

# Ozone Planning in Colorado's Front Range

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# Regional Air Quality Council

- **Lead agency for air quality planning for the 7-county Denver region**
- **Established by Governor's Executive Order**
- **Board composed of local government officials, business, health organizations, transportation agencies, citizens, CDPHE, CDOT, DOLA**
- **Two primary responsibilities:**
  - Prepare plans to comply with air quality standards and improve air quality
  - Implement programs of public education
- **Coordinate with NFRMPO on Front Range ozone planning**

# Ozone History

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- EPA established more stringent 8-hour ozone standard in 1997
- Early Action Compact with EPA – 2002
- Ozone Action Plan – 2004
- Region violated 8-hour standard in 2007 based on 2005-2007 3-year average
- EPA designated the Denver/NFR region nonattainment in November 2007
- EPA established a new, even more stringent ozone standard in March 2008
- New ozone plan to EPA in July 2009
- EPA will propose its reconsideration of 2008 standard in December 2009

# Early Action Compact

- In Dec. 2002 state and regional agencies entered into a voluntary agreement with EPA to address ozone
- Region committed to developing an Ozone Action Plan earlier than would normally be required
- Region committed to meeting several planning/implementation milestones
- In return, EPA agreed to defer any nonattainment designation and any resulting requirements, pending the area coming into attainment by 2007

# Nonattainment Designation

- **In April 2004 EPA designated nearly 500 counties nationwide as nonattainment for the 1997 8-hour ozone standard**
- **EPA established an expanded 8-hour ozone nonattainment area boundary for the Denver area to include the north Front Range**
  - All of Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas, and Jefferson counties
  - Portions of Larimer and Weld counties
- **Nonattainment area designation for Denver/NFR area was deferred under terms of an Early Action Compact agreement with EPA**



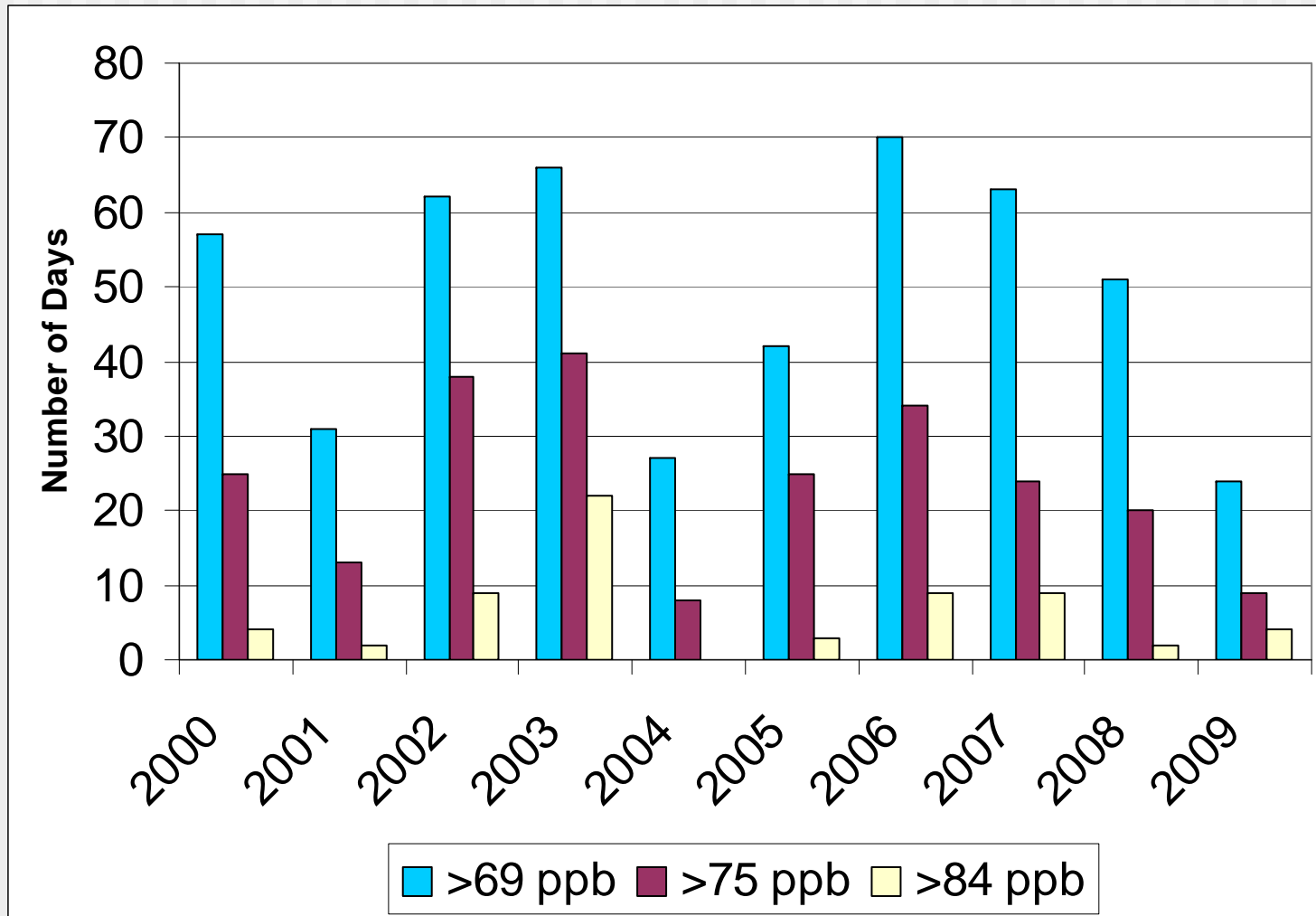
# 2009 Ozone Plan

- **Plan to attain .08 ppm (1997) standard**
  - 81% control of condensate tanks – up from 75% in 2008
  - Auto ignitors for all new tanks and existing tanks > 50 tpy
  - Electronic surveillance pilot program underway
  - Pneumatic device retrofits completed
  - Tighter VOC/NO<sub>x</sub> RACT requirements are in place for new stationary sources
  - Tighter I/M cut points and expansion of I/M program to North Front Range
  - Additional fleet and engine turnover occurring
- **2007-2009 data demonstrates attainment of 1997 standard**

# .075 ppm (2008) Standard

- **Nonattainment designations for 2008 standard**
  - State recommendation submitted March 2009
    - Based on 2006-2008 ozone data
    - Denver/NFR only area out of compliance with 2008 standard
  - EPA makes final designation by March 2010
    - Based on 2007-2009 ozone data
    - Process will be delayed to August 2011 due to EPA reconsideration of standard
- **Attainment SIPs**
  - Due by March 2013 (3 years after final designation)
    - Process will be delayed to end of 2013 by EPA reconsideration
- **Attainment Dates**
  - 2013-2030 depending on severity of problem and classification
    - Classifications will be addressed by future EPA rulemaking

# Days Above .070 ppm (Denver/North Front Range Area)



# Current Ozone Planning

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- **2015/2020 Ozone Modeling**
  - Preliminary modeling
  - Modeling improvements and enhancements
- **Strategy evaluations**
  - Large NO<sub>x</sub> sources
  - Fuels options
  - Transportation sources
  - Other important sources
- **Coordination with other ongoing initiatives– Regional Haze and RMNP**

# Ozone Planning Timeline

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- Preliminary ozone modeling – 2009/2010
- Potential interim ozone strategies – 2010/2011
- Discussion of transportation strategies – 2010/2011
- Updated ozone modeling and SIP development – 2011/2012
- SIP submittal to EPA -- 2013

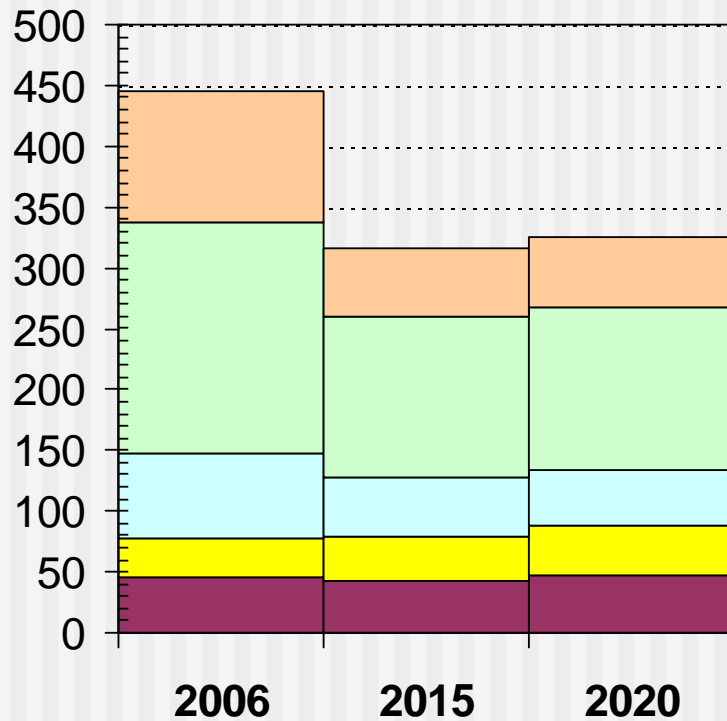
# Current Ozone Modeling

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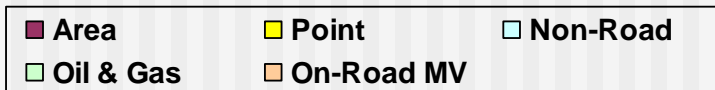
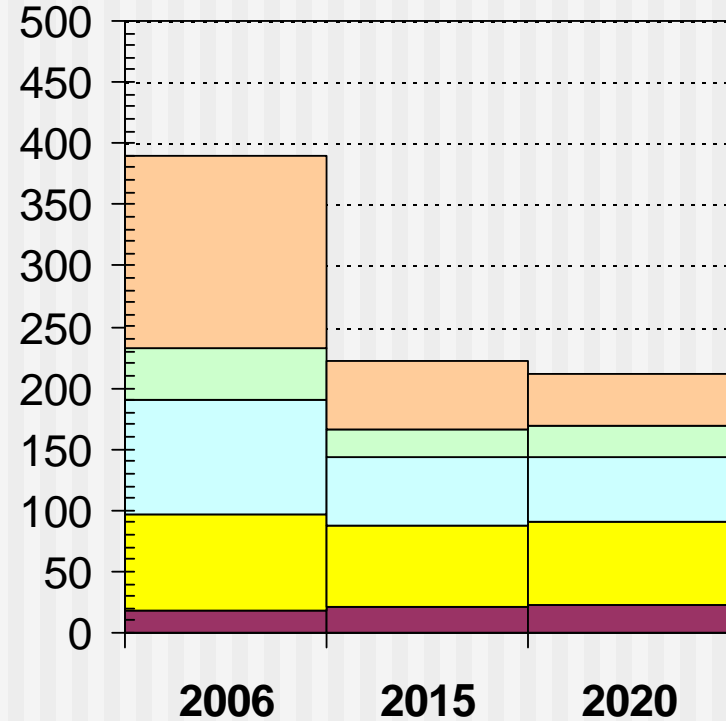
- **Preliminary 2015/2020 Base Case**
  - Projections based on currently adopted measures and expected growth
- **2020 Source Apportionment**
  - Assist with apportioning contributions from various sources and geographic regions
- **Emission reduction sensitivity tests**
  - Impact of gross emission reductions from source categories and regions
- **Modeling platform improvements**

# Future Emission Projections

## VOC



## NOx



# Preliminary Conclusions

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- **Current and planned efforts will continue to reduce ozone approaching the new standard**
- **However, current and planned efforts will not be sufficient to attain the standard at all monitors**
- **Ozone transport is significant and important**
- **Regional NO<sub>x</sub> sources are important**
- **Local NO<sub>x</sub> and VOC sources are still important**
- **Future attainment will require additional national, regional, and local strategies**

# For More Information

- Go to [www.OzoneAware.org](http://www.OzoneAware.org)
  - “2015 and 2020 Ozone Projections for the Denver Area” (Morris et al., July 15, 2009)
    - Revised 2006 Base Case w/ updated O&G emissions for the Piceance Basin and Plume-in-Grid
    - 2015 and 2020 Emissions Modeling
    - 2015 and 2020 Ozone Projections (CAMx Modeling)
    - [http://www.ozoneaware.org/postfiles/Denver\\_2015-2020\\_Ozone\\_Projections\\_Jul15\\_2009.pdf](http://www.ozoneaware.org/postfiles/Denver_2015-2020_Ozone_Projections_Jul15_2009.pdf)
  - “2020 Ozone Source Apportionment Modeling for the Denver Area” (McNally et al., July 15, 2009)
    - OSAT and APCA Ozone Source Apportionment
    - 2020 Ozone Source Apportionment Modeling
    - Recommended VOC/NO<sub>x</sub> Sensitivity Tests
    - [http://www.ozoneaware.org/postfiles/Draft%20Final%202020\\_OSAT\\_Report.pdf](http://www.ozoneaware.org/postfiles/Draft%20Final%202020_OSAT_Report.pdf)