

Colorado Department of Public Health & Environment

Air Pollution Control Division

Volkswagen and Audi Clean Air Act Partial Settlement:

Background:

In September 2015, EPA found many VW cars had defeat device installed in their diesel engines that recognized when the vehicle was being tested.

- Devices sensed test scenarios and recalibrated the engine, putting the car in testing mode, where the engine ran below normal power and performance.
- Emission levels could then meet and pass the federal standards.
- On the road, devices switched engines back to normal driving mode resulting in Nitrogen Oxide pollutants (NO_x) up to 40 times higher than in test mode.

Why does it matter?

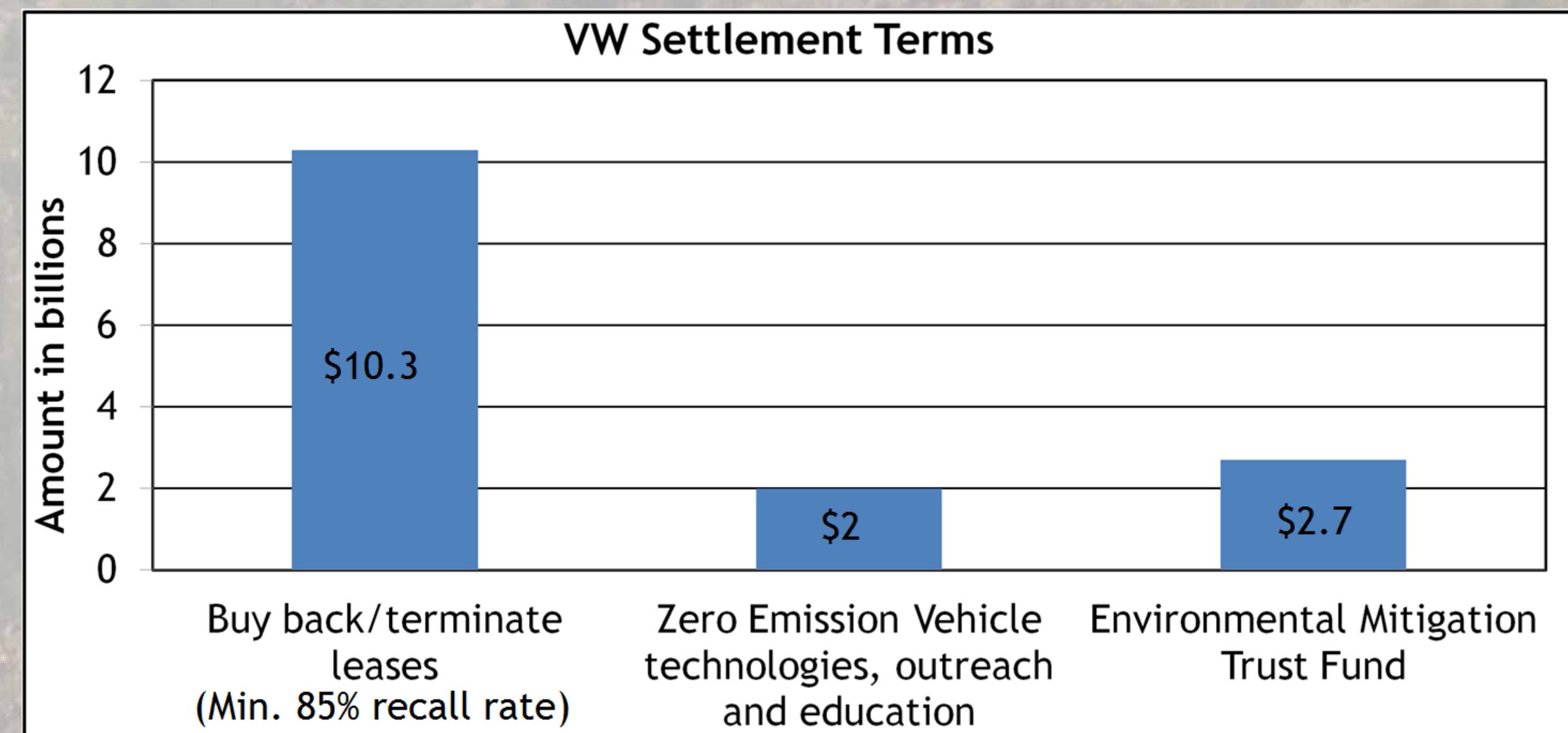
- 11 million diesel vehicles worldwide
- 482,000 diesel vehicles with 2.0 liter E189 engine in U.S.
- Impacts in Colorado (from October 2015 dataset)
 - 9,350 VW or Audi 2.0 Liter diesels statewide (0.27% of the vehicle fleet)
 - 6,065 VW or Audi 2.0 Liter diesels in the Ozone Non-Attainment Area (0.25% of the state vehicle fleet)
 - Excess statewide NO_x emissions = 0.22 to 0.65 tons per day

What is the VW and Audi CAA Partial Settlement?

EPA and California sued VW, Audi, Porsche

- VW & Audi signed partial Consent Decree
 - Admitted to using defeat devices on 2.0 L engines model year 2009-2015
- Settled mitigation claims for 2.0L vehicles
 - Covers Jetta, Golf, Passat, Beetle, Audi A3
 - Does not resolve penalties or 3.0L vehicles
 - Other lawsuits are pending
- Partial Consent Decree signed by federal judge on October 25, 2016

Settlement Terms:



Purpose of Environmental Mitigation Trust:

- Reduce NO_x emissions where the covered vehicles were, are, or will be operated

What does this mean for Colorado?

- \$61.3 million initial allocation for CO from Trust Fund
 - Spend only on eligible actions
 - Receive funds over 3-10 years
 - Return unused funds after 15 years

Colorado must describe how each project “mitigates the impacts of NO_x emissions on communities that have historically borne a disproportionate share of the adverse impacts of such emissions”

Mitigation Projects Eligible for Funding:

- Class 8 (large) local freight and port drayage trucks
- Class 4-8 school, shuttle, or transit buses
- Railroad freight switchers
- Class 4-7 (medium) local freight trucks
- Forklifts
- Airport ground support equipment
- Up to 15% for light duty zero emission vehicle supply equipment
- Certain boats & port equipment
- Diesel emission reduction act (DERA) option
- Admin costs

What is the timeline?

Event	Approximate Time Frame
Court approved the partial settlement	October 25, 2016
Trust takes effect	Spring 2017
States elect to become beneficiaries	Summer - Fall 2017
States notified of beneficiary designation	
Colorado solicits applications	Summer 2017
Colorado files a Beneficiary Mitigation Plan	Fall 2017
Colorado may request funds	Fall 2017
Colorado begins to receive funds	End of 2017

How to apply for funding:

- Funding process being determined
- No funding decisions have been made
- CDPHE, CDOT & CEO gathered input fall 2016
- State agencies will set funding priorities and selection criteria
- Public application plan

CDPHE anticipates releasing the application plan in Spring of 2017

Ozone/NO_x Regional Trends

Nitrogen Oxides (NO_x)

- Plays major role in ozone formation (“ozone precursor”) particulate matter, haze and acid rain. Primarily nitrogen dioxide (NO₂) and nitric oxide (NO).

- Man-made significant sources: burning fuel in automobiles, industrial engines and power plants.

Health and Environmental Effects of NO_x

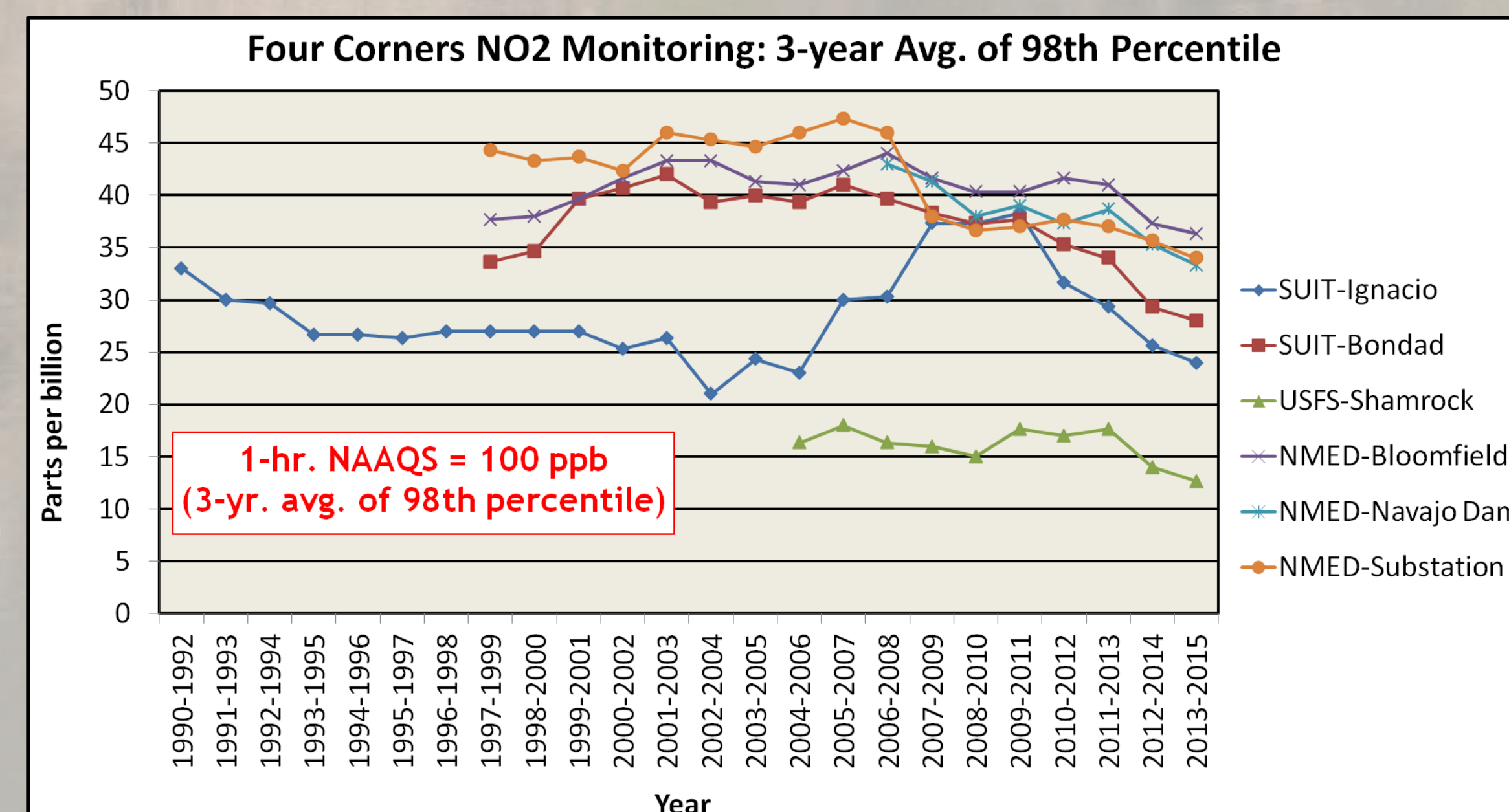
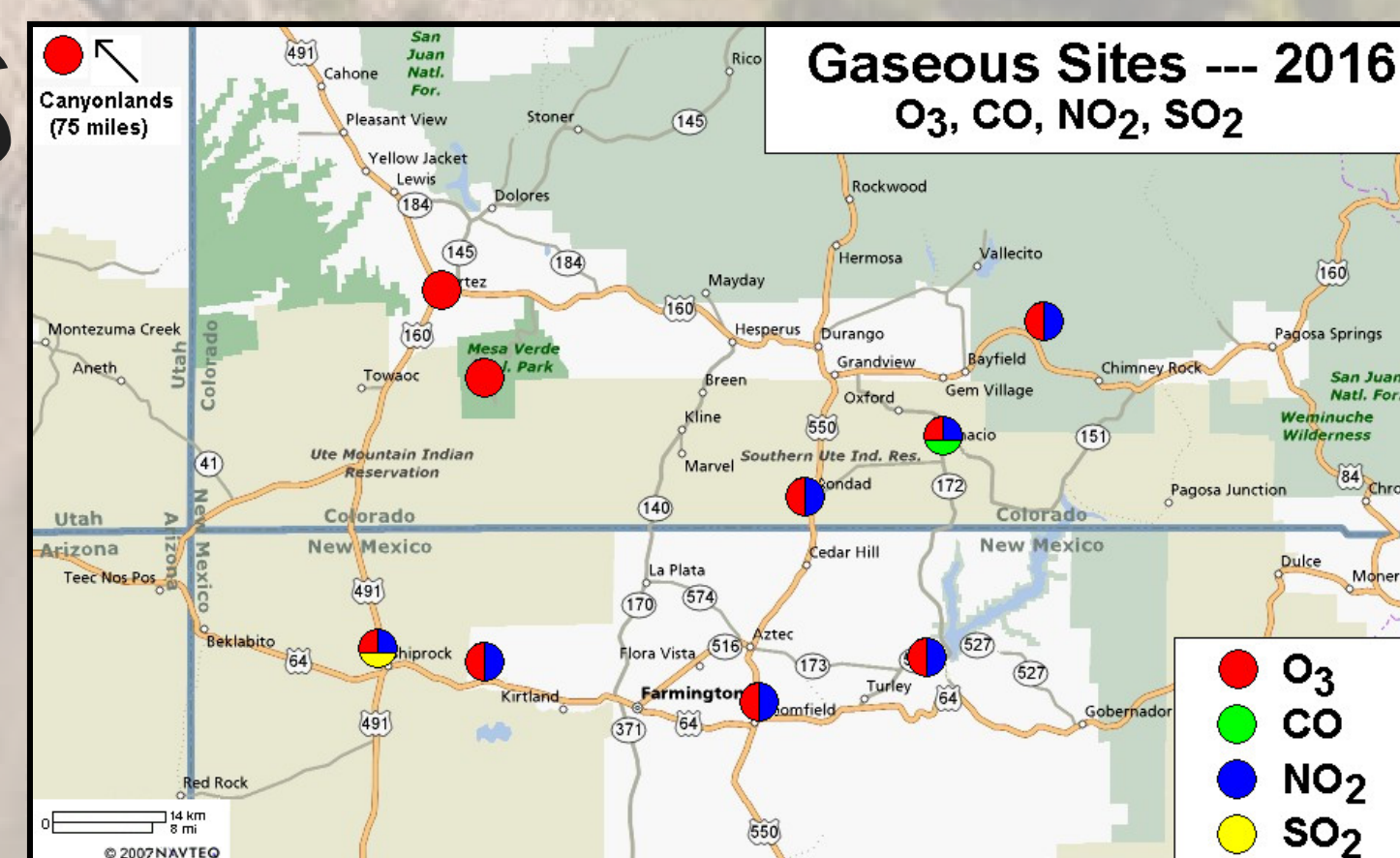
- Health effects: increase in respiratory problems, causes symptoms in asthmatics & increases susceptibility to respiratory infections.
- Environmental effects: Contributor to acid rain, ozone, & visibility impairment. Changes in plant species composition & diversity in terrestrial and wetland systems. Eutrophication (excessive algae growth) in lakes & streams. Severe depletion of dissolved oxygen and increased levels of toxins harmful to aquatic life.

Impacts in Colorado

- Colorado monitors NO₂ at two sites: downtown Denver (termed CAMP) and Welby (north of Denver). Both sites show NO₂ values that are well below National Ambient Air Quality Standards (NAAQS), similar to national trends, which are currently at the lowest levels recorded in the past 20 years. Other sites in Colorado also show levels well below the standard.

- Four Corners area sites and air pollution source categories are shown to the right. NO₂ concentrations are expected to continue decreasing in the future per new federal and state regulations aimed at reducing ozone precursors.

This map shows the air monitors from which the NO_x and ozone trend data was collected. CDPHE works with federal partners including the U.S. Forest Service and the National Park Service as well as other states to compile this data.



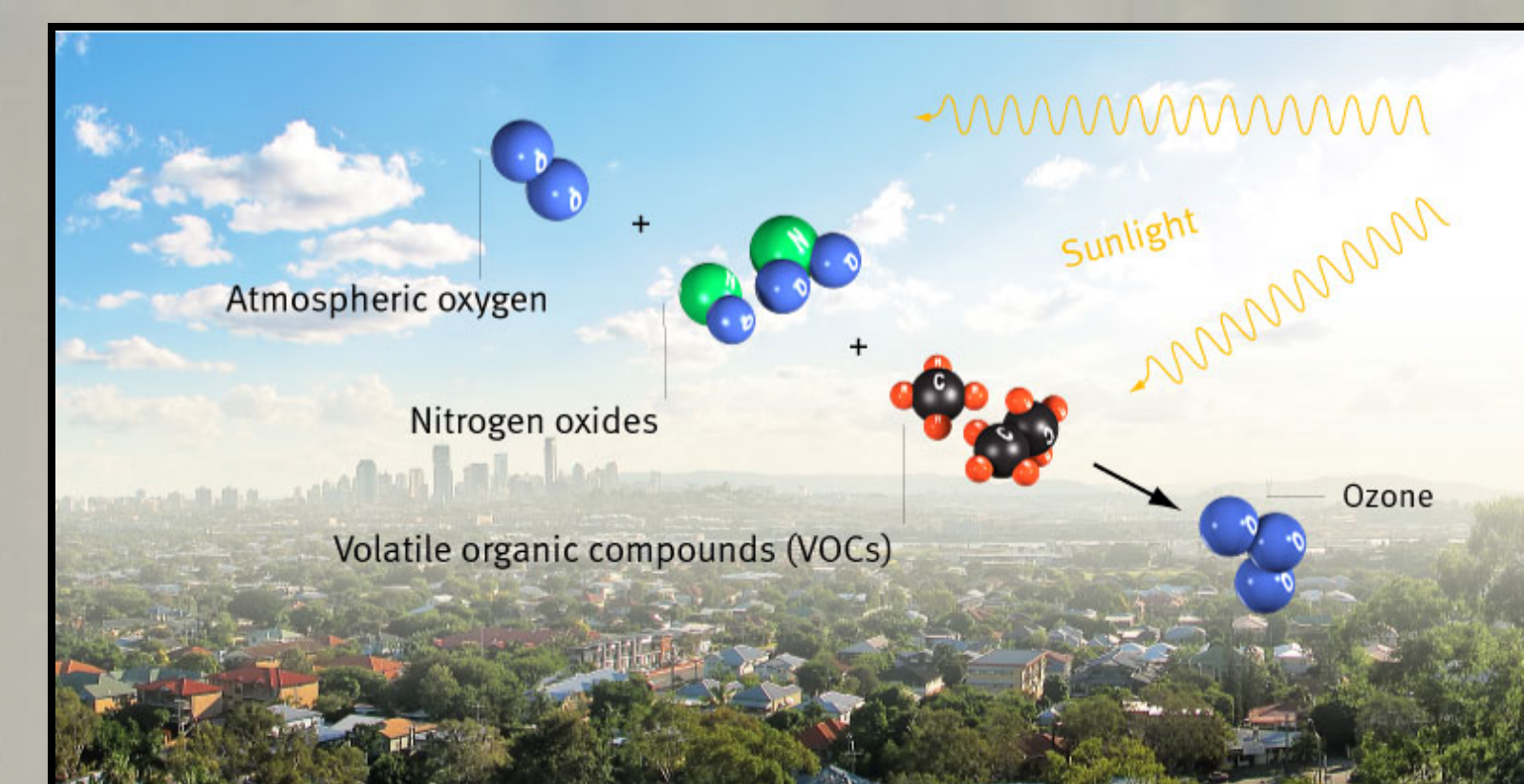
Ozone:

- Formed through interaction between volatile organic compounds (VOCs) & nitrogen oxides (NO_x) in presence of sunlight.

- Colorless and odorless at ambient concentrations. Typically not emitted from individual sources directly.

- Emissions from motor vehicles, industry, oil and gas production, and vegetation contribute to ozone formation.

- Highest ground-level ozone concentrations usually occur in the summer when hot, still days cause reactive pollutants to form ozone. However, high ozone levels have been observed in winter in areas with high oil and gas production activities.

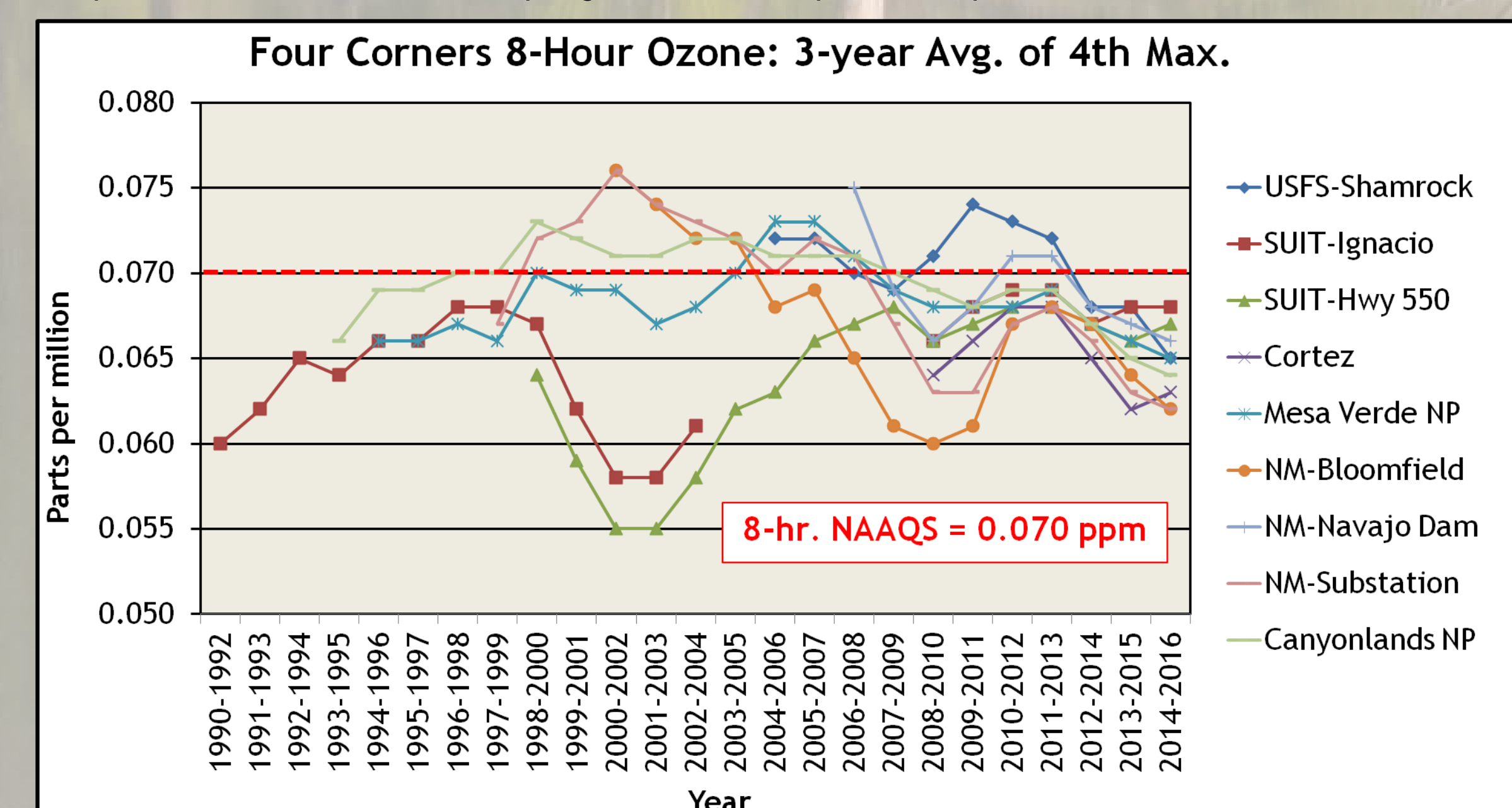


Health and Environmental Effects

- Causes breathing difficulties & respiratory infections in the elderly, the young & those with preexisting ailments such as asthma. Can cause premature mortality. Even healthy people who exercise or work outdoors can experience respiratory effects from ozone. Causes detrimental effects on plants and ecosystems.

Impacts in Colorado

Denver-metro and the North Front Range have been designated by the EPA as a moderate nonattainment area for ozone for failing to meet the 2015 ozone standard of 70ppb. The rest of Colorado presently attains the ozone standard. The Colorado Air Quality Control Commission (AQCC) takes regulatory actions to reduce ozone precursors; adopted regulatory changes to significantly reduce VOC emissions from oil and gas production in 2014. In 2011, the Commission approved a regional haze plan that includes substantial NO_x emission reductions that will also improve ozone throughout the state. New federal motor vehicle emissions standards and Colorado's motor vehicle inspection and maintenance programs also help reduce precursors of ozone.



Ozone concentrations in the four corners region (above) have been declining over the past 3 years and are below the existing NAAQS of 70ppb. It is expected that these levels will drop further in the future due to new and existing state and federal regulations aimed at reducing ozone precursors.