



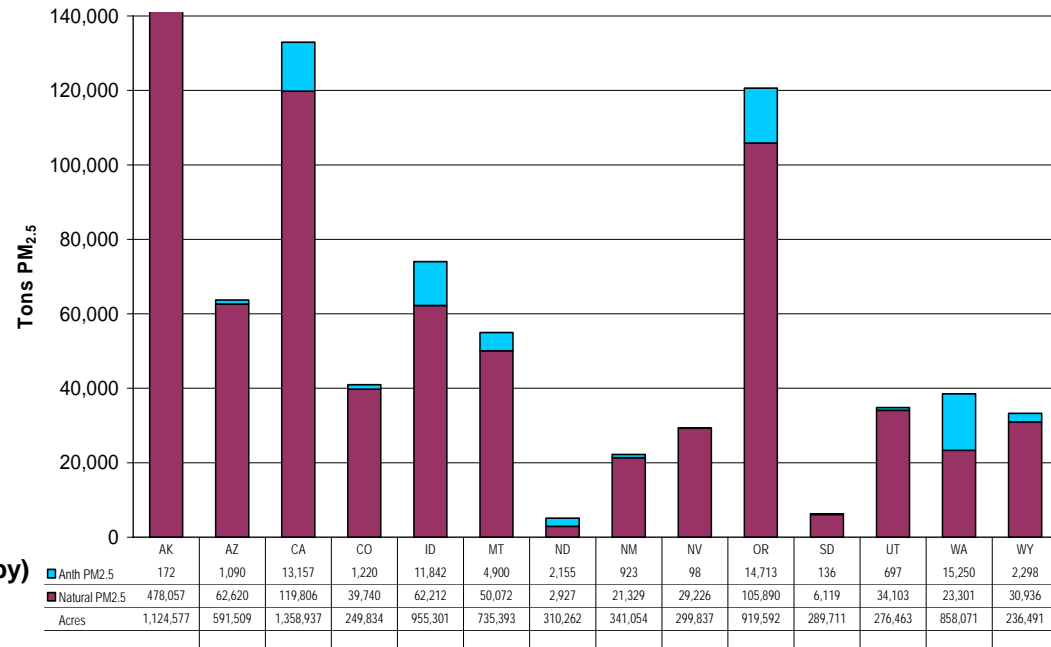
Demonstrating Reasonable Progress Protocol – Key Points Synthesis - 4/18 State Presentations

Implementation Workgroup

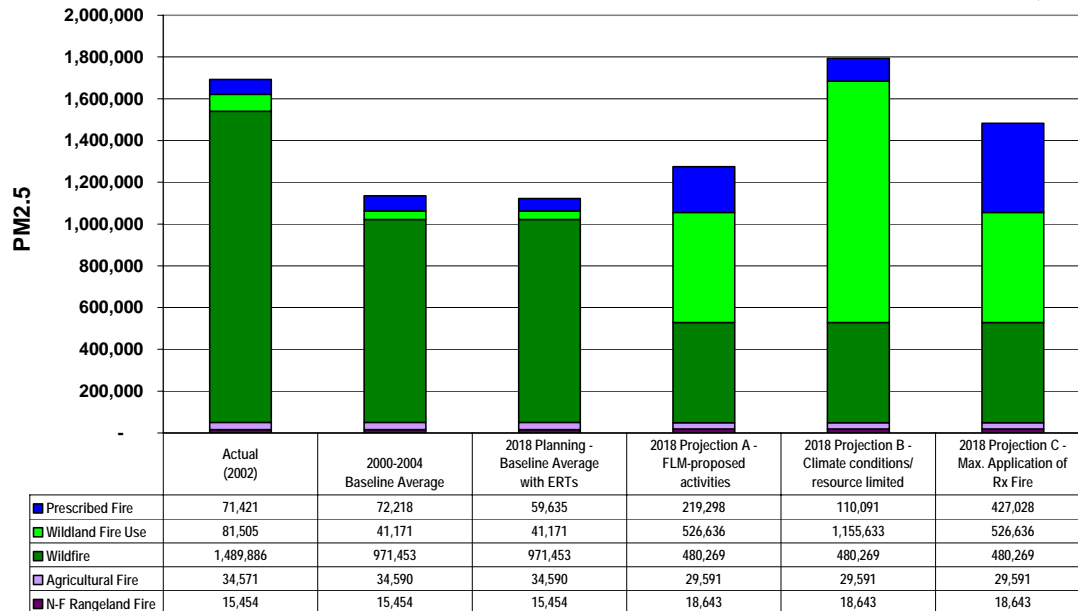
April 19, 2007

2018 Planning - Baseline Average with ERTs
 Baseline Emission Inventory: Natural vs. Anthropogenic PM_{2.5} Emissions

Fire Emissions



WRAP Region Fire PM_{2.5} Emissions Scenarios (tpy)



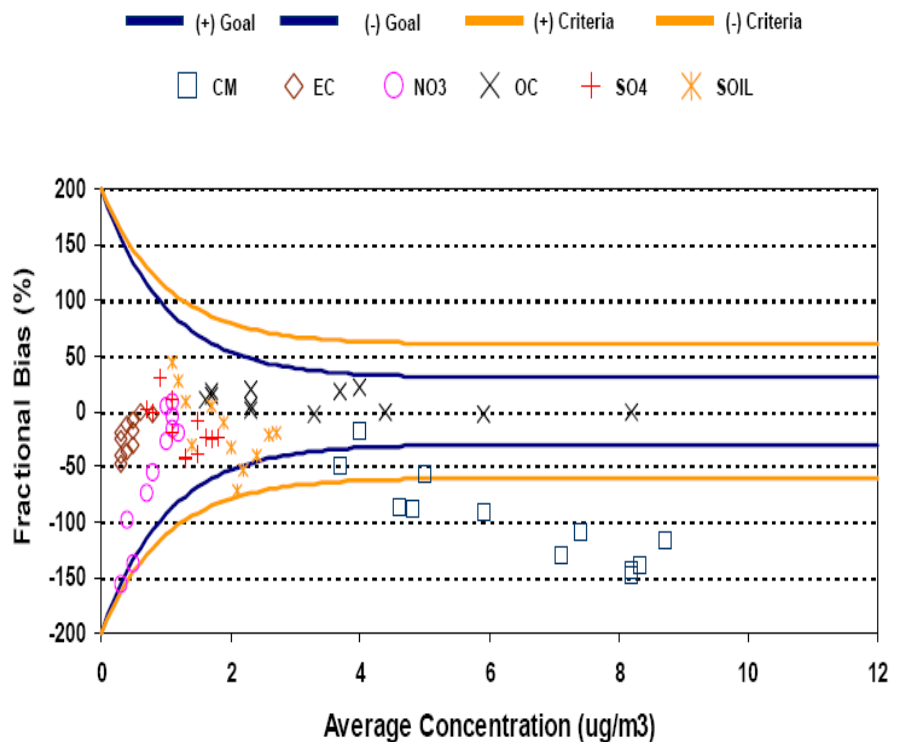
Dust emissions –
 same kind of picture

CMAQ modeling

- Model tested extensively for performance against monitoring data
- Absolute modeling values not suitable for planning
- Performance tests indicate that model is good for estimating change over time, i.e., 2002 vs. 2018 emissions
- Coarse mass not simulated well, will hold constant 2000-04 to 2018

AoHMF Meeting, San Diego, CA, Jan 25, 2006

Bugle plots of performance benchmarks & goals CMAQ4.5 vs. IMPROVE for all species

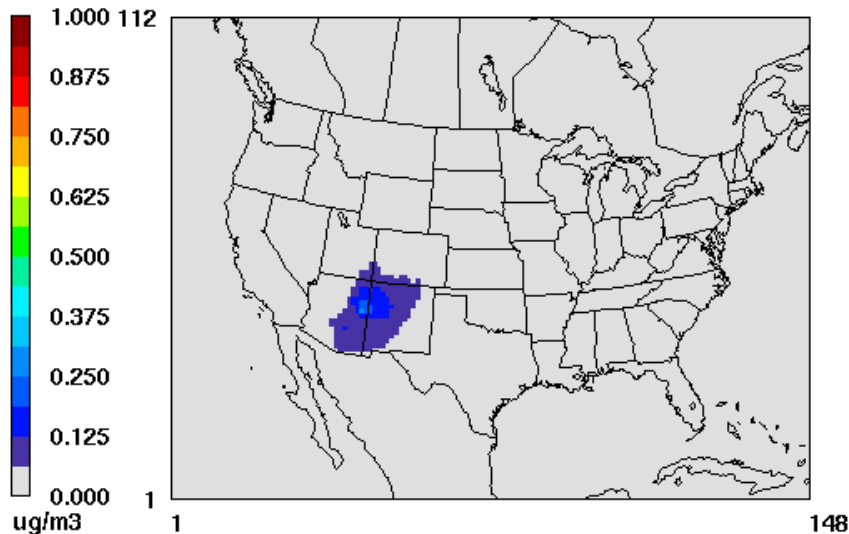


SO_x/NO_x CAM_x PSAT Source Apportionment

- Emissions grouped into anthropogenic and natural categories of SO_x and NO_x sources to allow:
 - Relative contribution of source categories, and
 - the effect of changes in emissions
- Predicts mass change for sulfate and nitrate
- Data do not lend themselves to conversion to light extinction
- Performance tests indicate that PSAT results are good for estimating change over time for source categories with greatest confidence in emissions, i.e., 2002 vs. 2018

PSO4 Point Source AZ

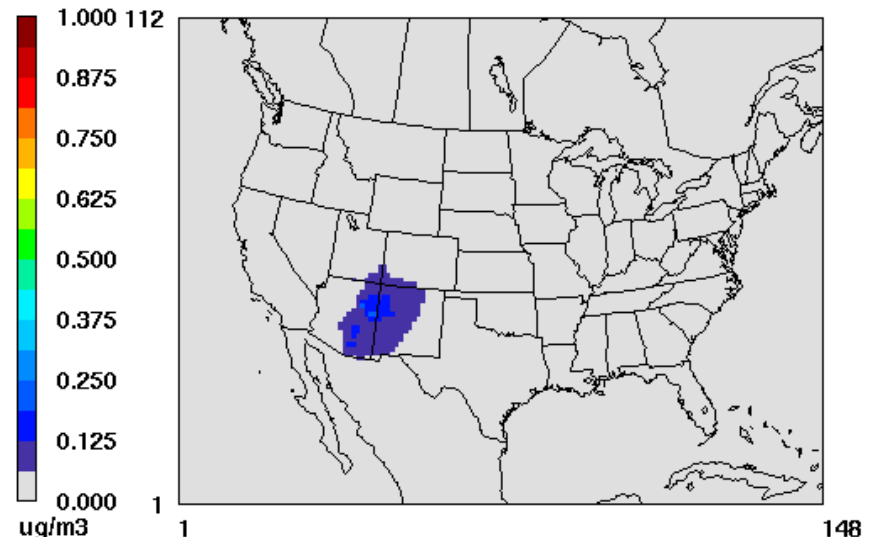
CAMx Planning 02c
Monthly Average: August



August 1, 2002 0:00:00
Min= 0.000 at (1,1), Max= 0.303 at (45,44)

PSO4 Point Source AZ

CAMx Base 18b
Monthly Average: August

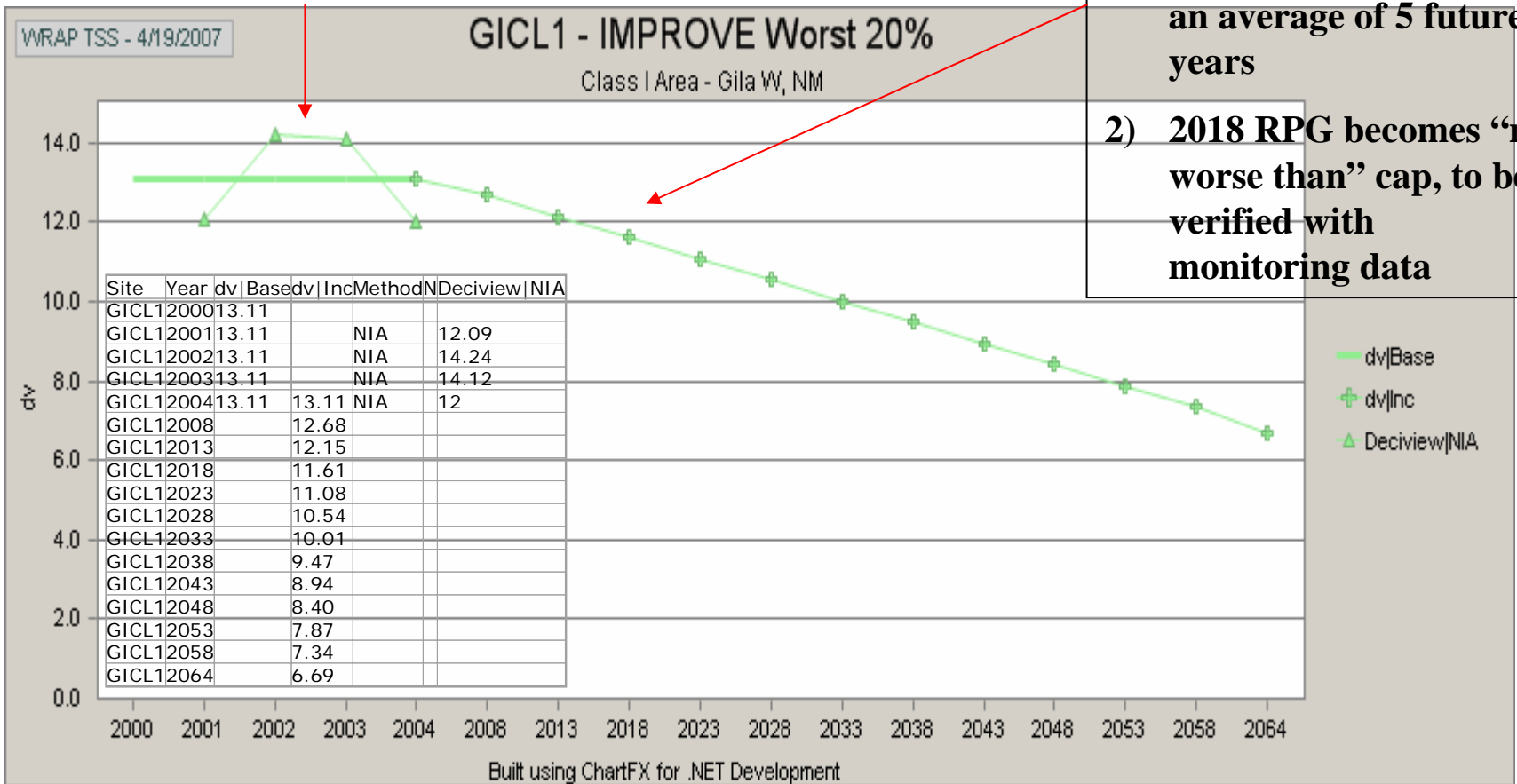


August 1, 2018 0:00:00
Min= 0.000 at (1,1), Max= 0.227 at (45,44)

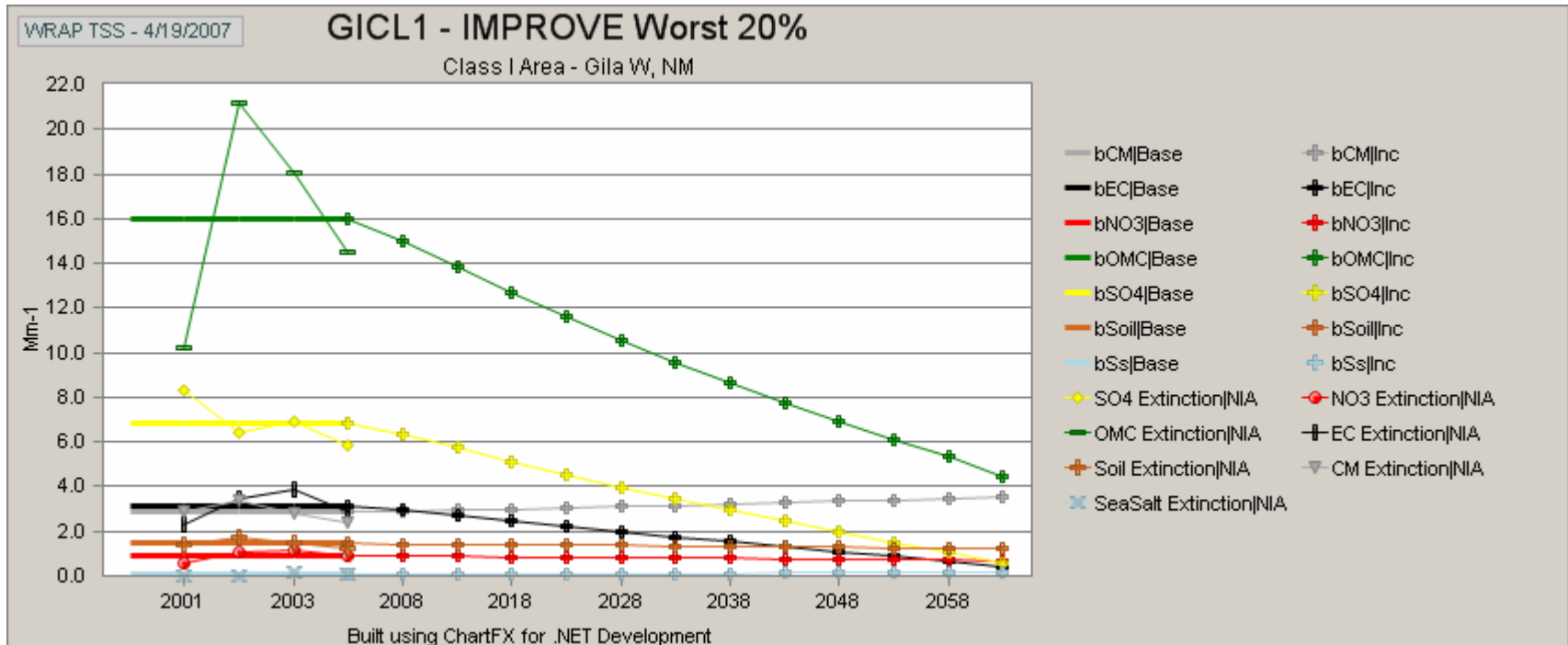
RHR approach to glide path

Year-to-year variation smoothed out with 5-year average, single emissions/met data year of 2002

- 1) Emissions projections aim for single year, not an average of 5 future years
- 2) 2018 RPG becomes “no worse than” cap, to be verified with monitoring data

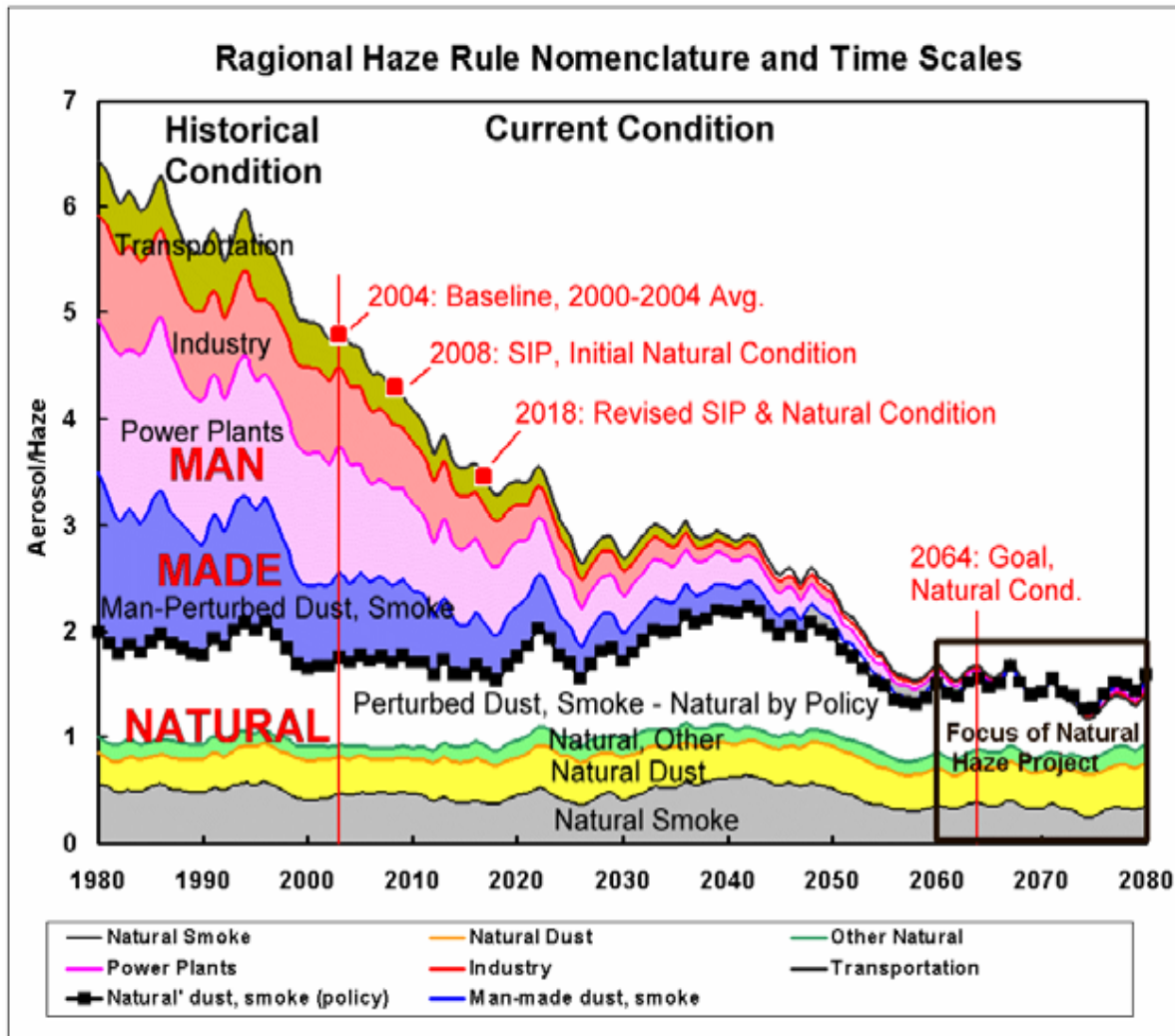


Species parts of RHR deciview glide path



- 1) Small source-by-source incremental changes in SO_x and NO_x will produce little regional haze effect at western Class I areas
- 2) Predicted improvements in nitrate from fed mobile rules and sulfate/nitrate from CAIR in eastern U.S. have been the results of huge (>50% reductions in sources)

Likely actual western glide path



A complete haze plan – an integration

- **BART controls and §309 SO₂ program**
- **Manage controllable fire emissions and track emissions;**
- **Account for growth;**
- **Identify natural and uncontrollable emissions and their impacts;**
- **Set reasonable progress goals for 2018; and**
- **Adopt IMPROVE monitoring network for tracking visibility**

State programs are already managing emissions

- **BART in process**
- **Title V permits (approved/delegated by EPA)**
- **PSD/NSR (that other visibility protection program)**
- **Smoke management**

- **Reasonable controls and control programs are in place for meaningful sources contributing to visibility impairment**