

Smoke Program Background

This document is for you if you are, or work for, a fire management officer (FMO) and are new to the job, or just new to Colorado. It's for you also if you want to know about how the Colorado smoke management program functions administratively.

If that's not you or you only need a permit for a few simple piles, save time by going instead to the [page about pile permits](#), download a [pre-populated pile application](#) or choose another [form](#).

The document addresses 3 topics:

- I. Overview of program structure and procedures
- II. APCD site inspections
- III. "Big league" burners

Many additional topics are addressed in the program [manual](#). The manual provides formal requirements, program concepts, and background about individual permit conditions. The manual might be useful if you have a specific question or want more in-depth information.

Colorado Smoke Management Program goal

Influence management of Colorado prescribed fire smoke so that burners continue to protect visibility and public health and welfare.

I. Overview of Colorado smoke management program structure and procedures

Each pile or broadcast prescribed fire in Colorado needs a smoke permit. Permits protect air quality for health, welfare, and visibility. The program is governed by Colorado air [Regulation 9](#).

Permit applicants must show that a burn can and will minimize smoke impacts on visibility and health. It must use emission-reduction techniques. The application [forms](#) address both subjects.

If you need a Colorado prescribed fire smoke permit, or think you might but have never applied for one, [contact us!](#) Please don't waste time trying to figure this out alone. First time through, the procedures can be complex. Also, if you are a new burn boss in Colorado, we want to get to know you. We will help you be sure to provide the necessary information, and will explain what you must do after you receive a permit. If you ask (and sometimes anyway), we will come see your project as well. [Call us](#) or anyone else who already works with Colorado prescribed fire permits.

How Colorado's smoke permits work: Colorado's Air Pollution Control Division's (APCD's) smoke management permits establish in advance the conditions under which a burn may occur. Conditions address [forecasted smoke ventilation](#), wind direction, ignition end time, and maximum daily acres or number of piles. They may have additional conditions as well. Unlike several other western states, Colorado does not make daily (go/no go) decisions about individual burns.

To get a permit, start by [calling us](#) and/or filling out an [application](#). There are separate applications for [piles](#) and for [broadcast](#). The application becomes part of the final permit. Burn descriptors on the application such as number, location and size of piles are binding outer limits. An application for a relatively high smoke risk project and/or one with complex conditions may also need to include a smoke planning map and/or unit map. For details see the [worksheets](#) and/or [guidance for non-standard permits](#). To supplement what we hope are largely self-explanatory application forms, there are [hover hints](#) and (very) [detailed instructions](#).

Two Levels of Permits, Standard and Non-Standard

1. Standard conditions - *predictable, simpler, and used for most burns*
 - Apply using the relevant [form](#). Worksheets for [piles](#) and [broadcast](#) show standard

conditions.

- Standard conditions are for [NWCG](#)-qualified burn bosses and other experienced fire professionals. Other burn supervisors can request standard conditions but may receive tighter constraints at least initially.
- Standard conditions embody close to the upper end of what has worked well in Colorado in the past.

2. Non-standard conditions - *negotiated, flexible, for atypical burn situations*

- Non-standard conditions may be more or less restrictive than standard conditions, and most often are a combination of both.
- Benefits including shared learning about how standard conditions should change into the future.

To apply for a non-standard permit, first become familiar with standard [pile](#) and [broadcast](#) permits. Then read the [guidance for non-standard conditions](#).

Timing: It usually works well for everyone if a project's smoke permit is issued before the start of a burn season. But applications are accepted any time. We strongly discourage applications being submitted a couple days before you hope to start burning.

Most applications are processed in about a week. At the outer time limit, an application could be in review for up to 30 days after it is complete. Permits are valid for (the remainder of) the full calendar year for which they are issued.

To renew an existing permit for another year, we prefer that you simply send an email to cdpfe_fireapps@state.co.us listing the project name(s) or permit number(s). On the other hand if there are a lot of changes for the next year, please submit the application form with changes, ideally indicated by 'track changes.' We typically start processing the next calendar year's applications in early autumn.

Fees start at \$100 per permit and average about \$350 each. For all federal agencies and some others, charges for smoke permits are billed once a year. The bill goes to a state or regional office but the cost may come directly out of your fuels budget.

Activity reporting: There are three (!) [forms](#) associated with each burn day:

- 2-48 hours before ignition, send to both [APCD](#) and the [local county air quality official](#) a [Notification of Ignition](#).

- By 10:00 the following day, and whether or not ignition did occur, send [APCD](#) an [Activity Report](#).
- By March 30 of the following year, we need an annual activity summary, whether or not any burning occurred. In late fall we email each permittee a draft annual based on our records to date so that you can review it for accuracy. Or you may fill out a [blank annual](#) summary or request a draft any time in advance, like when burning on a project is complete.

Training burns: Many prescribed fires provide training for individuals, for NWCG classes, and/or for fire departments.

- If a fire is small enough that it is eligible for an [open burn](#) permit, it may qualify for a training exemption from smoke permitting.
- If a wildland training exercise is too big to qualify as general open burning, we consider it to have purposes in addition to training. It needs a smoke management permit and is not eligible for a training exemption. [a](#)

II. APCD site inspections

This section starts with the rules (mostly that constrain APCD staff) and the hard limits. The rules section lists what, not why. After that are sections about intent, guidance suggestions, and other topics full of opinion.

The Rules

Presence: As stated in [Regulation 9](#), a consequence of obtaining a prescribed fire permit is that “burning operations shall be subject to inspection by the Division.” APCD staff must monitor permit compliance, and have legal authority to do so. Any aspect of a permit’s conditions or information submitted on an application may be checked. While we show up unannounced at a burn site only infrequently, it is within the Division’s right to do so and to be present.

Accountability: On an active burn site, an APCD representative is always accountable to the burn boss. This provides for safety, including emergency head counts.

We do not walk or drive around live burns unannounced. If we didn’t attend morning briefing, the first two things an APCD representative will do on arriving at an active burn is put on regulation personal protective equipment and contact the burn boss. We immediately look around until we find anyone who has a radio, and ask them to let the burn boss know we are present. We keep a burn boss or whoever they designate informed when we depart or re-enter a burn, and, to the extent you request, about changes to our location within a burn site.

The APCD representative’s FFT2 or better qualifications card will be current at an arduous level, or we will make clear that the representative is not carded. Usually we remember to offer to show the burn boss the card. If we forget and you would like to see, please ask.

Assignments: We make a distinction between reporting and being accountable that, while conceptually-important, is very fine and usually invisible. As regulatory inspectors, we may not report to the burn boss. Therefore you may not assign us roles or require us to accomplish certain tasks. (See the guidance section below, however.) We do not serve as the day’s smoke monitor. In fact, one of the permit conditions we check is that smoke is indeed being monitored and documented adequately.

Escort: While we find that having an assigned escort tends to hamper mutual learning opportunities, it is the burn boss’ decision whether to assign one. Any escort needs to be free of other assignments for the day, because going where they need to be or prefer to show us might conflict with the APCD representative’s duties. You may choose to or not to invite us to any off-site planning meetings. If you have an on-site discussion you don’t want us to hear, say so and we’ll oblige.

Operations: It is our intent to stay out of operations. However, smoke permits do interact with operational decisions. The term “operational” is a difficult one, defined in the eyes of the beholder. We try not to cross the line. We also count on a burn boss or other line supervisor to tell

us, clearly, right away, if you think anything the APCD representative is doing amounts to meddling in operations.

To the extent that it tends to make the conversations that are our focus be more productive, we spend time with holders and others who are working at the burn (and will speak up if we see an unreported spot), and might even participate briefly in patrol or holding. If you want us to stay away from all or certain activities or line personnel on your burn, say so! At the other end of the spectrum, we often receive generous and cleanly-intentioned invitations to help light. We think that in most circumstances lighting is enough of a privilege it could appear to be a conflict of interest to accept, and in that case decline.

Confidentiality: We are responsible to pay attention to what we observe. Anything we observe that contradicts permit conditions will be reported to our supervisors. We do not have the option to keep our observations confidential even if someone requested that we do. Also, we keep designated smoke liaisons informed about any challenging compliance questions within their own agency. In contrast, if anyone with whom we talk wants us to keep their conversation with us confidential and says so, we carefully honor the request.

Permit Compliance: Burn bosses are accountable to meet permit conditions, not smoke outcomes. Smoke impacts do not form the basis for enforcement. You are bound only to meet the terms of your smoke permit.

Smoke impacts we document, learn from, will talk about with you if they seem interesting, and are a critical way we evaluate potential changes to standard conditions. We do hope for, appreciate, build trust based on, and all benefit from decisions that promote good smoke outcomes. But all that is required is to meet the permit's terms. Responding to excessive smoke impacts starts with implementing the smoke contingency plan included in the application portion of the permit. See the description above the smoke contingency section.

Most apparent compliance problems are misunderstandings and/or unintentional. The great majority of questionable circumstances can be resolved with a conversation. If we think we see a minor problem that needs to be addressed informally, we will ask you about it. But we probably won't do so during ignitions. We think that is potentially distracting to a burn boss. Also we often have only partial information at first, so later may better understand why something differs from what we think is needed. We'll wait until a quiet time at the end of the day's burn or later in the week.

An exception that in more than a decade we have had to make only twice is that if an inspection turns up a violation sufficiently serious to warrant formal enforcement immediately, we would carefully consider the prudence of discussing it with you informally. Instead, you, and if you are a government employee, also your supervisor, could receive a formal Notice of Violation or Compliance Advisory. They are vanishingly rare.

Documentation: Field inspection reports, described below, are public property and are subject to the Colorado Open Records Act. Also anyone may use our photos without permission.

Intent of Site Inspections

Learning: Our main purpose in making site visits is to learn. The questions continually evolve, and often what we learn from a burn is about some different topic than we expected. Typical questions we have in mind may include:

- What questions, suggestions, points of confusion, or other topics do the people present have about permits and about smoke?
- What smoke impacts are and are not occurring?
- What can we learn about and from the responses of area residents to smoke?
- What are the consequences of specific permit conditions, intended and not?
- What better options can we discover, especially through conversations with the people involved?
- How does a project differ from the mental pictures we had while reviewing the permit application? What lessons can we draw from differences?
- What variables seem to be affecting smoke and its consequences, and why?
- How does a particular burn organization deal with unexpected smoke issues?

Some permittees have told us they find smoke field inspection reviews helpful. For example, it might be useful to you if we can more fully envision a burn that is unusual or complex from a smoke perspective. We encourage permittees to request that we see your site or your burn when you feel it would help you if we better understood the situation. If you notice ways we can make our smoke field reviews more effective, please share your ideas with us.

Field time is one of the easiest opportunities you have to make your thoughts and perspectives known to ACPD staff, though phone and email are always options also. The primary way we can improve a program that affects you is by you providing input - ideas, opinions, observations, etc..

We - and more importantly, our managers - think it is crucial for every permittee to have the opportunity to have open conversations with us. These are a way to clarify misunderstandings, voice disagreements, discuss past or possible problems, etc. That is why even though requests for confidentiality are seldom made, the option described above is important to us.

The reason we can't be assigned within the burn organization is because formally our role is as a regulator and compliance monitor. It would be a conflict of interest for us also to report to a burn boss as an assigned resource. We still do our best to be reasonable and to be helpful. For example usually the APCD representative is pleased to answer a burn boss' inquiry about the smoke we can see, photograph something, or to take on other limited tasks.

Enforcement: Enforcement of permit conditions has never yet been our only interest in being at a location. Almost as rarely is it a focus. But enforcement is a duty we also do not overlook. Usually the checks are informal and invisible.

Who Preferentially Gets Site Inspections

Burns whose permit conditions include "If feasible, advise APCD 36(+) hrs before ignition" are slated for us to attend provided APCD staff are available. Please attempt to honor this non-

binding request for advance notice. It usually means the difference between whether we can arrive in time for briefing or not.

We attend burns:

- at the request of any burn boss, fuels planner, private landowner or line officer
- supervised by new permittees. They include experienced RXB2s new to Colorado, and newly-minted RXB2s in long-standing programs.
- supervised by permittees with whom there are compliance uncertainties. Examples: past minor corrective action, known or likely smoke impact difficulties, or, most often, smoke paperwork that raises as many questions as it answers.
- with top-notch burn bosses and programs from whom we most want to learn
- in consequence of interest perked by a conversation
- with non-standard conditions
- large, and close to homes
- in unusual fuels
- that are part of large multi-year projects, especially new ones

Other reasons for a prescribed fire smoke field inspection review may include an opportunity to watch activity related to a topic on which we are currently focusing, having not seen an active permittee in a few years, or simply being nearby with time to stop.

People and activities we seek out to visit other than active burns include a permittee's or agency smoke liaison's office; a proposed or completed burn; inexperienced burn supervisors who most often are private landowners; a county health department or other non-permittee stakeholder; a community or area that is or potentially will become a receptor for one or more projects; and others.

Guidance

Before an Inspection

Typically we've marked the permit and/or talked to you well ahead of time about our hope to attend your burn. We may have asked you to keep us informed as you see possible windows developing. Once a burn date is set that we hope to attend, we will ask when and where the briefing will be. We try hard to show up in time to attend, in order to minimize causing inconveniences. We will request to be told the radio frequencies in use, and if they are within wildland fire's usual range will program them into an APCD field radio.

If a burn boss in a large burn organization already has many reports, we usually ask through whom we should be accountable for the day instead of assuming it should be the burn boss directly. Initiate the topic if you think it is overlooked.

During a Site Inspection

Then what do we do all day? Basically, we listen, watch, and try to learn. Take photos. Wander around and talk to people, anyone who doesn't appear to be or say they are too busy. Discuss

comments or inquiries that may come our way, which most often are about other projects or other burn days at the same agency unit. Look at fuels or fire behavior or consumption or any other variable that can affect smoke production and impacts. Talk to the person monitoring smoke, to glean both information and perspectives from them, and sometimes also to share learning or coordinate our documentation of the burn's smoke. Get off-site far enough to see the smoke and take photos. Try to learn enough about a project to understand some of its constraints in addition to smoke management. Maybe set out a particulate monitor. Get a geographic feel for nearby homes, and sometimes talk to the neighbors. Think about what this burn might mean for standard permit conditions and other smoke program practices. Take some more photos and watch some more. If the burn boss is willing, attend the AAR.

After a Site Inspection

A week or several later, we may send you a draft report and request your edits. We used to do this for every site visit, and now are saving time by being more selective. While writing reports we make mistakes of fact or interpretation, notice minor permit problems that we can resolve quickly with you and subsequently remove from the final report, put ideas in tactless language, or do not recognize the sensitivity of some issue. Fixing all these possible problems is why we send you (the burn boss or other host) and only you the first draft of the report. In response we get and appreciate many improvements to the draft. If weeks go by and despite a reminder or two we haven't heard back from you, at that point we may finalize the report without your input.

The inspection report is primarily for our supervisors and coworkers. People who also will be sent a copy include you, usually your supervisor and/or next-level FMO, your agency smoke liaison or other agency contact if one has been designated, the [county smoke contact](#) which is the person to whom you make daily notifications, and occasionally others with a stake in the smoke aspects of the project.

If you see or think of ways we can improve the effectiveness of our field work, please share with us your ideas.

III. "Big League" Burners

Is this topic SO not my problem?

If your burn program belongs in Colorado's big league and you don't already know about the 'significant user' process, you probably don't need to pay attention to it. Chances are your agency's main or regional office or your ranch manager already took care of it for you.

What does it mean for a burn program to be in the 'big league' in Colorado?

Colorado law and [regulation](#) have special provisions for property owners and land management agencies that make it into Colorado's big league for prescribed burning. Big league burners include most of Colorado's large public land management agencies and a few large ranches.

Every ten years these most active burners must complete a review with the [Air Commission](#) to determine that their decisions about when to use prescribed fire are made in ways consistent with protecting air quality. In essence, while individual smoke permits set boundaries on the 'how' about managing smoke, a "significant user" hearing reviews the 'whether.'

Is your burn program in or approaching the big leagues? To qualify, the entity for which you burn must own or manage more than 10,000 acres in Colorado, and its prescribed burns generate at least 10 tons a year of particulate matter, PM-10. Very approximate examples of burning that generates 10 tons of PM-10 are 500 piles of 1,000 ft³ each, or 300 acres of healthy ponderosa understory.

If you generate at least 10 tons of PM-10 in one year, your program is, in the words of the legislation, a significant user of prescribed fire. (We don't consider everyone else who burns as insignificant. And we might as well enjoy the word associations for significant users of something.)

Who is in Colorado's prescribed fire 'big league?'

As of 2015, the following entities have current significant user status:

- Banded Peak Area Ranches*
- Blue Valley Ranch*
- Bureau of Land Management
- Colorado Parks
- Colorado State Land Board
- Denver Water Board

Fort Carson
Larimer County Natural Areas
National Park Service
Trinchera Ranch*
U.S. Fish and Wildlife Service
U.S. Forest Service

* privately owned land

When their burn programs were more active, the Air Force Academy, Jefferson County Open Space and [the formerly-named] Colorado Division of Wildlife had significant user standing. It has since lapsed. If the programs grew sufficiently large again, then it would be time to renew their significant user status at a new hearing before the Air Commission.

What should I expect if we're getting into prescribed fire's 'big league?'

The [Air Quality Control Commission](#) considers each significant user's planning document at a public hearing. The document describes how decisions are made to identify fuel treatment alternatives to achieve resource objective goals, and how decisions are made to select among various fuel treatment alternatives. It demonstrates for lands selected for fuel treatment how compliance with the State standard will be achieved. The State standard requires that air pollution emissions be minimized to the extent "feasible, practicable and reasonable."

The Commission doesn't approve or disapprove of a planning document. Instead, after considering the document and the processes it describes, the Commission may make formal comments. If it does, staff must take those comments into account when issuing smoke permits for the lands covered by the planning document. So far, significant user hearings have concluded without any of these formal comments. The Commission's review is valid for ten years, or less if the land manager's planning processes change substantially.

It can take 6-12 months to generate then secure review of a planning document. If your program may even be approaching the threshold, [contact us](#). Planning documents are public record. We will send you examples if you ask. The examples can be very helpful for a manager preparing their agency's or ranch's significant user planning document. The Air Division is required to charge an hourly fee to review and process significant user planning documents for a public hearing.

[Contact us](#)