Executive Summary:

Figure 1 and Table 1 reflect the current Albuquerque – Bernalillo Co. monitoring network. The number of monitoring sites has remained fairly consistent over the years, though some locations and instruments have been shifted. As a result of ongoing assessment, the AQD (Air Quality Division) will propose closing one site, 35-001-0019 (local designation 2ZE) in the upcoming year. The shutdown of several monitors is also proposed. Within the 5 year period of this assessment, a second site (35-001-0027, 2ZT) is considered for shut-down, conditional upon Ozone attainment and our scientific understanding of Ozone precursors, formation, breakdown, and transport.

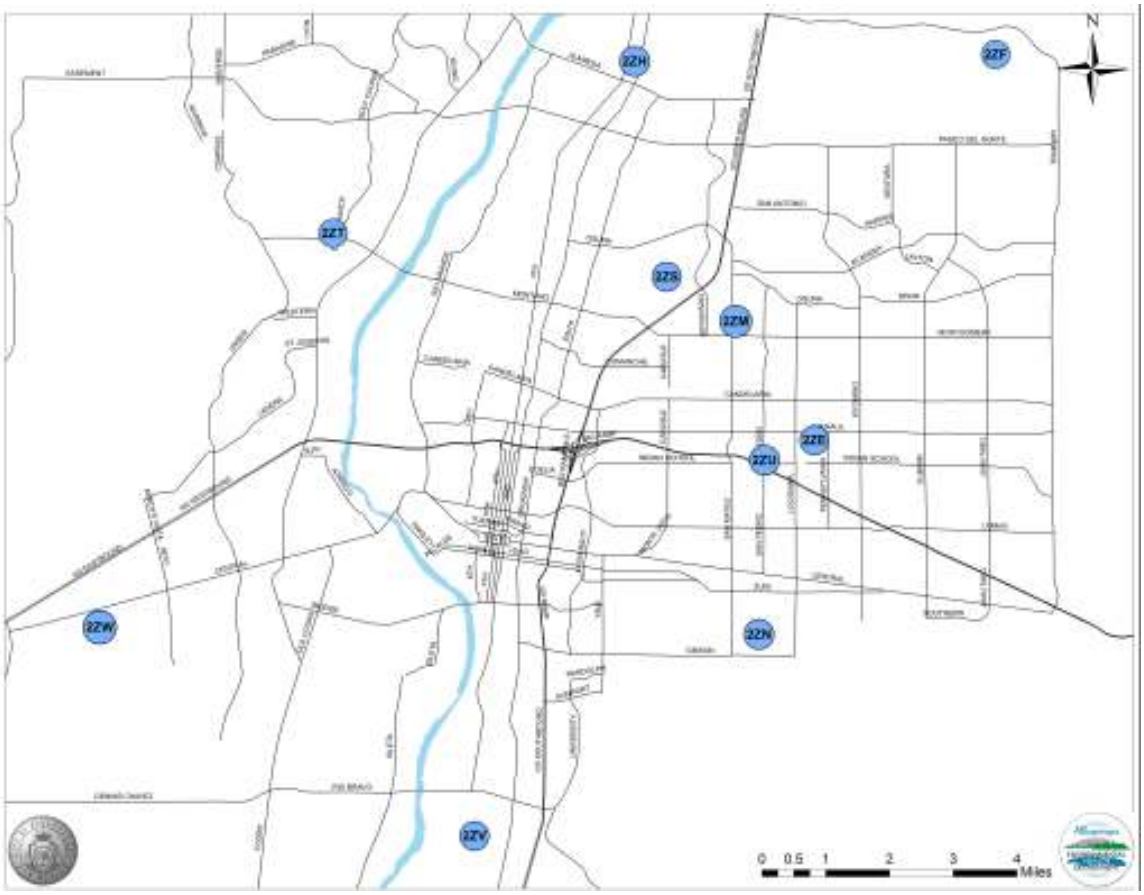


Figure 1 Albuquerque Bernalillo Co Air Monitoring Network Sites

Recent history:

In 2004, the Albuquerque – Bernalillo Co. monitoring network consisted of 10 monitoring sites. One site, 35-001-0019 (2ZF) was located on the northern edge of Bernalillo Co. on Sandia Tribal land. Following an access disagreement the site was moved temporarily to a nearby fire station, and eventually to a new permanent location at Double Eagle elementary school. After reviewing the proximity of the initial/final sites and the data, Region VI decided that the new site could continue under the original AIRS number.

In 2007, the AQD submitted documentation and analysis, requesting permission to shut down site 35-001-1014 (2ZL) at Corrales. The data it produced was innocuous and not distinguishable from other sites in the AQD Network. The Region agreed and the site was discontinued.

At the same time an Ozone monitor was positioned temporarily at the AQD offices. The data it produced was unexpectedly high for a near-rural site. Particularly in the spring months, it would sometimes record the daily high AQI value. After collecting data for a year, the AQD decided that the site should be permanent. It is part of the current network under 35-001-0031 (2ZW).

Network Purpose:

The AQD cannot afford sites that serve a single purpose. In a small network like Albuquerque – Bernalillo Co, each site and every monitor serves multiple purposes. An urban environment experiences significant pollutant variability over small spatial increments; hence, the site spacing is somewhat closer than a state network with rural sites.

The over-arching purpose is to protect public health by ensuring NAAQS compliance. In addition:

- Monitors at various sites are used to determine the daily AQI.
- One site is proximal to several industrial dust sources and has the ability to verify compliance with permit conditions and to trigger preventive measures and/or shut-down during high-wind events.
- One site is used to document CO Maintenance status.
- One site is designated as NCore, starting in 2011.
- Three sites record higher Ozone readings, but each under different weather conditions and at different times of year.
- Two sites reside in or near neighborhoods that claim Environmental Justice impacts and any attempt to discontinue monitoring at those sites would have significant political ramifications.
- Sites are distributed in an effort to provide somewhat even coverage to all areas of the city and county. Within the distributed coverage, we maintain a system "backbone": North Valley (2ZH, 35-001-0013), Del Norte (2ZM, 35-001-0023) and South Valley (2ZV, 35-001-0029). These 3 sites have a more extensive compliment of monitors and are arranged loosely in a North-South configuration from one edge of the county to the other.

In light of site synergy, this assessment addresses monitoring stations site-by-site and category by category, trying to optimize the amount of information for all purposes. Appendix B contains some plots created using the Netassess tools. No discussion is included because we think the tools are inappropriate at the scale of our network.

Table 1 shows all of the equipment that is currently operating at the 10 existing sites.

Table 1. Albuquerque-Bernalillo Co. 2010 Air Monitoring Network

Station Description	Gases						PM10			PM2.5			Other	
Station Name (Site Code), AIRs #	Ozone	CO	HS-CO	HS-NOx	HS-NOy	HS-SOx	24 Hour Hi Vol	Cont. (TEOM)	FDMS	Cont. (TEOM)	FDMS	Sequential	Speciation	Nephelome
Uptown Zuni Park (2ZE), 35-001-0019		API 300								R & P 1400	R & P 8500			
Dbl Eagle Elementary (2ZF), 35-001-1012	API 400A									R & P 1400				
North Valley (2ZH), 35-001-1013	API 400A	API 300						R & P 1400		R & P 1400	R & P 8500			
Del Norte (2ZM), 35-001-0023	API 400A	API 300	*API 300 EU*	*API 200 EU*	*API 501 EU*	*API 100 EU*	GMW 1/6	Thermo 1405 Dichotomous				2025 Col. 1/3, 1/6	MetOne Super SASS & URG Carbon 1/6	Optec NGN
SE Heights (2ZN), 35-001-0024	API 400A											Partisol 2025 1/3		
Singer (2ZS), 35-001-0026							Partisol 2025s (2-Col)	R & P 1400a						
Taylor Ranch (2ZT), 35-001-0027	API 400A									R & P 1400	R & P 8500			
Uptown San Pedro (2ZU), 35-001-0028		API 300												
South Valley (2ZV), 35-001-0029	API 400A	API 300						R & P 1400a		R & P 1400	R & P 8500			
AQD Westside (2ZW), 35-001-0031	API 400A							R & P 1400						

SLAMS
Seasonal
NCORE
Special Purpose

Purchased, pending activation

Ozone:

Albuquerque – Bernalillo Co is in attainment with the current standard of 0.080 PPM. With the pending change to both primary and secondary standard, there is a high probability of non-attainment. This pollutant is our primary attainment concern.

Ozone is monitored at 7 sites.

Station Description		Gases
Site Code AIRs #	Station Address	Ozone
2ZE 35-001-0019	Uptown Zuni Park 2421 Mesilla NE	
2ZF 35-001-1012	Dbl Eagle Elementary 8901 Lowel NE	API 400A
2ZH 35-001-1013	North Valley 9819 2nd St. NW	API 400A
2ZM 35-001-0023	Del Norte 4700 San Mateo NE	API 400A
2ZN 35-001-0024	SE Heights 6000 Anderson SE	API 400A
2ZS 35-001-0026	Singer 3700 Singer NE	
2ZT 35-001-0027	Taylor Ranch 5100 Montano NW	API 400A
2ZU 35-001-0028	Uptown San Pedro San Pedro & AMAFCA NE	
2ZV 35-001-0029	South Valley 201 Prosperity SE	API 400A
2ZW 35-001-0031	AQD Westside 11850 Sunset Gardens SW	API 400A

Three sites have a high probability of measuring the daily high reading:
Double Eagle Elementary (2ZF), AIRS 35-001-1012
North Valley (2ZH), AIRS 35-001-1013
AQD Westside (2ZW), AIRS 35-001-0031
One site normally produces the low daily reading:
South Valley (2ZV), AIRS 35-001-0029
The remaining three sites produce values that are in between.

While the AQD Network appear to be generously populated with Ozone monitors, and T-test data (Table 2 & Figure 2) indicates possible redundancy, in the event of non-attainment the AQD will be required to propose a Control Strategy. An effective strategy must be based on an accurate scientific understanding of Ozone precursors and formation.

It is our strong belief that Bernalillo County does not have sufficient local sources (fixed and mobile) to produce the Ozone levels that are measured, and a significant portion of the Ozone must be attributable to transport. The small variations between the existing

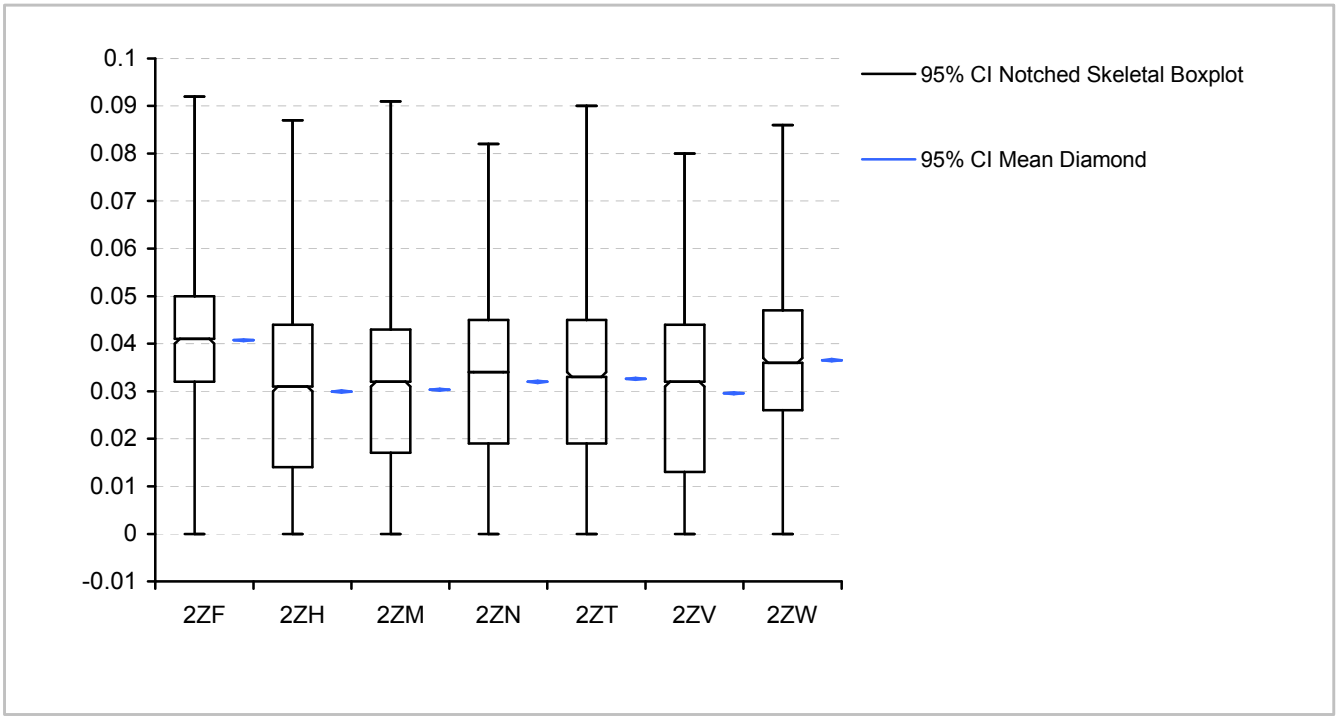
monitors are helping us achieve a better understanding of the phenomena that will be invaluable should the area cross into non-attainment.

Table 2A & 2B: Ozone Statistical Data

	n	Mean	95% CI		SE	SD
2ZF	24631	0.0407	0.0406	0.0409	0.0001	0.0129
2ZH	24503	0.0299	0.0297	0.0302	0.0001	0.0189
2ZM	25932	0.0303	0.0301	0.0305	0.0001	0.0171
2ZN	25664	0.0320	0.0317	0.0322	0.0001	0.0178
2ZT	25825	0.0326	0.0324	0.0328	0.0001	0.0171
2ZV	25629	0.0296	0.0293	0.0298	0.0001	0.0185
2ZW	15007	0.0365	0.0363	0.0368	0.0001	0.0150

CO Site	n	Min	1st Quartile	Median	95% CI		3rd Quartile	Max	IQR
2ZF	24631	0.0000	0.0320	0.0410	0.0400	0.0410	0.0500	0.0920	0.0180
2ZH	24503	0.0000	0.0140	0.0310	0.0300	0.0310	0.0440	0.0870	0.0300
2ZM	25932	0.0000	0.0170	0.0320	0.0310	0.0320	0.0430	0.0910	0.0260
2ZN	25664	0.0000	0.0190	0.0340	0.0340	0.0340	0.0450	0.0820	0.0260
2ZT	25825	0.0000	0.0190	0.0330	0.0330	0.0340	0.0450	0.0900	0.0260
2ZV	25629	0.0000	0.0130	0.0320	0.0310	0.0320	0.0440	0.0800	0.0310
2ZW	15007	0.0000	0.0260	0.0360	0.0360	0.0370	0.0470	0.0860	0.0210

Figure 2 Ozone Plot



Ozone Conclusion:

All current Ozone monitors are proposed to continue operation for the next 3 years. By year 4, if we remain in Attainment or if we have developed a full understanding of the

Ozone phenomena (precursors, formation, and breakdown) we will keep the three high sites, the low site, and Del Norte (NCore). We will propose at that time to shut down two of the mid-level Ozone monitors:

SE Heights (2ZN), AIRS 35-001-0024
Taylor Ranch (2ZT) AIRS 35-001-0027

Carbon Monoxide

Albuquerque – Bernalillo Co was in non-attainment for CO and is now in Maintenance Status. Carbon Monoxide is monitored at 5 sites.

Station Description		Gases
Site Code AIRs #	Station Address	CO
2ZE 35-001-0019	Uptown Zuni Park 2421 Mesilla NE	API 300
2ZF 35-001-1012	Dbl Eagle Elementary 8901 Lowel NE	
2ZH 35-001-1013	North Valley 9819 2nd St. NW	API 300
2ZM 35-001-0023	Del Norte 4700 San Mateo NE	API 300
2ZN 35-001-0024	SE Heights 6000 Anderson SE	
2ZS 35-001-0026	Singer 3700 Singer NE	
2ZT 35-001-0027	Taylor Ranch 5100 Montano NW	
2ZU 35-001-0028	Uptown San Pedro San Pedro & AMAFCA NE	API 300
2ZV 35-001-0029	South Valley 201 Prosperity SE	API 300
2ZW 35-001-0031	AQD Westside 11850 Sunset Gardens SW	

Statistically, all five monitors are very similar (Tables 3A & 3B). The Uptown San Pedro Microscale site (2ZU, 35-001-0028) must operate year around to verify Maintenance Status. Starting in 2011 the Del Norte site must monitor year around, replacing the current monitor with a high sensitivity monitor for NCore. The remaining three sites appear to be redundant, but with approval from Region VI, they are only operated seasonally and without shutting down an entire site, there is little benefit from discontinuing a single monitor.

Carbon Monoxide Conclusion:

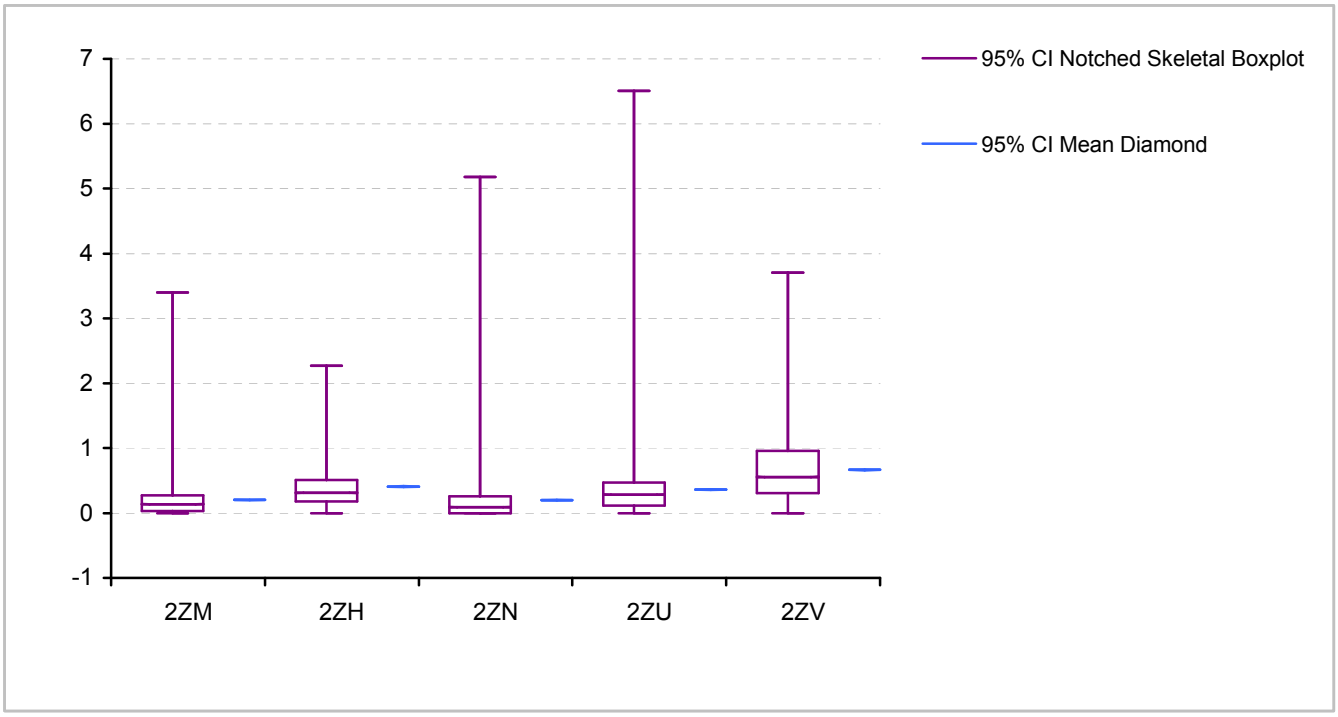
Because the Uptown Zuni Park (2ZE, 35-001-0019) is in close physical proximity to the year-around Maintenance site at Uptown San Pedro (2ZU, 35-001-0028), this assessment proposes to discontinue CO Monitoring at the former site. [In the PM 2.5 section the PM monitor will also be discontinued – thereby closing the site.]

Table 3A & 3B: CO Statistical Data.

CO Site	n	Mean	95% CI		SE	SD
2ZM	25672	0.2035	0.2005	0.2066	0.0015	0.2472
2ZH	6415	0.4084	0.4000	0.4167	0.0043	0.3414
2ZN	11700	0.1999	0.1940	0.2059	0.0030	0.3285
2ZU	25585	0.3645	0.3599	0.3691	0.0023	0.3750
2ZV	18169	0.6636	0.6564	0.6708	0.0037	0.4966

CO Site	n	Min	1st Quartile	Median	95% CI		3rd Quartile	Max	IQR
2ZM	25672	0.0000	0.0333	0.1371	0.1341	0.1403	0.2761	3.3982	0.2428
2ZH	6415	0.0000	0.1820	0.3116	0.3064	0.3182	0.5090	2.2702	0.3270
2ZN	11700	0.0000	0.0000	0.0919	0.0885	0.0969	0.2588	5.1800	0.2588
2ZU	25585	0.0000	0.1164	0.2861	0.2826	0.2899	0.4726	6.5046	0.3563
2ZV	18169	0.0000	0.3081	0.5528	0.5454	0.5611	0.9551	3.7043	0.6470

Figure 3 CO Plot



We propose continued seasonal operation of the CO monitors at
North Valley (2ZH) 9819 2nd St. NW 35-001-1013
South Valley (2ZV) 201 Prosperity SE 35-001-0029
for the following reasons:

1) The sites 'bookend' the north and south edges of our monitoring area
2) The sites represent Bernalillo Co., outside of the Albuquerque City Limits
3) A portion of the South Valley considers itself an EJ area, subject to excessive pollution

4) The two sites give a wider 'footprint' to the AQI, than if we used a single site in the middle of the area.

The API300 Co monitor at Del Norte (2ZM) 35-001-0023 will be replaced by the NCore high sensitivity API-300EU in late 2010.

PM_{10}

PM_{10} is monitored in two ways: 24-hour cumulative and continuous. The 24-hour measurements are made at two sites using a single FRM (Federal Reference Method) and collocated FRMs – the minimum network requirement. The second of the collocated monitors operates on a 1/6 schedule.

Del Norte (2ZM) 4700 San Mateo NE AIRS 35-001-0023
Singer (2ZS), 3700 Singer NE, AIRS 35-001-0026

Station Description		PM10		
Site Code AIRs #	Station Address	24 Hour Hi Vol	Cont. (TEOM)	FDMS
2ZE 35-001-0019	Uptown Zuni Park 2421 Mesilla NE			
2ZF 35-001-1012	Dbl Eagle Elementary 8901 Lowel NE			
2ZH 35-001-1013	North Valley 9819 2nd St. NW		R & P 1400	
2ZM 35-001-0023	Del Norte 4700 San Mateo NE	GMW 1/6	*Thermo 1405 Dichotomous	
2ZN 35-001-0024	SE Heights 6000 Anderson SE			
2ZS 35-001-0026	Singer 3700 Singer NE	Partisol 2025s (2-Col)	R & P 1400a	
2ZT 35-001-0027	Taylor Ranch 5100 Montano NW			
2ZU 35-001-0028	Uptown San Pedro San Pedro & AMAFCA NE			
2ZV 35-001-0029	South Valley 201 Prosperity SE		R & P 1400a	
2ZW 35-001-0031	AQD Westside 11850 Sunset Gardens SW		R & P 1400	
NCORE	SLAMS	Special Purpose		

Continuous measurements are made at 4 sites, using TEOMs (Tapered Element Oscillating Microbalance). Two sites "bookend' the county and are used for reporting the daily AQI:

North Valley (2ZH) 9819 2nd St. NW 35-001-1013
South Valley (2ZV) 201 Prosperity SE 35-001-0029

Historic data has portrayed both sites as relatively high PM. Recent landscaping improvements made by Bernalillo County to the area surrounding the South Valley site

appear to have resolved the matter, indicating that the site itself was the problem. However, due to less stringent Bernalillo County zoning and enforcement, the area represented by this site considers itself to be an EJ neighborhood. Attempts to shut down a monitor would engender major criticism.

The Singer site is near to large industrial dust sources which are permit regulated to institute dust control measures or shut down during high-wind events. Data from the PM monitors both triggers dust control notifications, records the effectiveness of said measures, and ensures that the neighborhood population is not subjected to levels exceeding the PM10 NAAQS.
Singer (2ZS), 3700 Singer NE, AIRS 35-001-0026

While the Continuous monitor at this site allows us to observe increments less than 24-hours, the data comparison also indicates that TEOMs do not record accurately during certain conditions. (They read irrationally high when compared to the FRM.) The 2025 FRMs ensure that the AQD has an accurate 24-hour NAAQS value

The final PM10 site is at the AQD offices: This site is on a ridge, separating the Rio Grande and Rio Puerco river valleys. The soils are fine alluvial sand and are highly susceptible to wind erosion. The land is currently undeveloped and primarily stabilized by native vegetation. However, the monitors already indicate large amounts of blowing PM during high-wind conditions and development is pending.
AQD Westside (2ZW), 11850 Sunset Gardens SW, AIRS 35-001-0031

Referring to the earlier discussion of 24-hour monitors, Del Norte (2ZM) also hosts a continuous PM10 instrument that has FEM (Federal Equivalent Method) status: a Thermo 1405. The 1405 dichotomous will meet the NCore requirement for $PM_{10-2.5}$. When it was purchased, it contained some factory design problems that made the data questionable. Those problems have recently been resolved, and the data now appears to be reliable. The PM_{10} channel of the 1405 could be considered a replacement for the GMW 8x10 filter based unit.

PM_{10} conclusion:
The AQD will continue parallel operation of the FRM and Dichotomous FEM monitors at Del Norte (2ZM) through the end of CY 2010. At that time, based on submittal of acceptable correlation data, discontinuation of the filter-based FRM will be propose.

The Continuous 1400 TEOMs at North (2ZH) and South Valley (2ZV) will continue to operate for now, providing data for the AQI. The continuous monitor at the Westside (2ZW) is establishing a pre-development baseline and will monitor changes as development occurs.

At Singer, operation of the collocated filter based samplers will continue to meet the minimum network requirement. Evaluation of a different continuous FEM is underway. If satisfactory results are obtained, the 1400 TEOMs may eventually be replaced throughout the network, as funding permits.

Table 4 PM_{10}

Site	AIRS #	POC	Year	# of 24 hr Observations	1st Max	2nd Max	3rd Max	4th Max
2ZM Del Norte								
	35-001-0023	1	2007	59	38	35	35	34
	35-001-0023	1	2008	56	43	33	32	31
	35-001-0023	1	2009	57	107	35	33	28
			Total	**172**	62.7	34.3	33.3	31.0
2ZS Singer								
	35-001-0026	1	2007	323	197	131	114	112
	35-001-0026	1	2008	342	163	132	123	114
	35-001-0026	1	2009	343	137	113	107	95
			Subtotal	1008	165.7	125.3	114.7	107.0
	35-001-0026	2	2007	50	140	97	86	84
	35-001-0026	2	2008	54	99	99	98	92
	35-001-0026	2	2009	53	105	75	72	67
			Subtotal	157	114.7	90.3	85.3	81.0
	35-001-0026	3	2007	352	194	130	124	111
	35-001-0026	3	2008	361	169	131	110	100
	35-001-0026	3	2009	360	183	119	115	94
			Subtotal	1073	182.0	126.7	116.3	101.7
			Total	**2238**	154.1	114.1	105.4	96.6
2ZH North Valley								
	35-001-1013	3	2007	308	95	89	86	85
	35-001-1013	3	2008	361	153	98	88	82
	35-001-1013	3	2009	269	110	183	65	62
			Total	**938**	119.3	123.3	79.7	76.3
2ZV South Valley								
	35-001-0029	3	2007	361	310	143	135	124
	35-001-0029	3	2008	358	147	135	124	122
	35-001-0029	3	2009	145	91	75	62	58
			Total	**864**	182.7	117.7	107.0	101.3

$PM_{2.5}$

The AQD operates FRM Sequential filter-based samplers at two sites. One site has a *collocated monitor that operates 1/6. Based on Albuquerque design values, those monitors meet the minimum network requirement.

*Del Norte (2ZM) AIRS 35-001-0023
Southeast Heights (2ZN), AIRS 35-001-0024

Five sites operate continuous $PM_{2.5}$ monitors. Four of the five continuous monitors are paired with FDMS to distinguish aerosol/solid particulates. Four of the monitors are

collocated with Ozone monitors – at one time an EPA objective. Data from the continuous monitors is used for the daily AQI.

Uptown Zuni Park (2ZE), AIRS 35-001-0019
Double Eagle Elementary (2ZF), AIRS 35-001-1012
North Valley (2ZH) AIRS 35-001-1013
South Valley (2ZV) AIRS 35-001-0029
Taylor Ranch (2ZT), AIRS 35-001-0027

As discussed in the PM_{10} section, Del Norte also hosts a Thermo 1405 dichotomous instrument that measures continuous $PM_{2.5}$. The 1405 FEM will meet the mandatory NCore requirement for $PM_{10-2.5}$.

Station Description		PM2.5		
Site Code AIRs #	Station Address	Cont. (TEOM)	FDMS	Sequen-tial
2ZE 35-001-0019	Uptown Zuni Park 2421 Mesilla NE	R & P 1400	R & P 8500	
2ZF 35-001-1012	Dbl Eagle Elementary 8901 Lowel NE	R & P 1400		
2ZH 35-001-1013	North Valley 9819 2nd St. NW	R & P 1400	R & P 8500	
2ZM 35-001-0023	Del Norte 4700 San Mateo NE	*Thermo 1405 Dichotomous		2025 Col. 1/1, 1/6
2ZN 35-001-0024	SE Heights 6000 Anderson SE			Partisol 2025 1/1
2ZS 35-001-0026	Singer 3700 Singer NE			
2ZT 35-001-0027	Taylor Ranch 5100 Montano NW	R & P 1400	R & P 8500	
2ZU 35-001-0028	Uptown San Pedro San Pedro & AMAFCA NE			
2ZV 35-001-0029	South Valley 201 Prosperity SE	R & P 1400	R & P 8500	
2ZW 35-001-0031	AQD Westside 11850 Sunset Gardens SW			

PM2.5 Conclusion

Statistically (Table 4) data from the five monitors are similar and are will within the NAAQS. Pending approval from EPA Region VI, the continuous monitors at three sites will be discontinued in the coming year. Note that this will remove the ability to look at *Ozone – $PM_{2.5}$ correlation at two sites.

Uptown Zuni Park (2ZE) AIRS 35-001-0019
*Double Eagle Elementary (2ZF) AIRS 35-001-1012 and
*Taylor Ranch (2ZT) AIRS 35-001-0027

Two continuous sites will be retained to provide a wider spatial separation for AQI purposes.

North Valley (2ZH),	AIRS 35-001-1013
South Valley (2ZV),	AIRS 35-001-0029

Table 5 $PM_{2.5}$

Site Name AQS #	Sampling Schedule	2007 Daily 98th %	2008 Daily 98th %	2009 Daily 98th %	Design Value (% Daily NAAQS)	2007 Annual Arithmetic Mean	2008 Annual Arithmetic Mean	2009 Annual Arithmetic Mean	Design Value (% Annual NAAQS)	Co-located with continuous PM2.5 Sampler
Del Norte 0023	1/3	18.4	14.1	13.1	43.4%	6.7	6	5.3	40.0%	Yes
Del Norte 0023 co-locate	1/6	12.9	12.9	12	36.0%	6.2	6	5.2	38.7%	Yes
Del Norte 0023 R&P 1405	Continuous/hourly	Not available	Not available	Not available		Not available	Not available	Not available		
SE Heights 0024	1/3	18	14.3	16.6	46.6%	6.5	5.9	5.2	39.1%	No
Uptown Zuni 0019	Continuous/ Hourly	30	20.8	32.9	NC	8.6	7.4	8.8		
* Double Eagle 1012	Continuous/ Hourly				NC				NC	
North Valley 1013	Continuous/ Hourly	40.2	33.9	27.7	NC	11.9	10.8	7.6	NC	
Taylor Ranch 0027	Continuous/ Hourly	22.2	15.9	17.4	NC	6.8	5.5	5.9	NC	
South Valley 0029	Continuous/ Hourly	43.9	29.2	28	NC	11.2	10.1	8.8	NC	

The AQD Modeler and meteorologist makes a case for continuing site 2ZE. (see Appendix C) The Monitoring section counters with the following points. Looking at Figure 1, 2ZE is in close physical proximity with other AQD sites. The Polygons for CO and PM2.5 (Appendix B) do not show that 2ZE represents a unique area for either pollutant.

The "No Burn nights" are very infrequent –none have been called during the last two winter seasons.

Air monitoring believes that the No Burn is an important tool in preventing pollution build-up during temperature inversions, and would support tightening the "No Burn trigger." However the No Burn is a local program and does not have a direct relationship to EPA Criteria pollutants or the NAAQS.

The data from 2ZE is not used to direct or issue the "No Burn" call. Rather, it is being used after the fact to determine how effective the "No Burn" was in preventing over night pollution build-up.

In a time of resource constraints, relief must be sought in the least critical part of the system. Neither the Ozone or PM2.5 monitors at 2ZE survive individual scrutiny. By discontinuing both monitors, the site itself can be shut down.

Specialty Measurements: High Sensitivity Gases, PM10-2.5, Speciation, Nephalometer, and Aethalometer.

High sensitivity gases will be monitored at only one site for NCore, starting later in 2010. This is a mandatory requirement and no discussion is necessary. The NCore site is at:

Del Norte (2ZM) 4700 San Mateo NE 35-001-0023

Station Description		Specialty Measurements										
Site Code AIRs #	Station Address	HS-CO	HS-NOx	HS-NOy	HS-SOx	Cont. (TEOM)	FDMS	Cont. (TEOM)	FDMS	Speciation	Nepha-lometer	Aethe-lometer
2ZE 35-001-0019	Uptown Zuni Park 2421 Mesilla NE											
2ZF 35-001-1012	Dbl Eagle Elementary 8901 Lowel NE											
2ZH 35-001-1013	North Valley 9819 2nd St. NW											
2ZM 35-001-0023	Del Norte 4700 San Mateo NE	API 300 EU	API 200 EU	API 501 EU	API 100 EU	*Thermo 1405 Dichotomous				MetOne Super SASS & URG Carbon 1/6	Optec NGN-2	McGee AE2
2ZN 35-001-0024	SE Heights 6000 Anderson SE											
2ZS 35-001-0026	Singer 3700 Singer NE											
2ZT 35-001-0027	Taylor Ranch 5100 Montano NW											
2ZU 35-001-0028	Uptown San Pedro San Pedro & AMAFCA NE											
2ZV 35-001-0029	South Valley 201 Prosperity SE											
2ZW 35-001-0031	AQD Westside 11850 Sunset Gardens SW											

NCore Current Status and Future:
The site is established. Equipment is mostly procured and on site. The AQD will meet the deadline of January 1 2011.

There is one potential "cloud" on the horizon. In the most recent municipal election, voters passed a bond issue for schools that included a possible major renovation of Del Norte High School. The NCore site sits on the very back edge of the high school property.

Should it come about, building demolition and construction traffic could impact the site. In one very preliminary discussion with the school administration, they indicated the intent to leave alone the track and grassed practice field that isolate the monitoring site from the built-up portion of the property. The project is probably several years in the future. It might not happen at all and, if it does, the impact may be insignificant.

Network level assessment:

The reason for and significance of individual monitors has been discussed above. As noted in the introduction, monitors serve multiple purposes and are sometimes located for several reasons. At the same time, the network as a whole is evaluated annually for functionality to provide a clear picture of Albuquerque-Bernalillo County air quality.

Manual construction of Thesian polygons (Appendix B) identified possible redundancy between Uptown Zuni Park (2ZE) and Uptown San Pedro (2ZU), leading to a proposed shut-down of the former site.

With 2ZE discontinued, the AQD will consider upgrading the Uptown San Pedro (2ZU) site during the next 5 years. The site is already a microscale site for CO maintenance and by using existing equipment it could work equally well for all traffic-related emissions. Plans are tentative at this point but upgraded meteorology, PM2.5, Aethalometer (carbon), and Ozone are all under consideration. There could be an efficiency advantage to concentrating multiple pollutants at a single site.

Pending New Requirements:

EPA is considering new monitoring requirements in conjunction with its ongoing assessment of NAAQS. Several of these requirements merit discussion in this 5-year Plan.

Lead:
In response to a question during the February 2010 NACCA conference call, the EPA spokesperson said that NCore sites were proposed as a simplification. The assumption was that $PM_{10-2.5}$ would be measured with two discrete filters at each NCore site. The PM_{10} filter could be simultaneously analyzed for Lead, rather than installing a separate monitor at another location. The EPA spokesperson said approval of an alternate monitoring site was within the purview of our Region.

Different technology:
The "co-use" logic is not applicable to the Albuquerque AQD, which is measuring $PM_{10-2.5}$ at the NCore site with a continuous dichotomous sampler. It is our intent to monitor Lead with a TSP sampler and the monitoring requirement mandates two collocated devices.

Spacing:
With all of the current and pending samplers at the NCore site, Del Norte (2ZM), two more samplers would not fit on the deck with the required inlet spacing.

Probability of relevant lead findings:
During a CSM Toxics monitoring project, heavy metals were collected and analyzed at three AQD sites: North Valley, Del Norte (NCore), and South Valley, with highest results in the South Valley location. While none of the lead data exhibited any reason for concern, the South Valley EJ community is likely to protest if a lead monitor is placed anywhere else.

There are several possible reasons why the South Valley might show slightly increased lead concentrations:

- The area lies along the Burlington Northern – Santa Fe railroad corridor. (There may be some historic accumulation from 150 years of use.)
- The area has been zoned by Bernalillo County as M1 – Industrial.
- Despite the zoning, residential development subsequently occurred.
- The zoning has allowed a high prevalence of Auto Body Scrap yards. (Though to our knowledge there are no battery recycling operations)
- The area is below the SW to NE takeoff/landing corridor for the Albuquerque International Airport. (though propeller driven traffic is not common at this airport)
- The zoning allows three fuel bulk storage facilities, one of which holds Av-Gas.

It must be emphasized that

- The lead data does not remotely approach the new lead NAAQS level.
- There is not a definitive relationship with any of the aforementioned facilities.
- The probable explanation may be a data anomaly, within one standard deviation or some combination of the theories above.

Never the less, if population-based lead monitoring is to be in the area of highest concentration, it should be in the South Valley. Monitors there not only allow us to meet the EPA monitoring requirement, but the data can also assure the local population that lead levels are not endangering their health. Lastly, the South Valley site will have room to accommodate the lead monitors. The NCore/Del Norte site doesn't.

The AQD is formally proposing as part of this 5-year Network Assessment, to collocate 2 TSP lead samplers at the South Valley (2ZV, 35-001 0029) site.

Roadside NO_2:
The monitoring requirement states within 50 m of the nearest traffic lane. While that parameter is extremely challenging, particularly when concatenated with logistical issues, two tentative sites have been found and shown to the region. Passive sampling will occur for 6 months. The resultant data may support the final site selection.

A new Roadway NO2 site raises an alternative to the proposal to expand Uptown San Pedro (2ZU, 35-001-0028) (See Network Level assessment, 2 pages prior). If the CO maintenance site can be transferred to the Roadway NO2 location, 2ZU could be discontinued. The Roadway site could be expanded to include all potential mobile source emissions, including PM2.5 and carbon particulates.

SO_2
After reading the Federal Register, it is our understanding that none of the criteria will require Albuquerque - Bernalillo County to participate in the new SO2 monitoring, beyond trace gas monitor at the NCore site. We request the Region's concurrence on this matter.

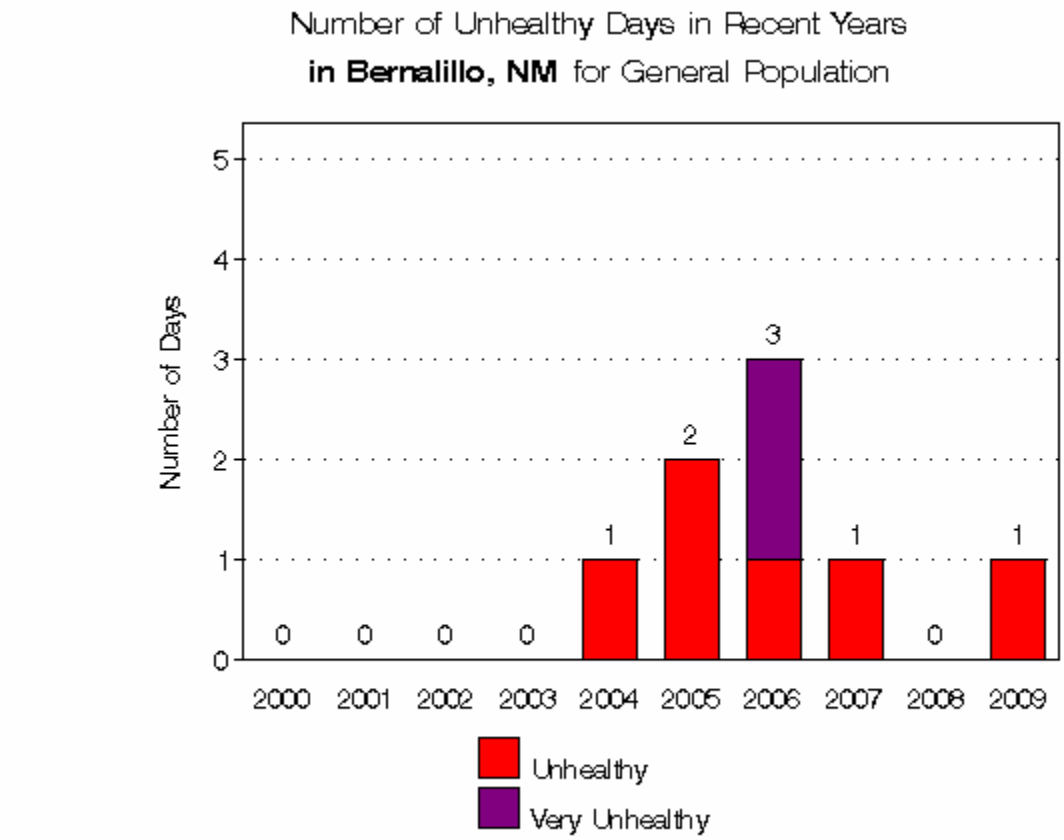
Appendix A. Responses to specific Checklist questions.

These topics do not fit the narrative format in the main report and are more easily answered as stand-alone questions. Checklist issues that are not addressed below are not-applicable.

D. MONITORING NETWORK/DATA GENERAL QUESTIONS

1. Who are the primary data users? *Include all major users*
   a. Monitoring Program Yes
   b. Compare to NAAQS or agencies use of long-term trends Yes
   c. Required by SIP or Maintenance plan – is their a sunset date after which monitoring can be retired if air becomes sufficiently clean? For CO at 2ZU. Expires in 2016
   d. State standard or program Dust and No Burn are local. No-burn is related to CO Maintenance
   e. Other internal data use? No
   f. Public – (i.e., AQI reports) Yes
   g. EPA Federal (Agency would not run monitor expect that have been asked by EPA to do so). AQI, NCore high-sensitivity monitors, Speciation and Carbon particulates, Roadway NO2, Lead
   h. Third Party science data users or other? NARAC, users of Speciation Trends Network data.

2. What is the most important monitoring objective for this site/network? *e.g., a site may have occasional high concentrations that are important for AQI but it does not violate the NAAQS.*
   a. NAAQS – violates the NAAQS or a site used in emission control strategy development No
   b. AQI – number of days above 100 level Yes



In 2009 there were two days for Sensitive Populations. One day was for Ozone and one day was for Particulate Matter.

c. Used in health or atmospheric study – which one and when does the study conclude? No
d. Long-term trends Yes
e. Model validation No
f. Other - List None

3. What is the domain of responsibility for the monitoring agency and how does it relate to upwind and downwind impacts?
   a. What is the geopolitical area of responsibility? A State, a county, a multi-county area. The AQD domain of responsibility is Bernalillo County, excluding any Native American Lands.
   b. What upwind areas typically transport pollution into our networks? During exceptional events we have seen dust from China. We have seen forest fire emissions (PM2.5 and Carbon) from the State of New Mexico, SW Colorado, Arizona, and Southern California. We have seen Ozone back trajectories leading to Phoenix, Az, and have a very clear instance of Stratospheric Ozone intrusion that migrated from

Arizona to New Mexico including Bernalillo Co. We theorize that Bernalillo County gets some NOx from the large EGUs in the Four Corners area. Analysis by Sonoma Technologies showed a slight preponderance of back trajectories leading to the El Paso area during some seasons of the year.

c. What downwind areas are impacted by transport from our networks? Being a small but relatively clean "island" in the middle of New Mexico we don't think we have any industrial emissions that migrate beyond the New Mexico state borders. However, being only a county, it would be surprising if our area-source emissions weren't, to some extent, transmitted into the surrounding counties of Valencia, Southern Sandoval, and Southern Santa Fe. The subject counties are all within the jurisdiction of the NMED.

4. Beyond Federal requirements are there any specific State or local priorities that the Monitoring Networks serve. Some possible examples (not exhaustive) – identify all that are relevant:
   a. **List State Air Quality Standards,** even if redundant with Federal Standards Only Federal and New Mexico Standards.
   b. Are there any other Air Quality Standards or goals not already listed? No
   c. Notification of "burn-bans" or other action day programs.
      The AQD has a very active program to control fugitive dust, which can order additional control measures and under extreme weather conditions - issue stop-work orders.
      Similarly, under meteorological conditions that favor the rapid onset of strong temperature inversions, the AQD can order "No Burn" nights.

5. Are there known health or atmospheric science users of the ambient air monitoring data? *See attachment D on Index of Health Studies and Associated Ambient Air Monitoring Data* The Albuquerque network provides Speciation Data, from the Super SASS and the URG carbon sampler. Beginning in January 2011 the network will provide NCore Data. The network currently provides meteorological parameters NARAC (National Atmospheric Release Advisory Center) – a component of Homeland Security.
   a. Clearly identify any on-going studies that could potentially be impacted by changes to the network. None
   b. Identify any already completed studies and cite, if available any published papers from these data.
      "*Albuquerque/Bernalillo County Community-Scale Air Toxics Monitoring and Risk Assessment Project Final Report*" (2006 – 2008. Draft until approved by Region VI)
   c. "*Albuquerque Ozone Modeling Analysis Report*" (2007)

E. POLLUTANT SPECIFIC SUMMARY – ALL POLLUTANTS

These first series of questions apply individually to all of the NAAQS

Ensure that the Assessment covers each of the following:

All measured pollutants comply with all current NAAQS. Depending upon the final level that is selected (primary and secondary), Ozone is t he most problematic pollutant. All other air pollutants are well within the NAAQS and will remain so. Ozone is therefore the AQD priority pollutant. Other pollutants do provide information that supports, substantiates, or clarifies Ozone concentrations.

1. What is the priority of this pollutant relative to others in the network? Be clear about how this pollutants relative importance:
   a. Pollutant violates the NAAQS
   b. Pollutant is near the NAAQS Ozone
   c. Pollutant is well below the NAAQS, but is used in assessing ratio with other NAAQS that do violate
   d. Pollutant is well below the NAAQS and some of the existing sites should be considered low-value
2. What is the priority of this pollutant relative to others in the network? Be clear about how this pollutants relative importance:
   a. Pollutant violates the NAAQS
   b. Pollutant is near the NAAQS
   c. Pollutant is well below the NAAQS, but is used in assessing ratio with other NAAQS that do violate
   d. Pollutant is well below the NAAQS and some of the existing sites should be considered low-value
3. Is there a table or similar that provides the design value for each monitoring site? Yes

4. Is there a table or similar that provides the design value for each monitoring site? Yes

5. Is there a table or graphic that describes/illustrates the uniqueness or correlation of the sites in the network? Yes

6. Does the site still meet the network design requirements? (i.e., maximum concentration site) Yes

7. If any atmospheric dispersion modeling output generated as part of a permit application or control strategy has been utilized? No

8. If the network is suitable to measure the appropriate spatial scale of representativeness for selected pollutants. Yes

9. If there are monitoring data spatial redundancies or gaps that need to be eliminated. No

F. POLLUTANT SPECIFIC SUMMARY - PM

Questions for $PM_{2.5}$ Continuous Monitors (e.g., ARM/FEM or other method)

If applicable, ensure that the Assessment covers each of the following:

1. Has the agency developed a plan to transition to continuous FEM's Yes
2. Does the agency have a preferred $PM_{2.5}$ continuous method that supports AQI forecasting and reporting. Yes
3. Does the method meet the Data Quality Objectives's (DQO's) compared to collocated FRM's? Yes
   a. Within +/- 10% total bias
   b. Above 0.9 for correlation (0.81 r^2)

Questions for $PM_{2.5}$ Chemical Speciation Network (CSN)

1. Is there a CSN site at the design value location for any CBSA violating the NAAQS? If not at the design value location, explain if the existing location is appropriate for characterizing chemical species of if the CSN needs to move. Note: Moving Speciation Trends Network (STN) Stations is discouraged as these are intended to be long-term operated stations to support a number of objectives. Not Applicable
2. For most areas the design value location will be applicable to both the daily and annual NAAQS, but in limited situations this may not be the case. Explain if this is not the case and what it means for interpreting speciation data. Not Applicable

Question for PM_{10}

1. Does the agency have a plan to transition any remaining important PM_{10} stations to either low-volume or continuous methods? Yes – covered in main body.

G. POLLUTANT SPECIFIC SUMMARY – Ozone and Precursors

Questions for Ozone

1. Does the site still meet the network design requirements? (i.e., downwind maximum concentration site) Ensure discussion on this question addresses:
   a. How population shifts affect a site still being appropriate as the downwind maximum concentration ozone site.

b. That proximity to nearby roadways has enough buffer so that NOx titration is not depressing the site as a maximum concentration location (i.e., Appendix E setback requirements)
c. Include graphics and figures illustrating wind trajectories, population density, sources, and any other useful information that supports characterizing ozone in a down wind location that represents the highest concentrations of ozone for the CBSA. Identify if the current network supports this location or if a new station is needed.

Questions for Photochemical Assessment Monitoring Stations (PAMS), (if PAMS is applicable) The AQD does not have a PAMs site.

Albuquerque – Bernalillo County is in compliance with the current 8-hour standard and will probably be in compliance with the new primary standard if it is set at 0.075, and secondary standard if it is set at 15. Our VPMD (Vehicle Pollution Management Program) was targeted at CO Attainment but probably serves double duty to reduce VOC emissions. Other than that, no emissions (VOCs or oxides of Nitrogen) are targeted for reduction at this time.

Despite not having a PAMs site, the AQD does have some tools and models available to assess the probability that Ozone and its precursors are being transported into the area.

1. Does the agency have the information to answer whether ozone exceedences are NOx limited or VOC limited. Identify a typical high ozone episode for the network and whether the ozone maxima are NOx or VOC limited. Analysis by Sonoma Technology indicates spatial variation: VOC limited over most of the County, NOx limited on the periphery.
2. How do the PAMS data relate to State Implementation Plans (SIPs) under development or already implemented? Not applicable
3. Identify target emission pollutants that are being addressed in the SIP. Identify if these are part of local or national controls.
4. Oxides of nitrogen being targeted for emission reductions? Until we understand better, we are looking at everything.
5. Volatile Organic Compounds being targeted for emission reductions. Until we understand better, we are looking at everything.
6. Describe the PAMS data used or that will be used to assess progress in these control programs.
7. Does the agency have access to its own or other agency data to assess air pollution being transported into PAMS areas?
8. Is the location of the type 2 PAMS station still appropriate?
9. Is the location of the type 3 PAMS station still appropriate?
10. Does the PAMS network still meet the network design requirements? (i.e., downwind maximum concentration site)
11. How are you meeting the requirements for upper air measurements? Is this meeting the needs of your agency air quality forecasters and SIP planners?

H. POLLUTANT SPECIFIC SUMMARY – Additional NAAQS Gases

Questions for Carbon Monoxide (CO)

1. Are the objectives of CO sites clearly stated and appropriate?
    a. Smaller scale sites for mobile impacts Uptown San Pedro is a microscale site that monitors CO to demonstrate Maintenance status compliance through the year 2016.
    b. Area-wide sites collocated with other pollutants. Other CO sites are collocated and measure CO for daily AQI.

Questions for Sulfur Dioxide (SO_2)

1. Are source-oriented sites in the area of expected maximum concentration
   The AQD does not monitor SO2.

Questions for Nitrogen Dioxide (NO_2)

1. Are the objectives of NO2 sites clearly stated and appropriate?
    a. Smaller scale sites for mobile impacts
    b. Area-wide sites collocated with other pollutants

   Bernalillo County is currently in attainment for the annual standard; however EPA has established a new 1-hour NO_2 standard at a level of 100 ppb. As part of the new standard, EPA is requiring the placement of new near-road NO_2 monitors in urban areas or 'Core Based Statistical Areas' (CBSA) with populations greater than or equal to 500,000 people. Albuquerque's CBSA population in 2008 was 845,913, which will require Bernalillo County to install a near-road monitor.
   A second near-road monitor is required in areas with: either a population greater than or equal to 2.5 million people, or one, which has a road segment with an Annual Average Daily Traffic (AADT) count greater than or equal to 250,000 vehicles. The highest AADT for any road segment in Bernalillo County is only 182, 700, measured on I-25 near Montgomery Boulevard (see http://www.mrcog-nm.gov/images/stories/pdf/maps_and_data/traffic_flow/tfm08urban.pdf), therefore a second monitor will not be required.

I. POLLUTANT SPECIFIC SUMMARY – Lead (Pb)

Questions for Lead (Pb)

1. What is the minimum number of sites required for this area? Bernalillo County is not required to install a Source-oriented monitor. Core

Based Statistical Area (CBSA) with populations exceeding 500,000 people, are required to install a non-source-oriented Pb monitor. Therefore, Bernalillo County, which has a CBSA exceeding 500,000, is required to install a non-source oriented Pb monitor, which must be operational by January 1, 2011.

2. Are you meeting the minimum requirements and if so, how many more monitors to you have beyond the minimums and for what purpose?
Bernalillo County currently does not monitor lead but will comply with the new lead requirement by the January 1, 2011 deadline.
3. Considering the latest available emissions inventory does the agency meet the requirements of Part 58, Appendix D: Not Applicable
    a. Are source-oriented monitors located properly to measure expected maximum concentrations?
    b. Has the agency considered other lead monitoring stations where the likelihood of Pb air quality violations is significant?

J. TECHNOLOGY

This section provides some questions that can be addressed on technology related areas of a monitoring network.

Monitors

Describe the status of the monitors. Summarize areas where the agency is satisfied with the current generation of gas monitors, PM samplers, and PM continuous monitors and those areas where it is not. If applicable, explain how the current suite gas monitors models is still appropriate or if a new series of monitors will need to be explored.
The AQD is satisfied with the reliability and accuracy of gaseous monitors from Teledyne API. This company also provides excellent service and has prompt availability of spare parts.
Particulate monitors from Thermo Scientific Instruments are a mixed bag. Service, responsiveness, and availability of spare parts are uniformly poor. Much of the former R&P staff were let go, part inventories are minimal to non-existent, phone calls are not answered, and no amount of complaining seems to change the corporate attitude. The R&P 2025s are reliable but the software and programming interfaces are complicated. A new generation of this monitor has been mentioned and might offer some improvement. Then again, if developed by Thermo, they might be worse.
The 1400A TEOMS produce a lot of data per manhours invested. However they produce anomalous results under critical conditions, that show decreasing mass loading and impossibly high PM concentrations. Thermo has not been willing to research and fix the problem and we would be very uncomfortable if we were totally dependent on TEOMs for NAAQS compliance.
We are close to the point of eliminating our last operational 8 x 10 Hi Vol filter based unit made by General Metalworks. It continues to be reliable but it is cumbersome and costly to operate a filter based unit to produce a single 24-hour data point.
A MetOne BAMS is being evaluated. The company is highly responsive. Monitor design appears to be good, but we do not have sufficient data at this point to make a decision about replacing TEOMs with BAMs.

PAMS, if applicable

Describe the condition or your PAMS equipment, what the remaining lifetime of this equipment is, and how your agency will transition to any new equipment or different measurements to support PAMS in the next 5 years. N.A.

Calibrator (field)

Is the calibrator suitable for ozone and/or trace-level dilutions, if applicable, see Appendix A audit concentrations. Capable of automated QC checks. Internal O_3 generator – photometer preferred.
Our calibration systems are capable of automated precision checks but manual checks had to be performed at a few sites where API 700s were not available. Until a recent procurement, none of our dilution systems were capable of trace level dilution. The NCore site will have this capability when it comes on line, but other sites will not.

Calibrator (lab or field)

Suitable for generation of MDL-level concentrations
The AQD has purchased Dynamic Dillution Calibration Devices with three mass flow controllers, that will enable us to calibrate to trace levels. We are in the process of purchasing a Fluke Molblock for precise low-level flow calibrations?
Zero Air Source

Compliant with NCore TAD recommendations. Ultra-pure air cylinder recommended for occasional comparison to zero air source. Capacity for 20+ LPM of dilution air. NCore Monitors are still being installed and programmed and calibration equipment procured. Calibration cylinders have a 6-month life and will not be procured until closer to the end of the year. The AQD will have the 20 LPM dilution capacity.

Data acquisition system

Is the data systems capable of :

1. Digital-capable system? Yes.
2. Remote diagnostics? Yes.
3. Remotely enabled checks? Yes.

Gas cylinder standards

Suitable for trace-level dilutions, see Appendix A audit concentrations, EPA Protocol certifications. Special low-level standards needed for MDL concentrations (CO, SO2, NOy) The AQD is familiar with the Appendix A audit gas requirements. SLAMS requirements are fully met now and NCore requirements will be met before Ncore starts in January 2011.

Meteorological calibration devices

Devices have NIST traceability for required meteorological parameters.

NIST traceable meteorological equipment is available at existing sites. New ultrasonic equipment is being procured for the NCore site.

Sampling manifold

Per Appendix E. Residence time <20 seconds, only glass or Teflon materials, probe and monitor inlets acceptable heights. Per a TSA in 2009, all inlets are correctly positioned and all inlet manifolds are Pyrex glass and/or Teflon.

Auditing equipment

Independent calibrator, zero air source and gas standards compatible with trace level specifications. Independent meteorological and flow standards, it not already available. Per February 2010 Teleconference with Region VI, independent Audit equipment is NOT a requirement and funding to purchase independent equipment was not available.

K. CROSS-CUTTING NETWORK CONSIDERATIONS

Training considerations – Monitors and SOP's

Does the agency have a long-term strategy for aligning all of its equipment for a measurement using the same make and model?
The AQD has aligned all of its gaseous equipment with Teledyne API. This reduces parts inventory and narrows training requirements. PM monitors are aligned with Thermo (although most equipment was designed/manufactured by other companies that Thermo purchased) As discussed above, Thermo support and service are problematic and we would like to find another supplier

What other monitoring programs are leveraged in the network? Identify all other leveraged networks

SLAMS - NCore, CSN, PAMS
Air Toxics – NATTS, UATMP
Deposition – CASTNET, NADP, MD

The AQD is leveraged with SLAMS ,NCORE, and Speciation Trends Network (STN) that will now become part of the NCore site. There appear to be high levels of Mercury in New Mexico but only one monitor. We would like to install equipment to become a long-term participant in the Mercury Deposition Network.

Appendix B. Netassess Plots.

The following plots were produced either using Netassess tools or manually. They are included for reference; however, the scale produced by the tools make them relatively useless for the Albuquerque – Bernalillo Co Network. To overcome this, the Thesian Polygrams were produced manually.

Figure B1: 2008 Ozone, .065 NAAQS

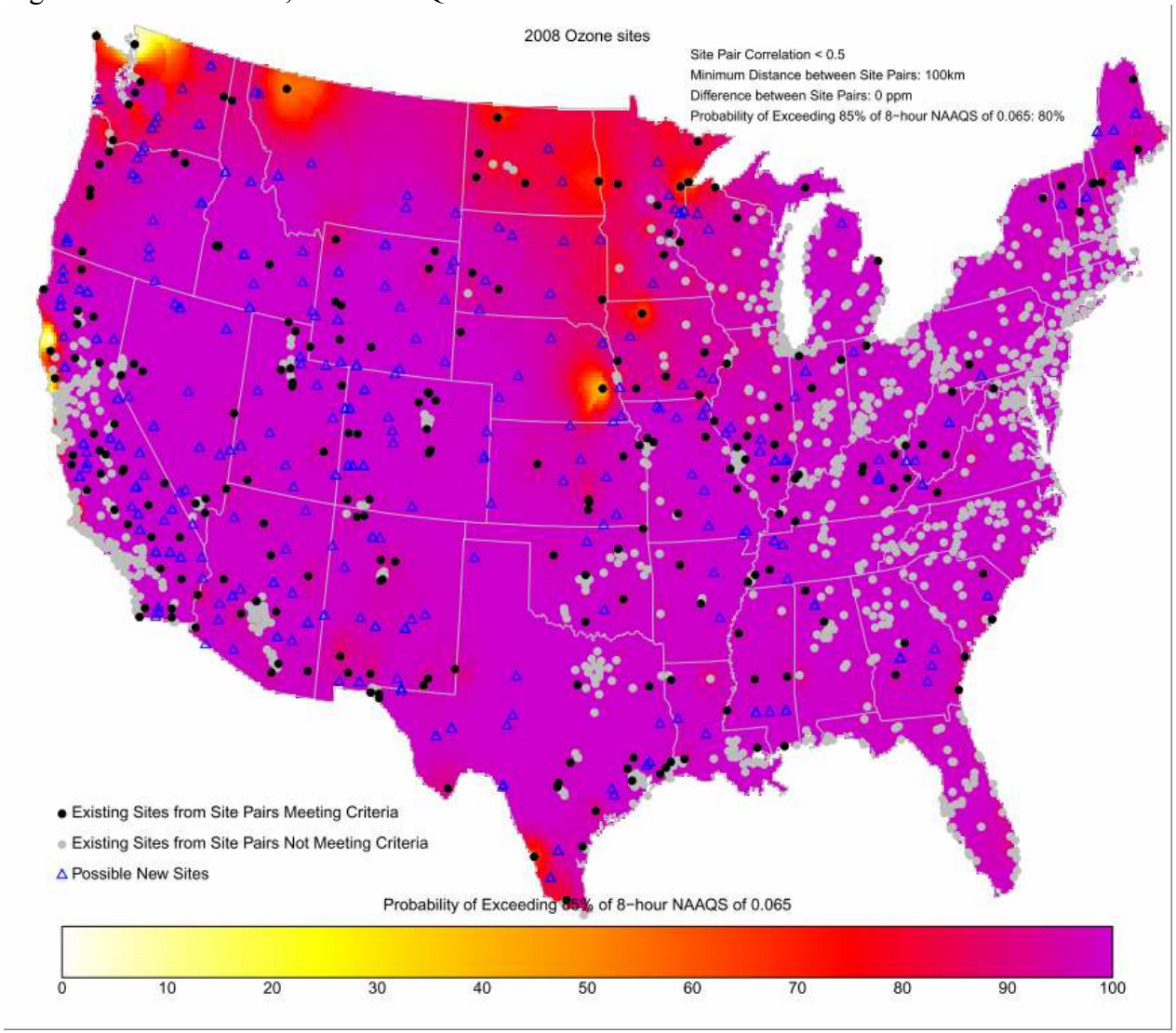


Figure B2: 2008 Ozone, .070 NAAQS

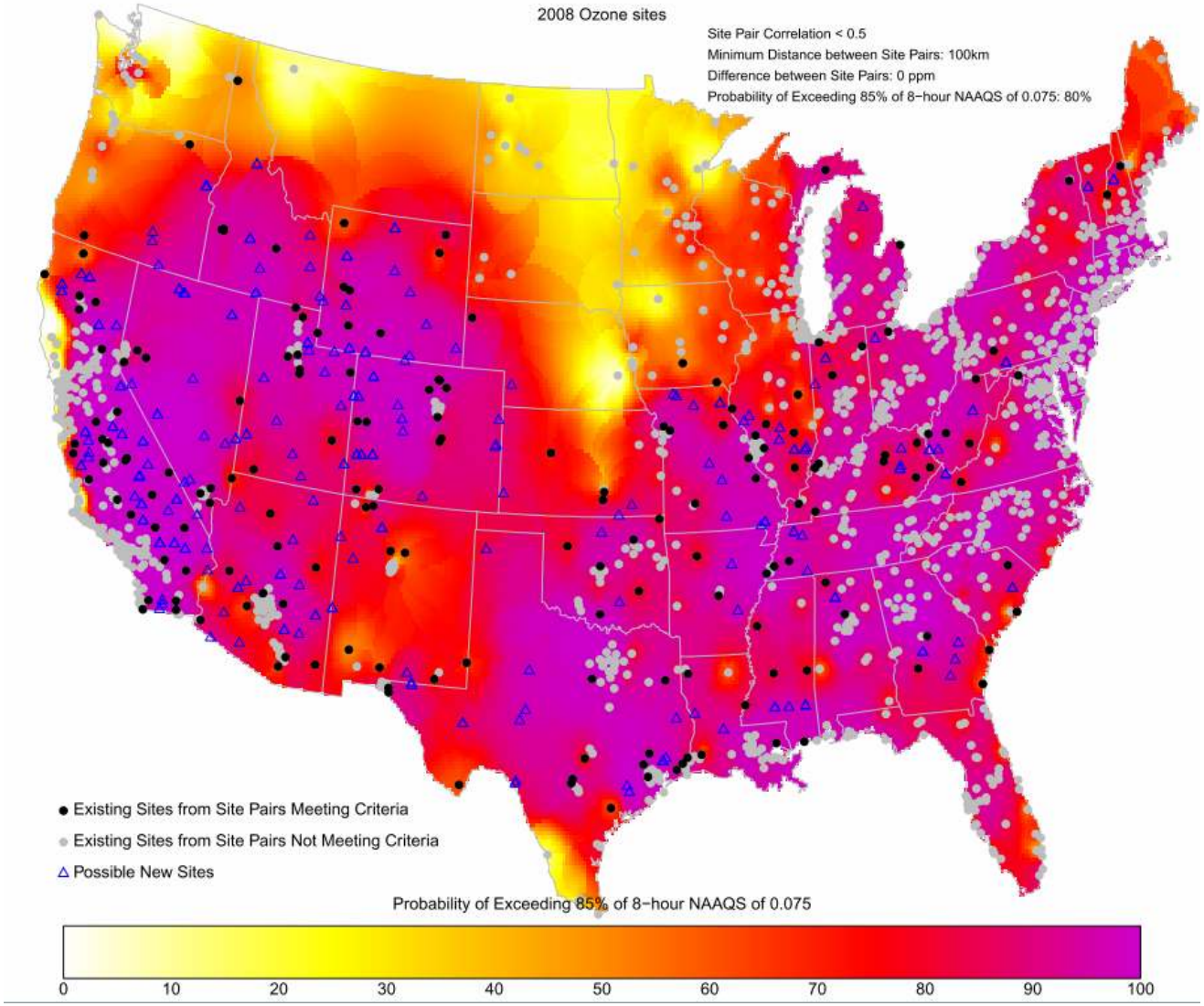


Figure B3: PM2.5 Continuous

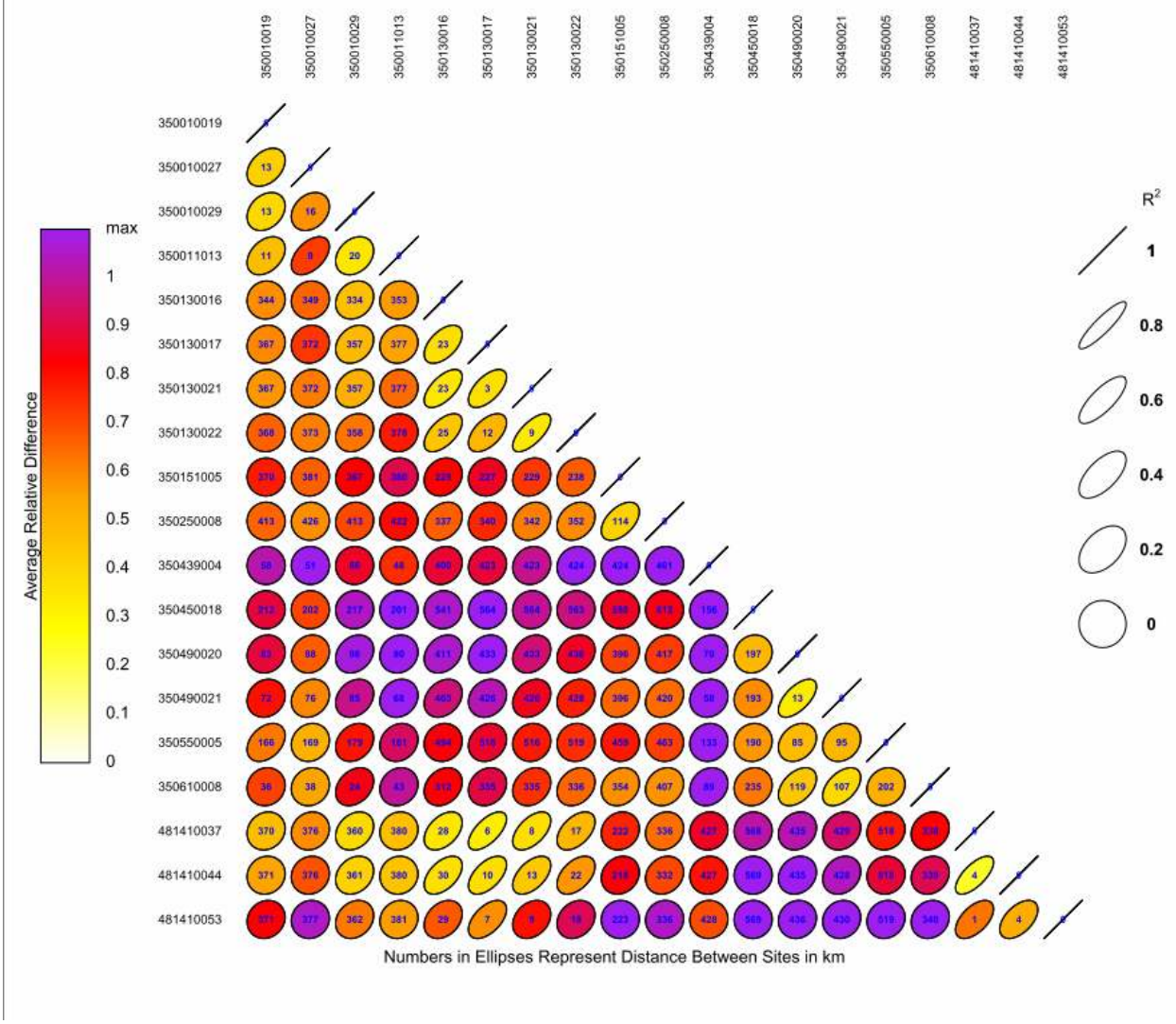


Figure B4: PM2.5 24-hour, 1/3

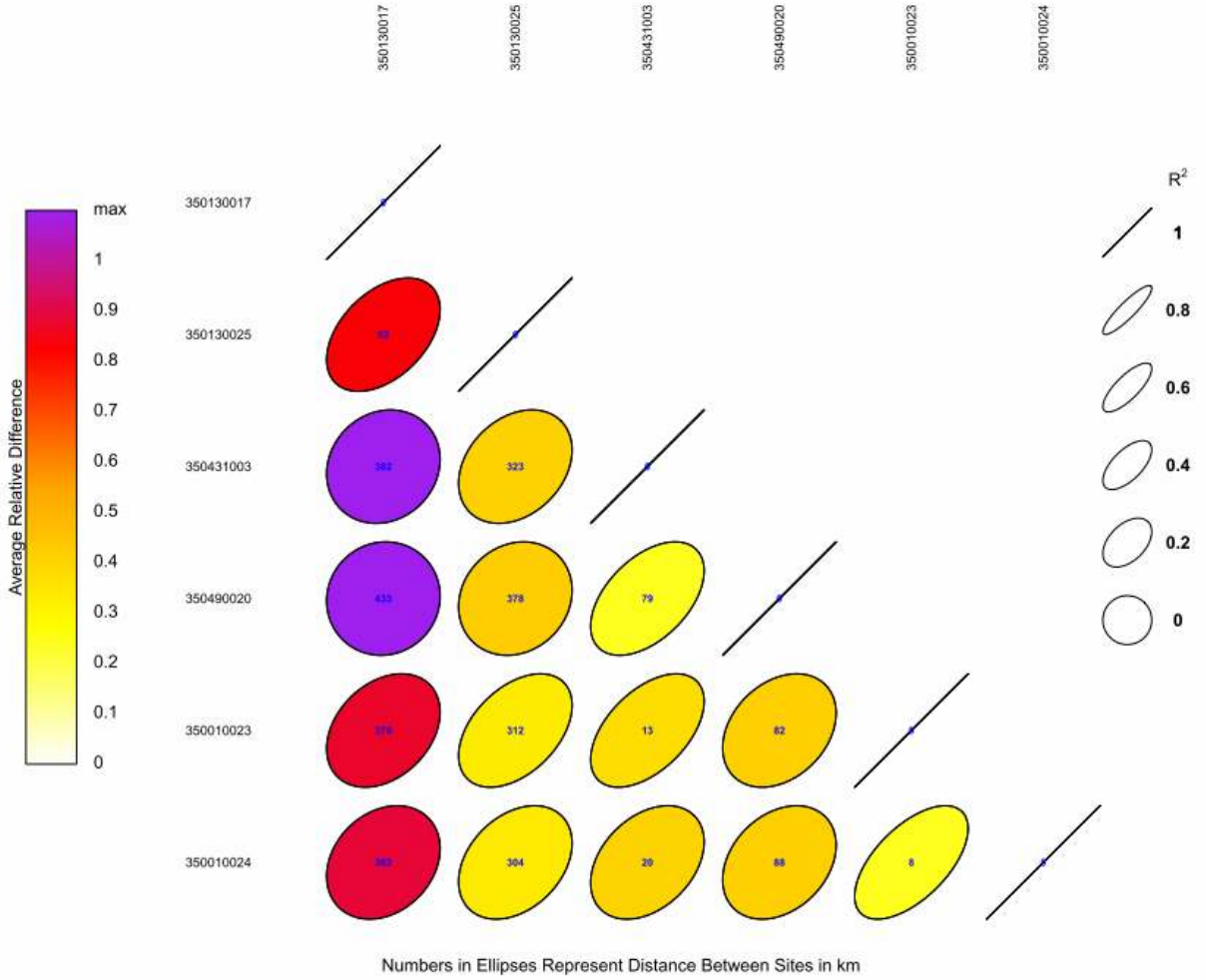


Figure B5: PM2.5 24-hour, 1/6

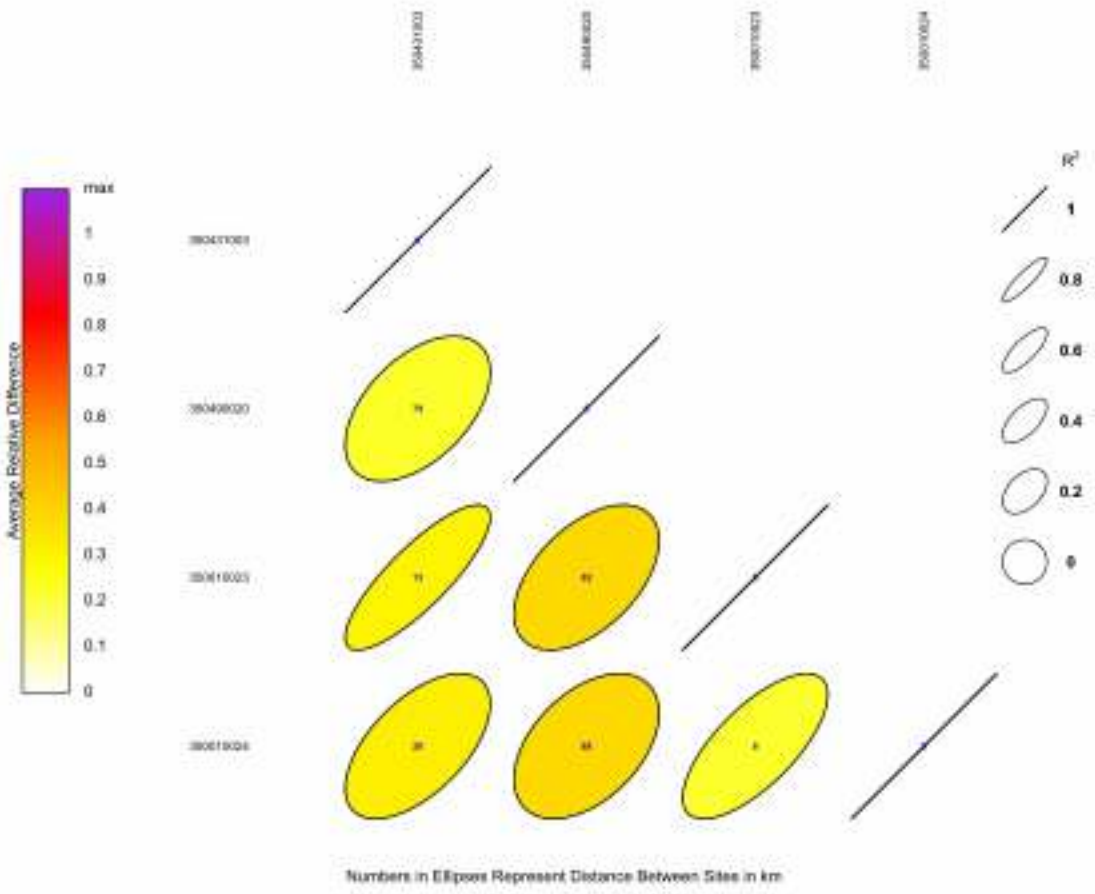


Figure B6: PM10 Continuous

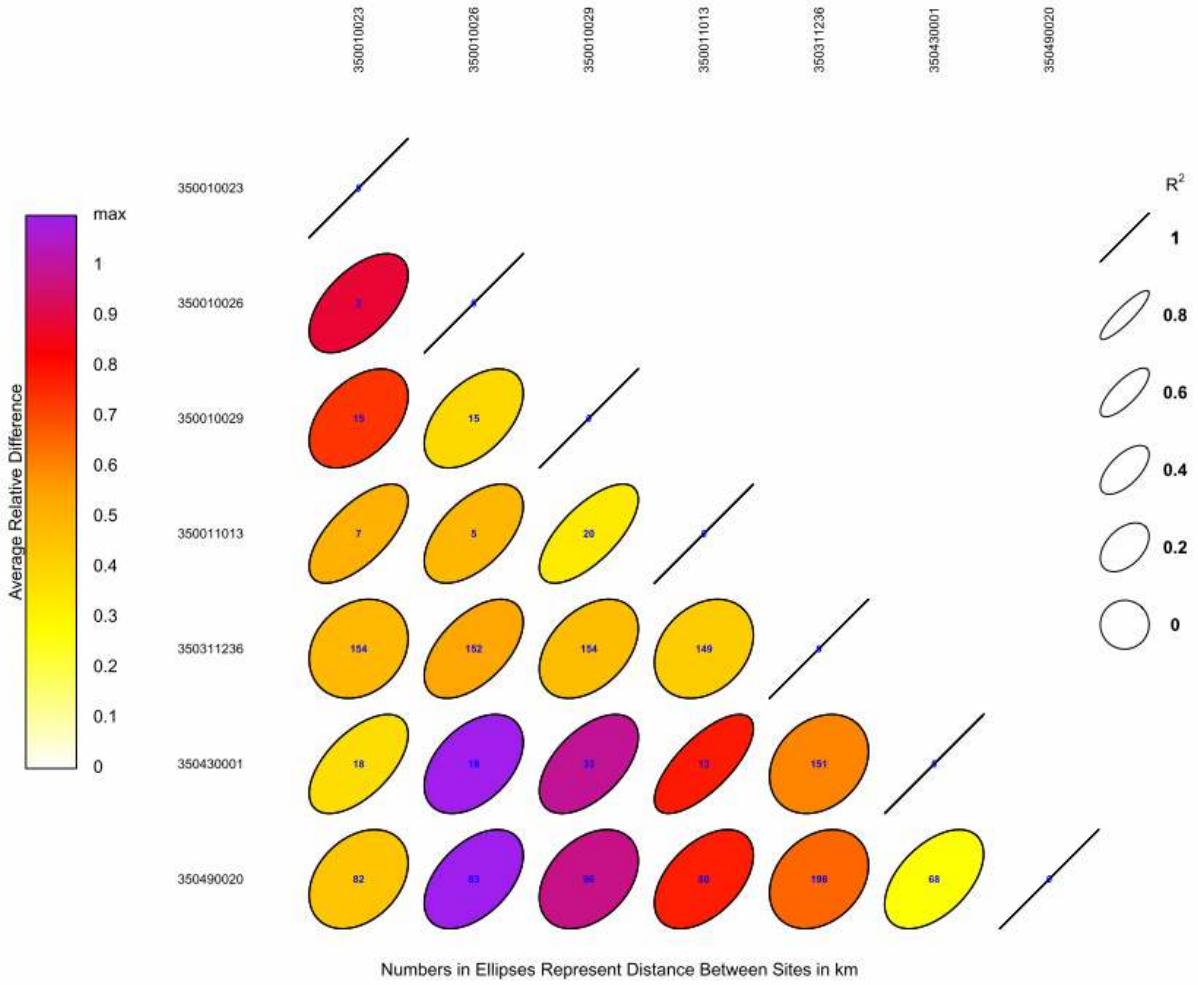
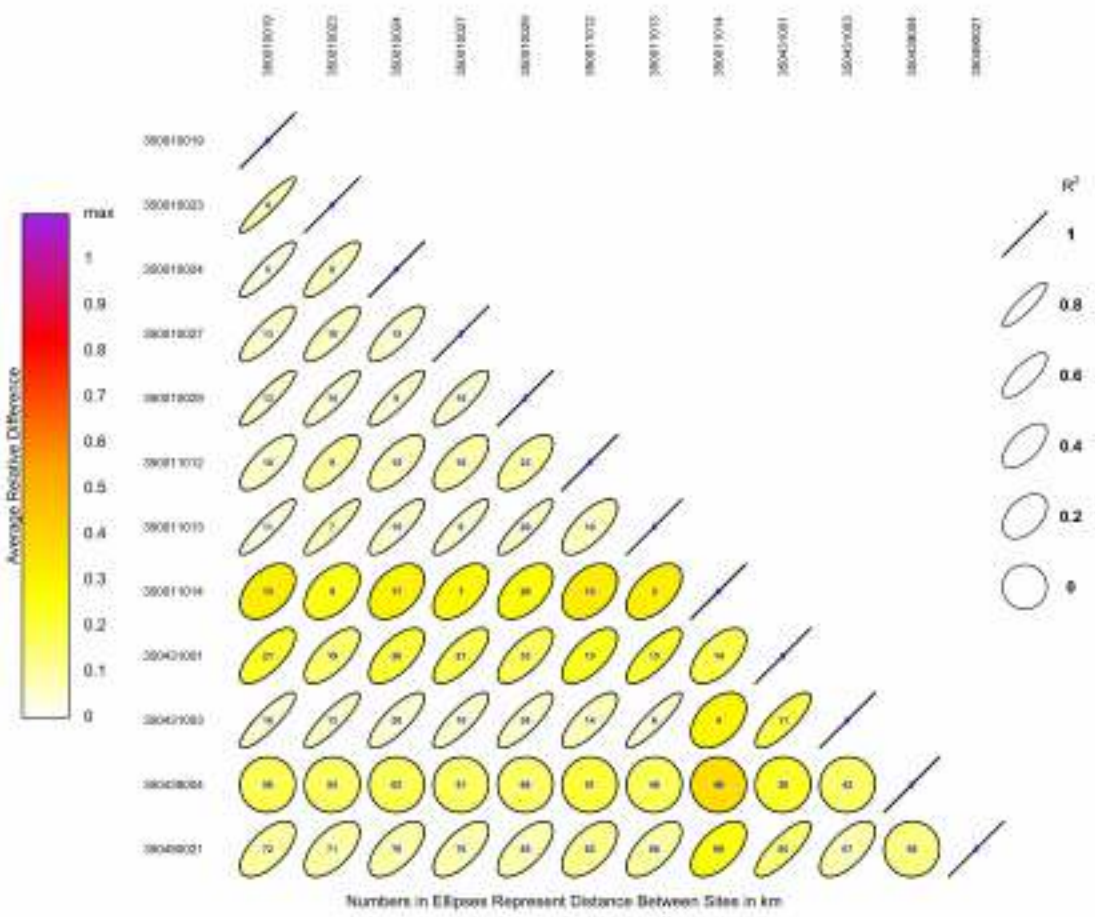


Figure B7: Ozone



Thesian Polygrams are a geometric construct that establishes the area of influence around a set of fixed points - in this case, monitoring sites. There is a one-to-one correspondence: each area has a site; each site has a polygon area. The polygons are constructed such that every point within the enclosed area is closer to that site than to any other potential site.

In theory, the most accurate air data about this polygon would be best obtained from the monitor within the enclosed area. However, Thesian Polygrams are only a first-order approximation. In reality, factors other than distance could play a part, e.g. the existence and arrangement of point and mobile sources, terrain, and prevailing winds.

The following figures show Thesian Polygrams for several types of monitors in the Albuquerque – Bernalillo Co Air Monitoring Network. In instances where potential changes are discussed in the body of the report, sequential figures show the polygrams before and after the proposed change.

Figure B8: Ozone

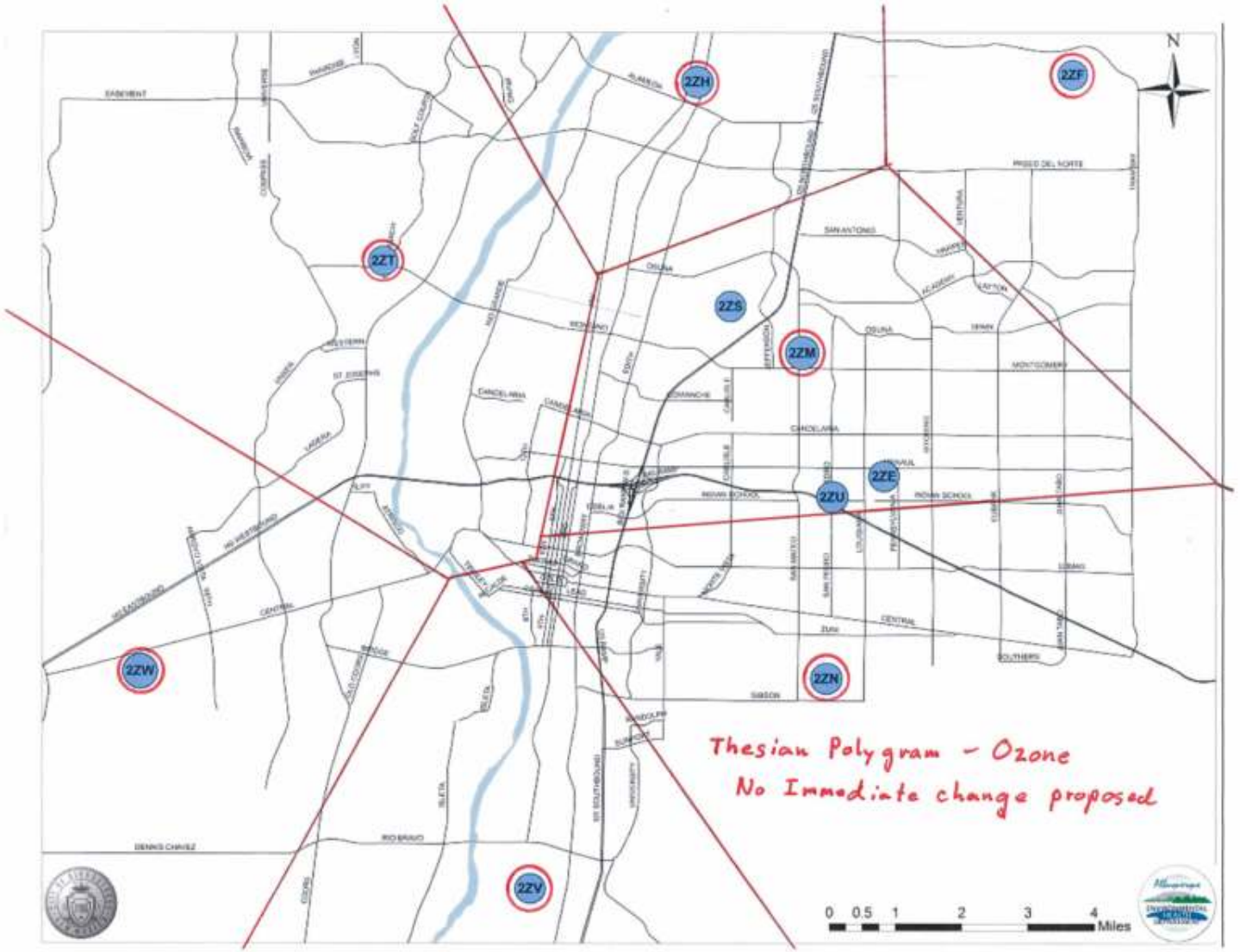


Figure B9: Ozone

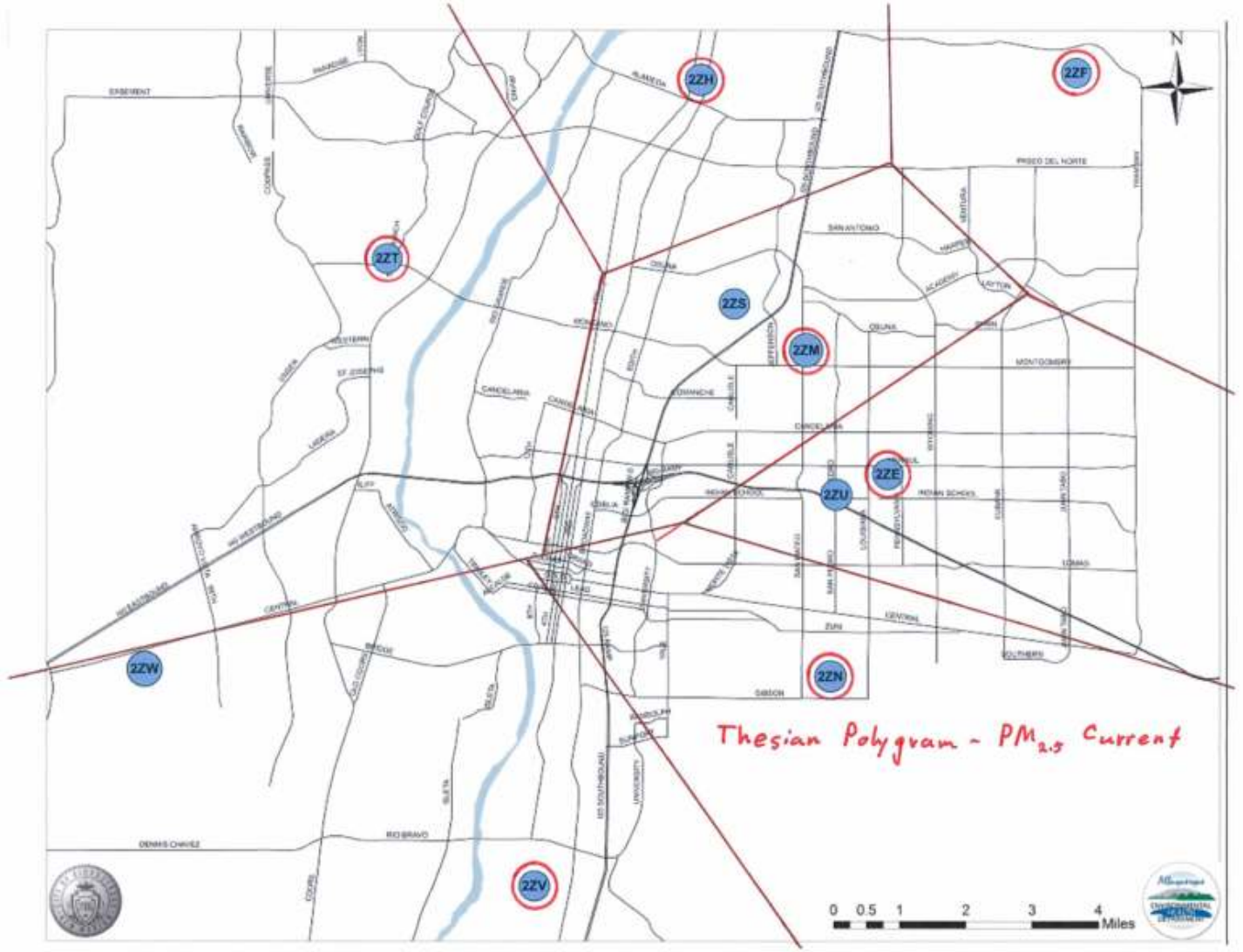


Figure B10: Ozone

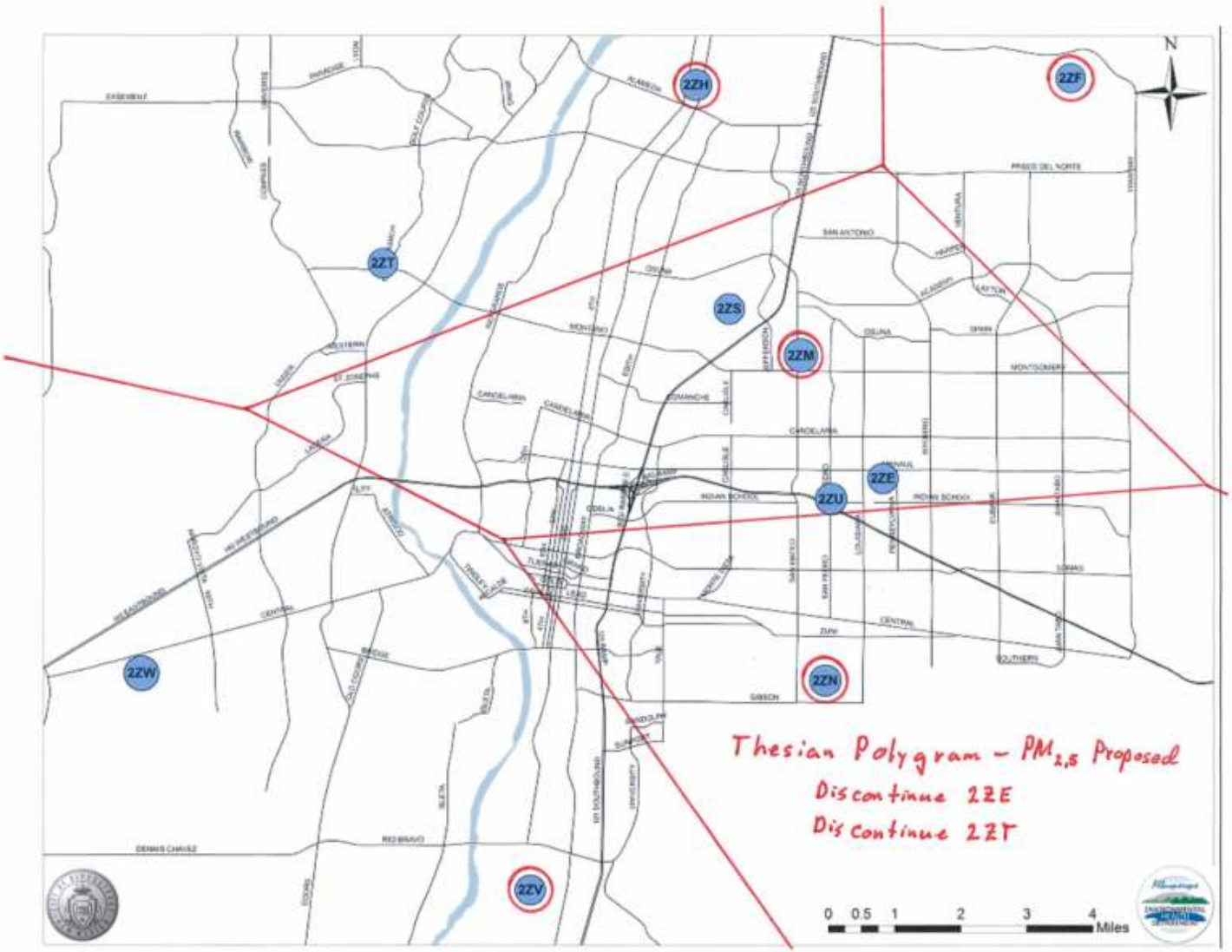


Figure B11: Ozone

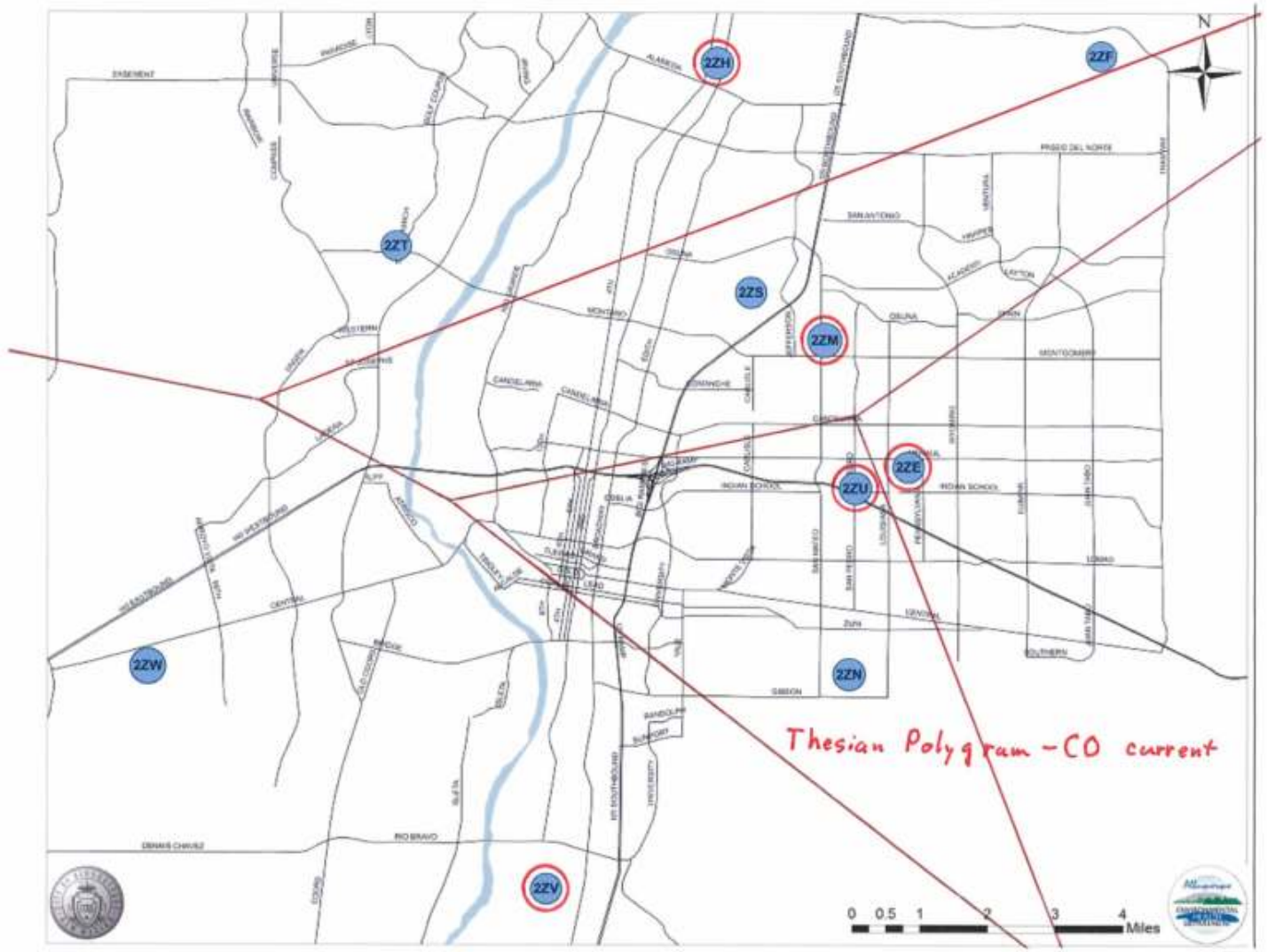
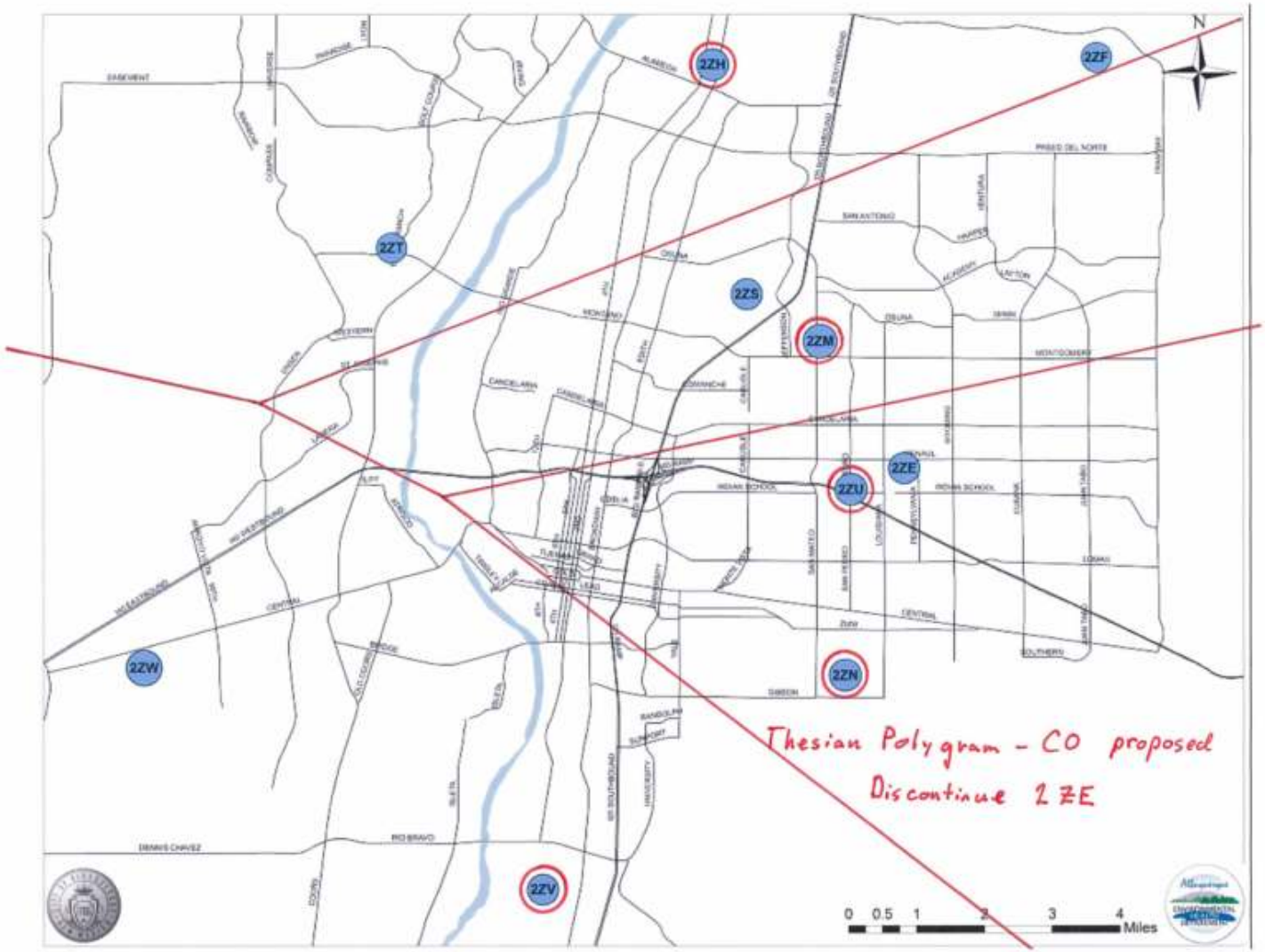


Figure B12: Ozone



Appendix C. Case for continuing Uptown Zuni Park, Site 2ZE – 35-001-0019

Letter from Albuquerque Bernalillo Co Air Quality Division staff member, Jeff Stonesifer

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The Zuni Park air quality monitor is crucial to the Winter Advisory Program, Air Quality Advisories and Health Alerts, as well as the Air Quality Forecasting Program. The wind and PM2.5 monitors at Zuni Park are the only clear feedback on burning restrictions effected by the Air Quality Division. The Zuni Park station is located in a neighborhood where many residents burn wood to stay warm during the winter. This monitoring station has been decisive in defining when burning restrictions are needed and when they are not.

Many times the Air Quality Division gets calls from the public complaining about thick smoke in a neighborhood and requesting that burning restrictions be put into effect more frequently. Having a monitor close to a neighborhood with substantial woodburning is the only way to distinguish whether such complaints have a basis in reality.

Likewise, the Division also gets complaints when burning restrictions are put into place. The data recorded at Zuni Park monitor is the Division's only real justification for the decision to effect burning restrictions or not. If the Zuni Park monitoring site must be shut down and the Division cannot add another site that is near some other woodburning neighborhood, then the Division should shut down the Winter Advisory Program. Otherwise, the Division may not be able to defend its actions.

Real-time data has been a crucial part of issuing Air Quality Advisories and Health Alerts in the past. A couple of years ago the City of Albuquerque had a localized air pollution event that demonstrated the need for more than one monitor in the metro area. Smoke from a prescribed burn in the Jemez Mountains drained down the Rio Grande Valley and remained concentrated near the river while air was relatively clean in the Heights and the west side of the metro area. The diamond-shaped network of monitors around the metro area helped the Division discern where the smoke was located and where it came from.

Ideally the diamond-shaped network of monitors around the city would be kept in place. If PM2.5 monitors must be reduced, the Division should have one monitor in the lowest part of the valley and one monitor closer to the mountains. At least one monitor should be within a football field distance of a neighborhood with numerous and frequently used fireplaces and should be located on the east side of the neighborhood.

Objective feedback is essential for a functional Air Quality Forecasting program and the current monitoring network provides it. An analogy may be helpful in understanding the importance of feedback. Imagine weather forecasters trying to predict intensity, quantity, and coverage of rainfall without radar and without a network of rain gauges. Meteorologists relate what they see on weather charts with what is happening and use

that experience to forecast future weather. Without feedback, the learning process would come to a stand still and old experience may fade from memory – particularly as veteran forecasters move or retire and are replaced by new forecasters. In fact, without objective measurements, forecasts might soon be influenced by vague and exaggerated statements from the public, such as "I've been living here all my life and I've never seen anything like this before."