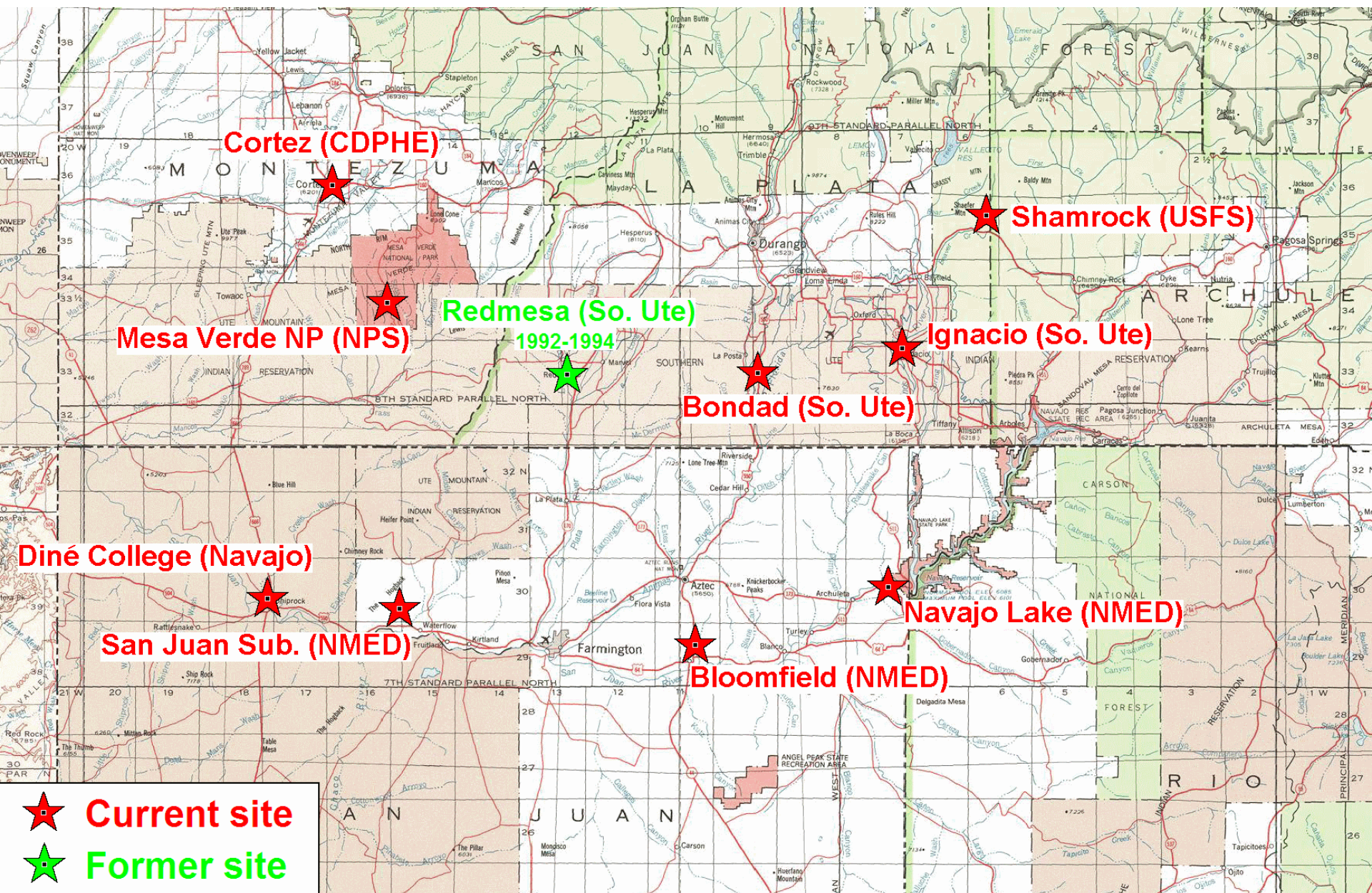


Monitoring Trends Analysis --- 2016 ---



Four Corners Air Quality Group Meeting
Farmington, NM
December 1, 2016

Ozone Monitoring Sites in the Four Corners Area



Three Year Average 4th Maximum Ozone Values

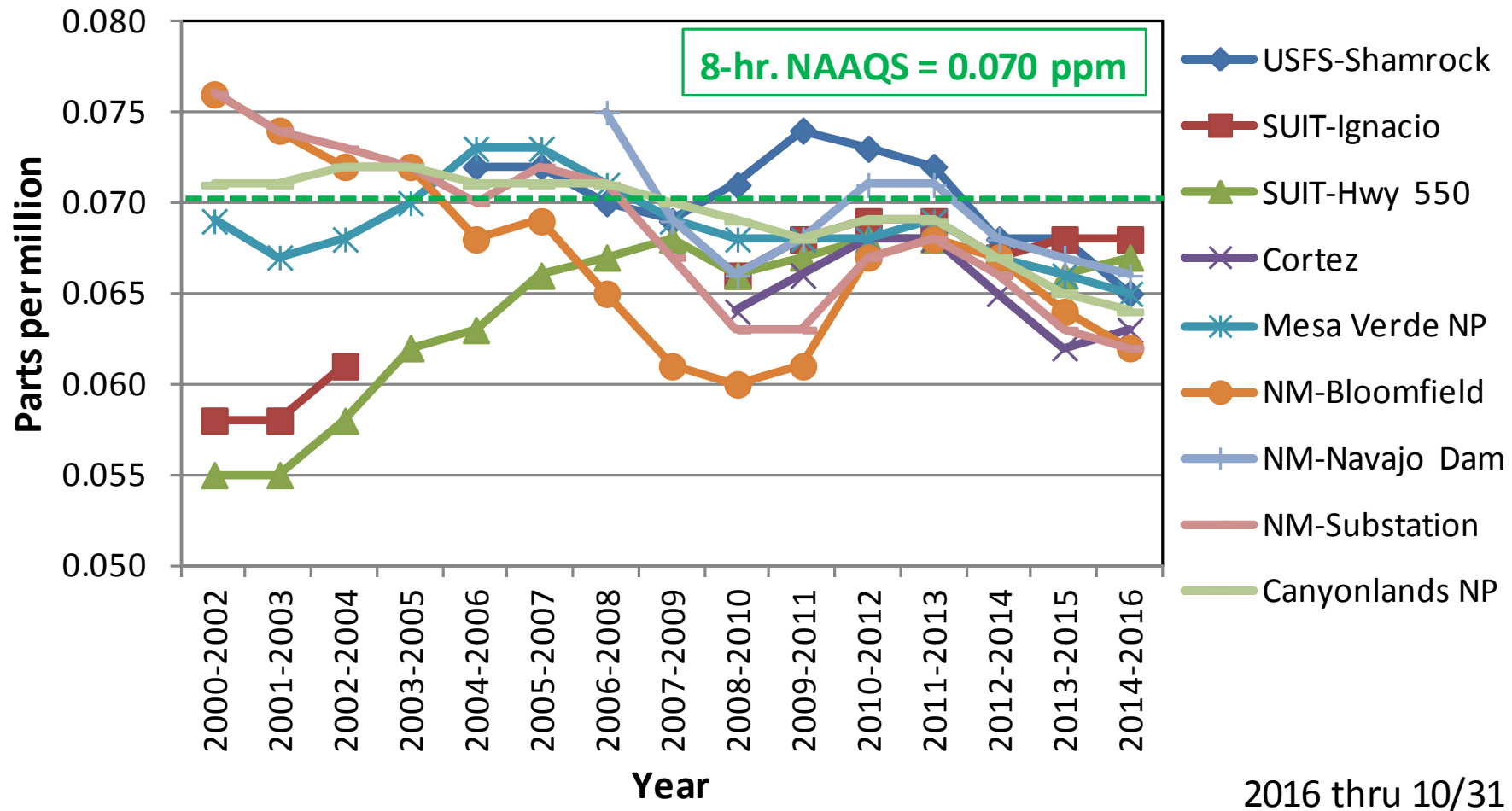
*** 2016 data through 31 October ***

<u>DRAFT data</u>		<u>2014</u> 8-hr. O3 4th Max. Value (ppm)	<u>2015</u> 8-hr. O3 4th Max. Value (ppm)	<u>2016</u> 8-hr. O3 4th Max. Value (ppm)	<u>2014-2016</u> 3-yr. Avg. 4th Max. Value (ppm)	<u>2017</u> Highest 4th Max. to not exceed (ppm)
Site Name	AQS #					
COLORADO						
CO - Cortez	08-083-0006	0.062	0.061	0.066	0.063	0.085
USFS - Shamrock	08-067-1004	0.064	0.068	0.065	0.065	0.079
SUIT - Ignacio	08-067-7001	0.067	0.068	0.071	0.068	0.073
SUIT - Bondad/Hwy 550	08-067-7003	0.065	0.066	0.072	0.067	0.074
NPS - Mesa Verde NP	08-083-0101	0.065	0.066	0.066	0.065	0.080
NEW MEXICO						
NM - Bloomfield	35-045-0009	0.062	0.061	0.065	0.062	0.086
NM - Navajo Lake	35-045-0018	0.063	0.068	0.067	0.066	0.077
NM - Substation	35-045-1005	0.063	0.061	0.062	0.062	0.089
Navajo - Dine College	35-045-1233	---	0.066	0.064	---	0.082
UTAH						
NPS - Canyonlands	49-037-0101	0.064	0.065	0.064	0.064	0.083


2016 data is preliminary.

8-Hour Ozone --- 3-year Avg. of 4th Max.

Four Corners area



All sites below the current NAAQS



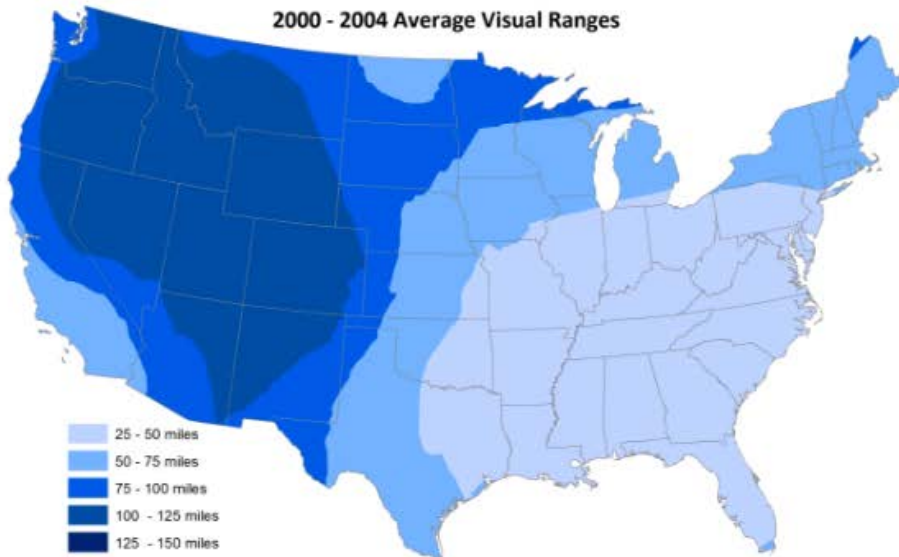
Other Air Monitoring in the Four-Corners Area (Non-Ozone)

- Particulates – CDPHE, NMED, USFS, SUIIT
- Oxides of Nitrogen – NMED, USFS/BLM, SUIIT, Navajo
- Sulfur Dioxide – Navajo, NMED
- Carbon Monoxide – SUIIT
- Ions (nitrate, sulfate, ammonium) – NPS, USFS
- Ammonia – NMED/EPA
- Visibility – USFS, NPS, SUIIT
- Mercury – USFS, NPS, NMED(pending)
- Meteorology – NMED, USFS/BLM, NPS, SUIIT, Navajo
- VOC/NMOC – SUIIT

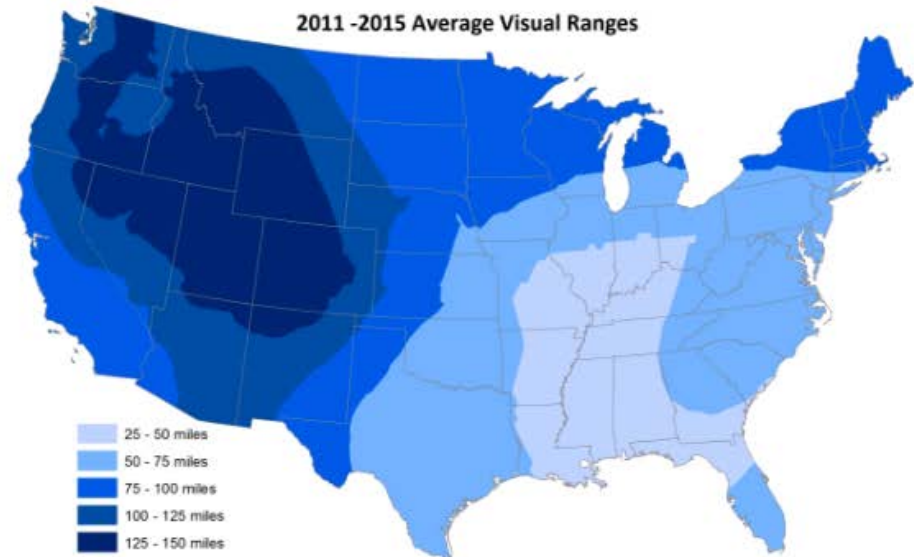
Visibility

- Nephelometer data at SUIT-Bondad site
- Webcam at Mesa Verde National Park
- IMPROVE data at three regional locations
 - Mesa Verde, Shamrock Mine, Weminuche
- Significant visibility improvements at Mesa Verde and in the Weminuche Wilderness

2000 - 2004 Average Visual Ranges



2011 - 2015 Average Visual Ranges



Courtesy: EPA

Mercury



Navajo Lake Site, NM
Monitor type: Reactive
Gaseous Mercury
Study duration: 2 Years;
Completed



Navajo Lake Site, NM
Monitor type: Wet Deposition Mercury
Study duration: recently discontinued

Ammonia



Links to peer reviewed research articles available at
<http://www.nmenv.state.nm.us/aqb/4C/>

NMED Monitoring Data:

<http://drdasnm1.alink.com/>

Map

Station Locations

Current Measurements

Reports

Publications

About

Languages

Login

Air Quality Index Guide

- Good
- Moderate
- Unhealthy For Sensitive Groups
- Unhealthy
- Very Unhealthy
- Hazardous
- NoData

Preliminary Data Warning: Data found on this website is preliminary and is subject to change. All data is reported in Mountain Standard Time format.

Map

2D 3D Road Aerial Street View Labels

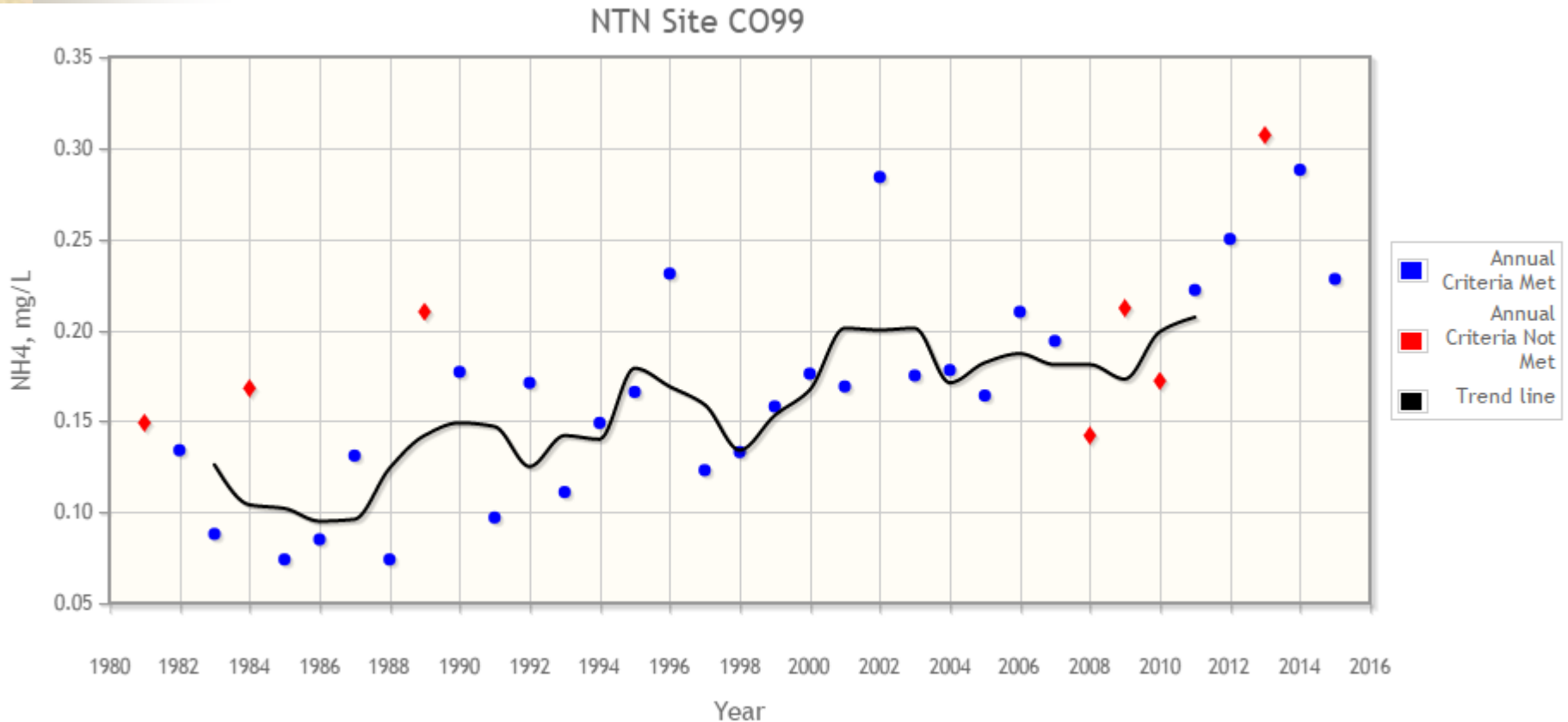
NEW MEXICO ENVIRONMENT DEPARTMENT

NewMexico.gov

Privacy Copyright © 2013, State of New Mexico. Updated: 2013-12-12

100% 11:21 AM 11/30/2016

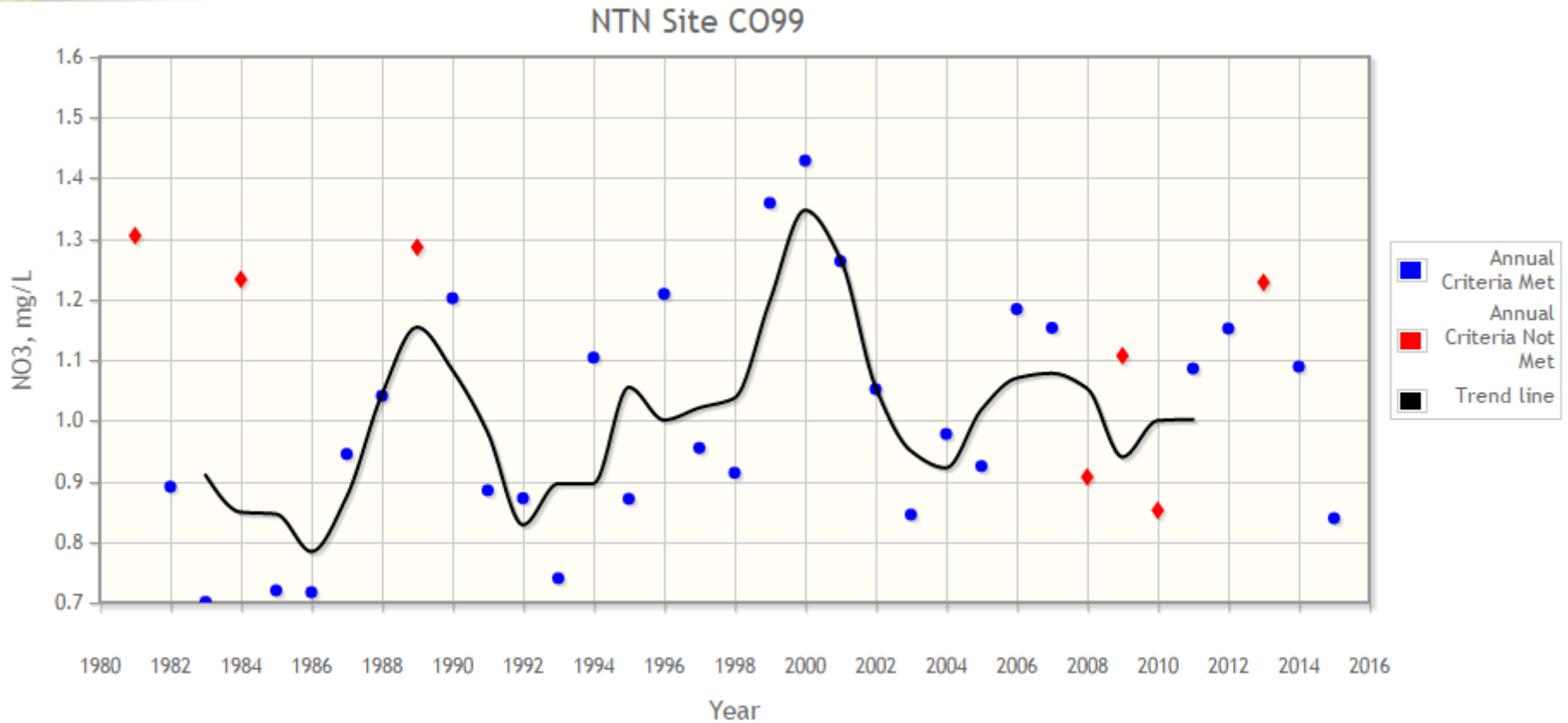
Ammonium Trends at Mesa Verde National Park



Increasing trend over time

For more on annual criteria: <http://nadp.sws.uiuc.edu/documentation/completeness.asp>

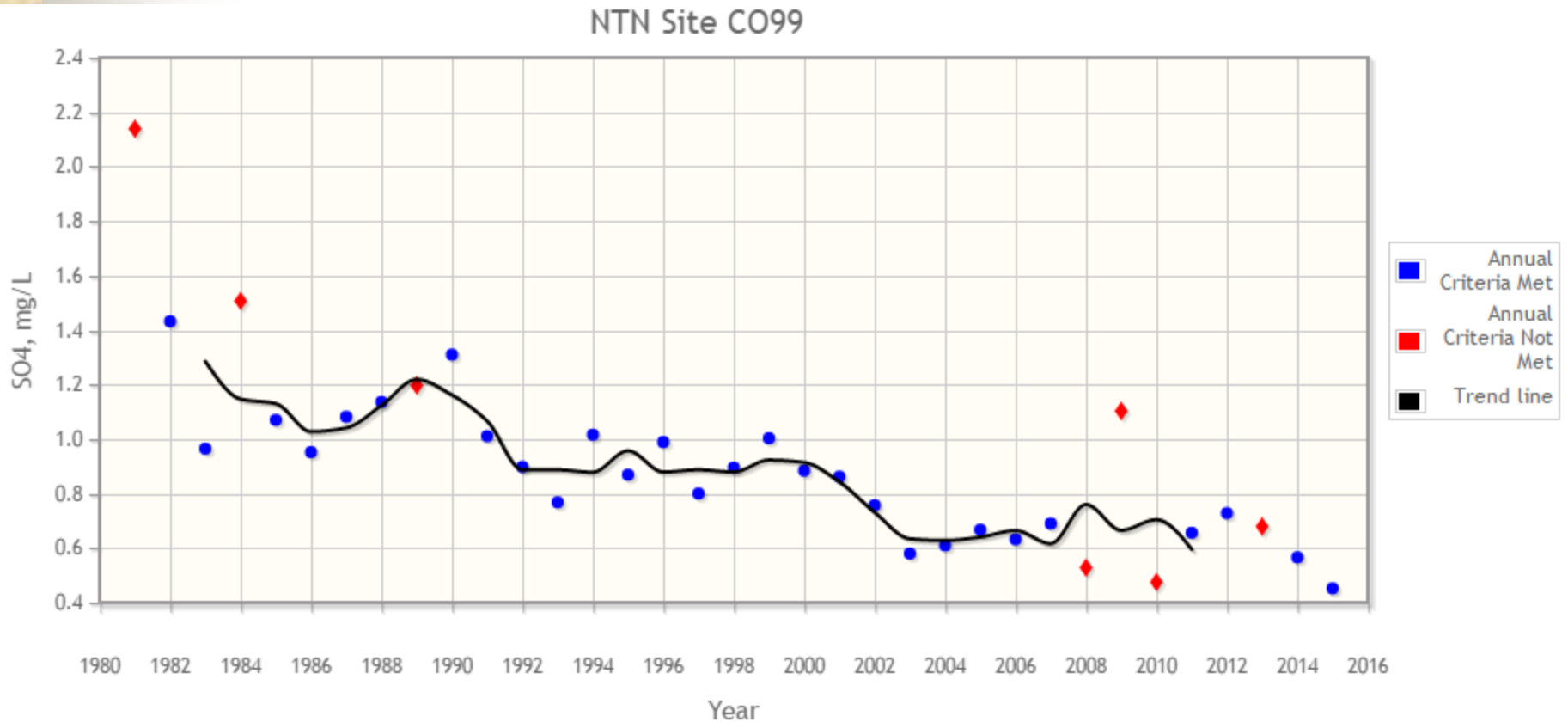
Nitrate Trends at Mesa Verde National Park



No recent trend

For more on annual criteria: <http://nadp.sws.uiuc.edu/documentation/completeness.asp>

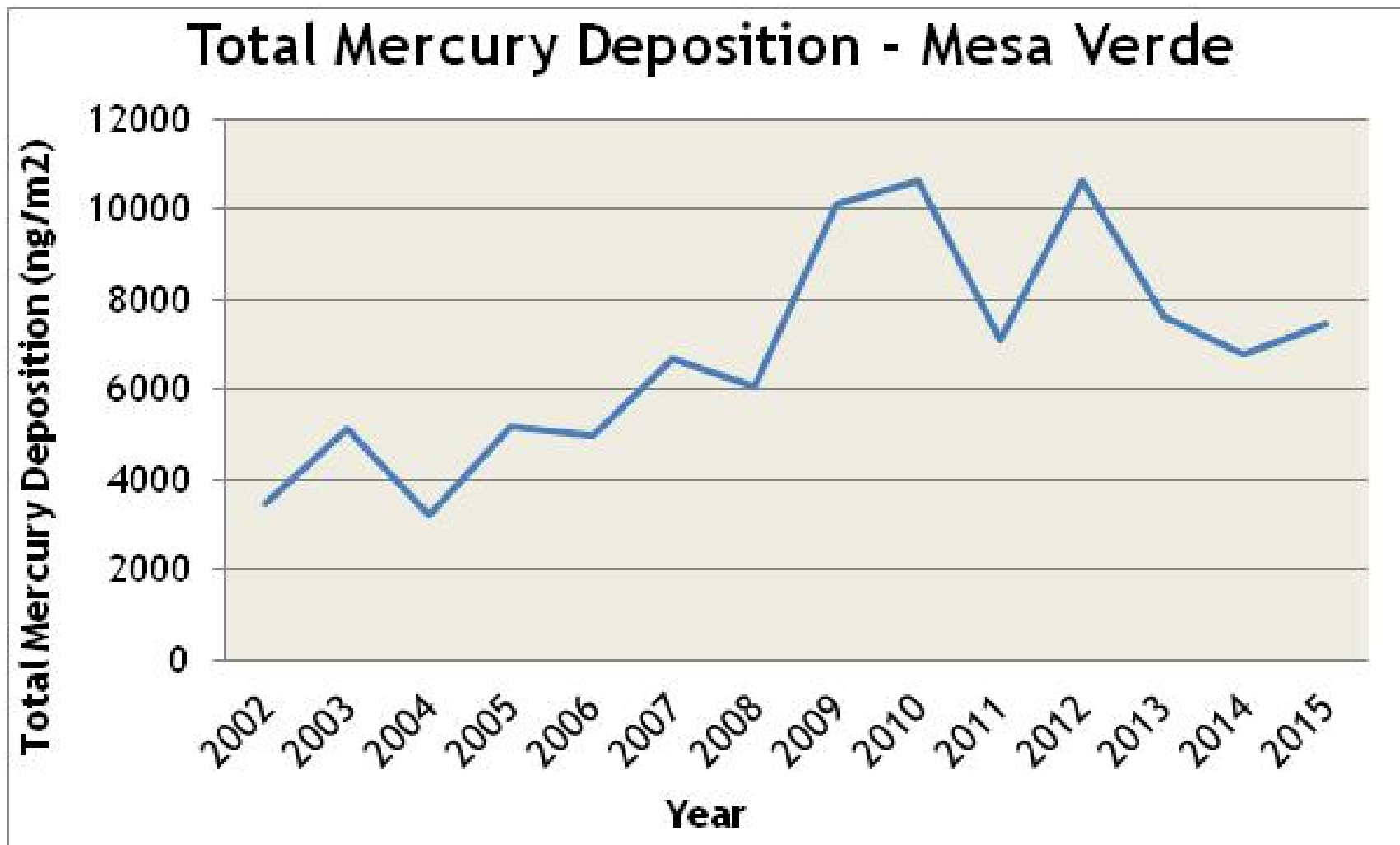
Sulfate Trends at Mesa Verde National Park



Decreasing trend over time

For more on annual criteria: <http://nadp.sws.uiuc.edu/documentation/completeness.asp>

Mercury Trends at Mesa Verde National Park



No short-term trend; long-term increasing trend



New Ozone NAAQS

- EPA released a final NAAQS on Oct. 1, 2015
- Primary standard = 70 ppb
 - No change in the form
 - Based on the 3-year average of the 4th maximum 8-hour values (truncated)
 - Non-overlapping provision (applies to 17 hours only)
- Secondary standard = 70 ppb
 - Same level and form as the primary standard
 - Approximately the same level of protection as a W126 standard of 17 ppm-hours



New Ozone NAAQS (continued)

- AQI break-points changed to match NAAQS level
- Monitoring season changed for 32 states
- PAMS monitoring required at NCore sites in existing non-attainment areas with populations > 1 million
 - To include hourly speciated VOCs, 8-hour carbonyls, O₃, NO/NO₂/NO_y, and meteorology
- Enhanced Monitoring Plan required to be developed for all moderate or higher ozone NAAs to look at what additional monitoring is appropriate or needed
- Added a new Federal Reference Method analyzer based on chemiluminescence
- Grandfathered PSD sources with complete applications as of final publication



Timeline

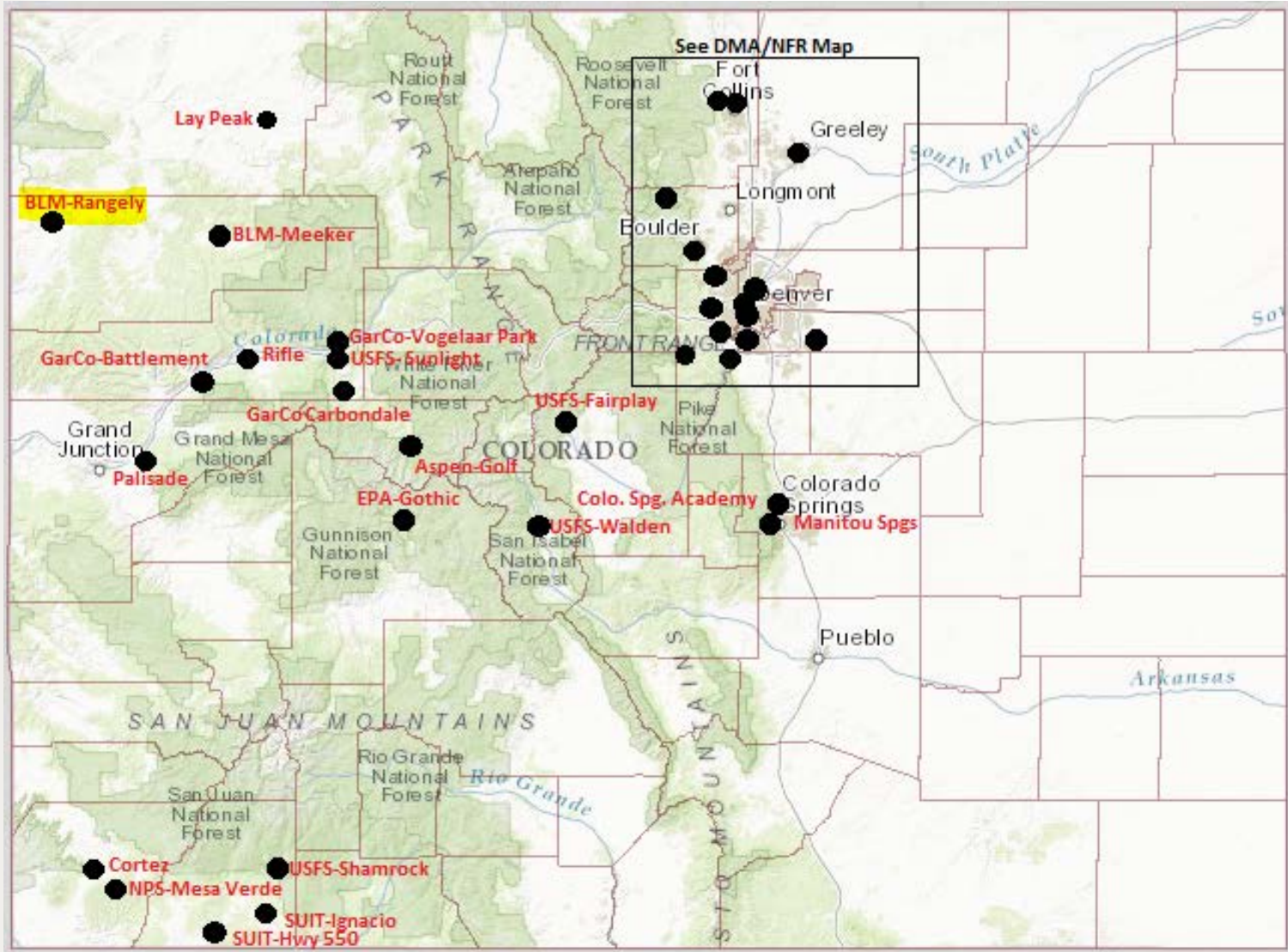
- October 1, 2015 EPA revised the 8-hour national ambient air quality standard for ozone
 - From 0.075 ppm to 0.070 ppm
- States required to submit initial recommendations for area designations by October 1, 2016
 - Based on 2013-2015 data
- EPA will make final designations by October 1, 2017
 - Based on 2014-2016 data



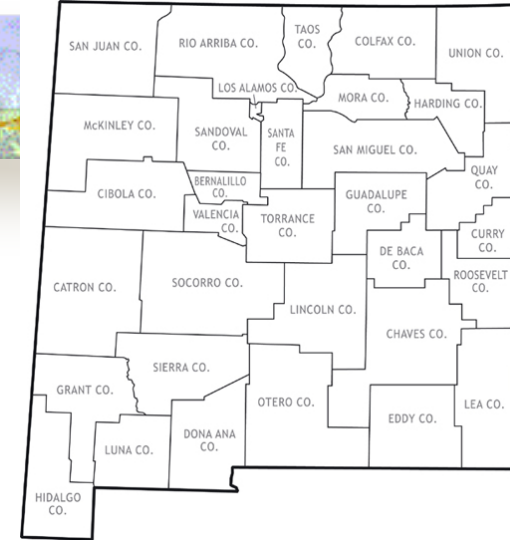
Designation Steps

- Identify areas violating standard
- Perform 5 factor analysis for violating areas:
 1. Air Quality Data
 2. Emissions and Emissions-Related Data
 3. Meteorology
 4. Geography/Topography
 5. Jurisdictional Boundaries
- Colorado Recommendations: Denver Metro/North Front Range Area – retain existing NAA boundary. Remainder of state – attainment/unclassifiable

Colorado Recommendations



NM Recommendations



- Part of Southern Dona Ana County – nonattainment, remainder of state – attainment/unclassifiable. (For 2013-2015, the nonattainment area in southern Doña Ana County would include Sunland Park and Santa Teresa. Using 2014-2016 data, the nonattainment area only includes Sunland Park.)

Figure 7-1: Recommended nonattainment boundary for the Sunland Park Area.

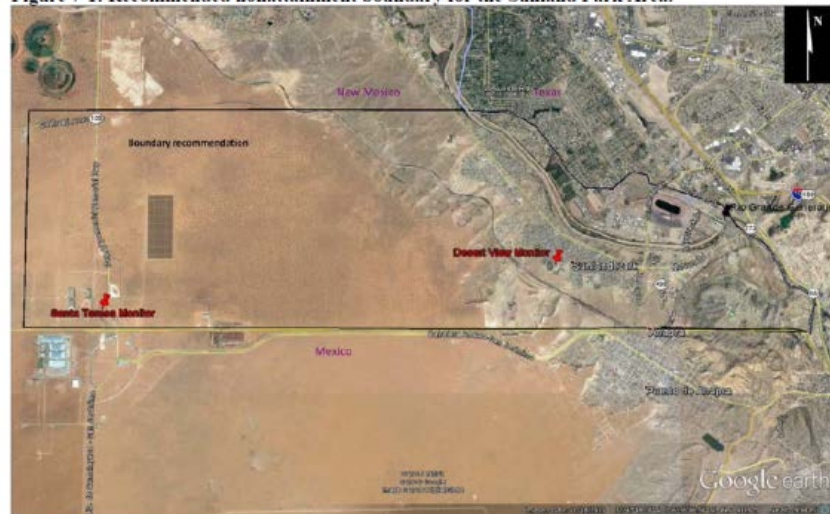


Figure 7-2: Alternative nonattainment boundary recommendation for the Sunland Park Area.



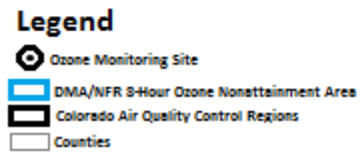
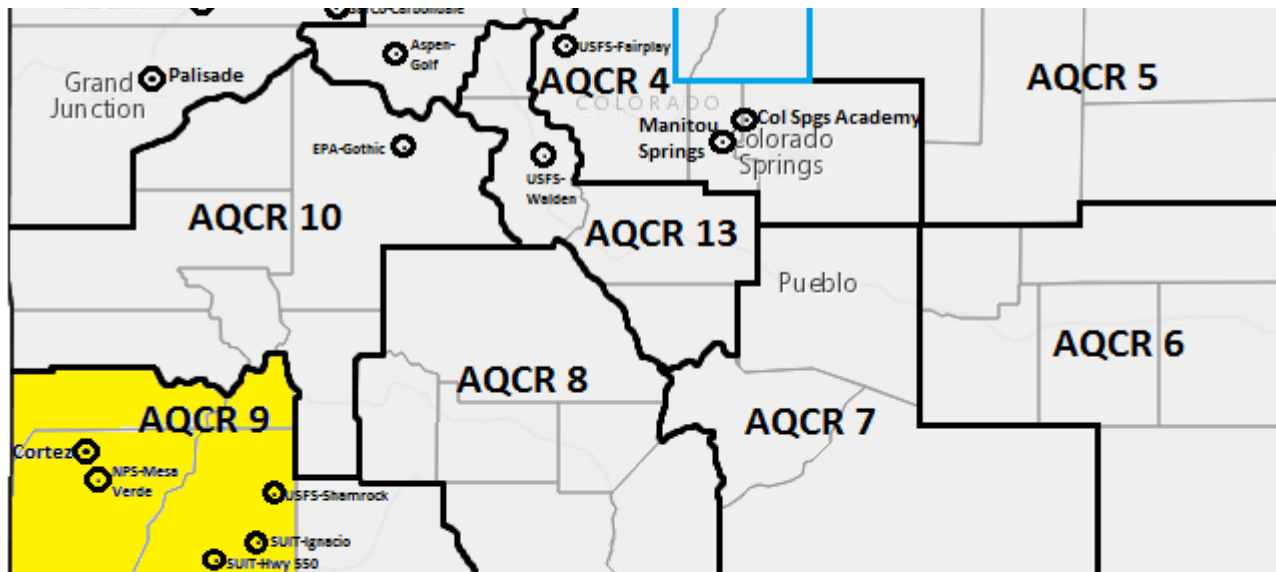


Questions?

AQCR 9 – Population & Emissions

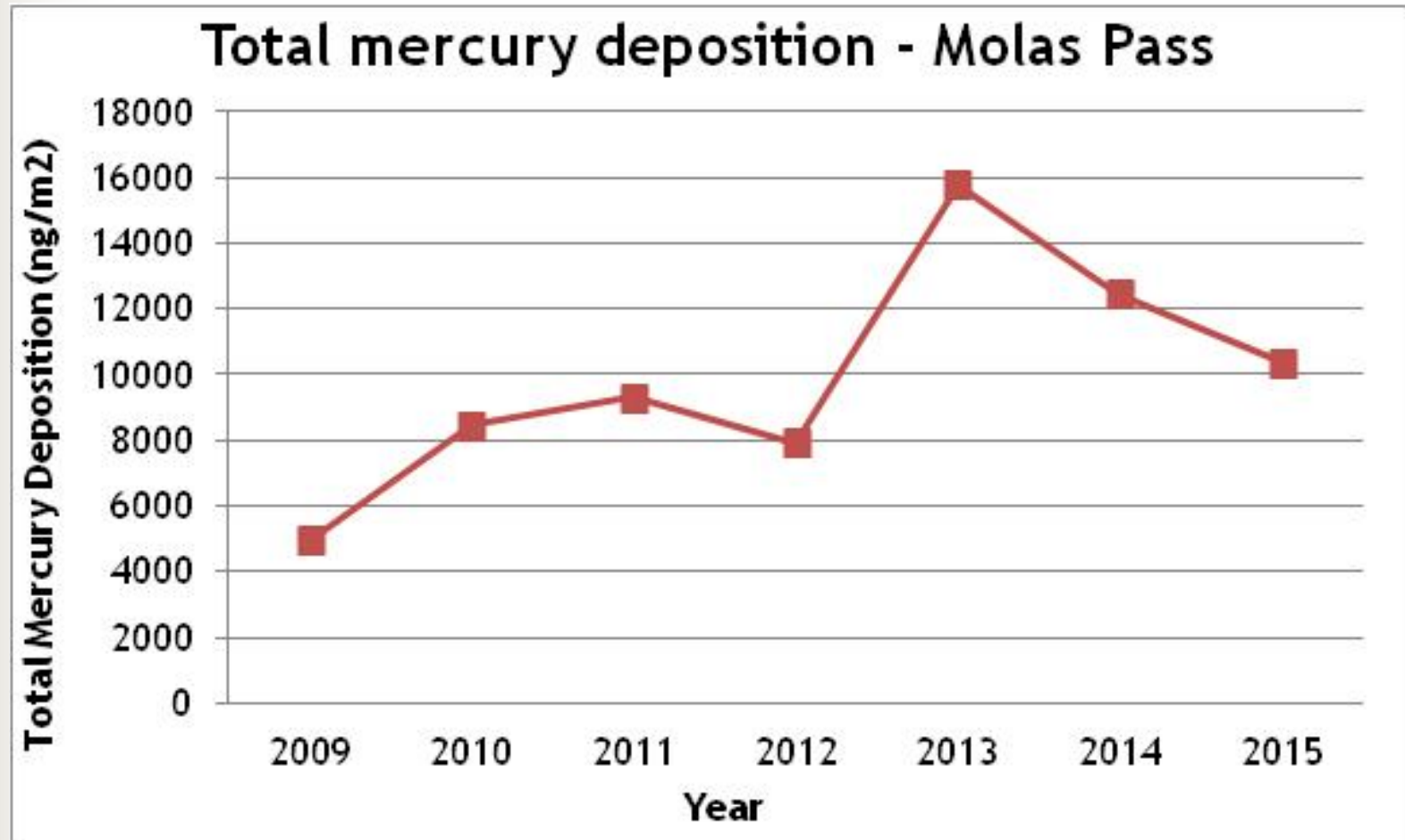


County	AQCR	Recommended 8-Hour Ozone Designation	Total Precursors				Population	
			Total (tpy)	Controllable (tpy)	Uncontrolled (tpy)	Rank	July 2015 (Estimate)	Rank
Archuleta	9	Attainment/Unclassifiable	24,585	2,451	22,134	24	12,352	35
Dolores	9	Attainment/Unclassifiable	15,204	2,277	12,927	40	1,978	58
La Plata	9	Attainment/Unclassifiable	40,689	18,932	21,757	11	54,688	14
Montezuma	9	Attainment/Unclassifiable	36,695	13,154	23,541	14	26,168	21
San Juan	9	Attainment/Unclassifiable	4,118	1,193	2,925	64	701	64



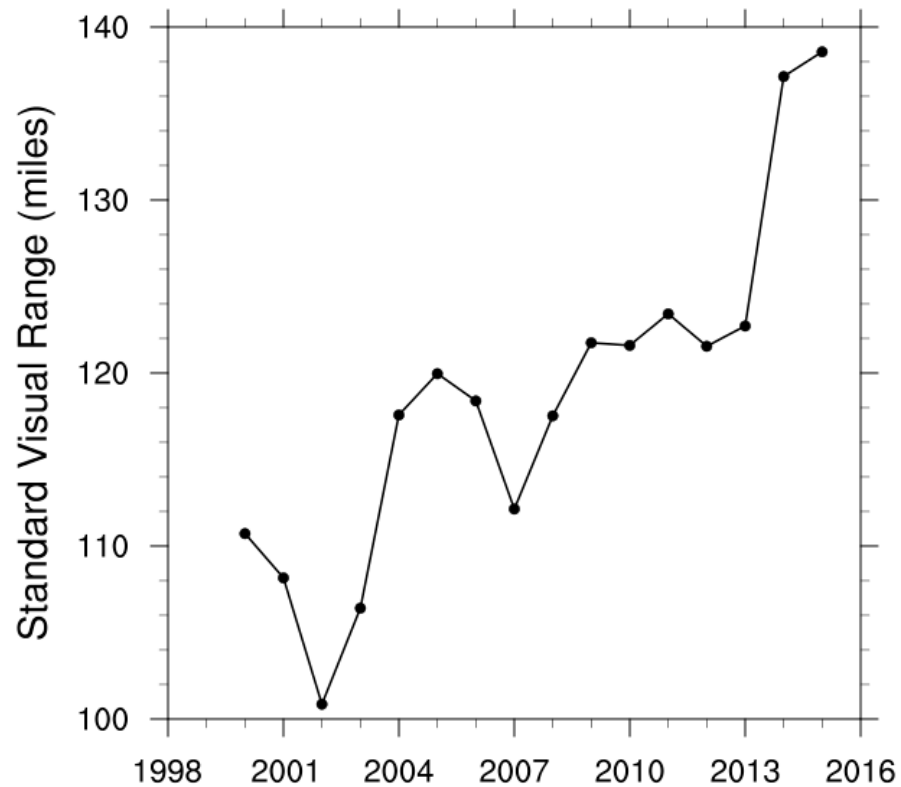
- Monitoring data for La Plata & Montezuma Counties indicates attainment of revised 8-hour Ozone NAAQS
- Total population and precursor emissions well below El Paso County
- Contributions to ozone from local sources is small, although the extent of transport into the area is unknown

Mercury Trends at Molas Pass



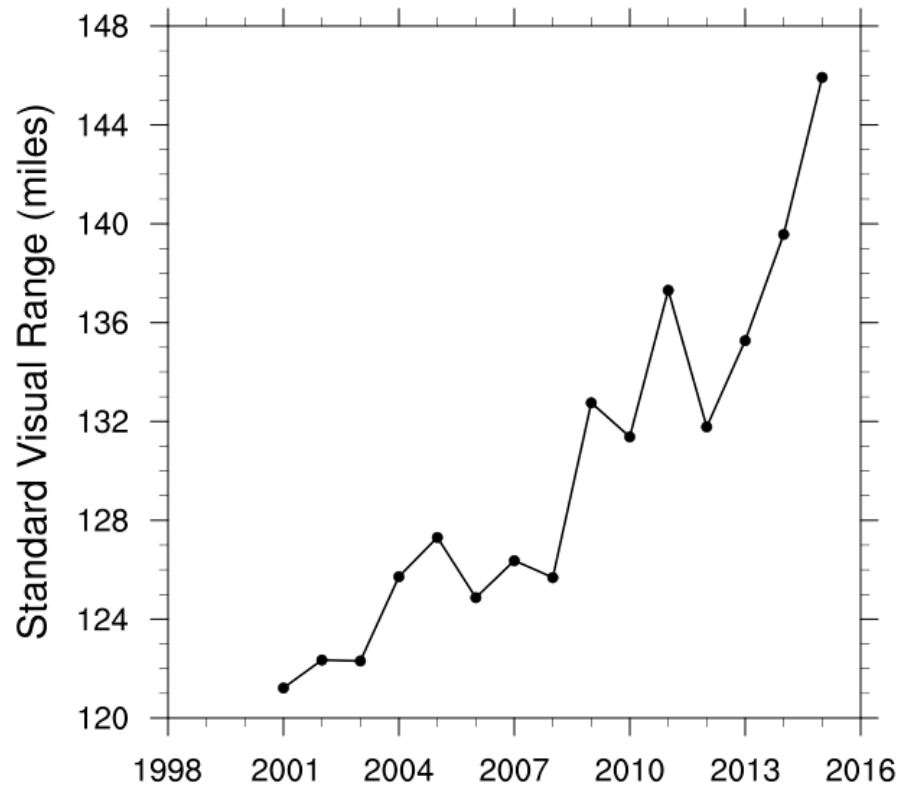
No short-term trend; long-term increasing trend

Mesa Verde National Park Visibility Range Trend



Courtesy: IMPROVE

Weminuche Wilderness Area Visibility Range Trend



Courtesy: IMPROVE