Division of Fire Prevention and Control.

Element 9: Pre-Burn Considerations

Describe on and off-site actions, including mitigation and design features identified in the parent decision documentation, to be conducted and any other considerations to be addressed prior to implementation. Examples include clearances; mitigation actions generated by the complexity analysis; line to be built; preparation of critical holding points; snags to be felled or protected; equipment to be pre-positioned; special features to be protected; warning signs to be placed; weather data collection; fuels inventory/moisture sampling; monitoring needs; responsibility; and timeframes.

Describe any fuel sampling and weather data that may need to be obtained. This data should be taken at the project site. If this is not possible, use the closest representative site.

Identify in the burn plan the method and frequency for obtaining weather and smoke management forecast(s). For all Colorado state agency prescribed fire projects; spot weather forecasts are required prior to ignition on all ignition days. The Burn Boss is required to obtain a spot forecast on any days the fire is actively spreading to determine holding, mop-up or patrol staffing needs. A smoke management forecast should be obtained when residual smoke has potential to impact smoke sensitive areas. A copy of the forecasts will be included in the Project File.

Only U.S. National Weather Service generated fire weather products (including spot weather forecasts) will be authorized on Colorado state agency prescribed fire projects as the industry standard. Long range climatology statements/outlooks provided by the Rocky Mountain Area Coordination Center predictive services meteorologists may be utilized to gain advanced intelligence on more long-range weather patterns and potential changes to conditions not normally addressed in NWS products however, these statements/outlooks are not to be utilized as a substitute for Spot Weather Forecasts.

In general, drought should be given serious consideration in prescribed fire planning. For long-duration prescribed fires, a specific drought threshold/indicator appropriate to the project area should be included for consideration as part of the weather evaluation.

As part of the pre-burn considerations, public and interagency notifications are a key component and are more thoroughly described within the Notification Element.

Element 10: Notifications

During the project planning phase, the agency responsible for the project planning and implementation shall contact all agencies having jurisdictional authority within or adjacent to the project planning area. It is imperative that all appropriate agencies are permitted to provide their input into the Burn Plan and to assist in identifying potential threats to life and property.

If the project may directly affect a community, a community meeting should be held prior to the implementation of the prescribed fire to provide interested parties information on the Burn Plan, including the objectives to be accomplished, notification procedures, and community protection measures.

The responsible agency and the Burn Boss delegated authority for the project shall post notice of proposed burn projects no later than one week prior to the initiation of burn operations. Notice may include, but is not limited to: fliers, signs, press releases, and public service announcements.

All Prescribed Fire Plans shall contain a notification section that identifies all governmental agencies that may be impacted or have any jurisdiction for the burn project area or any area that is immediately adjacent. These entities shall be contacted by the Burn Boss or his or her designee at least 24 hours prior to burn initiation. It should be noted that some dispatch/communications centers utilizing computer aided dispatch systems (CAD) prefer to only be notified on the day the project is initiated. Any special considerations such as this should be noted on the notification list.

In addition, the agency responsible for the burn will maintain a contact list of individuals and organizations other than jurisdictional agencies listed above to be notified prior to ignition; when the notification is to be made; current phone numbers; and the individual responsible for making notification. Notification of adjacent landowners, local authorities, and other affected residents (to the extent practicable) is required prior to ignition. With the permission of the jurisdictional authority, notification by the local/county/regional Reverse 911® or other community notification system(s) should be considered.

Attempts and/or actual notifications will be documented with date and method and placed in the Project File.

Temporary road signs shall be posted on arterial roads leading into a burn operation area. These may include Colorado Department of Transportation portable electronic signs for major roadways in visual proximity to burn areas. These signs shall be placed on the day burn operations begin and shall remain posted and visible until projects are completed and significant smoke is no longer evident.

Element 11: Briefing

All assigned personnel must be briefed at the beginning of each operational period to ensure personnel safety considerations (including any hazard analysis or other agency-specific risk analysis) and prescribed fire objectives and operations are clearly defined and understood. Briefing checklists are required to be included in the Prescribed Fire Plan and will include, but are not limited to the following elements:

- Burn organization and assignments
- Burn objectives and prescription
- Description of the prescribed fire area
- Special considerations and sensitive features
- Expected weather & fire behavior
- Communications
- Ignition plan
- Holding plan
- Contingency plan and assignments
- Wildfire declaration
- Safety and medical plan
- If aerial ignition devices will be used, include an aerial ignition briefing.

The briefing checklist should list briefing topics only, not re-state what is listed in the Prescribed Fire Plan for that element.

The Prescribed Fire Burn Boss will ensure that any new personnel arriving to the prescribed fire receives a briefing prior to assignment.

Element 12: Organization and Equipment

The complexity of each prescribed fire determines the organization capabilities needed to safely achieve the objectives specified in the Prescribed Fire Plan. Specify the minimum required implementation organization, equipment and supplies needed for each phase of the prescribed fire until declared out. The burn planner may choose to consider specifying line production rates, as opposed to specific

numbers and kinds of resources (crews, engines, dozers, etc.). At a minimum, a Prescribed Fire Burn Boss will be assigned to every prescribed fire. Collateral duty positions will be identified in the organization list and/or chart of the Prescribed Fire Plan.

Standard ICS fire management principles for span-of-control and length of assignments will be adhered to when developing burn implementation organization(s) and used in managing prescribed fires. On prescribed fires with large organizations, use the ICS organization and staffing commensurate with the level of complexity. Consider the use of a Prescribed Fire Manager in conducting multiple prescribed fires.

Before implementation (all phases) of the prescribed fire, documentation in the form of an organization list and/or chart must be completed. Changes to the staffing and assignments during implementation should be documented in unit logs or prescribed fire organizers and included in the Project File. The organization list and/or chart in the burn plan should not list personnel by name, only the position should be shown. On the day of the burn, names can be written in for each position and documented in the Project File.

No less than the minimum organization, identified for the applicable phase, described in the approved Prescribed Fire Plan will be used for implementation.

Any changes to the planned organization that reduce capabilities to less than the minimum organization and/or capability identified or increase complexity will require an amendment. Alternate minimum organizations or capabilities may be identified for different phases of implementation (i.e. holding v. mop-up and patrol, different ignition operations, different prescriptions) that would minimize the need for an amendment.

Multiple prescriptions for one Prescribed Fire Plan are permissible (Element 7). Multiple prescriptions may require identifying and developing multiple organizations.

Fire behavior, weather predictions, and staffing levels will continually fluctuate on long-term burns. As activity on the burn increases and decreases, the qualifications of onsite leadership must be reassessed to accurately consider the burn complexity**.**

The Prescribed Fire Burn Boss who receives a signed Delegation of Authority from the Agency Administrator is responsible for the fire until declared out unless responsibility is formally passed via a Return of Delegation to the Agency Administrator. At that point, a new Delegation of Authority would be needed to assign the project to a new Burn Boss or other qualified member of a fire management organization.

Element 13: Communications

Develop communications plan specific to the project's implementation to address safety and tactical resource management needs.

Identify and assign command, tactical, and air operations frequencies as needed. Also, include any required telephone, satellite or cellular numbers.

Element 14: Public & Personnel Safety and Medical Plan

Describe provisions made for public and personnel safety. All personnel who are within the active prescribed fire area are required to wear personal protective equipment and be qualified under NWCG guidance for the position they are assigned, including the commensurate physical fitness levels.

Identify and analyze the safety hazards unique to the individual prescribed fire project and specify personnel safety and emergency procedures. Include safety hazards (including smoke exposure, smoke on roads, and other impacts) and measures taken to reduce those hazards. A hazard analysis or other agency-specific risk assessment is required for each prescribed fire.

The emergency medical procedures and evacuation methods discussion should address stabilization and transport of accident victim(s). Identification of medical evacuation options, clarification of local, county, state or federal resource capabilities, ordering procedures, role of dispatch centers, and key contacts or liaisons should be included.

Consider incorporating the Standardized Medical Emergency Procedures for Incident Management Teams (IMT), Standardized Communication Center Protocols, and an expanded ICS 206 Medical Plan that includes emergency medical procedures into the Prescribed Fire Plan.

Element 15: Test Fire

Provisions for a test fire are required in the plan. The test fire should be ignited in a representative location and results must be documented. The test fire should be ignited in an area that can be easily controlled. The purpose of the test fire is to verify that the prescribed fire behavior characteristics will meet management objectives and in some cases, allow the burn team to initially observe localized smoke plume movement and lofting characteristics.

In many applications, analysis of the initial ignitions may provide adequate test fire results. On multiple-day projects, evaluation of current active fire behavior, in lieu of a test fire, may provide a comparative basis for continuing and must be documented. If in doubt however, initiate a separate test fire and evaluate results.

Prior to ignition of either the test fire or ignition operations, compare the Prescribed Fire Plan prescription elements against local area or spot weather forecasts, other predicted conditions, and the actual onsite conditions to determine if conditions are suitable for either the test fire or active ignition.

The Prescribed Fire Burn Boss should determine if observed fire behavior will achieve prescribed fire objectives during the operational period to continue with active ignition.

The location(s) of all test fires will be identified on project maps utilizing clear text and should include the date and time the test fire was initiated. This map record will be maintained in the Project File.

Test Fire Considerations:

- Past experience with test fires conducted in locations that were in cooler, more moist, or in fuels with a different kind of fire behavior than the prescribed fire area, yielded misleading results (i.e. fire behavior was lower: lower flame lengths and/or rate of spread).
- Test fires that are not ignited according to the ignition plan can provide unrealistic examples of fire behavior, e.g. how quickly fire will reach momentum for burning intensity, and the effects of area ignitions that encompass large areas of unburned fuel.
- Variations of ignition timing can also exceed test fire characteristics producing high burning intensity that exceeds objectives and creates unexpected problems for ignition and holding personnel.
- Test fires for units with aerial ignition are misleading. They will only show ease of ignition, burning intensity for a small area, and smoke characteristics where wind is the dominant force. Aerial ignition has the potential of near mass ignition where the fire's energy will exceed that of the wind. Burning intensity increases rapidly and can easily exceed holding capabilities caused by radiant heat as well as increasing opportunity for lofting large fire brands.

Element 16: Ignition Assignment Plan

Describe general ignition operations. Examples could include firing methods, devices, techniques, sequences within individual units or between multiple units, patterns, and minimum ignition staffing for single or multiple unit operations.

During active ignition, actual firing patterns, techniques, sequences, patterns and staffing will be determined and adjusted to meet objectives as dictated by topographic, fuels, and weather factors.

Maps showing proposed firing patterns may be included, however, caution should be exercised when developing ignition pattern maps. Conditions may change during the burn period which may negate the validity of ignition pattern maps and any deviation from the firing plan map may be viewed as not following the Prescribed Fire Plan.

If aerial ignition is planned, include aviation operations, organization, and safety within the Prescribed Fire Plan, Aerial Ignition Plan, or in an agency-specific Aviation Operating Plan. Refer to the Interagency Helicopter Operations Guide, (PMS 510) and the Interagency Aerial Ignition Guide (PMS 501) for more detailed information on this topic.

Multiple prescriptions and ignition operations (black line, primary, aerial, etc.) may require developing multiple ignition organizations.

Element 17: Holding Assignment Plan

Describe general procedures for operations to maintain the fire within the project area and meet project objectives until the fire is declared out or until the residual burning extends past the 24 hours immediately following active ignition operations. This should include mop-up and/or patrol procedures for that initial time period. If residual burning or heat extends past the initial 24 hour post ignition period, the planner should consider incorporating a Mop-up and Patrol assignment component into the Prescribed Fire Plan.

Patrol schedules will vary dependent upon fuel type(s) internal to the control barriers as well as the unburned fuel outside of control barriers. Fuel types that are compacted or have substantial amounts of residual material remaining after ignition, such as areas with masticated fuels or concentration of heavy or large diameter fuels, may require more frequent patrols for extended periods of time.

Describe critical holding points and mitigation actions. The holding plan must be developed taking into consideration the predicted fire behavior outside the project or unit boundaries.

Describe minimum capabilities needed for all phases of implementation, including needs for critical holding points and associated mitigation actions. When developing holding force needs, attach or reference fire behavior modeling outputs or worksheets and/or documented empirical evidence to justify minimum holding resources required. These reference documents should be located in the appendices of the Prescribed Fire Plan.

On complex and/or long-duration prescribed fires breaking the Holding Plan into Ignition, Mop-up and Patrol phases, each with associated Management Action Points (MAPs) is an effective approach to manage uncertainty associated with temporal changes in weather and fire behavior. Strategic Operations Planners (SOPL) and Long-term Analysts (LTAN) can assist in the development of MAPs**.**

Long-duration prescribed fires that continue into fire weather conditions that may escalate fire behavior, have an increased likelihood of escape due to increasing fire activity especially in units with heavy fuel loadings. Adjustments of complexity levels, holding and contingency plans are examples of additional planning that might be necessary.

Different organizations may be identified for different phases of implementation (i.e. holding versus mop-up and patrol, different ignition operations, different prescriptions). Multiple prescriptions (black line, unit, for example) may require separate complexity ratings and separate holding organizations for each of the prescriptions. Identify considerations for changes in staffing levels and when a prescribed fire may be moved from the holding phase to the mop-up and patrol phase or left unstaffed.

If onsite resources are insufficient to meet the Prescribed Fire Plan objectives, then the Burn Boss should consider implementing the Contingency Plan or Wildfire Conversion.

Element 18: Mop-Up and Patrol Assignment Plan

In the event the prescribed fire continues to hold heat or exhibits residual burning past the 24 hour period following the end of active ignition operations, a Mop-Up and Patrol Assignment component of the plan should be included. This is to ensure that the prescribed fire receives attention and actions that focus on maintaining the prescribed fire under control until the fire is declared out or deemed safe enough to leave unstaffed.

Remember; on Colorado state agency prescribed burn projects, at least one person, who must be qualified by NWCG standards as a prescribed Burn Boss at the level commensurate with the complexity of the burn, shall be present on site:

- During the conduct of the prescribed burn; and
- Until the fire is adequately confined to reasonably prevent escape of the fire from the area intended to be burned; or
- Until the prescribed burning is completed and all fire is declared to be out.

Once the prescribed fire is determined to "out", the Burn Boss with delegated authority will sign the Fire Safe Certification on the cover page of the Prescribed Fire Plan.

All prescribed burns shall receive daily patrols by holding forces until the potential for escape is diminished. The use of thermal sensors or thermal imaging cameras to detect heat signatures that may pose a threat to control lines is encouraged.

Many times, depending upon the fuels that are involved in a prescribed fire, it is not uncommon to have smoldering fuels well within control lines to burn for days or weeks following the actual ignition. The Mop Up and Patrol assignment should address the resource needs and scheduling of mop up actions and or patrols to be implemented during periods of extended burning.

Any Mop-up and Patrol assignment should include instructions weather and fuels monitoring. In the case of weather monitoring, the Burn Boss should have daily contact with the National Weather Service to obtain Spot Weather Forecasts and General Fire Weather Zone Forecasts with an emphasis on multi-day outlooks. These outlooks should pay particular note to frontal passages and/or the potential for wind events.

In the case of a prescribed fire potentially needing mop-up and patrol actions for a period of longer than five days from cessation of ignition operations, the prescribed fire plan should include an Extended Mop-Up and Patrol assignment which incorporates long-range weather and fuels outlooks.

Element 19: Contingency Plan

The contingency plan is the portion of the Prescribed Fire Plan that considers low probability but high consequence events and the actions needed to mitigate them.

Contingency planning is the determination of additional actions and/or additional resources needed to keep the prescribed fire within the scope of the Prescribed Fire Plan. At a minimum, this element will

address contingency options related to maintaining the prescribed fire within the ignition unit and/or prescribed fire project area. See appendix E, Contingency Planning Aids, for additional suggestions for developing contingency plans.

Contingency planning can address not meeting prescribed fire objectives, critical holding points, smoke management considerations such as impacts to critical smoke receptors, staffing, "incidents within incidents" and other unanticipated events.

The contingency plan may establish Management Action Points (MAPs) or limits that indicate when additional actions (tactical and non-tactical) and/or resources will be needed. If it is determined that contingency resources or actions are not needed, the rationale should be documented in this element of the Prescribed Fire Plan.

Contingency needs should be based on the tactics to mitigate events or impacts to prescribed fire objectives or values at risk. Contingency resources are the minimum resources or capabilities required to implement the MAPs, trigger points or limits and should be based upon the values at risk and the prescription window identified the prescription. For purposes of this element, the terms capabilities and resources are interchangeable.

These resources may be on or off site as required by the Prescribed Fire Plan. If the identified contingency resources will not be on-site, identify the maximum acceptable response time for those resources. For Colorado state projects, this time frame should never exceed 2 hours maximum response time. Regardless of the location of the contingency resources, these resources are assigned to the project and are not available for other assignments or duties. Never identify any contingency resource that the Burn Boss does not have full control over during the project. If off-site, the contingency resources' pay status will be determined by agency policy.

Separate contingency plans may be developed to address seasonal differences, types of ignitions or phases of the burn implementation as described in the prescription(s), ignition and holding plans developed for the burn.

The minimum number and type of contingency resources may vary depending on the location, implementation phase and applicable MAP or limit. The Burn Boss will verify and document availability of identified contingency resources and response time throughout each phase of the burn. If contingency resources availability falls below the minimum required for the current location and implementation phase, actions must be taken to secure operations until identified resources are replaced.

Contingency resources or actions identified for MAPs, or limits, can be activated individually or collectively by the Burn Boss as needed or as identified in the Prescribed Fire Plan.

Once a contingency resource is committed to a specific fire action (wildfire or prescribed fire), it cannot be considered a resource for another assignment until the Burn Boss determines that contingency resources are no longer needed for the project or until replacement resources have been ordered, have arrived on-scene and are secured for the project.

The Agency Administrator will determine if and when he or she is to be notified that contingency actions are being taken.

If the contingency actions are successful at bringing the project back within the scope of the Prescribed Fire Plan, the project may continue.

Taking contingency actions or ordering additional contingency resources should be documented in the Project File.

Contingency Plan Considerations:

- The ability to successfully manage the unexpected is dependent on having comprehensive contingency plans and updating them as needed during the burn. Most Burn Bosses expect that their burn will have a successful outcome. However, when their fire escaped, many felt that adequate contingency plans were not in place.

- Contingency plans with identified management action points (spatial or temporal) should be identified and addressed prior to ignition. The availability and effectiveness of contingency resources also need to be well planned and coordinated prior to ignition.
- Contingency plans for long-duration prescribed fires should address how the burning will be stopped if adverse conditions are experienced, such as a persistent high pressure system that limits smoke dispersion, or fire behavior that is no longer meeting objectives. Several questions must be answered beforehand, such as "where are the likely controls or internal check lines or other barriers that could be used?", and "what are the MAPs."
- When calculating contingency resource needs or capabilities the fire behavior outside of the burn unit will usually be quite different than within the unit, with flame lengths and rates of spread of a head fire.
- The intent of contingency planning is not to get stuck in an endless "do-loop" and develop MAPs for every potential scenario but it should focus attention on the area's most vulnerable to risk of escape.
- Spatial fire behavior modeling can assist in identifying potential problem areas and the development of MAPs.
- Contingencies for unplanned smoke impacts need to consider both the day and/or days following active ignition. Many smoke related problems occur at night (post ignition) or days following ignition when most resources have been demobilized.
- Consider what might happen if two or three things go wrong at the same time. The probability may be very low, but the impact can be extreme. Almost every major prescribed fire disaster involved multiple failures.

Element 20: Wildfire Declaration

The Prescribed Fire Plan will specify who has the authority to declare a wildfire.

A prescribed fire or a portion/segment of a prescribed fire must be declared a wildfire by those identified in the plan with the authority to do so when one or more of the following criteria are met:

- Prescription parameters are exceeded and holding and contingency actions cannot secure the fire by the end of the next burning period; or,
- The fire has spread outside the unit or project area or is likely to do so and the associated contingency actions have failed or are likely to fail and the fire cannot be contained by the end of the next burning period.

It is critical to remember that those personnel on the project must maintain constant situational awareness and in the event that a prescribed fire is presenting the on-scene personnel indicators that the project may need to be declared an escape, it is imperative to make such a declaration without delay. In past escaped prescribed fire situations, it is often the case where personnel did not want to declare an escape because of the perception that declaring an escape is an admission of failure. By delaying the wildfire declaration, valuable time may be lost, thereby making the situation more precarious.

A prescribed fire can be declared a wildfire for reasons other than an escape if events cannot be mitigated as determined by the Burn Boss and Agency Administrator.

Actions to be taken when a prescribed fire is declared a wildfire include:

- Wildfire declaration (by whom)
- IC assignment
- Notifications
- Resource ordering

In the event of an escaped prescribed fire, the local authorities, adjacent landowners, and other affected residents shall be notified without delay.

It is critical to identify, during the pre-burn briefing, who will become the Incident Commander when the prescribed fire is declared a wildfire. This is usually the Burn Boss with the other command and general staff of the prescribed burn becoming various wildfire positions on the declared fire (dependent upon their qualifications). It is critical that everyone assigned to the prescribed fire understands completely what role each and every member is to fill in the event of a wildfire declaration.

It should be considered a "Transition Period" when a prescribed fire is declared a wildfire. Because transition periods are considered one of the most hazardous periods on any wildland fire event, it becomes even more important that confusion is limited and personnel are fully aware of their roles and responsibilities.

The Wildfire Declaration section of the plan should include a list of resources that will likely need to be ordered once the project is declared a wildfire. Some basic modeling during the project planning phase can help determine the most likely number and type of resource that may need to be initially ordered.

Agency or local policy may limit the strategic and tactical responses available for a prescribed fire that is declared a wildfire.

During the planning stage, the Agency Administrator must determine and document in the Wildfire Declaration Element the funding requirements and sources that will cover suppression costs when a specific prescribed fire is converted to a wildfire.

Element 21: Smoke Management and Air Quality Plan

Smoke is how most of the general public or news media directly experience prescribed fire. Public health and safety issues caused by smoke can quickly become the Burn Boss and Agency Administrator's number one concern. Great care must be taken to avoid negative impacts to public health and safety.

A smoke receptor is any place you do not want heavy smoke. In the burn plan, list the burn area's most important receptors.

Examples are towns, subdivisions, schools, elder homes, hospitals, and more. Consider highways and other places smoke could compromise traffic safety.

- Receptors can be time-specific, such as a local special event.
- The closer the burn is to a receptor, the more attention is warranted. A single home adjacent to a burn may be an important smoke consideration, while the same isolated home half a mile away may be much less so.
- For pile burns and for broadcast burns in forest fuels, pay strongest attention to what receptors may be down drainage. This is where night smoke is likely to go. Night smoke causes more problems overall than does smoke during the day.
- Smoke planning may need to address areas farther from the burn than is at all obvious. Twenty miles from a moderate size pile burn, the increased pollution from the smoke may be measurable even in daytime. People with health sensitivities may react to smoke concentrations too faint to see or smell. If in doubt, look farther out from the project area.
- Finally, two regulatory designations may apply. Unless planners already are familiar with these receptors, one can generally rely on the Colorado APCD to assist in addressing their needs.
    - The older and larger National Parks and Wildernesses are designated in federal law as Class I air sheds deserving of special protection from air pollution.
    - Areas, typically large cities, that have or recently have had badly polluted air to the extent they have been formally designated as "non-attainment" or "maintenance" may need extra consideration with respect to smoke.

Public and inter-agency outreach which is addressed in the Notifications Element is critical to good smoke management and protecting public health.

Consider in the Notifications Element how will the project outreach provide a reasonable opportunity for a person who has health concerns related to smoke to find out about the proposed burn. Would they have time to contact the responsible agency in advance?

The Prescribed Fire Plan must identify how to protect receptors from excessive impacts.

- Examples are constrained wind directions, completing ignition a specified number of hours before sunset, and burning only on days with a specified minimum forecasted ventilation index. Refer to the Smoke Management Guide for Prescribed and Wildland Fire (NWCG PMS #420-2) for other smoke management planning suggestions and smoke management techniques for reducing or redistributing emissions. Air regulators are another source of advice to consider.
- The extent of mitigation should reflect the complexity, risk, consequences, and difficulty of successful implementation of the burn's smoke situation. It may be quite different than the burn's complexity overall.

The frequency and intensity of smoke monitoring also should be tailored to the smoke's complexity.

Describe in the burn plan the minimum requirements for monitoring this burn's smoke.

- Unless smoke dissipates to invisibility within a few hundred yards, smoke cannot be monitored effectively from the burn site. The smoke must be viewed from a sufficient distance to see the plume in cross-section. The person or people who monitor the smoke may not otherwise be connected with the burn. Webcams, trusted residents, or coworkers in an office with a good view all can help. Smoke monitoring may be a PIO's collateral duty. On the other hand someone who must stay at the burn site, like a FEMO collecting weather data, is not a good choice. Ideally smoke monitors should have a basic understanding of fire behavior and fire weather.
- Usually most of the smoke is produced during the last half or third of ignition. Monitoring is generally most useful once the burn is well underway, after interior ignition starts. For burns in timber, whether the fuel is piled or broadcast, smoke monitoring may be required until dark, and sometimes again the next morning.

If, despite all efforts, smoke impacts are excessive, a smoke contingency plan will be needed. Include it in the Prescribed Fire Plan Contingency Element. It may be as simple as extinguishing a few hand piles with snow as quickly as feasible. At worst it may be limited to advising residents down drainage that heavy smoke overnight is likely. The biggest challenge in building a good smoke contingency plan is to make it feasible and realistic. Procedures for promptly advising air regulators of problems should be included in the smoke contingency plan.

In Colorado, burns conducted for exclusively agricultural purposes do not need a smoke permit. (The land's tax designation is not necessarily determinative.) With few exceptions, all other prescribed burns in Colorado must have a smoke permit.

- The Prescribed Fire Plan should say that any required smoke permit must be obtained and its terms met.
- Burn permits are legally binding. They cannot be "adjusted" in the field.
- To apply for a smoke permit and learn about permitting requirements, contact either the health department for the County in which the burn will occur or the state Health Department http://www.colorado.gov/cdphe/smoke .
- Burn permits should be obtained well ahead of time. Several months in advance are not too early to apply, especially if the burn's smoke is challenging.

Element 22: Public Information Plan

This component of the Prescribed Fire Plan is closely related to the Notification Element and in many cases, especially during more complex prescribed fire projects, a Public Affairs Specialist or Public

Information Officer may be assigned to the project. In these cases, the Burn Boss may choose to delegate the notifications duties to this individual.

Besides notifications components, the duties within this plan may include providing on-scene information to the public, updates of progress to the public and/or media, providing a social media link to the project and also to assist the Agency Administrator in managing public information outreach and information dissemination.

In some cases, the Agency Administrator or his/her staff may take the lead in this arena and the prescribed fire information person may serve as a link between the project and the agency in charge.

Element 23: Monitoring

Prescribed fire monitoring is defined as the collection and analysis of repeated observations or measurements to evaluate changes in condition and progress toward meeting a management objective.

Describe the monitoring that will be required to ensure that Prescribed Fire Plan objectives are met. For a prescribed fire, at a minimum specify the weather (forecast and observed), fire behavior and fuels information and smoke dispersal monitoring required during all phases of the project and the procedures for acquiring it, including who and when.

For long-duration prescribed fires monitoring of smoke transport and impacts is highly recommended. Consider a range of monitoring activities including a visual smoke report, web cams to identify smoke plume and smoke haze or ambient air quality monitors.

When conducting long-duration prescribed fires it is important to do periodic assessments and document what the conditions are, what you saw and what you did. All of it goes back into a feedback loop tied to the MAPs set up for Holding and Contingency.

Monitoring documents should include all unit logs or notes maintained by the various personnel assigned to the project.

All monitoring documentation will be maintained in the Project File as appendices.

Element 24: Post-burn Activities

Describe the post-burn activities that must be completed. This may include preparing a post-burn report(s), finalizing the Project File, safety mitigation measures, close out of applicable pre-burn considerations, close out of parent planning document requirements and rehabilitation needs. This element as well as the monitoring element may be combined in the appendix of the Project File.

Project /Action Plan File Structure Protocols

Project File

All prescribed fire Project Files contain some or all of the following information. Agencies and/or administrative units may require additional information.

SECTION ONE – PARENT DOCUMENTS
Agency Specific Planning & Decision Documents
Cooperative Agreements/Funding Agreements

Memoranda of Understanding
Smoke/Fire Control Permits

SECTION TWO – CORE PRESCRIBED FIRE PLAN
Cover/Signature (Rx-200)
Prescribed Fire Briefing (Rx-201)
Prescribed Fire Project Objectives (Rx202a)
Prescribed Fire Pre-Burn Considerations (Rx-202a1) "Optional"
Prescribed Fire Prescription (Rx202b)
Prescribed Fire Complexity/Risk Assessment (NWCG Complexity Rating Summary Form)
Prescribed Fire Organization (Rx-203a)
Organization Chart (Rx-207) "Optional"
Prescribed Fire Equipment & Supplies (Rx-203b)
Prescribed Fire Ignition Assignment (Rx-204a)
Prescribed Fire Holding Assignment (Rx-204b)
Prescribed Fire Mop-Up & Patrol Assignment (Rx-204c) "Optional"
Prescribed Fire Extended Patrol (Rx-204d) "Optional"
Prescribed Fire Smoke Management Assignment (Rx-204e)
Information Assignment (Rx-204f) "Optional"
Prescribed Fire Contingency Assignment Plan (Rx-204g)
Prescribed Fire Contingency M.A.P. Descriptor (Rx-204g-MAP) "Optional"
Prescribed Fire Wildfire Declaration Plan (Rx-204h)
Prescribed Fire Communications Plan (Rx-205)
Prescribed Fire Emergency Medical Plan (Rx-206)
Prescribed Fire Safety Message (Rx-208)
Note: All items listed in Section Two are generally required components of the "Field IAP Type Burn Plan package" carried by implementers during project field operations, with the exception of those listed as optional.

SECTION THREE – REPORTING (MONITORING) DOCUMENTATION
Agency Administrator Ignition Authorization (Rx-301)
Prescribed Fire Go/No-Go Checklist (Rx-302)
Prescribed Fire Delegation of Authority (Rx-303)
Prescribed Fire Return of Delegation (Rx-304)
Prescribed Fire Briefing Checklist (Rx-305)
Agency Sub-Unit Notification List (Rx-306)
Cooperator & Agency Notification (Rx-307)
Burn Boss Report (Rx-308)
Prescribed Fire Record (Rx-309) "Optional"
Prescribed Fire Implementation Cost Summary (Rx-310)
Fire Behavior Forecast (Short Range) (Rx-311) "Optional"
Fire Behavior Forecast (Long Range) (Rx-312) "Optional"
Spot Weather Forecast(s)
Weather Monitoring Data (Include daily observation summaries)
Burn Team Unit Logs (ICS-214)
Minutes of Public Meetings and/or public comment records
After Action Review Notes
Any additional agency-specific reporting/monitoring requirements

Note: Depending upon the specific project, some of the above items may not be applicable.

SECTION FOUR – SUPPORTING DOCUMENTATION
NWCG Complexity Rating Documentation

Risk/Hazard Analysis (Rx-401)
Prescribed Fire Estimated Cost Calculation (Rx-410)
Fire Behavior Modeling Documentation
Downhill Spread Calculation/Size/Containment Worksheets
Uphill Spread Calculation/Size/Containment Worksheets
Fireline Production Rate Tables
Agency Specific Job or Risk Analysis Products
Aviation Safety Plans

Note: Depending upon the specific project, some of the above items may not be applicable.

SECTION FIVE – MAPS
Vicinity Map(s)
Project Area and Burn Unit Map
Fuels Map
Ownership Map
Smoke Impact Map
Burn Perimeter/Progression/Accomplishment Map(s) "Optional"
Ignition Pattern "Optional"
Aerial Photos "Optional"

Note: In most cases, at least the Project Area and Burn Unit Map would be included in the Field IAP Burn Plan package.

SECTION SIX - PHOTO DOCUMENTATION
Include Photo-Point Record Sheets (Rx-402) for each photo.

Reviews

Reviews are used to assess and improve the safety and effectiveness of prescribed fire planning and implementation. The primary purpose of a review is to facilitate continuous improvement by identifying strengths and weaknesses of programs.

State agencies in Colorado as well as all other entities that utilize prescribed fire as a management tool are encouraged to review prescribed fires whenever a learning opportunity presents itself regardless of the outcome, either positive or negative.

There are two formal reviews that are required in the event of a wildfire declaration or of a serious air quality violation. These are:

- Declared Wildfire Reviews
- Air Quality Notice Of Violation Reviews

At a minimum, all required reviews will contain the following information.

- Executive Summary
- Setting – environmental, social and political
- Prescribed fire objectives
- Prescribed fire prescription
- Prescribed fire outcomes
- Narrative and/or chronology
- Lessons Learned identified by the participants

- Lessons Learned identified by the review team (if used)
- Summary and recommendations
- Maps and photos
- Follow-up action items with time frames for completion (if applicable)

When formal teams are formed to conduct reviews, The Director or designee of the Division of Fire Prevention and Control should clearly communicate leader's intent to the review team and the affected prescribed fire unit regarding:

- Purpose of the review
- Intended audience for the review.
- How it will be conducted
- Expected products
- Time frame for completion
- Responsibility for disseminating products and communicating with key partners

Teams should listen before asking questions and approach the review with an attitude of seeking to understand the leader's intent.

Declared Wildfire Reviews

The Agency Administrator responsible for the escaped prescribed fire will immediately contact the Director or designee of the Division of Fire Prevention and Control for notification of a declared wildfire.

The declared wildfire review process will be initiated by the DFPC Director or designee.

Although other types of reviews may be required by individual agency policy, the minimum requirement of the declared wildfire review is to help prevent future escapes. This will be accomplished by analyzing key Prescribed Fire Plan and implementation interactions and gathering knowledge and insight from the local participants for improvement of their own prescribed fire planning and implementation.

The analysis and lessons learned are then disseminated for the benefit of the broader prescribed fire community.

Following the wildfire declaration the Burn Boss should document the incident, including all actions prior to and after the declaration.

To assist and prepare for the review team, a new declared wildfire file should be set-up that includes the Project File and other pertinent information, including a chronology of events, prescribed fire report; unit logs and individual statements; weather observations taken on site and Remote Automated Weather Station (RAWS) and National Fire Danger Rating System (NFDRS) data for the day of the escape from the nearest station(s); photos; and any other pertinent information not contained in the Project File.

In addition to the elements described above, the declared wildfire review must include the following analysis and may be addressed in a separate review:

- An analysis of the seasonal severity, weather events, and on-site conditions leading up to the wildfire declaration.
- An analysis of the Prescribed Fire Plan for consistency with policy and guidance related to prescribe fire planning and implementation.
- An analysis of prescribed fire implementation for consistency with the prescription, actions and procedures in the Prescribed Fire Plan.
- The approving Agency Administrator's qualifications, experience, and involvement.
- The qualifications and experience of key personnel involved.

An independent, peer-based review team is recommended for conducting declared wildfire reviews. The number of individuals assigned to the team and their functional expertise should be commensurate with the scope and focus of the review and the intended products.

Interagency participation is highly recommended for declared wildfire reviews however, in all cases on Colorado state agency escape reviews, the DFPC will be the lead agency.

The DFPC will determine the process for dissemination of review products.

Air Quality Notice of Violation (NOV) Reviews

In the event of an air quality notice of violation (NOV), the Colorado Department of Health and Environment; Air Pollution Control Division (APCD) will be contacted by the Division Director and given the lead in this review process

Optional After Action Review (AAR)

Each operational shift on a prescribed fire should have an informal After Action Review (AAR). The questions to answer in conducting an AAR include:

- What did we set out to do (what was planned)?
- What actually happened?
- Why did it happen that way?
- What should be sustained?
- What can be improved?

In addition to prescribed fire team AAR's, Burn Bosses should make a habit, of going back to their notes and evaluating where they did well-and not so well-at anticipating and containing the unexpected. Burn bosses should ask themselves: "What did I miss seeing? Why did I miss seeing it? What surprised me?" Burn bosses should consider sharing their observations with others in a Burn Boss Report and include them in the Project File.

Refreshers

The Division will establish and make available to other state agencies, annual or bi-annual refresher materials and presentations to maintain certification and meet IQS currency requirements for prescribed fire positions. In addition, the Division will maintain a prescribed fire refresher presentation on the Division's website that may be readily accessible to other agencies and entities for their own use in maintaining prescribed fire currency within their respective organizations.

The primary intent of the Burn Boss Refreshers is to update practitioners. Core topics include:

- Prescribed fire policy updates
- Weather and climate expectations and trends
- Smoke management requirements, modeling improvements, and techniques;
- National, regional, tribal, state and local issues of importance to prescribed fire practitioners

Other topics may include:

- Lessons learned from prescribed fire planning and implementation
- Prescribed fire problems and how to avoid them
- Prescribed fire successes and how to repeat them
- Innovations in prescribed fire planning and implementation

Appendices

Appendix A - References

This reference lists the various reports, reviews, documents, and policies used in development of the 2008 Interagency Prescribed Fire Planning and Implementation Procedures Guide, the 2013 update of the Interagency Prescribed Fire Planning and Implementation Procedures Guide and the subsequent creation of the 2014 Colorado Prescribed Fire Planning and Implementation Policy Guide.

National Wildland Fire Coordinating Group (NWCG) Publications are available online at http://www.nwcg.gov/pms/pms.htm

2010. Heinsch, Faith Ann and Andrews, Patricia L. 2010. Behave Plus fire modeling system, version 5.0: Design and Features. Forest Service: Rocky Mountain Research Station. [Online] 2010. [Cited: July 30, 2013.] http://www.fs.fed.us/rm/pubs/rmrs_gtr249.html RMRS-GTR-249.

2013. Interagency Prescribed Fire and Implementation Procedures Guide. National Wildfire Coordinating Group. November 2013. http://www.nwcg.gov/pms/pubs/pms484/pms484.pdf PMS 484.

2012. Glossary of Wildland Fire Terminology. National Wildfire Coordinating Group. July 2012. http://www.nwcg.gov/pms/pubs/glossary/index.htm PMS 205.

2010. Incident Response Pocket Guide. National Wildfire Coordinating Group. January 2010. http://www.nwcg.gov/pms/pubs/nfes1077/nfes1077.pdf PMS 461.

2012. Interagency Aerial Ignition Guide. National Wildfire Coordinating Group. March 2012. http://www.nwcg.gov/pms/pubs/pms501.pdf PMS 501.

2011. Interagency Ground Ignition Guide. National Wildfire Coordinating Group. September 2011. http://www.nwcg.gov/pms/pubs/443/pms443.pdf PMS 443.

2013. Interagency Helicopter Operations Guide. National Wildfire Coordinating Group. February 2013. http://www.nwcg.gov/pms/pubs/pms510/00_pms510.pdf PMS 510.

2012. Interagency Incident Business Management Handbook. National Wildfire Coordinating Group. August 2012. http://www.nwcg.gov/pms/pubs/iibmh2/pms902_201208.pdf PMS 902

2011. Interagency Transportation Guide for Gasoline, Mixed Gas, Drip-Torch Fuel, and Diesel. National Wildfire Coordinating Group. April 2011. http://www.nwcg.gov/pms/pubs/442/pms442.pdf PMS 442.

2004. Prescribed Fire Complexity Rating System Guide. National Wildfire Coordinating Group. January 2004. http://www.nwcg.gov/pms/RxFire/complexity_analysis.pdf PMS 424.

2004. Resource Advisor's Guide for Wildland Fire. National Wildfire Coordinating Group. January 2004. http://www.nwcg.gov/pms/pubs/RAguide_2004.pdf PMS 313.

2001. Smoke Management Guide for Prescribed and Wildland Fire. National Wildfire Coordinating Group. December 2001 http://www.nwcg.gov/pms/pubs/SMG/SMG-72.pdf PMS 420-2.

2010. Standardized Medical Emergency Procedures for Incident Management Teams (IMT), Standardized Communication Center Protocols. National Wildfire Coordinating Group. May 25, 2010 http://www.nwcg.gov/general/memos/nwcg-025-2010.html #b. NWCG#025-2010.

2012. Wildland Fire Qualification System Guide. National Wildfire Coordinating Group, October 2012. http://www.nwcg.gov/pms/docs/pms310-1.pdf PMS 310-1.

2005. Scott, Joe H. and Burgan, Robert E., 2005. Standard fire behavior fuel models: a comprehensive set for use with Rothermel's surface fire spread model. June 2005 Forest Service: Rocky Mountain Research Station. 2005 http://www.nwccweb.us/content/products/mobguide/rmrs_gtr153.pdf RMRS.GTR-153.

2011. USDA Forest Service and Natural Resource Conservation Service. 2011. Basic Smoke Management Practices. Natural Resource Conservation Service. October 2011. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1046311.pdf.

2013. Interagency Standards for Fire and Fire Aviation Operations. National Interagency Fire Center. January 2013. http://www.nifc.gov/policies/pol_intgncy_guides.html.

2013. National Mobilization Guide. National Interagency Fire Center. March 1, 2013. http://www.nifc.gov/nicc/mobguide/index.html.

2013. Rocky Mountain Area Mobilization Guide. 2013 http://gacc.nifc.gov/rmcc/administrative/publications.html

Appendix B - Glossary

"Certified Burner" means an individual who successfully completes the Division's Certified Burner training and certification program and possesses a valid certification number. Where the term "Certified Burn Manager" is used in state statute, this term is replaced by the term Certified Burner for purposes of these rules.

"Director" means the Director of the Division of Fire Prevention and Control in the Department of Public Safety.

"Division" or "DFPC" means the Division of Fire Prevention and Control in the Department of Public Safety.

"High-Complexity Burn" means a burn classified as high-complexity by NWCG's Prescribed Fire Complexity Rating System Guide based on risk, potential consequences, and technical difficulty.

"Low-Complexity Burn" means a burn classified as low-complexity by NWCG's Prescribed Fire Complexity Rating System Guide based on risk, potential consequences, and technical difficulty.

"Masticated Fuels" means fuels, such as brush, small-diameter trees, and slash that have been ground or chewed into small pieces of woody material through a mechanical wildland fuels treatment process, and generally left to carpet the ground.

"Moderate-Complexity Burn" means a burn classified as moderate-complexity by NWCG's Prescribed Fire Complexity Rating System Guide based on risk, potential consequences, and technical difficulty.

"National Wildfire Coordinating Group" or "NWCG" means the nationally recognized group made up of federal and state cooperating agencies which governs nationally based training and qualification standards for wildland fire, including prescribed fire. NWCG also includes subcommittees and working teams governed by NWCG directors.

"Policies" means formal guidelines promulgated by DPFC concerning the methods, procedures, and processes for implementing these rules and administering any certification program.

"Prescribed Fire Program Manager / Branch Chief" means the person assigned to the Wildland Fire Section of the Division of Fire Prevention and Control with responsibilities for the state's prescribed fire policy development and program oversight.

"Prescribed Burning" or "Prescribed Fire" means the application of fire, in accordance with a written prescription for vegetative fuels, under specified environmental conditions while following appropriate precautionary measures that ensure public safety and that is confined to a predetermined area to accomplish public safety or land management objectives. The term excludes controlled agricultural burns and controlled ditch burns.

"Refresher training" means a course of instruction, condensed over a short period of time, designed to provide training to persons for the purpose of preparing them for renewal of certification.

"State Agency" means all of the departments, divisions, commissions, boards, bureaus, and institutions in the executive branch of the state government. "State agency" does not include the legislative or judicial department, the department of law, the department of state, the department of the treasury, or state-supported institutions of higher education. Ref: C.R.S. 24-37.5-102(4)

Appendix C – DFPC Burn Boss Type 3 Position Task Book

State of Colorado
Department of Public Safety
Division of Fire Prevention and Control

TASK BOOK FOR THE POSITION OF

PRESCRIBED FIRE BURN BOSS 3 (RXB3)

(PRESCRIBED FIRE ASSIGNMENT REQUIRED)

January 2014

TASK BOOK ASSIGNED TO:

INDIVIDUAL'S NAME, DUTY STATION AND PHONE NUMBER

TASK BOOK INITIATED BY:

OFFICIAL'S NAME, TITLE, DUTY STATION AND PHONE NUMBER

LOCATION AND DATE TASK BOOK WAS INITIATED

The material contained in this book accurately defines the performance expected of the position for which it was developed. This task book is approved for use as a position qualification document in accordance with the instructions contained herein.

EVALUATOR(S): DO NOT COMPLETE THIS SECTION UNLESS YOU ARE RECOMMENDING THE TRAINEE SPECIFIED ON THE INITIATION PAGE FOR CERIFICATION AT THE FULLY QUALIFIED LEVEL.

VERIFICATION/CERTIFICATION OF COMPLETED TASK BOOK FOR THE POSITION OF:

PRESCRIBED FIRE BURN BOSS LEVEL 3 (RXB3)

FINAL EVALUATOR'S VERIFICATION

I verify that all tasks have been performed and are documented with the appropriate initials and dates. I also verify that:

Has satisfactorily performed as a trainee and should therefore be considered for agency certification in this position.

FINAL EVALUATOR'S SIGNATURE AND DATE

EVALUATORS PRINTED NAME, TITLE, DUTY STATION AND PHONE NUMBER

AGENCY CERTIFICATION

I certify that:

Has satisfactorily met all requirements for qualification in this position and that such qualification has been issued.

CERTIFYING OFFICIAL'S SIGNATURE AND DATE

CERTIFYING OFFICIAL'S NAME, TITLE, DUTY STATION AND PHONE NO.

POSITION TASK BOOK

This Position Task Book (PTB) lists performance requirements (tasks) for the State of Colorado, Department of Public Safety, Division of Fire Prevention and Control's Prescribed Fire Burn Boss 3 (RXB3) in a format that allows a trainee to be evaluated against written guidelines. Successful performance of all tasks, as observed and recorded by a qualified evaluator, will result in a recommendation to the employing agency that the trainee be certified in that position.

Although the RXB3 is no longer a listed position in the NWCG PMS 310-1 Wildland Fire Qualifications Guide, it has been determined to be an important position for Colorado's prescribed fire program and will remain in the Incident Qualifications System for State of Colorado employees. The RXB3 PTB is available for optional use by local, municipal and county governments.

Evaluation and confirmation of the individual's performance of all the tasks may involve more than one evaluator and can occur on more than one prescribed fire. This position requires specific tasks be performed in a prescribed fire field simulation or as part of a prescribed burn -- performance of these tasks on other types of incidents is NOT qualifying.

It is important that performance be critically evaluated and accurately recorded by each evaluator. All tasks must be evaluated. All bullet statements within a task which require an action (contain an action verb) must be demonstrated before that task can be signed off.

RESPONSIBILITIES:

1. The **local office** is responsible for:

   - Selecting trainees based on unit needs.
   - Ensuring that the trainee meets the training and experience requirements for the position.
   - Issuing PTBs to document task performance.
   - Explaining to the trainee the purpose and processes of the PTB, as well as the trainee's responsibilities.
   - Providing evaluation assignments and/or making the trainee available for evaluation assignments.
   - Providing a qualified evaluator for local assignments.
   - Tracking progress of the trainee.
   - Confirming PTB completion.
   - Determining certification per agency policy.
   - Issuing proof of certification.

2. The **individual** is responsible for:

   - Reviewing and understanding instructions in the PTB.
   - Identifying desired objectives/goals for a training or evaluation assignment.
   - Providing background information to an evaluator.
   - Satisfactorily demonstrating completion of all tasks for an assigned position within three years.
   - Assuring the Evaluation Record is complete.
   - Notifying unit personnel when the PTB is completed and providing a copy.
   - Keeping the original PTB in personal records.

3. The **evaluator** is responsible for:

   - Being qualified and proficient in the position being evaluated.
   - Meeting with the trainee and determining past experience, current qualifications, and desired

objectives/goals of the assignment.
- Reviewing tasks with the trainee.
- Explaining to the trainee the evaluation procedures that will be utilized and which objectives may be attained.
- Identifying tasks to be performed during an evaluation period.
- Accurately evaluating and recording performance. Satisfactory performance shall be documented by dating and initialing completion of the task. Unsatisfactory performance shall be documented in the Evaluation Record.
- Completing the Evaluation Record found at the end of each PTB.
- Signing the verification statement on the front cover of the PTB when all tasks have been initialed.
- Conducting a close-out interview with the trainee and assuring that documentation is complete.

BURN BOSS TYPE 3 (RXB3) – DIVISION OF FIRE PREVENTION & CONTROL – COLORADO SPECIFIC QUALIFICATIONS REQUIREMENTS:

These position requirements are Colorado State specific. The position is not found within the 310-1. State of Colorado employees currently holding an IQS certification at the RXB3 level will be allowed to maintain that qualification without initiating a new PTB (Historical Recognition).

Required Training
Intermediate Wildland Fire Behavior (S-290)

Additional Training Which Supports Development of Knowledge and Skills
Ignition Operations (S-234)
Prescribed Fire Implementation (RX-301)
Introduction to Fire Effects (RX-310)
Prescribed Fire Burn Plan Preparation (RX-341)

Required Experience
Firefighter One (FFT1) or
Incident Commander Type 5 (ICT5) and
Successful position performance as a Prescribed Fire Burn Boss 3 (RXB3)

Physical Fitness Level
Arduous

PTB Requirement
Prescribed Fire Burn Boss Type 3 (CO-DFPC-approved)

Other Position Assignments That Will Maintain Currency
Prescribed Fire Burn Boss Type 1 (RXB1)
Prescribed Fire Burn Boss Type 2 (RXB2)
Prescribed Fire Burn Boss Type 3 (RXB3)
Prescribed Fire Manager Type 1 (RXM1)
Prescribed Fire Manager Type 2 (RXM2)

QUALIFICATION RECORD – PRESCRIBED FIRE BURN BOSS LEVEL 3 (RXB3)

TASK	CODE	EVALUATION RECORD #	EVALUATOR: Initial & date upon task completion
GENERAL 1. Review agency procedures, policies and regulations for prescribed fire as related to position through conversations with supervisor and/or reading of agency manuals and handbooks. Identify the relationship of the Burn Boss with other prescribed fire positions.	O		
2. Review the burn plan and ensure all burn plan requirements are met. • Review the kind, number, type, and placement of equipment and personnel to meet burn plan/resource management objectives. • Review the availability of scheduled resources. • Combine different resources to effectively meet objectives. • Conduct documented (formal or informal) hazard analysis. • Understand the relationship between the proposed burn and the responsible agency's parent planning documentation. • Ensure that holding/contingency plan adequately addresses expected fire behavior outside unit and the probability of containment of spot fires with available resources. • Verify qualifications of assigned personnel.	RX		

Code:

- **O** = task can be completed in any situation (classroom, simulation, prescribed fire, daily job, etc.)
- **I** = task must be performed on an incident (flood, fire, prescribed fire, search & rescue, planned event, etc.)
- **W** = task must be performed on a wildland fire incident
- **R** = Rare Event – the evaluation assignment may not provide opportunities to demonstrate performance. The evaluator may be able to determine the skills knowledge through interview or the home office may need to arrange for another assignment or a simulation.
- **RX** = task must be performed on a prescribed fire incident

QUALIFICATION RECORD – PRESCRIBED FIRE BURN BOSS LEVEL 3 (RXB3)

TASK	CODE	EVALUATION RECORD #	EVALUATOR: Initial & date upon task completion
3. Safety: Ensure that all phases of the prescribed fire operation, stress the safety of all personnel. Some of the following bullet statements for this task will be repeated throughout the task book. This is intentional. • Conduct documented hazard analysis. • Verify qualifications of assigned personnel. • Recognize critical safety issues and insure that hazards and risks are mitigated prior to beginning the burn. • During the pre-ignition briefing, communicate safety issues to burn crew. Ensure that burn crew is aware of all hazards and risks, and mitigation measures, including but not limited to PPE, safety zones, escape routes, and lookouts. • During the burn, recognize changing weather, fire behavior or other conditions which may affect personnel safety. Communicate this information to necessary personnel and provide appropriate actions to ensure continued safe operations.	RX		
PRESCRIBED FIRE ACTIVITIES 4. Recon burn unit. • Determine and evaluate the placement of needed control line. • Recognize critical safety issues. • Identify fuel characteristics which affect fire behavior. • Verify burn plan components, such as staffing and equipment, resources, prescription parameters, contingency plan, mitigation techniques for air quality, etc.	RX		

Code:

- **O** = task can be completed in any situation (classroom, simulation, prescribed fire, daily job, etc.)
- **I** = task must be performed on an incident (flood, fire, prescribed fire, search & rescue, planned event, etc.)
- **W** = task must be performed on a wildland fire incident
- **R** = Rare Event – the evaluation assignment may not provide opportunities to demonstrate performance. The evaluator may be able to determine the skills knowledge through interview or the home office may need to arrange for another assignment or a simulation.
- **RX** = task must be performed on a prescribed fire incident

QUALIFICATION RECORD – PRESCRIBED FIRE BURN BOSS LEVEL 3 (RXB3)

TASK	CODE	EVALUATION RECORD #	EVALUATOR: Initial & date upon task completion
5. Obtain and interpret current fire environment conditions, such as weather, fuel moisture, and soil moisture. • Collect local and regional weather observations. • Make precise weather observations on the fire site. • Collect fuel and soil moisture data, such as fuel moisture stick readings and various drought indices. • Describe procedures for requesting and receiving spot weather forecasts. • Ensure that needed spot weather and smoke dispersal forecasts are in hand and have been analyzed against the prescription.	RX		
6. Given current and predicted environmental conditions (such as weather, smoke management forecasts, fuel moisture), air quality clearance, resource status (staffing and equipment), and national, regional and local preparedness levels, make "Go/No-Go" decision. • Analyze operational situations/factors to determine if burn plan can be implemented. • Evaluate fire behavior and weather conditions. • If appropriate, evaluate test fire results, including smoke impacts, current versus desired fire effects, observed versus predicted fire behavior, etc. • Describe consequences of "Go/No-Go" decision and notify appropriate personnel • Complete the "Go/No-Go" checklist and sign as appropriate.	RX		

Code:

- **O** = task can be completed in any situation (classroom, simulation, prescribed fire, daily job, etc.)
- **I** = task must be performed on an incident (flood, fire, prescribed fire, search & rescue, planned event, etc.)
- **W** = task must be performed on a wildland fire incident
- **R** = Rare Event – the evaluation assignment may not provide opportunities to demonstrate performance. The evaluator may be able to determine the skills knowledge through interview or the home office may need to arrange for another assignment or a simulation.
- **RX** = task must be performed on a prescribed fire incident

QUALIFICATION RECORD – PRESCRIBED FIRE BURN BOSS LEVEL 3 (RXB3)

TASK	CODE	EVALUATION RECORD #	EVALUATOR: Initial & date upon task completion
7. Conduct operations according to agency-specific policies and standards, emphasizing safety and meeting of plan objectives. • Ensure burn site perimeters and special areas of concern have been identified and marked. • Ensure public information and hazard warning signs are posted and maintained. • Protect cultural and natural resources and capital improvements. • Ensure on-site prescription variables are measured. • Validate fire behavior predictions. • Recognize fire behavior which endangers personnel, identify alternative tactics, and implement chosen mitigation alternatives. • If necessary, apply appropriate tactics for sensitive areas and threatened and endangered (T&E) species. • Ensure safety of personnel, observers, and the public. • Terminate burn if smoke, resource, and fire management objectives are not being met. • Know when to declare prescribed fire a wildland fire per agency policy. • Declare prescribed fire out per agency policy. • Identify safety hazards and use precautions for various procedures.	RX		

Code:

- **O** = task can be completed in any situation (classroom, simulation, prescribed fire, daily job, etc.)
- **I** = task must be performed on an incident (flood, fire, prescribed fire, search & rescue, planned event, etc.)
- **W** = task must be performed on a wildland fire incident
- **R** = Rare Event – the evaluation assignment may not provide opportunities to demonstrate performance. The evaluator may be able to determine the skills knowledge through interview or the home office may need to arrange for another assignment or a simulation.
- **RX** = task must be performed on a prescribed fire incident

QUALIFICATION RECORD – PRESCRIBED FIRE BURN BOSS LEVEL 3 (RXB3)

TASK	CODE	EVALUATION RECORD #	EVALUATOR: Initial & date upon task completion
8. Direct specific resources to complete operational assignments. • Identify additional staffing needs. • Adhere to local policy for ordering, use, and release of additional resources. • Verify resource needs are on-site, and then make tactical assignments. • Conduct pre-ignition briefing, to include burn objectives, operational procedures, and safety issues. • Ensure tactical assignments are completed. • Complete any subordinate task for an unfilled position. • Demonstrate communication skills as they relate to supervision. • Articulate performance requirements to subordinates. • Lead and direct the actions of subordinates. • Evaluate the performance of subordinates and take appropriate action.	RX		
9. Provide for monitoring of smoke emissions for health, safety, vista impairment, and fire behavior effects. • Identify mitigation measures when smoke emissions create safety hazards. Implement as needed.	RX		

Code:

- **O** = task can be completed in any situation (classroom, simulation, prescribed fire, daily job, etc.)
- **I** = task must be performed on an incident (flood, fire, prescribed fire, search & rescue, planned event, etc.)
- **W** = task must be performed on a wildland fire incident
- **R** = Rare Event – the evaluation assignment may not provide opportunities to demonstrate performance. The evaluator may be able to determine the skills knowledge through interview or the home office may need to arrange for another assignment or a simulation.
- **RX** = task must be performed on a prescribed fire incident

QUALIFICATION RECORD – PRESCRIBED FIRE BURN BOSS LEVEL 3 (RXB3)

TASK	CODE	EVALUATION RECORD #	EVALUATOR: Initial & date upon task completion
10. Remain in communication with crew members, assigned supervisor, and adjoining forces. • Advise crew members of potential or impending safety hazards. Inform of appropriate mitigation actions, such as posting of lookouts and identification of safety zones and escape routes. • Demonstrate communication skills appropriate to the burn organization, and situations encountered. • Ensure that radios and communication hardware are in place, and that frequencies are posted and known by all.	RX		
11. Ensure pre-burn coordination and communication is maintained between the burn organization(s) and other offices, agencies, air quality authorities, news media, transportation agencies, safety officials, and interested public. • Obtain permits or clearances as required by agency policy or local, state or federal regulation. • Notify appropriate people of the intent to burn (such as dispatcher, fire staff, cooperators, and landowners). • Coordinate with resource specialist(s). • Provide for internal and external communication as necessary.	RX		

Code:

- **O** = task can be completed in any situation (classroom, simulation, prescribed fire, daily job, etc.)
- **I** = task must be performed on an incident (flood, fire, prescribed fire, search & rescue, planned event, etc.)
- **W** = task must be performed on a wildland fire incident
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- **RX** = task must be performed on a prescribed fire incident

QUALIFICATION RECORD – PRESCRIBED FIRE BURN BOSS LEVEL 3 (RXB3)

TASK	CODE	EVALUATION RECORD #	EVALUATOR: Initial & date upon task completion
POST- BURN OPERATIONS 12. Evaluate and document the accomplishment of fire objectives, operational procedures, and assigned personnel. • Collect, analyze, and summarize immediate post-burn fire effects and fire behavior evaluation data as specified in prescribed fire plan. • Compare results to original fire objectives and submit as part of prescribed fire report. • Complete all required documentation for the burn plan. • Complete personnel evaluations. • Conduct an After Action Review (AAR) and recommend changes for incorporation in future burn plans.	RX		
13. Ensure the post-burn narrative, time and equipment records, reports, cost summaries, and unit logs are completed as necessary.	O		
14. Monitor implementation costs and make the appropriate notifications. • Describe desired cost limits set by the burn plan.	O		

Code:

- **O** = task can be completed in any situation (classroom, simulation, prescribed fire, daily job, etc.)
- **I** = task must be performed on an incident (flood, fire, prescribed fire, search & rescue, planned event, etc.)
- **W** = task must be performed on a wildland fire incident
- **R** = Rare Event – the evaluation assignment may not provide opportunities to demonstrate performance. The evaluator may be able to determine the skills knowledge through interview or the home office may need to arrange for another assignment or a simulation.
- **RX** = task must be performed on a prescribed fire incident

INSTRUCTIONS FOR EVALUATION RECORD

There are four separate blocks allowing evaluations to be made. These evaluations may be made on incidents, simulations in classroom, or in daily duties, depending on what the position task book indicates. This should be sufficient for qualification in the position if the individual is adequately prepared. If additional blocks are needed, a page can be copied from a blank task book and attached.

COMPLETE THESE ITEMS AT THE START OF THE EVALUATION PERIOD:

Evaluator's name, incident/office title, and agency: List the name of the evaluator, his/her incident position or office title, and agency.
Evaluator's home unit address and phone: Self-explanatory
#: The number in the upper left corner of the experience block identifies a particular experience or group of experiences. This number should be placed in the column labeled "Evaluation Record #" on the Qualification Record for each task performed satisfactorily.
Location of Incident/Simulation: Identify the location where the tasks were performed by agency and office.
Incident Kind: Enter kind of incident; e.g., wildland fire, prescribed fire, search and rescue, flood, etc.

COMPLETE THESE ITEMS AT THE END OF THE EVALUATION PERIOD:

Number and Type of Resources: Enter the number of resources and types assigned to the incident pertinent to the trainee's task book position.
Duration: Enter inclusive dates during which the trainee was evaluated. This block may indicate a span of time covering several small and similar incidents if the trainee has been evaluated on that basis; e.g., several initial attack fires in similar fuel types.
Management Level or Prescribed Fire Complexity Level: Indicates ICS organization level; i.e., Type 5, Type 4, Type 3, Type 2, Type 1, Area Command or prescribed fire complexity level (low, moderate, high).
NFFL Fuel Model: For wildland fire and prescribed fire experience, enter number (1-13) of the fuel model(s) in which the incident occurred and under which the trainee was evaluated.

Grass	Short Grass (1 foot)	**Timber**	Closed Timber Litter
Group	Timber (grass & understory)	**Group**	Hardwood Litter
	Tall Grass (2-1/2 feet)		Timber (litter understory)
Brush	Chaparral (6 feet)	**Slash**	Light Logging Slash
Group	Brush (2 feet)	**Group**	Medium Logging Slash
	Dormant Brush-Hardwood Slash		Heavy Logging Slash
	Southern Rough		

Recommendation: Check as appropriate and/or make comments regarding the future needs for development of this trainee.
Date: List the date the record is being completed.
Evaluator's initials: Initial here to authenticate your recommendations and to allow for comparison with initials in the Qualifications Record.
Evaluator's relevant red card rating: List your certification relevant to the trainee position you supervised.

Evaluation Record

TRAINEE NAME _____ TRAINEE POSITION _____

#1	Evaluator's name: Incident/office title & agency:

Evaluator' home unit address & phone:

Name and Location of Incident or Simulation (agency & area)	Incident Kind (wildland fire, search & rescue, etc.)	Number & Type of Resources Pertinent to Trainee's Position	Duration (inclusive dates in trainee status)	Management Level or Prescribed Fire Complexity Level	NFFL Fuel Model(s)
			to		

The tasks initialed & dated by me have been performed under my supervision in a satisfactory manner by the above named trainee. I recommend the following for further development of this trainee.

_____ The individual has successfully performed all tasks for the position and should be considered for certification.
_____ The individual was not able to complete certain tasks (comments below) or additional guidance is required.
_____ Not all tasks were evaluated on this assignment and an additional assignment is needed to complete the evaluation.
_____ The individual is severely deficient in the performance of tasks for the position and needs further training (both required & knowledge and skills needed) prior to additional assignment(s) as a trainee.

Recommendations: _____
_____

Date: _____ Evaluator's initials: _____ Evaluator's relevant red card (or agency certification) rating: _____

#2	Evaluator's name: Incident/office title & agency:

Evaluator' home unit address & phone:

Name and Location of Incident or Simulation (agency & area)	Incident Kind (wildland fire, search & rescue, etc.)	Number & Type of Resources Pertinent to Trainee's Position	Duration (inclusive dates in trainee status)	Management Level or Prescribed Fire Complexity Level	NFFL Fuel Model(s)
			to		

The tasks initialed & dated by me have been performed under my supervision in a satisfactory manner by the above named trainee. I recommend the following for further development of this trainee.

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_____ The individual was not able to complete certain tasks (comments below) or additional guidance is required.
_____ Not all tasks were evaluated on this assignment and an additional assignment is needed to complete the evaluation.
_____ The individual is severely deficient in the performance of tasks for the position and needs further training (both required & knowledge and skills needed) prior to additional assignment(s) as a trainee.

Recommendations: _____
_____

Date: _____ Evaluator's initials: _____ Evaluator's relevant red card (or agency certification) rating: _____

Evaluation Record
(Continuation Sheet)

TRAINEE NAME _____ TRAINEE POSITION _____

#3	Evaluator's name: Incident/office title & agency:

Evaluator' home unit address & phone:

Name and Location of Incident or Simulation (agency & area)	Incident Kind (wildland fire, search & rescue, etc.)	Number & Type of Resources Pertinent to Trainee's Position	Duration (inclusive dates in trainee status)	Management Level or Prescribed Fire Complexity Level	NFFL Fuel Model(s)
			to		

The tasks initialed & dated by me have been performed under my supervision in a satisfactory manner by the above named trainee. I recommend the following for further development of this trainee.

_____ The individual has successfully performed all tasks for the position and should be considered for certification.
_____ The individual was not able to complete certain tasks (comments below) or additional guidance is required.
_____ Not all tasks were evaluated on this assignment and an additional assignment is needed to complete the evaluation.
_____ The individual is severely deficient in the performance of tasks for the position and needs further training (both required & knowledge and skills needed) prior to additional assignment(s) as a trainee.

Recommendations: _____
_____

Date: _____ Evaluator's initials: _____ Evaluator's relevant red card (or agency certification) rating: _____

#4	Evaluator's name: Incident/office title & agency:

Evaluator' home unit address & phone:

Name and Location of Incident or Simulation (agency & area)	Incident Kind (wildland fire, search & rescue, etc.)	Number & Type of Resources Pertinent to Trainee's Position	Duration (inclusive dates in trainee status)	Management Level or Prescribed Fire Complexity Level	NFFL Fuel Model(s)
			to		

The tasks initialed & dated by me have been performed under my supervision in a satisfactory manner by the above named trainee. I recommend the following for further development of this trainee.

_____ The individual has successfully performed all tasks for the position and should be considered for certification.
_____ The individual was not able to complete certain tasks (comments below) or additional guidance is required.
_____ Not all tasks were evaluated on this assignment and an additional assignment is needed to complete the evaluation.
_____ The individual is severely deficient in the performance of tasks for the position and needs further training (both required & knowledge and skills needed) prior to additional assignment(s) as a trainee.

Recommendations: _____
_____

Date: _____ Evaluator's initials: _____ Evaluator's relevant red card (or agency certification) rating: _____

PTB GLOSSARY

Evaluator
The qualified person who judges or rates performance of a trainee based on a specific task.

Position Performance
Perform variety of multiple tasks in context of doing the job of the target position. Trainees must demonstrate the ability to do the job.

Trainee Assignment
An assignment that is performed in conjunction with a fully qualified person for the purpose of demonstrating knowledge, skills, and abilities required in accomplishing the tasks of the position.

Trainee
A person who has completed all required prerequisites and has been nominated to a training position.

Appendix D – Prescribed Fire Template Forms

Varieties of potential Prescribed Fire Plan templates are currently available or are under revision. The Division will maintain a standardized and current Prescribed Fire Plan Template that will be readily available to users via the Division's website.

http://dfs.state.co.us/programs-2/emergency-management/wildland-fire-management

As situations vary and new tools become available for plan development, the website repository for prescribed fire template forms will be regularly maintained, revised and updated. A non-editable reproduction of the most current version may be inserted into or attached to this policy for reference only at the discretion of the user. Prescribed Fire Planners should utilize the electronically available forms whenever possible to ensure consistency and to prevent the use of potentially obsolete documents.

Appendix E – Contingency Planning Aids

When events don't go as planned, whether the result is positive or negative may come down to how well you've planned. Without a well-developed plan small issues can become emergencies. Two tools that can assist in understanding contingency planning and aid in the development of contingency plans are:

- **PACE Planning** and
- **Management Action Points**

PACE PLANNING

PACE Planning stands for:

- **P**rimary
- **A**lternate
- **C**ontingency
- **E**mergency

It is a risk containment/contingency planning tool that may be used in prescribed fire planning and implementation.

With PACE**,** instead of just one fallback option, there are multiple options. In prescribed fire planning the Primary and **A**lternate plans are part of Element 17 & 18, Holding & Mop-Up Plans. Often, the alternate plan is a variation of the primary plan used if conditions change. The **C**ontingency Plan, Element 19, exists in case something doesn't go as planned, and the Emergency Plan, which exists in case everything goes wrong, is addressed in Element 20, Wildfire Declaration.

Unexpected events such as strong downdrafts from thunderstorms miles away, jet stream winds unexpectedly touching down, equipment breakdown, diverted or delayed resources, and/or a new nearby wildfire are only a few examples of unexpected events that can occur during the implementation of a prescribed fire that can be addressed with PACE Planning.

Plans can be either written (prescribed fire plan) or verbal (during the actual implementation). It is essential that they be clearly understood by all those who could be called on to assist in the prescribed fire.

The Primary and Alternate components of the Holding Plan address the resources and actions necessary to keep the prescribed fire within the project area and meet objectives within the identified prescription. The resources necessary for this component would be identified as the minimum holding resources in the prescribed fire plan.

Contingency Planning addresses the "what if?" for handling the unexpected. The **C**ontingency plan is the portion of the Prescribed Fire Plan that considers low probability but high consequence events and the actions needed to mitigate those events. The **C**ontingency Plan identifies one or more actions that are initiated at a certain time and place or under a certain set of conditions or Management Action Points. The Emergency Plan is the portion of the Prescribed Fire Plan that describes initial actions if the prescribed fire is declared a wildfire.

PACE-planning not only provides alternatives to the primary plan, it prepares the prescribed fire organization to deal with changes – changes that often are inevitable. PACE-planning accounts for this by preparing parallel solutions that can quickly adjust to change.

With that in mind, PACE could be used in other prescribed fire plan elements to identify Primary, Alternate, Contingency and Emergency options for various elements of the plan. Identification of check lines and options to secure prescribed fire operations mid-implementation is an example of **A**lternate and **C**ontingency planning.

The most important benefit of PACE-planning is that it helps create a culture that is constantly thinking of alternatives. What if this does not work? What if conditions change? What if something goes wrong? The organization that thinks in alternatives is prepared for the unexpected – and positioned to take advantage of it. (RiskContainment.com, 2011)

Management Action Points

As appropriate to the scale and complexity of the prescribed fire project, Management Action Points (MAPs) can be used in several elements of the prescribed fire plan including the Ignition Plan, Holding Plan, Contingency Plan and Smoke Management and Air Quality to describe actions that may be implemented during the implementation of the project. A Strategic Operations Planner (SOPL) can assist prescribed fire planners in the development of MAPs.

MAPs are clearly specified conditions that, if reached, prompt implementation of tactical and/or other non-tactical actions to meet prescribed fire objectives. MAPs are usually spatial, but can also be temporal or otherwise tied to conditions that cannot be conveyed geographically using points, lines or polygons.

If MAPs are tied to some geographic feature, they should be identifiable on the ground or from an aerial platform. If the MAP is supposed to identify a place where actual tactical actions are to take place, it should be placed in an area that is defensible and implemented safely under foreseeable conditions.

The key factor in any possible implementation of a MAP action is anticipation. Actions must be identified and performed before being forced to do so. If you are forced to accomplish the action, it may be too late.

Conditions defined by MAPs need to be related to the fire activity, which would relate to firefighter and public safety, location of fire to the MAP, smoke, weather, fuels, calendar dates, resource availability or a combination of any of these (and other) elements. If the conditions defined by the MAP are met, it's critical to act quickly for successful accomplishment of the prescribed fire objectives.

MAPs should be placed where tactical and non-tactical opportunities may be greatest for successful implementation. MAPs actions (tactics or non-tactical) should protect firefighter and public safety, effectively coordinate and communicate critical information with cooperators and public; and protect values at risk. Some examples of actions to address with MAPs are (the following list is not all inclusive):

- Tactical actions, such as direct or indirect hand or machine fireline construction; aerial water or retardant drops; firing operations; structure protection (wrap or application of water, foam, gel, or pre-treatment of hazardous fuels); or any combination of these actions for any given MAP.

- Non-tactical actions such as: Review of decisions, or discussion of new communications; increased monitoring actions; implementing road or area closures; ordering resources for tactical or logistical operations; notification of cooperators or public (cooperators, adjacent agencies and private landowners, county commissioners, county sheriff's, permittees, outfitters and others as appropriate); sending news releases and/or conducting public meetings; and ordering and staging resources.

During project design and identification of MAPs, take advantage of a combination of favorable topographic features (ridge tops, drainage bottoms), fuel conditions (areas that transition from heavy to

light fuels, past large fire areas, fuel treatment areas), weather, land ownership boundaries (if the other above mentioned factors are favorable), and human-made features such as roads or trails in delineating MAPs.

MAPs should be tied to a readily identifiable feature so prescribed fire personnel will know when to implement an action. If tactical actions are planned for an MAP, the MAP should be located in an area where there is a high probability of that action being successful (defensible). The use of any MAPs for tactical operations is subject to consideration of the fire behavior, fire weather, and its possible influence on the safety of firefighting resources, subject to carrying out the tactical operations. If it is deemed unsafe to conduct tactical operation from any particular MAP, a different MAP and/or action should be considered. Other factors in the development and documentation of a MAP should be considered. Some of these factors include:

- Addressing the condition when the identified MAP action would be implemented.
    - Think about when the action might be started in terms of the prescribed fire anticipated to, or reaching the MAP or some other factor that might trigger the action.

- Consider the management intent for implementing the action. In other words, why is it important? Is it tied to a prescribed fire objective or a constraint?

What is the reason for establishing the MAP? Is it for protection of a value, coordinate with other agencies, to inform the public, or some other reason?

- As discussed before, what is the specific action that needs to take place?
    - Is it a tactical or non-tactical action and specifically address what needs to occur?

- What are the resources needed and how much time is involved in completing that action?
    - Are the resources needed to implement the action currently on the prescribed fire or do they need to be ordered?
    - About how much time is needed to obtain and to use those resources to complete the action?

- What might be the subjective probability of success given the current and forecasted incident situation?
    - Are the logistics and implementation of the action going to be complex which might impact the probability of success given the situation?

- If for some reason the action can't be implemented due to an unforeseen circumstance, what is the consequence of not taking that identified MAP action?
    - Do the Agency Administrator and resource allocation personnel know the consequence of not taking the action if resources are not available?

- Who is responsible for the implementation of that action?
    - Is it clear who will be responsible to ensure the action is implemented?

- Who is responsible for tracking MAP status?

The following table is a template or guide to record information for MAPs on prescribed fires. This information can be entered into the appropriate element of the Prescribed Fire Plan template.

Although the example is part of a Contingency Plan on a long-duration prescribed burn the same template can be used to document MAPs for all burn sizes and complexities as appropriate to the needs and values at risk.

MAP Identifier: M.A.P. #1 – Taylor Canyon
Condition: Torching with spotting across the Taylor River and Taylor Canyon road, fire gets established south of road. Possible fire behavior includes uphill crown run
Management Intent: Control any spots within 12 hours to prevent impacts to Bear Creek subdivision.
Recommended Action(s): A. Initiate holding actions along Wilson Ridge north of Bear Creek. **B.** If spots occur during active ignition, evaluate whether to continue ignition or secure the burn where logical and feasible. **C.** Coordinate with County Sheriff on possible implementation of evacuation plan.
Recommended Resources: A. 2 Type 6 engines or equivalent, minimum of 10 FFT2 or above Type 3 dozer or equivalent **B.** Burn Boss **C.** Burn Boss
Time needed: A. 1-2 hours maximum resource response time B. Immediately **C.** 2 hours
Consequence of Not taking Action: (Optional) A. Fire would threaten the Bear Creek subdivision within 24 hours B. Increased escape potential if burn unit not secured while dealing with spots. **C.** Evacuation if needed may be delayed, public safety would be compromised.
Responsibility: A. Holding Specialist or Burn Boss B. Burn Boss in consultation with Ignition and Holding Specialists C. Burn Boss or Agency Administrator
Date Each Action Initiated: A. B. C. D.

Management Action Point (M.A.P.) Designator and Description: Enter unique identifier for management action point and description such as "MAP 1, Bear Creek."

Condition: State when the recommended actions will be implemented. Example: When the fire is anticipated to reach within 24 hours or has reached/crossed the MAP.

Management Intent: Describe the intent of planning and implementing the actions at this MAP. An example such as "to meet the objective of protecting the private land in Deer Creek or to keep the fire contained within the proposed Great Burn Wilderness."

Recommended Actions to consider: Described the actions to be taken for the MAP. When listing actions, a key word to use is "consider." An example would be, "Consider using aerial retardant to delay the spread of the fire to the east toward the X subdivision."

Recommended Resources: Describe the resources needed to carry out the recommended actions to consider.

Estimated Time to Complete: Enter the expected time needed to complete the recommended actions.

Describe the consequences of not taking the recommended action(s): An example such as; "There is a high likelihood that private land will be burned and structures will be lost or there is a high probability that fire will burn out of the wilderness and threaten/impact BPA transmission lines."

Responsibility: Identify who is responsible for implementing each action. As an example; utilize a "PIO" for conducting a public meeting or the "county sheriff" for implementing evacuations."

Date Initiated: If a specific action is implemented, record the date initiated.