

# AIR QUALITY TRENDS IN CLARK COUNTY

CLARK COUNTY DEPARTMENT OF  
AIR QUALITY AND ENVIRONMENTAL  
MANAGEMENT

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# Clark County Pollutants of Concern

- Carbon monoxide
- Particulate matter
  - PM<sub>2.5</sub>
  - PM<sub>10</sub>
- Ozone

# Carbon Monoxide

- Clark County last exceeded the CO NAAQS in 1998
- Clark County now has 7-years of clean CO data
- DAQEM is developing a carbon monoxide maintenance plan and a redesignation request for submittal to EPA in 2006.

## Particulate Matter - PM<sub>2.5</sub>

- Clark County is in attainment with both the annual and 24-hour PM<sub>2.5</sub> NAAQS
- Most recent 3-years of data complies with proposed PM<sub>2.5</sub> NAAQS revision
- Worst exceedance event – 150 µg/m<sup>3</sup>
- Event occurred July 4, 2003

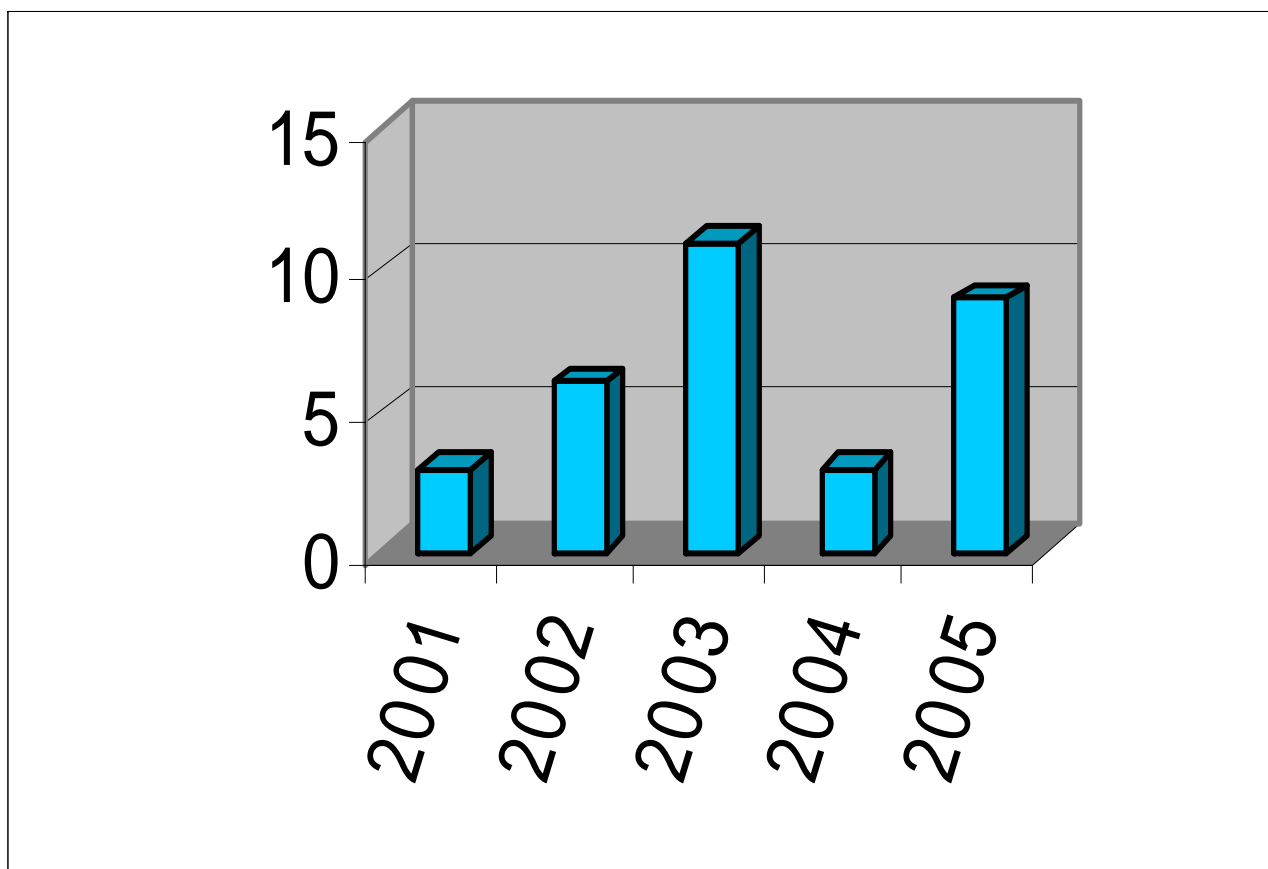
## Particulate Matter – PM<sub>10</sub>

- Clark County attained the annual PM<sub>10</sub> NAAQS at the end of 2001
- PM<sub>10</sub> SIP models attainment of the 24-hour standard at the end of 2006
- 2004 – two wind driven exceedances of the 24-hour NAAQS in the nonattainment area
- 2005 – no exceedances of the 24-hour NAAQS in the nonattainment area

# Ozone

- Clark County redesignated to basic nonattainment for the 8-hour Ozone NAAQS in 2004
- Designation based on 2001, 2002, and 2003 data
- Design value at redesignation = 0.086 PPM
- Clark County initiated studies in 2004
  - Ozone characterization study
  - Ozone field study (field work occurred in 2005)

# Ozone Exceedance Days



# Ozone Characterization Study

- Analyzed data for years 1999 through 2003
- Determined weather patterns are not a good predictor of ozone concentrations
- Determined local sources are primarily responsible for over half of all exceedance days
- Determined California transport plays a significant role in Clark County ozone concentrations

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# Summary of Exceedance Days and Likely Sources

Year	Local	Transport	Total
1999	4	1	5
2000	2	1	3
2001	2	0	2
2002	2	4	6
2003	7	4	11

## Ozone – 2005 Data

- Extensive field measurements made in 2005
  - Ground level SLAMS and saturation samplers
  - Upper air measurements using powered aircraft, balloons and glider
- Data analysis almost complete and reports under development
- Eight exceedance days occurred during study
- Highest recorded 8-hour value = 0.101 PPM
- Two exceedance days driven by wildfires



## **Paved Road Studies – Phase I**

- Phase I feasibility study completed in 2004
- Utilized TRAKER (DRI) and SCAMPER (UCR CE-CERT) mobile measurement systems
- Sampled valley-wide worst case and best case areas to evaluate equipment

## Paved Road Studies – Phase II

- Phase II study occurred in February of 2005
- Sampling route modified to better reflect overall valley conditions
- Study occurred over a 4-day period
- Other agencies invited to observe
  - EPA Region IX
  - EPA OAQPS
  - Maricopa County

## Paved Road Studies – Phase II

- Study contractors and equipment:
  - DRI TRAKER system (Testing Re-entrained Aerosol Kinetic Emissions from Roads)
  - UCR CE-CERT SCAMPER system (System of Continuous Aerosol Monitoring of Particulate Emissions from Roadways)
  - UNLV (AP-42 sampling)
- DAQEM staff are developing a unified report

## **Paved Road Studies – Phase III**

- Phase III study occurred November of 2005
- Study designed around SCAMPER system and AP-42 road silt samples
- Study focused on road infrastructure development and deposition sources for local, collector and arterial streets
- Utilized video recording system on SCAMPER
- Data variability less than in previous studies

## Paved Road Studies – Phase III

- SCAMPER measurements spatially consistent with AP-42 estimates, but only 1/3 of the values
- DAQEM currently reviewing draft report
- Anticipate release to EPA Region IX next week
- Report addresses OAQPS key issues
  - Emissions comparison to current AP-42 method
  - Estimates of uncertainty

## Paved Road Studies – Phase IV

- Planned Phase IV “empirical” study
  - Scope of work under development
  - Target date August 2006
- Planned Phase IV study components
  - Use both SCAMPER and TRAKER systems
  - AP-42 sampling
  - Upwind/downwind monitoring
  - Deposition of known quantities of road silt

# Paved Road Studies – AP-42 Assessment

- UNLV analysis of historical AP-42 data
  - Clark County has collected AP-42 silt samples beginning in 2002
  - Contracted with UNLV to conduct statistical assessment of trends
  - Interim report submitted, work is ongoing
  - At present, AP-42 estimates are the only approved method for transportation conformity use