

Nebraska Department of Environmental Quality

2009 Ambient Air Monitoring Network Plan

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Acronyms & Abbreviations

Agencies

- DCHD - Douglas County Health Department
- EPA - United States Environmental Protection Agency
- EPA R7 - United States Environmental Protection Agency Region VII
- LLCHD - Lincoln/Lancaster County Health Department
- NDEQ - Nebraska Department of Environmental Quality
- OAQ - City of Omaha Air Quality Program

Regulations

- CFR - Code of Federal Regulations
- NAAQS - National Ambient Air Quality Standards
- Title 129 - Nebraska Air Quality Regulations

Site Types

- IMPROVE - Interagency Monitoring of Protected Visual Environments (monitoring performed to evaluate regional haze)
- MDN - Mercury Deposition Network (a type of NADP site)
- NADP - National Atmospheric Deposition Program (analysis of deposition components in precipitation. May include NTN and MDN sites)
- NCore - National Core multipollutant monitoring stations. Monitors at these sites are required to measure particles (PM_{2.5}, speciated PM_{2.5}, PM_{10-2.5}), O₃, SO₂, CO, nitrogen oxides (NO/NO₂/NO_y), Pb, and basic meteorology.
- NTN - National Trends Network (a type of NADP site that analyzes for acidity, sulfate, nitrate, ammonium, chloride, and base cations (e.g., calcium, magnesium, potassium and sodium))
- SLAMS - State and Local Air Monitoring Stations (also see page 3)
- SPAMS - Special Purpose Air Monitoring Stations (also see page 3)

Monitor Terminology

- AIRS - Aerometric Information Retrieval System (AIRS), which is EPA's air monitoring data base
- FRM - Federal Reference Method used for determining compliance with the NAAQS
- FEM - Federal Equivalent Method used for determining compliance with the NAAQS
- ARM - Approved Regional Method (applies to the use of continuous PM_{2.5} monitors)

Pollutants

- CO - Carbon Monoxide
- H₂S - Hydrogen sulfide (typically a major component of TRS)
- O₃ - Ozone
- PM_{2.5} - Particulate matter with a diameter equal to or less than 2.5 micrometers or microns
- PM₁₀ - Particulate matter with a diameter equal to or less than 10 micrometers or microns
- SO₂ - Sulfur Dioxide
- TRS - Total Reduced Sulfur (H₂S + other reduced sulfur-containing compounds)

Acronyms and Abbreviations (Continued)

Concentration Units

- ppb - Parts per billion (a volume/volume concentration unit)
ppm - Parts per million (a volume/volume concentration unit)
mg/m³ - Milligrams per cubic meter (a mass/volume concentration unit)
µg/m³ - Micrograms per cubic meter (a mass/volume concentration unit)

Census Terminology

- MSA - Metropolitan Statistical Area
MiSA - Micropolitan Statistical Area

Definitions

in situ - A Latin phrase meaning *in the place*. As used in this report it refers to the formation of pollutants in the atmosphere. For example, ozone is formed *in situ* from the photochemical reaction of pollutant precursors. Ozone is not emitted directly from sources. PM_{2.5} and haze are also formed *in situ*, although they are also emitted by sources. PM₁₀ and CO, on the other hand, are largely emitted from sources; *in situ* formation being of minimal importance. NO_x and SO_x are emitted and then undergo transformations to NO₂ and SO₂; they also can play a role in the *in situ* formation of ozone and PM_{2.5}.

Criteria Pollutants – The pollutants for which National Ambient Air Quality Standards (NAAQS) have been established: Carbon Monoxide, Nitrogen Dioxide, Ozone, Sulfur Dioxide, PM_{2.5}, PM₁₀ and Lead.

I. Introduction and Purpose

This 2009 Ambient Air Monitoring Network Plan (hereafter referred to as the “2009 Network Plan”) was prepared to meet the requirements of Federal Regulations set forth in 40 CFR Part 58.10. It serves several purposes:

- Describes the current ambient air monitoring network in Nebraska including:
 - The purpose of each monitoring site and
 - Changes made since December 31, 2007
- Discusses the ambient air quality issues as they relate to the monitoring network
- Reviews the ambient air monitoring network to determine that the requirements of 40 CFR Part 58 Appendixes A, C, D and E are met
- Describes planned and possible changes to the ambient air monitoring network through 2010, as best they can be determined at the time this review was conducted.

This Network Plan was originally developed and made available for public inspection in June 2009, as required by 40 CFR Part 58.10. EPA Region 7 did request changes in the original network plan during the public inspection period. The primary issues that needed to be addressed were:

1. Attachment A that describes the monitoring sites in the current ambient monitoring network did not contain the latitude and longitude coordinates of the sites; and
2. Additional information pertaining to the proposed source-oriented lead sites was requested.

This revised Network Plan addresses EPA’s comments, and also contains updates relative to the 2010 Network Assessment process to accommodate additional information that has become available since June. Other minor changes were made, but these did not relate to any proposed network changes.

II. Public Participation

The federal regulations require that the Network Plan be made available for public inspection. The NDEQ meets this requirement by posting it on the NDEQ web site (www.ndeq.state.ne.us) for 30 days. During the 30 day public inspection period, written comments regarding this Network Plan may be submitted to the Nebraska Department of Environmental Quality (NDEQ) via mail or email. Contact information is provided below.

Mail:

Nebraska Department of Environmental Quality
Attn: Jim Yeggy - Air Quality Compliance Section
PO Box 98922
1200 N Street, The Atrium Suite 400
Lincoln, NE 68509

Email:

jim.yeggy@nebraska.gov

Informal inquiries may also be directed to Jim Yeggy at 402/471-2142.

The cut-off date for comment submittal can be found on the NDEQ web site.

III. Overview of Current Ambient Air Monitoring Network

Nebraska’s current air monitoring network is summarized in Table III.1 below. The network description tables in Attachment A provide more detailed information on the network, including site addresses and site purposes. Attachment G describes the air quality issues that relate to various areas of the state and these sites.

The network includes monitoring sites for ozone, carbon monoxide, sulfur dioxide, total reduced sulfur, PM₁₀, PM_{2.5} and regional haze (i.e., IMPROVE monitors). The network is operated by the Nebraska Department of Environmental Quality and two local agencies: the Douglas County Health Department and the Lincoln Lancaster County Health Department.

Table III-1: Number of Monitoring Sites in the Nebraska Air Monitoring Network ⁽¹⁾					
Pollutant	Omaha MSA ⁽²⁾	Lincoln MSA ⁽³⁾	Sioux City MSA ⁽⁴⁾	Other Areas of NE ⁽⁴⁾	Totals for State
Ozone	3	1	0	0	4
Carbon Monoxide	1	1	0	0	2
Sulfur Dioxide	2	0	0	0	2
Total Reduced Sulfur	0	0	2	1	3
PM ₁₀	8 ⁽²⁾	0	0	2	10
PM _{2.5}	4	1	0	2	7
IMPROVE ⁽⁵⁾	0	0	0	2	2
Totals	18 ⁽¹⁾	3	2	7	30

Footnotes:

(1) This table summarizes the number of sites in the NE SLAMS network. These are the sites that are subject to Nebraska's Network Plan review process. Sites not included in this table that are discussed in this Network Plan (but are not subject to Nebraska's Network Plan review process) include the following:

- (a) monitoring sites operated by Iowa in the Omaha and Sioux City MSAs,
- (b) the NADP sites at Mead and North Platte that measure atmospheric deposition constituents,
- (c) the ozone site operated by the National Park Service at the Agate Fossil Beds, and
- (d) the IMPROVE site (regional haze) operated by the Omaha Indian Tribe in Thurston County.

(2) PM₁₀ sites in the Omaha MSA include 5 SLAMS sites operated by DCHD that are located in Douglas County, and 3 SLAMS sites operated by NDEQ that are located in the Weeping Water area of Cass County.

(3) LLCHD operates the PM_{2.5}, ozone and CO sites in the Lincoln MSA.

(4) The NDEQ operates all of Nebraska’s sites in the Sioux City MSA and in “Other Areas of NE”. Including the 3 Weeping Water sites, the NDEQ operates 13 sites.

(5) IMPROVE – Interagency Monitoring of Protect Visual Environments. These are fine particulate and particulate speciation monitors intended to provide information for studying regional haze that may impact Class I National Park and Wilderness Areas.

IV. The Nebraska Ambient Air Monitoring Network during 2008

This section describes the Ambient Air Monitoring Network in place during 2008, and changes made to it during that year. For the most part, this section is organized around the MSAs and MiSAs in which monitoring is conducted. For population and statistical information about the MSAs and MiSAs see Attachment C. Attachment A lists all the monitoring sites in Nebraska, including start-up and termination dates.

A. Omaha MSA in Douglas, Sarpy and Washington Counties

The DCHD operated an ambient air network at 15 sites in these counties. See Attachment A for details. One change in the Ambient Monitoring Network in the Omaha MSA was made in 2008.

- Beginning January 1, 2008, DCHD upgraded the PM₁₀ site at 46th and Farnam Streets from a Hi-Vol monitor operating once every 6 days to a continuous monitor providing daily and hourly data.

B. Omaha MSA Ambient Air Quality Network in Cass County

The NDEQ operates 3 PM₁₀ monitoring sites near Weeping Water in Cass County. No changes were made to the SLAMS in this area of the Omaha MSA.

C. Lincoln Metropolitan Statistical Area (Lancaster and Seward Counties)

The LLCHD operates 3 monitoring sites in Lancaster County (See Attachment A). No ambient air monitoring is currently conducted in Seward County. The only change made to the SLAMS in the Lincoln MSA was that the monitoring frequency of the collocated PM_{2.5} monitor was increased from once every 12 days to once every 6 days. This was a return to the same monitoring frequency used prior to May 2007. The reduction to once every 12 days was made possible by the 40 CFR Part 58 regulation changes promulgated in October 2006. This reduction was initially made to save costs, but the savings were minimal and compliance with the 75% data completion requirements was made more difficult. Monitoring once every 6th day was re-initiated.

D. Sioux City Metropolitan Statistical Area (Dakota and Dixon Counties)

Two TRS monitoring sites are operated: one in Dakota City and one in South Sioux City. On April 16, 2008, a meteorological station was added at the TRS site located at the City/County Law Enforcement Center in South Sioux City. Wind speed and direction were setup. On October 8, 2008 ambient temperature, relative humidity and precipitation were added.

E. Grand Island Micropolitan Statistical Area

The NDEQ operates a PM_{2.5} monitor here. No changes have been made to the SLAMS in the Grand Island MiSA.

F. Scottsbluff Micropolitan Statistical Area

The NDEQ operates a PM_{2.5} monitor here. No changes have been made to the SLAMS in the Scottsbluff MiSA.

G. Lexington Micropolitan Statistical Area

The NDEQ operates a TRS monitor near Lexington and PM₁₀ sites in Cozad and Gothenburg. No changes have been made to the SLAMS in the Lexington MiSA.

H. IMPROVE Sites

IMPROVE is the acronym for Interagency Monitoring of Protect Visual Environments. These sites contain fine particulate and particulate speciation monitors intended to provide information for studying regional haze that may impact Class I National Park and Wilderness Areas. There are no Class I National Park and Wilderness Areas in Nebraska; the nearest such sites are in Colorado and South Dakota. The NDEQ provides administrative oversight of the operation of two IMPROVE sites: one at Halsey National Forest in Thomas County and one at Crescent Lake National Wildlife Refuge in Garden County. These sites began operation in 2002. No changes were made at these sites in 2008.

A third IMPROVE site in Thurston County is operated by the Omaha Indian Tribe. Although identified herein, the Thurston County site is not subject to the 2009 Network Plan review conducted by the NDEQ. The Omaha Indian Tribe and EPA Region VII are responsible for the operation and planning of IMPROVE activities in Thurston County.

I. National Atmospheric Deposition Program (NADP)

National Trends Network (NTN) & Mercury Deposition Network (MDP)

National Atmospheric Deposition Program/National Trends Network (NADP/NTN) is a nationwide network of sites that monitor for deposition constituents in precipitation. The deposition constituents examined include acidity, sulfate, nitrate, ammonium, chloride, and base cations (e.g., calcium, magnesium, potassium and sodium).

There are two NADP/NTN sites in Nebraska: one near Mead that has operated since 1978 and one near North Platte that has operated since 1985. These sites are operated by the University of Nebraska, with analytical and data development support from the NADP.

Mercury deposition monitoring can also be performed at NADP sites. Mercury deposition monitoring was added at the Mead site on June 26, 2007, and at North Platte on October 14, 2008. Both sites are now part of the Mercury Deposition Network (NADP/NTN/MDN sites). These upgrades were made possible through cooperative efforts of the NDEQ, the University of Nebraska, and Nebraska Environmental Trust grant funding.

The operation of NADP sites is not subject to the provisions of 40 CFR Part 58.10. Their inclusion in this Network Review is for informational purposes only. More information on the NADP/NTN and the NADP/MDN can be found in Attachment G and at the following web addresses: <http://nadp.sws.uiuc.edu/> or <http://nadp.sws.uiuc.edu/mdn/>

V. Considerations for Network Planning

A. Compliance with 40 CFR Part 58 Requirements

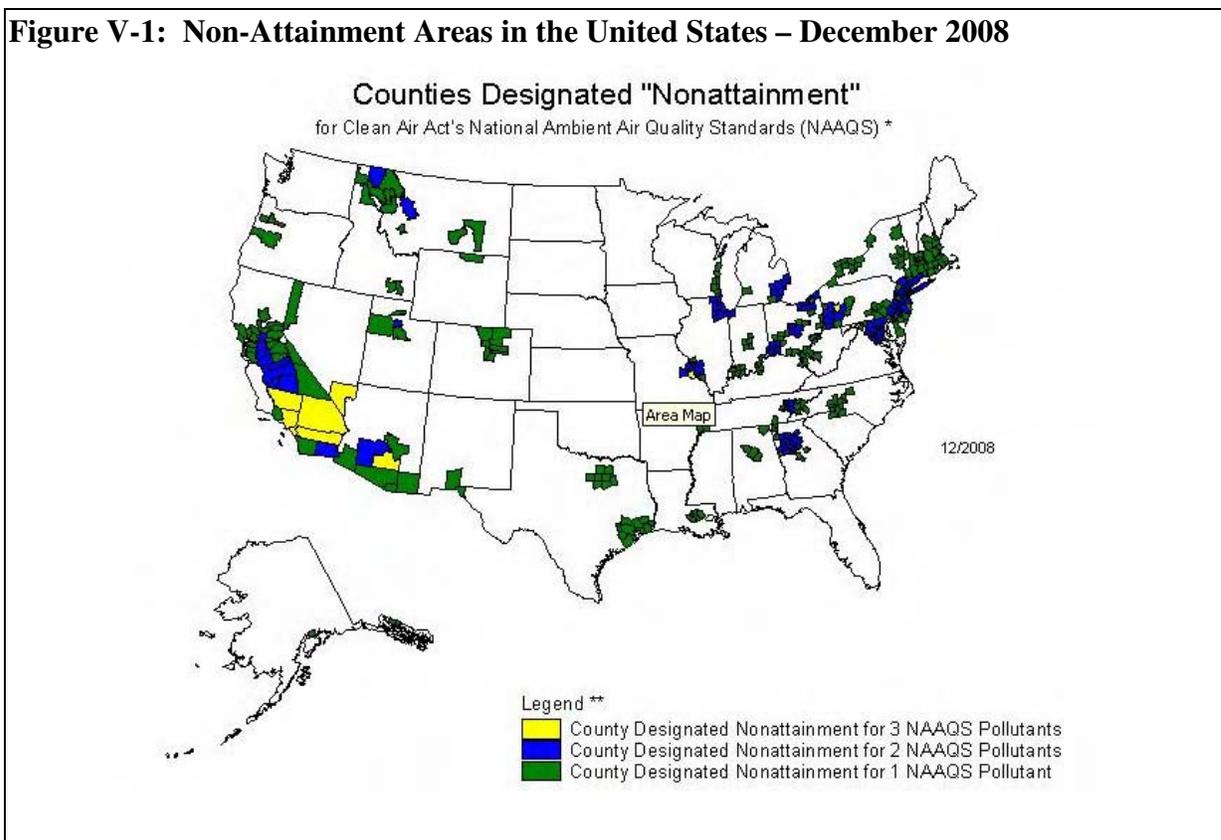
The Nebraska Ambient Air Quality Network must comply with the requirements set forth in 40 CFR Part 58, including Appendixes A, C, D and E. The reviews included in Attachments D through F of this review verify that these requirements are being met.

B. Attainment with the National Ambient Air Quality Standards (NAAQS)

All areas of Nebraska are currently in attainment with the NAAQS. Attachment B (*Comparison of Ambient Air Monitoring Data to NAAQS*) contains tables of the 2006 through 2008 air monitoring data used to evaluate attainment with the NAAQS.

Nebraska is also fortunate to be in an area of the country that is largely in attainment (see Figure V-1); thereby minimizing the impact of pollutant transport on Nebraska's air quality.

Figure V-1: Non-Attainment Areas in the United States – December 2008



EPA revised the 8-hour ozone NAAQS effective March 27, 2008. The revision lowered the NAAQS from $0.08 \mu\text{g}/\text{m}^3$ to $0.075 \mu\text{g}/\text{m}^3$. Nebraska submitted the required attainment designation to EPA Region VII on March 2, 2009. The attainment designation was based upon 2005 through 2007 data.

The ozone data for 2006 through 2008 also demonstrated attainment with the ozone NAAQS. Attachment B Table B-1 provides information on the 2006 through 2008 ozone levels and on the "Design Values" used to evaluate attainment. Attachment G Subsection 2.b provides further explanation of how ozone Design Values are calculated and used to determine attainment status.

C. Air Quality Issues

Overall, Nebraskans enjoy good air quality. All areas of the state are in attainment with state and federal air quality standards (See *Attainment with the National Ambient Air Quality Standards* above).

Local and state air quality issues that are important in the design of the ambient air monitoring network are discussed below. Attachment G contains a more thorough discussion of these issues.

1. Air Quality issues within the Omaha MSA:

- a. Ozone - The 2005 through 2007 ozone levels in the northeastern fringe of the Omaha MSA (rural Harrison County, IA) were at 99% of the NAAQS. This was due to the 0.08 $\mu\text{g}/\text{m}^3$ ozone level detected at the Pisgah, IA monitoring site in 2005. The 2008 ozone levels were lower than the levels detected in the previous three years, and the 2006 through 2008 ozone levels are now at 77% to 89% of the NAAQS. The 2005 through 2008 ozone levels demonstrate a 4-year downward trend, but it is uncertain as to whether this is a transient or more permanent change. For more information on Omaha ozone levels see Attachment B table B-1 and Attachment G Subsection 2.b.
- b. South Omaha PM_{10} - Citizen concerns prompted DCHD to place a PM_{10} Special Purpose Monitor (SPM) in the old stockyard area near 24th and O streets in South Omaha. This monitor, referred to as the South Omaha SPM, has been operated since May 2006. It is finding PM_{10} levels to be at 56% of the 24-hour NAAQS of 150 $\mu\text{g}/\text{m}^3$ (i.e., it is demonstrating attainment with a significant safety factor). The DCHD has determined that this site will be included as part of the SLAMS network, and will continue operating this site at least through the end of 2009.
- c. Dundee Neighborhood - In the first quarter of 2005, DCHD reported increased PM_{10} levels from the 46th and Farnam monitoring site. Omaha Air Quality and Douglas County Health Department worked with Omaha Steel, a major source in the area, to reduce particulate emissions. This effort appeared to have been effective, as PM_{10} levels dropped in 2006 and 2007.

In 2008 the maximum PM_{10} level increased to 143 $\mu\text{g}/\text{m}^3$. This is 95% of the 150 $\mu\text{g}/\text{m}^3$ NAAQS. The regulations allow 3 excursions above the standard in any 3-year period. Thus there does not appear to be need for imminent concern with respect to attainment status. The PM_{10} values measured at the 46th and Farnam site are the highest in the Omaha MSA (see Attachment B Tables B-4a and B-4b).

- d. Sarpy County - Complaints of odors in central Sarpy County were received in 2007 and 2008. The NDEQ Air Quality Program does not regulate odors, unless the odors originate from a regulated pollutant. The NDEQ does have standards for total reduced sulfur (TRS) and these compounds produce an unpleasant odor. Hydrogen sulfide, which is typically a major component of TRS, has a characteristic rotten-egg odor. TRS sources were identified at the Sarpy County Landfill, and the landfill implemented improvements to reduce odor and TRS emissions. Off-site TRS survey monitoring did not detect any appreciable levels of TRS. Survey monitoring will continue in 2009, as needed in response to TRS (or TRS-like) odor complaints.

2. Weeping Water - Limestone mining and processing are significant PM₁₀ sources in the Weeping Water area. In 1999 and 2000, this area was very close to being declared in non-attainment with the PM₁₀ NAAQS. Particulate levels have since dropped. This drop is attributed to voluntary efforts by sources in the area to reduce particulate discharges.

There are three air monitoring sites located in the area: two in the city of Weeping Water and one approximately 2 miles west of the city. In 2007, two of the 3 monitoring sites in the Weeping Water area recorded excursions above the 150 µg/m³ 24-hour NAAQS for PM₁₀ in October and November of 2007. Attainment with the NAAQS is maintained as long as there are no more than 3 excursions above the 150 µg/m³ NAAQS in a 3 year period at any given monitoring site. Thus the area remained in attainment.

In 2008, Martin Marietta relocated their limestone mining and processing operations out of the Weeping Water Creek valley to a new site approximately 2 miles south-southwest of the city. The new facilities are equipped with more efficient pollution control technology, which should reduce PM₁₀ pollutant emissions.

In 2008, there were no exceedences of the NAAQS. The highest 24-hour PM₁₀ value at the Weeping Water monitoring sites was 142 µg/m³.

3. Cozad and Gothenburg – PM₁₀ monitoring was initiated in these two cities in the early 1990's. Alfalfa processing and agricultural product handling facilities are significant sources of airborne particulates in these cities.

Particulate levels in these two cities have exhibited a downward trend in recent years (see Appendix G Figure G-2). The maximum 24-hour concentration of 71 µg/m³ recorded at Cozad in 2008 is the lowest since 1997. The 54 µg/m³ maximum recorded at Gothenburg in 2008 is the lowest on record since monitoring was initiated in 1991. Although a definitive study has not been done, this reduction would appear to be due to better source control. In addition, the closure of an alfalfa processing facility in Gothenburg was probably a contributing factor.

4. Total Reduced Sulfur - Elevated Total Reduced Sulfur (TRS) levels were a significant concern in the Lexington and South Sioux City/Dakota City areas in the late 90's. The anaerobic lagoons at beef packing plants in these areas were a significant source of TRS. In 2001, these lagoons were covered and TRS levels have dropped significantly since then. There are two TRS monitors located in the South Sioux City/Dakota City area and one in the Lexington area.

The Pine Street monitor in Dakota City has recorded limited excursions of the State's TRS standard in the last 3 years (27 minutes in April 2006, 14 minutes in May 2007, 36 minutes in May 2008 and 91 minutes in June 2008). The highest 30-minute average TRS readings were 0.160 ppm recorded on April 24, 2006 and June 17, 2008.

5. Broken Bow - Broken Bow has been the site of citizen complaints concerning odors and particulates. Particulate monitoring (PM₁₀) was conducted from 1999 through 2002, and total reduced sulfur (TRS) monitoring was conducted from 2000 through 2002. This monitoring indicated that the ambient levels of these pollutants were in compliance with state and federal standards. In 2007 the U.S. Agency for Toxic Substances and Disease Registry (ATSDR, an agency within the US Department of Health) initiated a health consultation review. Their report was released in May 2009.
6. Pollutant Transport
 - a. Ozone in Sioux County – In 2007 and 2008 the National Park Service operated a temporary ozone monitor at the Agate Fossil Beds. The monitor indicated that the area was in attainment with the NAAQS, but the levels were higher than anticipated for a rural location. Atmospheric transport from the urbanized areas of Colorado whose MSAs are not in attainment with the ozone NAAQS (Greeley, Fort Collins-Loveland, Boulder and Denver) may be contributing to the ozone levels detected at the Agate Fossil Beds (see Figure V-1 above and Figure G-3 in Attachment G).
 - b. Range and Grassland Management Burning – Prescribed burning is a common range and grassland management practice conducted in the spring to promote native prairie species and to suppress tree growth in pastures and prairies. It is a conservation/grassland management tool recognized by state and federal agencies (,see www.npwrc.usgs.gov/resource/habitat/burning/index.htm or www.ngpc.state.ne.us/wildlife/programs/wildnebraska/options.asp).

This practice can have temporary impacts on air quality and these impacts can be regional in scale. This was the case on April 15, 2008 when hazy conditions and a smoke odor were detectable in Lincoln. Air monitors operated by the Lincoln Lancaster Department of Health (LLCHD) documented elevated PM_{2.5} levels. LLCHD issued an air quality advisory to alert potentially sensitive populations of the possible health risk posed by elevated PM_{2.5} levels. Subsequent analysis using modeling tools supported by the National Oceanic and Atmospheric Administration (NOAA) indicated that range burning in east-central Kansas and northern Oklahoma (the Flint Hills area) was impacting Nebraska.

D. Metropolitan Areas

Metropolitan areas are important to network planning because they have multiple, densely-located air emission sources, and as such are more prone to having elevated air pollutant levels than rural areas. Some of the minimum monitoring requirements set forth in 40 CFR Part 58 Appendix D are based upon the population of metropolitan areas. The US Census Bureau defines three Metropolitan Statistical Areas (MSAs) in Nebraska (Omaha, Lincoln and Sioux City) and ten Micropolitan Statistical Areas (MiSAs) (Grand Island, Kearney, Norfolk, Hastings, Scottsbluff/Gering, North Platte, Fremont, Columbus, Lexington and Beatrice). See Attachment C (*Metropolitan and Micropolitan Statistical Areas*) for more information on these metropolitan areas, and Section VI (*Detailed Analysis of Nebraska's Air Monitoring Network*) below for a detailed analysis of air monitoring in each of the MSAs and in other areas of the state.

The deployment of the Nebraska SLAMS reflects an emphasis on the larger metropolitan areas:

- Omaha MSA – There are 18 Nebraska monitoring sites or 58% of the Nebraska SLAMS network located in the Omaha MSA. The pollutants monitored are: Ozone - 3 sites, Carbon Monoxide – 1 site, Sulfur Dioxide – 2 sites, PM_{2.5} – 4 sites and PM₁₀ - 8 sites. Three of the PM₁₀ sites are located in the Weeping Water area, which is outside of the main urbanized area.
Iowa operates 2 sites in the Omaha MSA: a PM_{2.5}/PM₁₀ site and an ozone site; and have indicated the intent to add a second ozone site in 2009.
- Lincoln MSA - There are 3 monitoring sites or 10% of the Nebraska SLAMS network located in the Lincoln MSA. There is one site each for Ozone, Carbon Monoxide and PM_{2.5}.
- Sioux City MSA - There are 2 TRS sites in Nebraska and one PM_{2.5}/PM₁₀ site in Iowa.

E. Funding

The ambient air monitoring carried-out by the NDEQ, DCHD and LLCHD is funded in part by federal funds (EPA grant money provided pursuant to the Clean Air Act(CAA)), and in part by state and local funds, including those collected from the Title V Program. federal funding comes from two EPA-administered grant programs: CAA §103 and §105. DCHD also utilizes funds supplied by the Metro Area Planning Association (MAPA) to help fund air monitoring activities.

The §105 grant requires a 40% state/local match (CAA Title V permit funds can not be used for match). Ozone, carbon monoxide, sulfur dioxide, PM₁₀ and TRS monitoring are supported by §105 funding with state/local match.

The §103 grant does not require a state /local match. In 2008 and continuing into 2009, §103 funding has been used to support PM_{2.5} and IMPROVE monitoring. Starting in 2009, funding for the development of the Omaha NCore site will be provided.

The uncertainty in federal funding levels that occurred in 2007 and early 2008 have subsided. federal funding provided for 2008 and the first half of 2009 was adequate to fund the existing SLAMS network. EPA Region VII has also been compiling information on the instrumentation needed for the Omaha NCore site to determine additional 2009 funding for that purpose.

Additional federal funding for the new lead monitoring sites will not be available until October 1st 2009. This creates some hurdles with respect to instrument purchases and site development but these are manageable.

F. Changing Regulations

Several federal regulation changes made in the past few years have affected Nebraska's ambient air monitoring programs:

- October 2006 – New requirements were established with respect to network planning and minimum network requirements. The Omaha NCore site was required by 2011
- December 2006 – The 24-hr maximum limit for PM_{2.5} was lowered to 35 µg/m³
- March 2008 - The 8-hour Ozone standard was lowered from 0.08 ppm to 0.075 ppm
- October 2008 – The lead standard was lowered from 1.5 µg/m³ to 0.15 µg/m³. The state was required to either begin lead monitoring in the vicinity of 2 sources by 2010 or demonstrate compliance at 50% of the standard through other means. A community-oriented lead monitoring site is required to begin operation in Omaha by 2011.

The two areas have been reviewed for possible source-oriented monitoring are Auburn (Magnolia Metal Corp.) and Fremont (Magnus Farley Inc.). A decision to develop monitoring sites adjacent to both these sites has been finalized (See Attachment I for proposed site details). The implementation schedule for source-oriented lead monitoring is very short (January 2010). Complying with the January 2010 implementation date will be difficult.

Additional NAAQS revision reviews are anticipated over the next few years for Nitrogen Dioxide and Sulfur Dioxide. Any revisions made are not anticipated to cause a revision of the current monitoring network prior to the end of 2010.

In February 2008 the D.C. Circuit Court of Appeals remanded the PM_{2.5} annual standard for further review by EPA. This decision means that EPA will re-examine the standard with respect to the Clean Air Scientific Advisory Committee recommendation that the annual standard be within the 12 to 14 µg/m³ range. The standard is currently 15 µg/m³. Based on a review of 2004 through 2008 data (including the 2006, 2007, and 2008 Design Values - see Attachment B Table B-5 for the 2008 Design Values), a lowering of the annual standard into the 12 to 14 µg/m³ range is not anticipated to have any immediate impacts on attainment status in Nebraska (in 2008 Nebraska would have been in attainment with a NAAQS of 12 µg/m³). Thus, it is not anticipated that a lowering of the annual PM_{2.5} NAAQS would require any changes in the monitoring network, prior to the end of 2010.

The revised ozone NAAQS finalized in March 2008 is also being appealed in federal court for very similar reasons to those of the annual PM_{2.5} standard. The case is still pending. The Clean Air Scientific Advisory Committee recommended that the 8-hour ozone NAAQS be set no higher than 0.070 ppm. It is too early to evaluate the potential impact of any possible court determination on the monitoring network.

To summarize, the primary impacts of recent regulatory changes on the ambient monitoring network are:

- The initiation of lead monitoring in Auburn and Fremont by January 2010
- The implementation of the NCore site in Omaha by January 2011
- The implementation of a community-oriented lead monitoring site in Omaha by January 2011

Although the Omaha NCore and lead sites are not required to begin operating until January 2011, considerable development work will need to be completed in 2009 and 2010.

G. Changing Monitoring Priorities

Since 2001, EPA has been advocating a monitoring priority shift to provide more data for regional air monitoring modeling and planning, while de-emphasizing monitoring to evaluate NAAQS compliance. The basis for this shift was that most non-attainment areas in the USA had been delineated and also that most areas of the USA were in attainment with the NAAQS (see Figure V-1). Continuing to place a high priority on monitoring to verify attainment/non-attainment, in well documented urban areas was not contributing significantly to the improvement of air quality. Air pollution problems associated with urban ozone and regional haze were not showing improvement, and evidence indicated that large-scale transport and *in situ* formation was playing an important role in their formation.

The alternative, new approach was to deploy a more geographical diverse network, which would provide a broader picture of nationwide pollutant levels and trends. This allows for improved analysis of pollutant transport and *in situ* transformations, and would be more useful in developing air pollution reduction strategies.

Along with this change in monitoring priorities, there was also recognition that technological advances in air pollution monitoring technology needed to be deployed. Automated, computer-controlled monitors that can be remotely calibrated and operated reduce operational costs. Improvements in electronic data handling also improved efficiency and QA.

The changes made to 40 CFR Part 58 in October 2006 reflected this change in strategy. This revised regulation required the establishment of multi-pollutant, trace-level NCore sites and reduced the minimum monitoring requirements for many of the criteria pollutants.

EPA was also reviewing the NAAQS to determine if tighter standards might be warranted and three changes were made:

- In December 2006 the 24-hour maximum standard for PM_{2.5} was lowered
- In March 2008 the ozone NAAQS were lowered and
- In October 2008 the lead NAAQS was lowered.

Nebraska did not need to expand its network in response to the PM_{2.5} and ozone standard, but the revised lead standard will require the establishment of 3 new sites: source-oriented sites in Auburn and Fremont, and a community-oriented site in Omaha.

EPA is considering requiring additional source-based lead monitoring and rural ozone monitoring, with final regulations to be issued in the spring of 2010. Any changes that might be required will need to be addressed in the 2010 or 2011 Network Plans.

Reviews of the CO, NO₂ and SO₂ NAAQS are expected in the next few years. The courts have remanded the PM_{2.5} annual standard for further review. Changes in these NAAQS can necessitate additional ambient monitoring to demonstrate attainment with the new standards.

Prior to 2009, EPA had not made significant increases in federal grant support to support the implementation of the revised monitoring strategy and new NAAQS-oriented monitoring. EPA was encouraging state and local agencies to utilize re-deployment to accommodate the new monitoring priorities (re-deployment meaning the closing of existing monitoring sites to free-up resources for new sites). Sites where attainment had been demonstrated and those that correlated closely with other sites were to be given the highest priority for closure.

Re-deployment has always been practiced in NDEQ's Network Design, but as new monitoring expectations grew, re-deployment priorities became harder to establish. Fortunately, in 2009, federal funding commitments for instrument purchases for the Omaha NCore site have been increased. Thus at least through 2010, federal funding levels and monitoring expectations appear to be more closely correlated. It is noted that federal funding to support the development of the new lead monitoring sites was not allocated until the 4th quarter of 2009 calendar year, which does create challenges with respect to equipment purchases and site development.

The 2008 *Ambient Air Monitoring Strategy for State, Local, and Tribal Air Agencies* can be viewed at www.epa.gov/ttn/amtic/monstratdoc.html.

H. EPA - NDEQ Work Plans

The NDEQ and EPA negotiate two-year work plans that describe activities to be conducted with federal grant funds. Air monitoring activities are included in these work plans. There are separate work plans for §103 and §105 funded activities. These work plans provide the state and local air monitoring programs with a framework of expectations.

The §105 Work Plan was modified for 2009 (October 2008 through September 2009) and the §103 work plan for 2009/2010 (April 2009 through March 2011) has been drafted with general agreement on its content. These two work plans provide a good framework for conducting and planning monitoring activities.

The NCore implementation strategy is much better defined than it was in previous work plans. EPA has been working with NDEQ and DCHD to develop a list of needed equipment and to provide §103 funding for the purchase of the equipment. DCHD has submitted site approval documentation. EPA R7 has conducted an on-site assessment and provided preliminary regional approval for the site. EPA headquarters will ultimately need to approve the site as well. NCore implementation has progressed well thus-far in 2009.

Two other new areas are the lead monitoring requirements and the 5-year network assessment.

- **New Lead Monitoring Requirements** - The revised lead NAAQS became effective January 12, 2009. This regulation change requires source-oriented monitoring to be implemented by January 2010 and community-oriented monitoring in Omaha by January 2011. The NDEQ has determined that source-specific lead monitoring will be needed in Auburn and Fremont. EPA has allocated grant funds beginning in October 2009 for development of the sites, and has provided initial approval for the two proposed sites. The regulatory time-frame for implementation is very short and will be challenging to meet.

Five-Year Network Assessments - A 5-year network assessment is required in 40 CFR Part 58.10 and is to be submitted by July 1, 2010, along with the Annual Network Plan. This was a new requirement that became effective in 2006, and the 2010 assessment is the first one required under this new regulation. EPA Region 7 provided guidance in September 2009 as to the expectations for the 5 year assessment. That guidance is under review by the NDEQ. It appears that many of the 5-year assessment requirements are already considered in the annual network plan reviews; but some additional analyses will be required.

I. Changing Pollutant Sources and Newly Recognized Pollutant Potential

As Nebraska grows and changes, so do pollutant sources. The NDEQ, and the local air quality programs in the Omaha and Lincoln areas, operate thorough and integrated air pollutant permitting, compliance, emission inventory and air monitoring programs. Modeling is an important tool used to evaluate both the impact of pollutant sources and projected pollutant levels. Inspector observations relative to scheduled source inspections and complaint response inspections also figure into this integrated approach. This on-going approach can and does shift air monitoring priorities as new or newly-recognized pollution problems are recognized.

At this time, there are no new air pollutant sources or issues (excluding regulation changes) that are anticipated to require significant monitoring network changes through 2010. This conclusion is based upon the best information available to the NDEQ at this time (April 2009). However, if new information becomes available, it is possible that network changes may be initiated.

VI. The Nebraska Air Monitoring Network through 2010

This section summarizes what is known and anticipated at this time with respect to network modifications through 2010.

A. Continuous PM_{2.5} Monitoring in Omaha

The continuous TEOM PM_{2.5} monitor at 4102 Woolworth in Omaha was replaced with a Met One BAM continuous monitor on January 6, 2009. The old TEOM monitor was not an FRM/FEM unit; the BAM monitor is an FEM. The Woolworth site has a filter-based FRM monitor as the primary reporting monitor. DCHD anticipates making the BAM unit the primary reporting monitor sometime in 2009, assuming that there is good correlation between the BAM and filter-based data.

B. Omaha NCore Site Development

The *Omaha NCore Implementation Plan*, which is required pursuant to 40 CFR Part 58.10(a)(3), is included as Attachment H to this Network Plan. The *NCore Implementation Plan* provides the best information available at this time, but could be subject to change as described in the plan. Activities that will be ongoing through 2010 are summarized below:

- The construction of a temperature-controlled enclosure will need to be initiated, preferably in 2009, assuming the Woolworth site is approved for the location of the NCore site. Preliminary regional approval of the site was obtained in April 2009. National approval is anticipated, but the time frame for that approval process has not been provided. If the Woolworth site were rejected, an alternative site would need to be selected and development initiated.
- Instrument procurement is anticipated to start in 2009 and continue into 2010.
- Partial start-up of the new NCore site is anticipated in the later half of 2010, prior to the required start date of January 1, 2011.

C. Omaha Re-Deployments under Consideration

- DCHD has indicated preliminary intent to close the SO₂ monitoring site at 11300 N Post Road (Ponca Hills Grade School) during the 2009 through 2010 time frame. This monitor has found low SO₂ numbers since it was started on May 18, 2004. The Design Values for the 2006 through 2008 period were 3% to 4% of the NAAQS (See Attachment B Table B-3).

The closure of this site would free-up resources for the development of the NCore site. Once the NCore site is operational, it will contain a trace level SO₂ monitor.

- As the NCore site is developed and brought on line additional redeployment closures will be considered. Two that have been identified for future consideration are:
 - Discontinuing ozone monitoring at one site, and
 - Discontinuing PM₁₀ monitoring at one or more sites.

As the NCore site will contain an ozone and PM₁₀ monitor, the closure of an existing ozone and PM₁₀ site would not involve a net reduction, but a re-location. The closing of more than one PM₁₀ site would seem feasible with respect to 40 CFR Part 58 Appendix D requirements and the PM₁₀ levels being detected. A data correlation analysis would provide additional information for the review.

D. Omaha Community-Oriented Lead Monitoring Site

- A site for the Omaha community-oriented lead monitoring site will need to be proposed and site approval sought. DCHD has indicated an early preference to have the lead site located at the proposed Woolworth NCore site. EPA has indicated that it is considering changes to the community-oriented lead siting criteria. If any changes are made they can be expected to be finalized in the spring of 2010.
- Site development and instrument procurement is anticipated to occur in 2010. The required start-up date is January 1, 2011. Details concerning this site will need to be included in the 2010 Network Plan.

E. Source-Based Lead Monitoring

Source-specific monitoring will be required around Magnus Farley Inc. in Fremont and Magnolia Metal Corp. in Auburn. Site development and instrumentation purchases will be initiated in the later half of 2009. The sites are to be running by January 1, 2010 and this will be a challenging timetable to meet. Attachment I contains detailed information the proposed source-oriented lead sites.

F. PM_{2.5} Monitoring in Scottsbluff

The PM_{2.5} site in Scottsbluff is scheduled to be moved from the City Library to the Scottsbluff High School prior to July 1, 2009. The new site will be powered by solar and wind-power electric generation units.

G. Additional Ozone Monitor in Iowa portion of the Omaha MSA

The Iowa DNR has installed a second ozone monitor in Harrison County, which is in the Omaha MSA. The new site is located approximately 4 miles S-SE of the existing Pisgah site. This site is not part of Nebraska's SLAMS network, nor is it subject to Nebraska's Network Plan review process.

H. Network Reduction/Redeployment Contingency Planning

Although network reductions beyond those previously discussed are not anticipated, a reduction/redeployment contingency plan is included in case unforeseen priority shifts should occur.

- Redeployments involve shutting down existing monitors to provide resources for new or expanded monitoring site elsewhere.
- Reductions involve shutting down an existing site without opening a replacement.

Reasons for reductions and redeployments can include: monitoring objectives being met (NAAQS attainment adequately demonstrated), close correlation with other sites, new modeling or pollutant source information, changing program priorities, resources constraints, etc.

Forced closures can result due to the site becoming unavailable or unsuitable. Examples include demolition and re-development of a site, structural building damage at a roof-mounted site, roofing activities, or new owner of a site requests we leave. When these situations arise, (they can arise with little notice), there is no choice but to close the site. When forced closures occur, consideration is given to relocation, redeployment or reduction.

The first consideration when considering reductions or redeployments is whether the minimum monitoring requirements set-forth in 40 CFR Part 58 Appendix D would be met. These are discussed in Attachment D of this work plan. Appendix D specifies the minimum number of monitors that must be in the SLAMS network. The current NE SLAMS network exceeds these minimum requirements, thus reductions and redeployments are possible.

The second consideration would be maintaining a network that adequately monitors for NAAQS attainment. The Appendix D minimum requirements at least partially address this; the minimum monitoring requirements for some pollutants are related to pollutant levels being found. Factors considered in addition to the pollutant levels detected include: data correlation between sites, pollutant sources, spatial distribution of sites, and impacted populations.

The use of site data for on-going studies/research is also considered. EPA R7 must be consulted and approve of all site shut-downs.

Attachment A: Ambient Air Monitoring Sites in Nebraska

Carbon Monoxide Sites in the Omaha MSA that are Operated by DCHD

Site Name: 78th & Dodge – Omaha	AIRS ID: 31-055-0056
Location: 78th St and W Dodge Rd, Omaha	Latitude: 41.259175° Longitude: -96.028628°
Operating Agency: Douglas County Health Department	
Monitor Information	Pollutant: Carbon Monoxide (CO)
Type/POC: Primary / POC 001	Monitoring Frequency: Continuous
Method Description: IR Spectrophotography	EPA Method: RFCA 00381-051
Purpose: Highest Concentration	Scale: Microscale
Start-Up Date: 10/01/07	Closure Date: Currently operating
Comments: None	

Sulfur Dioxide Sites in the Omaha MSA that are Operated by DCHD

Site Name: Whitmore – Omaha	AIRS ID: 31-055-0053
Location: 1616 Whitmore St, Omaha	Latitude: 41.297778° Longitude: -95.937500°
Operating Agency: Douglas County Health Department	
Monitor Information	Pollutant: Sulfur Dioxide (SO₂)
Type/POC: Primary / POC 001	Monitoring Frequency: Continuous
Method Description: UV Fluorescence	EPA Method: EQSA- 1086-061
Purpose: High Conc. & Population Oriented	Scale: Neighborhood
Start-Up Date: 7/1/99	Closure Date: Currently operating
Comments: None	

Site Name: North Post Road - Omaha	AIRS ID: 31-055-0055
Location: 11300 N. Post Road, Omaha	Latitude: 41.362433° Longitude: -95.976112°
Operating Agency: Douglas County Health Department	
Monitor Information	Pollutant: Sulfur Dioxide (SO₂)
Type/POC: Primary / POC 001	Monitoring Frequency: Continuous
Method Description: UV Fluorescence	EPA Method: EQSA- 1086-061
Purpose: Population Oriented	Scale: Neighborhood
Start-Up Date: 5/18/04	Closure Date: Currently operating
Comments: None	

Attachment A: Ambient Air Monitoring Sites in Nebraska

Ozone Sites in the Omaha MSA that are Operated by DCHD

Site Name: South Omaha – Ozone		AIRS ID: 31-055-0028	
Location: 2411 O Street, Omaha		Latitude: 41.207500°	Longitude: -95.947500°
Operating Agency: Douglas County Health Department			
Monitor Information		Pollutant: Ozone (O₃)	
Type/POC: Primary / POC 001		Monitoring Frequency: Continuous	
Method Description: UV spectrophotometry		EPA Method: EQOA- 0577-019	
Purpose: Highest Concentration		Scale: Urban	
Start-Up Date: 7/1/78		Closure Date: Currently operating	
Comments: There is also a PM ₁₀ monitor located at this site.			

Site Name: North 72nd St – Omaha		AIRS ID: 31-055-0032	
Location: 11414 N. 72nd Street, Omaha		Latitude: 41.360278°	Longitude: -96.024722°
Operating Agency: Douglas County Health Department			
Monitor Information		Pollutant: Ozone (O₃)	
Type/POC: Primary / POC 001		Monitoring Frequency: Continuous	
Method Description: UV spectrophotometry		EPA Method: EQOA- 0577-019	
Purpose: High Conc. & Population Oriented		Scale: Neighborhood	
Start-Up Date: 6/1/79		Closure Date: Currently operating	
Comments: None			

Site Name: 30th & Fort - Omaha		AIRS ID: 31-055-0035	
Location: 30th & Fort Sts., Omaha		Latitude: 41.306111°	Longitude: -95.960278°
Operating Agency: Douglas County Health Department			
Monitor Information		Pollutant: Ozone (O₃)	
Type/POC: Primary / POC 001		Monitoring Frequency: Continuous	
Method Description: UV spectrophotometry		EPA Method: EQOA- 0577-019	
Purpose: High Conc. & Population Oriented		Scale: Neighborhood	
Start-Up Date: 5/1/81		Closure Date: Currently operating	
Comments: None			

Attachment A: Ambient Air Monitoring Sites in Nebraska

PM_{2.5} Sites in the Omaha MSA that are Operated by DCHD

Site Name: Woolworth Omaha		AIRS ID: 31-055-0019 (See Comment 1)	
Location: 4102 Woolworth St., Omaha		Latitude: 41.245947°	Longitude: -95.973128°
Operating Agency: Douglas County Health Department			
Monitor Information		Pollutant: PM_{2.5}	
Type/POC: Primary / POC 001		Monitoring Frequency: Once every 3 days	
Method Description: R&P 2025 Seq. Filter		EPA Method: RFPS-0498-118	
Purpose: Population Oriented		Scale: Neighborhood	
Start-Up Date: 1/1/99		Closure Date: Currently operating	
Monitor Information		Pollutant: PM_{2.5}	
Type/POC: Collocated / POC 002		Monitoring Frequency: Once every 12 days	
Method Description: R&P 2025 Seq. Filter		EPA Method: RFPS-0498-118	
Purpose: Population Oriented		Scale: Neighborhood	
Start-Up Date: 1/1/99		Closure Date: Currently operating	
Monitor Information		Pollutant: PM_{2.5}	
Type/POC: Continuous / POC 003		Monitoring Frequency: Continuous	
Method Description: BAM		EPA Method: EQPM-0308-170	
Purpose: Population Oriented		Scale: Neighborhood	
Start-Up Date: 2/1/04 (See Comment 2)		Closure Date: Currently operating	
Monitor Information		Pollutant: PM_{2.5}	
Type/POC: Speciation / POC 005		Monitoring Frequency: Once every 3 days	
Method Description: PM _{2.5} Speciation		EPA Method: Not applicable	
Purpose: Population Oriented		Scale: Neighborhood	
Start-Up Date: 5/25/01		Closure Date: Currently operating	
Comments:			
<p>1. Site Plans: Current plans are to move this site approximately 550 ft north to allow for development of the NCore site. This move is anticipated to take place in 2010 to allow for start-up of the NCore site on 1/1/11. EPA has given tentative approval, but not final approval for Woolworth as the NCore site.</p> <p>2. Continuous PM_{2.5} Monitor: From 2/1/04 through 1/5/09 an R&P TEOM continuous PM_{2.5} monitor was used. The TEOM monitor is not an FRM/FEM. On 1/6/09 a Met One BAM monitor was brought on line. The Met One BAM monitor is an FEM. DCHD plans on using the Met One BAM as the POC 001 primary monitor starting sometime in 2009.</p>			

Attachment A: Ambient Air Monitoring Sites in Nebraska

PM_{2.5} Sites in the Omaha MSA that are Operated by DCHD (Continued)

Site Name: Berry Street Omaha		AIRS ID: 31-055-0052	
Location: 9225 Berry Street, Omaha		Latitude: 41.333056°	Longitude: -96.099722°
Operating Agency: Douglas County Health Department			
Monitor Information		Pollutant: PM_{2.5}	
Type/POC: Primary / POC 001		Monitoring Frequency: Once every 3 days	
Method Description: R&P 2025 Seq. Filter		EPA Method: RFPS-0498-118	
Purpose: Population & Source Oriented		Scale: Neighborhood	
Start-Up Date: 1/1/99		Closure Date: Currently operating	
Comments: None			

Site Name: Bellevue		AIRS ID: 31-153-0007	
Location: 2912 Coffey Ave., Bellevue		Latitude: 41.166944°	Longitude: -95.923889°
Operating Agency: Douglas County Health Department			
Monitor Information		Pollutant: PM_{2.5}	
Type/POC: Primary / POC 001		Monitoring Frequency: Once every 3 days	
Method Description: R&P 2025 Seq. Filter		EPA Method: RFPS-0498-118	
Purpose: Population & Source Oriented		Scale: Neighborhood	
Start-Up Date: 3/1/99		Closure Date: Currently operating	
Comments: None			

Site Name: Blair		AIRS ID: 31-177-0002	
Location: 2242 Wright St., Blair		Latitude: 41.551136°	Longitude: -96.146753
Operating Agency: Douglas County Health Department			
Monitor Information		Pollutant: PM_{2.5}	
Type/POC: Primary / POC 001		Monitoring Frequency: Once every 3 days	
Method Description: R&P 2025 Seq. Filter		EPA Method: RFPS-0498-118	
Purpose: Population & Source Oriented		Scale: Neighborhood	
Start-Up Date: 4/6/09		Closure Date: Currently operating	
Comments: None			

Attachment A: Ambient Air Monitoring Sites in Nebraska

PM₁₀ Sites in the Omaha MSA that are Operated by DCHD

Site Name: 19th & Burt, Omaha		AIRS ID: 31-055-0054	
Location: 19th & Burt Sts., Omaha		Latitude: 41.267770°	Longitude: -95.940830°
Operating Agency: Douglas County Health Department			
Monitor Information		Pollutant: PM₁₀	
Type/POC: Primary / POC 001		Monitoring Frequency: Once every 6 days	
Method Description: Hi-Vol Filter		EPA Method: RFPS 1287-063	
Purpose: Population & Source Oriented		Scale: Middle	
Start-Up Date: 6/1/01		Closure Date: Currently operating	
Monitor Information		Pollutant: PM₁₀	
Type/POC: Collocated / POC 002		Monitoring Frequency: Once every 12 days	
Method Description: Hi-Vol Filter		EPA Method: RFPS 1287-063	
Purpose: Population & Source Oriented		Scale: Middle	
Start-Up Date: 6/1/01		Closure Date: Currently operating	
Comments: None			
Site Name: 7717 Dodge, Omaha		AIRS ID: 31-055-0040	
Location: 7717 W. Dodge Road, Omaha		Latitude: 41.258611°	Longitude: -96.033333°
Operating Agency: Douglas County Health Department			
Monitor Information		Pollutant: PM₁₀	
Type/POC: Primary / POC 001		Monitoring Frequency: Once every 6 days	
Method Description: Hi-Vol Filter		EPA Method: RFPS 1287-063	
Purpose: Traffic Oriented		Scale: Neighborhood	
Start-Up Date: 10/1/87		Closure Date: Currently operating	
Comments: None			
Site Name: 132nd & Q, Omaha		AIRS ID: 31-055-0044	
Location: 132nd & Q Sts., Omaha		Latitude: 41.205556°	Longitude: -96.122222°
Operating Agency: Douglas County Health Department			
Monitor Information		Pollutant: PM₁₀	
Type/POC: Primary / POC 001		Monitoring Frequency: Once every 6 days	
Method Description: Hi-Vol Filter		EPA Method: RFPS 1287-063	
Purpose: Population Oriented		Scale: Middle	
Start-Up Date: 1/1/93		Closure Date: Currently operating	
Comments: None			

Attachment A: Ambient Air Monitoring Sites in Nebraska

PM₁₀ Sites in the Omaha MSA that are Operated by DCHD (Continued)

Site Name: 46th & Farnam, Omaha		AIRS ID: 31-055-0045	
Location: 46th & Farnum Sts, Omaha		Latitude: 41.257500°	Longitude: -95.976111°
Operating Agency: Douglas County Health Department			
Monitor Information		Pollutant: PM₁₀	
Type/POC: Primary / POC 001		Monitoring Frequency: Continuous	
Method Description: BAM Continuous		EPA Method: EQPM 0308-170	
Purpose: Population & Source Oriented		Scale: Middle	
Start-Up Date: 1/1/93 (See Comments)		Closure Date: Currently operating	
Comments: This site was modified on 1/1/08: the Hi-Vol that sampled once every 6 days was replaced with a continuous BAM sampler.			

Site Name: South Omaha - PM₁₀		AIRS ID: 31-055-0028	
Location: 2411 O Street, Omaha		Latitude: 41.207500°	Longitude: -95.947500°
Operating Agency: Douglas County Health Department			
Monitor Information		Pollutant: PM₁₀	
Type/POC: Primary / POC 001		Monitoring Frequency: Once every 6 days	
Method Description: Hi-Vol Filter		EPA Method: RFPS 1287-063	
Purpose: Population & Source Oriented		Scale: Neighborhood	
Start-Up Date: 6/1/06 (See Comments)		Closure Date: Currently operating	
Comments: <ul style="list-style-type: none"> • There has been an ozone monitor at this site since 2/1/78. • The PM₁₀ sampler was initially set-up at 25th & L Sts and then moved to 2411 O St on 8/22/07. 			

Attachment A: Ambient Air Monitoring Sites in Nebraska

PM₁₀ Sites in the Weeping Water Area* that are Operated by NDEQ

* The Weeping Water Area is in Cass County, which is part of the Omaha MSA. This is a relatively non-urbanized area of the county with limestone mining and processing activities. The PM₁₀ monitoring conducted here is for evaluation of air quality in the vicinity of Weeping Water, and not the Omaha MSA as a whole.

Site Name: Weeping Water WWTF		AIRS ID: 31-025-0002	
Location: 102 P Street, Weeping Water		Latitude: 40.866228	Longitude: -96.137678
Operating Agency: Nebraska Department of Environmental Quality			
Monitor Information		Pollutant: PM₁₀	
Type/POC: Primary / POC 001		Monitoring Frequency: Once per 3 days	
Method Description: R&P 2025 Seq. Filter		EPA Method: RFPS-1298-127	
Purpose: Population & Source Oriented		Scale: Neighborhood	
Start-Up Date: 1/1/85		Closure Date: Currently operating	
Monitor Information		Pollutant: PM₁₀	
Type/POC: Collocated / POC 001		Monitoring Frequency: Once per 6 days	
Method Description: R&P 2025 Seq. Filter		EPA Method: RFPS-1298-127	
Purpose: Population & Source Oriented		Scale: Neighborhood	
Start-Up Date: 1/1/85		Closure Date: Currently operating	
Comments: Lat/Long data was obtained from a Google Earth map search. AQS data did not match.			

Site Name: Weeping Water Park		AIRS ID: 31-025-0008	
Location: 112 S. Randolph St., Weeping Water		Latitude: 40.868854°	Longitude: -96.143089°
Operating Agency: Nebraska Department of Environmental Quality			
Monitor Information		Pollutant: PM₁₀	
Type/POC: Primary / POC 001		Monitoring Frequency: Continuous	
Method Description: Continuous TEOM		EPA Method: RFPS 1090-079	
Purpose: Population & Source Oriented		Scale: Neighborhood	
Start-Up Date: 9/10/03		Closure Date: Currently operating	
Comments: None			

Attachment A: Ambient Air Monitoring Sites in Nebraska

PM₁₀ Sites in the Weeping Water Area* that are Operated by NDEQ (Continued)

* See note on previous page

Site Name: Weeping Water Lauritzen Farm		AIRS ID: 31-025-0009	
Location: 5102 Hwy 50, Cass Co.		Latitude: 40.873309°	Longitude: -96.183359°
Operating Agency: Nebraska Department of Environmental Quality			
Monitor Information		Pollutant: PM₁₀	
Type/POC: Primary / POC 001		Monitoring Frequency: Continuous	
Method Description: Continuous TEOM		EPA Method: RFPS 1090-079	
Purpose: Source Oriented		Scale: Neighborhood	
Start-Up Date: 4/8/05		Closure Date: Currently operating	
Comments: None			

Sites in the Lincoln MSA that are Operated by LLCHD

Site Name: Morris Paint Building		AIRS ID: 31-109-0018	
Location: 2620 O St., Lincoln		Latitude: 40.812590°	Longitude: -96.683020°
Operating Agency: Lincoln Lancaster County Health Department			
Monitor Information		Pollutant: Carbon Monoxide (CO)	
Type/POC: Primary / POC 001		Monitoring Frequency: Continuous	
Method Description: IR spectrophotography		EPA Method: RFCA 0488-067	
Purpose: Highest Concentration		Scale: Microscale	
Start-Up Date: 1/1/86		Closure Date: Currently operating	
Comments: None			

Site Name: Davey		AIRS ID: 31-109-0016	
Location: 1st & Maple Sts., Davey		Latitude: 40.984722°	Longitude: -96.677222°
Operating Agency: Lincoln Lancaster County Health Department			
Monitor Information		Pollutant: Ozone	
Type/POC: Primary / POC 001		Monitoring Frequency: Continuous	
Method Description: UV spectrophotometry		EPA Method: EQOA 0577-019	
Purpose: Highest Concentration		Scale: Urban	
Start-Up Date: 1/1/85		Closure Date: Currently operating	
Comments: None			

Attachment A: Ambient Air Monitoring Sites in Nebraska

Sites in the Lincoln MSA that are Operated by LLCHD (Continued)

Site Name: LLCHD Building		AIRS ID: 31-109-0022	
Location: 3140 N St., Lincoln		Latitude: 40.812590°	Longitude: -96.683020°
Operating Agency: Lincoln Lancaster County Health Department			
Monitor Information		Pollutant: PM_{2.5}	
Type/POC: Primary / POC 001		Monitoring Frequency: Once every 3 days	
Method Description: R&P 2025 Seq. Filter		EPA Method: RFPS 0498-118	
Purpose: Population Oriented		Scale: Neighborhood	
Start-Up Date: 1/1/99		Closure Date: Currently operating	
Monitor Information		Pollutant: PM_{2.5}	
Type/POC: Collocated / POC 002		Monitoring Frequency: Once every 6 days	
Method Description: R&P 2025 Seq. Filter		EPA Method: RFPS 0498-118	
Purpose: Population Oriented		Scale: Neighborhood	
Start-Up Date: 1/1/99		Closure Date: Currently operating	
Monitor Information		Pollutant: PM_{2.5}	
Type/POC: Continuous / POC 003		Monitoring Frequency: Once every 6 days	
Method Description: Continuous TEOM		EPA Method: Not a FRM/FEM. See comment	
Purpose: Population Oriented		Scale: Neighborhood	
Start-Up Date: 7/1/06		Closure Date: Currently operating	
Comments: The continuous POC 003 analyzer is an R&P TEOM monitor. This monitor is not a Federal Reference or Equivalent Method (FRM/FEM). The results from this monitor are reported to AirNow, but are not used to determine compliance with the NAAQS.			

Attachment A: Ambient Air Monitoring Sites in Nebraska

PM_{2.5} Sites Operated by NDEQ

Site Name: Grand Island Senior High		AIRS ID: 31-079-0004	
Location: 2124 N Lafayette Ave, Grand Island		Latitude: 40.942099°	Longitude: -98.364967°
Operating Agency: Nebraska Department of Environmental Quality			
Monitor Information		Pollutant: PM_{2.5}	
Type/POC: Primary FRM/ POC 1		Monitoring Frequency: Once every 3 days	
Method Description: R&P 2025 Seq. Filter		EPA Method: RFPS-0498-118	
Purpose: Transport & Population Oriented		Scale: Regional & Neighborhood	
Start-Up Date: 5/7/04		Closure Date: Currently operating	
Comments: None			

Site Name: Scottsbluff Senior High School		AIRS ID: 31-157-0004	
Location: Hwy 26 & 5th Ave, Scottsbluff		Latitude: 41.876853°	Longitude: -103.656561°
Operating Agency: Nebraska Department of Environmental Quality			
Monitor Information		Pollutant: PM_{2.5}	
Type/POC: Primary FRM/ POC 1		Monitoring Frequency: Once every 3 days	
Method Description: R&P 2025 Seq. Filter		EPA Method: RFPS-0498-118	
Purpose: Background & Population Oriented		Scale: Regional & Neighborhood	
Start-Up Date: 5/13/09		Closure Date: Currently operating	
Comments: This site is approximately 1 mile north of the Scottsbluff Library site, which it replaced. Electric power is supplied to this site by wind and solar generating units.			

Site Name: Scottsbluff Library (Closed)		AIRS ID: 31-157-0003	
Location: 1809 3rd Avenue, Scottsbluff		Latitude: 41.865000°	Longitude: -103.664444°
Operating Agency: Nebraska Department of Environmental Quality			
Monitor Information		Pollutant: PM_{2.5}	
Type/POC: Primary FRM/ POC 1		Monitoring Frequency: Once every 3 days	
Method Description: R&P 2025 Seq. Filter		EPA Method: RFPS-0498-118	
Purpose: Background & Population Oriented		Scale: Regional & Neighborhood	
Start-Up Date: 3/1/99		Closure Date: 5/11/09	
Comments: Monitor moved to new site at Scottsbluff High School approximately 1 mile to the north.			

Attachment A: Ambient Air Monitoring Sites in Nebraska

PM₁₀ Sites outside of MSAs that are Operated by NDEQ

Site Name: Cozad		AIRS ID: 31-047-0001	
Location: 215 W 8th Street, Cozad		Latitude: 40.859444°	Longitude: -99.987778°
Operating Agency: Nebraska Department of Environmental Quality			
Monitor Information		Pollutant: PM₁₀	
Type/POC: Primary FRM/ POC 1		Monitoring Frequency: Once every 6 days	
Method Description: R&P 2025 Sequential Filter		EPA Method: RFPS-1298-127	
Purpose: Source and Population Oriented		Scale: Neighborhood	
Start-Up Date: 10/1/94		Closure Date: Currently operating	
Comments: None			

Site Name: Gothenburg		AIRS ID: 31-047-0003	
Location: 409 9th Street, Gothenburg		Latitude: 40.927500°	Longitude: -100.162778°
Operating Agency: Nebraska Department of Environmental Quality			
Monitor Information		Pollutant: PM₁₀	
Type/POC: Primary FRM/ POC 1		Monitoring Frequency: Once every 6 days	
Method Description: R&P 2025 Sequential Filter		EPA Method: RFPS-1298-127	
Purpose: Source and Population Oriented		Scale: Neighborhood	
Start-Up Date: 9/1/91		Closure Date: Currently operating	
Comments: None			

Attachment A: Ambient Air Monitoring Sites in Nebraska

TRS Sites operated by NDEQ

Site Name: Lexington #1 Location: County Rds 435 & 753, Dawson Co. Operating Agency: Nebraska Department of Environmental Quality		AIRS ID: State SPM, AIRS ID not assigned Latitude: 40.743350° Longitude: -99.711906°
Monitor Information Type/POC: State TRS monitor Method Description: See comments Purpose: Source Oriented Start-Up Date: 7/1/99	Pollutant: Total Reduced Sulfur (TRS) Monitoring Frequency: Continuous EPA Method: Not applicable; See Comments Scale: Neighborhood Closure Date: Currently operating	
Comments: There is a Nebraska ambient air quality standard established for TRS, but there is no Federal standard or NAAQS. The NE standard is established in NDEQ Title 129 Chapter 4 <u>007</u> . The TRS method is set forth in NDEQ Title 129 Chapter 4. <u>007.02</u> .		
Site Name: Pine Street – Dakota City Location: 501 Pine St, Dakota City Operating Agency: Nebraska Department of Environmental Quality		AIRS ID: State SPM, AIRS ID not assigned Latitude: 42.421867° Longitude: -96.403031°
Monitor Information Type/POC: State TRS monitor Method Description: See comments Purpose: Source Oriented Start-Up Date: 9/15/97	Pollutant: Total Reduced Sulfur (TRS) Monitoring Frequency: Continuous EPA Method: Not applicable; See Comments Scale: Neighborhood Closure Date: Currently operating	
Comments: There is a Nebraska ambient air quality standard established for TRS, but there is no Federal standard or NAAQS. The NE standard is established in NDEQ Title 129 Chapter 4 <u>007</u> . The TRS method is set forth in NDEQ Title 129 Chapter 4. <u>007.02</u> .		
Site Name: SSC – LEC Location: 701 W 29th St., South Sioux City Operating Agency: Nebraska Department of Environmental Quality		AIRS ID: State SPM, AIRS ID not assigned Latitude: 42.463706° Longitude: -96.420989°
Monitor Information Type/POC: State TRS monitor Method Description: See comments Purpose: Source Oriented Start-Up Date: 11/6/07	Pollutant: Total Reduced Sulfur (TRS) Monitoring Frequency: Continuous EPA Method: Not applicable; See Comments Scale: Neighborhood Closure Date: Currently operating	
Comments: There is a Nebraska ambient air quality standard established for TRS, but there is no Federal standard or NAAQS. The NE standard is established in NDEQ Title 129 Chapter 4 <u>007</u> . The TRS method is set forth in NDEQ Title 129 Chapter 4. <u>007.02</u> .		

Attachment A: Ambient Air Monitoring Sites in Nebraska

Interagency Monitoring of Protected Visual Environments (IMPROVE) Sites

Site Name: Crescent Lake IMPROVE		AIRS ID: Not applicable, See Comments	
Location: Crescent Lake WRA, Gosper Co.		Latitude: 41.7627°	Longitude: -102.4336°
Operating Agency: Nebraska Department of Environmental Quality / US Fish & Wildlife Service			
Monitor Information		Pollutant: IMPROVE (See Comments)	
Type/POC: IMPROVE		Monitoring Frequency: Continuous	
Method Description: : IMPROVE		EPA Method: Not applicable	
Purpose: Background & Transport		Scale: Regional	
Start-Up Date: 2002		Closure Date: Currently operating	
Comments: Interagency Monitoring of Protected Visual Environments (IMPROVE) monitors are operated to evaluate regional haze that may impact Federal Class I areas in National Parks and Wilderness Areas. Monitor for fine particulate and particulate speciation. They do not have an AIRS ID.			

Site Name: NE National Forest IMPROVE		AIRS ID: Not applicable, See Comments	
Location: Nebraska National Forest, Thomas Co.		Latitude: 41.8888°	Longitude: -100.3387°
Operating Agency: Nebraska Department of Environmental Quality / US Forest Service			
Monitor Information		Pollutant: IMPROVE (See Comments)	
Type/POC: IMPROVE		Monitoring Frequency: Continuous	
Method Description: : IMPROVE		EPA Method: Not applicable	
Purpose: Background & Transport		Scale: Regional	
Start-Up Date: 2002		Closure Date: Currently operating	
Comments: Interagency Monitoring of Protected Visual Environments (IMPROVE) monitors are operated to evaluate regional haze that may impact Federal Class I areas in National Parks and Wilderness Areas. Monitor for fine particulate and particulate speciation. They do not have an AIRS ID.			

Attachment A: Ambient Air Monitoring Sites in Nebraska

Monitoring Sites not subject to the Network Plan Review Process**

** These sites are included in the Network Plan for informational purposes only.

Site Name: Omaha Indian Reservation IMPROVE		AIRS ID: Not applicable, See Comments	
Location: Omaha Indian Res., Thurston Co.		Latitude: 42.4318°	Longitude: -96.4318°
Operating Agency: Omaha Indian Tribe*			
Monitor Information		Pollutant: IMPROVE Site (See Comments)	
Type/POC: IMPROVE		Monitoring Frequency: Continuous	
Method Description: : IMPROVE		EPA Method: Not applicable	
Purpose: Background & Transport		Scale: Regional	
Start-Up Date: 2002		Closure Date: Currently operating	
<p>Comments: Interagency Monitoring of Protected Visual Environments (IMPROVE) monitors are operated to evaluate regional haze that may impact Federal Class I areas in National Parks and Wilderness Areas. Monitor for fine particulate and particulate speciation. They do not have an AIRS ID.</p> <p>* This monitor is located within the boundaries of the Omaha Indian Reservation in Thurston County, NE. This monitor is operated by the Omaha Indian Tribe. The State of Nebraska does not have any planning, operational or oversight responsibilities for this site.</p>			

Site Name: Agate Fossil Beds Nat. Mon.		AIRS ID: 31-165-1001	
Location: Agate Fossil Beds NM, Sioux Co.		Latitude: 42.429300°	Longitude: -103.729400
Operating Agency: US National Park Service			
Monitor Information		Pollutant: Ozone	
Type/POC: Special Purpose / POC 001		Monitoring Frequency: Continuous	
Method Description: Portable		EPA Method: Not FRM/FEM. See Comments.	
Purpose: Background		Scale: Regional	
Start-Up Date: 7/27/2007		Closure Date: Scheduled for 2009 closure date	
<p>Comments: This site is operated by the National Park Service (NPS) to obtain ozone background data as part of their Northern Great Plains Monitoring Program. A portable ozone monitor is used and this is not a Federal Reference or Equivalent Method (FRM/FEM). The monitor is scheduled to operated at the Agate Fossil Beds in 2007 and 2008 and then be moved to the Valentine area. This site is not subject to 40 CFR Part 58.10, and thus is not subject to review under the 2008 Network Review.</p>			

Attachment A: Ambient Air Monitoring Sites in Nebraska

Monitoring Sites not subject to the Network Plan Review Process**

** These sites are included in the Network Plan for informational purposes only.

Site Name: Mead NADP Location: U of Ne Field Lab, Saunders Co. Operating Agency: University of Nebraska		AIRS ID: Not applicable, See Comments Latitude: 41.1528° Longitude: -96.4912
Monitor Information Type/POC: NTN/MDN Method Description: NTN/MDN Purpose: Background & Transport Start-Up Date: 7/25/78	Pollutant: TNT/MDN Monitoring Frequency: Continuous EPA Method: Not applicable Scale: Regional Closure Date: Currently operating	
Comments: The Mead and North Platte National Atmospheric Deposition Program (NADP) sites are operated by the University of Nebraska with analytical and data processing support from the NADP. NADP sites are not subject to review under the provisions of 40 CFR Part 58.10, and thus are not subject to review under the 2009 Network Review. . They are included herein for informational purposes only.		
<ul style="list-style-type: none"> Monitoring methods are specific to this program and are not Federal Reference or Equivalent Methods (FRM/FEM). The National Trends Network (NTN) sites collect deposition data on acidity, sulfate, nitrate, ammonium, chloride, and base cations (e.g., calcium, magnesium, potassium and sodium). Mercury Deposition Network (MDN) sites collect mercury deposition data. The NADP oversees both NTN and MDN sites, and provides analytical and data processing support. The Mead site initiated operation as an NTN site in 1978 and began MDN operations in June 2007. 		
Site Name: North Platte NADP Location: U of Ne Ag Station, Lincoln, Co. Operating Agency: University of Nebraska		AIRS ID: Not applicable, See Comments Latitude: 41.0592° Longitude: -100.7464°
Monitor Information Type/POC: NTN/MDN Method Description: NTN/MDN Purpose: Background & Transport Start-Up Date: 9/24/85	Pollutant: TNT/MDN Monitoring Frequency: Continuous EPA Method: Not applicable Scale: Regional Closure Date: Currently operating	
Comments: The Mead and North Platte National Atmospheric Deposition Program (NADP) sites are operated by the University of Nebraska with analytical and data processing support from the NADP. NADP sites are not subject to review under the provisions of 40 CFR Part 58.10, and thus are not subject to review under the 2009 Network Review. . They are included herein for informational purposes only.		
<ul style="list-style-type: none"> Monitoring methods are specific to this program and are not Federal Reference or Equivalent Methods (FRM/FEM). The National Trends Network (NTN) sites collect deposition data on acidity, sulfate, nitrate, ammonium, chloride, and base cations (e.g., calcium, magnesium, potassium and sodium). Mercury Deposition Network (MDN) sites collect mercury deposition data. The NADP oversees both NTN and MDN sites, and provides analytical and data processing support. The North Platte site began operation as an NTN site in 1985 and began MDN operations in 2008. 		

Attachment B: Comparison of Ambient Air Monitoring Data to NAAQS

This attachment compares ambient air quality data from 2006 through 2008 to the NAAQS, and in the case of Total Reduced Sulfur to state standards. This comparison demonstrates that all areas of Nebraska are in attainment with state and federal air quality standards.

Table B-1: Ozone Data

Comparison of 3-Year Design Values for 8-hour Ozone to NAAQS ^{(1) (2) (3)}					
Site	2006	2007	2008	Design Value ⁽¹⁾	% NAAQS
Omaha MSA ⁽⁴⁾					
2411 O St., Omaha	0.072	0.066	0.057	0.065	87%
11414 N 72nd St., Omaha	0.066	0.056	0.052	0.058	77%
30th & Fort, Omaha	0.067	0.061	0.058	0.062	83%
Pisgah, IA	0.074	0.070	0.059	0.067	89%
Lincoln MSA					
First & Maple, Davey	0.056	0.054	0.051	0.053	71%
Agate Fossil Beds National Monument - Sioux County					
Agate Fossil Beds ^{(4) (5)}	-	0.066	0.067	na ^{(4) (5)}	88% ⁽⁶⁾
Notes and Explanations:					
(1) The design value is the 3-year average of the 4 th highest max for each year.					
(2) Concentrations are in units of ppm.					
(3) NAAQS = 0.075 ppm. This is the new standard promulgated 3/27/2008.					
(4) The ozone monitor at the Agate Fossil Beds was operated by the National Park Service. It operated from mid-July 2007 through September 2008 with some down-time in July & August 2008. Approximately one year of data was collected from this site over the 2007 through 2008 monitoring period. The 4 th highest maximum value over the 2007 through 2008 time frame was 0.069 ppm. The highest value was 0.072 ppm.					
(5) The monitoring method used was not a Federal Reference or Equivalent Method (FRM/FEM). Thus it cannot be used to evaluate attainment with the NAAQS. Method comparison work conducted by the National Park Service indicates the results should compare closely to FRM/FEM results.					
(6) The 2-year average of the 4 th highest maximums was .0665 ppm or 88% of the 3-year average NAAQS.					

Attachment B: Comparison of Ambient Air Monitoring Data to NAAQS
(continued)

Table B-2: Carbon Monoxide Data

Comparison of 3-Year Maximum Value for 1-Hour Carbon Monoxide to NAAQS⁽¹⁾⁽²⁾⁽³⁾					
Site	2006	2007	2008	Maximum Value	% NAAQS
Omaha MSA					
30th & Fort, Omaha⁽⁴⁾	2.5	2.2	ND ⁽⁴⁾	2.5	7%
7747 Dodge St., Omaha⁽⁵⁾	ND ⁽⁵⁾	3.0 ⁽⁵⁾	2.9	3.0	9%
Lincoln MSA					
2620 O St, Lincoln	4.2	4.2	4.5	4.5	13%
Notes and Explanations:					
(1) The maximum values shown are the 2 nd highest maximums for each year.					
(2) Concentrations are in units of ppm.					
(3) The 1-hour NAAQS = 35 ppm.					
(4) The 30 th & Fort St site discontinued operation on 12/31/07.					
(5) The 7747 Dodge Street site in Omaha began operations on 10/1/07.					
Comparison of 3-Year Maximum Value for 8-Hour Carbon Monoxide to NAAQS⁽¹⁾⁽²⁾⁽³⁾					
Site	2006	2007	2008	Maximum Value	% NAAQS
Omaha MSA					
30th & Fort, Omaha⁽⁴⁾	2.0	1.5	ND ⁽⁴⁾	2.0	22%
7747 Dodge St., Omaha⁽⁵⁾	ND ⁽⁵⁾	2.4	2.0	2.4	27%
Lincoln MSA					
2620 O St, Lincoln	2.5	2.6	1.8	2.6	29%
Notes and Explanations:					
(1) The maximum values shown are the 2 nd highest maximums for each year.					
(2) Concentrations are in units of ppm.					
(3) The 3-hour NAAQS = 9 ppm.					
(4) The 30 th & Fort St site discontinued operation on 12/31/07.					
(5) The 7747 Dodge Street site in Omaha began operations on 10/1/07.					

Attachment B: Comparison of Ambient Air Monitoring Data to NAAQS (continued)

Table B-3: Sulfur Dioxide Data

Comparison of 3-Year Maximum Value for 3-Hour Sulfur Dioxide to NAAQS ⁽¹⁾					
Site	2006	2007	2008	Maximum Value	% NAAQS
Omaha MSA					
1616 Whitmore St., Omaha	0.054	0.082	0.106	0.106	21%
11300 North Post Rd, Omaha	0.015	0.006	0.002	0.015	3%
2115 Navajo Rd, Council Bluffs, IA ⁽²⁾	ND	0.024 ⁽³⁾	0.050 ⁽⁴⁾	0.050	10%
Notes and Explanations:					
(1) The 3-hour NAAQS is 0.5 ppm not to be exceeded more than once per year. This is determined using the 2 nd highest maximum 3-hour reading for each year. The values shown are 2 nd highest maximum values. The 3-hour NAAQS is a secondary standard. All concentrations expressed in units of ppm.					
(2) The Council Bluffs (Navajo Rd) monitor is operated by Mid-America Energy, and is located on their property. It is not part of Iowa's SLAMS and results from it cannot be used to make NAAQS attainment determinations.					
(3) For 2007, the Navajo Rd site reported SO ₂ data from 6/13/07 through 7/25/07 and 9/25/07 through 9/30/07.					
(4) For 2007, the Navajo Rd site reported SO ₂ data from 1/1/08 through 9/30/08.					
Comparison of 3-Year Maximum Value for 24-Hour Sulfur Dioxide to NAAQS ⁽¹⁾					
Site	2006	2007	2008	Maximum Value	% NAAQS
Omaha MSA					
1616 Whitmore St., Omaha	0.019	0.025	0.031	0.031	22%
11300 North Post Rd, Omaha	0.004	0.005	0.002	0.005	4%
2115 Navajo Rd, Council Bluffs, IA ⁽²⁾	ND	0.011 ⁽³⁾	0.023 ⁽⁴⁾	0.023	16%
Notes and Explanations:					
(1) The 24-hour NAAQS is 0.14 ppm not to be exceeded more than once per year. This is determined using the 2 nd highest maximum 24-hour reading for each year. The values shown are 2 nd highest maximum values. The 24-hour NAAQS is a primary standard. All concentrations expressed in units of ppm.					
(2) - (4) See notes under 3-hour data above.					
Comparison of 3-Year Maximum Annual Average Value for Sulfur Dioxide to NAAQS ⁽¹⁾					
Site	2006	2007	2008	Maximum Value	% NAAQS
Omaha MSA					
1616 Whitmore St., Omaha	0.0019	0.0022	0.0015	0.0022	7%
11300 North Post Rd, Omaha	0.0013	0.0016	0.0012	0.0016	5%
2115 Navajo Rd, Council Bluffs, IA ⁽²⁾	ND	0.0022 ⁽³⁾	0.0027 ⁽⁴⁾	0.0027	9%
Notes and Explanations:					
(1) The Annual Average NAAQS is 0.03 ppm not to be exceeded in a calendar year. Thus the highest annual average over the 3-year comparison period was compared to the NAAQS. The Annual Average NAAQS is a primary standard. All concentrations expressed in units of ppm.					
(2) - (4) See notes under 3-hour data above.					

Attachment B: Comparison of Ambient Air Monitoring Data to NAAQS (continued)

Table B-4a: Particulate Matter with an Aerodynamic Diameter Less Than or Equal to a Nominal 10 Micrometers (PM₁₀)

Comparison of Maximum 24-Hour Concentrations for PM ₁₀ to NAAQS ^{(1) (2)}					
Site	2006	2007	2008	3-Year Maximum	% NAAQS
Omaha MSA					
7717 Dodge St, Omaha	80	68	78	80	53%
132nd & Q Sts Omaha	78	59	74	78	52%
46th & Farnam Sts, Omaha	108	99	143	143	95%
19th & Burt Sts, Omaha	70	62	107	107	71%
2411 O St, Omaha ⁽⁶⁾	ND	60	84	84	56%
3130 C Ave, Council Bluffs, IA	70	74	59	74	49%
2115 Navajo Rd, Council Bluffs, IA ⁽³⁾	94	58	71	94	63%
Weeping Water WWTF ⁽⁴⁾	96	111	142	142	95%
Weeping Water Park ⁽⁴⁾	117	155 ⁽¹⁾	131	155 ⁽¹⁾	103% ⁽¹⁾
Weeping Water Lauritzen Farm ⁽⁴⁾⁽⁵⁾	141	167 ⁽¹⁾	102	167 ⁽¹⁾	111% ⁽¹⁾
Sioux City MSA					
27th & Morgan, Sioux City, IA	100	85	96	100	67%
Nebraska Outside the Omaha and Lincoln MSAs					
Cozad	118	120	71	120	80%
Gothenburg	142	83	54	142	95%
Notes and Explanations:					
(1) Compliance with the 150 µg/m ³ NAAQS is attained when the expected number of exceedances per year is equal to or less than one. When daily monitoring is performed, this means that the 150 µg/m ³ NAAQS can be exceeded up to 3 times in a 3-year period without triggering a non-attainment status. The monitors at the Weeping Water Park and Lauritzen Farm sites had PM ₁₀ levels in excess of 150 µg/m ³ for one day each in 2007 (10/23/07 and 11/19/07, respectively) and in the 2005 through 2007 time period. Thus, a NAAQS violation did not occur.					
(2) Concentrations are in units of µg/m ³ .					
(3) The monitor at 2115 Navajo Rd. in Council Bluffs is operated by Mid America Energy and is located on their property. It is not part of Iowa's SLAMS and results from it can not be used to make NAAQS attainment determinations. PM ₁₀ data was collected during the following time periods: 1/1/06 through 3/31/06, 6/22/07 through 9/6/07, 9/25/07 through 9/30/07, and 1/1/08 through 6/30/08. Thus only partial data is available each of the 3 years in the design period.					
(4) Weeping Water is a limestone mining and processing area in Cass County, which is located 15 to 20 miles south of the main urbanized area within the Omaha MSA.					
(5) Weeping Water Lauritzen Farm site initiated operations on 4/8/05.					
(6) This site was started as a Special Purpose Monitor (, the South Omaha SPM) on 5/17/06 at 25 th and L Sts. and was moved to 24 th & O Sts on 8/22/07. DCHD recognized it as a SLAMS in 2008.					

Attachment B: Comparison of Ambient Air Monitoring Data to NAAQS (continued)

Table B-4b: Particulate Matter with an Aerodynamic Diameter Less Than or Equal to a Nominal 10 Micrometers (PM₁₀)

Comparison of 3-Year Annual Averages for PM ₁₀ ^{(1) (2)}				
Site	2006	2007	2008	3-Year Average
Omaha MSA				
7717 Dodge St, Omaha	38.8	34.5	33.2	31.6
132nd & Q Sts Omaha	28.4	24.8	24.2	25.8
46th & Farnam Sts, Omaha	45.4	41.1	45.1	43.9
19th & Burt Sts, Omaha	28.2	23.7	31.1	27.7
2411 O St, Omaha ⁽⁶⁾	ND	32.1	28.8	30.5
3130 C Ave, Council Bluffs, IA	27.5	24.5	23.7	25.3
2115 Navajo Rd, Council Bluffs, IA ⁽³⁾	24.7	27.8	22.5	25.0
Weeping Water WWTF ⁽⁴⁾	28.4	25.2	23.0	25.5
Weeping Water Park ⁽⁴⁾	32.1	29.2	25.5	29.1
Weeping Water Lauritzen Farm ⁽⁴⁾⁽⁵⁾	32.8	30.6	27.8	30.6
Sioux City MSA				
27th & Morgan, Sioux City, IA	26.8	23.5	22.4	24.2
Nebraska Outside the Omaha, Lincoln & Sioux City MSAs				
Cozad	28.7	27.5	23.2	26.4
Gothenburg	38.7	26.7	25.5	29.8
Notes and Explanations:				
(1) The previous NAAQS of 50 µg/m ³ was rescinded by EPA on December 18, 2006. NDEQ Title 129 was modified to remove this standard on August 18, 2008.				
(2) Concentrations are in units of µg/m ³ .				
(3) The monitor at 2115 Navajo Rd. in Council Bluffs is operated by Mid America Energy and is located on their property. It is not part of Iowa's SLAMS. Results from it cannot be used to make NAAQS attainment determinations. PM ₁₀ data was collected during the following time periods: 1/1/06 through 3/31/06, 6/22/07 through 9/6/07, 9/25/07 through 9/30/07, and 1/1/08 through 6/30/08. Thus only partial data is available each of the 3 years in the design period.				
(4) Weeping Water is a limestone mining and processing area in Cass County, which is located 15 to 20 miles south of the main urbanized area within the Omaha MSA.				
(5) Weeping Water Lauritzen Farm site initiated operations on 4/8/05.				
(6) This site was started as a Special Purpose Monitor (, the South Omaha SPM) on 5/17/06 at 25 th and L Sts. and was moved to 24 th & O Sts on 8/22/07. DCHD recognized it as a SLAMS in 2008.				

Attachment B: Comparison of Ambient Air Monitoring Data to NAAQS (continued)

Table B-5: Particulate Matter with an Aerodynamic Diameter Less Than or Equal to a Nominal 2.5 Micrometers (PM_{2.5})

Comparison of 98th Percentile, 24-Hour Concentrations for PM_{2.5} to NAAQS⁽¹⁾⁽³⁾					
Site	2006	2007	2008	3-Year Average	% NAAQS
Omaha MSA					
42nd & Woolworth; Omaha	19.9	27.4	21.9	23.1	66%
9225 Berry St.; Omaha	24.2	24.8	19.8	23.0	66%
2912 Coffey Ave., Bellevue	21.5	28.8	18.0	23.9	68%
2242 Wright St., Blair	25.6	19.7	17.2	20.9	60%
3130 C Ave., Council Bluffs, IA	23.1	33.0	20.2	25.4	73%
Lincoln MSA					
3140 N Street, Lincoln	20.6	16.3	16.7	20.1	57%
Sioux City MSA					
27th & Morgan, Sioux City, IA	29.0	31.2	24.7	26.7	76%
Nebraska Outside the Omaha, Lincoln and Sioux City MSAs					
Grand Island Senior High	16.6	18.4	17.7	17.9	51%
1809 3rd Ave., Scottsbluff	19.0	17.7	19.3	19.8	57%
Comparison of 3-Year Annual Averages for PM_{2.5} to NAAQS⁽²⁾⁽³⁾					
Site	2006	2007	2008	3-Yr Ave	% NAAQS
Omaha MSA					
42nd & Woolworth; Omaha	8.85	9.77	9.22	9.48	63%
9225 Berry St.; Omaha	9.20	8.95	8.84	9.07	60%
2912 Coffey Ave., Bellevue	9.22	9.43	9.32	9.42	63%
2242 Wright St., Blair	9.05	8.61	8.24	8.77	58%
3130 C Ave., Council Bluffs, IA	10.92	11.20	10.26	10.75	72%
Lincoln MSA					
3140 N Street, Lincoln	7.98	8.15	8.08	8.14	54%
Sioux City MSA					
27th & Morgan, Sioux City, IA	10.33	10.64	9.84	10.20	68%
Nebraska Outside the Omaha, Lincoln and Sioux City MSAs					
Grand Island Senior High	7.25	8.34	7.78	7.93	53%
1809 3rd Ave., Scottsbluff	5.76	7.10	6.77	6.68	45%
Notes and Explanations:					
(1) To determine attainment status, the 3-year average of the annual 98 th percentile value is compared to the 35 µg/m ³ NAAQS.					
(2) To determine attainment status, the 3-year average of the annual averages is compared to the 15 µg/m ³ -NAAQS.					
(3) Concentrations are in units of µg/m ³ .					

Attachment B: Comparison of Ambient Air Monitoring Data to NAAQS (continued)

Table B-6: Total Reduced Sulfur (TRS) Data

Comparison of 3-Year Maximum Value for 1-Minute TRS to the State Standard ⁽¹⁾⁽²⁾					
Site	2006	2007	2008	Maximum Value	% NAAQS
Sioux City MSA					
501 Pine St. Dakota City	0.325	0.215	0.593	0.593	5.9%
250 152nd St. South Sioux City ⁽³⁾	0.080	0.039	-	0.08	0.8%
701 W. 29th Street, South Sioux City ⁽⁴⁾	-	0.009	0.028	0.028	0.3%
Lexington					
Dawson Co. Rds. 435 & 753 (Lexington)	0.342	0.105	0.151	0.342	3.4%
Notes and Explanations:					
(1) The 1-minute State Air Quality Standard is 10 ppm.					
(2) Concentrations are in units of ppm.					
(3) The 250 152 nd St., South Sioux City site was permanently closed on 4/18/07.					
(4) The 701 W 29 th St., South Sioux City site opened 11/6/07. This site is located on the City/County Law Enforcement Center property, and is referred to as the LEC SSC site.					

Comparison of 3-Year Maximum Value for 30-Minute TRS to the State Standard ⁽¹⁾⁽²⁾					
Site	2006	2007	2008	Maximum Value	% NAAQS
Sioux City MSA					
501 Pine St. Dakota City	0.160 ⁽⁵⁾	0.113 ⁽⁶⁾	0.160 ⁽⁷⁾	0.160	160%
250 152nd St. South Sioux City ⁽³⁾	0.049	0.023	-	0.049	49%
701 W. 29th Street, South Sioux City ⁽⁴⁾	-	0.008	0.021	0.021	21%
Lexington					
Dawson Co. Rds. 435 & 753 (Lexington)	0.078	0.061	0.043	0.078	78%
Notes and Explanations:					
(1) The 1-minute State Air Quality Standard is 10 ppm.					
(2) Concentrations are in units of ppm.					
(3) The 250 152 nd St., South Sioux City site was permanently closed on 4/18/07.					
(4) The 701 W 29 th St., South Sioux City site opened 11/6/07. This site is located on the City/County Law Enforcement Center property, and is referred to as the LEC SSC site.					
(5) In 2006 the Pine Street monitor recorded a single 27-minute excursion of the 30-minute standard on 4/24/06 from 04:29 – 04:56 CST.					
(6) In 2007, the Pine Street monitor recorded a single 14-minute excursion of the 30-minute standard on 5/8/07 from 20:27 - 20:40 CST.					
(7) In 2008, the Pine Street monitor recorded a total of 127 minutes above the 0.1 ppm 30-minute average standard for TRS: 5/25 (26 min), 5/31 (10 min), 6/2 (51 min), 6/17 (28 min) and 6/23 (12 min)					

Attachment C – Metropolitan Statistical Areas and Micropolitan Statistical Areas

The US Census Bureau defines metropolitan and micropolitan statistical areas as follows:

Metropolitan and Micropolitan Statistical Areas are geographic entities defined by the U.S. Office of Management and Budget (OMB) for use by federal statistical agencies in collecting, tabulating, and publishing federal statistics. The term "Core Based Statistical Area" (CBSA) is a collective term for both metro and micro areas. A metro area contains a core urban area of 50,000 or more population, and a micro area contains an urban core of at least 10,000 (but less than 50,000) population. Each metro or micro area consists of one or more counties and includes the counties containing the core urban area, as well as any adjacent counties that have a high degree of social and economic integration (as measured by commuting to work) with the urban core.

Nebraska contains three metropolitan areas (or at least parts of said metropolitan areas): Omaha, Lincoln and Sioux City, IA; and 10 Micropolitan Statistical Areas (MiSAs). Figures C.1, C.2 and C.3 below provide location and statistical information on these MSAs and MiSAs.

The Omaha MSA encompasses five counties in Nebraska (Cass, Douglas, Sarpy, Saunders and Washington) and 3 counties in Iowa (Harrison, Mills and Pottawattamie). The population of the Nebraska counties within this MSA is 717,943, which is 86% of the population in the Omaha MSA, and 40% of the total population of Nebraska. In the last five years (July 1st 2004 through July 1st, 2008,) the Omaha MSA has an estimated average annual growth rate of 0.9% (4.5% over the 5-year period). The Nebraska portion of the Omaha MSA is growing faster than the Iowa portion (1.0% vs 0.2%). Sarpy County is the fastest growing county in Nebraska, and has the 3rd highest population. Douglas County has the highest population and the 3rd highest growth rate among Nebraska counties.

The Lincoln MSA includes Lancaster and Seward Counties and has a population of 295,486, which is 17% of the state's total population. The Lincoln MSA grew at an average annual rate of 1.0% over the last five years. Most of that growth was in Lancaster County.

As can be seen from the data presented in Figures C.1 and C.3, the Omaha and Lincoln MSAs contain 57% of Nebraska's population and their populations are growing faster than other areas and counties within the state. The only exception was the Grand Island MiSA which grew at a faster rate in 2008 than the Omaha and Lincoln MSAs, but that is a one-year phenomenon (Omaha and Lincoln grew faster in 2007 and over the last five years).

The Fremont MiSA is located adjacent to and northwest of the Omaha MSA, while the Beatrice MiSA is located adjacent to and south of the Lincoln MSA (See Figure C.2). The Omaha and Lincoln MSAs, and the Fremont and Beatrice MiSA are thus contiguous. The population within the nine Nebraska counties within this area is 1,072,336 or 60% of Nebraska's population. Over the last 5 years the average annual growth rate of this area has been 1.0% or 4.8% over the 5-year period.

The populations and growth rates of cities outside of the MSAs and MiSAs were examined to determine if any additional MiSAs could be expected to be designated in the future. The cities examined were: Alliance (pop. 8155), York (pop. 7955), McCook (pop. 7542), Nebraska City (pop. 7137), Sidney (pop. 6372), Crete (pop. 6305), Holdrege (pop. 5325), Chadron (pop. 5208), Wayne (pop. 5176), Ogallala (pop. 4649), Aurora (pop. 4256), Fairbury (pop. 4010), Broken Bow (pop. 3265), Valentine (pop. 2703) and Kimball (pop. 2299). US Census population estimates for July 1st, 2007 were used in this review. All of these 15 cities have had historical growth rates of less than 1% per year during the previous 5 years. The MiSA designation is contingent upon the existence of a Core Statistical Area with a population of 10,000 to 50,000. Thus it is not anticipated that any new MiSAs will be designated in the near future.

Figure C-1: Metropolitan Statistical Areas and Micropolitan Statistical Areas

Metropolitan Statistical Areas

Name/Location	Population*	Growth Rate (2007-8 / 2004-8)	Counties
Omaha MSA	837,925	1.2% / 0.9%	NE Counties: Cass, Douglas, Sarpy, Saunders & Washington NE population: 717,943 86% of Omaha MSA population 40% of NE population IA Counties: Harrison, Mills & Pottawattamie
Lincoln MSA	295,486	1.4% / 1.0%	Lancaster and Seward counties 17% of total NE population Lincoln city pop. 252,316 (85% of MSA)
Sioux City MSA	143,157	0.6% / 0.2%	NE Counties: Dakota & Dixon NE population: 26,467 (18% of MSA) IA Counties: Woodbury SD Counties: Union

Micropolitan Statistical Areas

Grand Island MiSA	70,694	1.5% / 0.6%	Hall, Howard & Merrick counties Grand Island city pop. 45,602 or 65% of MiSA
Kearney MiSA	51,833	0.6% / 0.5%	Buffalo & Kearney counties Kearney city pop. 30,405 or 59% of MiSA
Norfolk MiSA	47,561	-0.3% / -0.8%	Madison, Pierce & Stanton counties Norfolk city pop. 23,132 or 49% of MiSA
Hastings MiSA	39,508	0.8% / 0.1%	Adams & Clay counties Hastings city pop. 25,624 or 65% of MiSA
Scottsbluff MiSA	37,289	0.7% / 0.2%	Banner & Scotts Bluff counties Scottsbluff/Gering city pop. 23,079 or 62% of MiSA
North Platte MiSA	36,831	0.4% / 0.4%	Lincoln, Logan & McPherson counties North Platte city pop. 24,178 or 68% of MiSA
Fremont MiSA	35,872	-0.1% / 0.0%	Dodge County Fremont city pop. 25,350 or 71% of MiSA
Columbus MiSA	32,072	0.8% / 0.8%	Platte County Columbus city pop. 21,580 or 67% of MiSA
Lexington MiSA	26,591	0.2% / 0.2%	Dawson & Gosper counties Lexington city pop. 10,200 or 38% of MiSA
Beatrice MiSA	23,035	0.3% / 0.1%	Gage County Beatrice city pop. 12,803 or 56% of MiSA
State of Nebraska	1,783,432	0.8% / 0.5%	

* Population estimates are for July 1st, 2008. County and state data were obtained from the US Census Bureau's population estimate released on March 19, 2009. City populations were estimated using US Census July 1st, 2007, estimates and adjusting them using the county growth rate with consideration for historical city growth rates.

Figure C-2: Map showing the location of MSAs and MiSAs

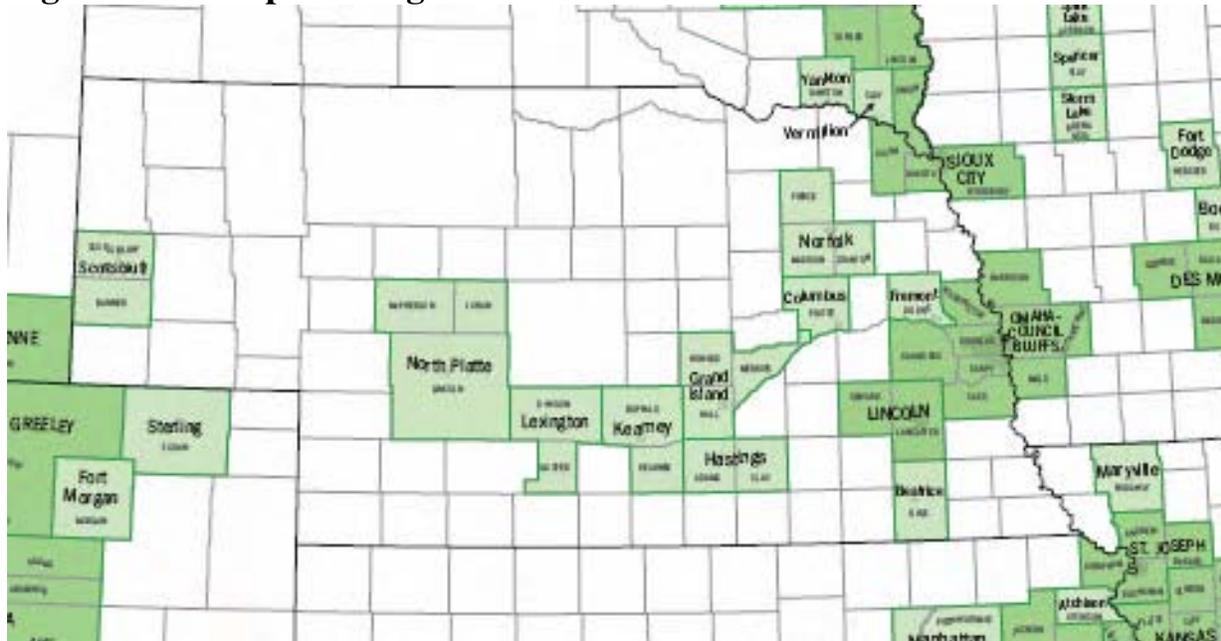


Figure C-3: Top Ten Nebraska Counties by Population and Growth Rates

Top Ten Counties by Population*			Top Ten Counties by Growth Rate**		
County	Population	Growth	County	Growth	Population
Douglas (Omaha MSA)	502,032	0.8 %	Sarpy (Omaha MSA)	3.3%	150,467
Lancaster (Lincoln MSA)	278,728	1.0 %	Lancaster (Lincoln MSA)	1.7%	278,728
Sarpy (Omaha MSA)	150,467	2.0 %	Douglas (Omaha MSA)	1.4%	502,032
Hall (Grand Island)	56,401	0.8 %	Hall (Grand Island MiSA)	1.3%	56,401
Buffalo (Kearney)	45,354	0.7 %	Platte (Columbus MiSA)	1.3%	32,072
Scotts Bluff (Scottsbluff)	36,554	0.2 %	Buffalo (Kearney MiSA)	1.2%	45,354
Dodge (Fremont)	35,872	0.0 %	Dixon (Sioux City MiSA)	1.2%	6,293
Lincoln (North Platte)	35,582	0.4 %	Wheeler	0.7%	807
Madison (Norfolk)	34,020	-0.9 %	Washington (Omaha MSA)	0.7%	19,812
Adams (Hastings)	33,238	0.4 %	Lincoln (North Platte MiSA)	0.7%	35,582

* Population estimates are for July 1st, 2008. They were obtained from the US Census Bureau's Population Estimate Program on or about April 1st 2009.

** The Average Annual Growth Rate over the last 5 years (July 1, 2004 through July 1, 2008). The growth rates were calculated from data obtained from the US Census Bureau's Population Estimate Program.

Attachment D – Verification of Compliance with 40 CFR Part 58 Appendix D

The requirements set forth in 40 CFR Part 58 Appendix D were used in this analysis. The purpose of this analysis is to verify that Nebraska's SLAMS network meets the minimum requirements with respect to the number of monitors deployed. Meeting these minimum requirements does not ensure that Nebraska's SLAMS network is adequate to meet all the needs that exist. As stated in Section 1.1.2 of Appendix D, the "... total number of monitoring sites that will serve the variety of data needs will be substantially higher than these minimum requirements provide..."

Does the Nebraska Air Monitoring Network meet the minimum monitoring requirements set forth in 40 CFR Part 58 Appendix D?

Yes. This analysis demonstrates that individual areas of the state (including the Omaha, Lincoln and Sioux City Metropolitan Statistical Areas) are in compliance with the Appendix D requirements.

Why is this review divided into four parts?

Some of the Appendix D requirements are defined relative to the population of the metropolitan areas in which monitoring is performed. The first 3 subparts to this attachment review minimum monitoring requirements in the three Metropolitan Statistical Areas (Omaha, Lincoln and Sioux City). All other areas of the state are examined in the fourth subpart.

How are pollutant levels related to this analysis?

The minimum monitoring requirements set forth in 40 CFR Part 58 Appendix D are based in part upon air pollutant levels. In general, monitoring requirements increase as pollutant levels increase so as to approach or exceed the NAAQS. Attachment B above compares 2006 through 2008 air monitoring results to the NAAQS.

Attachment D: Part I – The Omaha MSA

The Douglas County Health Department operates the ambient air monitoring network in most of the Nebraska portion of the Omaha MSA, with monitoring sites in Douglas, Sarpy and Washington Counties. The Nebraska Department of Environmental Quality operates particulate monitors in the Weeping Water area of Cass County.

The Weeping Water area is a limestone mining and processing area in Cass County. It is located 15 to 20 miles south of the southern edge of the main urbanized areas of the Omaha MSA. In reviewing the number of PM₁₀ monitors within the Omaha MSA, it should be noted that the monitors in the Weeping Water area are outside the Omaha metro area as most would define it

NCore – One site is anticipated for start-up by January 1, 2011 (40 CFR Part 58 App. D Sec.3).

NCore sites are a new type of multi-pollutant site with deployment anticipated by 2011. One NCore site is required in the Omaha Metropolitan Statistical Area. The DCHD has proposed locating the NCore site at 41st and Woolworth. This proposal has been forwarded to EPA R7. EPA R7 conducted an on-site review in April 2009 and provided preliminary regional approval of the site. The proposed NCore site documentation was forwarded to EPA headquarters and preliminary approval has been indicated, but written approval has not been received. A timely approval determination is important, because approval is needed to commence with the construction of the temperature controlled enclosure for the site. Equipment purchases for this site have been initiated and will continue in 2009 and 2010. EPA R7 has indicated \$103 funding will be made available for the purchase of NCore equipment. At least partial start-up of this site is anticipated in the latter half of 2010.

Ozone (O₃) – Two sites required (40 CFR Part 58 App. D Sec. 4.1); 4 sites deployed.

The criterion for the number of sites is dependent upon the size of the MSA and whether the latest 3-year average of maximum ozone level is 85% or more of the NAAQS. Omaha falls in the MSA population size range of 350,000 to 4,000,000. For this size MSA, two ozone sites are required if the 3 year average is $\geq 85\%$ of the NAAQS. If the average is less than 85%, then one ozone site is required.

Within the Omaha MSA there are 3 ozone-monitoring sites in Nebraska and 1 site in Iowa. Iowa has indicated that they will start-up a second site in 2009. The ozone levels detected in 2006 through 2008 at the three NE sites ranged from 77% to 87% of the NAAQS (0.075 ppm), and the IA site averaged 89% of the NAAQS. Thus the 85% threshold was exceeded at 2 of the 4 sites. Therefore at least 2 ozone monitors are required; this requirement is met and exceeded.

Carbon Monoxide (CO) – No sites required (40 CFR Part 58 App. D Sec. 4.2); one deployed.

Appendix D does not establish a minimum number of sites for CO monitoring. The implementation of air control technology on mobile and stationary CO sources has led to attainment with the CO NAAQS in almost all areas of the US. There are only two areas that are not listed in attainment with the carbon monoxide NAAQS: Clark County (Las Vegas), NV, designated non-attainment; and Marion and Polk Counties (Salem), OR, designated not classified. As a result, EPA has shifted monitoring priorities such that CO monitoring is no longer required, except in areas where CO non-attainment may be an issue.

The CO levels monitored at the Omaha sites are well below the NAAQS. During the 2006 through 2008 time period, the maximum 2nd highest 1-hour maximum was 9% and the maximum 8-hour 2nd highest value was 27% of the NAAQS.

The CO monitoring site in the Omaha MSA was moved from 30th and Fort Streets to 78th and Dodge Streets on October 1, 2007. This was based on modeling that indicated that the 78th and Dodge location would have higher CO levels. These modeling results were also consistent with historical monitoring results from the 74th & Dodge Streets site, which was shut down in 2005 due to commercial re-development of the site.

Nitrogen Dioxide (NO₂) – No sites required (40 CFR Part 58 App. D Sec. 4.3). None deployed.

Appendix D does not establish a minimum number of sites for NO₂ monitoring. All areas of the US have been in attainment with the NO₂ NAAQS since 1998. Nebraska has never had a non-attainment designation with respect to NO₂. Currently, there are no NO₂ monitoring sites in Nebraska and none are anticipated, other than the NO/NO_y (or substitute NO₂) trace gas monitoring at the future Omaha NCore site.

Sulfur Dioxide (SO₂) – No sites required (40 CFR Part 58 App. D Sec. 4.4). Two sites deployed.

Appendix D does not establish a minimum number of sites for SO₂ monitoring. Almost all areas of the USA are in attainment with the sulfur dioxide NAAQS, the exceptions being in the states of AZ, MT, NJ, PA and UT and the territory of Guam. Nebraska has never had a non-attainment designation with respect to SO₂.

Currently, the only SO₂ monitoring sites in Nebraska are in Omaha, in part because of the OPPD North Omaha power plant located there. These sites have demonstrated compliance with the NAAQS. The Omaha Whitmore site has recorded the highest SO₂ levels, with the maximum levels detected in the last 3 years being no more than 22% of the NAAQS.

Trace level SO₂ monitoring is part of the monitoring that will be carried out at future NCore sites. DCHD has indicated a preliminary intent to shut-down the SO₂ monitoring site on North Post Road during 2009 or 2010. The closure would be a re-deployment to free-up resources for the development of the NCore site. SO₂ levels at this site have not exceeded 5% of the NAAQS at the North Post Road site, and the NCore site will have a trace SO₂ monitor.

Lead (Pb) – One site required by 2011 (40 CFR Part 58.10(a)(4) and App. D Sec. 4.5). None currently deployed.

Effective January 15, 2009, EPA substantially strengthened the lead NAAQS from 1.5 µg/m³ to 0.15 µg/m³. These regulations also established new minimum monitoring requirements.

- Source-oriented monitoring is required around sources emitting 1 tpy or more of lead, unless it can be demonstrated that maximum ambient lead levels will not exceed 50% of the NAAQS. Monitoring to commence by January 1, 2010.
- A community-oriented monitoring site is required in each Core Based Statistical Area (CBSA) with a population equal to or greater than 500,000 people as determined by the latest available US Census Bureau figures. Monitoring to commence by January 1, 2011.

Emission inventory data does not identify any lead sources meeting the 1 tpy threshold in the Omaha MSA. Therefore, source-oriented monitoring is not required, and none is anticipated at this time.

The Omaha MSA is a CBSA with a population exceeding 500,000. Thus, a lead monitoring site will need to be established by January 1, 2011. DCHD has indicated preliminary consideration for placing the lead monitor at 41st and Woolworth.

Particulate Matter with a Diameter of 10 Microns or Less (PM₁₀)

2 to 4 sites required (40 CFR Part 58 Appendix D Section 4.6); 9 sites deployed

There are 10 monitors deployed at 8 sites in NE and 1 monitor deployed in IA. In Nebraska, there are 6 monitors at 5 sites in Douglas County operated by the DCHD, and the 4 monitors at 3 sites in Cass County are operated by the NDEQ.

The minimum number of sites required is dependent upon the population of the MSA and the concentration of PM₁₀ in the MSA. Omaha falls in the MSA population category of 500,000 to 1,000,000. The minimum number of monitors required for this size MSA is as follows:

- 4 to 8 if maximum 24-hour PM₁₀ concentrations exceed 120% of the NAAQS
- 2 to 4 if maximum 24-hour PM₁₀ concentrations are between 80 to 120% of the NAAQS
- 1 to 2 if maximum 24-hour PM₁₀ concentrations are less than 80% of the NAAQS

From 2006 through 2008, the 24-hour concentrations at the different sites within the Omaha MSA ranged from 49% to 111% of the NAAQS. Thus, 2 to 4 sites are required, and the 7 sites operated meet and exceed this requirement. Furthermore, the 5 sites in Douglas County, NE and the 1 site Pottawattamie County, IA (i.e., those within the main urbanized area of the Omaha MSA) also meet or exceed the minimum requirements.

Fine Particulate Matter with a Diameter of 2.5 Microns or Less (PM_{2.5})

Requirements include: one FRM site, one collocated site, one continuous monitor and one speciation monitor as part of the PM_{2.5} Speciation Trends Network (STN) (40 CFR Part 58 Appendix D Section 4.7).

There are four FRM sites in Nebraska and one FRM site in Iowa. The site at 4102 Woolworth Street in Omaha meets all of the minimum requirements for the Omaha MSA in that it contains FRM, collocated, continuous and speciation monitors.

The minimum number of required FRM sites is dependent upon the population of the MSA and the concentration of PM_{2.5} in the MSA. The Omaha MSA falls in the population category of 500,000 to 1,000,000. The minimum numbers of sites required for this size MSA are as follows:

- 2 if PM_{2.5} concentrations are equal to or greater than 85% of the NAAQS
- 1 if PM_{2.5} concentrations are less than 85% of the NAAQS

For the 2006 through 2008 time period, the 3-year average of the 98th percentile, 24-hour values ranged from 60 to 73% of the 35 µg/m³ NAAQS, while annual average values were 58 to 72% of the 15 µg/m³ NAAQS. Thus there must be at least one FRM PM_{2.5} monitor located in the Omaha MSA.

Appendix D Section 4.7 also has requirements for PM_{2.5} collocated and continuous monitors in the Omaha MSA. The 4102 Woolworth Street site in Omaha has been designated by EPA to be part of the PM_{2.5} Speciation Trends Network (STN), and as such must have a PM_{2.5} chemical speciation monitor (Appendix D Section 4.7.4). The 4102 Woolworth site has an FRM, a collocated, a continuous and a speciation monitor; thus meeting all of the minimum requirements.

Coarse Particulate Matter (PM_{10-2.5})

One site required at future NCore site (40 CFR Part 58 Appendix D Section 4.7).

A coarse PM monitor will be included as part of the NCore site that is to be located in the Omaha MSA. The site at 3130 C Avenue in Council Bluffs, IA also monitors for both PM₁₀ and PM_{2.5}. This site could be utilized to supply PM_{10-2.5} data.

Photochemical Assessment Monitoring Stations (PAMS)

No sites required at this time. None deployed. (40 CFR Part 58 Appendix D Section 5)

PAMS are deployed to provide more extensive data in areas classified as serious, severe, or extreme non-attainment for O₃. All areas of Nebraska, and the Omaha MSA, are in attainment with the O₃ NAAQS. Thus no PAMS are required or anticipated at this time.

Attachment D: Part II – Lincoln MSA

NCORE – No sites required (40 CFR Part 58 App. D Sec. 3) None deployed or anticipated.

The only required NCore site for Nebraska is to be located in Omaha.

Ozone (O₃) – No sites required (40 CFR Part 58 Appendix D Section 4.1). Currently one site deployed.

The criterion for number of sites is dependent upon the size of the MSA and whether the latest 3-year average of maximum ozone levels meet or exceed 85% of the NAAQS. Lincoln falls within the MSA population size range of 50,000 to 350,000. For this size MSA, one ozone site is required if the 3-year average is $\geq 85\%$ of the NAAQS. If the average is less than 85%, then no ozone site is required. For 2006 through 2008, the average of maximum value is 0.054 ppm (3-year average of 4th highest maximum values), which is 72% of the 0.075 ppm 8-hour NAAQS.

Carbon Monoxide (CO) – No sites required (40 CFR Part 58 App. D Sec. 4.2). One site deployed.

Appendix D does not establish a minimum number of sites for CO monitoring. The implementation of air control technology on mobile and stationary CO sources has led to attainment with the CO NAAQS in almost all areas of the US. There are only two areas that are not listed in attainment with the carbon monoxide NAAQS: Clark County (Las Vegas), NV, designated non-attainment; and Marion and Polk Counties (Salem), OR, designated not classified. As a result, EPA shifted monitoring priorities so that CO monitoring is no longer required, except in areas where CO non-attainment may be an issue.

The CO levels monitored at the Lincoln site have been well below the NAAQS. The 2006 through 2008 3-year average for the 2nd highest 1-hour maximum was 13%, and the 3-year average for the 8 hour 2nd highest maximums was 29% of the NAAQS.

Nitrogen Dioxide (NO₂) – No sites required (40 CFR Part 58 App. D Sec. 4.3). None deployed.

Appendix D does not establish a minimum number of sites for NO₂ monitoring. All areas of the USA have been in attainment with the NO₂ NAAQS since 1998. Nebraska has never had a non-attainment designation with respect to NO₂. Currently, there are no NO₂ monitoring sites in Nebraska and none are anticipated other than the NO/NO_y (or substitute NO₂) trace gas monitoring at the future Omaha NCore site.

Sulfur Dioxide (SO₂) – No sites required (40 CFR Part 58 App. D Sec. 4.4). None deployed.

Appendix D does not establish a minimum number of sites for SO₂ monitoring. Almost all areas of the US are in attainment with the sulfur dioxide NAAQS. The exceptions are: AZ, MT, NJ, PA, UT, and the territory of Guam. Nebraska has never had a non-attainment designation with respect to SO₂.

Currently, the only SO₂ monitoring sites in Nebraska are in Omaha, in part because of the OPPD North Omaha power plant located there. These sites have demonstrated compliance with the NAAQS. There is no evidence to indicate that SO₂ levels in Lincoln would be higher than those in Omaha. Thus, SO₂ monitoring is neither required nor anticipated.

Lead (Pb) – No sites required (40 CFR Part 58.10(a)(4) and App. D Sec. 4.5). None deployed.

Effective January 15, 2009, EPA substantially strengthened the lead NAAQS from 1.5 $\mu\text{g}/\text{m}^3$ to 0.15 $\mu\text{g}/\text{m}^3$. These regulations also established new minimum monitoring requirements.

- Source-oriented monitoring is required around sources emitting 1 tpy or more of lead, unless it can be demonstrated that maximum ambient lead levels will not exceed 50% of the NAAQS. Monitoring to commence by January 1, 2010.
- A community-oriented monitoring site is required in each Core Based Statistical Area (CBSA) with a population equal to or greater than 500,000 people as determined by the latest available US Census Bureau figures. Monitoring to commence by January 1, 2011.

There are no known lead sources meeting the 1 tpy threshold in the Lincoln MSA. The Lincoln MSA has a population of 292,000; well below the 500,000 threshold for requiring a community-oriented site. Therefore, neither source-oriented nor community-oriented lead monitoring is required, and none is anticipated at this time.

Particulate Matter with a Diameter of 10 Microns or Less (PM₁₀)

No sites required or anticipated (40 CFR Part 58 Appendix D Section 4.6). None deployed.

The minimum number of required sites is dependent upon the population of the MSA and the concentration of PM₁₀ in the MSA. Lincoln falls in the MSA population category of 250,000 to 500,000. The minimum numbers of sites required for this sized MSA are as follows:

- 3 to 4 if maximum 24-hour PM₁₀ concentrations exceed 120% of the NAAQS
- 1 to 2 if maximum 24-hour PM₁₀ concentrations are between 80 to 120% of the NAAQS
- 0 to 1 if maximum 24-hour PM₁₀ concentrations are less than 80% of the NAAQS

PM₁₀ monitoring was discontinued in Lincoln in 1997. However, monitoring continued at several sites within the Omaha MSA. These have generally not shown any appreciable increase in PM₁₀ levels. PM_{2.5} monitoring in Lincoln was started in 1997, and PM_{2.5} levels have not shown any increase. Thus, the available evidence indicates that PM₁₀ levels in Lincoln remain well below 80% of the NAAQS. Therefore, there appears to be no immediate need for PM₁₀ monitoring in the Lincoln MSA.

Fine Particulate Matter with a Diameter of 2.5 Microns or Less (PM_{2.5})

No sites required (40 CFR Part 58 Appendix D Section 4.7). One site with 3 monitors existing.

The minimum number of required sites is dependent upon the population of the MSA and the concentration of PM_{2.5} in the MSA. Lincoln falls in the MSA population category of 50,000 to 500,000. The minimum numbers of sites required for this size MSA are as follows:

- 1 if PM_{2.5} concentrations are equal to or greater than 85% of the NAAQS
- 0 if PM_{2.5} concentrations are less than 85% of the NAAQS

For the 2006 through 2008 time period, the 3-year average of the 98th percentile, 24-hour values was 51 % of the 35 $\mu\text{g}/\text{m}^3$ NAAQS, while annual average values were 54 % of the 15 $\mu\text{g}/\text{m}^3$ NAAQS.

Coarse Particulate Matter (PM_{10-2.5})

No sites required or anticipated (40 CFR Part 58 Appendix D Section 4.8). None deployed.

PM_{10-2.5} monitors are only required at NCore Stations. PM_{10-2.5} chemical speciation monitoring and analyses are also only required at NCore Stations. Lincoln is not anticipated to receive an NCore site or a PM_{10-2.5} monitor at this time.

Photochemical Assessment Monitoring Stations (PAMS)

No sites required at this time (40 CFR Part 58 Appendix D Section 5). None deployed.

PAMS are deployed to provide more extensive data in areas classified as serious, severe, or extreme non-attainment for O₃. All areas of Nebraska, and the Lincoln MSA, are in attainment with the O₃ NAAQS. Thus no PAMS are required or anticipated at this time.

Attachment D: Part III – Sioux City MSAs

NCore – No sites required (40 CFR Part 58 App. D Sec. 3). None deployed or anticipated

The only required NCore site for Nebraska is to be located in Omaha.

Ozone (O₃) – No sites required (40 CFR Part 58 App. D Sec. 4.1). None deployed in NE

Appendix D sets forth criteria for the number of ozone sites required based upon the population and historical ozone levels. The Sioux City IA-NE-SD MSA has a population of approximately 143,000. MSAs with populations of 50,000 to 350,000 are required to have one ozone site if the historical 3 year design value is greater than or equal to 85% of the NAAQS. If ozone is less than 85% of the NAAQS, then no sites are required.

Currently there are no ozone monitors deployed in the Sioux City MSA. There is an ozone monitor in Emmetsburg, IA, which is approximately 40 miles northeast of Sioux City. The Iowa DNR considers this a background site, as it is not located in a highest concentration area for the Sioux City MSA. The 3-year design value (2006 through 2008) for this site was 0.058 ppm or 77% of the NAAQS.

Carbon Monoxide (CO) – No sites required (40 CFR Part 58 App. D Sec. 4.2). None deployed

Appendix D does not establish a minimum number of sites for CO monitoring. The implementation of air control technology on mobile and stationary CO sources has led to attainment with the CO NAAQS in almost all areas of the US. There are only two areas that are not listed in attainment with the carbon monoxide NAAQS: Clark County (Las Vegas), NV, designated non-attainment; and Marion and Polk Counties (Salem), OR, designated not classified. As a result, EPA shifted monitoring priorities so that CO monitoring is no longer required, except in areas where CO non-attainment may be an issue.

Nitrogen Dioxide (NO₂) – No sites required (40 CFR Part 58 App. D Sec. 4.3). None deployed.

Appendix D does not establish a minimum number of sites for NO₂ monitoring. All areas of the US have been in attainment with the NO₂ NAAQS since 1998. Nebraska has never had a non-attainment designation with respect to NO₂. Currently, there are no NO₂ monitoring sites in Nebraska and none are anticipated, other than the NO/NO_y (or substitute NO₂) trace gas monitoring at the future Omaha NCore site.

Sulfur Dioxide (SO₂) – No sites required (40 CFR Part 58 App. D Sec. 4.4). None deployed.

Appendix D does not establish a minimum number of sites for SO₂ monitoring. Almost all areas of the US are in attainment with the sulfur dioxide NAAQS. The exceptions are: AZ, MT, NJ, PA, UT, and the territory of Guam. Nebraska has never had a non-attainment designation with respect to SO₂.

Currently, the only SO₂ monitoring sites in Nebraska are in Omaha, in part because of the OPPD North Omaha power plant located there. These sites have demonstrated compliance with the NAAQS. There is no evidence to indicate that SO₂ levels in the Sioux City MSA would be higher than those in Omaha. Thus, SO₂ monitoring is neither required nor anticipated.

Lead (Pb) – No sites required (40 CFR Part 58.10(a)(4) and App. D Sec. 4.5). None deployed.

Effective January 15, 2009, EPA substantially strengthen the lead NAAQS from 1.5 µg/m³ to 0.15 µg/m³. These regulations also established new minimum monitoring requirements.

- Source-oriented monitoring is required around sources emitting 1 tpy or more of lead, unless it can be demonstrated that maximum ambient lead levels will not exceed 50% of the NAAQS. Monitoring to commence by January 1, 2010.
- A community-oriented monitoring site is required in each Core Based Statistical Area (CBSA) with a population equal to or greater than 500,000 people as determined by the latest available US Census Bureau figures. Monitoring to commence by January 1, 2011.

There are no known lead sources meeting the 1 tpy threshold in Dixon or Dakota County, NE (i.e., the NE counties in the Sioux City MSA). The Sioux City MSA has a population of approximately 143,000; well below the 500,000 threshold for requiring a community-oriented site. Therefore, neither source-oriented nor community-oriented lead monitoring is required in the NE portion of the Sioux City MSA, and none is anticipated at this time.

Particulate Matter with a Diameter of 10 Microns or Less (PM₁₀)

None required (40 CFR Part 58 App. D Sec. 4.6). One monitor deployed in Iowa. No monitors deployed in Nebraska or South Dakota. Deployment of PM₁₀ monitors in Dakota or Dixon Counties is not anticipated at this time.

Appendix D only sets forth minimum siting criteria for MSAs with populations of 100,000 to 250,000. The minimum numbers of sites required for this sized MSA are as follows:

- 1 to 2 if maximum 24-hour PM₁₀ concentrations exceed 120% of the NAAQS
- 0 to 1 if maximum 24-hour PM₁₀ concentrations are between 80 to 120% of the NAAQS
- None if maximum 24-hour PM₁₀ concentrations are less than 80% of the NAAQS

Iowa has one PM₁₀ site deployed in Sioux City. The data for 2006 through 2008 indicates that the 24-hour maximum PM₁₀ concentration reached approximately 67% of the NAAQS. Thus, the minimum Appendix D requirements are met in the Sioux City MSA by the Iowa monitor.

Fine Particulate Matter with a Diameter of 2.5 Microns or Less (PM_{2.5})

No sites required (40 CFR Part 58 App. D Sec. 4.7). One monitor deployed in Iowa. No monitors deployed in Nebraska or South Dakota. Deployment of PM_{2.5} monitors in Dakota or Dixon Counties is not anticipated at this time.

Appendix D establishes requirements for monitors in MSAs with populations of 50,000 to 350,000. One PM_{2.5} site is required if the 3-year design number is equal to or greater than 85% of the NAAQS, and none is required if less than 85%. The PM_{2.5} levels found at the Sioux City, Iowa site have been less than 85% of the NAAQS.

Coarse Particulate Matter (PM_{10-2.5})

No sites required at this time (40 CFR Part 58 App. D Sec. 4.8). None deployed.*

A PM_{10-2.5} monitor is anticipated to be included as part of the NCore site that is to be located in the Omaha MSA. The NDEQ does not plan to deploy a PM_{10-2.5} outside of the Omaha MSA.

* The site at 27th & Morgan in Sioux City, IA monitors for both PM₁₀ and PM_{2.5}. Thus this site could be utilized to supply PM_{10-2.5} data.

Photochemical Assessment Monitoring Stations (PAMS)

No sites required at this time (40 CFR Part 58 Appendix D Section 5). None deployed.

PAMS are deployed to provide more extensive data in areas classified as serious, severe, or extreme non-attainment for O₃. All areas of Nebraska, and the Lincoln MSA, are in attainment with the O₃ NAAQS. Thus no PAMS are required or anticipated at this time.

Attachment D: Part IV – Nebraska Outside the Omaha, Lincoln and Sioux City MSAs

NCore – No sites required (40 CFR Part 58 App. D Sec. 3). None deployed or under development.

The only required NCore site for Nebraska is to be located in Omaha with deployment required by 2011. It is possible that one or more sites could be established in rural Nebraska to provide regional background and transport information. However, there is no ongoing planning or development activities underway to establish a second Ncore site.

Ozone (O₃) – No sites required (40 CFR Part 58 App. D Sec. 4.1). None deployed.

Appendix D sets forth criteria for the number of ozone sites required based upon the population and historical ozone levels. MSAs and MiSAs with populations of 50,000 to 350,000 are required to have one ozone site if the historical 3-year design value is greater than or equal to 85% of the NAAQS. If ozone is less than 85% of the NAAQS or if the population is less than 50,000, then no sites are required.

Two MiSAs fall in the 50,000 to 350,000 population range:

- The Grand Island MiSA, population ~71,000, no monitors deployed
- The Kearney MiSA, population ~52,000, no monitors deployed

Based on known population and source information, ozone levels in the Grand Island and Kearney MiSAs would be anticipated to be less than those found in the Lincoln MSA; and thus less than 85% of the NAAQS.

Carbon Monoxide (CO) – No sites required (40 CFR Part 58 App. D Sec. 4.2). None deployed

Appendix D does not establish a minimum number of sites for CO monitoring. The implementation of air control technology on mobile and stationary CO sources has led to attainment with the CO NAAQS in almost all areas of the US. There are only two areas that are not listed in attainment with the carbon monoxide NAAQS: Clark County (Las Vegas), NV, designated non-attainment; and Marion and Polk Counties (Salem), OR, designated not classified. As a result, EPA shifted monitoring priorities such that CO monitoring is no longer required, except in areas where CO non-attainment may be an issue.

Nitrogen Dioxide (NO₂) – No sites required (40 CFR Part 58 App. D Sec. 4.3). None deployed.

Appendix D does not establish a minimum number of sites for NO₂ monitoring. All areas of the USA have been in attainment with the NO₂ NAAQS since 1998. Nebraska has never had a non-attainment designation with respect to NO₂. Currently, there are no NO₂ monitoring sites in Nebraska and none are anticipated other than the NO/NO_y (or substitute NO₂) trace gas monitoring at the future Omaha NCore site.

Sulfur Dioxide (SO₂) – No sites required (40 CFR Part 58 App. D Sec. 4.4). None deployed.

Appendix D does not establish a minimum number of sites for SO₂ monitoring. Almost all areas of the US are in attainment with the sulfur dioxide NAAQS, the exceptions are: AZ, MT, NJ, PA, UT, and the territory of Guam. Nebraska has never had a non-attainment designation with respect to SO₂.

Currently, the only SO₂ monitoring sites in Nebraska are in Omaha, in part because of the OPPD North Omaha power plant located there. These sites have demonstrated compliance with the NAAQS. There is no evidence to indicate that SO₂ levels in other areas of the state would be higher than those in Omaha. Thus, SO₂ monitoring is neither required nor anticipated.

Lead (Pb) – Possibly two sites required by 2010 (40 CFR Part 58.10(a)(4) and App. D Sec. 4.5). None deployed. Modeling is being conducted relative to two possible sites.

Effective January 15, 2009, EPA substantially strengthen the lead NAAQS from 1.5 µg/m³ to 0.15 µg/m³. These regulations also established new minimum monitoring requirements.

- Source-oriented monitoring is required around sources emitting 1 tpy or more of lead, unless it can be demonstrated that maximum ambient lead levels will not exceed 50% of the NAAQS. Monitoring to commence by January 1, 2010.
- A community-oriented monitoring site is required in each Core Based Statistical Area (CBSA) with a population equal to or greater than 500,000 people as determined by the latest available US Census Bureau figures. Monitoring to commence by January 1, 2011.

Two sources have been identified that meet the 1 tpy threshold: Magnolia Metal Corp. in Auburn and Magnus Farley Inc. in Fremont. Attachment I contains information on the proposed sites in Auburn and Fremont.

Particulate Matter with a Diameter of 10 Microns or Less (PM₁₀)

No sites required (40 CFR Part 58 App. D Sec. 4.6). Two monitors deployed at two sites.

Appendix D only sets forth minimum siting criteria for MSAs with 100,000 or more people. No sites are required in MiSAs with less than 100,000 people.

Both of the Nebraska PM₁₀ sites located outside the MSA areas are source and population oriented. One is deployed in downtown Cozad; the other one is in downtown Gothenburg. These sites were established to monitor for possible impacts from agricultural processing facilities, primarily alfalfa processing facilities in these two communities.

Fine Particulate Matter with a Diameter of 2.5 Microns or Less (PM_{2.5})

Two (2) sites required. Two deployed. (40 CFR Part 58 Appendix D Section 4.7)

Appendix D establishes requirements for monitors in MSA/MiSAs with populations of 50,000 or more. For MSA/MiSAs with populations of 50,000 to 350,000, one PM_{2.5} site is required if the 3-year design number is equal to or greater than 85% of the NAAQS, and none is required if less than 85%.

Two of the MiSAs have populations in the 50,000 to 350,000 range: the Grand Island MiSA and the Kearney MiSA. There is a PM_{2.5} monitoring site in one of these communities: Grand Island. The 2006 through 2008 design value found in Grand Island is less than 60% of the NAAQS.

Monitoring is also conducted at Scottsbluff and was previously conducted at North Platte. The PM_{2.5} levels found at these sites were less than 85% of the NAAQS. Thus, there is no demonstrated need for additional PM_{2.5} monitors

Appendix D also requires states to operate one transport and one background PM_{2.5} site. The Scottsbluff site is Nebraska's background site, and the Grand Island site is its transport site.

Coarse Particulate Matter (PM_{10-2.5})

No sites required at this time (40 CFR Part 58 Appendix D Section 4.8). None deployed.

A PM coarse monitor is anticipated to be included as part of the NCore site that is to be located in the Omaha MSA. There are no plans at present to deploy a PM coarse monitor outside of the Omaha MSA.

Photochemical Assessment Monitoring Stations (PAMS)

No sites required at this time. None deployed. (40 CFR Part 58 Appendix D Section 5)

PAMS are deployed to provide more extensive data in areas classified as serious, severe, or extreme non-attainment for O₃. All areas of Nebraska are in attainment with the O₃ NAAQS. Thus no PAMS are required or anticipated at this time.

Attachment E – Verification of Compliance with 40 CFR Part 58 Appendix A

40 CFR Part 58 Appendix A sets forth quality assurance requirements for the collection, calculation and reporting of air monitoring data. To ensure compliance with these requirements, the NDEQ has a *Quality Assurance Project Plan (QAPP) for the Nebraska Ambient Air Monitoring Program for PM₁₀, PM_{2.5}, CO, O₃, SO₂ and TRS*. EPA Region 7 reviewed and approved this QAPP in June 2006. Actual procedures for operating monitors, as well as for collecting, reviewing and submitting data are set forth in Standard Operating Procedures (SOPs) that were developed to comply with the requirements of the QAPP.

Appendix A also sets forth requirements specifying the number of collocated monitors required for PM_{2.5} and PM₁₀ monitors. The requirements for the PM_{2.5} network are set forth in section 3.2.5 of Appendix A; and the PM₁₀ network requirements are in section 3.3. Although addressed in separate sections, the requirements for both PM_{2.5} and PM₁₀ networks are basically the same, and require each primary quality assurance organization (PQAO) to have at least 1 collocated monitor and have at least 15% of its monitors collocated for its PM_{2.5} and PM₁₀ networks. Continuous monitors are not included in this requirement. The table below demonstrates that the Nebraska Network complies with the collocation requirements.

Table D-1: Compliance Demonstration with the Collocation Requirements of 40 CFR Part 58 Appendix A ⁽¹⁾						
PQAO	PM ₁₀			PM _{2.5}		
	# of Sites	# Collocated	% Collocated	# of Sites	# Collocated	% Collocated
DCHD	4	1	25%	4	1	25%
NDEQ	5 ⁽²⁾	1	20%	3 ⁽³⁾	1	33%

Abbreviations:
 DCHD – Douglas County Health Department
 LLCHD – Lincoln Lancaster County Health Department
 NDEQ – Nebraska Department of Environmental Quality

Footnotes:
 (1) Each PQAO must meet the following collocation criteria for its PM_{2.5} and PM₁₀ networks:
 • Have at least one collocated monitor, and
 • Have at least 15% of sites collocated.
 (2) The NDEQ operates a network of five PM₁₀ sites. Two of these sites use continuous monitors, for which the collocation requirements do not apply. Regardless, the continuous sites were included in this table.
 (3) Of the 3 sites in the NDEQ PM_{2.5} network, 2 are operated solely by the NDEQ and the third site (the collocated site) is jointly operated by NDEQ and LLCHD. LLCHD changes the filters, performs monthly QA checks and performs routine maintenance. NDEQ audits the site and provides oversight. All three sites in the network use the same equipment (R&P 2025 samplers) and procedures. NDEQ is recognized as the PQAO because of the following:
 • LLCHD uses the NDEQ’s QAPP and equivalent SOPs
 • NDEQ provides oversight and technical support to LLCHD, including review of operational and QA procedures
 • NDEQ audits all three sites so as to comply with the requirements of Appendix A section 3.2.4
 • The Nebraska Human Health and Services Laboratory performs the filter analysis for all three sites using the same procedures
 • NDEQ performs data QA review and submits the PM_{2.5} data collected to AQS

Attachment F – Verification of Compliance with 40 CFR Part 58 Appendixes C and E**1. Appendix C Requirements**

Appendix C contains requirements for approved ambient air monitoring methodologies. Any monitor that is used to evaluate NAAQS compliance must be a Federal Reference Method (FRM) or a Federal Equivalent Method (FEM) or an alternatively approved method as defined in Appendix C. The network description tables in Attachment A of the network plan identify the monitoring method used by each monitor in the Nebraska ambient air monitoring network.

All monitors used to evaluate compliance with the NAAQS are FRM or FEM certified. The only monitors that are not FRM/FEM certified are those listed below:

- The TRS monitors used to evaluate compliance with the State TRS standard
- The continuous TEOM PM_{2.5} monitors in Lincoln used for AirNow reporting, but not NAAQS compliance determinations

Appendix C does set forth procedures for obtaining an Approved Regional Method (ARM) designation for continuous PM_{2.5}. Although there was initial interest on the part of NDEQ and LLCHD to pursue the ARM designation for the continuous TEOM PM_{2.5} monitors, operating results within EPA Region 7 are indicating that the ARM designation may not be feasible.

2. Appendix E Requirements

This appendix sets forth requirements for probe and monitoring path placement, including: horizontal and vertical placement, spacing from minor sources, spacing from obstructions, spacing from trees, spacing from roadways, cumulative interferences on a monitoring path, maximum monitoring path length, and probe material and sample residence time. Compliance with these criteria is verified when the site is set-up and periodically after that. Compliance is evaluated using an SOP developed for that purpose.

Attachment G – Air Quality Issues Related to Ambient Air Monitoring**1. General – Statewide**

All areas of Nebraska are in attainment with National Ambient Air Quality Standards (NAAQS). See Attachment B (*Comparison of Ambient Air Monitoring Data to NAAQS*) for details on the air quality found at the various monitoring sites across the state.

2. Omaha MSA (Cass, Douglas, Sarpy, Saunders & Washington Counties)

Within the Omaha MSA, DCHD operates 16 monitoring sites for 5 pollutants (ozone, carbon monoxide, sulfur dioxide, PM₁₀ and PM_{2.5}). , NDEQ operates 3 PM₁₀ monitoring sites near Weeping Water. General and specific air quality issues related to these sites are described below.

a. Omaha MSA - General Considerations

Omaha is Nebraska's largest Metropolitan Statistical Area (MSA). It encompasses 5 counties in Nebraska and 3 counties in Iowa. Total population of the Omaha MSA is 837,925. It is bordered on the southwest by the Lincoln MSA (Population 295,486) on the west by the Fremont Micropolitan Statistical Area (Population 35,872). See Attachment C for more details on Metropolitan and Micropolitan Areas.

The Omaha MSA is growing at a rate of approximately 1.0% per year. The Nebraska population within the MSA is growing a rate of 1.2% per year. Sarpy County growth is at 2.3% and Douglas County growth is at 0.9 %. Sarpy County is the fastest growing county in the state.

Due to the size of the Omaha MSA and the impact of densely-located, multiple pollutant sources (an inherent quality of metropolitan areas), air quality impacts can be anticipated. The primary pollutants of concern are ozone and PM_{2.5}, and to a lesser extent carbon monoxide, sulfur dioxide and PM₁₀. As shown in Attachment B – *Comparison of Ambient Air Monitoring Data to NAAQS*, the air quality in the Omaha MSA is in compliance with the NAAQS. See below for a more detailed discussion with respect to ozone levels in the Omaha MSA.

b. Omaha MSA & Ozone

EPA lowered the 8-hour ozone NAAQS effective March 27, 2008. The new NAAQS is 0.075 ppm. Attainment with this NAAQS is achieved if the 3-year average of the 4th highest daily maximum 8-hour concentrations for each calendar year does not exceed 0.075 ppm (note: truncating is used to calculate the 3-year average; thus 0.07599 truncates to 0.075, and would be considered in attainment). These 3-year averages are referred to as "Design Values". See the hypothetical Design Value calculations in Table G.1 below.

In 2008 there were 4 ozone monitoring sites in the Omaha MSA: 3 in the City of Omaha and one in Harrison County, IA near Pisgah, Iowa (a rural setting approximately 23 miles north of Omaha). The 2006 through 2008 Design Values at these 4 sites ranged from 0.058 ppm to 0.067 ppm, or from 77% to 89% of the NAAQS. Thus the Omaha MSA is in attainment with the ozone NAAQS.

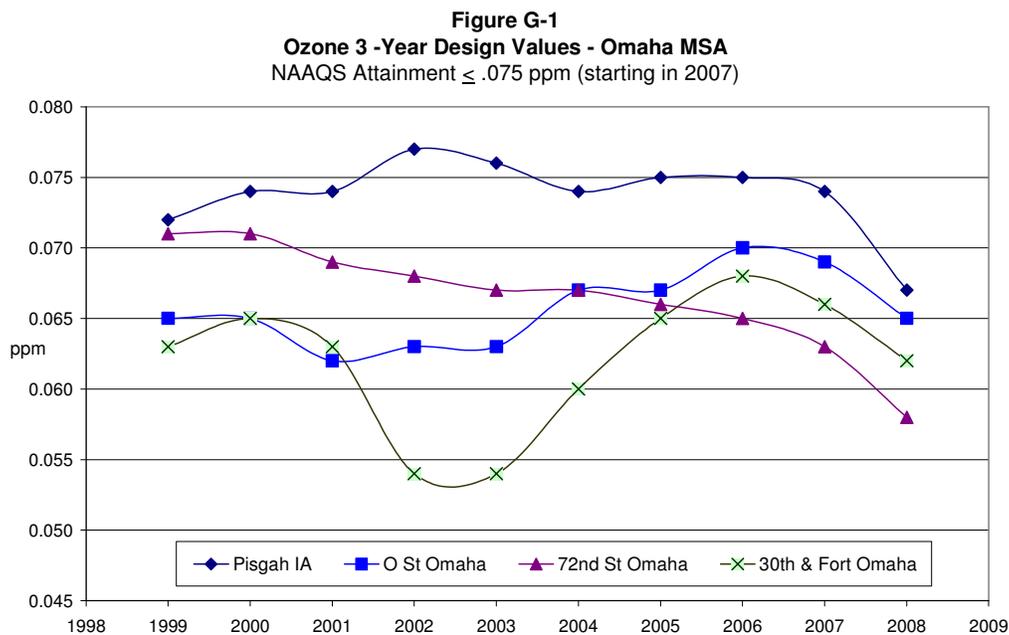
In 2009 Iowa initiated monitoring at a new site located approximately 4 miles S-SE of the existing site near Pisgah, IA. Initial monitoring results for the April thru August 2009 time period indicate that maximum ozone levels at the new site are slightly higher than those at the Pisgah site: the highest 8-hour reading being 0.071 ppm at the new site and 0.068 ppm at the Pisgah site.

Monitoring was initiated at the Pisgah site in 1997. It has always reported a higher 3-year Design Value than the other Omaha sites (see Figure G-1). The 2005 through 2007 Design Value for Pisgah was 0.074 ppm, or 97% of the NAAQS. This raised concerns that the ozone levels at the Pisgah site may indicate future non-attainment status for the Omaha MSA with respect to ozone. However, with the relatively low ozone levels found in 2008 (4th highest 8-hr max = 0.059 ppm), it now appears that the NAAQS will be met through 2010, unless 2009 and/or 2010 ozone levels exceed levels previously recorded. See hypothetical calculations in Table G-1.

Table G-1: Hypothetical Ozone Design Value Calculations using Actual 2007 and 2008 Data from the Pisgah Site and Hypothetical Data for 2009 and 2010					
Annual 4 th Highest 8-hr Values			3 Yr Average	2009 Design Value	Status
2007	2008	2009			
0.070	0.059	0.098 *	0.0757	0.075	Attainment
0.070	0.059	0.099 *	0.0760	0.076	Non-Attainment
Annual 4 th Highest 8-hr Values			3 Yr Average	2010 Design Value	Status
2008	2009	2010			
0.059	0.084 *	0.084 *	0.0757	0.075	Attainment
0.059	0.084 *	0.085 *	0.0760	0.076	Non-Attainment
* Example values were assigned for 2009 and 2010. The values for 2007 and 2008 are the actual values determined by monitoring.					
Historical Data Summary: 1997 to 2008 (12 years or 2556 sampling days) Highest historical annual 4 th highest 8-hr value = 0.080 ppm Highest maximum 8-hr ozone value recorded = 0.089 ppm 2 nd highest maximum 8-hr ozone value recorded = 0.086 ppm 3 rd highest maximum 8-hr ozone value recorded = 0.085 ppm Days when maximum 8-hr ozone ≥ 0.084 ppm => 5 days Days when maximum 8-hr ozone ≥ 0.080 ppm => 1 days Summary: Ozone levels would have to increase above historical levels to trigger an ozone non-attainment status in the Omaha MSA prior to 2011.					

As illustrated in Figure G-1 below, an examination of the historical data does not show any definitive upward trends with respect to ozone levels in the Omaha MSA during the 1997 through 2008 time frame. All four ozone sites in the Omaha MSA have shown a downward trend over the last 3 years, but that trend is dependent mostly upon the low 2008 values. The only site showing a long term downward trend is the 72nd Street site.

Figure G-1 also illustrates that the Design Values at the Pisgah site exceeded the current 0.075 ppm NAAQS standard in 2002 (0.077 ppm) and 2003 (0.076 ppm). The NAAQS was 0.08 ppm at that time. Thus ozone monitoring results will continue to be carefully watched in the Omaha MSA.



c. Odor Complaints in Sarpy County

In 2007 and 2008, state and local government agencies received odor related complaints from areas in Sarpy County around and south of the Hwy 50 and I-80 interchange. The complaints came from a relatively large area, with complainants separated by 5 miles or more in some cases. Several potential sources were examined. The Sarpy County Landfill implemented odor control measures.

The NDEQ Air Quality Program does not regulate odors unless they are associated with a regulated pollutant. In that regard, survey monitoring for total reduced sulfur (TRS) was performed and is continuing. The survey monitoring has not found TRS levels that would indicate levels approaching an exceedence of the State TRS standards.

d. Weeping Water & PM₁₀

The area in and around Weeping Water in Cass County has several limestone mining and processing facilities that are potential sources of PM₁₀. In 1999 and 2000, this area was very close to being declared in non-attainment with the PM₁₀ NAAQS. Particulate levels have since dropped. This drop is attributed to voluntary efforts by sources in the area to reduce particulate discharges.

In 2008, Martin Marietta, one of the mining and processing companies operating in the area, relocated their operations. Their old site was immediately west of the City of Weeping Water. The new location is approximately 2 miles south-southwest of the city and outside the Weeping Water Creek valley. The new facilities are equipped with more efficient pollution control technology, which should reduce PM₁₀ pollutant emissions.

In October and November of 2007, two of the Weeping Water monitoring sites (the Park and Lauritzen Farm sites) reported maximum daily average values above the 150 $\mu\text{g}/\text{m}^3$ NAAQS.

40 CFR Part 50 allows up to 3 daily maximum values above the NAAQS over a 3-year period from any one site, before a non-attainment status occurs. Maximum levels in 2008 did not exceed the NAAQS (maximum 24-hr value was 142 $\mu\text{g}/\text{m}^3$ at the city's wastewater treatment facility). Thus, the area remains in compliance with the NAAQS.

The location of the Weeping Water area and the nature of the limestone dust, minimize transport impacts on the central urbanized area of the Omaha MSA.

3. Lincoln Metropolitan Statistical Area (Lancaster and Seward Counties)

Lincoln is Nebraska's second largest metropolitan statistical area (MSA). It encompasses 2 counties: Lancaster and Seward. Total population of the Lincoln MSA is 295486. It is bordered on the north and east by the Omaha MSA (population 837,925), and on the south by the Beatrice Micropolitan Statistical Area (population 23035). See Attachment C for more details on Metropolitan and Micropolitan Areas.

The population of the Lincoln MSA is growing at a rate of 1.2% per year since 2000. This growth is primarily in Lancaster County, which has been the second fastest growing county in Nebraska from 2000 through 2008 (Sarpy County is the fastest growing county).

Some air quality impacts can be anticipated in the Lincoln MSA due to the number and density of pollutant sources existing in its metropolitan area. The primary pollutants of concern are ozone, $\text{PM}_{2.5}$, and to a lesser extent, carbon monoxide. LLCHD operates 3 monitoring sites: ozone, carbon monoxide and $\text{PM}_{2.5}$. As shown in Attachment B – *Comparison of Ambient Air Monitoring Data to NAAQS*, the air quality in the Lincoln MSA is in compliance with the NAAQS.

4. Sioux City Metropolitan Statistical Area (Dakota and Dixon Counties)

The Sioux City MSA has a population of 143,157; 18% of that population is within Nebraska, 72% within Iowa, and 10% within South Dakota. Although the population of this MSA appears to have been relatively static since the 2000 census; there has been recent growth. From July 2005 through July 2008, U.S. Census Bureau data estimates an MSA growth rate of 0.4% per year. Union County, SD has the fastest growth rate of 1.5% per year, Dakota and Dixon Counties in NE growing at a combined rate of 0.3% per year, and Woodbury County, IA, is growing at 0.3%. A new industrial park area was developed in South Sioux City in 2008. It is located west of Dakota Avenue near the southern border of the city (just north of the Tyson packing plant in Dakota City).

Some air quality impacts can be anticipated in the Sioux City MSA due to the number and density of pollutant sources existing in its metropolitan area. The primary pollutants of concern would be $\text{PM}_{2.5}$ and ozone. Iowa conducts particulate monitoring in Sioux City and ozone monitoring in Emmetsburg, IA (approximately 40 miles northeast of Sioux City). Iowa considers the Emmetsburg site to be a background site, since it is not located for maximum ozone concentration from the Sioux City MSA. These monitoring sites are demonstrating attainment with the NAAQS (Design Values for 2006 through 2008: 8-hr ozone = 0.058 ppm or 77% of NAAQS, Annual Average $\text{PM}_{2.5}$ = 10.27 $\mu\text{g}/\text{m}^3$ or 68% of the NAAQS, and 98th percentile 24-hour $\text{PM}_{2.5}$ = 28.3 or 81% of the NAAQS). Attachment B has additional information on the monitoring results.

Hydrogen sulfide and Total Reduced Sulfur (TRS) was demonstrated to be at levels of concern in the 1990's in the South Sioux City/Dakota City area. The NDEQ promulgated TRS standards in 1997 and there were significant violations of these standards in the South Sioux City/Dakota City area through 2000. TRS levels in the area have decreased markedly since the covering of the anaerobic treatment lagoons at the Tyson packing plant.

Over the last 3 years there have been limited excursions of the State TRS standard detected at the Pine Street monitor in Dakota City (27 minutes in April 2006, 14 minutes in May 2007, 36 minutes in May 2008 and 91 minutes in June 2008). The highest 30-minute average TRS readings were 0.160 ppm recorded on April 24, 2006 and June 17, 2008.

5. Grand Island Micropolitan Statistical Areas

The Grand Island Micropolitan Statistical Area encompasses Hall and Merrick Counties with a population of 70,694. It is the 3rd largest metropolitan area in Nebraska. It has grown at a rate of 0.4% per year since 2000, with a 2007 through 2008 growth rate of 1.5%. Hall County is the fastest growing county in this MiSA with a 2000 through 2008 growth of 0.4% per year and 2007 through 2008 growth rate of 1.5%. Hall County was the second fastest growing county over the last year (July 2007 through July 2008) with a growth rate of 1.8% (Sarpy county was first at 2.8%).

There are no minimum requirements set forth in 40 CFR Part 58 Appendix D that require monitoring in Grand Island. The PM_{2.5} monitor located in Grand Island functions as a population-based and regional transport monitor. The monitoring results have demonstrated compliance with the NAAQS (see Attachment B). Appendix D of 40 CFR Part 58 requires Nebraska to maintain on PM_{2.5} monitor for regional transport purposes.

6. Scottsbluff/Gering Micropolitan Statistical Areas

The Scottsbluff/Gering Micropolitan Statistical Area encompasses Banner and Scotts Bluff Counties with a population of 37,289. The overall growth rate of this MiSA was negative (-0.2% per year) from 2000 through 2008. However, this MSA grew 0.7% in 2008. The recent population growth within the MSA has been almost entirely in Scotts Bluff County.

There are no minimum requirements set forth in 40 CFR Part 58 Appendix D that require monitoring in Scottsbluff/Gering. The PM_{2.5} monitor located in Scottsbluff functions as a population based and regional background monitor. The monitoring results have demonstrated compliance with the NAAQS (see Attachment B). Appendix D of 40 CFR Part 58 requires Nebraska to maintain on PM_{2.5} monitor for regional background purposes.

7. Lexington MSA

The Lexington Micropolitan Statistical Area encompasses Dawson and Gosper Counties with a population of 26,591. The growth rate for this MiSA has been 0.03% per year from 2000 through 2008 and 0.2% from 2007 through 2008. There are no minimum requirements set forth in 40 CFR Part 58 Appendix D that require monitoring in Lexington.

a. Lexington

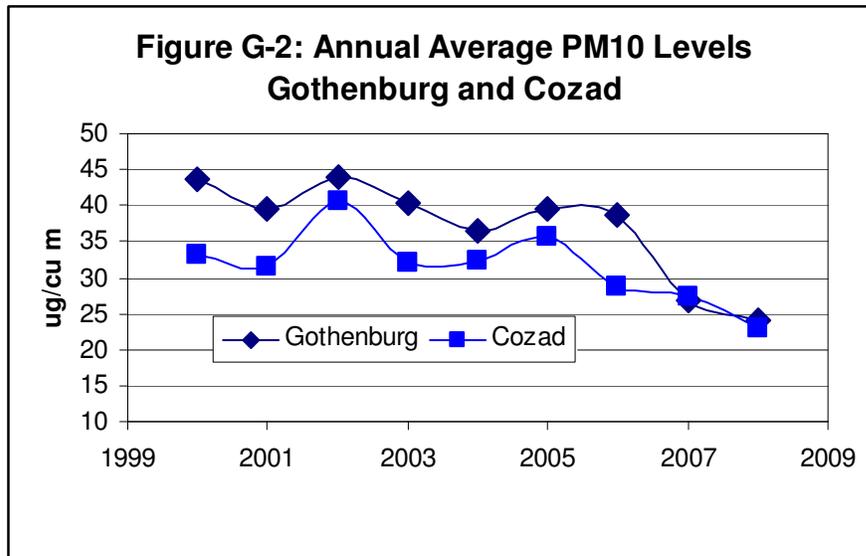
A TRS monitor site is located just east of Lexington. It is source-oriented with respect to the Tyson wastewater treatment facility located north of it. TRS levels detected by this monitor have dropped significantly since 2000 following the covering of the anaerobic lagoons at the Tyson wastewater treatment facility. The last recorded exceedence of the State TRS standard at Lexington was in 2001.

b. Cozad and Gothenburg

Cozad and Gothenburg are cities in Dawson County with respective populations of approximately 4200 and 3700. Federal Regulations 40 CFR Part 58 Appendix D does not establish any specific minimum monitoring requirements for these smaller communities.

Alfalfa processing and agricultural product handling facilities are significant sources of airborne particulates in these cities. Total Suspended Particulate (TSP) monitoring was conducted in Cozad from 1975 through 1994, and PM₁₀ monitoring has been conducted from 1994 through the present time. At Gothenburg, TSP monitoring was conducted from 1990 through 1992. PM₁₀ monitoring has been conducted from 1991 through the present. The monitors located in both cities are source and population oriented, with monitors located in the downtown business areas.

Particulate levels in these two cities have exhibited a downward trend in recent years (see Figure G-2). The maximum 24 hour concentration of 71 µg/m³ recorded at Cozad in 2008 is the lowest since 1997. The 54 µg/m³ maximum recorded at Gothenburg in 2008 is the lowest on record since monitoring was initiated in 1991. Although a definitive study has not been done, this reduction would appear to be due to better source control. In addition, the closure of one of the alfalfa dehys at Gothenburg was a likely contributing factor.



8. Broken Bow

Broken Bow has been the site of citizen complaints concerning odors and particulates. Particulate Monitoring (PM₁₀) was conducted from 1999 through 2002, and Total Reduced Sulfur (TRS) monitoring was conducted from 2000 through 2002. This monitoring indicated that the ambient levels of these pollutants were in compliance with state and federal standards. In 2007 the U.S. Agency for Toxic Substances and Disease Registry (ATSDR, within the US Department of Health) initiated a health consultation review. A report on their findings was released in May 2009.

9. Transport Issues

a. Ozone in Sioux County

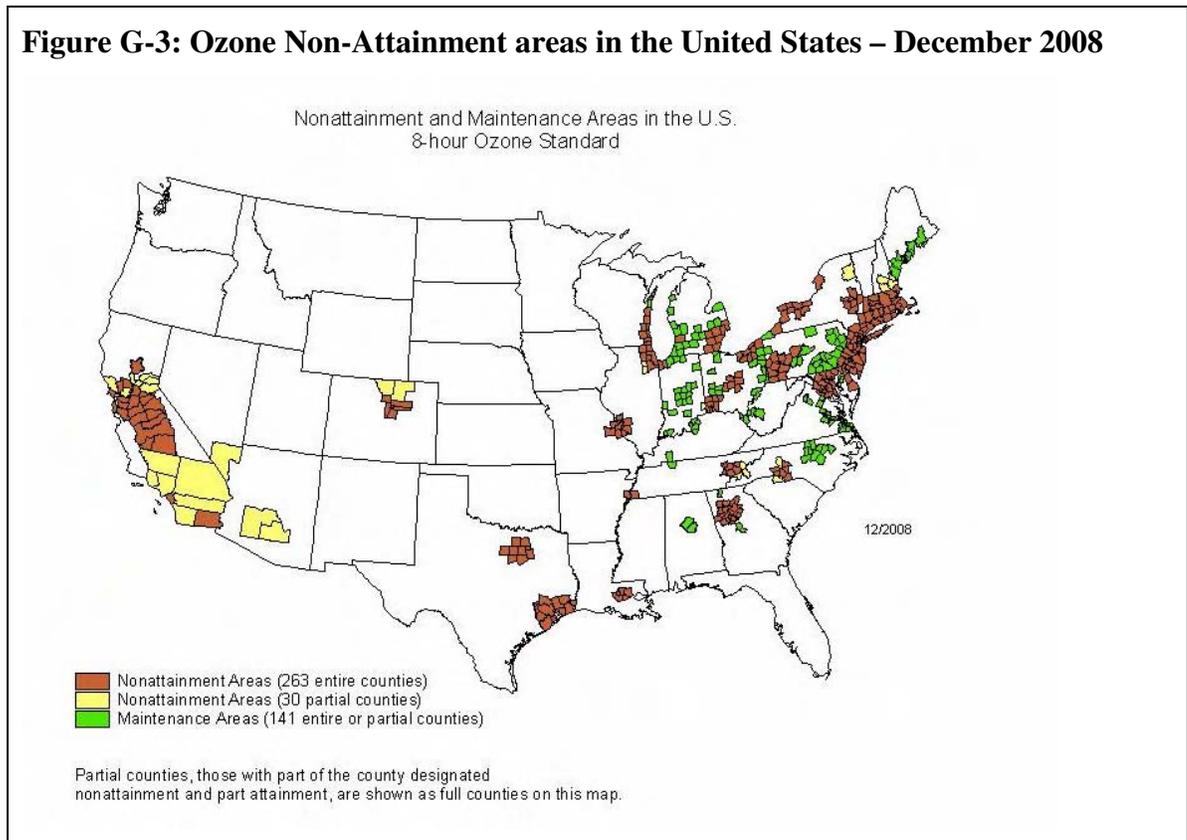
As part of the Northern Great Plains Monitoring Program the National Park Service operated a portable ozone monitor at the Agate Fossil Bed National Monument in 2007 and 2008. The monitor is anticipated to be moved to another NPS site in 2009. The primary focus of this monitoring was to evaluate potential foliar impacts from ozone exposure.

The monitor operated at the Agate Fossil Bed National Monument from July 27th through September 30th, 2007, (65 days) and again from April 25 through September 30th in 2008 (155 days with 32 down days in July and August). The 4th highest maximum recorded in 2007 was 0.066 ppm, and in 2008 it was 0.067 ppm. The highest level recorded was 0.072 ppm in June 2008. These results indicate the area was in attainment with the ozone NAAQS.

The ozone levels found are as high as those found in the Omaha MSA. It is likely that the pollution causing the ozone originates from the urbanized areas of north-central Colorado. There are several MSA areas in non-attainment with NAAQS: Greeley, Fort Collins, Loveland, Boulder, and Denver. (see Figure G-3).

The portable monitoring method used was not a Federal Reference or Equivalent Method (FRM/FEM). Thus it can not be used to evaluate attainment with the NAAQS. Additionally, the results may not be comparable to FRM/FEM generated results.

This site is not part of the Nebraska SLAMS. It is not subject to 40 CFR Part 58.10 regulations, nor is it subject to the Network Plan review process. It was included in this Network Plan for informational purposes only.



b. Range and Grass Management Burning

Range and Grassland Management Burning – Prescribed burning is a common range and grassland management practice conducted in the spring to promote native prairie species and to suppress tree growth in pastures and prairies. It is a conservation/grassland management tool recognized by state and federal agencies (see www.npwrc.usgs.gov/resource/habitat/burning/index.htm or www.ngpc.state.ne.us/wildlife/programs/wildnebraska/options.asp).

This practice can have temporary impacts on air quality and these impacts can be regional in scale. This was the case on April 15, 2008 when hazy conditions and a smoke odor were detectable in Lincoln. Air monitors operated by the Lincoln Lancaster Department of Health documented elevated PM_{2.5} levels. Subsequent analysis using modeling tools supported by the National Oceanic and Atmospheric Administration (NOAA) indicated that range burning in east-central Kansas and northern Oklahoma (an area centered around the Flint Hills area of Kansas) was impacting Nebraska.

10. Interagency Monitoring of Protected Visual Environments (IMPROVE)

IMPROVE sites provide particulate data that are used to evaluate regional haze and its potential impact on Class 1 National Park and Wilderness Areas. There are no Class 1 National Park and Wilderness Areas in Nebraska. The nearest class I sites are in Colorado and South Dakota. The IMPROVE sites are wholly operated using federal funds provided pursuant to §103 of the Clean Air Act.

There are three IMPROVE sites in Nebraska at the following locations: Halsey National Forest in Thomas County, Crescent Lake National Wildlife Refuge in Garden County, and the Omaha Indian Reservation in Thurston County. The Halsey National Forest and Crescent Lake National Wildlife Refuge sites are operated using federal funds administered by the NDEQ.

The Omaha Indian Reservation site is operated by the Omaha Indian Tribe using federal funds. Although identified herein, the Thurston County site is not subject to the 2009 Network Plan conducted by the NDEQ (the Omaha Indian Tribe and EPA Region VII are responsible for the operation of the Thurston County IMPROVE site).

More information on IMPROVE sites is available at the following web site: <http://vista.cira.colostate.edu/improve/>

11. National Atmospheric Deposition Program (NADP)**National Trends Network (NTN) & Mercury Deposition Network (MDP)**

National Atmospheric Deposition Program/National Trends Network (NADP/NTN) is a nationwide network of precipitation monitoring sites. The network is a cooperative effort between many different groups, including the State Agricultural Experiment Stations, U.S. Geological Survey, U.S. Department of Agriculture, and numerous other governmental and private entities. The purpose of the network is to collect data on the chemistry of precipitation for monitoring of geographical and temporal long-term trends. The precipitation at each station is collected weekly and is sent to a central analytical laboratory for analysis of hydrogen (acidity as pH), sulfate, nitrate, ammonium, chloride, and base cations (e.g., calcium, magnesium, potassium and sodium).

There are two NADP/NTN sites in Nebraska: one near Mead that has operated since 1978 and one near North Platte that has operated since 1985. These sites are operated by the University of Nebraska, with analytical and data development support from the NADP.

The objective of the National Atmospheric Deposition Program / Mercury Deposition Network (NADP/MDN) is to develop a national database of weekly concentrations of total mercury in precipitation. The data is used to develop information on spatial and seasonal trends in mercury deposited to surface waters, forested watersheds, and other sensitive receptors. Many, but not all, NADP/MDN sites are collocated at NADP/NTN sites.

The NDEQ in cooperation with the University of Nebraska obtained Nebraska Environmental Trust grant funds to upgrade the NADP/NTN sites near Mead and North Platte to also include mercury deposition monitoring. The Mead site began MDN operations in June 2007, and the North Platte site initiated MDN operations in October 2008.

The operation of NADP sites is not subject to the provisions of 40 CFR Part 58.10. Their inclusion in this Network Plan is for informational purposes only. More information on the NADP/NTN and the NADP/MDN can be found at the following web addresses: <http://nadp.sws.uiuc.edu/> or <http://nadp.sws.uiuc.edu/mdn/>

Attachment H – Omaha NCore Implementation Plan

1. Introduction/Background

The 2006 amendments to 40 CFR Part 58 required each state to establish at least one National Core multi-pollutant monitoring station (NCore) by January 1st, 2011. EPA designated that Nebraska would operate an NCore site in the Omaha MSA.

Parameters that must be monitored at the Omaha NCore site are defined in 40 CFR Part 58 Appendix D Section 3 (b):

- PM_{2.5} particle mass using continuous and integrated/filter-based samplers
- PM_{10-2.5} particle mass
- Speciated PM_{2.5} and PM_{10-2.5}
- Four gaseous pollutants: O₃, SO₂, CO, and NO/NO_y
- Meteorological parameters: wind speed, wind direction, relative humidity, and ambient temperature.

The Omaha NCore Implementation Plan was developed to comply with the requirements of 40 CFR Part 58.10 (a) (3), which required states to submit an NCore Implementation Plan by July 1, 2009. The regulation inferred and EPA guidance confirmed that the NCore Implementation Plan was to be submitted as part of the 2009 Network Plan required by 40 CFR Part 58.10.

Exhibit H.a contains a summary listing of the information required to be included in the Omaha NCore Implementation Plan. Exhibit H.b is a copy of the NCore Self-Assessment Checklist provided by EPA and completed by the DCHD. Exhibit H.d contains pictures of the proposed site and the area surrounding it. All three of these exhibits are attached below.

2. Site Selection

EPA's NCore self-assessment checklist was completed for the proposed Woolworth site. It is attached as Exhibit H.b. On April 7, 2009 Leland Grooms from EPA R7 performed an on-site assessment visit. Following the on-site assessment, Mr. Grooms indicated he was "... moving forward with the Regional approval of this site and forwarding that to OAQPS..."

The NDEQ also reviewed the site with respect to the NCore siting criteria set forth in 40 CFR Part 58 Appendix D. These criteria are:

- Neighborhood or urban scale
- Available for long-term use
- Free of substantial source impacts that might impact their use as neighborhood/urban scale sites.

The NDEQ review found that the proposed NCore site at 4102 Woolworth Avenue met these three siting criteria. A summary analysis is included below.

A. Scale

The proposed NCore site is very near the existing PM_{2.5} site (550 ft north), which has previously been reported as a neighborhood-scale, population-oriented site. The proposed location is centrally located within the Omaha MSA in a residential area. The closest air emission source is located 0.6 mile to the N-NE. Air quality at this site is representative of the air quality within the community and a significant portion of the residential area within the Omaha MSA. Hence the proposal to re-designate this an urban-scale site.

B. Availability

The Douglas County Health Department (DCHD) operates the monitoring network within the Nebraska portion of the Omaha MSA and will operate the Omaha NCore site. The proposed site is to be located on the roof of the Douglas County Health Center (DCHC) warehouse building. The warehouse building and the DCHC complex are owned by the county. The county anticipates continued operation of the DCHC complex into the foreseeable future. There is good assurance of the long-term availability of this site.

C. Source Impacts

The 2005 Emission Inventory (EI) was used to evaluate source impacts on the proposed site. Exhibit H.c contains summary information obtained from the EI analysis.

The EI identified 178 air emission sources within the Omaha MSA with total Criteria Air Pollutant (CAP) emissions of 86,258 tons per year (tpy). There are two sources within one mile of the proposed NCore site with combined CAP emissions of 454 tpy or 0.5% of the total CAP emissions in the MSA. There are 16 sources within 5 miles of the proposed site with combined CAP emissions of 3710 tpy or 4.3% of the total for the MSA.

3. Site Development

DCHD expects to build a temperature-controlled enclosure for the NCore site on the roof of the Douglas County Health Center (DCHC) warehouse building. The warehouse building is approximately 550 feet north of the existing PM_{2.5} site, which is on the roof of the DCHC hospital/office building. Due to the small distance between the existing site and proposed NCore site the existing AIRS AQS site number of 31-055-0019 would be retained for the NCore site. EPA Region VII has indicated that this is acceptable.

The current PM_{2.5} site on the DCHD hospital/office building has 4 monitors: primary filter-based FRM, collocated filter-based FRM, continuous BAM FRM, and PM_{2.5} speciation. If approved, the PM_{2.5} monitors would be moved to the new NCore site.

The relocation of the site is sought to allow for the construction of the temperature-controlled structure required for the gaseous monitors. An engineering review conducted by DCHD determined it was more feasible to construct the temperature controlled structure on the DCHC Warehouse building than on the DCHC hospital/office building.

The anticipated development schedule envisions the construction of a temperature-controlled structure beginning in the second half of 2009 or early 2010, with the completion of said structure by mid-2010. This schedule is dependent upon EPA approval of the proposed Woolworth site (or an alternative site if this is rejected).

4. Equipment Purchase Schedule

In March 2009, EPA R7 representatives teleconferenced with NDEQ staff to discuss NCore site start-up needs and funding as part of the §103 grant funding process. An equipment purchase budget has been developed and a work plan has been agreed upon. At the time this plan was written (April/May 2009), the NCore implementation process had already begun.

The PM_{2.5} monitoring equipment required for the NCore site is already in place, except for the URG 3000N carbon sampler, which is to be installed by an EPA contractor in the first half of 2009. A data logger has also been purchased for use at the NCore site. Additional equipment purchases are anticipated to begin in the later half of 2009 and continue into 2010. Schedule variables include the finalization of the §103 work plan, funding, and EPA guidance and recommendations concerning test methods (particularly with respect to PM_{10-2.5} and trace gases).

Exhibit H.a: Summary Information: Proposed NCore Site in Omaha, NE

AIRS AQS ID: 31-055-0019

Address: 4102 Woolworth Avenue, Omaha, NE

Lat/Long Coordinates: 41°14'48.45" N / 95°58'26.27" W (Determined using GPS)

Scale: Urban (all pollutant parameters)

Area Represented: Omaha, NE/Council Bluffs, IA MSA

Site Self-Assessment Checklist Completed? Yes The site appeared acceptable based on this checklist. The completed checklist is attached as Attachment H-b.

Regional On-Site Review? Yes. Leland Grooms conducted the on-site review on April 7, 2009. He indicated the site was acceptable and would receive regional approval.

Parameters to be Monitored:

- PM_{2.5} particle mass using continuous and integrated/filter-based samplers
- PM_{10-2.5} particle mass
- Speciated PM_{2.5} and PM_{10-2.5}
- Four gaseous pollutants: O₃, SO₂, CO, and NO/NO_y
- Meteorological parameters: wind speed, wind direction, relative humidity, and ambient temperature.

Exhibit H.a: Summary Information: Proposed NCore Site in Omaha, NE (continued)

Pollutant-Specific Information

1) Particle Matter

Pollutant	Purpose	Sampler Type ⁽¹⁾	Sampler ⁽¹⁾	Method ⁽¹⁾	Minimum Frequency
PM_{2.5}	Primary FRM	Sequential Filter-Based	R&P 2025	RFPS-0498-118	1 in 3 days
	Collocated FRM	Sequential Filter-Based	R&P 2025	RFPS-0498-118	1 in 12 days
	Speciation	Manual Filter Based	URG 3000N	Speciation	1 in 3 days
	Continuous	BAM Continuous	Met One BAM	EQPM-0308-170	daily
PM_{10-2.5}	Particulate Mass	TBD	TBD	TBD	1 in 3 days
	Speciation	TBD	TBD	TBD	1 in 3 days

(1) Sampler type, manufacturer and method may be subject to change provided FRM, FEM or ARM are used and the following monitoring is performed: PM_{2.5} continuous particulate mass, PM_{2.5} integrated filter-based particulate mass, PM_{2.5} and PM_{10-2.5} speciation, and PM_{10-2.5} particulate mass.
 TBD – To Be Determined – The methods and equipment used shall conform to EPA FRM, FEM or ARM specifications. More specific information on the methods and equipment to be used can not be made until equipment purchase agreements have been completed. These are not anticipated prior to the second half of 2009 and equipment purchases may not be completed until 2010.

2. Gaseous Pollutants

Pollutant	Monitor Type	Monitor Mfg/Model	Method	Minimum Frequency
Ozone	Continuous	TBD	TBD	Daily
Carbon Monoxide	Continuous	TBD	TBD	Daily
Sulfur Dioxide	Continuous Trace	TBD	TBD	Daily
Nitrogen Oxide (2)	Continuous Trace	TBD	TBD	Daily

TBD – To Be Determined – The methods and equipment used shall conform to EPA FRM, FEM or ARM specifications. More specific information on the methods and equipment to be used can not be made until equipment purchase agreements have been completed. These are not anticipated prior to the second half of 2009 and equipment purchases may not be completed until 2010.
 (2) The nitrogen oxide monitor employed will be capable of detecting all nitrogen oxide compounds, including reactive nitrogen oxide compounds (NO_y).

**Exhibit H.b: NCore Site Self-Assessment Checklist for Proposed Site at 4102 Woolworth Avenue in Omaha, NE
Submitted to EPA R7 on or about January 1, 2009.**

A. Network Design				
Proposed NCore Station #1 ___NEW SITE <u>X</u> EXISTING SITE AQS # <u>31-055-0019^(a)</u>				
Proposed NCore Station #2 ___NEW SITE ___EXISTING SITE AQS # _____				
Proposed NCore Station #3 ___NEW SITE ___EXISTING SITE AQS # _____				
	Item	Criteria	Status	Next Steps
1	Urban or Rural	Largest MSA(s) covered by urban station.	<i>Omaha-Council Bluffs, NE-IA</i>	
2	Scale of Representation	Neighborhood ___ Urban ___ Regional ___ Other ___	Urban	Neighborhood scale or larger highly recommended.
3	Population Oriented	Yes ___ No ___	Yes	Population oriented monitoring highly recommended.
4	Proximity to local emissions sources	No biasing local sources within 500 meters for urban stations. No biasing sources or large urban population centers within 50 km for rural stations.	No biasing local sources within 500 meters	
5	Suitability for meteorological measurements	Distance from obstructions is 10x height of obstruction above station. See Volume IV: Meteorological Measurements Version 1.0 (Draft)	No obstructions 10X height of proposed Meteorological station	
6	Information (including site photographs) provided for AMTIC NCore web site	Photographs in 8 cardinal directions needed.	See notes (a) & (b) below.	
7	Station Coordinates	Determined by GPS	41°14'48.45"N/95°58'26.27"W	
8	Site visited by EPA in past 3 years	Meets applicable Appendix D and E criteria.	See notes (a) & (c) below.	New sites should be visited by EPA before final NCore approval is requested

**Exhibit H.b: NCore Site Self-Assessment Checklist for Proposed Site at 4102 Woolworth Avenue in Omaha, NE
Submitted to EPA R7 on or about January 1, 2009 (continued).**

A. Network Design				
	Item	Criteria	Status	Next Steps
9	Network leveraging	Collocation with other networks encouraged: STN__ Supplemental CSN__ NATTS__ CASTNET__ IMPROVE__ NADP__ PAMS__ Other__	Collocated with PM _{2.5} Chemical Speciation Network	
10	Applicable site fields updated in AQS including coordinates	Consider setting additional monitor type to "Proposed NCore" (station should also be categorized as SLAMS).	Awaiting preliminary approval	
<p>Notes</p> <p>(a) The proposed NCore site is ~ 550 ft north of the existing Omaha site at 4102 Woolworth (31-055-0019). The change in location is to allow the construction of a temperature controlled enclosure on the roof of an adjacent building (i.e., the building roof at the existing site would not accommodate such a structure). The existing site is on the roof of a 3 story building, the proposed NCore site would be on the roof of a two story building. Both buildings are owned and maintained by Douglas County, so continued assess is assured. If the proposed NCore site is accepted, the PM_{2.5} monitors at the existing Woolworth site would be moved to the new NCore site.</p> <p>(b) Roof access and safety considerations precluded the taking of 8 direction photos from the exact location of the new proposed site. The attached eight direction photos were taken approximately 325 ft south of the proposed site (i.e., at the south end of the building rather than the north end). Also see attached aerial photos. The NCore-aerial1.jpg shows the locations of the existing and proposed sites, as well as the location where the 8 direction photos were taken. The NCore-aerial2.jpg provides a wider view of the immediate area around the proposed site.</p> <p>(c) EPA has visited the existing site. The proposed site is located very close to it (~550 ft north).</p>				

Exhibit H.b: NCore Site Self-Assessment Checklist for Proposed Site at 4102 Woolworth Avenue in Omaha, NE Submitted to EPA R7 on or about January 1, 2009, (continued).

B. Logistical Considerations				
	Item	Criteria	Status	Next Steps
11	Site access	Access for at least five years is suggested.	Yes, County owned site	
12	Power requirements and availability	200A service suggested. 240vac service typically needed for a/c. Key power outlets protected by UPS units.	Yes, Ncore room will be built to power specifications with thermostat controlled a/c and heat	
13	Telecommunications	Minimum dial-up service. Broadband service suggested for polling of 1-minute data.	Will use existing cellular modems along with internet/broadband connection	
14	A/C cooling capacity	Minimum 18,000BTU a/c capacity.	Site will be built with own a/c unit	
15	Interior space	Sufficient for minimum of two 19" inner dimension, 6' tall instrument racks and related equipment and accessories, or equivalent shelf space.	Room will be built upon approval of site for NCore. Room to be built estimated at 12 foot by 10 foot.	
16	Exterior space (roof and accompanying platforms)	Allow for: a) 1m spacing of low-volume PM sampler inlets – up to seven* required plus PEP audit sampler. b) 1m spacing between low-volume PM sampler inlets and gas manifold cane or Teflon tubing. Facilitate usage of TTP audit vehicle or trailer.	Yes, large flat wooden platform to be built on existing roof with easy hatch access and will have easy access for audit trailer	
17	10m tower compatibility	Required for meteorological equipment, NOy converter. Room to drop tower for calibrations and audits.	Site capable of having 10m tower for meteorological equipment and NOy converter with room to drop tower.	
<p>*Notes</p> <ol style="list-style-type: none"> 1. PM2.5 FRM sampler 2. PM10c FRM sampler for PM10-2.5 mass (dichotomous sampler could substitute for #1 and #2 if future FRM/FEMs available) or PM10-2.5 continuous 3. PM2.5 continuous sampler (does not have to be FEM/ARM) 4. PM2.5 speciation sampler (CSN or IMPROVE) 5. URG sampler for carbon channel (PM2.5 speciation) if using CSN samplers 6. Sampler for PM10-2.5 speciation (unless dichotomous sampler or PM2.5 speciation sampler (spare channels) is used) 7. URG sampler for PM10 carbon speciation (speculative need for PM10-2.5 carbon speciation by difference) 				

Exhibit H.b: NCore Site Self-Assessment Checklist for Proposed Site at 4102 Woolworth Avenue in Omaha, NE Submitted to EPA R7 on or about January 1, 2009 (continued).

C. Required Parameter Methodological Evaluation						
	Parameter	Existing Measurements		Future Measurements		Notes
		Sampling Began	Method	Date Expected	New or Relocated	
1	Ozone			January 2011 if resource s provided	New	Year-round operation (not seasonal)
2	Sulfur dioxide			01/01/10	New	High sensitivity
3	Carbon monoxide			January 2011 if resource s provided	New	High sensitivity
4	Nitrogen oxides (NOy)*			January 2011 if resource s provided	New	High sensitivity External converter mounted at 10m
5	PM2.5 mass	01/01/1999	R&P Sequential			1-in-3 day FRM/FEM integrated
6	PM2.5 continuous	01/01/2009	MetOne 1020 BAM FEM			FEM or ARM preferred but not required
7	PM2.5 speciation	05/28/2001	MetOne Sass/Soon to be replaced by IMPROVE 2009			1-in-3 day (Met One & URG 3000N samplers) or IMPROVE
8	PM10-2.5 mass			01/01/10	Relocated PM10 TEOM FEM- MetOne PM2.5 1020 BAM FEM	Integrated samplers (FRM difference or dichot) or continuous monitor
9	PM10-2.5 speciation			January 2011 if resource s provided	New	Details to be provided later (2008) on sampling requirements.
10	Wind speed and direction**			01/01/2010	Relocated MetOne	At 10 m
11	Ambient temperature**			01/01/2010	Relocated MetOne	At 2 m
12	Relative humidity**			01/01/2010	Relocated MetOne	At 2 m
13	Optional – Vertical wind speed, solar radiation, precipitation, barometric pressure, delta-T for 2-			01/01/2010	Relocated MetOne	

C. Required Parameter Methodological Evaluation						
	Parameter	Existing Measurements		Future Measurements		Notes
		Sampling Began	Method	Date Expected	New or Relocated	
	10m.					
14	Optional – Ammonia and nitric acid			Not anticipated at this time		Pilot project using denuders scheduled for 2008-2009.
<p>Notes</p> <p>* Although the measurement of NO_y is required in support of a number of monitoring objectives, available commercial instruments may indicate little difference in their measurement of NO_y compared to the conventional measurement of NO_x, particularly in areas with relatively fresh sources of nitrogen emissions. Therefore, in areas with negligible expected difference between NO_y and NO_x measured concentrations, the Administrator may allow for waivers that permit high-sensitivity NO_x monitoring to be substituted for the required NO_y monitoring at applicable NCore sites.</p> <p>** EPA recognizes that, in some cases, the physical location of the NCore site may not be suitable for representative meteorological measurements due to the site's physical surroundings. It is also possible that nearby meteorological measurements may be able to fulfill this data need. In these cases, the requirement for meteorological monitoring can be waived by the Administrator.</p>						

Exhibit H.b: NCore Site Self-Assessment Checklist for Proposed Site at 4102 Woolworth Avenue in Omaha, NE Submitted to EPA R7 on or about January 1, 2009 (continued)

D. Supporting Equipment Evaluation				
	Item	Criteria	Status	Next Steps
1	Calibrator (field)	Suitable for trace-level dilutions, see Appendix A audit concentrations. Capable of automated QC checks. Internal O3 generator – photometer preferred.	Need to purchase	
2	Calibrator (lab or field)	Suitable for generation of MDL-level concentrations	Need to purchase	
3	Zero Air Source	Compliant with TAD recommendations. Ultra-pure air cylinder recommended for occasional comparison to zero air source. Capacity for 20+ LPM of dilution air.	Purchased 20+ LPM with Ultra Pure air/ API 701 with stainless steel piping	
4	Data acquisition system	Digital-capable system	ESC8816 with possible purchase of ESC8832	
5	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)	Need purchased, but have AirGas as source	
6	Meteorological calibration devices	Provide NIST traceability of required meteorological parameters.	Need to purchase a few parameters	
7	Sampling manifold	Per Appendix E. Residence time <20 seconds, only glass or Teflon materials, probe and monitor inlets acceptable heights.	Need to purchase for equipment room	
8	Auditing equipment	Independent calibrator, zero air source and gas standards compatible with trace level specifications. Independent meteorological and flow standards, it not already available.	Need to purchase for Audit	

**Exhibit H.b: NCore Site Self-Assessment Checklist for Proposed Site at 4102 Woolworth Avenue in Omaha, NE
Submitted to EPA R7 on or about January 1, 2009 (continued)**

E. Organizational Factors				
	Item	Criteria	Status	Next Steps
1	Training considerations	Key monitoring personnel have attended OAQPS provided monitoring workshops or equivalent training.	Monitoring personnel will receive training when site location is accepted for NCore site	
2	Monitoring station documentation	NCore station(s) described in Annual Monitoring Network Plan.	Included as "proposed" in the Nebraska 2008 Annual Monitoring Network Plan	Must be included in plan due on or before July 1, 2009. Discuss siting with health researchers and other data stakeholders.
3	Section 103 funds received and obligated for equipment purchases		No funds for NCore equipment have been obligated to DCHD from 103 funds as of Dec. 22 nd 2008	Work with EPA Regional contacts.

State Review and Comments

The Nebraska Department of Environmental Quality – Air Quality Compliance Section (NDEQ-AQCS) has reviewed the *NCore Readiness Self-Assessment* above that was prepared by the Douglas County Health Department. Our review indicates the proposed Ncore site meets the qualifications set forth in 40 CFR Part 58 (i.e., a population oriented, urban scale, adequate setback from roads, trees, obstructions, etc.). It also has an important logistical advantage of being located on Douglas County property; thus assuring personnel and utility access, and continuity of operation.

We urge immediate attention in reviewing this site for consideration as the new NCORE site. Douglas County will need to construct a temperature controlled enclosure at the NCORE site. This needs to be initiated in the near future to enable the NCORE site to be operational by January 2011, as required by the regulations.

Questions concerning the NDEQ-AQCS review should be directed to one of the following: Jim Yeggy (402/471-2142), Chris Hetzler (402/471-0007) or Todd Ellis (402/471-4561)

Exhibit H.c: Pollutant source summary table of the Omaha MSA and the area around the proposed NCore site at 4102 Woolworth Street in Omaha, NE *										
Area	Number of Sources	CAPs (tpy)	HAPs (tpy)	VOCs (tpy)	SO ₂ (tpy)	NO _x (tpy)	CO (tpy)	PM ₁₀ (tpy)	PM _{2.5} (tpy)	Lead (tpy)
Omaha MSA	178	86258	1537	2970	40667	29647	4777	2205	1353	2.05
Within 1 mile of NCore site	2	454	4	39	167	59	17	43	32	nr
% Total Pollutants from MSA		0.5%	0.3%	1.3%	0.4%	0.2%	0.4%	2.0%	2.4%	na
With 2 miles of NCore site	6	882	8	94	171	160	88	110	37	0.13
% Total Pollutants from MSA		1.0%	0.5%	3.2%	0.4%	0.5%	1.8%	5.0%	2.7%	6.3%
Within 5 miles of NCore site	16	3710	181	890	218	529	1041	271	163	1.24
% Total Pollutants from MSA		4.3%	11.8%	30.0%	0.5%	1.8%	21.8%	12.3%	12.1%	60.5%

Footnote: * Air pollutant source and quantity information was obtained from the 2005 Emission Inventory, which was accessed at www.epa.gov/ttnchie1/eiinformation.html

Abbreviations:
 CAPs – Criteria Air Pollutants (i.e., those for which a NAAQS has been established)
 HAPs – Hazardous Air Pollutants
 VOC – Volatile Organic Compounds
 nr – none reported
 na – not applicable

Exhibit H.d: Site photographs



Picture H.d.1: Aerial photo showing proposed site 550 ft north of existing site



Photo H.d.2: Aerial view showing residential neighborhood surrounding the Woolworth site

Exhibit H.d: Site photographs (continued)



Photo H.d.3: North view across the warehouse building



Photo H.d.4: Northeast view from the warehouse building

Exhibit H.d: Site photographs (continued)



Photo H.d.5: East view from the warehouse building



Photo H.d.6: Southeast view from the warehouse building

Exhibit H.d: Site photographs (continued)



Photo H.d.7: South view from the warehouse building. The brown brick building is the DCHC building on which the PM_{2.5} monitoring site is currently located.



Photo H.d.8: Northeast view from the warehouse building

Exhibit H.d: Site photographs (continued)



Photo H.d.9: West view from the warehouse building



Photo H.d.10: Northwest view from the warehouse building

Attachment I – Source-Oriented Lead Monitors

This attachment summarizes the review that went into determining what and where Nebraska might need source-oriented lead monitors, and also provides site information on the two sites that were determined to be needed.

The Regulation:

In October 2008 changes were made to 40 CFR Parts 50, 51, 53 and 58 that pertained to ambient lead monitoring:

- The lead standard was lowered from 1.5 µg/m³ to 0.15 µg/m³;
- State were required to review emission inventories to identify lead sources that emitted 1 ton per year or more of lead,
- States had two options with respect to sources of 1 tpy or more of lead:
 - Begin lead monitoring in the vicinity of the sources by 2010 or
 - Demonstrate compliance at 50% of the standard through other means.
- A non-source-oriented lead monitoring site was required in CBSAs with populations of 500,000 or more by 2011.

CBSA is the abbreviation for Core Based Statistical Area, a census term used to define to metropolitan areas. Omaha is a CBSA with a population exceeding 500,000. Thus a non-source-oriented (or community-oriented) lead monitoring site will be required in Omaha. The Omaha community-oriented site is not discussed in this attachment because it is not required until 2011. It will be covered in the 2010 Network Plan .

Emission Inventory Review

Changes made to 40 CFR Part 51.117 required that emission inventories (EIs) be reviewed with respect to all sources emitting 0.5 tpy or more of lead. EPA R7 requested that the 2005 Federal EI and the 2007 Nebraska EI both be reviewed and any discrepancies between them examined. The purpose for this review was to identify sources that emit 1 tpy or more of lead.

The EI review identified 4 sources that emit 0.5 tpy or more of lead and 2 sources that emit 1 tpy or more of lead (See Table I-1 below).

Table I-1: Comparison of 2005 EPA and 2007 Nebraska Emission Inventory Emission Estimates for Lead		
Facility Name	2005 EPA EI (tpy)	2007 NE EI (tpy)
Magnolia Metal Corp, Auburn	1.88	1.86
Magnus Farley Inc, Fremont	1.22	1.15
Nucor Steel, Norfolk	0.70	0.61
Western Sugar Co, Scottsbluff	0.63	0.70

As can be seen there is very good agreement between the 2005 EPA EI and 2007 NE EI emission estimates.

There is one abnormality that is not apparent from the data present in Table I-1. The emission estimates for Western Sugar Company in Scottsbluff were considerably higher than for other similarly sized sources operating coal-fired boilers. Western Sugar was contacted concerning this. A review indicated that Western Sugar had been reporting the maximum potential lead emission their air quality permit allowed.

This method resulted in lead emissions being over-estimated. A more accurate and appropriate method would be to calculate lead emissions based on the quantity of coal burned, taking into account the emission control technology in place. Western Sugar has implemented this procedure for calculating lead emissions, and the revised lead emissions for 2008 EI are 0.03 tpy. This will receive additional review, but does appear more in line with the emissions reported by other similar sources.

Modeling Reviews

Lead concentrations in the vicinity of the two lead sources reporting more than 1 tpy were modeled (i.e., Magnolia Metal in Auburn and Magnus Farley in Fremont). The modeling could not justify a waiver for monitoring around these sources (i.e., the modeled concentrations exceeded 50% of the lead NAAQS). The modeling also predicted that the highest concentrations would be found at or near the facility boundaries.

Proposed Monitoring Sites

Based on the modeling results, two sites for source-oriented monitoring are proposed. EPA R7 has reviewed the proposed sites and has provided preliminary approval for these sites. Site specific information of these sites is provided below

Proposed Lead Monitoring Site near Magnus Farley, 1300 Morningside Road, Fremont, NE

- 1) AQS site ID: 31-053-0004
AQS history: TSP/Pb monitoring site: 4/1/94 thru 9/30/95
Comments: New site may not be in same exact location as previous site
- 2) Location: 1255 Front St., Fremont, NE
Lat/Long: 41° 25' 29.35" N / 96° 28' 50.95" W
Comments:
Lat/Long's are approximate. Exact coordinates to be verified when site is approved
Located in back lot of Structural Component Systems
Approximately 80 meters north of Magnus Farley property line
- 3) Sampling and Analysis Method: TSP-Pb to verify compliance with 40 CFR Part 50.16
TSP sampler to comply with 40 CFR Part 50 Appendix B
Pb analysis using a reference method based on 40 CFR Part 50 Appendix G and designated in accordance with 40 CFR Part 53 of this chapter or; an equivalent method designated in accordance with 40 CFR Part 53
- 4) Operating schedule: One sample every 6 days
- 5) Monitoring Objective: Highest concentration
Comments:
Modeling was performed to verify expected highest concentration areas
Location is the highest concentration site which met all logistical requirements (e.g., App E, permission, electrical power)
Population exposure is a secondary objective. There is a residential area ~ 175 meters to the north.
- 6) Micro-scale site: Modeling indicates that this is a highest concentration site, and that lower concentrations of Pb can be anticipated at distances of 100 yds or more to the east, north or west (i.e., further away from the source)
- 7) Population Centers and Urbanized Areas:
The Fremont is located in Dodge County, and the county comprises the Fremont Micropolitan Statistical Area (MiSA). The Fremont MiSA is bordered on the east and south by the Omaha/Council Bluffs Metropolitan Statistical Area, and it is considered part of the Omaha-Council Bluffs-Fremont, NE-IA Combined Statistical Area (OMA CSA).
This is a micro-scale, highest concentration site. Monitoring results from this site will be representative of only a small area within the City of Fremont. They will not be representative of concentrations found in the Fremont MiSA nor the OMA CSA.
- 8) Review of Part 58 Appendix E Requirements for Lead [*Site comments bracketed and in italics*]
Vertical & Horizontal Placement
 - Sampler inlets between 2 and 7 meters above ground level [*Will require a platform*]
 - At least 1 meter vertically or horizontally away from any supporting structure, walls, parapets, penthouses, etc., and away from dusty or dirty areas [*OK*]
 - 2 meter separation between collocated monitors (EPA AMTIC Guidance) [*Not anticipated to be collocated site, but space exists to accommodate collocation*]

Spacing from Minor Sources

- Particulate matter sites should not be located in an unpaved area unless there is vegetative ground cover year round, so that the impact of wind blown dusts will be kept to a minimum. *[Area paved or rocked]*

Spacing from Obstructions

- The distance from the obstacle to the probe, inlet, or monitoring path must be at least twice the height that the obstacle protrudes above the probe, inlet, or monitoring path. An exception to this requirement can be made for measurements taken in street canyons or at source-oriented sites where buildings and other structures are unavoidable. *[OK]*

Spacing from Trees

- the probe, inlet must be at least 10 meters or further from the drip line of trees. *[OK]*
- For microscale sites of any air pollutant, no trees or shrubs should be located between the probe and the source under investigation, such as a roadway or a stationary source. *[OK. There may be*
- *some small trees/brush growing in Magus Farley's north fence line, but these are ~80 meters from the monitor and should not significantly impact lead levels at the proposed monitoring site.]*

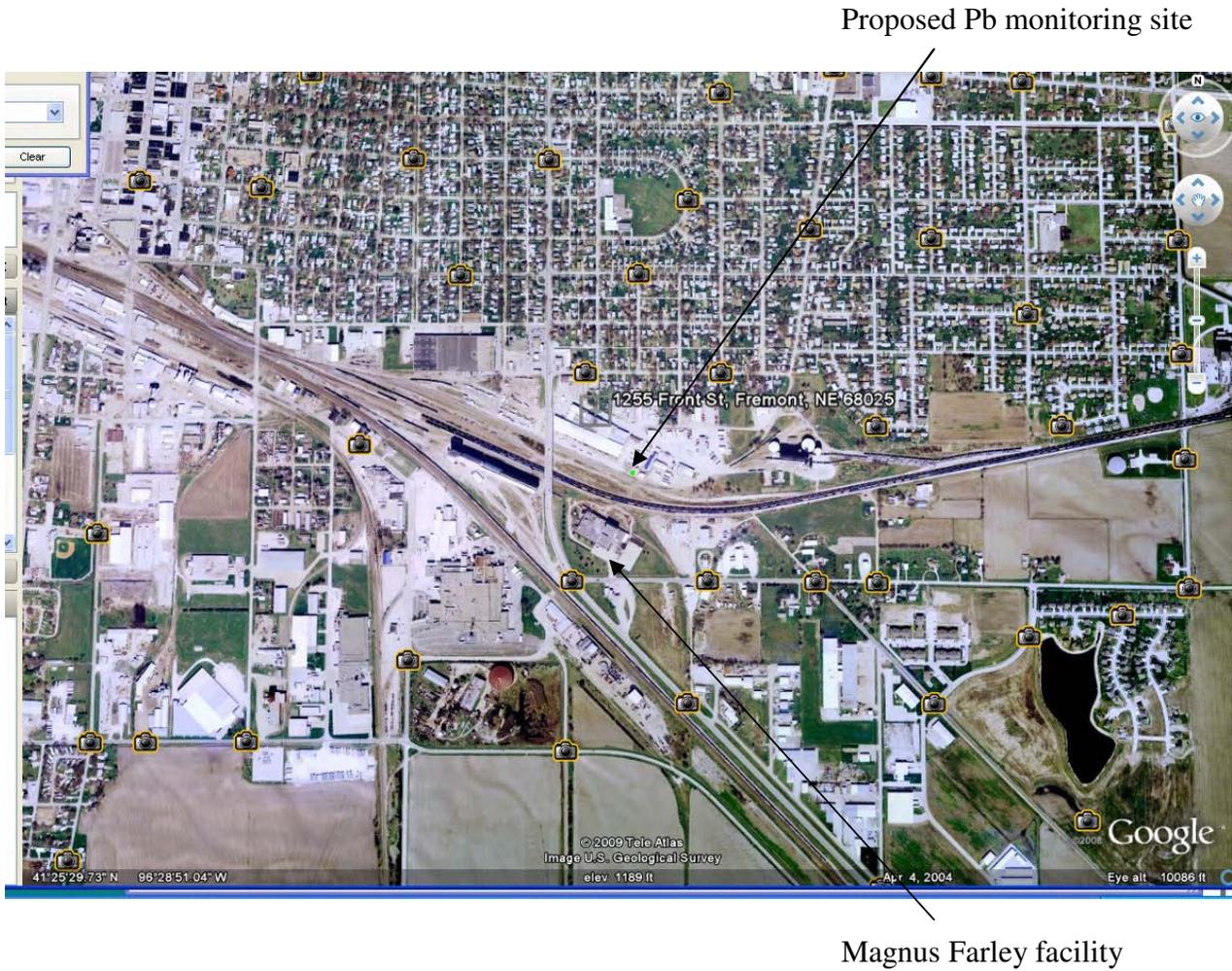
Spacing from Roadways

- For the microscale traffic corridor site, the location must be between 5 and 15 meters from the major roadway.
- For the microscale street canyon site the location must be between 2 and 10 meters from the roadway.
- For the middle scale site, at least 15 M from the roadway as shown in Figure E-1

Two comments:

- *None of these requirements appear to be applicable. The proposed lead site is a near-property-line, micro-scale site as demonstrated by the modeling. The microscale criteria above are for traffic or street canyon oriented sites, which this proposed site is not.*
- *There is a multi-line railroad area located between monitor and source. Front Street approximately 95 meters north.*

Aerial of the area around Magnus Farley in Fremont showing the approximate location of the proposed lead monitoring site.



Proposed Lead Monitoring Site near Magnolia Metals, 63959 730 Road, Auburn, NE

- 1) AQS site ID: 31-127-0002
AQS history: None, new site
- 2) Location: RR2, Auburn, NE
Lat/Long: 40° 24' 19.65" N / 95° 50' 36.25" W
Comments:
Lat/Long's are approximate. Exact coordinates to be verified when site is approved
Located on the Armstrong Cabinets manufacturing plant site
Monitor inlets would be within 10 ft of Magnolia Metals south property boundary
- 3) Sampling and Analysis Method: TSP-Pb to verify compliance with 40 CFR Part 50.16
TSP sampler to comply with 40 CFR Part 50 Appendix B
Pb analysis using a reference method based on 40 CFR Part 50 Appendix G and designated in accordance with 40 CFR Part 53 of this chapter or; an equivalent method designated in accordance with 40 CFR Part 53
- 4) Operating schedule: One sample every 6 days
- 5) Monitoring Objective: Highest concentration
Comments:
Modeling was performed to verify expected highest concentration areas
Location is the highest concentration site for which met all logistical requirements (e.g., App E, permission, electrical power)
Population exposure is a secondary objective. The City of Auburn is located south of the source and this site is on the sources south property boundary. The nearest population exposure areas are: the Armstrong Cabinets manufacturing facility (monitor on-site); a single residence 175 meters south; a park 350 meters south and the closest residential area 650 meters south.
- 6) Micro-scale site: Modeling indicates that this is a highest concentration site, and that lower concentrations of Pb can be anticipated at distances of 100 yds or more to the east, south or west (i.e., further away from the source)
- 7) Population Centers and Urbanized Areas: The city of Auburn has a population of ~ 3250. It is not a micropolitan or metropolitan statistical area, nor is it in a combined statistical area. This is a micro-scale, highest concentration site. Monitoring results from this site will be representative of only a small area near the monitoring site, and will not representative of air quality in the City of Auburn.
- 8) Review of Part 58 Appendix E Requirements for Lead *[Site comments bracketed and in italics]*

Vertical & Horizontal Placement

- Sampler inlets between 2 and 7 meters above ground level *[Will require a platform]*
- At least 1 meter vertically or horizontally away from any supporting structure, walls, parapets, penthouses, etc., and away from dusty or dirty areas *[OK]*
- 2 meter separation between collocated monitors (EPA AMTIC Guidance) *[Anticipated to be collocated site; Space exists to accommodate collocation]*

Spacing from Minor Sources

- Particulate matter sites should not be located in an unpaved area unless there is vegetative ground cover year round, so that the impact of wind blown dusts will be kept to a minimum. [OK]

Spacing from Obstructions

- The distance from the obstacle to the probe, inlet, or monitoring path must be at least twice the height that the obstacle protrudes above the probe, inlet, or monitoring path. An exception to this requirement can be made for measurements taken in street canyons or at source-oriented sites where buildings and other structures are unavoidable. *[One of the Armstrong cabinet buildings is located ~ 15 meters south of the proposed site. The 2 times height criteria may not be met. However, the south is located to the north and the modeling identifies this as a highest concentration site.]*

Spacing from Trees

- The probe, inlet must be at least 10 meters or further from the drip line of trees. *[OK, any trees that might be within 10 meters would be located east or west of the monitoring site and should not impact lead levels emanating from the source, which is located to the north.]*
- For microscale sites of any air pollutant, no trees or shrubs should be located between the probe and the source under investigation, such as a roadway or a stationary source. [OK]

Spacing from Roadways

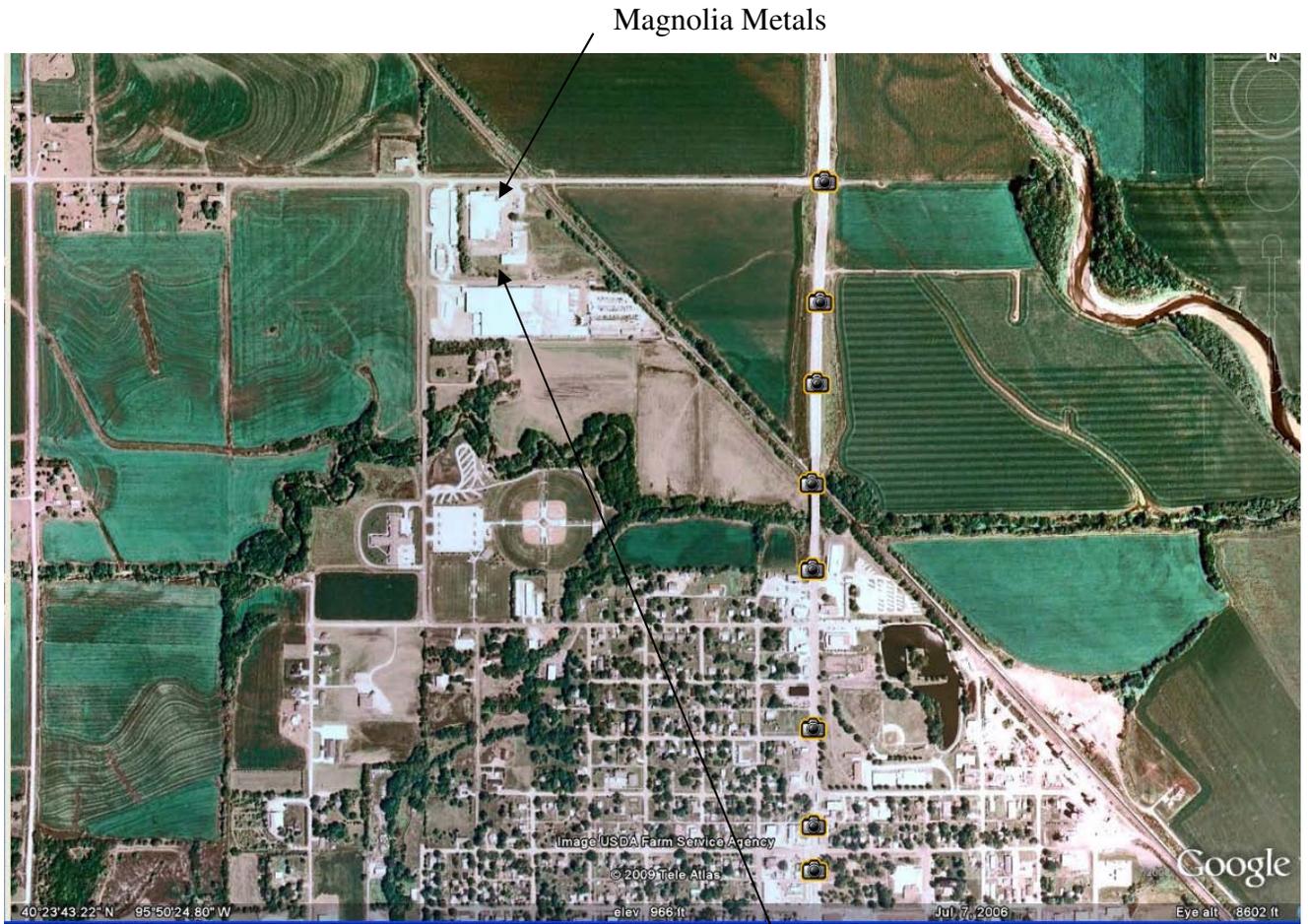
- For the microscale traffic corridor site, the location must be between 5 and 15 meters from the major roadway.
- For the microscale street canyon site the location must be between 2 and 10 meters from the roadway.
- For the middle scale site, at least 15 M from the roadway as shown in Figure E-1

Two comments:

- *None of these requirements appear to be applicable. The proposed lead site is a near-property-line, micro-scale site as demonstrated by the modeling. The microscale criteria above are for traffic or street canyon oriented sites, which this proposed site is not.*
- *The proposed site is adjacent to the driveway for the Armstrong Cabinets facility. Any re-entrainment that might occur appears to be consistent with issues considered in the development of the lead regulation.*

Proposed Source-Oriented Lead Monitoring Site near Magnolia Metals in Auburn, NE
August 7, 2009

Aerial of area near Magnolia Metals on north edge of Auburn, NE with the approximate, proposed lead monitoring site indicated.



Magnolia Metals

Proposed Pb monitoring site