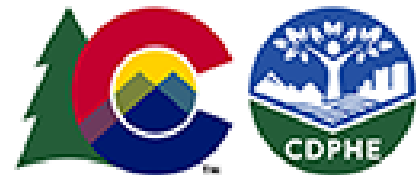


A Proposed Zero Emission Vehicle (ZEV) Rule for Colorado



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Department of Public Health & Environment

Phil von Hake
Mobile Sources Program
July 24, 2019



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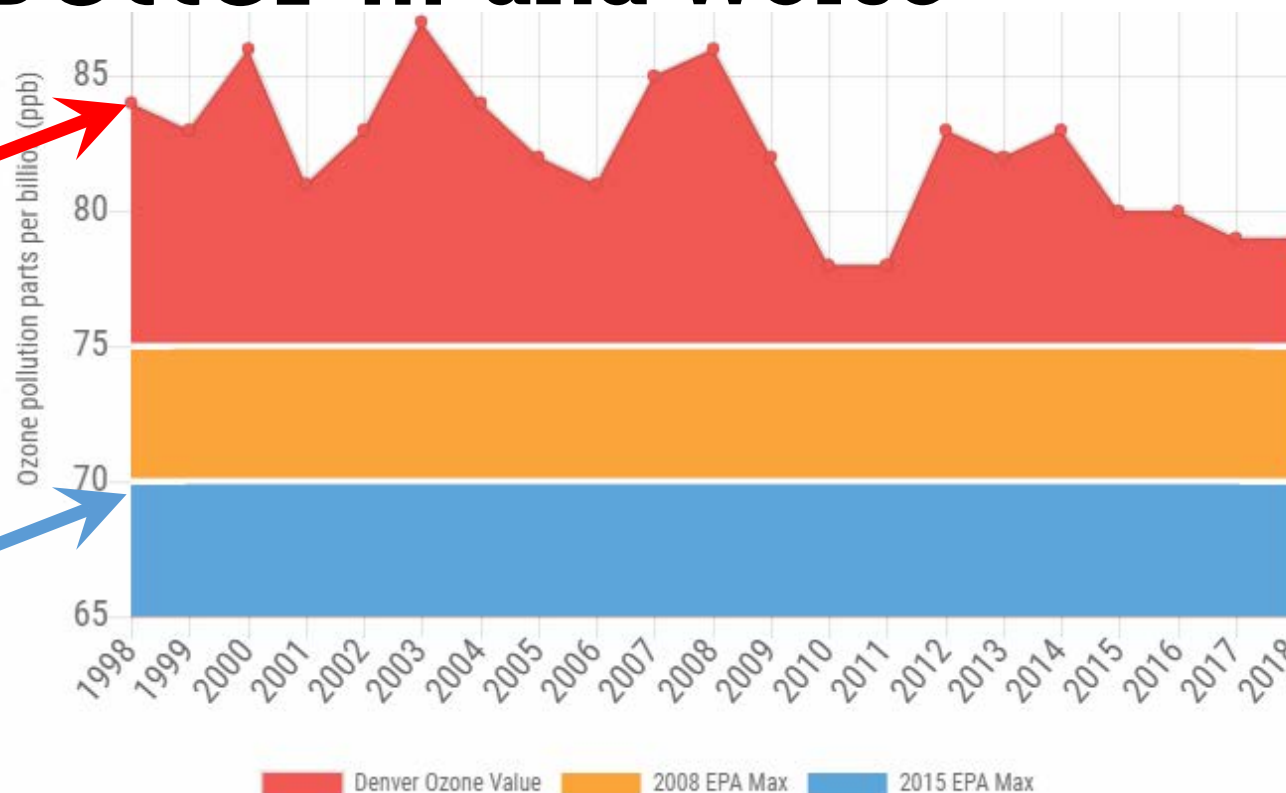
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Colorado's Air Quality is Getting Better ... and Worse

Denver Metro Area
& North Front Range
Ozone Levels
(where we are)

EPA Ozone Levels
allowed for Attainment
(where we need to be)



SOURCE: REGIONAL AIR QUALITY COUNCIL

CHART: TAMARA CHUANG | DATA DESIGN: ERIC LUBBERS



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Colorado's Air Quality is Getting Better ... and Worse

Better

Technology

Electric Grid

O&G Methane Rules

Awareness

Worse

Population Growth

Climate Change

Increased O&G Activity

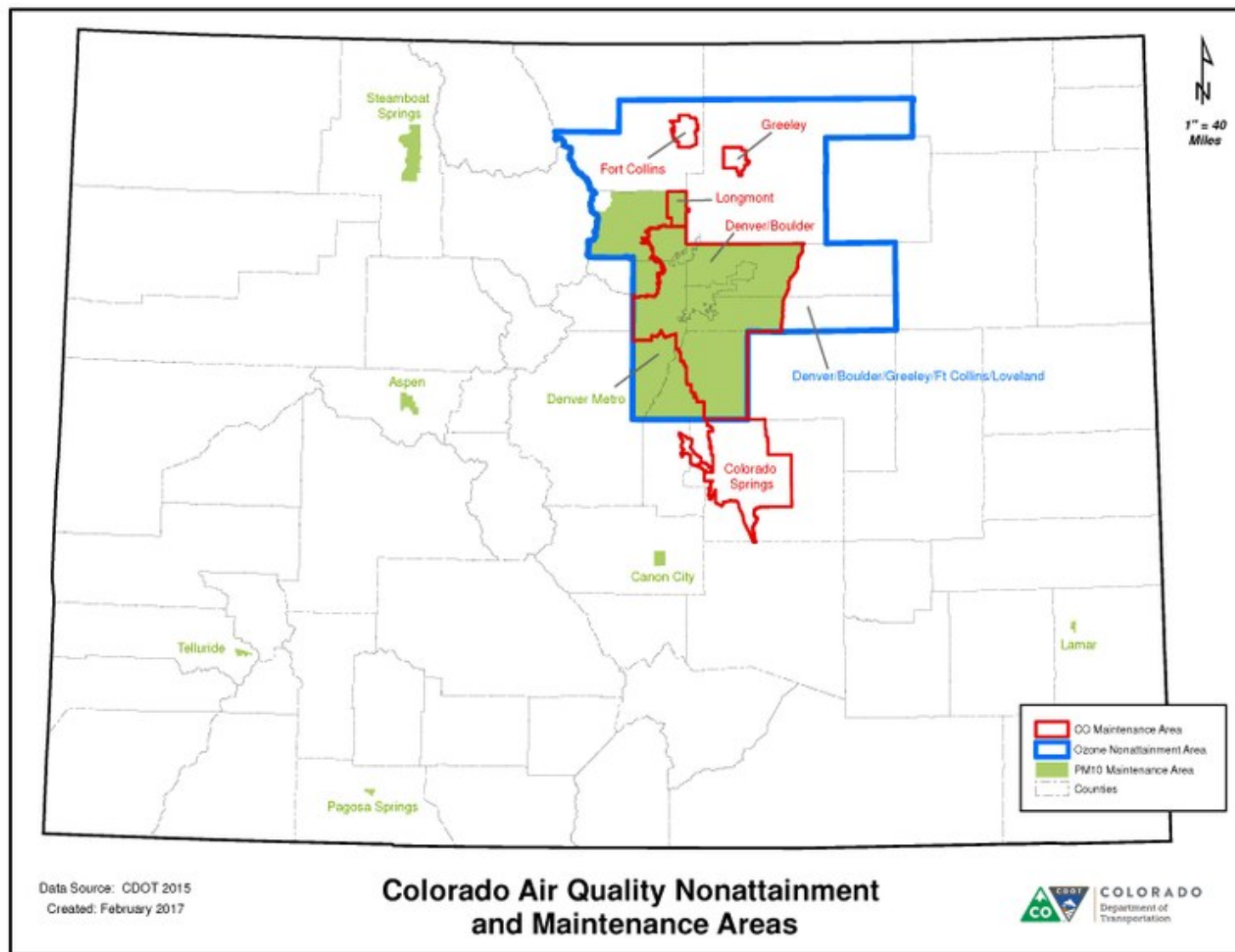
"Moderate" > "*Serious*"
Non-Attainment for Ozone



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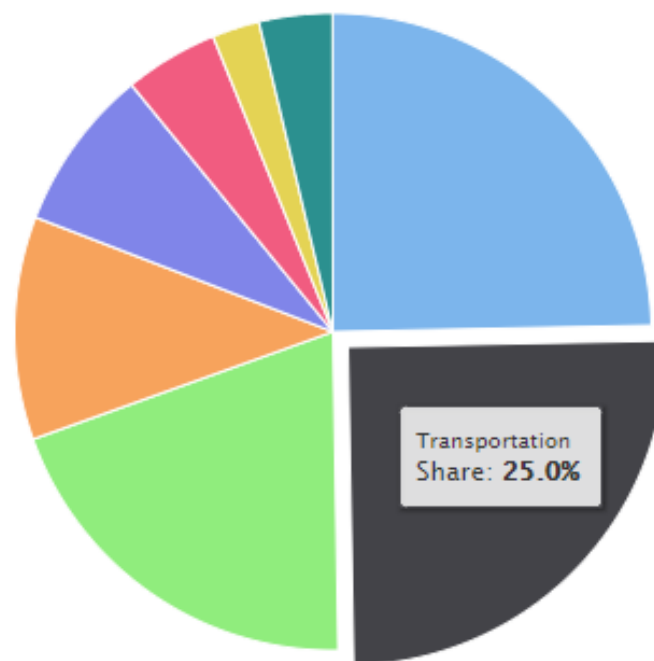


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Projected 2020 Emissions By Sector



Electric Power Transportation Residential, Commercial and Industrial Fuel Use Natural Gas and Oil
Agriculture Coal Mining & Abandoned Mines Industrial Processes Waste Management

Colorado's projected greenhouse gas emissions, in metric tons of carbon dioxide equivalent, by sector.

Source: Colorado Department of Public Health & Environment

Credit: Jim Hill / CPR News



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PROJECTIONS

Exhibit 2-30: Total Emissions from Mobile Sources (MMTCO₂e)

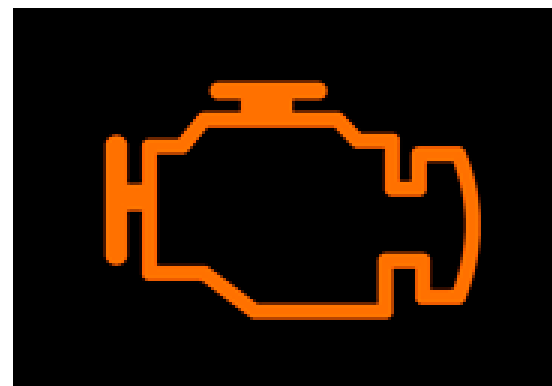
Fuel Type/Vehicle Type	1990	1995	2000	2005	2010	2015	2020	2030
Gasoline Highway								
Passenger Cars	0.561	0.661	0.638	0.476	0.302	0.170	0.161	0.166
Light-Duty Trucks	0.309	0.535	0.559	0.361	0.104	0.060	0.113	0.078
Heavy-Duty Vehicles	0.019	0.026	0.030	0.026	0.007	0.004	0.007	0.007
Motorcycles	0.001	0.001	0.001	0.001	0.002	0.002	0.000	0.000
Subtotal	0.890	1.224	1.228	0.863	0.415	0.236	0.281	0.251



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Smoking Vehicle Hotline:

303.692.3211

cdphe.smokeline@state.co.us

And now ...



Services & information	Boards & commissions	Divisions
Concerns & emergencies	Data	News
	LPHAs	

Low Emission Vehicle Standards

On June 19, 2018, Governor Hickenlooper signed [Executive Order B 2018 006](#), Maintaining Progress on Clean Vehicles. The executive order explains that the federal government has announced its intention to roll back vehicle greenhouse gas (GHG) standards for model years 2022-2025. Rolling back these standards would negatively impact Colorado's ability to meet its GHG reduction goals.

The executive order directs the Colorado Department of Public Health and Environment (CDPHE) to do the following:

- develop a rule to establish a Colorado Low Emission Vehicle (LEV) program, which incorporates the requirements of the California LEV program; and



Services & information	Boards & commissions	Divisions
Concerns & emergencies	Data	News
	LPHAs	

Zero Emission Vehicle Mandate Proposal

[Back to Air Pollution Control Division outreach efforts](#)

Update (May 10, 2019):

The Colorado Air Quality Control Commission (AQCC) voted 9-0 to [hold a hearing on whether to adopt a proposed Zero Emission Vehicle \(ZEV\) Rule](#). Additional information on this process is available through [the AQCC website](#).

The [Alliance of Auto Manufacturers \(AAM\)](#) is also negotiating with the State of Colorado about a [tentative agreement to bring more electric vehicles to Colorado sooner](#). The State of Colorado will explore this proposal in parallel with this ZEV rulemaking process, which will continue to proceed on an independent path. Additional information will be



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1960s: California Air Resources Board (CARB)

1970: U.S. Clean Air Act takes effect; Section 177 provides waiver for California & other “177 states” to use stricter standards

< 2017: Federal & California standards set to merge (MY2025)

> 2017: “Safe Affordable Efficient Vehicles (SAFE) Act”
would freeze federal standards at MY2020 levels;

-> EPA also seeks to revoke California’s waiver (TBD)

“No Third Car”: States must choose Federal or California/177 standards



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LEV

< 2018: CDPHE suggested LEV/ZEV at least twice before ...

June 2018: Gov. Hickenlooper signs EO B 2018 006,
“Maintaining Progress on Clean Vehicles”

Aug. – Nov. 2018: Parties to LEV Rulemaking Hearing

FOR

Local Governments
Environmental Coalition
“Most” Private Citizens

AGAINST

Automakers
Auto Dealers
Fuel Providers



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LEV



Nov. 2018: Colorado Air Quality Control Commission (AQCC) *unanimously* adopts “Colorado Low Emission Automobile Reg. (CLEAR)”

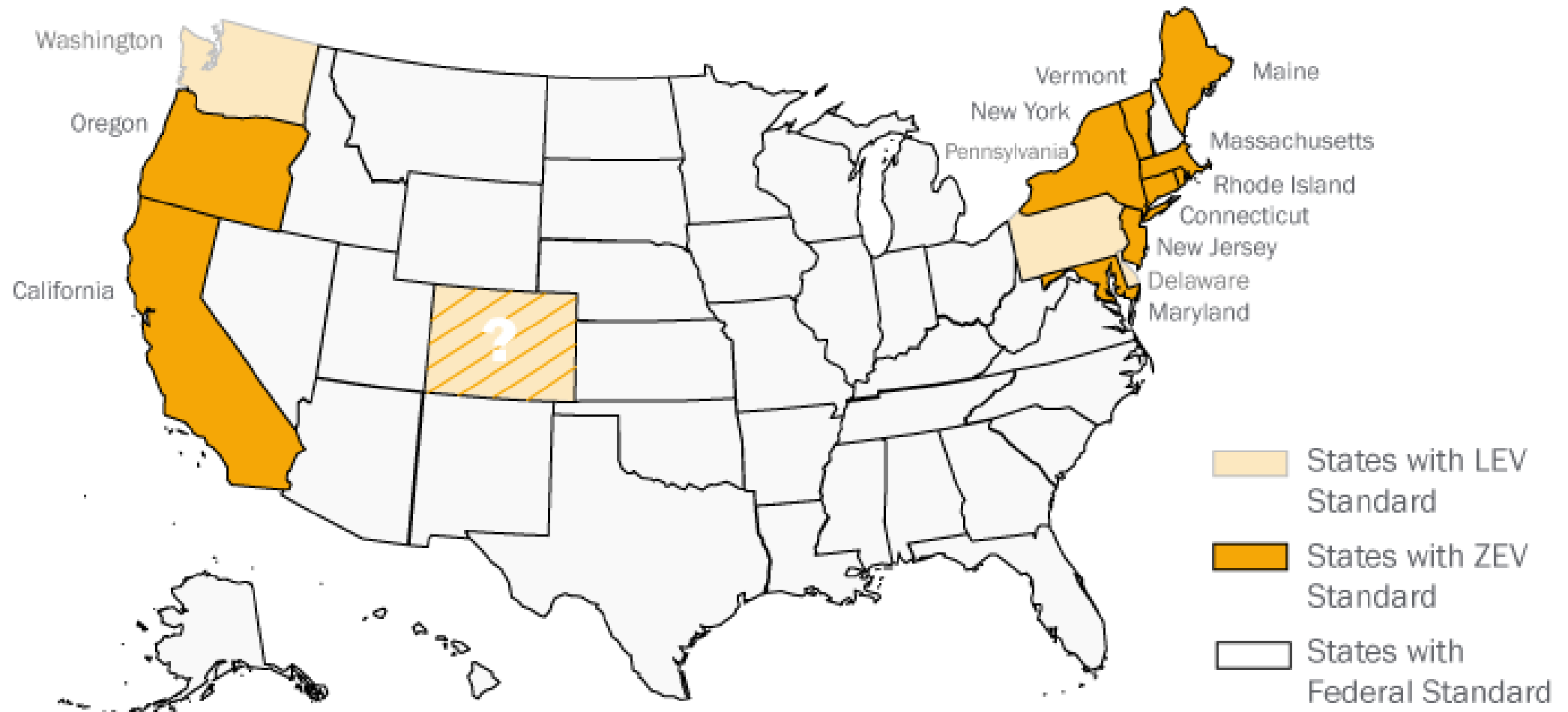
“I don’t like this rule, but I like what EPA did even less.”

Jan. - July 2019: Auto Dealers challenged rule, but case dismissed.

MY 2022: All new light- and medium-duty vehicles sold in Colorado must meet California/177 Low-Emission Vehicle standards (CA Code of Regulations, Title 13, Sections 1961.2, *et. al.*)



Low-Emission Vehicle (LEV) Standard vs Zero-Emission Vehicle (ZEV) Standard





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The Gazette

PULITZER PRIZE-WINNING JOURNALISM, EST. 1872

Colorado to miss out on Subaru EVs for lack of a law

By: By JOEY BUNCH Colorado Politics May 16, 2018



Subaru is planning to release its first plug-in hybrid powertrain on its Crosstrek models. Photo courtesy Subaru.



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From LEV to ZEV

Aug. 2018: Unprecedented public input supporting LEV *and* ZEV

Jan. 2019: Gov. Polis signs EO B 2019 002,
“Supporting a Transition to Electric Vehicles”

May 2019: Automakers negotiating with CDOT & CEO to bring
all available ZEVs to Colorado as soon as 2020 ... ?

Aug. 2019: AQCC will decide on ZEV rule; IF adopted (MY2023),
automakers must sell an increasing % of light-duty ZEVs



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ZEV Rule is about *credits*, not cars

- Credits are based on vehicles' zero-emission ranges:
 - Long-Range BEVs (Tesla, Chevy Bolt, etc.) => 3-4 credits
 - Plug-in Hybrids (Chevy Volt, Prius Prime, etc.) => 0.5 credits
- Credits translate (roughly) into automakers selling $\geq 5\%$ ZEVs in 2023, going up to $\geq 9\%$ in 2030 & beyond
- Not meeting credit minimums
=> another year to comply and/or paying fines
- Automakers seeking early-credit allowances for Colorado ...



Opposition to Colorado ZEV Rule

- “Most ZEVs are compact, sedans, etc. ...
while most of what Coloradans buy are pickups, SUVs, etc.”
(true in 2019, but less likely in 2023)
- Range Anxiety (but battery ranges & EVSE are both increasing)
- Colorado’s unique weather & terrain
(but EV sales are strong in more mountainous areas)
- All other (current) ZEV states are coastal
(NM also planning to be a ZEV state)



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- These rules do NOT take any vehicles off the road
- These rules do NOT force anybody to buy a ZEV
- ZEV rule *increases* customer choice (e.g., Subaru EV > CO)
- These rules apply primarily to *automakers*
- State-wide rule, but met through urban/suburban ZEV sales
- “Think 2023, not 2019”



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Estimated Pollution Reductions (MY 2022 - 2031)

LEV Rule 30,000,000 tons of CO₂e

ZEV Rule 3,200,000 tons of CO₂e



“Green really is Green!”

Rule	Costs *	Benefits
LEV	\$1,000 more per vehicle	Less fuel & maintenance means <i>net savings</i> of \$3,000 over average vehicle life
ZEV	\$6,000 more per vehicle (2023) and Cost Parity w/ICEVs (c. 2028)	<i>Much</i> less fuel & maintenance means <i>net savings</i> of \$4,000 (2023) to \$11,000 (2030) over vehicle life



“Green really is Green!”

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* Cost estimates do NOT include any tax credits or other subsidies



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ZEV Rulemaking Timeline:

July 17: Pre-Hearing

July 24: Pre-Hearing Rebuttals Due

Aug. 2: Cost-Benefit Analysis Due

Aug. 8: Regulatory Analysis Due

Aug. 13-16: Rulemaking Hearing



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ZEV Rulemaking Timeline:

- c. Oct. 2019: If AQCC adopts Colorado ZEV Rule,
Colorado Secretary of State has up to 50 days to review it
before officially adding it to Colorado Revised Statutes.
Rule must be on books for 2 years before going into effect
(per Clean Air Act, Section 177).
- Jan. 2, 2022: Colorado ZEV Rule takes effect.
Automakers must make MY 2023 ZEVs available for sale
as an increasing % of their total light duty vehicles.



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Cleaner Cars ... *and FEWER Cars!*

The Atlantic

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BUSINESS

The Absurd Primacy of the Automobile in American Life

Considering the constant fatalities, rampant pollution, and exorbitant costs of ownership, there is no better word to characterize the car's dominance than insane.

EDWARD HUMES APR 12, 2016





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Find Smarter Ways to Go!

Mode	Clean Air	Traffic	Multi-Task	Exercise	Parking	\$	Misc.
SOV	X	X	X	X	X	\$\$\$	“Convenient”
EV	✓	X	X	X	X	\$\$	Cleaner, Connected, etc.
Cab / Uber/Lyft	?	X	✓	?	✓	\$\$	ZOVs ... ?!
Car/Van-Pool	✓	✓	✓	?	✓	\$\$	Community
Scooter	✓	✓	X	?	✓	\$\$	Single & Sober ... !
Telework	✓	✓	✓	?	✓	?	Google / VPN
Transit	✓	✓	✓	✓	✓	\$	EcoPass?!
Bike/Walk	✓	✓	✓	✓	✓	\$	Commute + Workout!



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Find Smarter Ways to Go!

RND





FRONT RANGE AIR QUALITY

Expected:	MODERATE
Current:	MODERATE
Visibility:	NOT AVAILABLE

SAVE COLORADO'S BIG BLUE SKIES

Take the #JustSkip2 Challenge

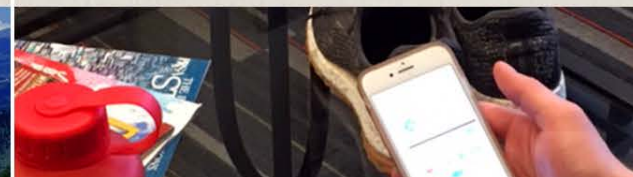
SIMPLE STEPS



GET SMART



JOIN US!





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Thank You!

Phil von Hake

phil.vonhake@state.co.us

[Colorado.gov/cdphe](https://colorado.gov/cdphe)

[/motorvehicles](https://colorado.gov/cdphe/motorvehicles)

Search on [LEV](#) and/or [ZEV](#)