

# MAG 2013 Carbon Monoxide Maintenance Plan for the Maricopa County Area

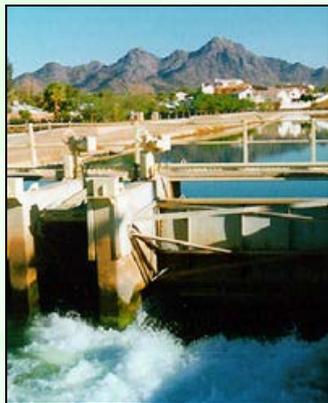
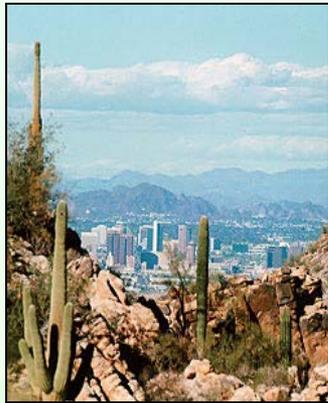
**Air Quality Technical Advisory Committee**

**July 26, 2012**



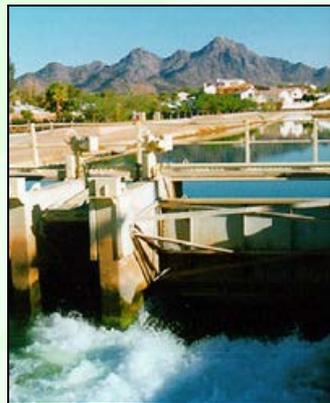
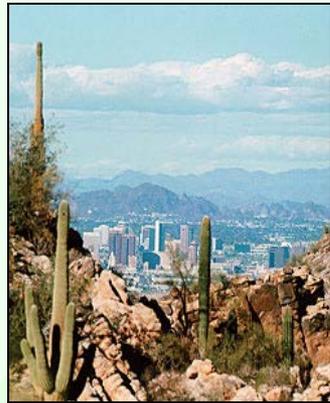
# MAG Carbon Monoxide (CO) Plans for the Maricopa County Area

- Revised 1999 Serious Area CO Plan, January 2001
  - Demonstrated attainment of the CO standards by 2000
  - No monitored violations of the one-hour CO standard since 1986
  - No monitored violations of the 8-hour CO standard since 1996
- CO Redesignation Request and Maintenance Plan, May 2003
  - Demonstrated maintenance of the CO standards through 2015
  - Established transportation conformity budgets for 2006 and 2015
- EPA approved both of these plans and redesignated the Maricopa County Nonattainment Area to attainment for CO, effective April 8, 2005
- Section 175A(b) of the Clean Air Act requires an additional plan demonstrating maintenance of the CO standards ten years beyond the initial 10-year period
  - Due eight years after the attainment designation (April 8, 2013)
  - Must demonstrate attainment 10 years after 2015 (through 2025)



# Draft Modeling Protocol for the MAG 2013 CO Maintenance Plan

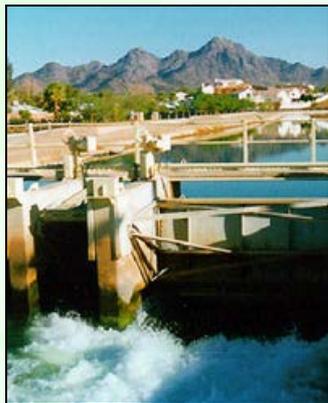
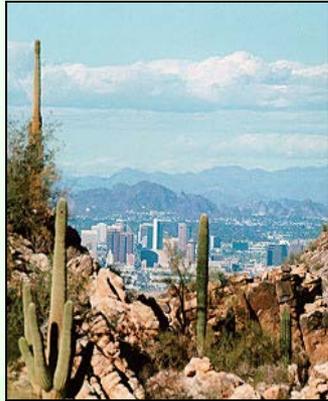
- CO standards
  - 2nd highest monitored value each year should not exceed
    - 35 parts per million (ppm) for one hour
    - 9 ppm for an 8-hour average
- New maintenance plan will demonstrate maintenance of these standards through 2025 using 3 different analyses
  - Emissions Inventory Comparison
  - Scaling Maximum Concentrations
  - Intersection Analysis



# Draft Modeling Protocol for the MAG 2013 CO Maintenance Plan

## #1 Emissions Inventory Comparison

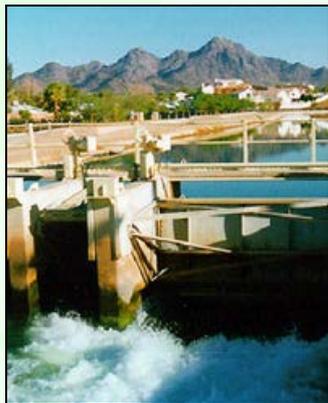
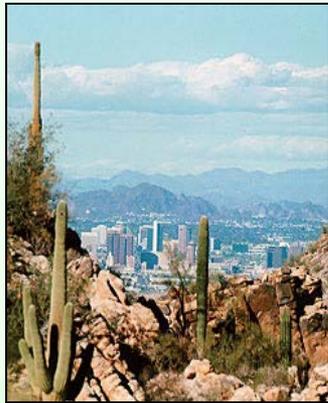
- Compare emission trends in 2006, 2008, 2015 and 2025
- 2008 emissions derived from the MCAQD 2008 Periodic Emissions Inventory for CO
- All inventories will be use the latest EPA-approved models
  - MOVES2010b, NONROAD2008a, and EDMS version 5.1.3
- 2006 and 2008 emissions will be compared with actual monitored concentrations
  - 2<sup>nd</sup> highest 8-hour CO concentration at all monitors was 4.6 ppm in 2006 and 3.0 ppm in 2008



# Draft Modeling Protocol for the MAG 2013 CO Maintenance Plan

## #2 Scaling Maximum Concentrations

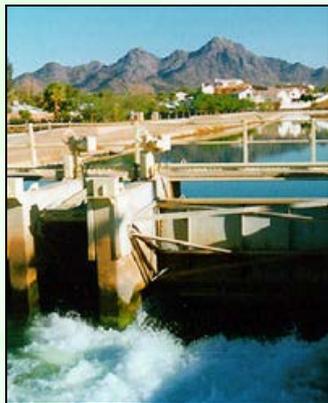
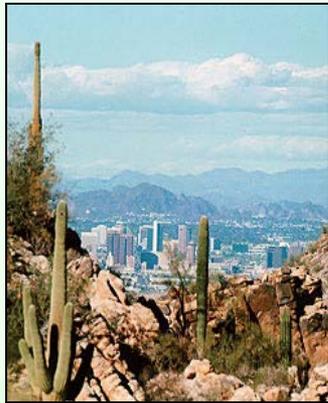
- Use maximum modeled 8-hour CO concentrations for 2006 and 2015 from MAG 2003 CO Maintenance Plan
  - Urban Airshed Model (UAM) and CAL3QHC (intersection hotspot model)
- Scale maximum modeled concentrations based on output of new versus old emission models for 2006 and 2015
  - i.e., MOBILE6 vs. MOVES for onroad mobile source emissions
- Project maximum concentrations to 2025 based on the ratio of 2025 emissions to 2006 and 2015 emissions



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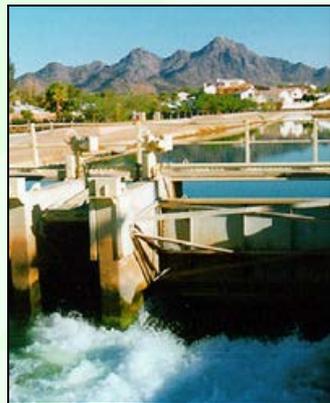
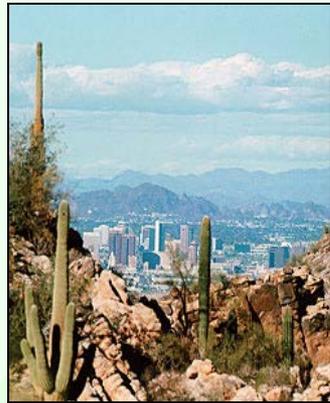
## #3 Intersection Analysis

- Use CAL3QHC to model CO emissions at potentially high traffic volume and congested intersections in 2025
- Ensures that high traffic/congested intersections will not contribute to an exceedance of the CO standard in 2025
- In accordance with EPA guidance, six intersections will be selected from the twelve intersections projected to have the highest traffic volumes or worst congestion in 2025
- Background concentration in 2025 = average of highest 8-hour ozone concentrations in 2007-2009 multiplied by the ratio of 2025 to 2008 emissions



# Draft Modeling Protocol for the MAG 2013 CO Maintenance Plan

- All three modeling analyses must demonstrate that the CO standards are met in 2025
- In addition, MAG will perform a weight of the evidence demonstration
  - Demonstrate declining trends in monitored concentrations
  - Show that the declining concentrations are not due to unusually favorable meteorological conditions
    - Temperatures
    - Wind speeds
    - Mixing heights and atmospheric stability
- The maintenance plan will also establish a new 2025 transportation conformity budget for CO
  - Once EPA finds this budget to be adequate or approves the Plan, the budget will be applied in MAG conformity analyses for all horizon years after 2024



## Schedule

- **Finalize modeling protocol document - Aug 31, 2012**
  - Draft sent to EPA for review on June 12, 2012
  - EPA concurred with modeling approach on June 25, 2012
  - Draft modeling protocol sent to ADEQ, ADOT, and MCAQD for review and comment on June 27, 2012
- **Develop CO emission inventories - Aug 31, 2012**
- **Perform CAL3QHC hotspot modeling - Sept 30, 2012**
- **Conduct maintenance modeling - Oct 31, 2012**
- **Prepare the Draft CO Maintenance Plan and Technical Support Document (TSD) - Nov 30, 2012**
- **Release the Draft Plan and TSD for the 30-day public comment period - January 2013**
- **Potential action by MAG Air Quality Technical Advisory Committee - February 2013**
- **Potential action by MAG Management Committee and Regional Council - March 2013**
- **Submit to ADEQ/EPA - End of March, 2013**



For more information

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