

Guide to Burning

A Citizen's Guide to Burning Safely and Legally in Unincorporated Boulder County

Smoke Impacts

Smoke is made up of a complex mixture of gases and fine particles produced when wood and other organic matter burn. The biggest health threat from smoke comes from fine particles. These microscopic particles can get into your eyes and respiratory system, where they can cause health problems.

Wood Smoke: A Hazard to Our Health

- ✓ Breathing wood smoke on a high pollution day is equivalent to smoking 4-16 cigarettes a day.
- ✓ Using a non-certified wood stove for four hours emits as much carbon monoxide as driving a car 20 miles.
- ✓ Exposing oneself to wood smoke can trigger headaches, irritate the lungs and eyes, decrease alertness, cause flu-like symptoms, nausea, fatigue, rapid breathing, chest pain, confusion, impaired judgment, and increase cardiovascular problems such as angina. Respiratory diseases such as asthma, emphysema, and bronchitis can also be intensified. Briefly encountering light wood smoke causes no harm.
- ✓ Burning wood releases toxic pollutants: carbon monoxide and very tiny harmful particles into the atmosphere that can lodge in our lungs. These pollutants are released into your home as well as the atmosphere. Certified stoves and fireplaces minimize the effects of indoor and outdoor air pollution.

Wood Smoke: An Air Quality Hazard

- ✓ Wood smoke is a major contributor to the air pollution problem in the Denver-Metro area.
- ✓ Wood burning in the Denver-Metro area can contribute up to 20% of the particulate matter (PM-10) in the air. Other sources of particulates include street sanding and vehicle emissions.
- ✓ Wood burning also contributes 15% of the carbon monoxide in the air. Other sources are vehicle emissions and fossil fuel combustion. Carbon monoxide can bind with blood hemoglobin and prevent oxygen from reaching the body.

Why is burning regulated?

For you! Unregulated burning can degrade air quality and poses a risk to your health and that of your family, friends, and neighbors. Therefore, the Colorado Department of Public Health, in partnership with Boulder County, regulates burning to **protect the air quality** of the place we call home.

Boulder County is no stranger to wildfires, and no one needs to be reminded that burning can be dangerous business if not undertaken carefully. It is our intention that with regulation comes **increased education**, **greater oversight**, and more **thoughtful**, **responsible burning practices**.

Boulder County recognizes both the need for, and the value of, burning for both forest health and agricultural operations. Intentional burning is an important component of managing wildfire risk. It is because we recognize its value that we have chosen to regulate it. We want to ensure it gets done and gets done safely.

In short, open burning in Boulder County is regulated for two reasons:

#1 Public Safety #2 Air Quality

Alternatives

While burning slash (aka, "forest debris") is a simple and cost-effective method of disposal, it isn't without its drawbacks. Open burning releases SMOKE, FINE PARTICULATE MATTER, and CARBON MONOXIDE into the atmosphere, which can contribute to health problems and degrade the air quality of Boulder County.

Several community sort yards and drop-off locations exist in Boulder County that will accept your slash material. Often, these materials are put to use powering biomass energy systems right here in Boulder County. Keep in mind that a burn permit application may be denied if a practical alternative method of disposal exists.

There are **3 ALTERNATIVES TO BURNING** to consider prior to applying for an open burn permit:

- ✓ Drop off your material at a SORTYARD
- ✓ SCATTER your material around your property*
- ✓ CHIP your material and broadcast it onto your property*
- * If your slash material was generated as a result of wildland fire mitigation, scattering material or broadcasting chips is not a good alternative as there is no net reduction in wildland fuels; you have just rearranged them. If your intent is wildland fire mitigation, the best alternative to burning is dropping your material at a sort yard.



Call **303-678-6368** or visit www.bouldercounty.gov/property-and-land/forest-health/community-forestry-sort-yards/ for more information on the Community Forestry Sort Yards.

How do I get a free permit?

- Consider **ALTERNATIVES** to burning
- 2 READ this booklet
- APPLY for a Burn Permit online at least 20 days prior to burning ^{1, 2}
- WAIT for your permit to arrive via email
- FOLLOW THE INSTRUCTIONS
 in this booklet and
 on your permit

- Go to the Boulder County Open Burning Portal at <u>burnpermits.bouldercounty.gov</u> to apply for a burn permit.
- Your burn might also require a smoke management permit from the CDPHE/APCD.
 Call 303-692-3268 or visit https://cdphe.colorado.gov/outdoor-burning for more information and to apply for a smoke permit.

Do I need a permit?

YES

Burns that **REQUIRE** a permit:

Slash Pile Burns

A slash pile is made up of vegetative material that has been concentrated by manual or mechanical means into a pile measuring no more than 6' wide by 6' tall. Slash piles generally contain the remnants of mitigation projects or simply the forest debris cleaned up from around one's property. However, there are restrictions on what types of material can be placed in a slash pile. See "WHAT can I burn" for a list of items that cannot legally be burned in Boulder County.

Visit the Boulder County Open Burning Portal at <u>burnpermits.bouldercounty.gov</u> to apply for a burn permit.

Contact the Colorado Department of Public Health & Environment to apply for the appropriate **smoke management permit**:

- For less than 50 piles, smoke permits are not required in unincorporated Boulder County
- For more than 50 piles, visit https://cdphe.colorado.gov/apens-and-air-permits/get-a-pile-smoke-permit
- Or call the State Air Pollution Control Division at 303-692-3268

Broadcast Burns

Although these burns do not require a permit, you will need to file a **burn plan** with Boulder County Fire Management. Often thought of as "prescribed burns," broadcast burns are defined as "the controlled application of fire to wildland fuels in their natural or modified state over a predetermined area." Broadcast burns are often conducted to reduce wildland fire fuel loads, to restore the ecological health of an area, or to clear weeds.

If you plan to burn **more than 10 acres of grass or more than 5 acres of other vegetation**, contact Boulder County Fire Management at bcfiremanagement@bouldercounty.gov before proceeding.



CONFUSED? Call us at **303-441-4500** or email us at bcfiremanagement@bouldercounty.gov to file a burn plan or if you have questions about a specific burn and whether it requires a permit.



Burns that **DO NOT REQUIRE** a permit:

Agricultural Burns

Whether land is zoned as agricultural is relevant but is not determinative of whether a fire on it should be categorized as an agricultural open burn.

Agricultural burns are the open burning of cover vegetation for the purpose of preparing the soil for crop production, weed control, maintenance of water conveyance structures related to agricultural operations and other agricultural cultivation purposes.

Examples include:

- Burning stubble from a commercial annual row crop.
- Burning of fruit tree, vine prunings, and cull trees in and from an orchard or nursery.
- Improvement of habitat and disposal of tree materials and brush, improving forage for livestock.
- Burning of vegetative detritus that accumulates in a reservoir.

The day before an agricultural burn, register your burn on the Open Burning Portal at burnpermits.bouldercounty.gov. You will receive a registration number within a few hours. On the day of your burn, log your Intent to Burn using the registration number on the Open Burning Portal or by calling the Open Burning Hotline at 720-806-4305. You will need to follow the same methods to log a burn completion notice after you are done.

Recreational Fires

Recreational fires include fires used for ceremonies (including sweat lodges), non-commercial cooking of food for human consumption (barbecues, gas stoves, charcoal fires), instructional purposes, or campfires on private land. Recreational fires should be no larger than 2 feet wide x 2 feet long x 3 feet high.

Bonfires are not allowed.

Other Exempted Burns

- Fires in a fireplace (indoor or out)
- Propane grills
- Candles
- Propane lanterns
- Tikitorches
- Kerosene heaters
- Training

WHO can burn WHERE?

- LANDOWNERS or their designees may conduct a burn on their own PRIVATE PROPERTY with the applicable permits.
- ✓ FIRE MANAGERS may burn on PRIVATE PROPERTY with the landowner's permission, or on PUBLIC PROPERTY within their management jurisdiction with the applicable permits.

Want to know about burns occurring in your neighborhood?

Visit <u>burnpermits.bouldercounty.gov</u> to view a map of approved, active, and recently completed burns in Boulder County for the current calendaryear.

WHAT can I burn?

YES

The following items MAY BE BURNED in Boulder County, but require a permit:

- ✓ Tree branches and trunks smaller than 6" in diameter
- ✓ Clean, dry slash
- ✓ Clean, dry forest debris

NO

The following items CANNOT BE BURNED in Boulder County, with or without a permit:

- ✓ Material that is wet.
- ✓ Material that is full of dirt or soil
- ✓ Trash or garbage
- ✓ Buildings
- ✓ Construction debris
- ✓ Commercial or business waste
- ✓ Lumber, even if it is unpainted and untreated
- ✓ Hazardous materials, including treated wood
- ✓ Non-wood waste (tires, insulation, plastics, etc.)
- ✓ Animal carcasses
- ✓ Leaf piles and lawn clippings
- ✓ Food waste
- ✓ Stumps
- ✓ Branches larger than 6" diameter
- ✓ Tree trunks larger than 6" diameter

WHEN can I burn?

My burn is above 6400' elevation:

Slash piles Year round¹
Agricultural Burns Year round
Recreational Fires Year round

My burn is below 6400' elevation:

Slash piles March 1 – Oct. 31¹

Agricultural Burns Year round²
Recreational Fires Year round

Time of Day (All elevations)

March 1 – Oct. 31 2 hours after sunrise to

2 hours before sunset

Nov. 1 – Feb. 29 10:00 am - 4:00 pm

Deal Breakers

YOU MAY **NOT** BURN WHILE **ANY** OF THE FOLLOWING RESTRICTIONS ARE IN PLACE, EVEN IF YOU HAVE A PERMIT.

Weather High Danger Conditions:

Fire Weather Watch

Red Flag Warning

Wind Watch

High Wind Warning

Air Quality³ Air Quality Action Day

Public Safety Burn Ban

^{1 -} Requires a permit

^{2 -} Requires registration

^{3 -} Agricultural and recreational burns are exempted from all air quality restrictions.

Just the facts

A quick-reference guide to the basics of open burning in Boulder County

	Slash Piles
Permit required?	Yes Visit <u>burnpermits.bouldercounty.gov</u> to apply for a burn permit.
Size	6 feet wide x 6 feet long x 6 feet high
Required notifications	 Online Intent to Burn and Burn Completion: Visit burnpermits.bouldercounty.gov or call the Open Burning Hotline at 720-806-4305. CDPHE/APCD¹
Times you may burn	10:00 am - 4:00 pm (Nov. 1 - Feb. 29) 2 hours after sunrise to 2 hours before sunset (March 1 - Oct. 31)
Dates allowed	All year (Above 6400') March 1 – Oct. 31 (At or below 6400')
Snow cover required	Mountains ³ 5" of snow that extends 30' in all directions from pile(s) Plains ⁴ No snow cover required
Deal Breakers³	 Air Quality Action Day High Danger Conditions (Fire Weather Watch, Red Flag Warning, Wind Watch, or High Wind Warning) Burn Ban

^{1.} CDPHE/APCD Colorado Dept. of Public Health & Environment/Air Pollution Control Division.

Deal Breakers You may not burn if any one of the listed restrictions is in place, even if you have a valid permit.

Agricultural Fire	Recreational Fire
No permit required, but you must register each ag burn for each address where burning will occur. Visit burnpermits.bouldercounty.gov to register your burn.	No
N/A	2 feet wide x 2 feet long x 3 feet high
Online Intent to Burn and Burn Completion: Visit <u>burnpermits.bouldercounty.gov</u> or call the Open Burning Hotline at 720-806-4305 .	Contact your local fire district (recommended)
No limitations	No limitations
All year	All year
None	None
NOT Recommended on: High Danger Conditions (Fire Weather Watch, Red Flag Warning, Wind Watch, or High Wind Warning) Burn Ban	 High Danger Conditions (Fire Weather Watch, Red Flag Warning, Wind Watch, or High Wind Warning) Burn Ban

- 3. Mountains are defined as those areas located WEST of the following line: 83rd Street south to Woodland Road, Woodland Road west to 75th, 75th south to Highway 66, Highway 66 west to North Foothills Highway, North Foothills Highway south to Broadway, Broadway south to South Foothills Highway, South Foothills Highway south to county line.
- **4. Plains** are defined as everything east of the Mountains (defined above).

HOW do I burn?

How to site, build, burn, and put out a fire like the experts

#1 Prepare Site

Choosing & Preparing a Burn Site

- ✓ Burn on BARE GROUND or SPARSE GRASS
- ✓ Do not place your pile over BURIED UTILITIES
- ✓ Do not place your pile under OVERHEAD UTILITIES
- ✓ Do not place your pile within **30 FEET of ANYTHING** you don't want to burn, including:
 - ✓ Other slash piles
 - ✓ Structures
 - ✓ Trees
 - ✓ Shrubs
 - √ Vehicles
 - ✓ Decks
 - √ Wood piles
 - ✓ Lawn furniture

- √ Swingsets
- ✓ Greenhouses
- ✓ Car ports
- √ Flammable fences
- ✓ Hazardous materials✓ Fuel containers

 - ✓ Cisterns
 - ✓ Landscaping
- ✓ Ensure the smoke from your pile will not IMPACT ANY NEARBY BUILDINGS. Build piles downwind of structures (homes, buildings, schools), if possible.
- Ensure the smoke from your pile will not OBSTRUCT VISIBILITY ON A ROAD. Build piles downwind of roads, if possible. If not, keep the pile well back from road edges.

#2 Prepare Fuels

Constructing a Pile

- ✓ Place branches in pile with THICK/BUTT ENDS UPWARD AND INWARD. This will place the largest part of the branch into the area of greatest heat, increasing consumption of material.
- ✓ Build your pile no larger than 6 FEET HIGH and 6 FEET IN DIAMETER.
- Piles should be shaped like a CONE, a CYLINDER, or a MOUND. Conical piles will consume material more completely and more efficiently than any other shape.
- ✓ Piles should be DENSE. If your pile is well-built, you will not be able to pass your fist through it.
- ✓ Let your pile sit and cure for at least SIX MONTHS, but no longer than TWO YEARS before burning. A green pile will give off copious amounts of smoke and won't consume well. An overly-dry pile will burn too hot and fast to be safe.

HOW do I burn?

How to site, build, burn, and put out a fire like the experts

#3 Apply and notify

At least 20 days prior to burning slash piles, **APPLY** for a Burn Permit. At least one day prior to agricultural burns, **REGISTER** your burn. Visit <u>burnpermits.bouldercounty.gov</u> or call the Open Burning Hotline at **720-806-4305**.

On the day of your burn, **5 minutes prior to burning**, file your **Intent to Burn** by logging into your Boulder County Open Burning Portal account. Alternatively, call <u>720-806-4305</u>. Have your permit number or registration number ready to enter. Note that even if your burn does not require a permit (i.e., Agricultural), you still need to complete the **Intent to Burn** notification process. Notification reduces the number of false smoke reports your fire department and sheriff's deputies respond to.

Slash Piles

The day of your	burn, within	5 minutes	prior to	ignition:

- Initiate your Intent to Burn online through the Boulder County Open Burning Portal account or by calling the Open Burning Hotline at 720-806-3205. Have your permit number ready to enter.
- ☐ If you are unable to access your online account or are unable to complete your Intent to Burn, call 303-441-4500.
- ☐ For 50 piles or more, submit a Colorado State Daily Notification of Ignition by visiting https://cdphe.colorado.gov/apens-and-air-permits/smoke-management-permits. For additional assistance, contact coleen.campbell@state.co.us or call 303-692-3268.

Agricultural Fires

The day of your burn, within 5 minutes prior to ignition:

- ☐ Initiate your Intent to Burn online through the Boulder County Open Burning Portal account or by calling the Open Burning Hotline at 720-806-3205. Have your registration number ready to enter.
- ☐ If you are unable to access your online account or are unable to complete your Intent to Burn, call 303-441-4500.

Recreational Fires

No notifications required but are recommended

#4 Burn

Dig a 6-12" **TRENCH** around your pile down to mineral soil. Mineral soil is soil that contains no plant (flammable) material.

DRESS for the occasion.

- Wear flame-resistant clothing (NOMEX or COTTON). When cotton burns, it consumes completely and cleanly. When nylon or polyester burns, it melts and may adhere to the skin.
- Do not wear any loose clothing (scarves, etc.) that may accidentally ignite
- ✓ Wear Nomex or leather work GLOVES
- Wear EYE PROTECTION (goggles or glasses) to protect your eyes from popping or floating embers
- ✓ Do not wear clothing with fuel spills on it. It can ignite.

Choose the right IGNITION DEVICE

- FUSEES and PROPANE TORCHES are the best choice if you have them available
- ✓ If using a drip torch or other petroleum delivery system to light the burn, a less-flammable 3-parts-diesel to 1-part-unleaded mix will ensure a less explosive combustion.
- WARNING! Dousing your pile with pure gasoline before lighting it can cause an explosive ignition that can severely burn you! This method is strongly discouraged!

Establish a WATER SOURCE for extinguishment

- Water source should be adequate to quickly extinguish the pile in full involvement
- ✓ As a rule of thumb, have 100 gallons of water on hand for every slash pile to be burned or 500 gallons per acre.
- ✓ Water source should be nearby and immediately available.

Make a **PLAN** in the event your burn escapes. That plan should include calling 911 IMMEDIATELY. Small wildland fires are *much* easier to catch than large ones.

NEVER BURN ALONE

HOW do I burn?

How to site, build, burn, and put out a fire like the experts

#5 Mop Up

MOP-UP \'mäp-'əp\ vt 1: a concluding action 2: to beat decisively 3: to clear an area of remaining pockets of military resistance 4: to completely extinguish a fire, removing all traces of heat

The importance of a comprehensive mop-up process cannot be overstated. Few people realize how long a pile of ashes and partially burned woody material can hold heat. A pile that has not been properly mopped up can reignite days, weeks, even several months after the last wisp of visible smoke escapes. Don't be fooled into believing your pile is truly extinguished until you have actually **felt** cold material with your own hands **throughout** your ash pile. Even a trace of warmth overlain with cold material can reignite. No amount of latent heat is acceptable. Any material or ash that is even lukewarm still poses a risk of reignition. Piles must be truly **COLD TO THE TOUCH all the way down to mineral soil**.

File your **Burn Completion** at the Open Burning Portal (<u>burnpermits.bouldercounty.gov</u>) or by calling **720-806-4305**.

HOURS POST-IGNITION & ACCOMPANYING MOP-UP ACTIVITY

Ignite burn Let pile burn down as completely as possible. Scrape a 6-12" wide trench down to mineral soil around the perimeter of the pile, separating burned material from unburned. Leave no burnable or burned material within your trench.

IGNITION

BEGIN MOP-UP 6-8 hours post-ignition

ACTIVITY

ADD WATER & STIR

BURN 8 MOP-UF

HOUR

24 MONITOR

- 6-8 Begin mop up and extinguishment. Add water. Stir and turn the ashes with a shovel or other tool. Mix warm material with wet to cool it. Carefully and slowly feel for heat. First by hovering the back of a bare hand over the ashes, then, if no heat is felt, by placing your hand slowly and carefully into the ashes to feel for warmth. Continue stirring and adding water until no warmth can be detected by a bare hand at any depth within the ash pile.
- 24 Apply and stir additional water into the ashes. Continue stirring and adding water until no warmth can be detected at any depth within the ash pile. It's not uncommon for a pile that felt cold everywhere on one day to have new heat on a later day.
- 48 Apply and stir additional water into the ashes. Continue stirring and adding water until no warmth can be detected at any depth within the ash pile.
- 72 You should be able to touch the ashes and burned material with your bare hand, ensuring it is "out." Continue to add water and stir as long as it takes to make the pile cold to the touch. Rehabilitate any scarred soil and vegetation by replacing organic soil and scraped-up vegetation. Use a rake or shovel to pull removed material back over the barren soil.

ADD WATER & STIR

FIRE OUT & COLD

Burn Checklist

PI	LE CUNSTRUCTION
	My pile is situated on bare ground or sparse grass.
	All branches in my pile are less than 6" in diameter.
	My pile is not built under overhead utilities.
	I am not burning a building or structure.
	I have confirmed there is no reasonable alternative for disposing
	of this material.
	There is a 6-12"-wide trench dug down to mineral soil around mentire pile.
The	fuels I intend to burn are:
	Clean
	Dry
Not	hing in my burn pile is:
	Trash or garbage
_	Hazardous material
_	Construction debris or lumber
_	A leaf pile or lawn clippings
_	All or part of an animal carcass
_	Pinecones (except incidental to pine slash)
_	Food waste
	Stumps
<u> </u>	Tree trunks (larger than 6" diameter)
0.11	TE 0114 D 4 0TEDIOTIO
21	TE CHARACTERISTICS
	The smoke from my pile will not significantly affect any nearby buildings.
	The smoke from my pile will not obstruct visibility on a road.
	re is nothing within 30' of my pile in any direction that I don't
	nt to burn, including:
	Structures
	Overhead power lines
	Vehicles
	Other slash piles
	Trees
	Roads



ONE WEEK PRIOR				
	I have read the Guide to Burning in its entirety. I have obtained a burn permit from Boulder County. I have obtained a smoke permit from CDPHE/APCD. The project description on my permit is accurate. I have obtained any permits required by my local fire protection agency (if applicable).			
PR	RIOR TO IGNITION			
	It's after 10:00 am (Nov. 1 – Feb. 29) or 2 hours after sunrise (March 1 – Oct. 31).			
	I can easily complete and extinguish this burn before 4:00 pm (Nov. 1 – Feb. 29) or 2 hours before sunset (March 1 – Oct. 31).			
	I don't have anywhere else I need to be today.			
	There is a 6-12"-wide trench down to mineral soil dug around my pile. (Only if there is less than 2" of snow on the ground).			
	There is 5" of snow on the ground (Mountain¹ areas only).			
	I have confirmed there are no burn bans in effect today.			
	I have confirmed today is not an Air Quality Action Day. ²			
	I have confirmed there are no High Danger Conditions in effect.			
	I have a propane torch, fusees, or a 3:1 diesel-to-unleaded mix to ignite my pile.			
	I have a reliable, adequate, and immediately available $\mbox{\bf water}\mbox{\bf source}$ for suppression.			
	I am wearing cotton or Nomex clothing . I have no loose-fitting clothing			
	items (scarves, etc.) that may ignite accidentally. I am not wearing			
	ANYTHING that is nylon or polyester, including my underclothes and socks.			
	I am wearing leather work gloves and eye protection.			
	I have notified CDPHE/APCD.			
	I have notified my local fire protection agency by phone.			

POST IGNITION

☐ I have a **plan** if my burn escapes.

☐ I have confirmed that my burn is extinguished and closed my online Intent to Burn or called the Open Burning Hotline at **720-806-4305**.

☐ I submitted my Intent to Burn within 5 minutes prior to ignition online

or called the Open Burning Hotline at 720-806-4305.

^{1.} See page 11 for a definition of Mountain areas

^{2.} Applies to slash pile burns only

Definitions

AGRICULTURAL BURNING

The open burning of cover vegetation for the purpose of preparing the soil for crop production, weed control, maintenance of water conveyance structures related to agricultural operations and other agricultural cultivation purposes.

OPEN BURNING

An open burn is a fire started and used intentionally for grassland or forest management, including vegetative, habitat, or fuel management.

MINERAL SOIL

Soil that contains no organic matter, and therefore, no flammable components.

FIREPLACE

A non-flammable, semi-permanent enclosure for containing fire with a chimney for arresting embers.

CAMPFIRE

A single fire no larger than 2 feet length (L) x 2 feet wide (W) x 3 feet high (H) that is contained by a fireplace or fire pit, which is used for cooking, personal warmth, lighting, ceremonial, or aesthetic purposes that is not within or mounted on any structure. Charcoal grills and gas stoves are considered campfires.



Boulder County Fire Management Program

Phone: 303-441-4500

Email: <u>bcfiremanagement@bouldercounty.gov</u>

Boulder County Open Burning portal: <u>burnpermits.bouldercounty.gov</u>

Boulder County Open Burning Hotline: 720-806-4305

Colorado Department of Public Health & Environment

Smoke permits phone: 303-692-3268

Website: https://cdphe.colorado.gov/outdoor-burning

- Permits for less than 50 piles: https://cdphe.colorado.gov/apens-and-air-permits/open-burn-smoke-permits
- Permits for more than 50 piles: https://cdphe.colorado.gov/apens-and-air-permits/get-a-pile-smoke-permit