REGIONAL AIR QUALITY COUNCIL

Presentation to the Colorado Chamber of Commerce -- Regulatory Affairs Council Meeting

September 29, 2025

FOUNDATIONAL BACKGROUND INFORMATION:

WHAT'S IN THE BLUEPRINT? *(let's see...)*

ARE THESE REGULATIONS? *(no)*

IS THIS A SIP? *(no)*

WHAT PROBLEMS ARE WE TRYING TO SOLVE? *(here we go...)*

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RAQC CONTROL STRATEGY BLUEPRINT DEVELOPMENT EFFORT

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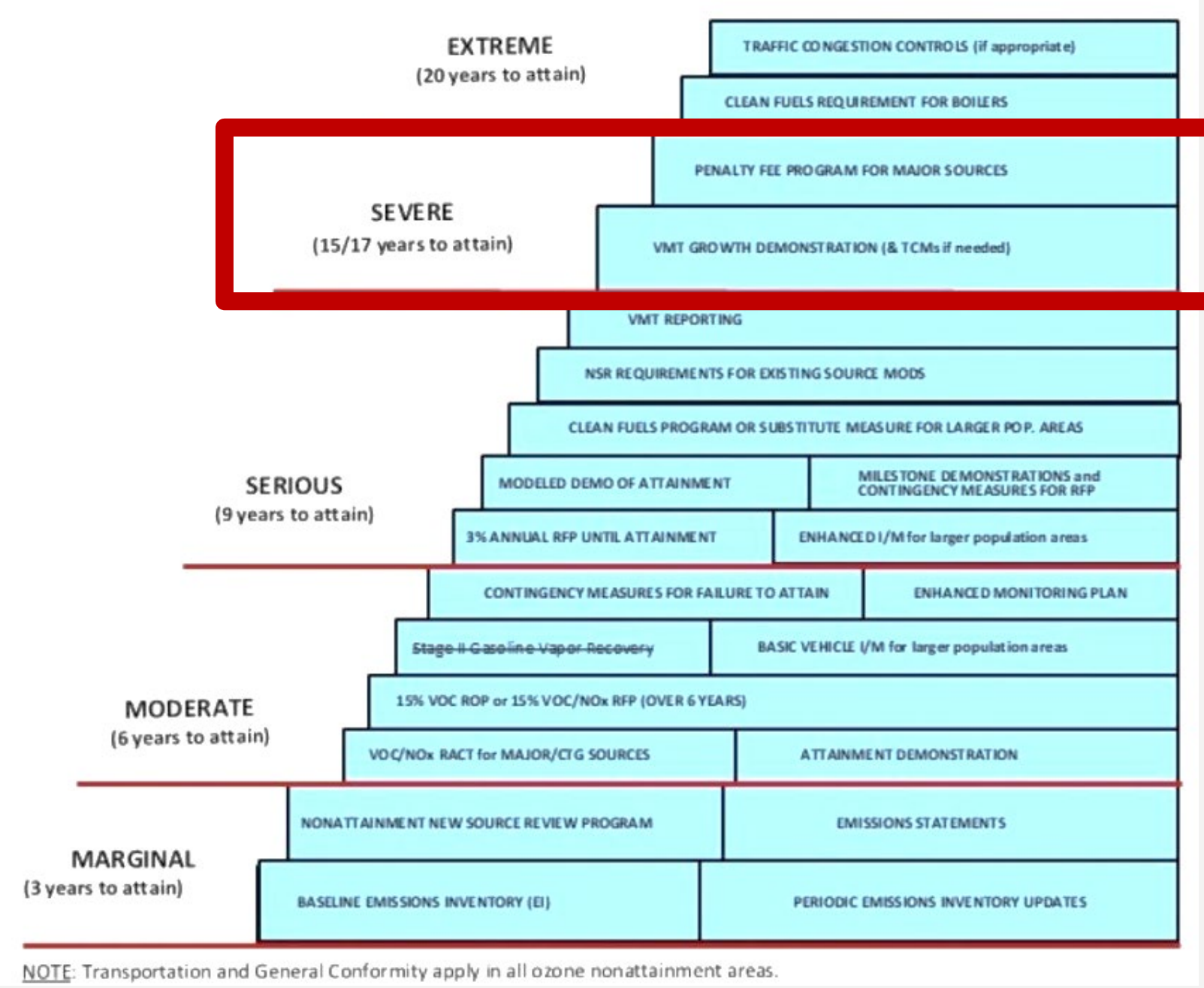
The Blueprint is about:

- Planning vs. deciding
- Inputs to modeled attainment by the early 2030s
  - Cleaner air is also a result of adopting emission controls,
  - That also account for growth in population and economic activity
- Emissions control analysis
  - Options for emissions mgmt. through regulations and voluntary programs
- Publishing strategy ideas on a timeline for subsequent consideration
  - Strategies are not "modular"
  - Have to continue consideration of each/all to reduce emissions enough by 2030
- Engaging stakeholders in strategic planning
  - Decisions about regulations are up to others.
- Aiming for success vs. the dreaded continuing drone of defeat



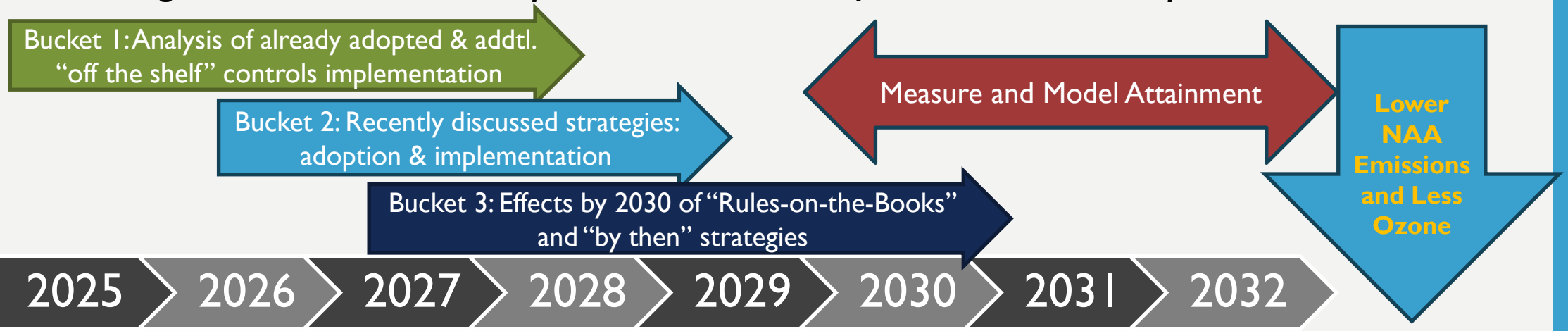
The Clean Air Act (CAA) details specific requirements for nonattainment areas under the ozone National Ambient Air Quality Standards depending upon the classification of an area.

This table represents the cumulative requirements that apply to an area as the nonattainment status continues.

The CAA-specified classifications refer to the length of time to attain, not the level of ozone air pollution.

NOW: A BLUEPRINT FOR CONTROL STRATEGIES AND ANTHROPOGENIC EMISSION REDUCTIONS: 2025-2029

- A **strategic framework** for the RAQC staff and Board to develop control strategy options and to plan implementation timelines is necessary, aligned with new attainment planning milestones **and** to achieve critical air quality improvement as soon as possible for human health and environmental benefits
- RAQC will develop a set of **control strategy policy recommendations** for Board consideration and AQCC presentation this year that:
  - Recommends a sequence of emission reduction policy actions for implementation during the 2026-2028 timeframe, for the set of potential strategies recently discussed and additional ones to be determined, to result in:
    - ***Lower levels of measured peak ozone, to occur less frequently, within the 2029-2032 timeframe, and***
    - ***Achieving emission reductions and a plan to achieve the new federal attainment compliance deadline.***



WHAT'S IN THE BLUEPRINT?

- Draft recommendations
- Ozone Air Quality Planning Context for our Region
  - RAQC's roles and responsibilities
  - Public input on Blueprint
  - Trends and Levels of Measured Ozone Air Quality at most polluted sites
  - Emissions causing Ozone
- Emission Control Strategies
  - APCD proposal for regulatory updates to be adopted with the Serious Ozone SIP
  - Post-2025 Control Strategy Timing and Consideration in the Blueprint
  - Emission Control Strategies for the Nonattainment Area – brief summaries & overview links
  - Emissions Control Strategy Evaluation
- Control Strategy Blueprint: Summary for Stakeholder Review
- Blueprint Endorsement Consideration Process by the RAQC Board

HOW TO USE THE INFO IN THE BLUEPRINT

Directions for commenting on the Blueprint:

- Consider what information you need to provide comments.
  - If you give us an idea of any additional information you need, soon, we can try to add it to the process.
- Identify which portions of the draft Blueprint need clarification or further explanation.
- Group similar strategies and/or sectors to comment, and/or comment on individual strategies.
- Identify strategies and/or sectors you believe would be the most effective and timely to address.
- Collaborate with others in your contact groups and among organizations by sharing and discussing with them (tell us whom when you comment!).
- Reach out with your questions, comments, and/or ask staff for more information:
  - RAQC Emission Controls (emissioncontrols@raqc.org), send comments in an E-Mail or attach a Word document.
  - The Blueprint will then transition into a subsequent Preliminary Final Board version, with the review and feedback process continuing into October.

STRATEGY OVERVIEWS & STAKEHOLDER ENGAGEMENT

- RAQC developed briefing papers for control strategy concepts included in the Blueprint
- Currently available overviews are linked in the Blueprint and on the Blueprint webpage
- Additional updates made for preliminary final draft October Blueprint
- A supplemental Stakeholder Engagement Information document is also linked in the Blueprint, in the briefing papers, and on the Blueprint webpage

Each briefing paper includes:

- Source sector
- Proposed timeline
- Applicable pollutants & expected reductions
- Implementation option(s)
- Strategy description
- Stakeholder outreach
- Disproportionately Impacted Communities
- Implementation elsewhere

EVALUATION METHODS FOR EMISSION STRATEGIES

What will be evaluated?

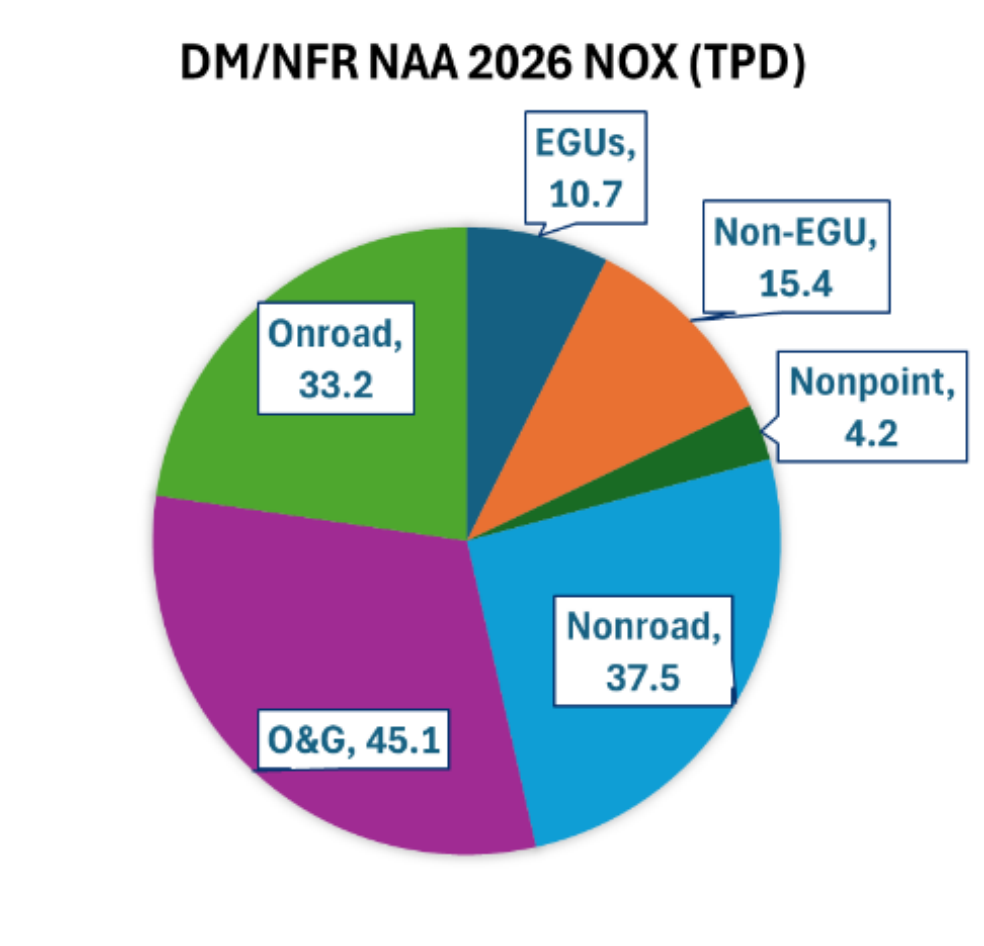
- Contribution to reducing ozone precursor emissions
- Technologic and economic feasibility
- Implementation considerations and timeframes
- Are strategies quantifiable and enforceable?
- Strength of stakeholder engagement, and
- Impact in disproportionately impacted communities

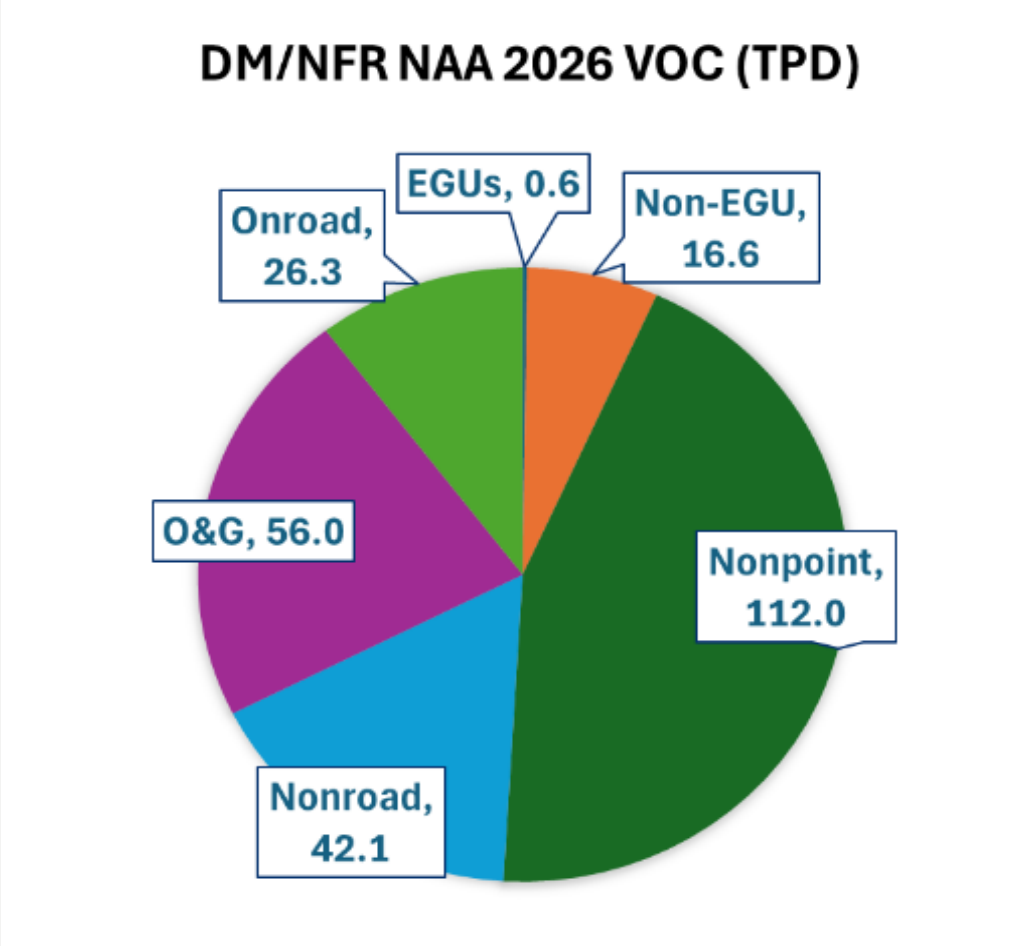
- Blueprint reviewers have noted the need to address the following related topics.
  - potential for changes to future regional ozone levels, and
  - improving public health by reducing ozone exposures.

How will the emission strategy descriptions and evaluation methods be available?

- Blueprint includes additions and changes from discussions at workshops and comments received from Board Members and stakeholders
- Strategy Overviews at: RAQC Control Strategy Blueprint page and linked in document
  - Twenty (20) of 22 strategies listed in Buckets 1, 2, and 3 are available now

BEYOND THE CURRENT 2026 EMISSION PROJECTIONS: WE WILL ESTIMATE CHANGES TO THESE INVENTORIES





ESTIMATING EFFECTS ON FUTURE OZONE

- Test estimated effects of emission reductions with recently-updated air quality modeling tools – **report in early 2026**
  - Technical modeling methods at rescheduled Ozone Forum in late Oct./early Nov.
- Right now, additional air quality modeling is in process and will then be used to estimate changes in ozone resulting from these strategies:
  - To estimate the contributions, or apportionment, of **nonattainment area ozone-causing emission sources in 2026, 2028, and 2030** on the highest ozone days
  - To evaluate the **future effects of emission controls already "on-the-books" and "by then"** for strategies effective by 2030
- ***Our audiences are the RAQC Board and AQCC:***
  - ***Results will assist in planning to identify NAA sources and emission controls necessary to reduce ozone and improve air quality***

EVALUATION METHODS FOR OZONE CHANGES, PART 1

How Will Ozone Changes from the Strategy Options be Evaluated?

- Use modeling tools complementary to Source Apportionment, called the Decoupled Direct Method (DDM)
- DDM is a comprehensive sensitivity tool in CAMx to calculate the first order sensitivity of ozone to changes in all emissions inputs to the model within the NAA
- DDM results (factors) can then be used to estimate the change in ozone concentrations to small perturbations (reduction/increases) in VOC and/or NOx emissions

How will the DDM ozone air quality evaluation results be made available?

- Add those results in a separate technical appendix later in Winter 2025-26 to: RAQC Control Strategy Blueprint
  - We will estimate % changes in VOC and/or NOx for each strategy and report those in the memo.
  - Then we will scale 2026 emissions changes 2028 and 2030 for each control strategy in the buckets and the total of all the strategies in each bucket.
  - We will use the DDM factors to estimate changes to the existing 2026 ozone air quality projections.

CONTROL STRATEGIES UNDER CONSIDERATION: THREE BUCKETS

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CONTROL STRATEGIES BUCKETS IN 2025 BLUEPRINT DEVELOPMENT FOR BOARD AND AQCC CONSIDERATION

3 buckets of strategies to consider, as well as to evaluate the ozone impacts from implementing individual and combinations of the strategies in the buckets

- **Immediate "off-the-shelf" Ozone season emission reduction actions** for AQCC consideration in 2026 for seasonal application from 2027 onward
- **Year-round and/or Ozone season strategies** discussed & considered by RAQC Board during 2024-25 for AQCC consideration/implementation in 2026/27
- **AQCC already-adopted Rules-on-the-Books or "by then" strategies** – those to take effect in the 2027 through 2030 or by the 2030 timeframe

BUCKET ONE: IMMEDIATE "OFF-THE-SHELF" OZONE SEASON EMISSION REDUCTION ACTIONS

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WHAT DOES "OFF-THE-SHELF" MEAN?

- Now, not later – emission reduction effectiveness starts by May 2027
- 2026 consideration by the Air Quality Control Commission or other decisionmakers for seasonal application from 2027 onward
- Strategies already fully or significantly developed
  - Clear models/examples to follow
  - Feasible to put through consideration process by next year and implemented soon after that
  - Some are assess / evaluate strategies with later adoption in Buckets 2 or 3

STRATEGIES IN BUCKET ONE

Source Category used for Emission Reduction Planning	Color coding key: **Assessment/Data Collection (no direct emission reductions)**; **AQCC-adopted regulations for Required Reductions and/or implementation of Voluntary Emission Reduction Programs**; **Emission Reductions Rules or Programs requiring Legislative Statutory and/or Funding Actions**; **Evaluation / confirmation of emission reduction benefits of already "on-the-books" regulations and longer-term strategies**
Oil & Gas Production	**1) Assess ozone attainment and local impacts effects of Wellsite Venting & Blowdowns regulation**
Permitted Stationary Sources	**2) Assess feasibility and emission reduction effects of tightening Stationary Source Potential-to-Emit (PTE) Permit Limits to Reflect Actual Emissions**
Mobile Sources (On-Road and Non-Road Engines)	**3) Indirect Sources (trip attractors and generators) Data Reporting** **4) Landscape Maintenance Equipment - CDPHE Requirements** **5) Summertime Free Fare Transit**

BUCKET TWO: ANNUAL (YEAR-ROUND) AND/OR OZONE SEASON STRATEGIES

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WHAT COULD "ANNUAL AND/OR SEASONAL OZONE SEASON STRATEGIES" MEAN FOR ATTAINMENT?

- Act as expeditiously as practicable
  - Consideration by the Air Quality Control Commission and/or other decisionmakers in 2026 or 2027
  - Implementation begins in 2026, 2027, or 2028 and continues annually/seasonally
  - Timing would enable lower emissions by 2030 for 2030-32 air quality data planning milestone
  - Emission reduction effectiveness starts no later than May 2028
- Additional time may be desired for the following reasons:
  - To develop / refine some of these strategies
  - To conduct further analysis to support regulatory proposals
  - To plan for / phase in implementation
  - To plan ahead for consideration by decisionmakers
- Some are assess / evaluate strategies with later adoption in Bucket 3
- Not acting as proposed to adopt means emission reductions will occur during / after early 2030s

STRATEGIES IN BUCKET TWO: PART 1

Sourc Category used for Emission Reduction Planning	Color coding key: Assessment/Data Collection (no direct emission reductions); AQCC-adopted regulations for Required Reductions and/or implementation of Voluntary Emission Reduction Programs; Emission Reductions Rules or Programs requiring Legislative Statutory and/or Funding Actions; Evaluation / confirmation of emission reduction benefits of already "on-the-books" regulations and longer-term strategies
Oil & Gas Pre-Production	1) Adopt Wellsite Venting & Blowdowns regulation (assessed in Bucket One) 2) Assess changes to electric drill rig and hydraulic fracturing (frac'ing) engine requirements
Stationary Sources	3) Adopt Limit Daily Emissions by 2030 for Large Point Sources During Ozone Season (assessed in Bucket One)
Mobile Sources (On-Road and Non-Road Engines):	4) Assess Efficacy of Implementing Indirect Source: Voluntary Facility Emission Reduction Plans (VERPs) from best managementpractices building on results from Strategy 3 in Bucket 1 5) Assess Options for Additional Landscape Maintenance Equipment reductions by 2028 6) Non-Road Engines Emisson Targets

STRATEGIES IN BUCKET TWO: PART 2

Source Category used for Emission Reduction Planning	Color coding key: **Assessment/Data Collection (no direct emission reductions);** **AQCC-adopted regulations for Required Reductions and/or implementation of Voluntary Emission Reduction Programs;** **Emission Reductions Rules or Programs requiring Legislative Statutory and/or Funding Actions;** **Evaluation / confirmation of emission reduction benefits of already "on-the-books" regulations and longer-term strategies**
Mobile Sources continued (On-Road and Non-Road Engines):	**7) Assess Opportunities to Enhance Vehicle Registration/Emission Testing Compliance and Options to Improve/Increase Emission Reductions from the Vehicle Inspection & Maintenance (I&M) Program** **8) Analyze viability to continue/modify implementation of Light Duty Vehicle Electrification Incentives**
Area Sources	**9) Assess commercial cooking requirements** **10) Consumer Products VOC Content Limits**

- ***The Bucket 2 list is a great number of strategies to have considered for adoption from mid-2026 into early 2028.***
- ***If there are delays in consideration and adoption, emission reductions will be delayed into the early 2030s due to the ramp-up time for rule effectiveness and penetration into source categories.***

BUCKET THREE: AIR QUALITY CONTROL COMMISSION ALREADY ADOPTED "RULES ON THE BOOKS" OR “ADOPT BY THEN” STRATEGIES

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WHAT DOES "ON THE BOOKS" OR "ADOPT BY THEN" MEAN?

Two parts to this bucket

- Assess, reconsider if needed, and improve existing "rules-on-the-books" strategies with emissions reductions effective by May 2030
  - These longer-term already-adopted regulations need to have emissions reductions and effects on ozone estimated
  - Then we can verify effects of those reductions to occur by 2030 for 2032 attainment demonstration and weight of evidence
- Consider additional strategies to take effect by May 2030
  - Those that may require a longer implementation/phase-in timeframe or to see emissions reductions
  - Bucket 3 is also effectively a cumulative analysis of Buckets 1 and 2, plus these strategies

STRATEGIES IN BUCKET THREE

Source Category used for Emission Reduction Planning	Color coding key: **Assessment/Data Collection (no direct emission reductions)**; **AQCC-adopted regulations for Required Reductions and/or implementation of Voluntary Emission Reduction Programs**; **Emission Reductions Rules or Programs requiring Legislative Statutory and/or Funding Actions**; **Evaluation / confirmation of emission reduction benefits of already "on-the-books" regulations and longer-term strategies**
Oil & Gas Upstream and Midstream	1. Fully assess based on available analyses, the ***on-the-books* effects of AQCC's upstream Oil & Gas NOx intensity rule by 2030** **2) Implement Electric Drill Rig and Frac'ing Engine Requirements (assessed in Bucket Two)**
Permitted Stationary Sources	3) Include ***on-the-books* emission reduction effects of plans by EGU operators statewide in their required Clean Energy Plans by 2030**
Mobile Sources (On-Road and Non-Road Engines):	**4) Indirect Sources: Require Regulatory Facility Emission Reduction Plans (ERP)** **5) Include *on-the-books* 2027-30 implementation effects to reduce mobile source emissions within the nonattainment area, resulting from adopted Clean Cars and Trucks regulations** **6) Zero-Emission Forklifts** **7) Assess and Quantify Ozone Reduction Benefits of Ongoing Emission Reductions from Changes in Design and Operation of Commercial Buildings by 2030**

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DRAFT RECOMMENDATIONS

BLUEPRINT DRAFT PRIMARY RECOMMENDATIONS

Achieve attainment of the 70 ppb National Ambient Air Quality Standard for ozone in the 2030-32 period, by proposing a viable and sufficient package of emission reduction policies for implementation by 2030.

BLUEPRINT DRAFT SECONDARY RECOMMENDATIONS

- *Timely, coordinated, consistent emission controls planning and tracking in all activities of state agencies and regional entities*
- *State agencies provide timely estimates of adoption evaluation inputs as requested and forecasts of their implementation resource needs, i.e., staffing, analysis costs, computing needs, etc.*
- *Coordination and collaboration across Colorado state government to integrate consideration of air quality impacts and benefits of the collective state government*
  - *Results-oriented data and metrics as to how potential programs and policies are evaluated and how programs are set up/implemented, including in policy areas with longer-term impacts such as housing development and community/city/transit planning, climate mitigation/adaptation/resilience, etc.*

BLUEPRINT DRAFT SECONDARY RECOMMENDATIONS

- *Coordination and collaboration with other states also experiencing ozone issues to share best practices and lessons learned*
- *Assess the equity of uniform strategy stringency and applicability to all regulated and/or affected parties in strategy evaluation*
- *Resources and financial support to improve air quality through funding incentive programs, staff resources to run programs, etc. and opportunities to get those in place by 2030*
- *Associated additional research and data and/or additional resources, timely by early 2026 (health impacts study, modeling estimating impacts on ozone levels)*
- *Revisit the Blueprint strategic plan periodically to determine if additional strategies are needed*

INDIRECT SOURCES IN THE DRAFT BLUEPRINT

OVERVIEW OF PREVIOUS THOUGHTS ON RECOMMENDATION OPTIONS (JUNE WG MEETING)

Recommendation Element	Menu
Definition of indirect sources addressed	Option 1: Reporting Requirement
Evaluation and tracking (data sources, metrics)	Option 2: Best Management Plan Requirement
Implementation mechanism (reg/vol)	Option 3: Best Management Plan Voluntary Program
Implementation timeframe/ milestones	Hybrid and/or other options
Entity tracking & approving data	
Decisions to move to next milestone	

INDIRECT SOURCES IN THE DRAFT BLUEPRINT

Bucket	Phased indirect source strategies	Other related strategies
1	Indirect Source Data Reporting	• Landscape Maintenance Equipment – Phase 1 CDPHE requirements • Summertime free fare transit • Enhanced license plate registration evaluation and enforcement strategy(ies)
2	Voluntary Facility Emission Reduction Plans	• Landscape Maintenance Equipment – concepts for Phase 2 CDPHE reqs. • Develop and begin implementation of Non-Road Engines Emission Targets program • Expand vehicle Inspection & Maintenance (I&M) program
3	Regulatory Facility Emission Reduction Plans	• *On-the-books* 2027-30 implementation effects in the nonattainment area of adopted Clean Cars and Trucks regulations • Assess viability and need for continued Light Duty Vehicle Electrification Incentives • Zero-Emission Forklifts

INDIRECT SOURCE EMISSION REDUCTIONS (ISER) PHASE ONE IN BUCKET ONE

Indirect Source Data Reporting Strategy Overview

Source Sector(s) for emission reductions: Information gathering for Mobile Sources (vehicles & equipment) – first step for potential emission reduction programs/regulation design

Proposed timeline:

- **Proposal and adoption:** By end of 2026
- **Reductions effective:** No expected reductions
- **Phased?:** This program could potentially be phased in by facility size, type, or other factor(s)

Applicable pollutants & expected reductions in short tons/summer day: No emissions reductions expected

Implementation option(s): AQCC rule or Voluntary program

ISER PHASE TWO IN BUCKET TWO

Voluntary Facility Emission Reduction Plans Strategy Overview

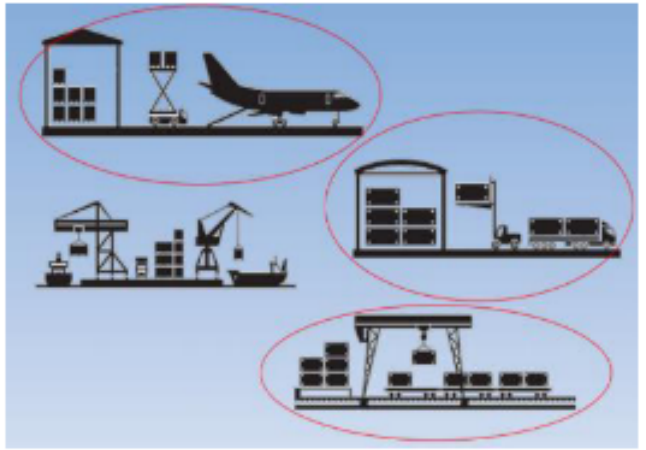
Source Sector(s) for emission reductions: Mobile Sources (vehicles & equipment) – direct reduction and/or offsets

Proposed timeline:

- **Proposal and adoption:** By end of 2026
- **Reductions effective:** Summer 2027-2028
- **Phased?:** This program could potentially be phased in by facility size, type, or other factor(s)

Applicable pollutants & expected reductions in short tons/summer day: Tailpipe NOx, VOC, CO2. Reductions to be determined.[1]

Implementation option(s): Voluntary program



[1] Please see the indirect source data reporting strategy overview for information about gathering data to project potential emission reductions.

ISER PHASE THREE IN BUCKET THREE

Regulatory Facility Emission Reduction Plans Strategy Overview

Source Sector(s) for emission reductions: Mobile Sources (vehicles & equipment) – direct reduction and/or offsets

Proposed timeline:

- **Proposal and adoption:** By end of 2027
- **Reductions effective:** Summer 2028-2029
- **Phased?:** This program could potentially be phased in by facility size, type, or other factor(s)

Applicable pollutants & expected reductions in short tons/summer day: Tailpipe NOx, VOC, CO2. Reductions to be determined.[1]

Implementation option(s): Regulatory implementation

[1] Please see the indirect source data reporting and voluntary facility emission reduction plans strategy overviews for information about related control strategies proposed for earlier implementation.

ISER WORKGROUPS

Stakeholder discussions over the past year focusing on these trip generators and attractors:

- Airports
- University/Higher Education Campuses
- Warehousing & Distribution Operations
- Large Entertainment Venues

QUESTIONS/DISCUSSIONS

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