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air quality



INTRODUCTION

Good air quality is fundamental to our well-being, and the presence of air pollution can adversely affect our health. Outdoor air quality is a serious concern in Boulder County due to historically high ozone levels in the summer months and, more recently, persistent wildfire smoke.

Boulder County is a part of the Denver Metro/North Front Range nonattainment area, which has violated the eight-hour-ozone National Ambient Air Quality Standards since 2012. High levels of ozone and the pollutants that form ozone cause poor air quality, which can lead to decreased lung function, exacerbate asthma, and cause breathing difficulty, particularly for sensitive populations. Pollutants and high ozone levels may even lead to cardiovascular disease and premature death. In addition,

smog—which contains ozone, among other pollutants—impairs visibility, damages crops, and causes acid rain, which especially impacts our protected areas like Rocky Mountain National Park.

These wide-reaching impacts of poor air quality underscore the importance of regulating the oil and gas industry and reducing our vehicle emissions, since these pollution sources degrade our air quality and contribute to climate change.

With increasing drought and heat come longer fire seasons and more severe disasters. Particulate matter in wildfire smoke is hazardous, especially to children, seniors, and people with underlying health conditions. Smoke plumes can travel across the entire country, affecting the well-being of all who work and play outside.

Boulder County Public Health supports air quality monitoring studies to better understand the impacts of local sources of air pollution. Using this data, Boulder County participates in the development of stringent local, state, and national air pollution control regulations. Finally, the county works with local government partners to improve indoor air environments by reducing pollutants such as lead, radon, asbestos, and mold.

The two largest sources of ozone-forming pollutants in the nonattainment area are oil and gas production and vehicle emissions.



air quality goal
Ensure clean, clear, and healthy air for current and future generations.



glossary

OZONE

Ozone is an invisible, odorless gas that can either protect us or harm us, depending on where it is found. Unlike the protective stratospheric ozone layer, ground-level ozone forms from air pollution just above the earth's surface and damages living tissue. Ozone is created by chemical reactions between nitrogen oxides and volatile organic compounds in the presence of sunlight.

SMOG

Smog is a mixture of harmful air pollutants dominated by ground-level ozone.

COMMUNITY STRATEGIES

Push for action to meet federal outdoor air quality standards in Boulder County

- Urge the adoption of state and federal regulations and policies that reduce the impacts of oil and gas resource extraction while continuing to strengthen and enforce county oil and gas regulations.
- Support the adoption of regulations, policies, and legislation that reduce emissions from the transportation sector and benefit disproportionately impacted communities.
- Promote the adoption of electric vehicles (EVs) and the installation of EV charging stations.
- Diagnose and investigate emission sources, such as oil and gas.
- Monitor air quality conditions and public health impacts.
- Inspect sources of pollution for compliance and support enforcement of air pollution requirements.
- Conduct voluntary programs to educate, empower, and mobilize action to reduce ozone-forming and greenhouse gas (GHG) emissions.
- Support the adoption of continuously increasing renewable energy standards.
- Actively participate in the development of protective state and federal air quality policies and plans.

SEE THE CLIMATE (PAGE 30), ENERGY & BUILDINGS (PAGE 102), AND TRANSPORTATION (PAGE 134) CHAPTERS FOR ADDITIONAL OUTDOOR AIR QUALITY IMPROVEMENT STRATEGIES RELATED TO GHG EMISSIONS.



COMMUNITY STRATEGIES

Empower residents to identify and maintain healthy indoor environments

- Promote radon testing, mitigation, and the use of proper methods to install radon reduction systems.
- Encourage adoption of radon reduction systems in new single- and multifamily homes through building codes.
- Encourage residents to work with state and local government partners to address indoor air quality issues associated with mold, moisture, radon, and asbestos.
- Conduct education and outreach to real estate professionals, builders, decision-makers, and residents (particularly low-income) to increase radon awareness in Boulder County.
- Promote and incentivize electrification of heating, water heating, and cooking in homes and businesses to reduce indoor exposure to combustion pollutants.
- Promote real-time and forecast information about outdoor air hazards such as wildfire smoke, along with guidance on keeping indoor air clean.



Colorado has emerged as a leader in climate and air quality action, and Colorado's local governments are stepping up to study impacts on our air and climate, so that Colorado can continue to lead. We are concerned about the climate and health ramifications of ozone and air toxics in our community, especially for community members who are disproportionately affected by climate change and air pollution, including children, people who are living in poverty or who are unhoused, and communities of color. Boulder County looks forward to continued work with the Air Quality Control Commission to find ways to address this.

—Cindy Copeland, Boulder County Air & Climate Policy Advisor





TAKING ACTION

Oil and Gas Production

Oil and gas production statewide has quadrupled since 2012. The increasing intensity of oil and gas development has consequences for air quality, even for counties that do not host many active wells. Nearly 90% of the state’s oil and gas production originates in proximate Weld County, and emissions from Weld County travel into Boulder County on prevailing winds.

In Colorado, oil and gas production emissions represent one of the two largest sources of ozone-forming air pollution and a large source of toxic air pollution. Air monitoring studies funded by Boulder County and neighboring local governments show that these emissions are adding to the high ozone levels in Boulder County.

The county has adopted stringent air quality measures applicable to oil and gas operations and continues to advocate for stronger state regulations. In the course of its voluntary inspection program, Boulder County

Public Health found leaks at 65% of inspected oil and gas sites. These findings informed the Air Quality Control Commission’s rulemaking process, yielding a new state regulation that requires more frequent leak inspections and covers additional pieces of equipment. The county also participated in a rulemaking by the Colorado Oil and Gas Conservation Commission that generated stronger leak detection and repair requirements for oil and gas pipelines.

Research to understand the air quality impacts of oil and gas production continues to develop, and Boulder County supports those efforts with both funding and staff expertise.



TAKE A RIDE

To help reduce the impact of vehicles on air quality, Boulder County subsidizes new businesses and neighborhoods that sign up for the Regional Transportation District (RTD)’s EcoPass (unlimited bus pass) program, an annual transit pass that provides unlimited rides on all local and regional bus and rail services operated by RTD. Surveys have shown that someone with an EcoPass is much more likely to take public transit.

In 2018, Boulder County offered a 70% reimbursement for RTD EcoPasses or MyRide cards for businesses in Lafayette that participate in the

Lafayette Green Business program, a partnership between Boulder County’s Partners for a Clean Environment and the City of Lafayette. This program was inspired by a winning submission from Boulder County’s “No Fare Lafayette” transit promotion contest.

Boulder County supported legislation for fare-free transit for high-ozone periods of the summer. Our transportation program promotes this option to introduce people to public transit when it is most important for air quality.



→ Air quality monitors at the Boulder Reservoir continuously collect samples to test for nitrogen oxides, methane, and a suite of volatile organic compounds associated with oil and gas production. Sample results are posted publicly in real time to bouldair.com. This data is analyzed to support policies for more stringent emission controls.



CLEAN AIR CHALLENGE

Vehicle emissions are one of the two largest sources of ozone-forming air pollution in Boulder County. From 2004 to 2017, 1,700 people participated in the Boulder County Clean Air Challenge (BCCAC), reducing driving by nearly one million vehicle miles and saving 50,000 gallons of gasoline.

In the coming years, Boulder County Public Health will update goals to focus on supporting fuel economy standards, EV adoption, and renewable energy adoption.

What is the Clean Air Challenge?

The BCCAC, which encouraged participants to take personal action to have a positive impact on the environment, was created in 2004 in partnership with local businesses and nonprofits. With vehicle emissions being the second largest contributor to ozone-generating emissions on the Front Range, the challenge was to use alternative modes of transportation during the highest ozone months of the year. The main target was reducing single-occupancy vehicle travel. From 2004 to 2017, the BCCAC reduced vehicle miles traveled by more than 1 million miles, equaling a reduction of 543 tons of CO₂ and 5,000 pounds of ozone formation. The challenge ended in 2017 with the inception of several new programs along the Front Range that encourage alternative travel. These programs include the Regional Air Quality Council’s Simple Steps for Better Air (modeled on the Clean Air Challenge), the regional Love to Ride Program, Bike to Work Day, and Winter Bike to Work Day. New services offering alternative modes of transportation were also established.

POLICY PRIORITIES

The following are environmental sustainability policy priorities within Boulder County’s legislative agenda:

POLICY	WHAT YOU NEED TO KNOW	
<p>Protect air quality</p>	<p>Boulder County, as part of the Denver Metro/Northern Front Range Ozone Nonattainment Area, currently exceeds national air quality standards for ozone. Poor air quality has significant public health and environmental impacts, from increasing doctor visits and hospital admissions to</p>	<p>compromising the unique value of our Parks and Open Space lands through loss of visibility and impacts to wildlife. Boulder County supports state legislative, regulatory, and other efforts to ensure public and environmental health by reducing the emissions of harmful pollutants.</p>
<p>Support implementation of the Clean Air Act</p>	<p>The Clean Air Act is the law that defines the Environmental Protection Agency’s (EPA) responsibilities for protecting and improving the nation’s air quality and the stratospheric ozone layer, including important regulatory powers over GHG emissions and air pollution and associated GHG emissions. Boulder County supports effectively implementing and</p>	<p>enforcing the Clean Air Act and other regulations with the highest level of environmental protection to improve and maintain high standards of our air quality. Boulder County opposes any efforts to reduce the authority of the Clean Air Act or the EPA to protect residents from air pollution or climate change.</p>

POLICY

WHAT YOU NEED TO KNOW

<p>Require residential radon mitigation systems</p>	<p>Including radon mitigation requirements in home sales and building codes would help decrease potential health risks associated with</p>	<p>residential exposure to radon, which is the second leading cause of lung cancer in the United States.</p>
<p>Address the air quality impacts associated with oil and gas operations</p>	<p>Oil and gas operations and transportation are the two largest contributors to poor air quality in Boulder County. The county supports</p>	<p>legislative and regulatory efforts to reduce the air quality impacts from these sources and others.</p>





Radon Reduction Roadmap

Radon is the second leading cause of lung cancer—second only to smoking. Each year, more than 20,000 people in the United States die from lung cancer caused by exposure to radon. Although most lung cancer deaths are attributable to tobacco usage, secondary causes of lung cancer are important because of the magnitude of lung cancer incidence and its poor survival rate.

More people die from lung cancer than colorectal, breast, and pancreatic cancers combined. From 2012–2014, nearly 7,000 people in Colorado were diagnosed with lung and bronchus cancers; almost 5,000 people (70%) died from them. Boulder County Public Health has created the statewide Public Health Radon Reduction Roadmap, which identified 37 strategies to reduce radon exposure, including education, policy recommendations for elected officials, programs, and practices. The program deploys social mobilization practices with real estate professionals, home builders, building officials, home inspectors, elected officials, and others to create incentives and policies to reduce radon.

As a result,

- Since adopting radon reduction building codes in 2017, unincorporated Jefferson County has issued 1,239 single-family, duplex, and townhome building permits requiring construction with radon-resistant construction techniques.
- Since adopting radon reduction building codes in 2019, the cities of Erie, Louisville, and Sheridan have issued 450 single-family, duplex, and townhome building permits requiring construction with radon-resistant construction techniques.
- The City of Wheat Ridge adopted radon reduction building codes in 2020. From January–November 2020, Wheat Ridge issued 110 single-family, duplex, and townhome building permits requiring construction with radon-resistant construction techniques.

In all, an estimated 4,345 Colorado residents have been impacted and protected from indoor radon exposure in their homes since these building codes have been adopted.



TAKE ACTION

Improving Air Quality

Our cars, lawn and garden equipment, and other products (e.g., paints and cleaners) produce pollution. The fewer ozone-causing emissions produced on hot, still summer days, the better. Residents can help take care of our air by:

- ❑ Keeping cars tuned—routine maintenance helps cars run efficiently.
- ❑ Choosing low-polluting travel options to driving, including walking, biking, telecommuting, or riding the bus.
- ❑ Fueling vehicles in the evening so fume vapors can't "cook" into ozone.
- ❑ Keeping tires appropriately inflated—it reduces pollution and saves you money.
- ❑ Avoiding idling—restarting your engine uses as much fuel as about six seconds of idling.
- ❑ Using a manual or electric-powered lawn mower or mowing in the evening if you must use a gas-powered mower.
- ❑ Purchasing or leasing a new or used EV, if you must purchase a vehicle. Even better if you power your home with solar.
- ❑ Buying electric appliances, since natural gas appliances contribute to both indoor and outdoor air pollution and have significant health impacts.



RESOURCES

More Information

Mobility for All

bouldercounty.gov/transportation/multimodal/mobilityforall/

Radon Aware Initiative

bouldercounty.org/environment/healthy-home/PHR3

Oil And Gas Air Quality Information

bouldercounty.gov/environment/air/oil-gas-development-air-quality/

Legislative Information

bouldercounty.gov/departments/commissioners/legislative-affairs/

