Developing a Prescribed Fire Burn Plan:
ELEMENTS & CONSIDERATIONS

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The Purpose of a Burn Plan

Burn plans are a critical component of any prescribed burn. The purpose of a burn plan is to provide a description of the burn area, target weather conditions, hazards that may be encountered, personnel needs and safety, and contacts to make prior to burning. This publication includes a burn plan template (see page 4-7) and explains the importance and purpose of each section of the template. Not every section will need to be included in a burn plan. Each specific prescribed burn will have its own plan that is made up of only relevant sections and information.

The template draws elements from Iowa DNR recommendations, USDA-NRCS, and Minnesota DNR. It includes several components: goals and objectives of the burn, burn site description, fire prescription, and fire operation, control, and cleanup. Each component contains several important subsections. This publication gives a brief introduction to each section and subsection and highlights what should be included.

Goals and Objectives

This section of the plan should address what you are trying to accomplish with burning: why you are burning (the goal) and what you are trying to accomplish with this particular burn (the objectives). The purpose of the burn should be addressed along with your short and long term management goals. For example, the purpose of the burn may be to have a relatively patchy burn with a short-term goal of stimulating plant growth and a long-term goal to improve pheasant habitat.

Burn Site Information and Site Preparation

Timing or season should include information on the appropriate weather conditions and desirable dates. Some of the weather considerations of particular importance are wind direction and speed, temperature, and relative humidity.

Burn area considerations should detail the amount of land being burned, types of consumable fuel, firebreak locations and construction, and topography. Consumable fuel should be broken down into ground (leaf litter, roots, etc.), surface (forbs, trees up to 6' tall, shrubs, etc.), crown/aerial (trees greater than 6'), and structures (homes, barns, etc.). Be sure to pay close attention to cedars and other highly combustible fuels as they may greatly impact fire behavior. For each of the fuel categories it is recommended to record the amount, type, and continuity as a way to evaluate the effectiveness of the fire. Topographic information pertaining to slope, terrain, and aspect should be included along with a site map that indicates topographic features and natural and/or constructed fireline locations.
Surrounding area considerations should include a burn history for the area, the date, results/objectives, and what could/should have been done differently. The special considerations section should include information on any plants or animals that may be adversely affected by the fire and what is being done to prevent any harmful effects. This section also should include any information on local burn restrictions. It also is important to include information on local hazardous areas and prevention measures. Some areas that may pose hazards include power lines, gas lines, wells, and impassable fences.

Site preparation should include a written description of all natural and constructed firebreaks with a map identifying their location. For each firebreak, be sure to explain the type, composition, and width. Be sure that each firebreak is properly cleared prior to igniting the fire; remove all down wood, ensuring that no fuels cross the firebreak.

Prescription

Timing section should identify the desired season and month of the burn. For more information on when to burn for wildlife habitat improvements, managing invasive species, or promoting vegetation, see PM 2088C, Why, When, and When Not to Burn.

Acceptable weather sections detail the weather conditions that should be targetted when conducting burns. The weather conditions that should be included are temperature, relative humidity, wind speed, and wind direction.
For more information on how wind influences fire, see PMR 2088E, Ignition Techniques.

A smoke management plan is included to address the precautionary measures that will be implemented. In order to properly address smoke management, areas of special concern need to be identified as well as the measures that will be taken to avoid problems with these areas. Areas of special concern include buildings, roads, and animal confinements. Desirable and unsafe weather conditions are addressed in this section; and in particular, wind direction, wind speed, and forecasted wind shifts should be noted. A good action plan will include actions to take in the event that hazardous smoke conditions arise.

Ignition and Holding Plans

Ignition and holding plans outline all contacts to make prior to the day of the burn and those to make the day of the burn. The day before the burn, contact local residences and the county health department, as well as check several online weather sources. Some counties require special permits to burn, so call your county health department in advance to find out if permits are required. Check weather conditions on the day of the burn. Note weather conditions, if available, immediately prior to ignition as well as during the burn. The ignition plan also will outline personnel safety precautions, the sequence of ignition, and the types of ignition patterns being used. A Go/No-Go checklist also is to be completed prior to burning.

A contingency plan outlines a back-up plan to handle changes in fire behavior, undesirable fire behavior or conditions, equipment failure, or personnel injury. The plan should clearly identify each person's responsibilities and how that information will be relayed to each person.

A mop-up plan includes all post-burn activities and assignments: who will monitor the area once it is burned, who determines that the fire is extinguished, and how to determine that the fire is extinguished.

Prescribed Burn Plan Form

Site Information

Provide information on the burn area location, ownership, and owner contact information

Owner and Property Information

Owner			
Home Phone		Cell Phone	
Property Name			
Address			

County	Lat/Long	Section	Township	Range

Emergency Contact Information

COUNTY EMERGENCY DISPATCH

COURTESY NOTIFICATIONS (Include neighbors and/or organizations that might be affected by the burn)

Name		Home phone		Cell phone	
Name		Home phone		Cell phone	
Name		Home phone		Cell phone	
Name		Home phone		Cell phone	
Name		Home phone		Cell phone	
Name		Home phone		Cell phone	
Name		Home phone		Cell phone	
Name		Home phone		Cell phone	

Goals and Objectives

Purpose of burn:

Short-term goal:

Long-term goal:

Burn Site Information

Describe physical and biological characteristics of the burn site and appropriate conditions under which to burn

Burn Site Area Map

ESTIMATED AREA OF BURN (include a map of the area):

Fuel Considerations

FUEL TYPE AND AMOUNT

Surface (grass, litter, downed trees, slash, etc.):

Ladder (vines, dead trees, shrubs):

Aerial/Crown (live trees, primarily conifers):

Structures:

Site topography (slope, aspect, and any steep/hazard slopes – indicate on map):

Firebreaks:

Surrounding Area Considerations

Previous burn management (dates of last fire, results of last fire, problems encountered during last fire):

Description of adjacent area (if significantly different in fuels, topography, etc.):

Special Considerations (plants, animals, safety, public agreement, etc):

Hazards (power lines, gas lines, well, impassable fences, rocky ground, etc.):

Closest water source (type and distance):

Prescribed Burn Plan Form

Site Preparation

Locate all firebreaks on the burn plan map

Natural Firebreaks

Type and Location (road, crop field, waterway, other):	Composition (bare soil, green grass, water, etc.):	Width

Firebreak Construction

Type (plow line, hand line, mowed, other):	Length	Length	Width

Organization (Personnel and Equipment)

Detail the individuals and equipment involved in the execution of the burn

Personnel

Minimum personnel required to conduct burn		Contact information	Medical concerns (bee sting allergy, asthma, etc.)
Burn boss			
Burn personnel			

Equipment Requirements

Include what will be used and how much will be needed. Also check for proper working condition.
See PM 2088B, Safety Considerations for Prescribed Burning: Safety, Equipment, and Ignition Techniques.

Personal protective equipment (PPE)		Hand tools		Heavy equipment	
Eye protection		Axe		Chainsaws	
First aid kit		Flappers		ATV/UTV	
Hardhat		Hoe		Truck + tank & pump	
Leather gloves		Pulaski		Ignition equipment	
Respiration mask		Rake		Backpack pump	
Communication		Shovel		Drip Torch	
2-way radios					
Cell phones					

Prescription

Indicate the ranges of weather, ignition method, fire behavior, and smoke management methods to meet the burn's objectives

Acceptable Burning Conditions

Monitor prior to and during burn.

Season / Month :				Timing of ignition:		
Temperature		Relative humidity		Wind speed		Wind direction
Max	Min	Max	Min	Max	Min	-

Days since last precipitation:

Smoke Management Plan

Wind direction and speed:

Highways and roads:

Smoke sensitive structures or areas (animal confinements, airports, buildings with managed ventilation systems):

Residences:

Noxious smoke (poison ivy):

Ignition and Holding Plan

Provide a pre-burn protocol in regard to contacts, weather conditions, and firing techniques

Pre-Burn Contacts

Contacts	When	Who will contact them	Contact information	Done
Online weather	Day before			
County health	Day before			
Local residence	ASAP and day before			

Burn Day Contacts

Contacts	When	Who will contact them	Contact information	Done
Online weather service	Day of burn			
All cooperators	Day of burn			
Local residence	Day of burn			
Local dispatch	Day of burn			

Burn Day On-Site Weather Conditions

	Before	During	-	Before	During
Sky			Temperature		
Precipitation			Relative humidity		
Wind direction			Wind speed		

Ignition and Holding Plan (cont'd)

Provide a go-no-go situation

Firing techniques (ignition sequence, firing pattern, personnel, safety precautions, etc.):

Go-no-Go Check List

yes	no	Are all fire prescription specifications met?
yes	no	Is the weather forecast favorable now and throughout the burn?
yes	no	Are all the necessary lines constructed and checked?
yes	no	Are all needed personnel on-site?
yes	no	Have all personnel been briefed on the prescribed burn?
yes	no	Have all personnel been briefed on safety hazards, escape routes, and safety zones?
yes	no	Do all personnel have the required PPE with them?
yes	no	Is all required equipment in place and in working order?
yes	no	Do you have needed direct communication lines established?
yes	no	Do you have access to adequate water?
yes	no	Do you have all keys and gate access?
yes	no	Have you made the necessary notifications?
yes	no	In your opinion can the burn be carried out according to the plan and will it meet the planned objectives?

Contingency Plan

Provide a backup plan in case of undesirable fire behavior or equipment failure.

Firing techniques (ignition sequence, firing pattern, personnel, safety precautions, etc.):

Mop-up Plan

Post burn clean-up needs:

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