

Scott Williams, M.D., M.P.H.
Executive Director
scott@healutah.org

Jessica Reimer
Air Quality Policy Associate
jessica@healutah.org



www.healutah.org

Healthy Environmental **AL**liance of **Utah**



Air Quality



Renewable Energy &
Climate Change



Toxic Waste

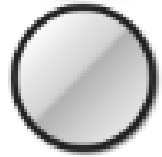
No safe level of air pollution

- Heart disease
- Lung disease
- Stroke
- Cancers
- Infections
- Kidney & Bowel
- Type 2 diabetes
- Cognition & mental health
- Infant mortality
- Pregnancy complications

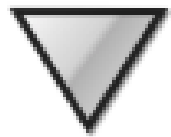
Health Forecast

Action Forecast

Unrestricted Action



Voluntary Action



Mandatory Action



Air Quality Index (AQI)

PM 2.5

Ozone

Good	0 - 12.0 $\mu\text{g}/\text{m}^3$	0 - 0.054 ppm
Moderate	12.1 - 35.4 $\mu\text{g}/\text{m}^3$	0.055 - 0.070 ppm
Unhealthy for Sensitive Groups	35.5 - 55.4 $\mu\text{g}/\text{m}^3$	0.071 - 0.085 ppm
Unhealthy	55.5 - 150.4 $\mu\text{g}/\text{m}^3$	0.086 - 0.105 ppm
Very Unhealthy	150.5 - 250.4 $\mu\text{g}/\text{m}^3$	0.106 - 0.200 ppm
Hazardous	Above 250.5 $\mu\text{g}/\text{m}^3$	Above 0.201 ppm

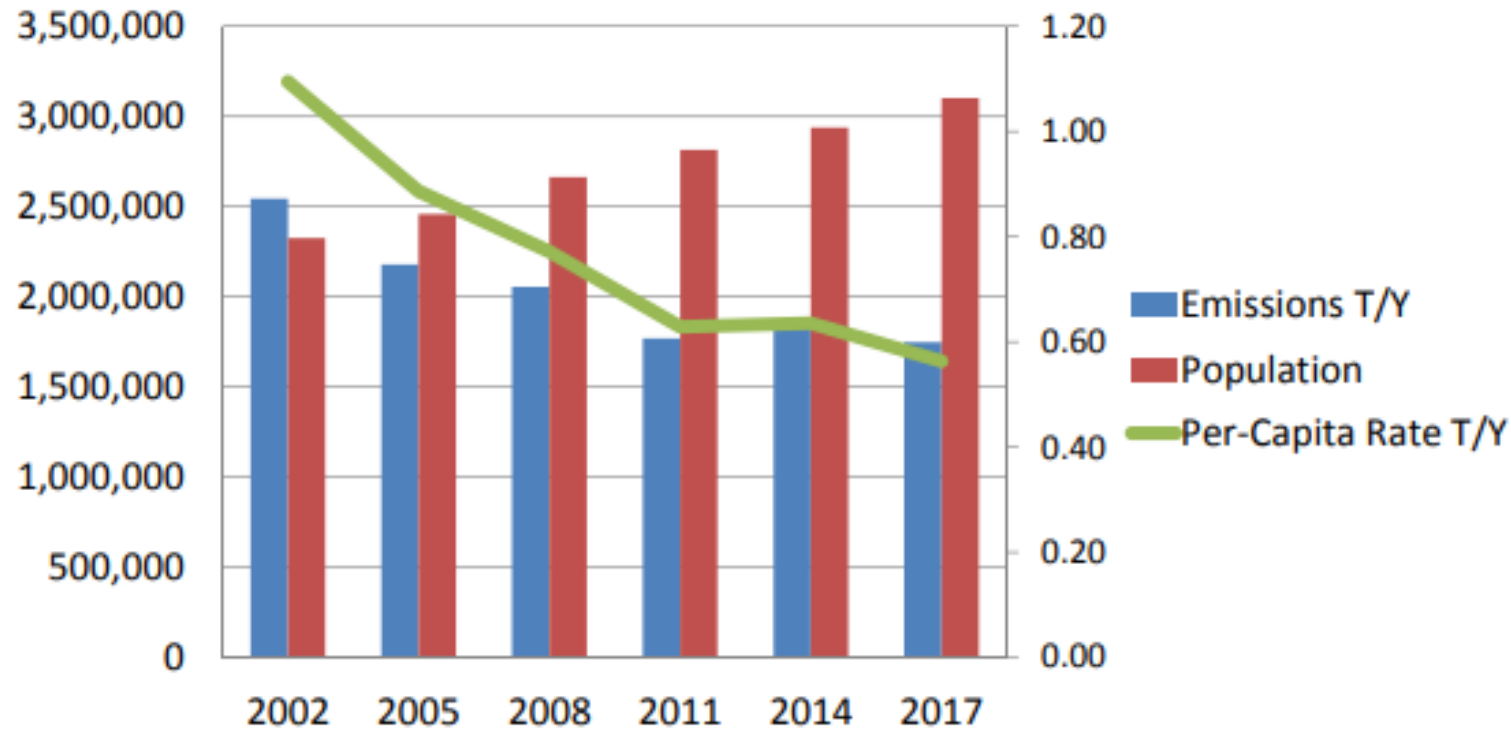
Based on a 24-hour average.

Based on an 8-hour average.

Per Capita Emissions (49% reduction since 2002)

draft 2017 inventory 1/8/2019

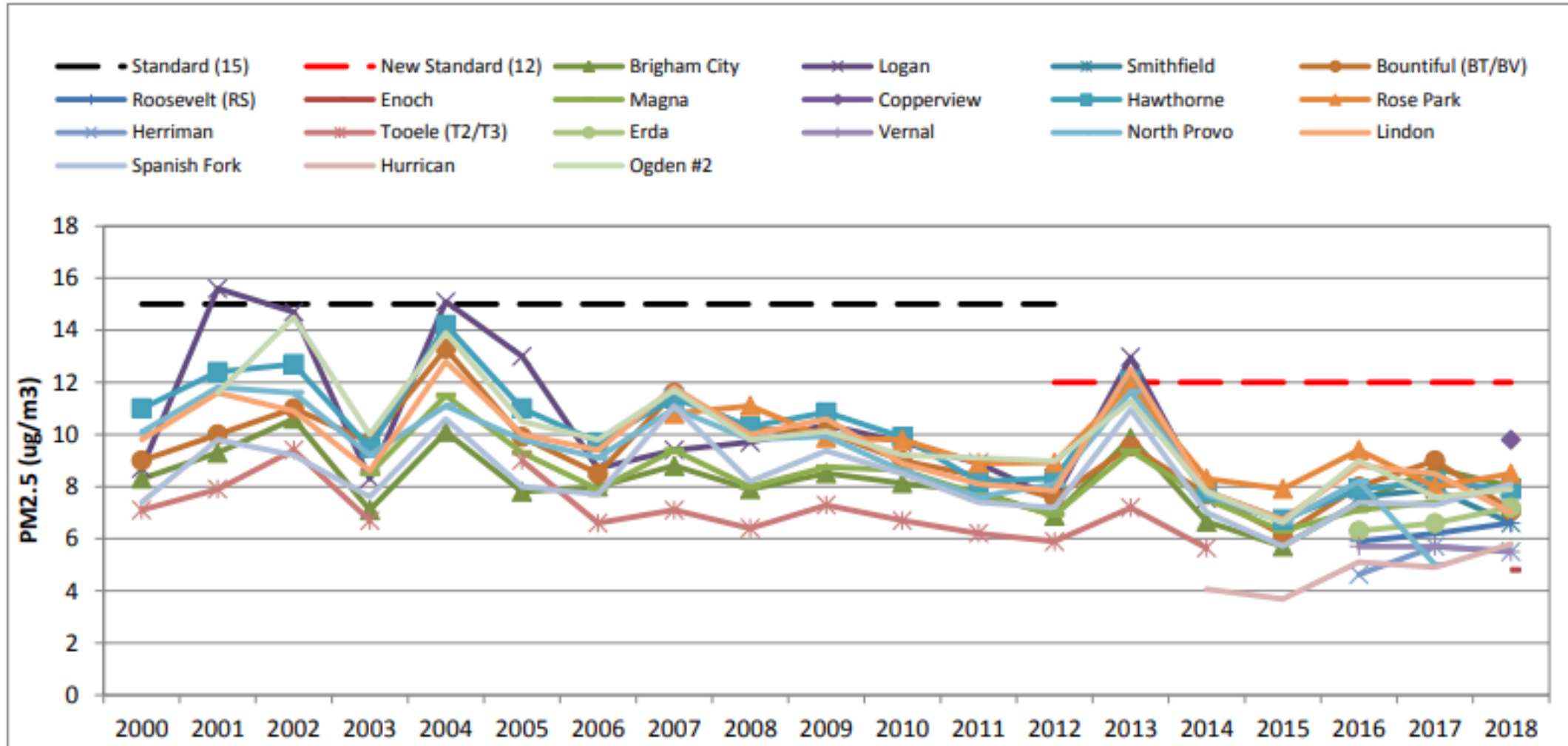
Statewide Annual Emissions Rate



Chronic exposure

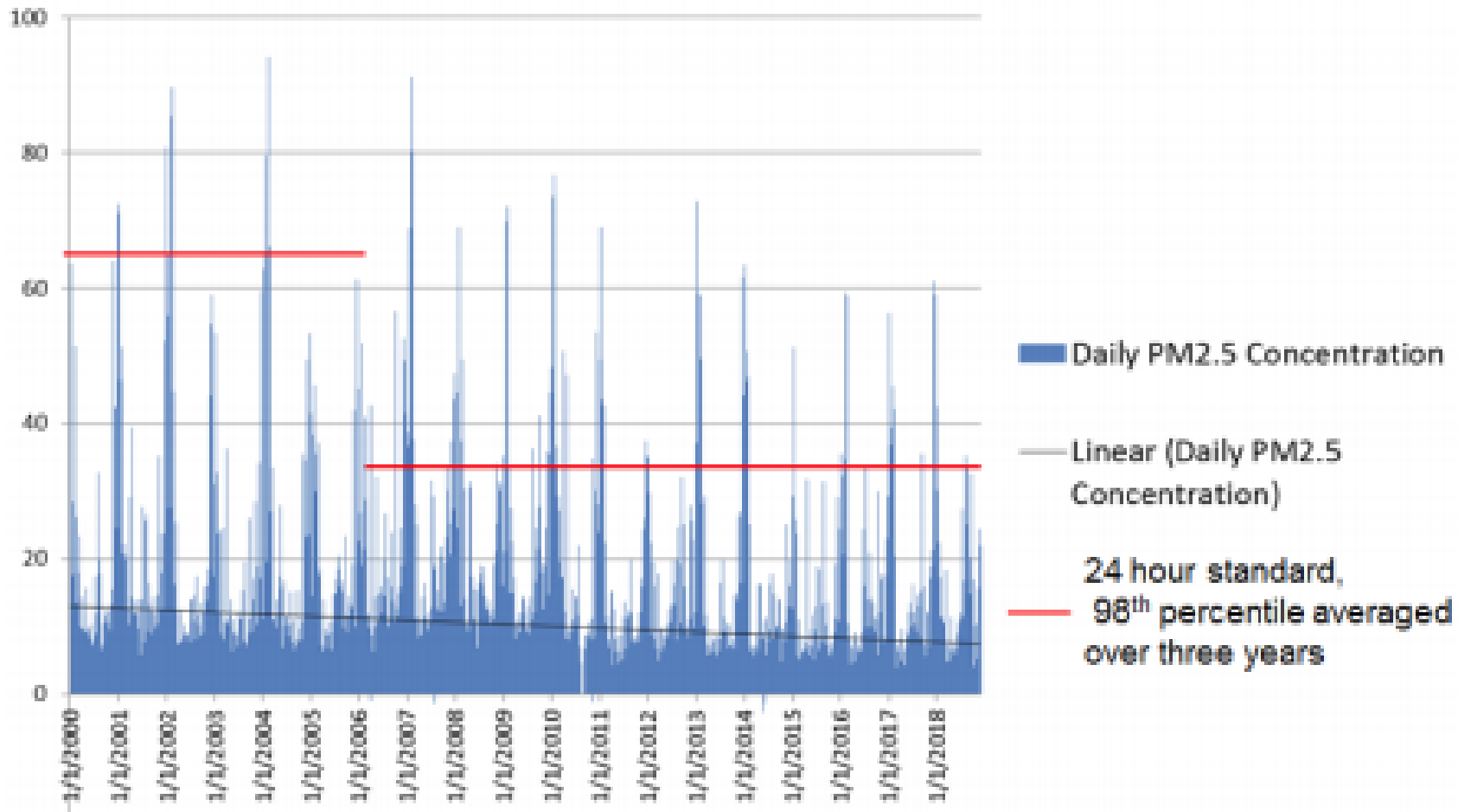


Figure 11. PM_{2.5} Annual Mean Concentration



Chronic Exposure- Geographic variation

Daily PM2.5 Concentration, ug/m3



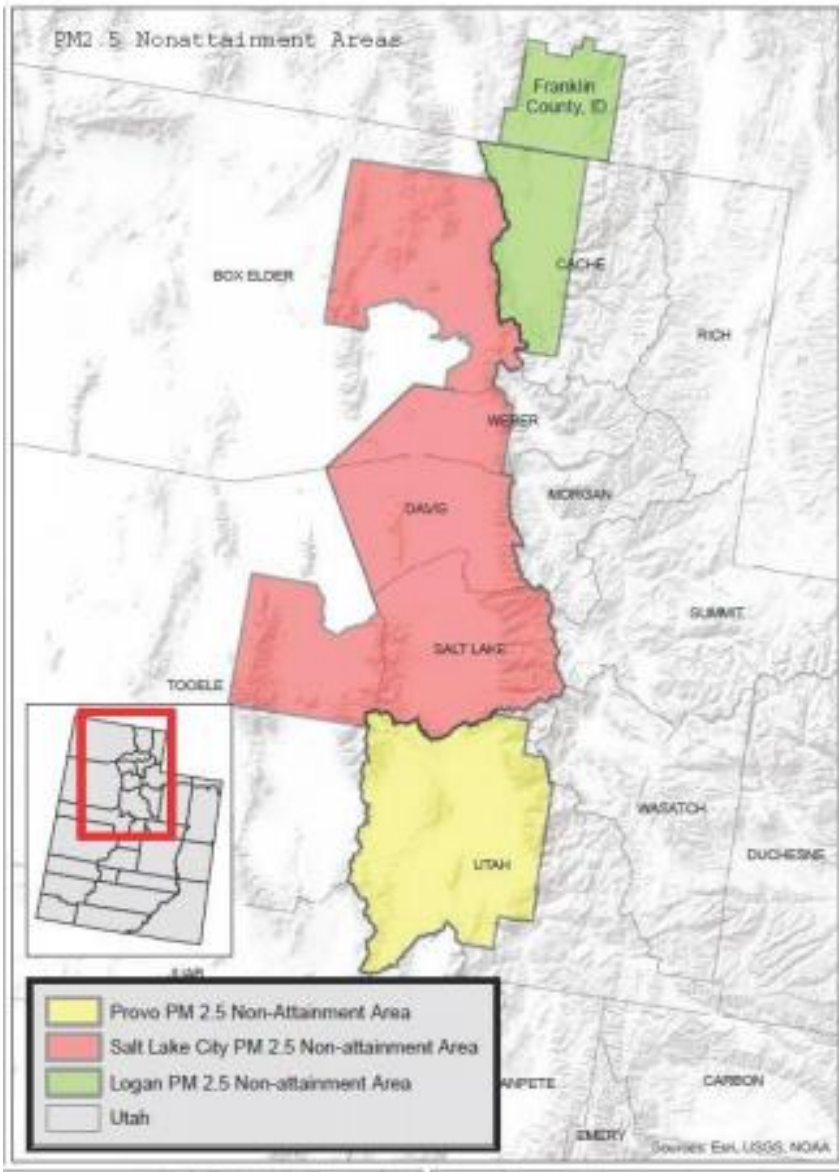
Acute Exposure

Site	2014	2015	2016	2017	2014-2016 Avg.* (3-yr. block)	2015-2017 Avg.* (3-yr. block)
Brigham City	34.5	32.2	35.7	36.6	34.1	34.8
Logan #4	39.9	29.0			34.5	
Bountiful	43.9	29.2	37.5	36.0	36.9	34.2
Magna	42.6	22.9	30.7	30.1	32.1	27.9
Hawthorne	43.3	29.3	42.0	38.5	38.2	36.6
Rose Park	47.9	33.4	43.2	38.5	41.5	38.4
Erda			30.9	28.8		29.9
N. Provo	25.5	25.8	39.2	28.1	30.2	31.0
Lindon	29.1	27.3	27.7	27.6	28.0	27.5
Smithfield		28.9	36.4	47.2	32.7	37.5
Spanish. Fork	26.5	28.1	29.2	27.6	27.9	28.3
Ogden #2	25.7	28.0	42.8	39.0	32.2	36.6
Hurricane		15.0	8.4			11.7
<i>Avg. of all sites:</i>	<i>35.9</i>	<i>27.4</i>	<i>33.6</i>	<i>34.4</i>	<i>33.5</i>	<i>31.2</i>

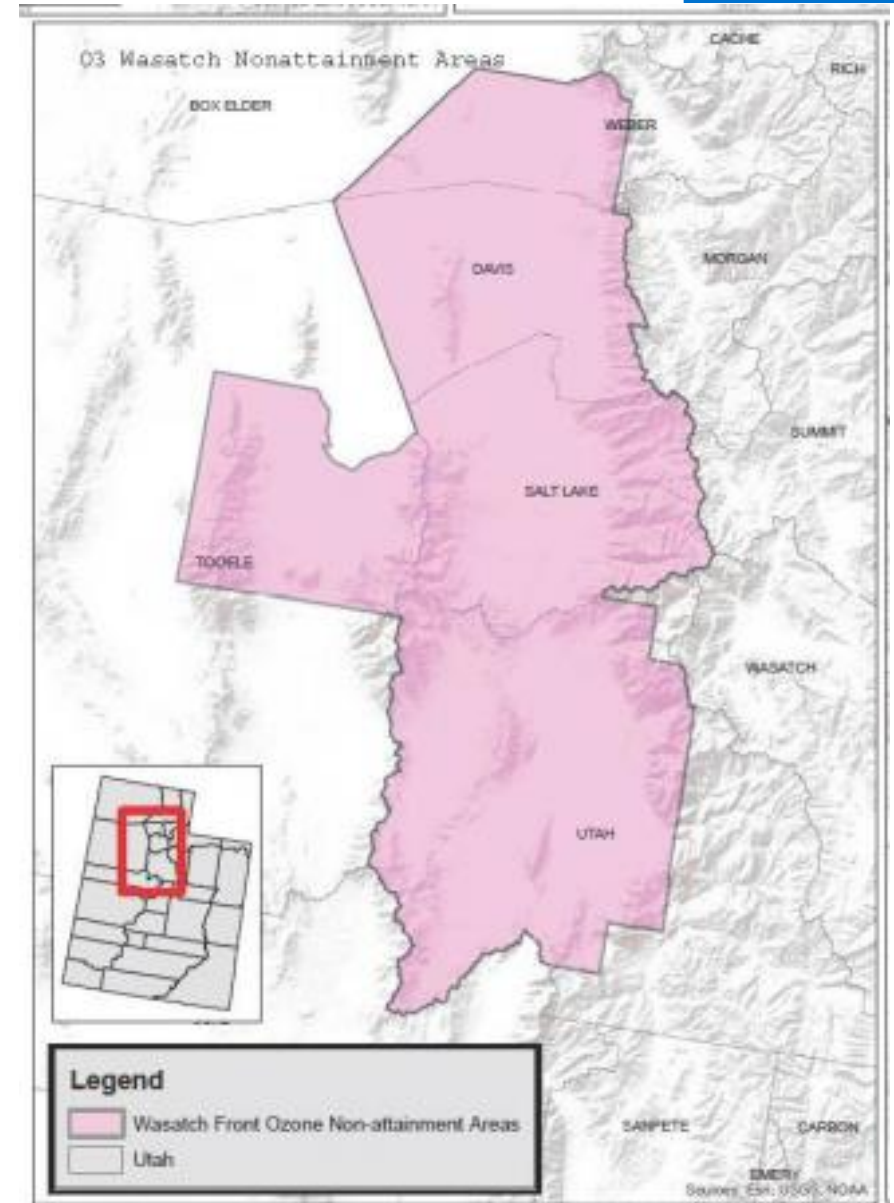


PM 2.5 24-hr.
Standard

98th percentile values
by year and site, 24-
hr. samples, in ug/m³



Particulate non-attainment areas
 Winter, visible, lower elevations



Ozone non-attainment areas
 Summer, invisible, higher elevations

“... a decrease of 10 μg per cubic meter in the fine-particulate concentration was associated with an estimated increase in life expectancy of approximately 0.61 ± 0.20 year — an estimate that is nearly as large as the indirect estimates.

Fine-Particulate Air Pollution and Life Expectancy in the United States
C. Arden Pope, III, Ph.D., Majid Ezzati, Ph.D., and Douglas W. Dockery, Sc.D.
January 22, 2009, N Engl J Med 2009; 360:376-386