APPENDIX G
PRESCRIBED FIRE PILE BURNING GUIDLINES
GOLDEN DISTRICT

Colorado State FOREST SERVICE

PRESCRIBED FIRE-PILE BURNING GUIDELINES

This handout is designed to be used by forest landowners, land managers, and fire department personnel in planning and conducting safe and effective burning of piled forest debris ("slash") - called "pile burns". These guidelines cannot guarantee safety against accidents, unforeseen circumstances, changing burning conditions, or negligent actions of the individuals conducting the prescribed fire. By following the intent of these guidelines and using common sense, the landowner or forest manager can reduce slash accumulations, improve the appearance of their forest land, and reduce wildfire risk on their property. The reader should contact a local office of the Colorado State Forest Service (CSFS) or their local fire authority for updated versions of this publication and current requirements about the use of open fires.

DEFINITIONS:

Slash: The accumulation of vegetative materials such as tops, limbs, branches, brush, and miscellaneous residue resulting from forest management activities such as thinning, pruning, timber harvesting, and wildfire hazard mitigation.

Pile Burning: The treatment of slash by arranging limbs and tops into manageable piles. Piles are burned during safe burning conditions, generally during the winter following cutting.

Chunking-In: The process of moving unburned materials from the outside perimeter into the center of the still burning piles. This is done after the pile has initially burned down and is safe to approach, but before the hot coals in the center have cooled. Chunking-in allows greater consumption of the piled slash.

Mop-up: The final check of the fire to identify and extinguish any still-burning embers or materials. This is accomplished by mixing snow, water, or soil with the burning materials.

MATERIALS TO BE INCLUDED IN PILES:

All limbs, tops, brush, and miscellaneous materials recently cut in the area, no greater than 3 inches in diameter and from 1 to 8 feet in length. Older branches can be used; as long as they still have needles/foliage attached or have not started decaying. Materials greater than 3 inches in diameter do not significant help a fire spread rapidly, will generally burn longer and require more chunking-in or mopping-up than is cost-effective, produce greater amounts of smoke, and should be used for sawtimber, posts & poles, firewood, or left for wildlife habitat. **Do not place garbage or debris in the piles**.

LOCATION OF PILES:

Piles should be located in forest openings or between remaining trees, in unused logging roads and landings, meadows, and rock outcrops. Piles should be preferably at least 10 feet from the trunk of any overhead trees. In denser stands of trees, piles can be located closer to the trees and even under the overhanging branches, but these piles should be smaller in size and burned when snow or moisture is present in the tree crowns. Piles should NOT be located on active road surfaces, in ditches, near structures or poles, under or around power lines, or on top of logs or stumps that may catch fire and continue smoldering.

CONSTRUCTION OF PILES:

Piles should be constructed by hand whenever possible, but if constructed by machine they should clean of dirt and debris. Piles should be started with a core of kindling-like materials such as needles, small branches, or paper in the bottom of the pile. Pile slash soon after cutting (while still green) and before winter snowfall. Do not include wood products such as firewood and logs. Pile branches and tops with the butt ends towards the outside of the pile, and with the branches overlapping so as to form a series of dense layers piled upon each other. The piles should be compact, packed down during construction, and with no long branches that will not burn from sticking out into the surrounding snow. Piles should be up to 8 feet in diameter, and at least 4 to 6 feet high. These measures prevent snow and moisture from filtering down into the piles and extinguishing the fire before it gets going. If the fuels do not have sufficient needles or fine fuels to carry the fire or kept moisture out (such as oak brush or very old conifer branches), then you should cover the piles with 6 mil plastic to keep them dry until the day of the burn, and then remove it.

PLANNING YOUR BURNING EFFORT:

Individuals should check with the local CSFS office or fire authority for the current requirements on open fires. Generally, you must complete one or more of the following steps before burning slash:

1. Complete and have an approved open burning permit from the local (county) Health Department.
2. Obtain authorization from the legally constituted fire authority for your area. This may be part of the health department's permit process.
3. Land management agencies must complete and have approval of an open burning permit from the Colorado Department of Health - Air Pollution Control Division.

Copies of all permits should be available on-site during the burning operation. Burning activities should also include plans for safety, supplemental water sources, and extra assistance from the local fire authority or the landowner. The individual(s) planning the burning operation should notify the following entities on the day of a burn: the local fire authority; county sheriff's department; and adjacent landowners who may be affected by smoke. Notification should include the date, times, and exact location of the burn. Pile burning must be conducted under suitable weather conditions. Periods of snow or light rain, with steady, light winds (for smoke dispersal), and sufficiently snow cover (6-12 inch depths) are ideal. Do not burn during periods of high winds, low humidity or drying conditions, temperature inversions (especially "Red Air Quality" days in metropolitan areas), with a lack of snow cover or these conditions are expected to develop after starting the burn. Persons burning slash piles should have the following: leather gloves; shovels; suitable footwear; masks for covering the mouth and nose; and proper eye protection.

BURNING SLASH PILES:

Piles may be ignited by several means. If the needles and fine fuels within the pile have dried though the summer, ignition can be easily started with matches and a large ball of newspaper placed within the bottom of the pile. If fuels are still partially green, or the pile is wet from rain or melting snow, then a hotter and longer burning source may be necessary. Drip torches (a specially designed gas can used by foresters for igniting fires) or sawdust soaked with diesel fuel can be used to ignite the pile. Flares used for highway emergencies can also be utilized to ignite the piles. **Do not use gasoline for this purpose.**

One test pile should be ignited to see if it burns and at what rate, prior to igniting other piles. If suitable burning conditions exist, then additional piles may be started. Ignite only those piles that can be controlled by the available manpower and resources until they have burned down. You can slow the rate of burning (and possible scorching of adjacent trees) by shoveling snow or spraying water into the pile and cooling the fire down. Depending upon weather conditions, pile size, and moisture content of the fuels, piles should burn down in 30-60 minutes. As a general rule, one person can manage 3-6 closely situated piles.

After the piles have burned down, chunk-in any unburned slash and wood into the hot coals in the center of the pile. As much as 95% of the original slash can be consumed by aggressive chunking-in. Do not start any new piles on fire after 2:00 pm, as they may continue burning into the evening and will not burn as completely due to lower temperatures and higher relative humidity. Smoke inversions may be a problem for piles still burning after sunset. At all times, piles may need to be actively mopped-up if the weather conditions will not extinguish the fire, or if the fires could escape. If high winds or melting snow increases this risk, then all burning materials must be mopped-up.

ADDITIONAL ASSISTANCE:

If landowners have questions about burning slash, they should contact a local CSFS office (http://csfs.colostate.edu/). CSFS can assist landowners with planning or conducting prescribed fire activities such as pile burning or broadcast (area) burning.

Local, state, and fire department authorities may require a burn plan, smoke management plan, and weather monitoring for complex burning operations.