

Presentation to the Legislative Interim Committee on Ozone Air Quality





Introductions

- **Mike Foote** is currently an environmental and energy attorney and the appointed Chair to the Regional Air Quality Council. From 2012 through 2020, Mr. Foote was a Colorado state Representative and Senator. He serves on the Regional Air Quality Council as a representative of the public interest.
- **Alicia Johnson** is a City of Evans Councilperson. As a Councilperson, Mrs. Johnson serves as the City of Evans' liaison in the Finance Committee and the High Plains Library District Board Selection Committee. She also serves on the 19th Judicial District Performance Commission, Colorado Latino Leadership, Advocacy & Research Organization, Friends of A Woman's Place, and the Mexica Center Board. She has served on the Regional Air Quality Council as a representative of Weld County since 2020.
- **Mike Silverstein** is the Executive Director of the Regional Air Quality Council. Previous to his work for the Council, Mike served as the Administrator and Technical Secretary for the Colorado Air Quality Control Commission and as deputy Director of the Colorado Air Pollution Control Division. Mike began his career with the Environmental Protection Agency.



Opening Remarks/Perspectives

Mike Foote:

- **RAQC is a year-round staffed organization focused on getting to attainment.**
- **RAQC can provide a unique perspective & can be different than the State.**
- **We take a forward-leaning approach.**

Alicia Johnson:

- **I bring both a local government and a disadvantaged community's perspective to the RAQC.**
- **Air quality improvement is important at both the regional and local scales.**
- **Everyone should have the opportunity to breath clean and healthy air.**

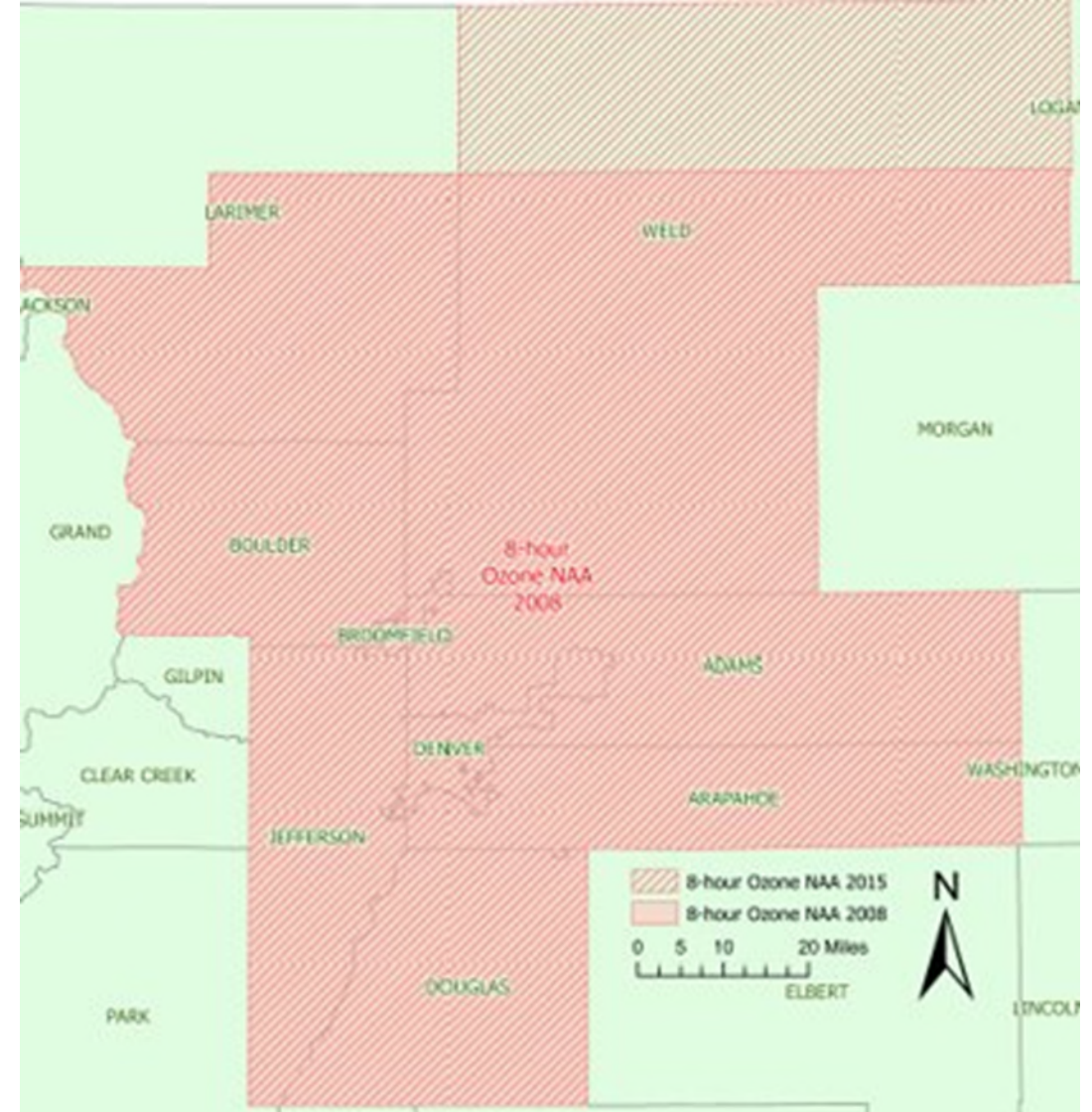
Regional Air Quality Council

RAQC is the lead planning agency for the Denver Metro/North Front Range Ozone Nonattainment Area

Governor appoints the 27-member Board

Primary responsibilities:

- **Planning to meet air quality standards and improve climate conditions**
- **Charged with coordinating the development of air quality plans, evaluating emission reduction strategies**
- **Conduct public education and awareness programs**
- **Implement public/private projects to reduce emissions**
- **Represent and assist local governments in the air quality planning process**



More About the RAQC



- Around for more than 30 years, we are a non-profit company which receives its charge and Board appointments from the Governor, but we are not the State!
- We are designated as the lead planning organization for the Front Range's large, complex ozone nonattainment area.
- We partner with other organizations on mutually beneficial efforts.
 - DRCOG, NFRMPO, CDPHE, CDOT, CEO, RTD, local governments, NGOs, media outlets, businesses, industry and citizens.
- We don't have regulatory authority but are a respected advisory organization.
- We are not directly funded by government but instead receive grants, contracts and contributions from federal, state, local and private sources.

How the RAQC is Funded

- **RAQC budget varies on current single and multi-year contracts, ranging from approx. \$8 – 15 million annually.**
 - **Higher amounts are usually years RAQC does more direct granting.**
- **Majority comes from direct contracting.**
 - **\$1.5 million from the State Legislature, via CDPHE, to grant to local governments for parks and open space equipment electrification.**
 - **Funding through DOT/CDOT, in conjunction with DRCOG, such as:**
 - **Educational campaigns (Simple Steps. Better Air.) for advertising and outreach.**
 - **High polluting car repair and anti-idling programs that directly reduce emissions.**
 - **Electrification and alternative fuel programs to reduce fossil fuel consumption.**
- **SEP funding from industry fines.**
- **Corporate contributions.**
- **C3 Smaller dollar fundraising.**

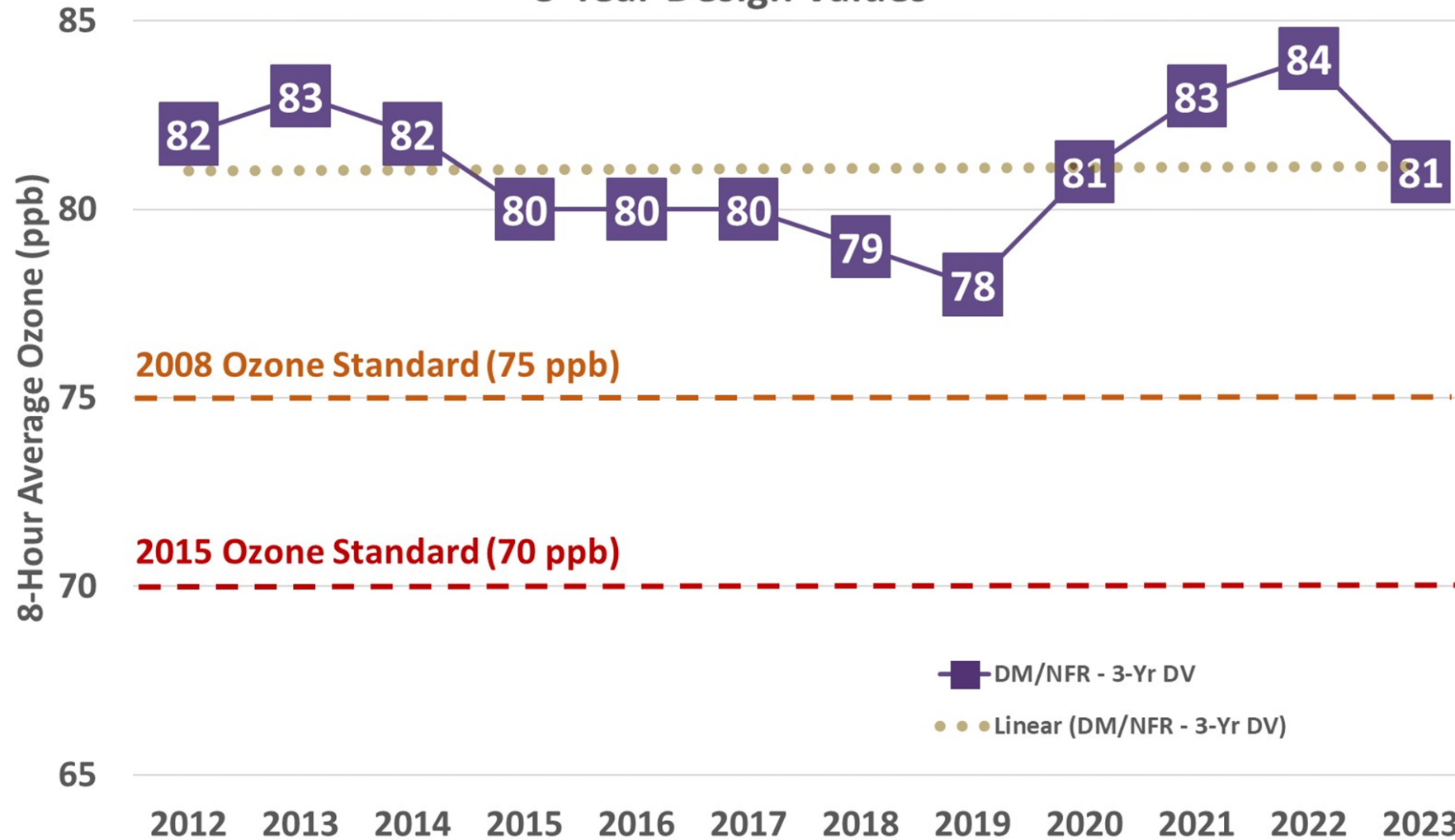
How the RAQC is Funded

- **Voluntary local government donations**
 - **\$350,000 in contributions received from local governments in past years.**
 - **Not dues – RAQC is not a dues-based organization.**
 - **Some local governments give requested amount, most give less, a few give more, and some don't contribute at all.**
 - **Funding is spent in local communities.**
 - **Mow Down Pollution.**
 - **Education & outreach.**
 - **Targeted grants.**

WHERE WE SOMETIMES ARE, AND WHERE WE NEED TO BE

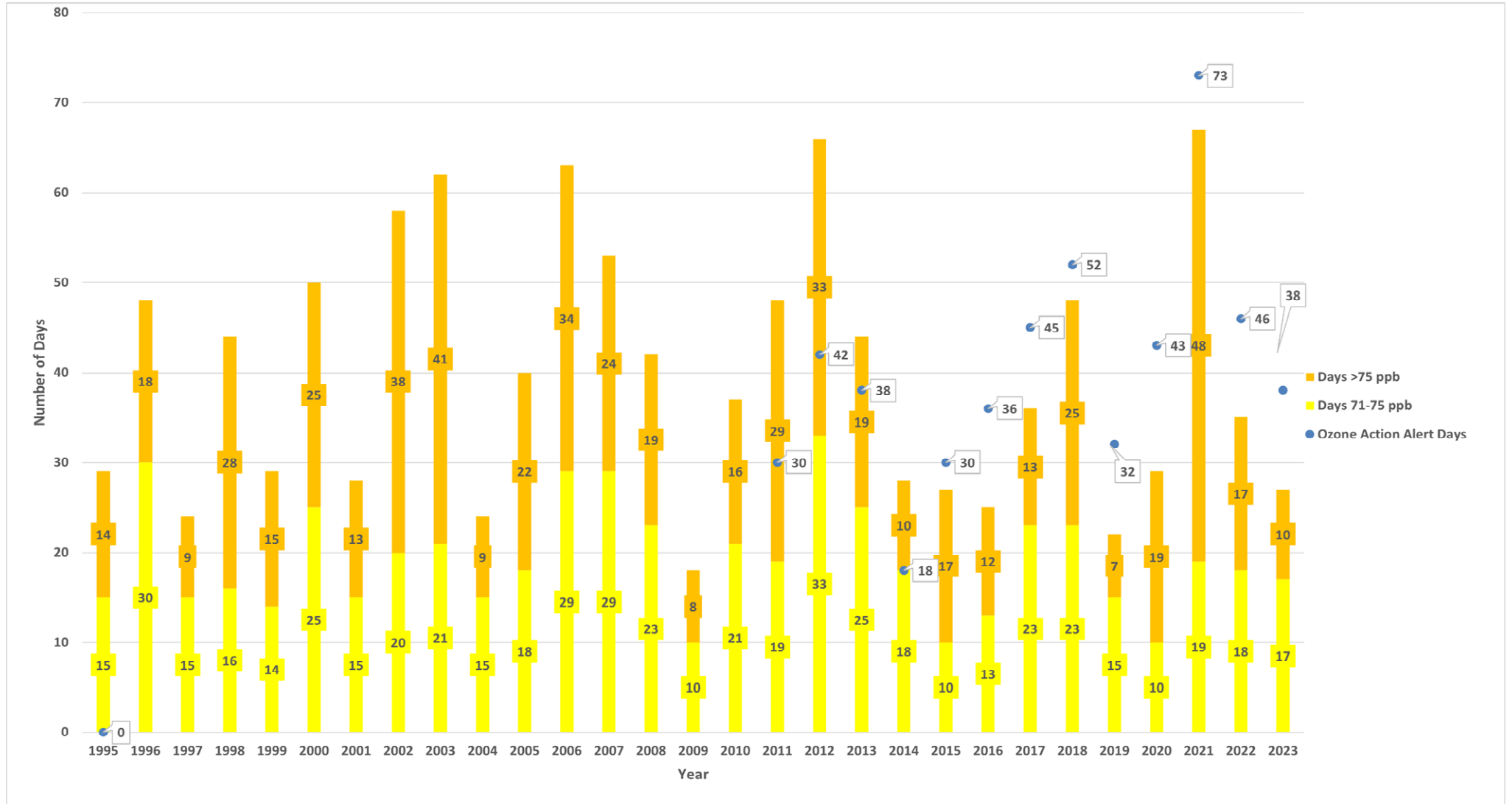


Denver Metro/North Front Range Ozone NAA 3-Year Design Values*



* Data current as of Sept. 13, 2023

Long-Term Ozone Trend for the Denver Metro/ North Front Range Nonattainment Area



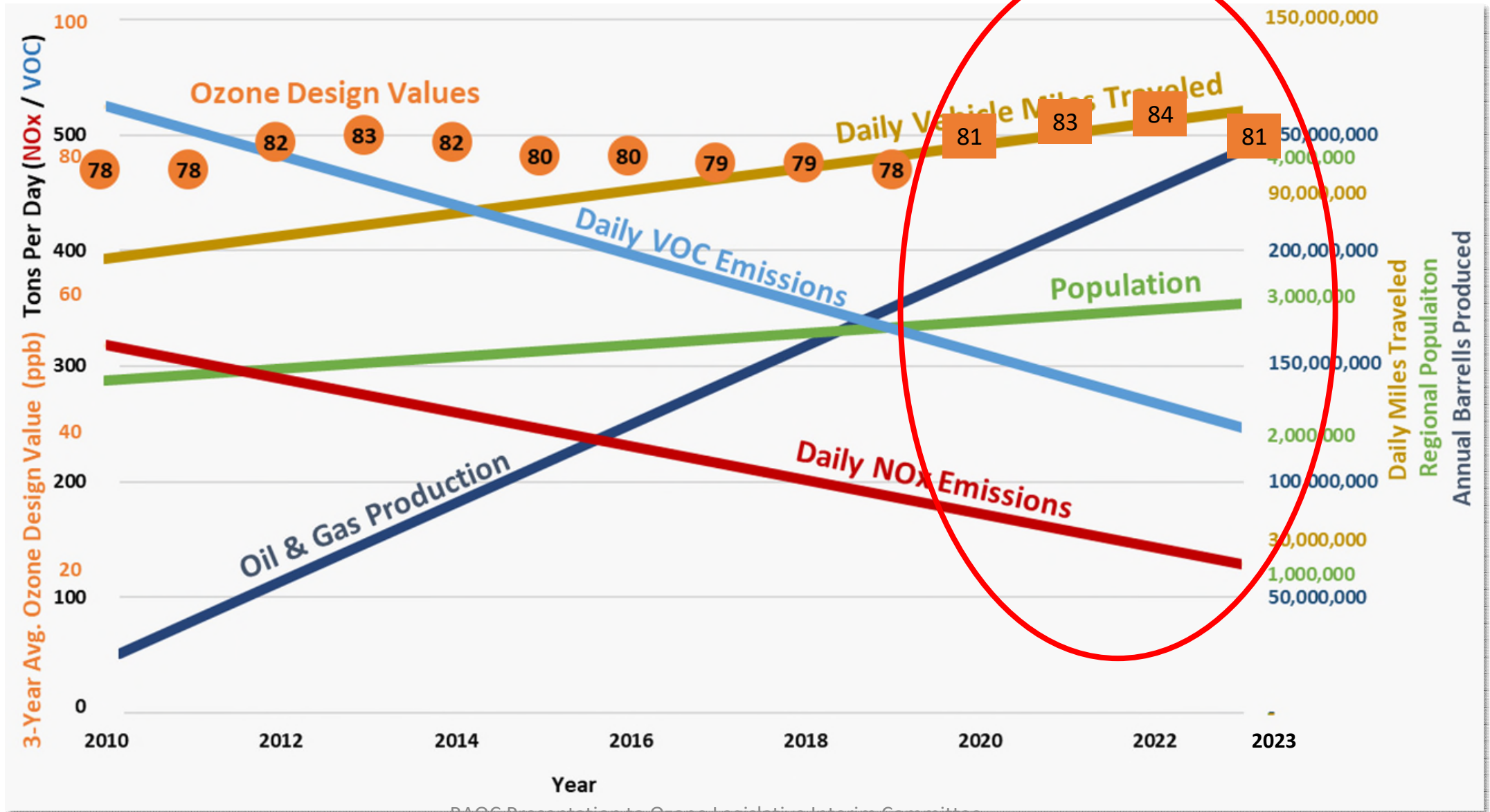


Denver Metro/North Front Range Area - 2023 8-Hour Ozone Summary*
Through 10/1/2023

Monitor	1st Max 2023	2nd Max 2023	3rd Max 2023	4th Max			2021-2023 Estimated Design Value^
				2023	2022	2021	
Aurora East	81	76	73	73	70	77	73
	05/23/23	08/02/23	07/29/23	05/22/23			
Blackhawk	79	74	73	73	71	82	75
	08/15/23	07/12/23	08/09/23	05/22/23			
Boulder Reservoir	81	72	71	71	72	82	75
	08/17/23	09/26/23	08/23/23	08/20/23			
CAMP	74	74	73	73	71	77	73
	08/24/23	07/31/23	08/09/23	08/02/23			
La Casa	73	72	71	70	72	83	75
	05/22/23	08/02/23	08/24/23	07/31/23			
Chatfield	83	77	76	76	78	89	81
	08/24/23	08/15/23	08/09/23	08/08/23			
Evergreen	79	76	75	73	74	79	75
	08/24/23	08/09/23	08/15/23	05/22/23			
Fort Collins - CSU	78	68	67	67	70	76	71
	08/17/23	08/15/23	05/22/23	07/12/23			
Fort Collins West	88	75	72	71	73	85	76
	08/17/23	08/15/23	05/22/23	07/12/23			
Greeley Weld County	74	70	69	68	70	76	71
	07/30/23	06/08/23	07/11/23	08/18/23			
Highlands	77	75	75	74	73	84	77
	08/24/23	07/29/23	05/20/23	08/02/23			
NREL	78	76	75	74	77	89	80
	08/15/23	08/09/23	05/22/23	08/24/23			
Platteville Observatory	70	68	68	67	73	83	74
	07/30/23	08/15/23	05/23/23	05/22/23			
Rocky Flats North	83	78	77	77	78	87	80
	08/17/23	08/15/23	09/26/23	08/20/23			
Welby	74	73	70	70	75	79	74
	08/15/23	08/02/23	08/24/23	05/23/23			

* Based on 8-hour averages of raw 1-hour ozone data from the [Colorado Department of Public Health and Environment \(CDPHE\)](#) and consistent with [Data Reporting and Handling Conventions outlined in 40 CFR Part 50, Appendix P.](#)

Regional Trends (2010-2023)



Estimate of Emissions by Source Category

Table 4-2: Summary of 2026 Attainment Year Emissions Inventory

2026 Emissions Inventory (TPD)		
Description	2008 Boundary	
	2026 VOC	2026 NOx
Area	79.9	0.1
Architectural and Industrial Maintenance	19.6	--
Consumer Products	41.6	--
Other	18.7	0.1
Non-Road	47.4	34.6
Agriculture	0.1	1.0
Aviation	2.6	9.0
Commercial Equipment	6.6	10.9
Lawn & Garden	36.0	7.5
Railroad	0.3	5.7
Recreation	1.9	0.5
Oil and Gas	90.4	68.4
Area	61.8	52.9
Condensate/Oil Tanks	15.4	0.2
Point	13.3	15.3
On-Road	27.0	21.7
Light-Duty Vehicles	26.3	14.6
Medium/Heavy-Duty Vehicles	0.7	7.1
Point (Non Oil and Gas)	21.5	19.6
EGU	0.3	4.7
Non-EGU	21.2	14.9
TOTAL	266.3	144.3

General Contribution to Front Range Summertime Ozone Concentrations



RAQC Presentation to Ozone Legislative Interim Committee - October 13, 2023
Contributions taken from 2023 modeling efforts. Do not represent contribution at any singular monitor. Additional information available in [2021 Modeling Forum Presentations](#)

Emission Reduction Trends

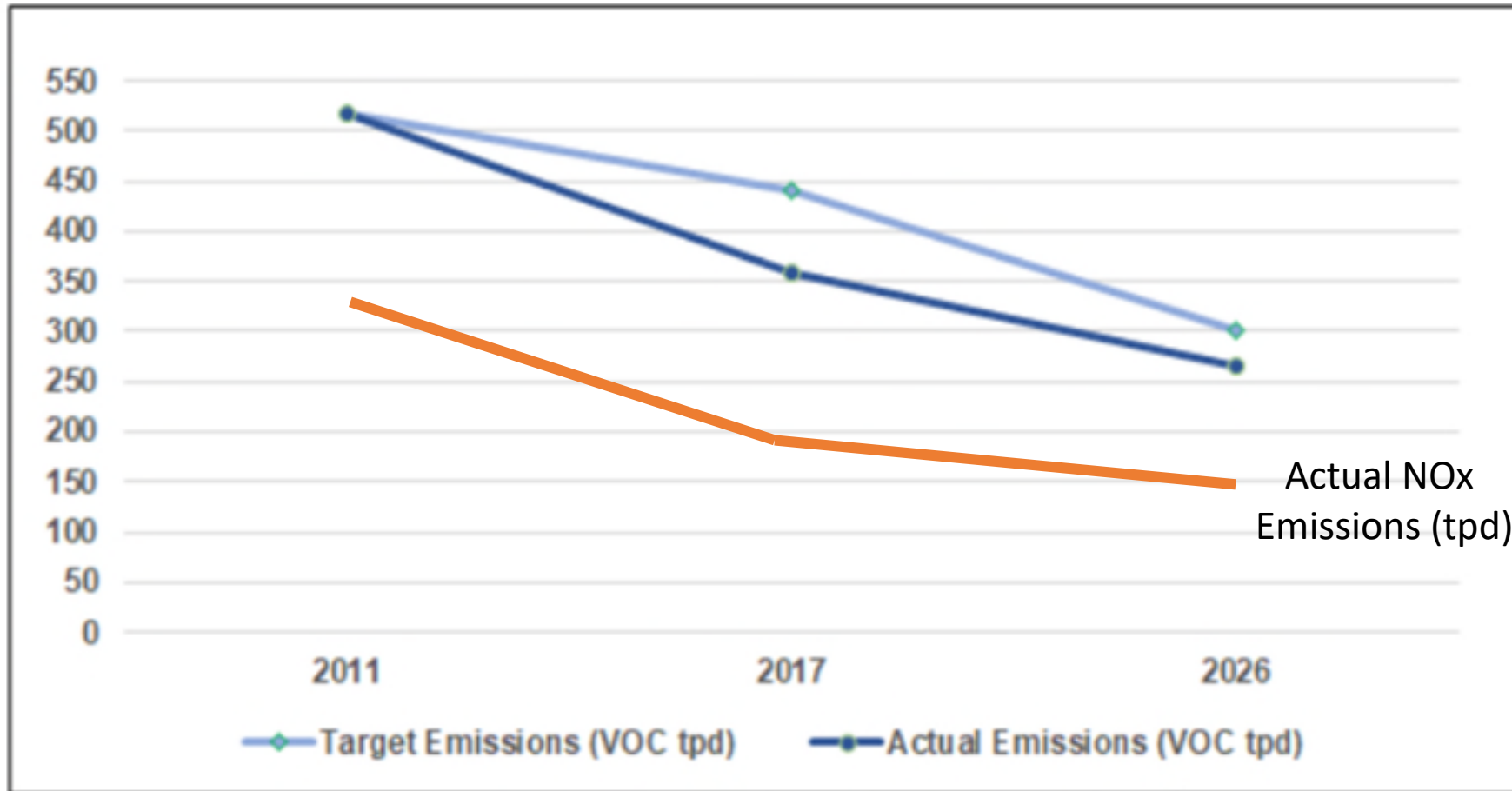


Figure 4-3: Reasonable Further Progress Glidepath for 2008 Ozone Nonattainment Area



2008 Ozone Standard (75 ppb) Severe SIP Planning Milestones

OZONE PLANNING NEXT STEPS		2023				2024				2025				2026				2027			
		1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
2008 Ozone NAAQS - Severe Nonattainment Planning Milestones																					
1	Technical and SIP Preparation work for Severe 2008 NAAQS Classification <i>O&G inventory revision and Colorado boundary conditions (January - April)</i> <i>Photochemical grid modeling for attainment design value (May - July)</i> <i>Revise SIP by end of July for subsequent RAQC and AQCC consideration</i>																				
2	RAQC and AQCC consideration and actions <i>Board consideration of revisions (July and/or August)</i> <i>Submit Board-approved documents to AQCC by August</i> <i>AQCC rulemaking hearings (August - December)</i>																				
3	Consider / adopt additional Severe SIP contingency measures if required by <u>PROPOSED</u> EPA guidance																				
4	Submit Severe ozone SIP revision to EPA following legislative review																				
5	Monitor ozone to achieve attainment (by July 20, 2027) <i>2024-26 fourth highest averages equal to or less than 75 ppb at each monitoring site</i>																				

← We are here



2015 Ozone Standard (70 ppb) Serious SIP Planning Milestones

OZONE PLANNING NEXT STEPS		2023				2024				2025				2026				2027			
		1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
2015 Ozone NAAQS - moving from Moderate into Serious Nonattainment Planning Milestones																					
1	Consider / adopt additional Moderate SIP contingency measures if required by <u>PROPOSED</u> EPA guidance																				
2	Technical Analysis and Modeling work for expected Serious 2015 NAAQS Re-Classification <i>Inventory, Modeling, and Analysis Plan - new base year platform + contracting (October 23 - February 24)</i> <i>Inventory and met data preparation and evaluation (January - June)</i> <i>Attainment Modeling - 2026 design value, source attribution, control strategies (June 24 - February 25)</i>																				
3	SIP Preparation work for expected Serious 2015 NAAQS Re-Classification <i>EPA reclassifies area from Moderate to Serious for failing to attain on time (late 2024 / early 2025)</i> <i>Develop / analyze additional ozone-reducing control measures (Spring 2023 through Summer 2025)</i> <i>Develop Serious area ozone SIP (June 2024 through Fall 2025)</i>																				
4	RAQC and AQCC consideration and actions <i>Board consideration of revisions (May - August)</i> <i>Submit Board-approved documents to AQCC by August</i> <i>AQCC rulemaking hearings (August - December)</i>																				
5	Submit Serious ozone SIP revision to EPA following legislative review																				
6	Monitor ozone to achieve attainment (by August 3, 2027) <i>2024-26 fourth highest averages equal to or less than 70 ppb at each monitoring site</i>																				

We are working on this now and will continue to do so

2026 Ozone Projections

(analysis just completed for Severe 75 ppb SIP)

Site	County	Base Year Monitored Design Values	Modeled RRFs	2026 Projected Monitored Design Values
NREL	Jefferson	79.3	0.9415	74.6
CHAT	Douglas	77.3	0.9256	71.5
FTCW	Larimer	75.7	0.9451	71.5
RFNO	Jefferson	77.3	0.9206	71.1
HIGH	Arapahoe	73.0	0.9268	67.6
WELC	Jefferson	73.0	0.9249	67.5
WELD	Weld	70.0	0.9534	66.7
FTCO	Larimer	69.0	0.9506	65.5
CASA	Denver	68.7	0.9516	65.3
RMNP	Larimer	69.3	0.9404	65.1
CAMP	Denver	67.7	0.9528	64.5
ASNP	Jefferson	70.0	0.9207	64.4
AURE	Arapahoe	67.7	0.9476	64.1
WELB	Adams	67.0	0.9457	63.3

This is more than 5% above the 70 ppb standard that must be met by 2027.

Additional emission reductions of approximately 20% are needed by 2026.

From which sources, and what combination of NOx and VOCs, are TBD.

Additional Emission Controls/Reductions NOT Included in 2026 Projections:

- **Vehicle emission reduction measures:**
 - **A more stringent vehicle inspection and maintenance program.**
 - **Low & zero emission vehicles standards + increasing electric vehicle penetration over time.**
 - **Adoption of Colorado Clean Trucks Rule.**
- **Oil and gas/industrial emission reduction measures:**
 - **Emission reductions from natural gas-fired reciprocating internal combustion engines greater than or equal to 1,000 horsepower.**
 - **Replacement of certain pneumatic controllers in the oil and gas sector with non-emitting controllers.**
 - **truck loadout of hydrocarbon liquids, well maintenance and liquids unloading, pigging and blowdown operations, and enclosed combustion device performance testing.**
 - **Permitting rule for Disproportionately Impacted areas.**
- **Electrification incentives**
 - **Gas-fired lawn and garden equipment.**
 - **Medium and heavy-duty gasoline and diesel vehicles.**
 - **Light duty vehicle fleets.**

RAQC Emission Control Strategy Assessments

2023/24 Control Strategy Evaluations:

- **Gasoline-powered lawn & garden equipment sales prohibitions.**
- **Gasoline-powered lawn & garden equipment seasonal use restrictions – government and commercial operators.**
- **O&G flaring minimization requirements.**
- **Episodic emissions from oil and gas industry operations.**
- **Requiring emission offsets or aggregation of wellhead and production facility equipment when permitting oil and gas sector minor sources.**
- **Zero-emitting retrofits for existing pneumatic devices.**

RAQC Emission Control Strategy Assessments



2023/24 Control Strategy Evaluations:

- **Appliance efficiency standards.**
- **Residential auto maintenance incentives.**
- **High polluting car maintenance and repair programs.**
- **Anti-idling programs and regulation.**
- **Mobile source credits as part of nonattainment new source review.**
- **Additional/permanent funding for VMT reducing strategies such as zero-fare transit, increased transit services, and bicycle and walking infrastructure.**
- **Emission reduction approaches for indirect sources.**

Additional Emission Controls/Reductions NOT Included in 2026 Projections:

- **Greenhouse Gas rulemakings:**
 - **Clean heat/energy plans.**
 - **Building performance standards.**
 - **Greenhouse Gas Air Pollutant Emissions Notice and Fee.**
 - **Greenhouse Gas Emissions and Energy Management for Manufacturing.**
 - **Greenhouse Gas Intensity Verification for Upstream Oil and Gas.**
 - **Greenhouse Gas Pollution Reduction for Transportation Planning.**
- **Upcoming rulemakings and additional controls to be considered in the near-term timeframe:**
 - **Proposal of Colorado Clean Cars Rule.**
 - **Lawn and garden equipment electrification requirements.**
 - **NOx emissions reduction requirements for oil and gas well pre-production activity.**
 - **Requirements to reduce emissions from stationary industrial engines.**

Lawn & Garden Equipment Emissions

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TOTAL	266.3	144.3

Lawn and Garden Equipment – Next Steps

- **RAQC Board approved regulatory recommendations to reduce emissions from lawn and garden equipment:**
 - **Prohibit the sale of gas-powered push and hand-held equipment in the nonattainment area, beginning in 2025.**
 - **Prohibit governments use of gas-powered push and hand-held equipment in the nonattainment area, during June-August, beginning in 2025.**
 - **Prohibit commercial operators' use of gas-powered push and hand-held equipment in the nonattainment area, during June-August, beginning 2026.**
- **This recommended regulatory approach was presented to the Air Quality Control Commission on September 20 and approved for public hearing to occur in December 2023.**

Lawn & Garden Equipment Control Strategies

What the proposed regulatory requirements are not:

- The restrictions on sales of gas-powered push and hand-held L&G equipment are not statewide but proposed for the nonattainment area only, so this equipment would be available for sale outside the nonattainment area.
- Restrictions on the sale and use of larger gas-powered riding equipment and tractors are not included in this emission control strategy proposal.
- The sales and seasonal use restrictions are not intended to apply to forest or grassland management nor do these restrictions apply to fire hazard reduction activities in or near wildland areas or the wildland urban interface.
- The seasonal use restrictions are not intended to apply to abating or preventing damage during a declared emergency.
- The sales and seasonal use restrictions are not intended to apply to equipment used by first responders to provide emergency services.
- Restrictions on residential use of gas-powered lawn and garden equipment are not included in this emission control strategy proposal.

Incentives to Assist with Compliance

RAQC's Mow Down Pollution Programs – Electrifying Lawn and Garden Equipment

- **Government & Public Entities Program - \$1.2 million for 2023/24**
 - **Up to \$100,000 for each agency**
- **Commercial Program - \$100,000 and growing**
 - **Up to \$3,000 for each operator/round**
- **Residential Program - \$250,000/year**
 - **\$75-\$150 vouchers**

State Electrification Incentives

- **30% instant discount from retailers during 2024-2026**

RAQC fundraising efforts to focus on increased and long-term incentives for all electrification efforts

- **Corporate and private contributions, Local/State/Federal grants**



\$7 Million Funding Request from the Regional Air Quality Council

Small Business grant programs to help small commercial operators switch to electric lawn and garden equipment.

- Commercial operators are frequently running gas-powered equipment 6-8 hours/day and electrifying the industry will have an immediate, meaningful impact on ozone.
- Commercial lawn and garden companies have a higher percentage of minority ownership than other industries. As regulations restrict operations, grants will help ensure that small, minority-owned businesses continue to thrive. **RAQC requests \$3 million over State FY 25-27.**

Expansion of Mow Down Pollution residential program.

- A single mower, running for an hour, has the ozone equivalent of driving 300 miles. Leaf blowers are equivalent to 1,100 miles driven. Expanding the RAQC's program from \$250,000 annually (funded through local government and corporate contributions) to **\$1 million will allow RAQC** to swap out approximately 10,000 pieces of equipment across the front range.

Public Sector grants.

- The RAQC is currently executing a contract to spend 1.5 million of one-time General Funds (through CDPHE) to electrify public agency lawn and garden equipment. Creating a continual program will allow us to help local governments year after year. **RAQC requests \$3 million over State FY 25-27.**

RAQC's Perspectives on Issues Brought to the Committee's Attention in Previous Meetings

- **Federal Clean Air Act §179b international transport:**
 - An international transport waiver was never sought by Colorado. A one-year “attainment year extension” waiver was sought in 2018 due to clean ozone data year in 2017 but withdrawn in 2019 as 2018 was not a clean data year. No clean data years have been recorded since.
- **Modeling the benefits of individual strategies:**
 - The model is not a great tool to evaluate emission control strategies 1-by-1 but is better for entire packages. There is not analytical tool available that can accurately predict the ozone change of an emission control strategy in isolation.
 - No unique strategy modeled in isolation makes a significant difference. That’s why we focus on the of quantity emission reductions.
 - The timing is short for local controllable emissions reductions – we are required to monitor compliance with both the 75 and 70 ppb standards during the 2024-26 ozone seasons.
- **Background ozone:**
 - Our models indicate that 60-70% of our region’s summertime ozone comes from outside the nonattainment area, or about 50-55 ppb.
 - Local emissions are what cause the region to violate the ozone standards.

RAQC's Perspectives on Issues Brought to the Committee's Attention in Previous Meetings

- **Reformulated gasoline:**
 - We anticipate about 4-5 tons per summer day of highly reactive emissions reduction throughout the NAA, beginning in 2024.
 - Equates to about \$20-\$30 annually per registered vehicle (at 20-30 cents/gallon increase).
- **Suncor SEP for Electric L&G equipment:**
 - RAQC is pleased to be awarded the recent SEP by EPA.
 - The environmental harm caused by the Suncor violations are regional due to the production of gasoline above specifications.
 - The electrification of L&G equipment initiative will achieve regional benefits WITH special emphasis towards directing the incentive monies to the citizens and public agencies in the vicinity of Suncor.
 - The program also directly reduces worker, resident, and neighborhood exposure to the direct emissions caused by gas-powered equipment.
 - Increases our electrification incentives by about \$550K.

Closing Remarks

- **We generally observe that peak ozone values in the 80+ ppb range are fewer in number than a decade ago.**
- **RAQC notifies the public in advance about the potential for a high ozone day so individual actions can be taken to reduce peak emissions.**
- **Many source types contribute on high ozone days.**
- **The SIP will not control interstate or international transport, or natural emissions.**
- **Current projections tell us that we would be between 74 and 75 ppb by 2026 at the highest sites, so a further ozone reduction of 5 ppb has to be achieved in the Serious SIP to attain 70 ppb.**
- **There is a strong group of existing or soon-to-be-adopted controls to build on.**
- **Controls to secure emission reductions of at least an additional 20% are needed by 2026.**
- **Significant additional resources are needed to further reduce the local controllable sources.**

