

Air Quality

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Forecast - Front Range Air Quality

Expected Air Quality for Your Health (Thursday)

UNHEALTHY for sensitive groups

Expected Visibility (Friday)

WEATHER LIMITED

Ozone Action Day in effect
Thu 4PM - Midnight



What is Ozone?

- Ozone (O₃) is the main driver of “smog” or “haze”
- Ozone is good up high, but bad nearby
- Ozone is a *secondary* pollutant. It is not emitted from sources directly, but forms when precursors – including nitrogen oxides (NO_x) and volatile organic compounds (VOCs) – meet sunlight



Ozone is Harmful

- Breathing ozone triggers serious health problems, including asthma attacks, decreased lung function, aggravated lung diseases, low birth weights, and premature death, among others
- Ozone also drives hospital admissions and increases school absences
- Communities of color and low-income populations disproportionately experience impacts – especially outdoor workers
- Children, the elderly, and other sensitive populations are particularly vulnerable to high ozone.
- Ozone exacerbates climate change, and climate change exacerbates ozone

3 Main “Buckets” of Pollutants



#1 - “Criteria” Pollutants

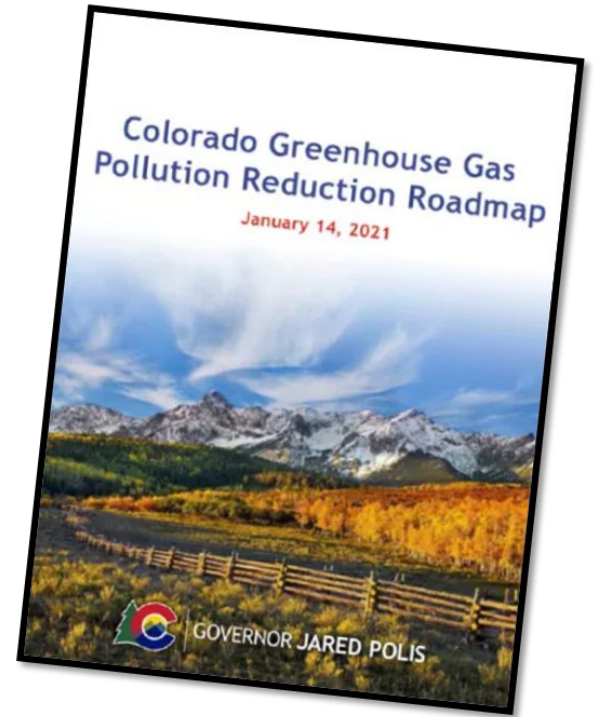
- A set of *only 6* pollutants identified by the federal Environmental Protection Agency (EPA)
- Includes: carbon monoxide, lead, nitrogen dioxide, particulate matter, sulfur dioxide, and **ozone**
- For these six pollutants only, the EPA has set health-based air quality standards called the National Ambient Air Quality Standards – or “NAAQS”
- States are required to keep ambient levels of each criteria pollutant below the NAAQS, but the Denver metro area has long been in “nonattainment” for ozone

#2 - Air Toxics

- The EPA has identified 188 air toxics known to cause cancer or other serious health impacts
- For air toxics, there are some federal health *guidelines*, but the EPA *has NOT* established federally enforceable health-based air quality standards
- In 2022, Colorado enacted HB22-1244 to create a new Air Toxics Program, which will establish state-level air quality standards for priority air toxics

#3 - Climate Pollutants

- Greenhouse gases including methane, carbon dioxide, nitrous oxide, etc. which contribute to global warming
- Colorado has statutory targets requiring reductions of 65% by 2035, 75% by 2040, 90% by 2045, and 100% by 2050 as compared to a 2005 baseline
- To meet the targets, Colorado is in the process of updating its Greenhouse Gas Pollution Reduction Roadmap



3 Main “Buckets” of Pollutants - A Re-cap

Criteria Pollutants

A set of *only 6* pollutants identified by the EPA

Includes carbon monoxide, lead, nitrogen dioxide, particulate matter, ozone, and sulfur dioxide

The *only* pollutants for which there are enforceable federal ambient air quality standards

Air Toxics

EPA identified 188 toxics that are known to cause cancer or other serious health impacts

Federal “guideline” levels, but no enforceable ambient air quality standards

HB22-1244 requires the Colorado to identify priority air toxics and establish state-level ambient air quality standards

Climate Pollutants

Greenhouse gases that are driving the warming of our planet

Colorado has economy-wide, statutory reduction targets

Colorado’s “Roadmap” includes steps to achieve necessary reductions

It's Time to Tackle Ozone Head-on

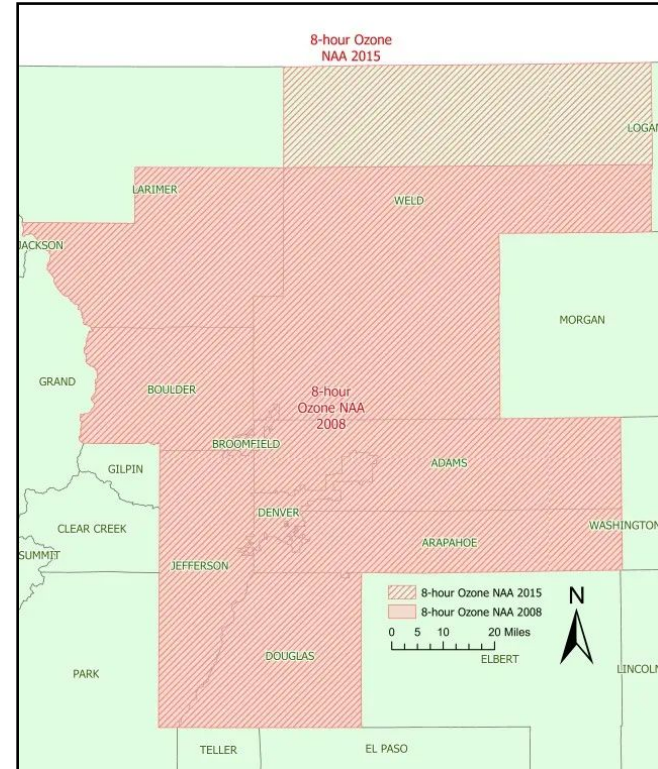
- In Colorado, air quality alerts are most often triggered by unsafe levels of ozone
- Communities are experience serious health impacts
- Until recently, legislation has focused more heavily on climate pollutants and air toxics
- Regulatory and rulemaking processes have not succeeded at bringing Colorado back into compliance with federal air quality standards

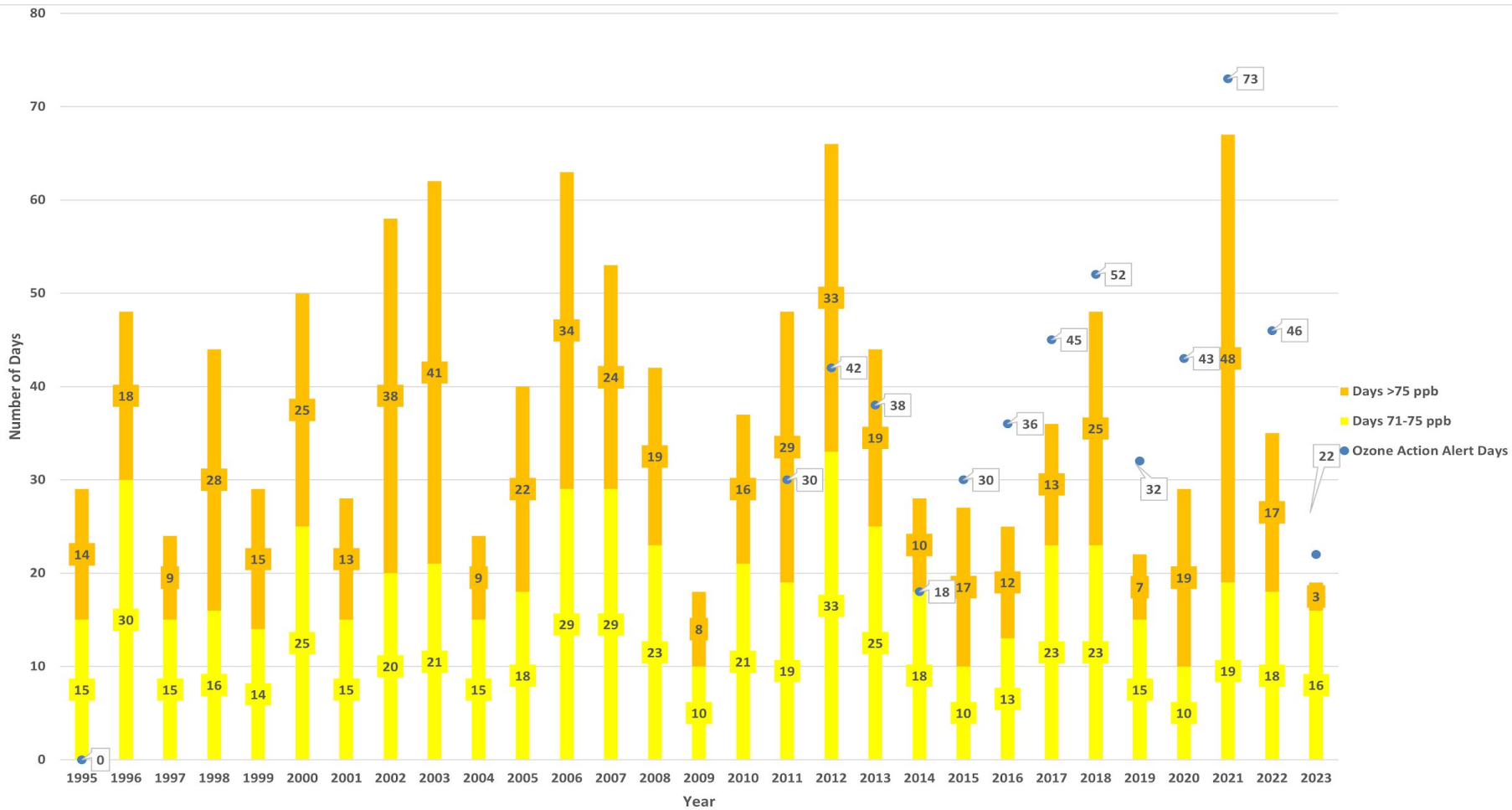
What is “Non-Attainment”?

- The EPA sets federal air quality standards (called “NAAQS”) for the six “criteria” pollutants, including ozone
- The EPA periodically reviews and may update the NAAQS
 - 2008 standard for ozone: 75 parts per billion
 - 2015 standard for ozone: 70 parts per billion
- If an area fails to meet federal air quality standards, the EPA must designate it as being in “non-attainment” with that standard
- The state must prepare a State Implementation Plan (“SIP”) detailing steps it will take to come back into compliance
- If the state fails to comply by a certain date, the area will be subject to increasingly stringent controls and classifications

Ozone Non-Attainment in Colorado

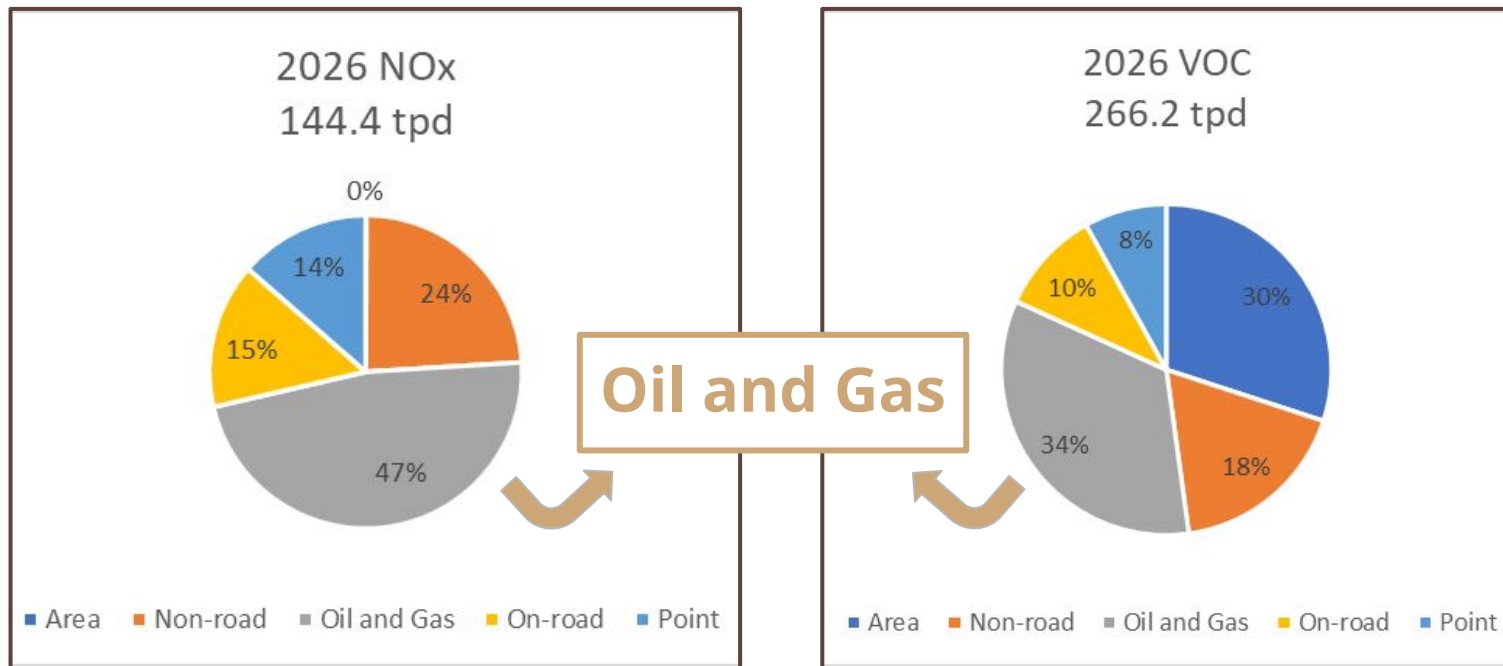
- The Denver Metro/North Front Range area exceeds federal standards for ozone, and has been designated by the EPA as a non-attainment area
- State Implementation Plans (“SIPs) to date have lacked sufficient control measures and have failed to bring Colorado back into compliance with federal standards for ozone
- The Denver Metro/North Front Range area was recently downgraded from “serious” to “severe” nonattainment with the 2008 ozone standard





What's Driving Colorado's Ozone Crisis?

Modeled 2026 Emissions for 2008 Boundary



Oil and Gas - Pre-Production Precursor Emissions

Figure 86: Pre-Production NOx Per Well

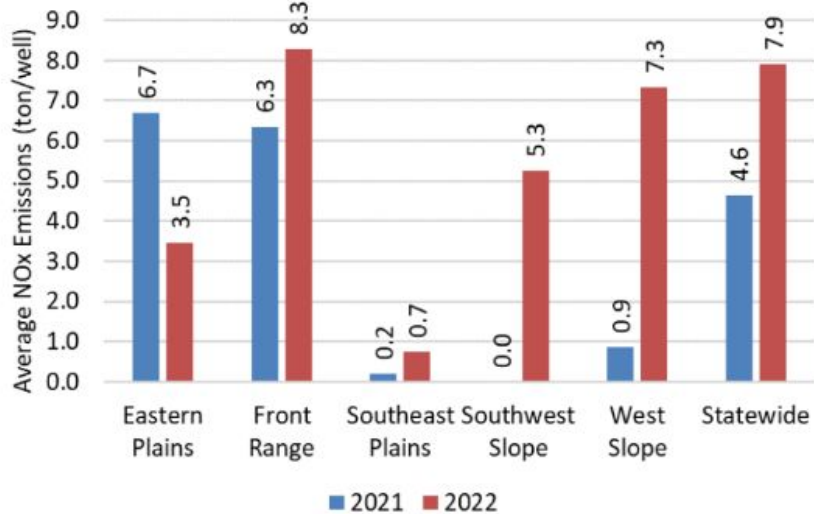
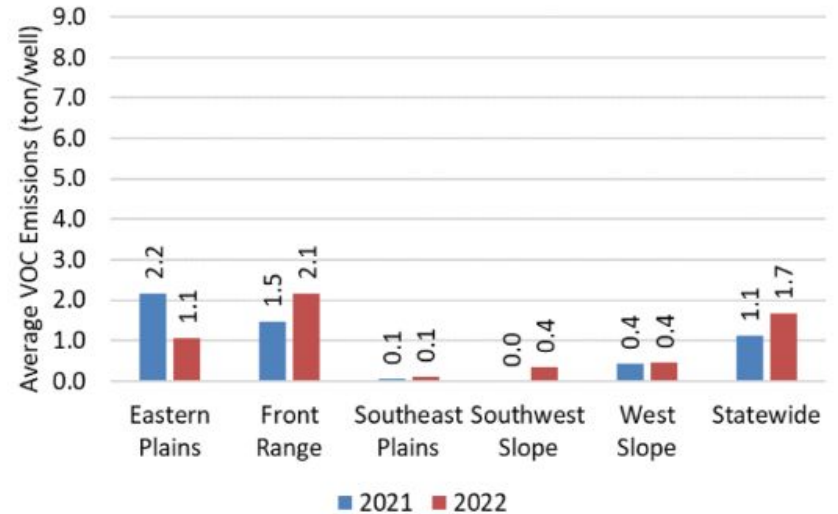


Figure 88: Pre-Production VOC Per Well



Barriers to Addressing Ozone

#1 - Ineffective SIPs that lack sufficient control measures

#2 - Silo-ed permitting processes that disregard air impacts

Barrier #1: Ineffective SIPs

- To date, Colorado's SIPs have failed to bring the nonattainment area back into compliance with federal ozone standards
- Each downgrade after an ineffective SIP carries mandatory, increasingly stringent permitting requirements and control measures that burden state agencies and impact Coloradoans
- In developing our most recent SIP in Fall 2022, air regulators admitted that the SIP would not attain federal ozone standards. Yet, the deficient SIP was submitted to the EPA
- If Colorado is ever going to get back into attainment with federal ozone standards, we must include additional control measures that target the most impactful sectors and meet the magnitude of our ozone crisis.

Barrier #2: State Permitting Disregards Air Quality

- Though Colorado has a severe ozone problem, the state's permitting processes streamline the construction of new sources and rubber-stamp pollution increases.
- Most permits are approved without ever considering how a potential new source's future emissions would impact our air quality, or would further interfere with our ability to comply with federal ozone standards.

Barrier #2: State Permitting Disregards Air Quality

Federal Permitting Requirements

- The EPA's implementing regulations for the federal Clean Air Act make it clear that Colorado has a duty to "set forth legally enforceable procedures that enable the State or local agency to determine whether the construction or modification of a facility...will result in...[i]nterference with attainment or maintenance of a [NAAQS]." *40 C.F.R. § 51.160(a)*
- These legally enforceable procedures "must include [the] means by which the State ... will prevent such construction or modification if ... [i]t will interfere with the attainment or maintenance of a [NAAQS]." *40 C.F.R. § 51.160(b); 42 U.S.C. § 7410(a)(2)(C)*

Barrier #2: State Permitting Disregards Air Quality

State Permitting Requirements

- Colorado statute directs the Division to grant permit applications if, among other requirements, “the source or activity will meet any applicable ambient air quality standards.” *Colo. Rev. Stat. Ann. § 25-7-114.5(7)(a)(III)*
- Colorado regulations further direct grant permits if, among other requirements, “[t]he proposed source or activity will not cause an exceedance of any [NAAQS]” and “will meet any applicable ambient air quality standards.” *5 CCR § 1001-5:3b:III.D.1.*
- Critically, “[i]f the Division determines that a source cannot comply with the provisions... of this regulation, the Division *shall issue its written denial* of the permit application stating the reasons for such denial.” *5 CCR § 1001-5:3b:III.F.1.*

Barrier #2: State Permitting Disregards Air Quality

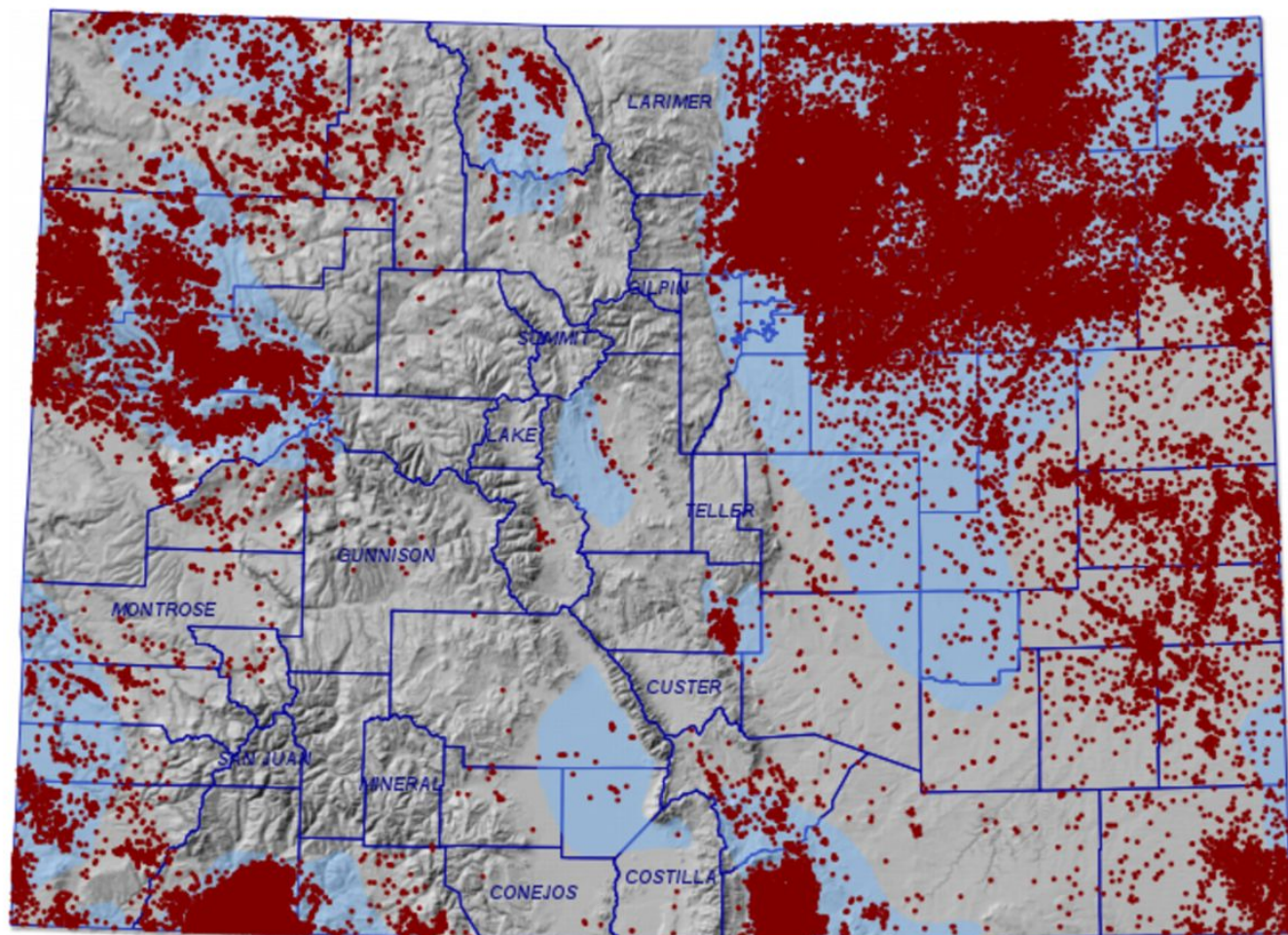
Air Quality Modeling

- In effect, federal and state requirements direct the our air regulators – upon receiving an application for a new source – to *evaluate the anticipated air quality impacts of that proposed new source – before the permit is approved.*
- Air regulators can evaluate the anticipated impacts of a new source using air quality modeling.
- Colorado routinely uses air quality modeling for “major” sources, but not “minor” sources.

Barrier #2: State Permitting Disregards Air Quality

Minor Sources

- Minor sources are a significant source of ozone precursor emissions, including tens of thousands of oil and gas operations
- While individual sources may be considered “minor” simply because they emit below “major” source thresholds, they are collectively huge contributors to our ozone crises
- Because the state considers them “minor,” permitting of “minor” sources is fast-tracked and the state does very little – if any – air quality modeling to assess the impact of potential new sources on our ability to comply with federal air quality standards
- Critically, there is little opportunity for members of the public to engage in minor source permitting processes.



Barrier #2: State Permitting Disregards Air Quality

Minor Modifications as “Minor Sources”

- The term “minor source” also includes minor *modifications* to *existing* air pollution sources.
- If an existing major source facility submits an application to modify its facility in a way that will increase air pollution, the state will consider the modification “minor” as long as the facility says that the increased pollution will be less than “major” modification thresholds

Barrier #2: State Permitting Disregards Air Quality

Criticism of Colorado's Minor Source Permitting Program

- In 2021, several Air Pollution Control Division whistleblowers alleged that staff were ordered to ignore modeling results that identified air quality violations
- Later that year, an independent investigation initiated by the Attorney General's Office found that the state's permitting program is "inadequate to ensure minor sources would not exceed the NAAQS."
- In July 2022, the EPA responded to the whistleblowers' complaint, validated many of their allegations, found that the state's permitting risks harm to air quality and public health, and confirmed that permits identified in the whistleblowers' complaint were issued illegally, despite modeled NAAQS violations.

Barrier #2: State Permitting Disregards Air Quality

Recent changes to Colorado's Minor Source Permitting Program

- Colorado air regulators have made some recent changes to the state's minor source permitting program. For example, many permit applicants must submit Form 114 along with their application to help inform decisions of whether to model or not.
- The state's minor source modeling guidance was also recently updated, but concerns remain. For example, the guidance still allows for permit applicants to commit to post-construction monitoring – *after the source is built* – in lieu of air quality modeling before the permit is approved. This runs afoul of state and federal requirements, because post-construction monitoring *requires requires the source to be built*.

Barrier #2: State Permitting Disregards Air Quality

The Problem of Agency Silos

- For oil and gas operations, two agencies are involved with permitting. The Air Pollution Control Division (APCD) permits air emissions, and the Energy and Carbon Management Commission (ECMC) permits subsurface activities like drilling and fracking.
- Permitting at these two agencies happens independently in agency silos.
- Though the ECMC is directed in statute to “evaluate and address” the cumulative impacts of oil and gas operations, the agency does not consider air quality impacts in making permitting decisions.
- Nor is the ECMC required to ensure that the source will qualify for an air quality permit before approving permits to drill and frack.

Conclusion

- All Coloradoans deserve clean air!
- If Colorado is ever going to get back into compliance with federal ozone standards, it can no longer afford to submit ineffective SIPs that lack necessary control measures.
- Nor can the state continue to streamline the construction of new emission sources and rubber stamp pollution increases in agency silos.
- To overcome barriers to addressing our ozone crisis, agencies need greater guidance and more tools from the legislature.



Thank you!

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