

**Iowa Ambient Air Monitoring
Annual Report
2011**



**Air Quality Bureau
Iowa Department of Natural Resources**

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Iowa Ambient Air Monitoring Annual Network Report: 2011

Iowa Department of Natural Resources - Air Quality Bureau – Ambient Air Monitoring Group

Introduction

The purpose of this review is to compare the maximum values of ambient air monitoring data gathered in the state of Iowa during 2011 to the level of the National Ambient Air Quality Standards (NAAQS) established by the Environmental Protection Agency (EPA). The EPA has established NAAQS for seven “criteria” pollutants: particulate matter with a diameter less than 10 microns (PM₁₀), particulate matter with a diameter less than 2.5 microns (PM_{2.5}), sulfur dioxide, ozone, nitrogen dioxide, carbon monoxide, and lead. Continuous monitoring methods have been approved by EPA for all criteria pollutants except lead. Filter samplers and laboratory filter weighing procedures have been approved by EPA for PM_{2.5} and PM₁₀. All data summarized in this review was obtained using methods that are currently approved by EPA for NAAQS comparisons.

This report is divided into two parts. The first part is an executive summary, indicating where exceedances of the NAAQS were measured in Iowa during 2011. A more comprehensive review, which includes the location and summary data for each monitor in the network, is included in the second part.

Gaseous pollutant monitors (ozone, nitrogen dioxide, sulfur dioxide, and carbon monoxide) provide hourly values and operate 24 hours a day, seven days a week. Most ozone monitors are operated only when ozone levels are highest, from April through October. The ozone monitor located at the multi pollutant site in Davenport operates year-round to establish ozone trends in cooler temperatures. Particulate filter samplers run for 24 hours at a time and collect one filter per day. Most PM₁₀ and PM_{2.5} filter based monitors are operated at a sampling frequency of one sample every third day. Some particulate monitoring sites are run at frequencies greater than this nominal frequency if they are located in highly populated areas, near pollution sources, or if pollutant levels are close to health standards. EPA finalized a monitoring rule for nitrogen dioxide setting a new 1 hour standard (100.5 ppb) in addition to the older annual standard. This rule became effective January 22, 2010. EPA finalized a monitoring rule for sulfur dioxide setting a new 1 hour standard (75.5 ppb) while retaining the 3 hour standard. This rule, effective August 23, 2010, revoked the 24 hour and annual standards.

Incomplete data may skew the summary statistics for a monitor. In order to alert the reader to data completeness problems data completeness statistics have been provided for each monitor. If a monitor collected all of the scheduled samples, then it has an associated data completeness of 100%. If the data capture from a monitor is insufficient to compute a valid annual average according to EPA completeness criteria, then the bar representing the comparison of the annual average to the NAAQS for that specific monitor is shaded lighter than the rest of the bars on the corresponding chart.

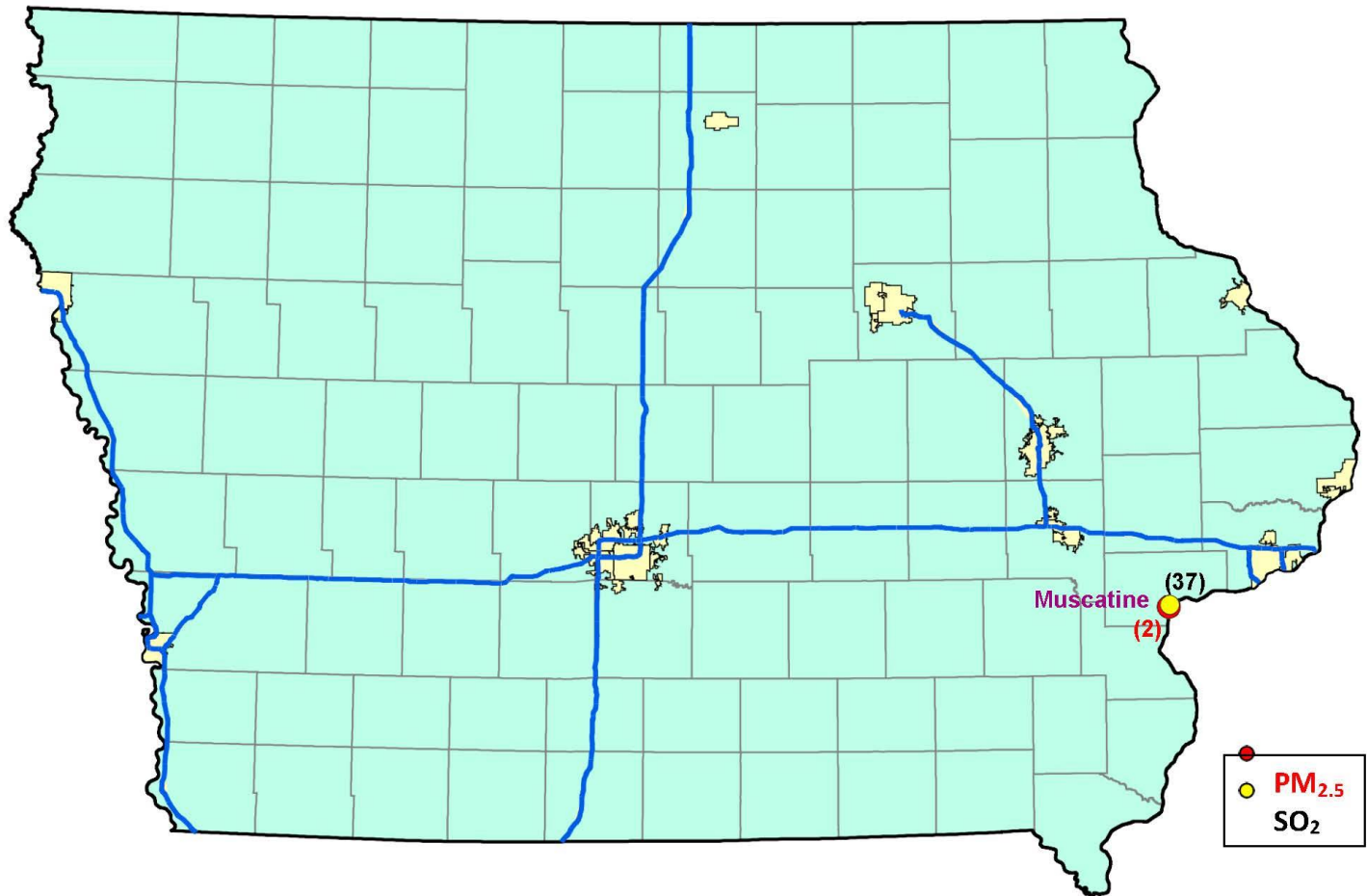
In 2011, there were 39 NAAQS exceedances in the state of Iowa. Two of the exceedances were associated with the 24 hour PM_{2.5} standard and 37 were exceedances of the 1 hour sulfur dioxide standard. All of these exceedances are detailed in this report.

Data used to create this report were gathered by three organizations under contract with the Iowa Department of Natural Resources: the State of Iowa Hygienic Laboratory, the Linn County Public Health Department, and the Polk County Public Works Air Quality Division. Contract funds were provided by US EPA, the Iowa legislature, and regulated industry. Air pollution data for Iowa and all other states are available online at: <http://www.epa.gov/airdata/>. Additional information on the NAAQS is available at: <http://www.epa.gov/air/criteria.html>.

Exceedances of National Ambient Air Quality Standards (NAAQS) in 2011

| Pollutant | Averaging Period | Exceedance Level | Units | Number of Exceedances |
|-------------------|-------------------------|------------------|----------------------------|-----------------------|
| Ozone | 8hr | 76 | ppb | 0 |
| PM _{2.5} | 24hr | 35.5 | micrograms per cubic meter | 2 |
| | annual | 15.05 | micrograms per cubic meter | 0 |
| PM ₁₀ | 24hr | 155 | micrograms per cubic meter | 0 |
| Sulfur dioxide | 1hr | 75.5 | ppb | 37 |
| | 3hr | 0.55 | ppm | 0 |
| Carbon monoxide | 1hr | 35.5 | ppm | 0 |
| | 8hr | 9.5 | ppm | 0 |
| Nitrogen dioxide | annual | 0.0535 | ppm | 0 |
| | 1hr | 100.5 | ppb | 0 |
| Lead | Rolling 3-month average | 0.155 | micrograms per cubic meter | 0 |

NAAQS Exceedance Counts at Iowa Monitoring Sites During 2011



PM_{2.5} NAAQS Exceedances Measured in 2011(Two PM_{2.5} Exceedances Recorded in 2011)

| Monitoring Site | Site ID | Exceedance Date | Concentration (µg/m ³) |
|----------------------------|-----------|-----------------|------------------------------------|
| Muscatine, Garfield School | 191390015 | 1/10/2011 | 45.0 |
| Muscatine, Garfield School | 191390015 | 3/22/2011 | 52.3 |

SO₂ NAAQS Exceedances Measured in 2011(37 SO₂ Exceedances Recorded in 2011)

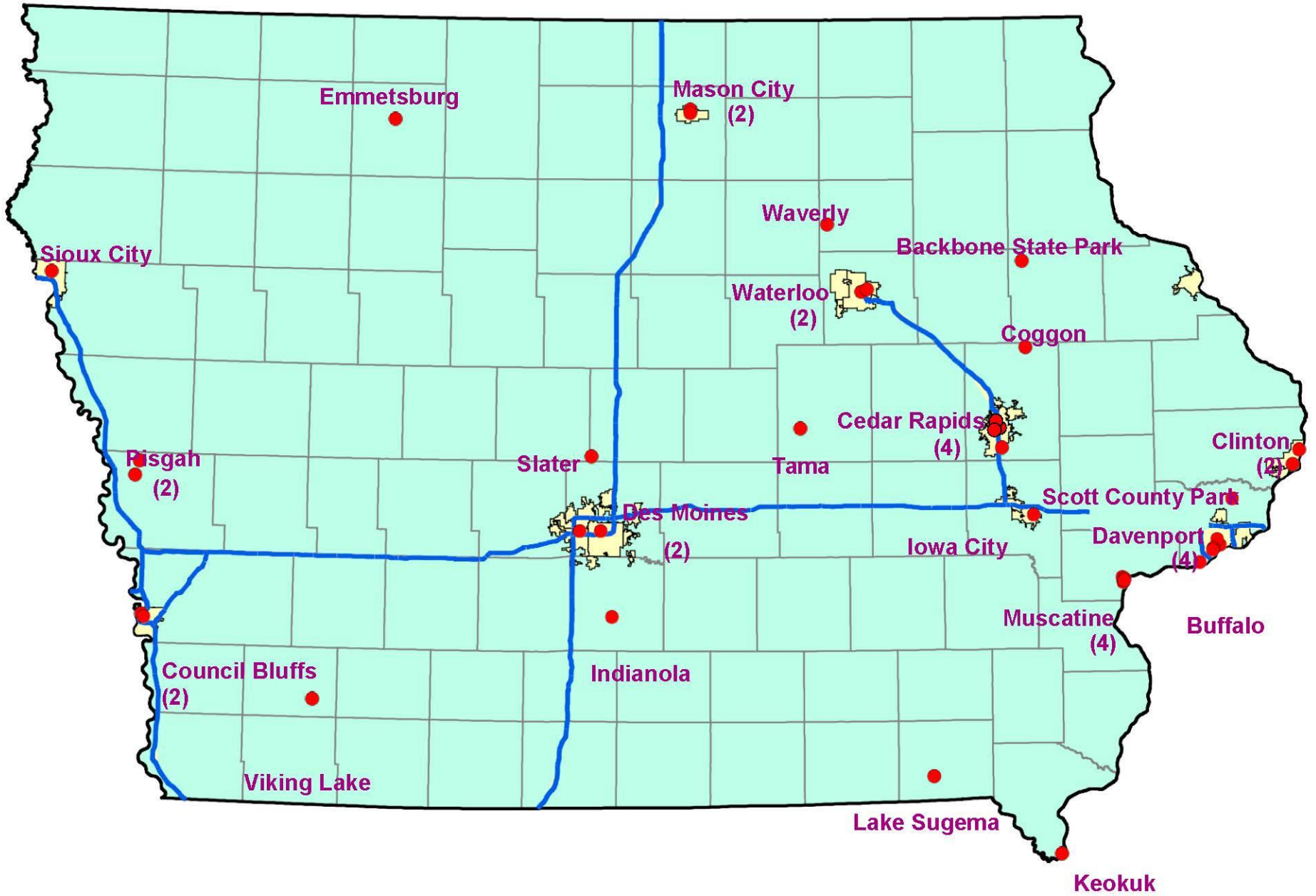
| Monitoring Site | Site ID | Exceedance Date | Concentration (ppb) |
|------------------------|-----------|-----------------|---------------------|
| Muscatine, Musser Park | 191390020 | 1/17/2011 | 175.5 |
| Muscatine, Musser Park | 191390020 | 2/17/2011 | 194.6 |
| Muscatine, Musser Park | 191390020 | 3/16/2011 | 146.6 |
| Muscatine, Musser Park | 191390020 | 3/17/2011 | 193.3 |
| Muscatine, Musser Park | 191390020 | 3/20/2011 | 96.1 |
| Muscatine, Musser Park | 191390020 | 4/3/2011 | 323.0 |
| Muscatine, Musser Park | 191390020 | 4/9/2011 | 143.7 |
| Muscatine, Musser Park | 191390020 | 4/10/2011 | 77.4 |
| Muscatine, Musser Park | 191390020 | 4/30/2011 | 224.4 |
| Muscatine, Musser Park | 191390020 | 5/5/2011 | 162.7 |
| Muscatine, Musser Park | 191390020 | 5/10/2011 | 111.5 |
| Muscatine, Musser Park | 191390020 | 5/21/2011 | 117.8 |
| Muscatine, Musser Park | 191390020 | 5/22/2011 | 208.8 |
| Muscatine, Musser Park | 191390020 | 5/30/2011 | 290.1 |
| Muscatine, Musser Park | 191390020 | 5/31/2011 | 230.9 |
| Muscatine, Musser Park | 191390020 | 6/3/2011 | 108.6 |
| Muscatine, Musser Park | 191390020 | 6/21/2011 | 95.6 |
| Muscatine, Musser Park | 191390020 | 7/9/2011 | 119.9 |
| Muscatine, Musser Park | 191390020 | 8/16/2011 | 129.7 |
| Muscatine, Musser Park | 191390020 | 8/23/2011 | 170.9 |
| Muscatine, Musser Park | 191390020 | 9/1/2011 | 99.6 |
| Muscatine, Musser Park | 191390020 | 9/20/2011 | 131.2 |
| Muscatine, Musser Park | 191390020 | 10/6/2011 | 91.6 |
| Muscatine, Musser Park | 191390020 | 10/7/2011 | 141.4 |
| Muscatine, Musser Park | 191390020 | 10/8/2011 | 103.0 |
| Muscatine, Musser Park | 191390020 | 10/25/2011 | 178.1 |
| Muscatine, Musser Park | 191390020 | 11/1/2011 | 199.9 |
| Muscatine, Musser Park | 191390020 | 11/2/2011 | 198.7 |
| Muscatine, Musser Park | 191390020 | 11/5/2011 | 114.5 |
| Muscatine, Musser Park | 191390020 | 11/6/2011 | 247.9 |
| Muscatine, Musser Park | 191390020 | 11/11/2011 | 110.0 |
| Muscatine, Musser Park | 191390020 | 11/12/2013 | 155.1 |
| Muscatine, Musser Park | 191390020 | 11/13/2011 | 209.8 |
| Muscatine, Musser Park | 191390020 | 11/18/2011 | 129.8 |
| Muscatine, Musser Park | 191390020 | 11/19/2011 | 309.3 |
| Muscatine, Musser Park | 191390020 | 11/24/2011 | 99.8 |
| Muscatine, Musser Park | 191390020 | 12/3/2011 | 233.7 |

**Ambient Monitoring Network
Site Locations**

| Site ID | Name | City | Address | County | Site Label | Pollutants |
|-----------|--------------------------|---------------|---------------------------------------|-------------|------------------------------------|-----------------------|
| 190130008 | Grout Museum | Waterloo | West Park St. & South St. | Black Hawk | Waterloo, Grout Museum | PM10, PM2.5 |
| 190130009 | Water Tower | Waterloo | Vine St. & Steely | Black Hawk | Waterloo, Water Tower | PM2.5 |
| 190170011 | Waverly Airport | Waverly | Waverly Airport | Bremer | Waverly, Airport | Ozone |
| 190330018 | Holnam Cement | Mason City | 17th St. & Washington St. | Cerro Gordo | Mason City, Holnam Cement | PM10 |
| 190330020 | Washington School | Mason City | 700 N. Washington Avenue | Cerro Gordo | Mason City, Washington Sch. | PM10 |
| 190450019 | Chancy Park | Clinton | 23rd & Camanche | Clinton | Clinton, Chancy Park | PM2.5, SO2 |
| 190450021 | Rainbow Park | Clinton | Roosevelt St. | Clinton | Clinton, Rainbow Park | Ozone, PM2.5 |
| 190550001 | Backbone State Park | not in a city | Fish Hatchery Backbone State Park | Delaware | Backbone State Park | PM2.5 |
| 190850007 | Forestry Office | Pisgah | 206 Polk St. | Harrison | Pisgah, Forestry Office | Ozone |
| 190851101 | Highway Maintenance Shed | Pisgah | 1575 Hwy 183 | Harrison | Pisgah, Highway Maintenance | Ozone |
| 191032001 | Hoover Elementary | Iowa City | 2200 East Court | Johnson | Iowa City, Hoover Sch. | PM10, PM2.5 |
| 191110008 | Fire Station | Keokuk | 111S. 13th St. | Lee | Keokuk, Fire Station | PM2.5 |
| 191130028 | Kirkwood College | Cedar Rapids | 6301 Kirkwood Blvd SW (Iowa Hall) | Linn | Cedar Rapids, Kirkwood Coll. | Ozone |
| 191130031 | Scottish Rite Temple | Cedar Rapids | 616 A Ave. | Linn | Cedar Rapids, Scottish Rite Temple | SO2 |
| 191130033 | Coggon Elementary School | Coggon | 408 E Linn St. | Linn | Coggon, Coggon Sch. | Ozone |
| 191130037 | Army Reserve Center | Cedar Rapids | 1599 Wenig Rd. NE | Linn | Cedar Rapids, Army Reserve | PM10, PM2.5 |
| 191130040 | Public Health | Cedar Rapids | 500 11th St. NW | Linn | Cedar Rapids, Public Health | CO, SO2, Ozone, PM2.5 |
| 191370002 | Viking Lake State Park | not in a city | 2780 Viking Lake Road | Montgomery | Viking Lake State Park | Ozone, PM10, PM2.5 |
| 191390015 | Garfield School | Muscatine | 1409 Wisconsin | Muscatine | Muscatine, Garfield Sch. | PM10, PM2.5 |
| 191390016 | Greenwood Cemetery | Muscatine | Fletcher St. & Kimble St. | Muscatine | Muscatine, Greenwood Cemetery | PM2.5 |
| 191390018 | Franklin School | Muscatine | 210 Taylor St. | Muscatine | Muscatine, Franklin Sch. | PM2.5 |
| 191390020 | Musser Park | Muscatine | Oregon St. & Earl Ave. | Muscatine | Muscatine, Musser Park | SO2, PM2.5 |
| 191471002 | Iowa Lakes College | Emmetsburg | Iowa Lakes Community College - S Camp | Palo Alto | Emmetsburg, Iowa Lakes Coll. | Ozone, PM10, PM2.5 |

| Site ID | Name | City | Address | County | Site Label | Pollutants |
|-----------|------------------------------|----------------|--|---------------|-----------------------------------|--------------------------------------|
| 191530030 | Health Department | Des Moines | 1907 Carpenter | Polk | Des Moines, Health Dept. | CO, SO2, NO2, Ozone, PM10, PM2.5 |
| 191532510 | Indian Hills Jr. High School | Clive | 9401 Indian Hills | Polk | Clive, Indian Hills Jr. High Sch. | PM10, PM2.5 |
| 191550009 | Franklin School | Council Bluffs | 3130 C Ave. | Pottawattamie | Council Bluffs, Franklin Sch. | PM10, PM2.5 |
| 191550011 | Griffin Pipe | Council Bluffs | 8th Avenue and 27th St | Pottawattamie | Council Bluffs, Griffin Pipe | Pb |
| 191630014 | Scott County Park | Davenport | Scott County Park | Scott | Scott County Park | Ozone |
| 191630015 | Jefferson School | Davenport | 10th St. & Vine St. | Scott | Davenport, Jefferson Sch. | CO, SO2, NO2, Ozone, PM10, PM2.5, Pb |
| 191630017 | Linwood Mining | Buffalo | 11100 110th Ave. | Scott | Buffalo, LW Mining | PM10 |
| 191630018 | Adams School | Davenport | 3029 N Division St. | Scott | Davenport, Adams Sch. | PM10, PM2.5 |
| 191630019 | Blackhawk Foundry | Davenport | 300 Wellman St. | Scott | Davenport, Blackhawk Foundry | PM10, PM2.5 |
| 191630020 | Hayes School | Davenport | 622 South Concord St | Scott | Davenport, Hayes Elementary | PM2.5 |
| 191690011 | City Hall | Slater | 105 Greene | Story | Slater, City Hall | Ozone |
| 191710007 | Meskwaki Tribal Center | Tama | 349 Meskwaki Road | Tama | Tama, Meskwaki Tribal Center | PM2.5 |
| 191770006 | Lake Sugema | not in a city | 24430 Lacey Trl, Keosauqua Lake Sugema | Van Buren | Keosauqua, Lake Sugema | SO2, Ozone, PM10, PM2.5 |
| 191810022 | Lake Ahquabi State Park | Indianola | 1650 118th Ave. | Warren | Indianola, Lake Ahquabi | Ozone |
| 191930019 | Bryant School | Sioux City | 821 30th St. | Woodbury | Sioux City, Bryant Sch. | PM10, PM2.5 |

Monitoring Site Locations



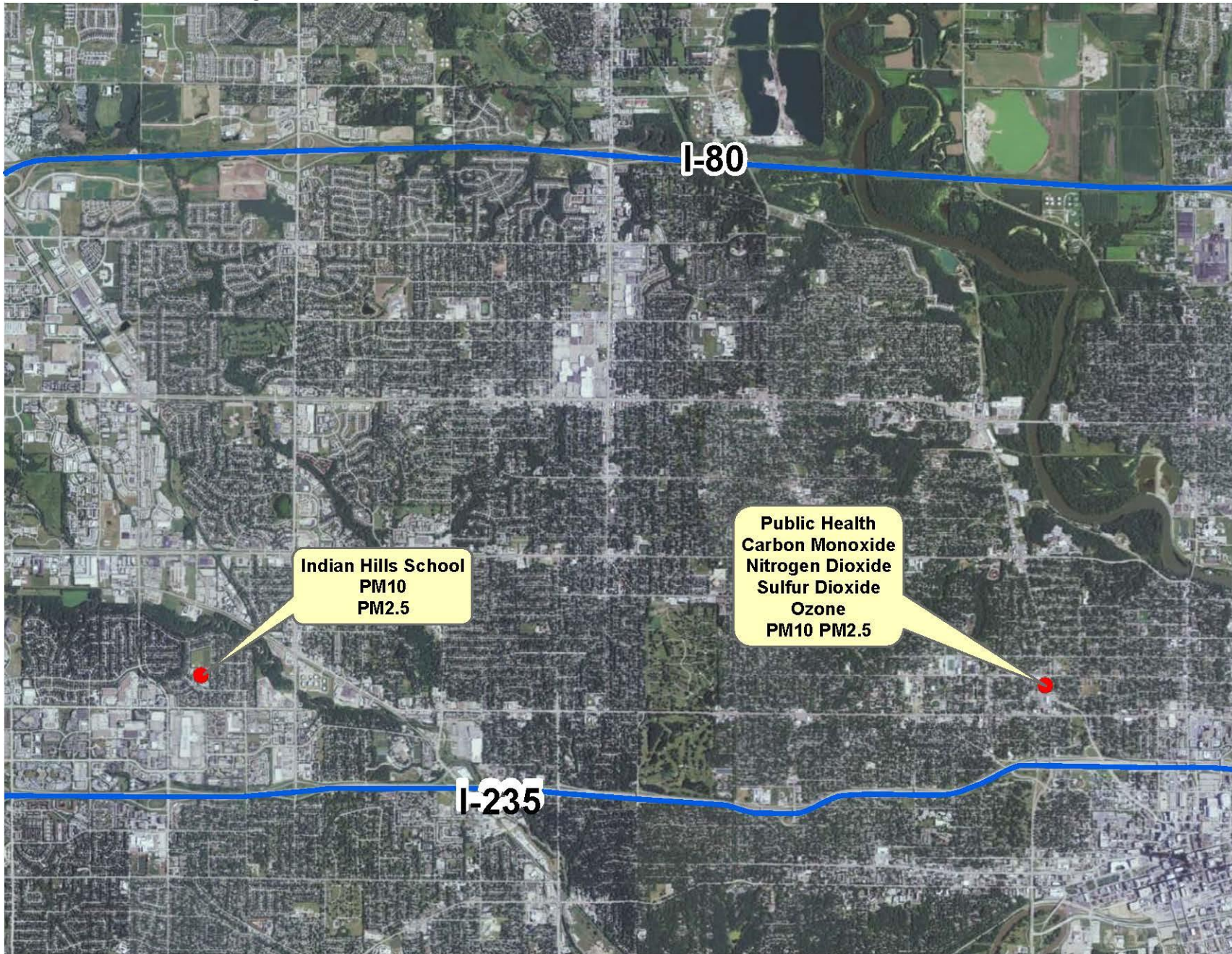
Cedar Rapids Monitoring Sites



Davenport Monitoring Sites



Des Moines/Clive Monitoring Sites



**Ambient Monitoring Network Changes
Monitors Removed at the End of 2010**

| Site | Name | City | County | Site Label | Start Date | End Date | Pollutants |
|-----------|---------------------|---------------|----------|---------------------|------------|------------|------------|
| 190550001 | Backbone State Park | not in a city | Delaware | Backbone State Park | 1/1/2009 | 12/31/2010 | PM10 |

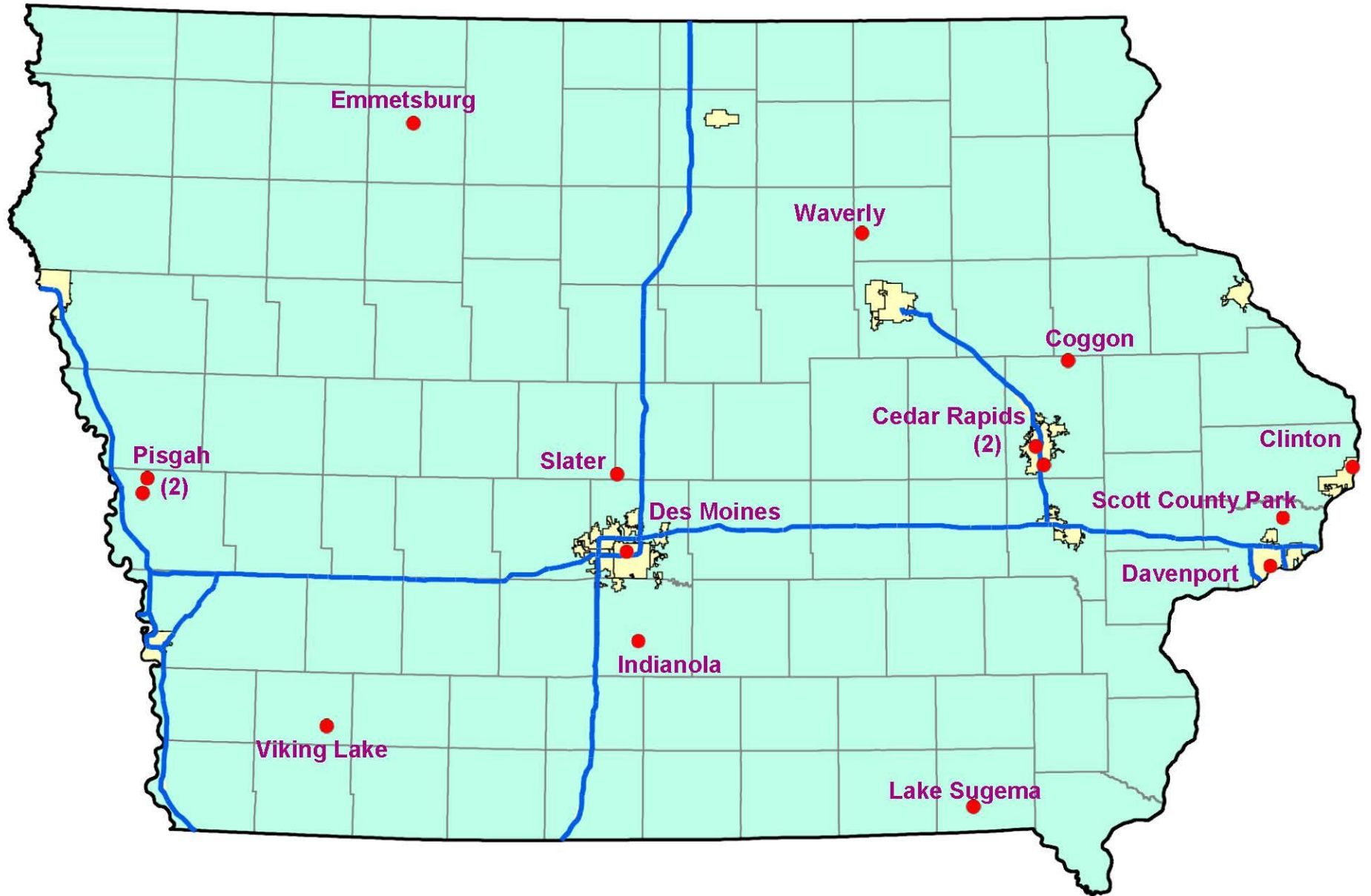
Monitors Added During 2011

| Site | Name | City | County | Site Label | Start Date | End Date | Pollutants |
|-----------|---------------------|---------------|-----------|---------------------------|------------|----------|------------|
| 190550001 | Backbone State Park | not in a city | Delaware | Backbone State Park | 1/1/2011 | - | PM2.5 |
| 191390020 | Musser Park | Muscatine | Muscatine | Muscatine, Musser Park | 1/1/2011 | - | PM2.5 |
| 191630015 | Jefferson School | Davenport | Scott | Davenport, Jefferson Sch. | 12/15/2010 | - | Lead |

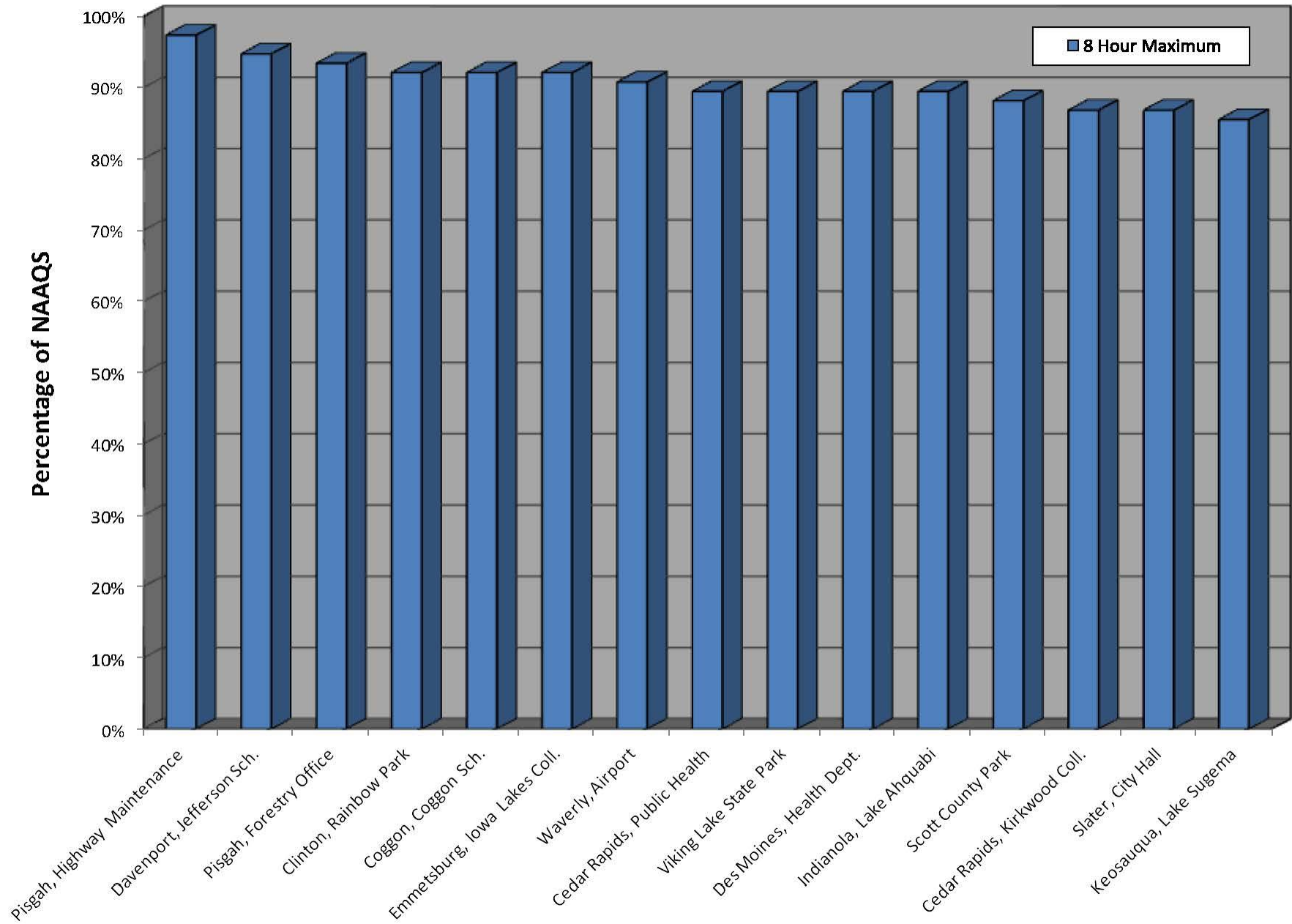
**Ozone Monitoring Sites
Site Locations**

| Site | Name | City | County | Site Label |
|-----------|--------------------------|---------------|------------|------------------------------|
| 190170011 | Waverly Airport | Waverly | Bremer | Waverly, Airport |
| 190450021 | Rainbow Park | Clinton | Clinton | Clinton, Rainbow Park |
| 190850007 | Forestry Office | Pisgah | Harrison | Pisgah, Forestry Office |
| 190851101 | Highway Maintenance Shed | Pisgah | Harrison | Pisgah, Highway Maintenance |
| 191130028 | Kirkwood College | Cedar Rapids | Linn | Cedar Rapids, Kirkwood Coll. |
| 191130033 | Coggon Elementary School | Coggon | Linn | Coggon, Coggon Sch. |
| 191130040 | Public Health | Cedar Rapids | Linn | Cedar Rapids, Public Health |
| 191370002 | Viking Lake State Park | not in a city | Montgomery | Viking Lake State Park |
| 191471002 | Iowa Lakes College | Emmetsburg | Palo Alto | Emmetsburg, Iowa Lakes Coll. |
| 191530030 | Health Department | Des Moines | Polk | Des Moines, Health Dept. |
| 191630014 | Scott County Park | Davenport | Scott | Scott County Park |
| 191630015 | Jefferson School | Davenport | Scott | Davenport, Jefferson Sch. |
| 191690011 | City Hall | Slater | Story | Slater, City Hall |
| 191770006 | Lake Sugema | not in a city | Van Buren | Keosauqua, Lake Sugema |
| 191810022 | Lake Ahquabi State Park | Indianola | Warren | Indianola, Lake Ahquabi |

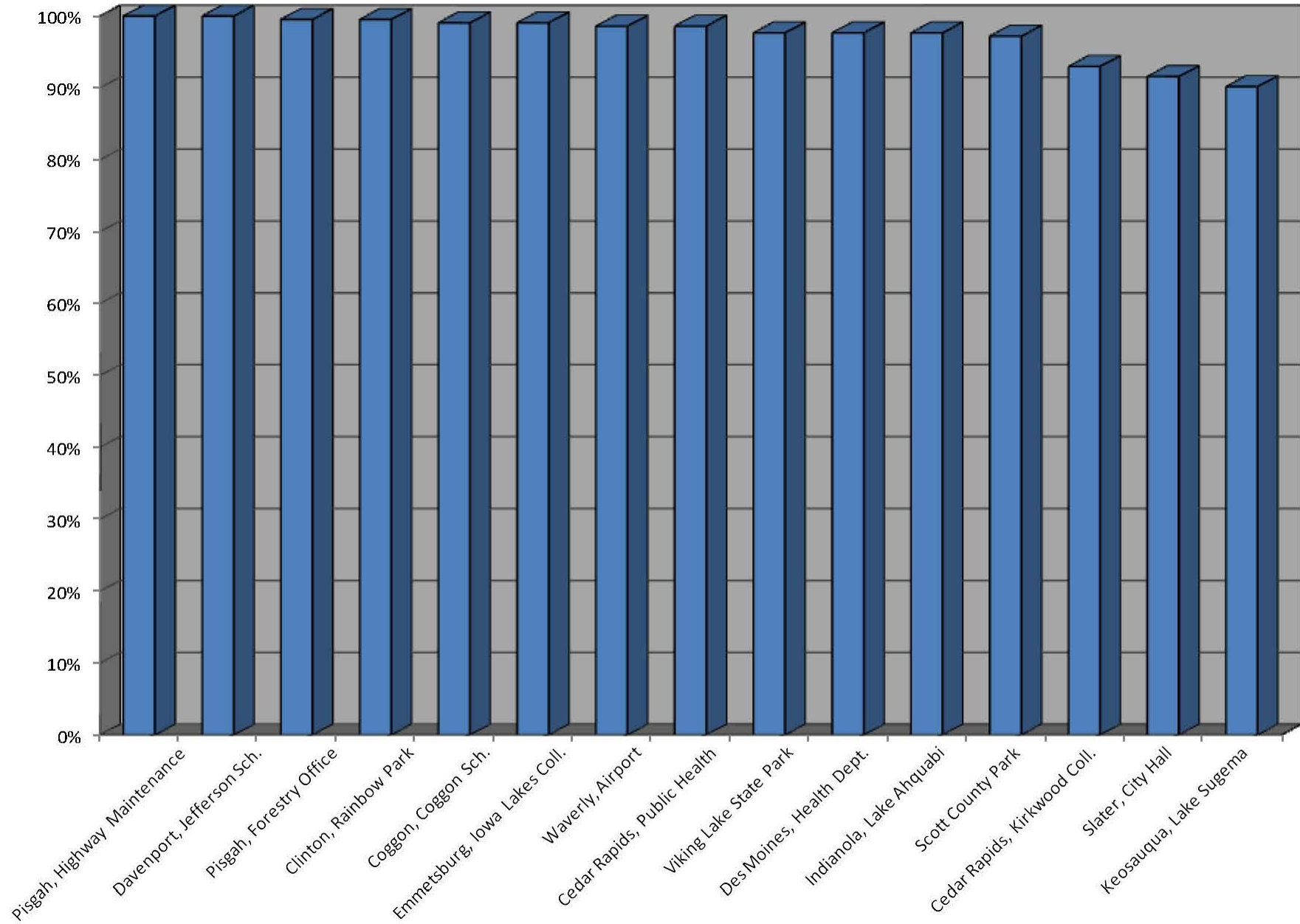
Ozone Monitoring Locations



Comparison of 2011 Ozone Data with National Ambient Air Quality Standards



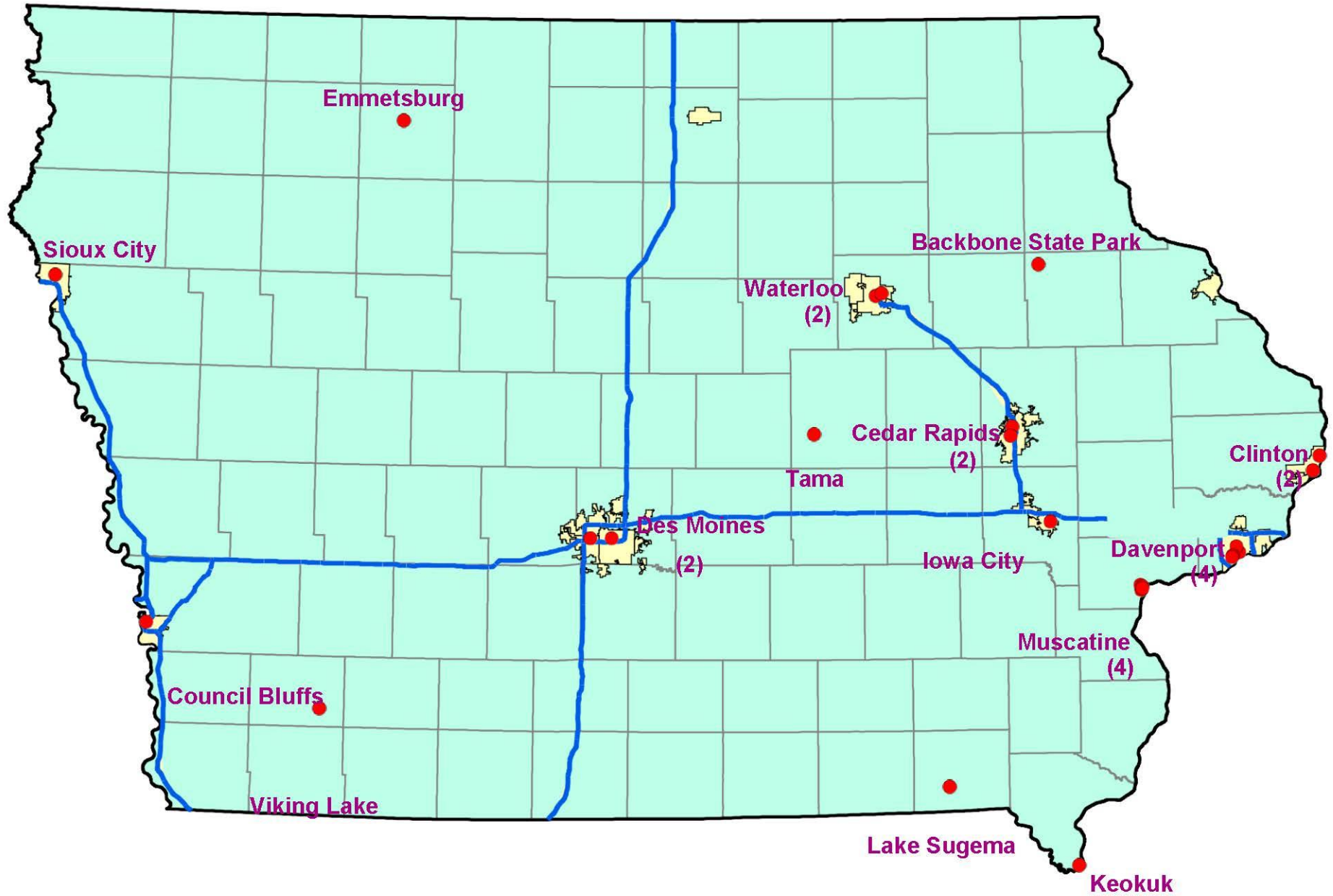
Data Completeness



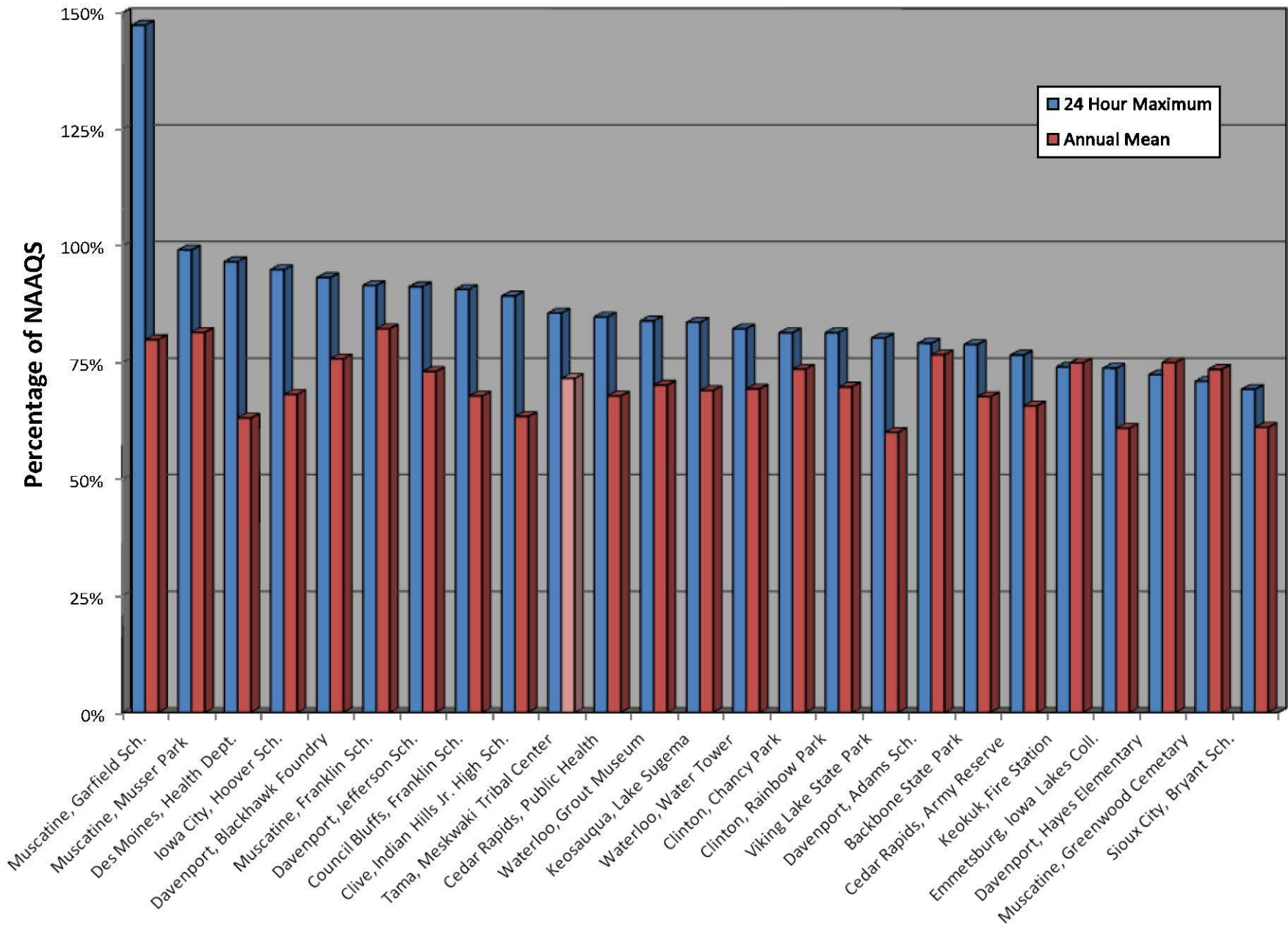
PM_{2.5} Monitoring Sites**Site Locations**

| Site | Name | City | County | Site Label |
|-------------|------------------------------|----------------|---------------|-----------------------------------|
| 190130008 | Grout Museum | Waterloo | Black Hawk | Waterloo, Grout Museum |
| 190130009 | Water Tower | Waterloo | Black Hawk | Waterloo, Water Tower |
| 190450019 | Chancy Park | Clinton | Clinton | Clinton, Chancy Park |
| 190450021 | Rainbow Park | Clinton | Clinton | Clinton, Rainbow Park |
| 190550001 | Backbone State Park | not in a city | Delaware | Backbone State Park |
| 191032001 | Hoover Elementary | Iowa City | Johnson | Iowa City, Hoover Sch. |
| 191110008 | Fire Station | Keokuk | Lee | Keokuk, Fire Station |
| 191130037 | Army Reserve Center | Cedar Rapids | Linn | Cedar Rapids, Army Reserve |
| 191130040 | Public Health | Cedar Rapids | Linn | Cedar Rapids, Public Health |
| 191370002 | Viking Lake State Park | not in a city | Montgomery | Viking Lake State Park |
| 191390015 | Garfield School | Muscatine | Muscatine | Muscatine, Garfield Sch. |
| 191390016 | Greenwood Cemetary | Muscatine | Muscatine | Muscatine, Greenwood Cemetary |
| 191390018 | Franklin School | Muscatine | Muscatine | Muscatine, Franklin Sch. |
| 191390020 | Musser Park | Muscatine | Muscatine | Muscatine, Musser Park |
| 191471002 | Iowa Lakes College | Emmetsburg | Palo Alto | Emmetsburg, Iowa Lakes Coll. |
| 191530030 | Health Department | Des Moines | Polk | Des Moines, Health Dept. |
| 191532510 | Indian Hills Jr. High School | Clive | Polk | Clive, Indian Hills Jr. High Sch. |
| 191550009 | Franklin School | Council Bluffs | Pottawattamie | Council Bluffs, Franklin Sch. |
| 191630015 | Jefferson School | Davenport | Scott | Davenport, Jefferson Sch. |
| 191630018 | Adams School | Davenport | Scott | Davenport, Adams Sch. |
| 191630019 | Blackhawk Foundry | Davenport | Scott | Davenport, Blackhawk Foundry |
| 191630020 | Hayes School | Davenport | Scott | Davenport, Hayes Elementary |
| 191710007 | Meskwaki Tribal Center | Tama | Tama | Tama, Meskwaki Tribal Center |
| 191770006 | Lake Sugema | not in a city | Van Buren | Keosauqua, Lake Sugema |
| 191930019 | Bryant School | Sioux City | Woodbury | Sioux City, Bryant Sch. |

PM_{2.5} Monitoring Locations



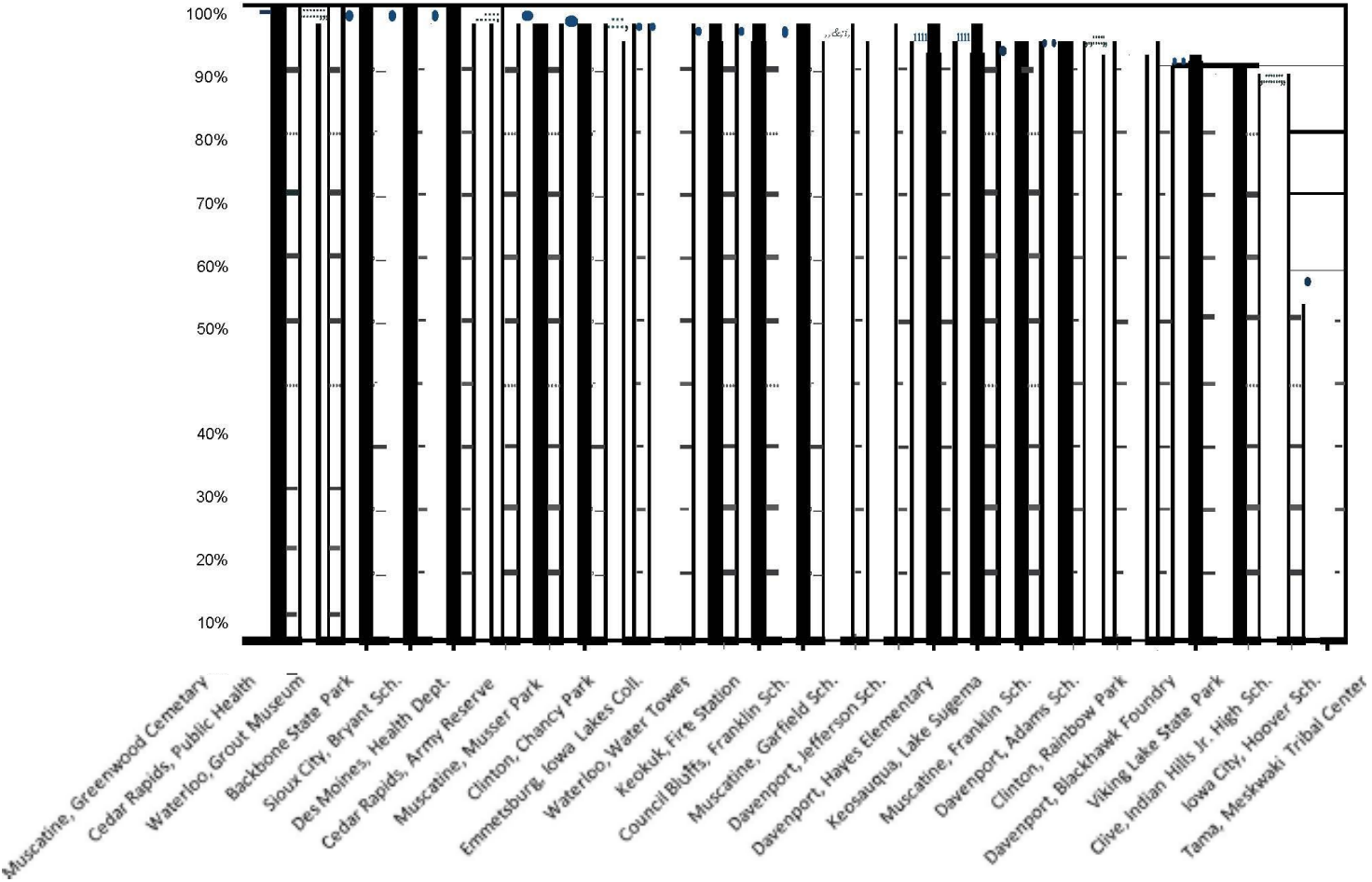
Comparison of 2011 PM_{2.5} Data with National Ambient Air Quality Standards



Data Completeness

2011 Data Completeness – PM_{2.5}

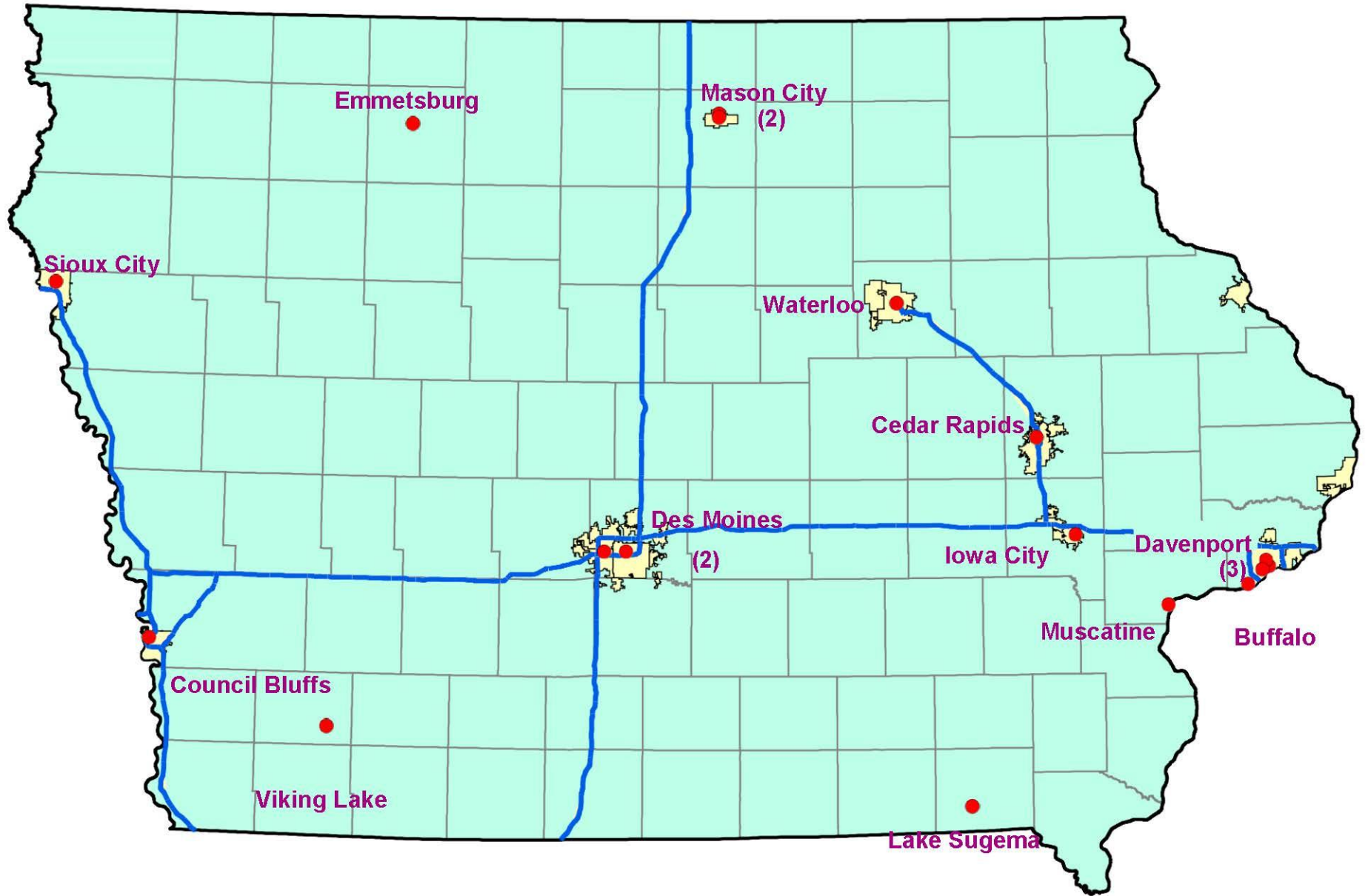
D 1 sample every 3 days D 1 sample everyday



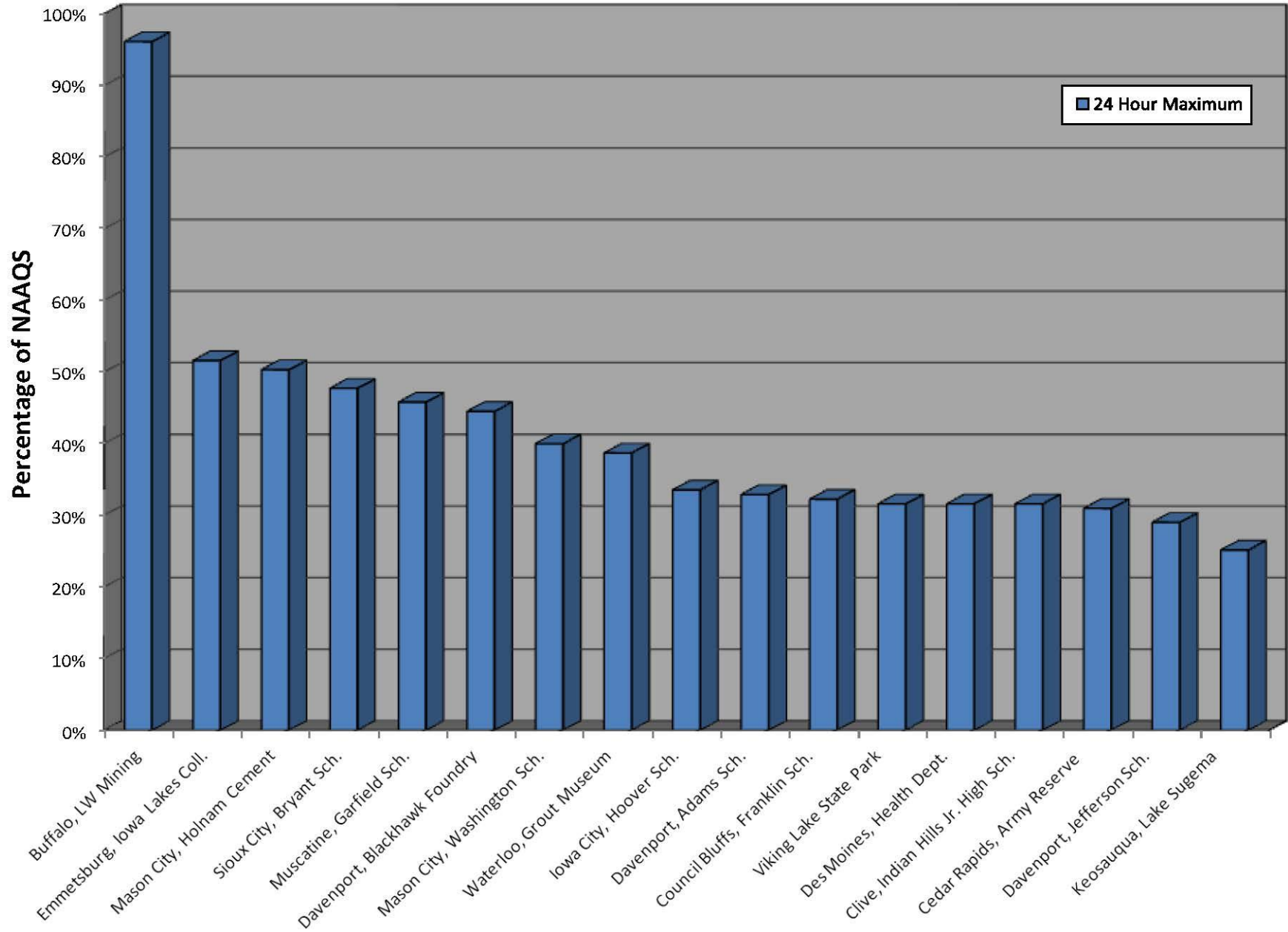
PM₁₀ Monitoring Sites**Site Locations**

| Site | Name | City | County | Site Label |
|-------------|------------------------------|----------------|---------------|-----------------------------------|
| 190130008 | Grout Museum | Waterloo | Black Hawk | Waterloo, Grout Museum |
| 190330018 | Holnam Cement | Mason City | Cerro Gordo | Mason City, Holnam Cement |
| 190330020 | Washington School | Mason City | Cerro Gordo | Mason City, Washington Sch. |
| 191032001 | Hoover Elementary | Iowa City | Johnson | Iowa City, Hoover Sch. |
| 191130037 | Army Reserve Center | Cedar Rapids | Linn | Cedar Rapids, Army Reserve |
| 191370002 | Viking Lake State Park | not in a city | Montgomery | Viking Lake State Park |
| 191390015 | Garfield School | Muscatine | Muscatine | Muscatine, Garfield Sch. |
| 191471002 | Iowa Lakes College | Emmetsburg | Palo Alto | Emmetsburg, Iowa Lakes Coll. |
| 191530030 | Health Department | Des Moines | Polk | Des Moines, Health Dept. |
| 191532510 | Indian Hills Jr. High School | Clive | Polk | Clive, Indian Hills Jr. High Sch. |
| 191550009 | Franklin School | Council Bluffs | Pottawattamie | Council Bluffs, Franklin Sch. |
| 191630015 | Jefferson School | Davenport | Scott | Davenport, Jefferson Sch. |
| 191630017 | Linwood Mining | Buffalo | Scott | Buffalo, LW Mining |
| 191630018 | Adams School | Davenport | Scott | Davenport, Adams Sch. |
| 191630019 | Blackhawk Foundry | Davenport | Scott | Davenport, Blackhawk Foundry |
| 191770006 | Lake Sugema | not in a city | Van Buren | Keosauqua, Lake Sugema |
| 191930019 | Bryant School | Sioux City | Woodbury | Sioux City, Bryant Sch. |

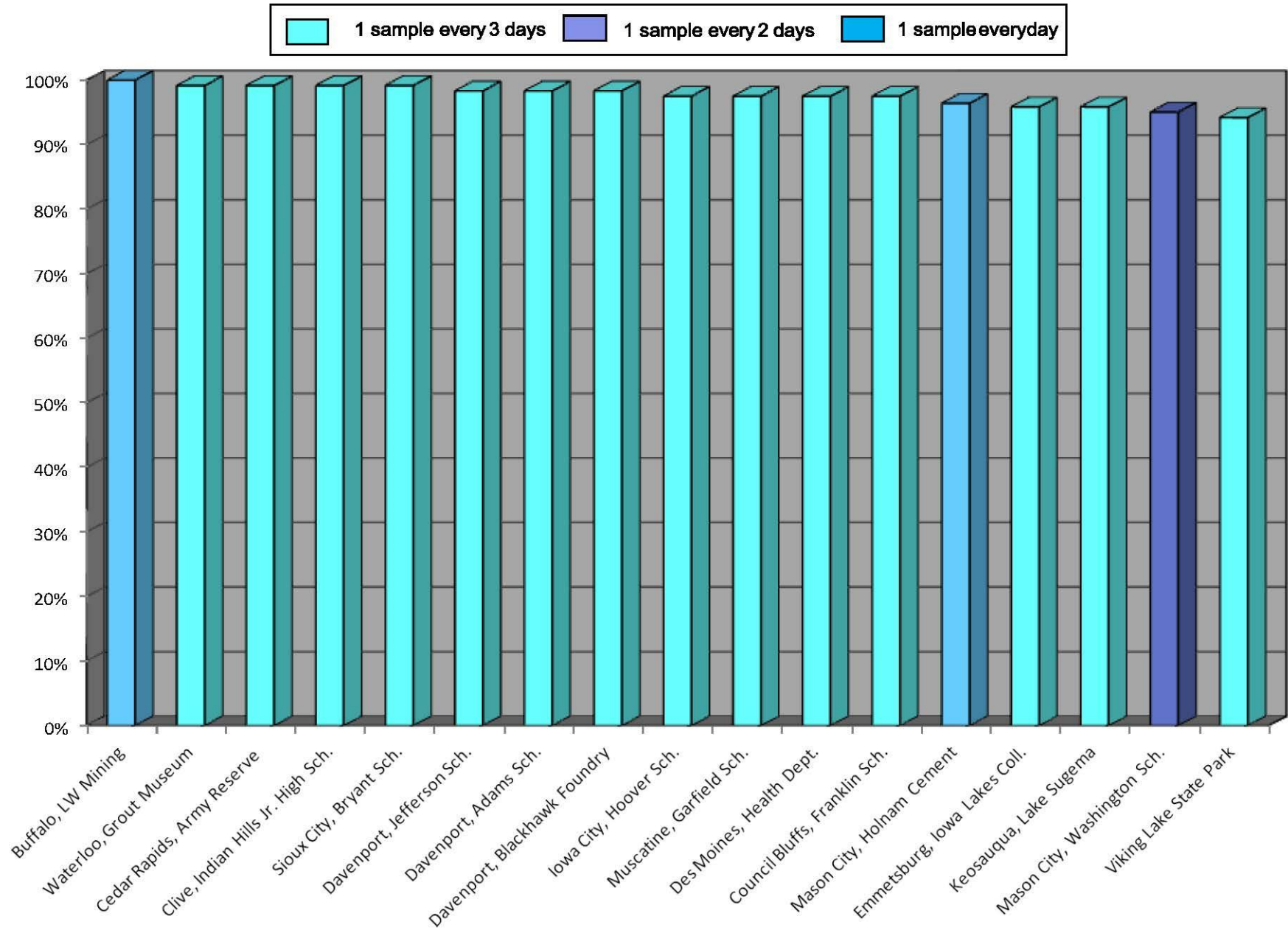
PM₁₀ Monitoring Locations



Comparison of 2011 PM₁₀ Data with the National Ambient Air Quality Standard



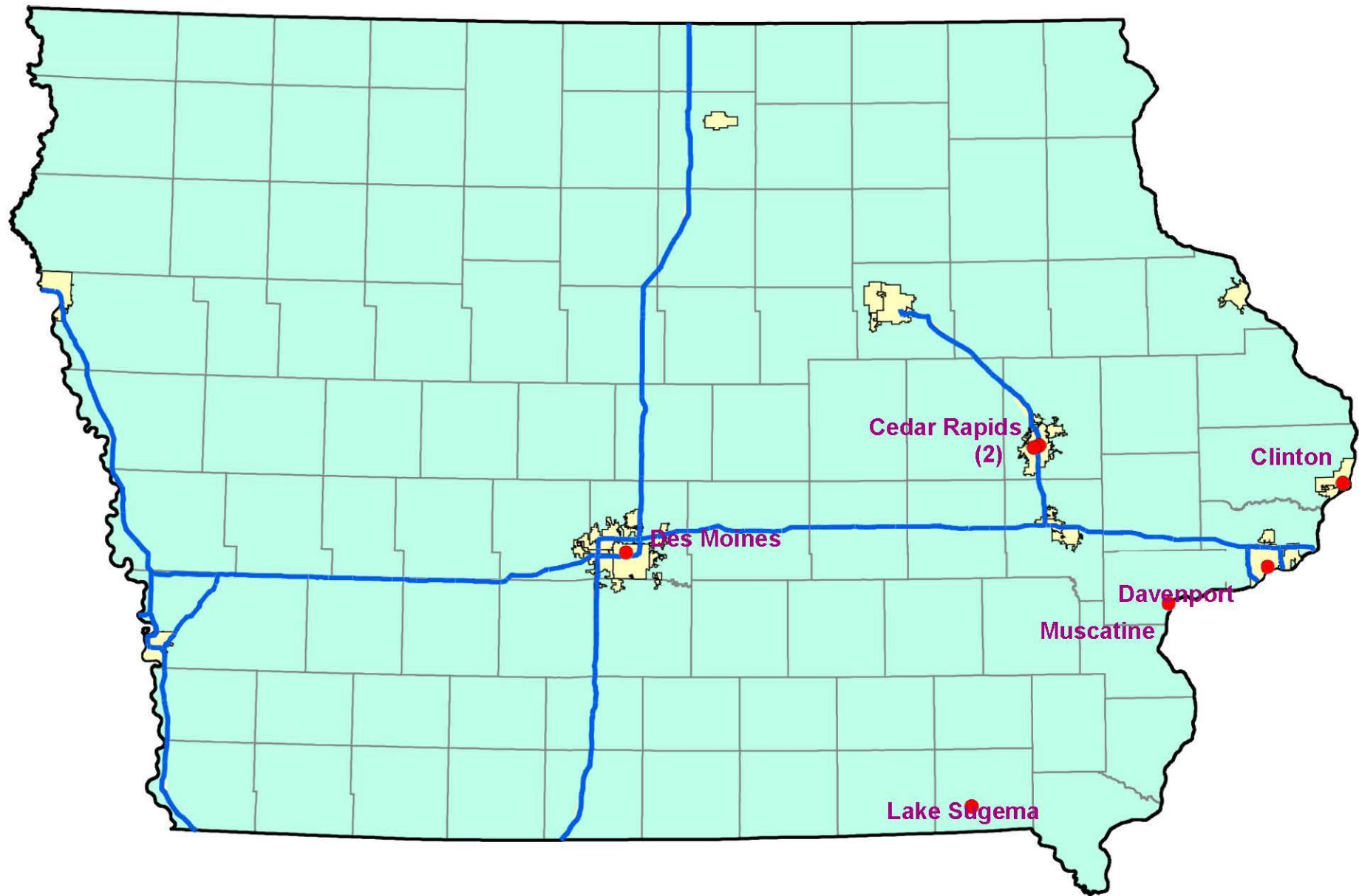
Data Completeness



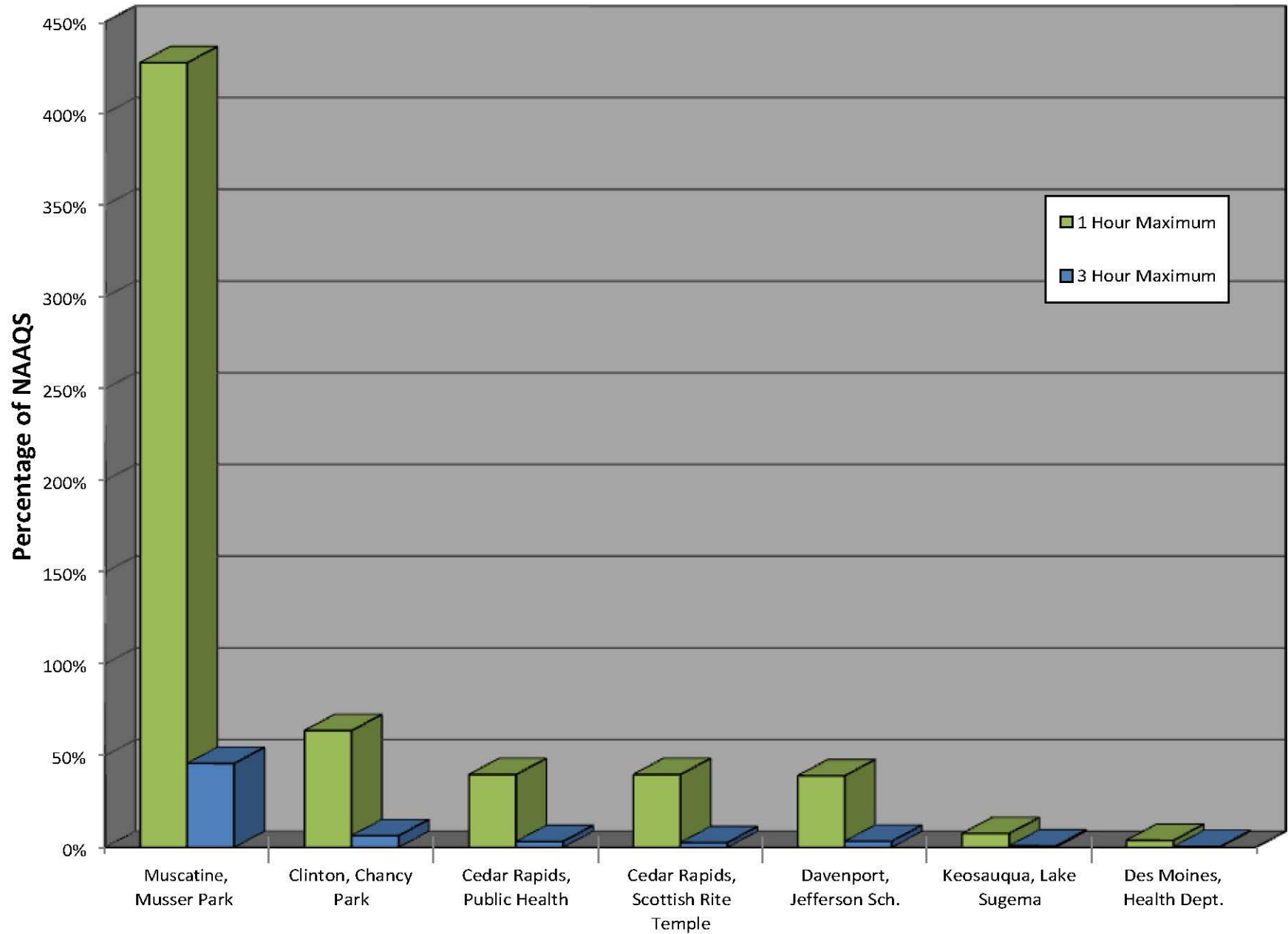
Sulfur Dioxide Monitoring Sites**Site Locations**

| Site | Name | City | County | Site Label |
|-------------|----------------------|---------------|---------------|------------------------------------|
| 190450019 | Chancy Park | Clinton | Clinton | Clinton, Chancy Park |
| 191130031 | Scottish Rite Temple | Cedar Rapids | Linn | Cedar Rapids, Scottish Rite Temple |
| 191130040 | Public Health | Cedar Rapids | Linn | Cedar Rapids, Public Health |
| 191390020 | Musser Park | Muscatine | Muscatine | Muscatine, Musser Park |
| 191530030 | Health Department | Des Moines | Polk | Des Moines, Health Dept. |
| 191630015 | Jefferson School | Davenport | Scott | Davenport, Jefferson Sch. |
| 191770006 | Lake Sugema | not in a city | Van Buren | Keosauqua, Lake Sugema |

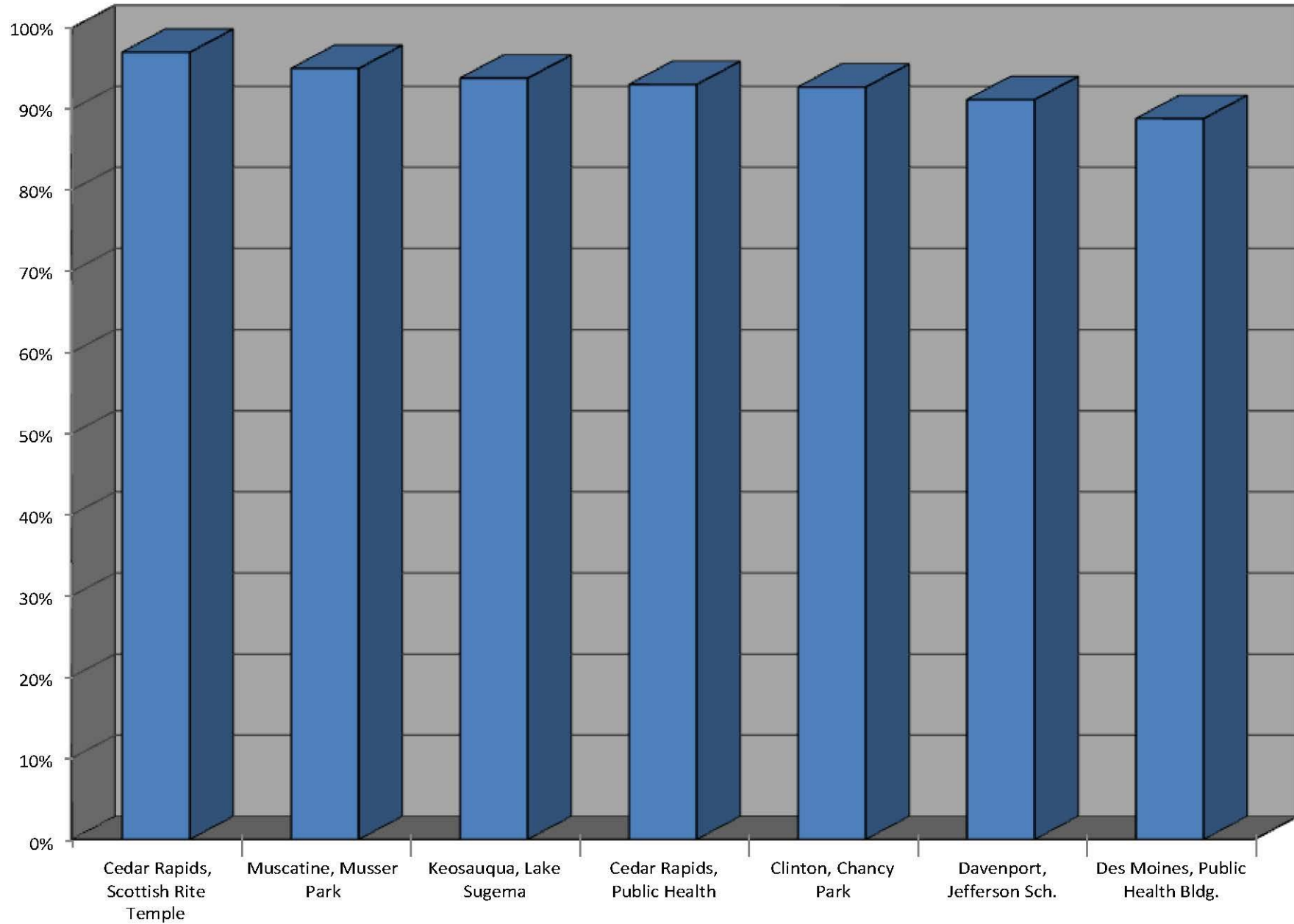
Sulfur Dioxide Monitoring Locations



Comparison of 2011 Sulfur Dioxide Data with National Ambient Air Quality Standards



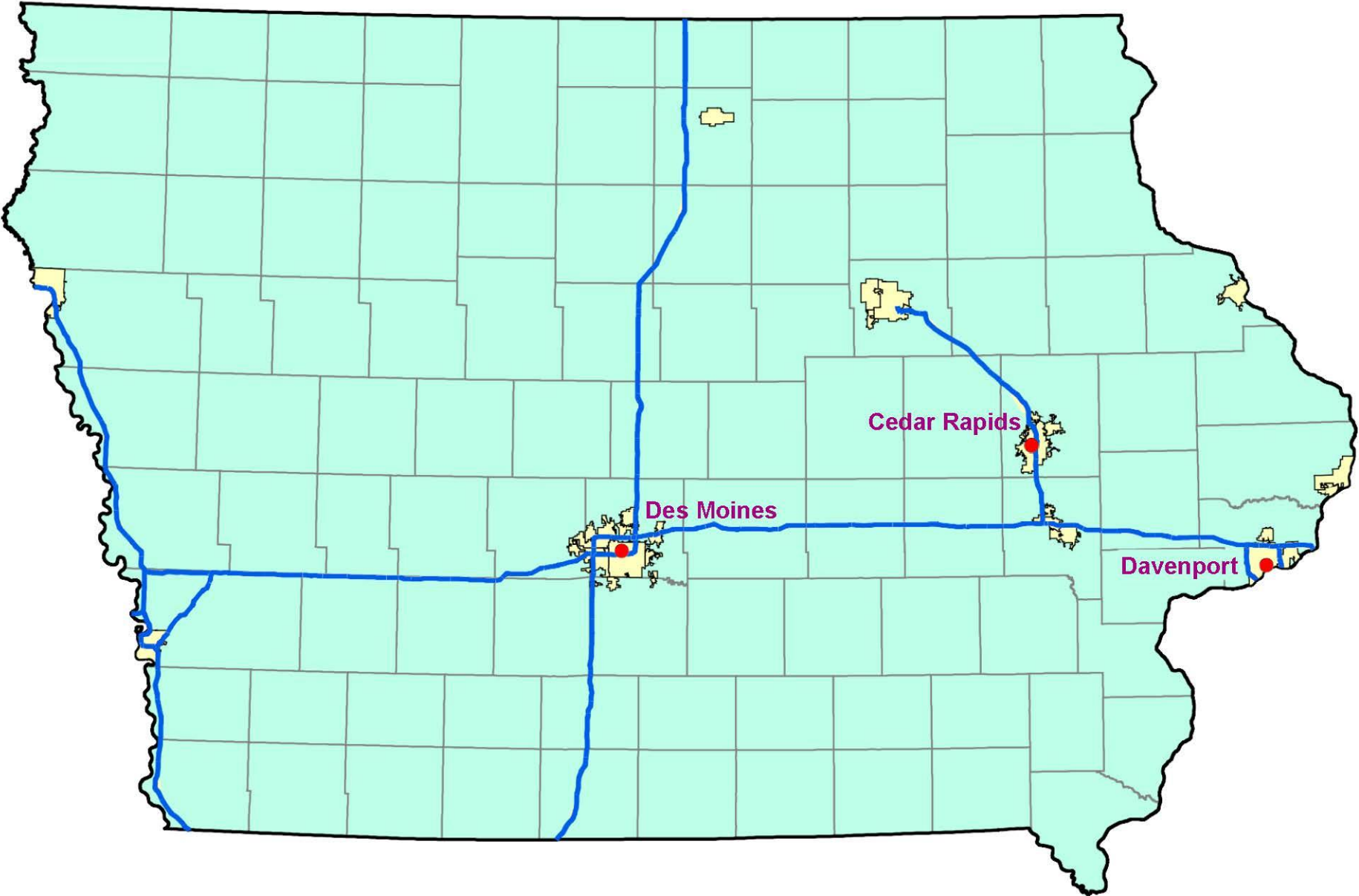
Data Completeness



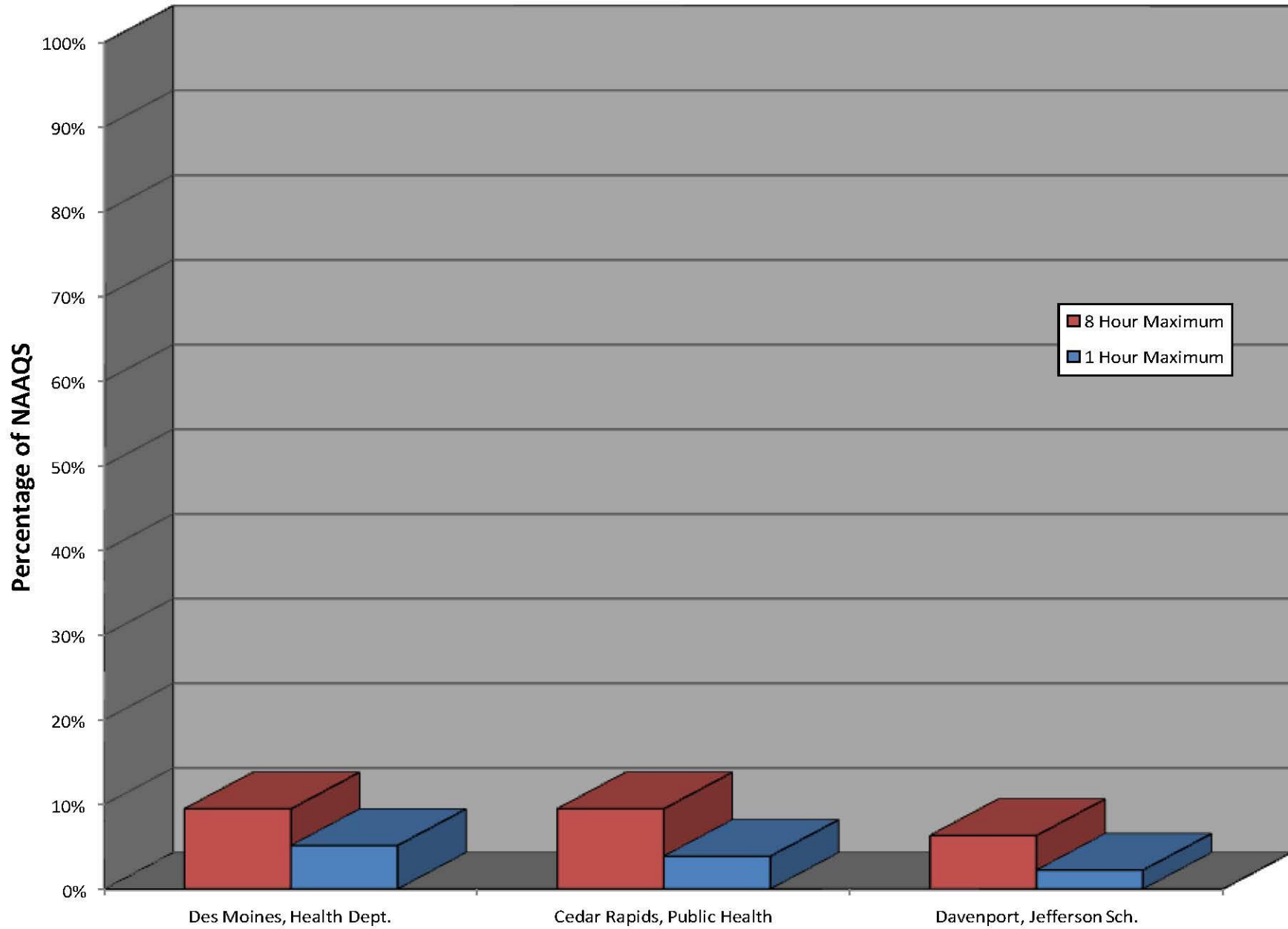
**Carbon Monoxide Monitoring Sites
Site Locations**

| Site | Name | City | County | Site Label |
|-------------|-------------------|--------------|---------------|-----------------------------|
| 191130040 | Public Health | Cedar Rapids | Linn | Cedar Rapids, Public Health |
| 191530030 | Health Department | Des Moines | Polk | Des Moines, Health Dept. |
| 191630015 | Jefferson School | Davenport | Scott | Davenport, Jefferson Sch. |

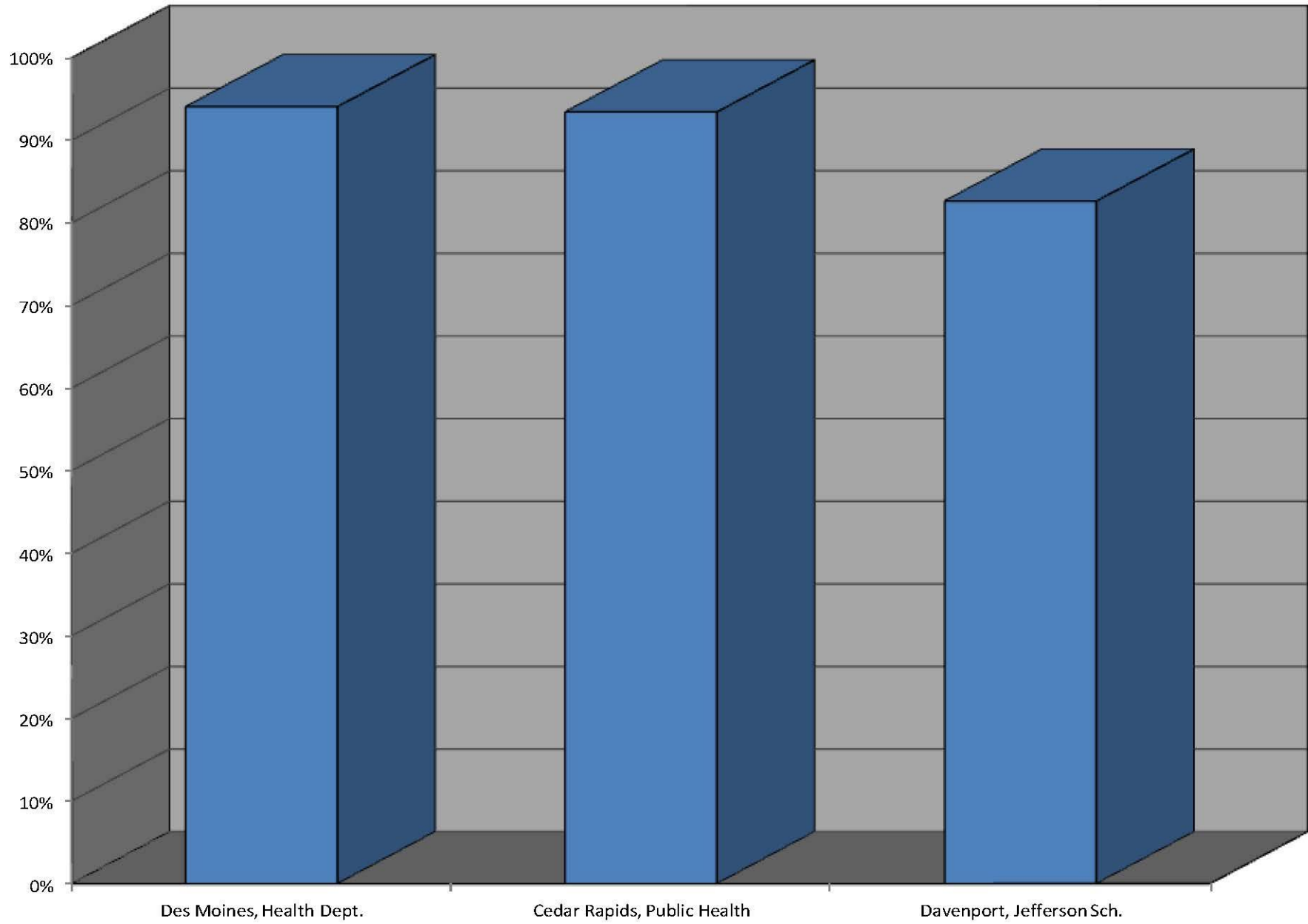
Carbon Monoxide Monitoring Locations



Comparison of 2011 Carbon Monoxide Data with National Ambient Air Quality Standards



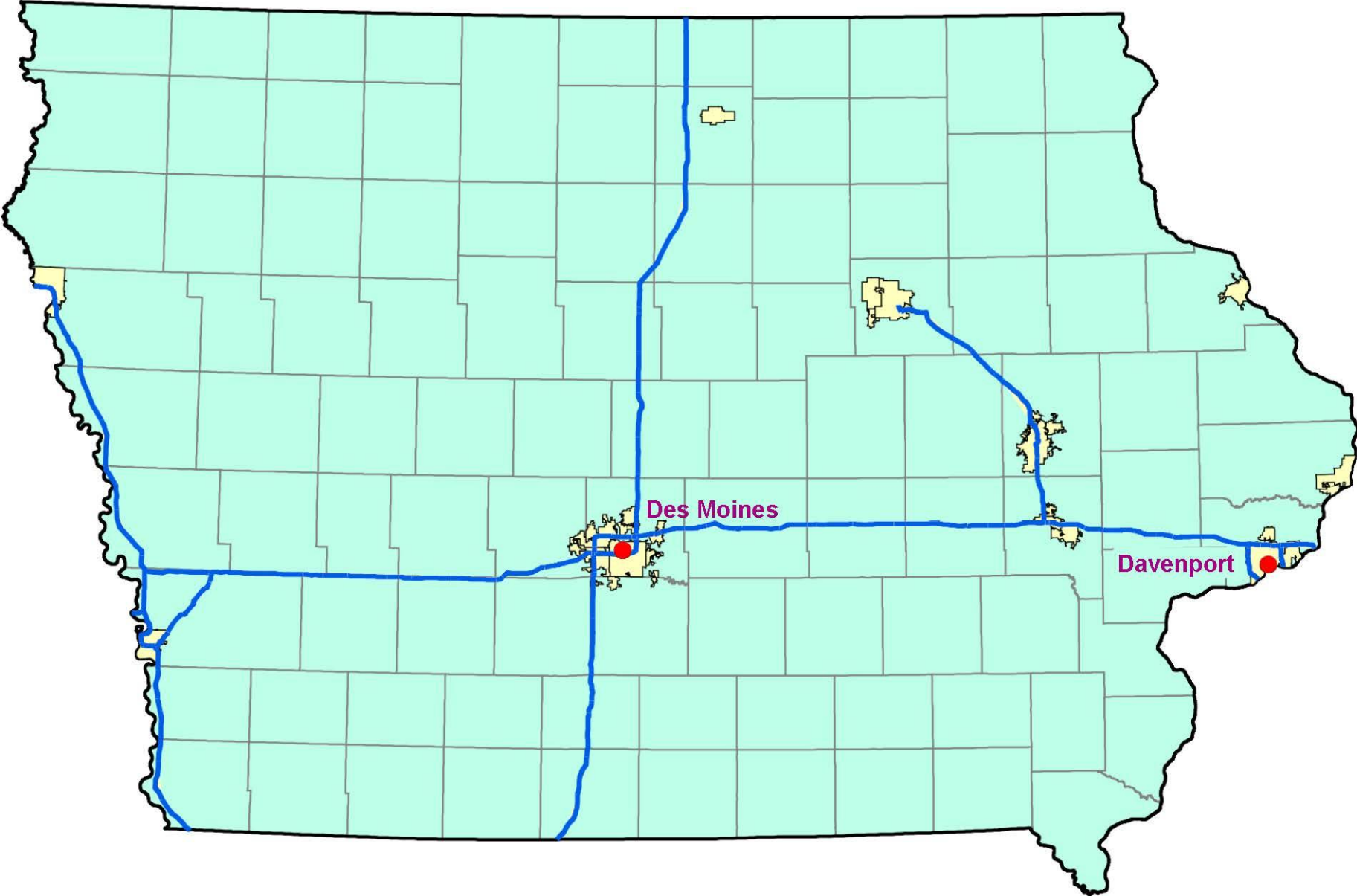
Data Completeness



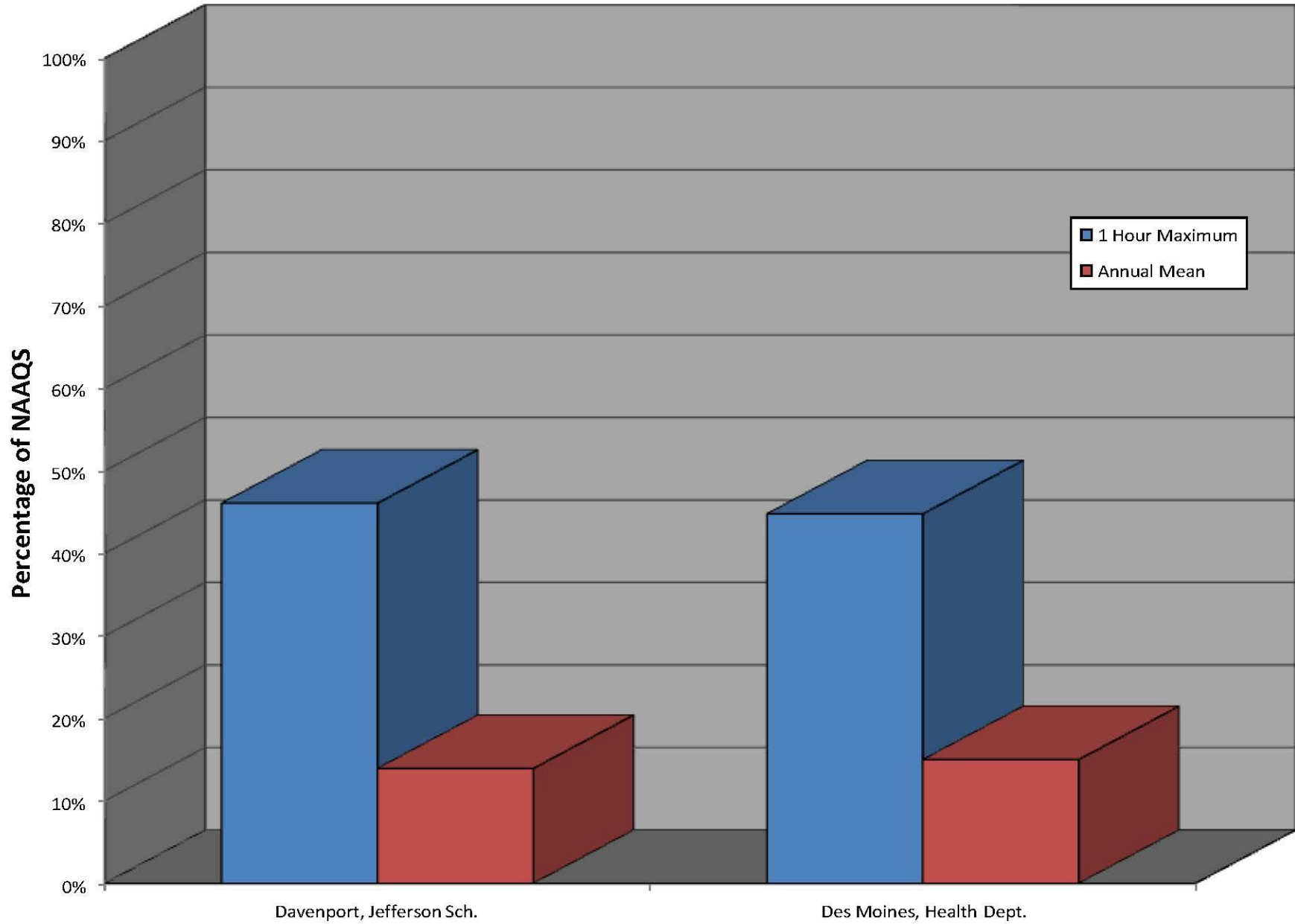
Nitrogen Dioxide Monitoring Sites
Site Locations

| Site | Name | City | County | Site Label |
|-------------|-------------------|-------------|---------------|---------------------------|
| 191530030 | Health Department | Des Moines | Polk | Des Moines, Health Dept. |
| 191630015 | Jefferson School | Davenport | Scott | Davenport, Jefferson Sch. |

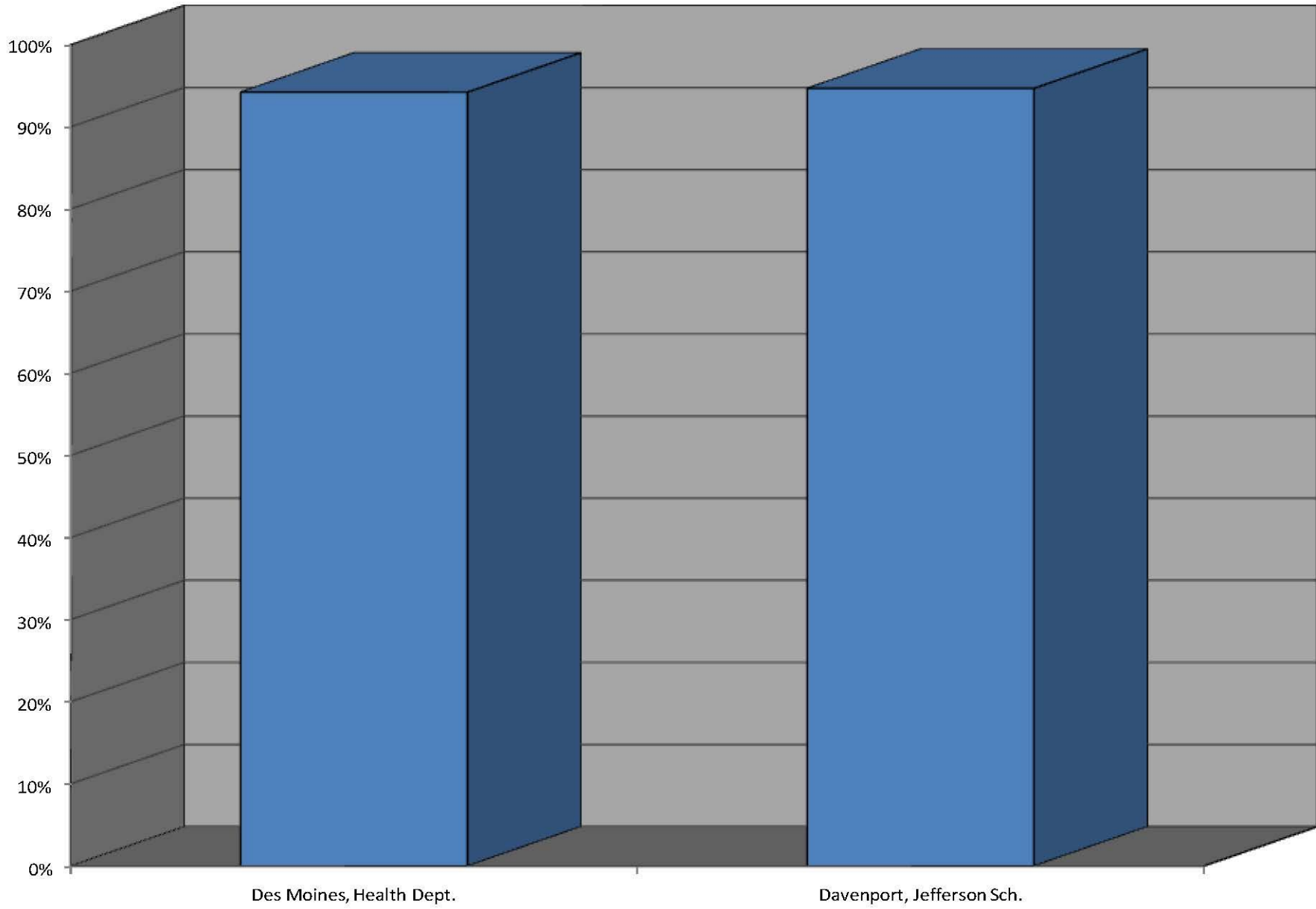
Nitrogen Dioxide Monitoring Locations



Comparison of 2011 Nitrogen Dioxide Data with the National Ambient Air Quality Standard



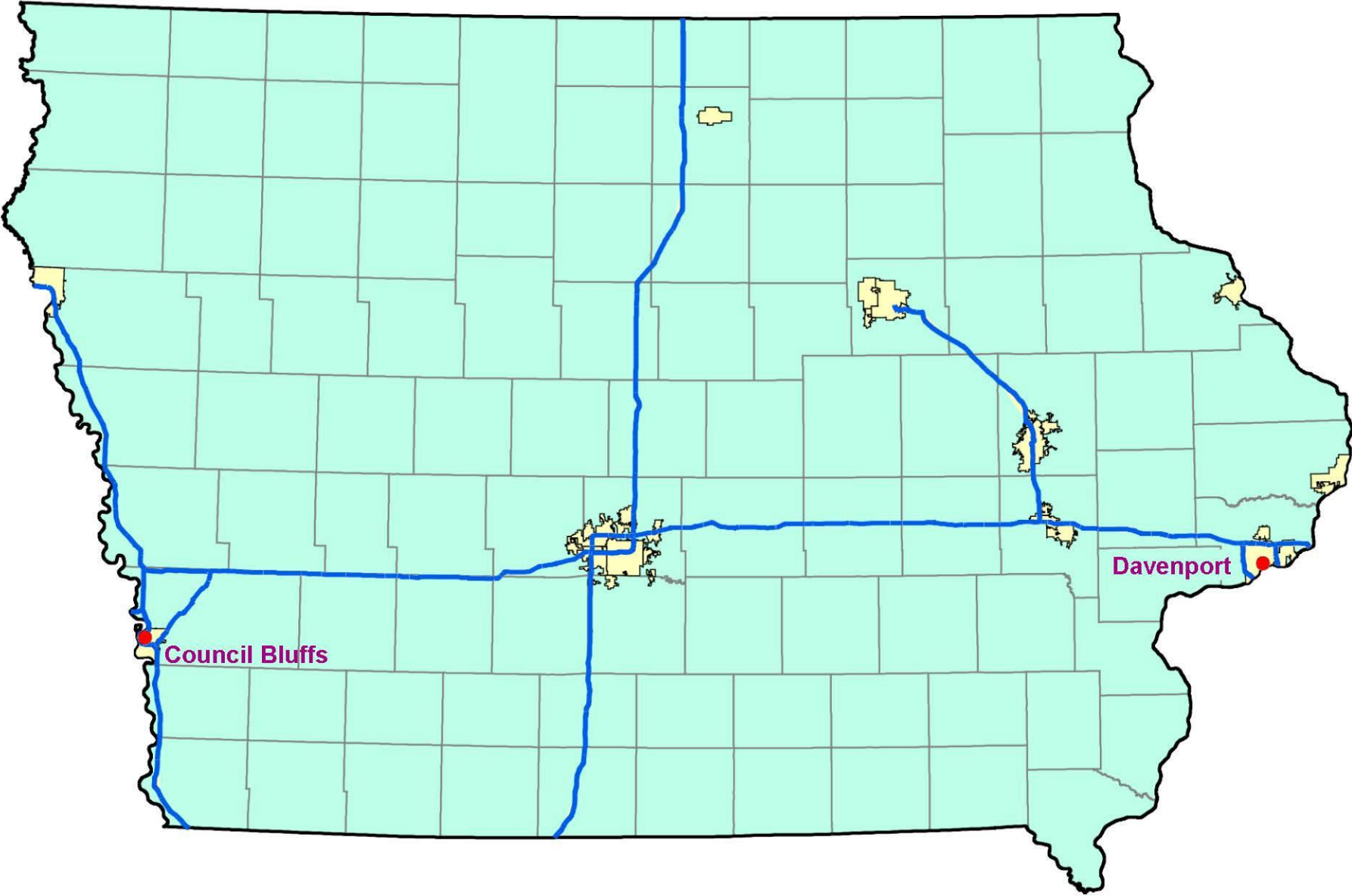
Data Completeness



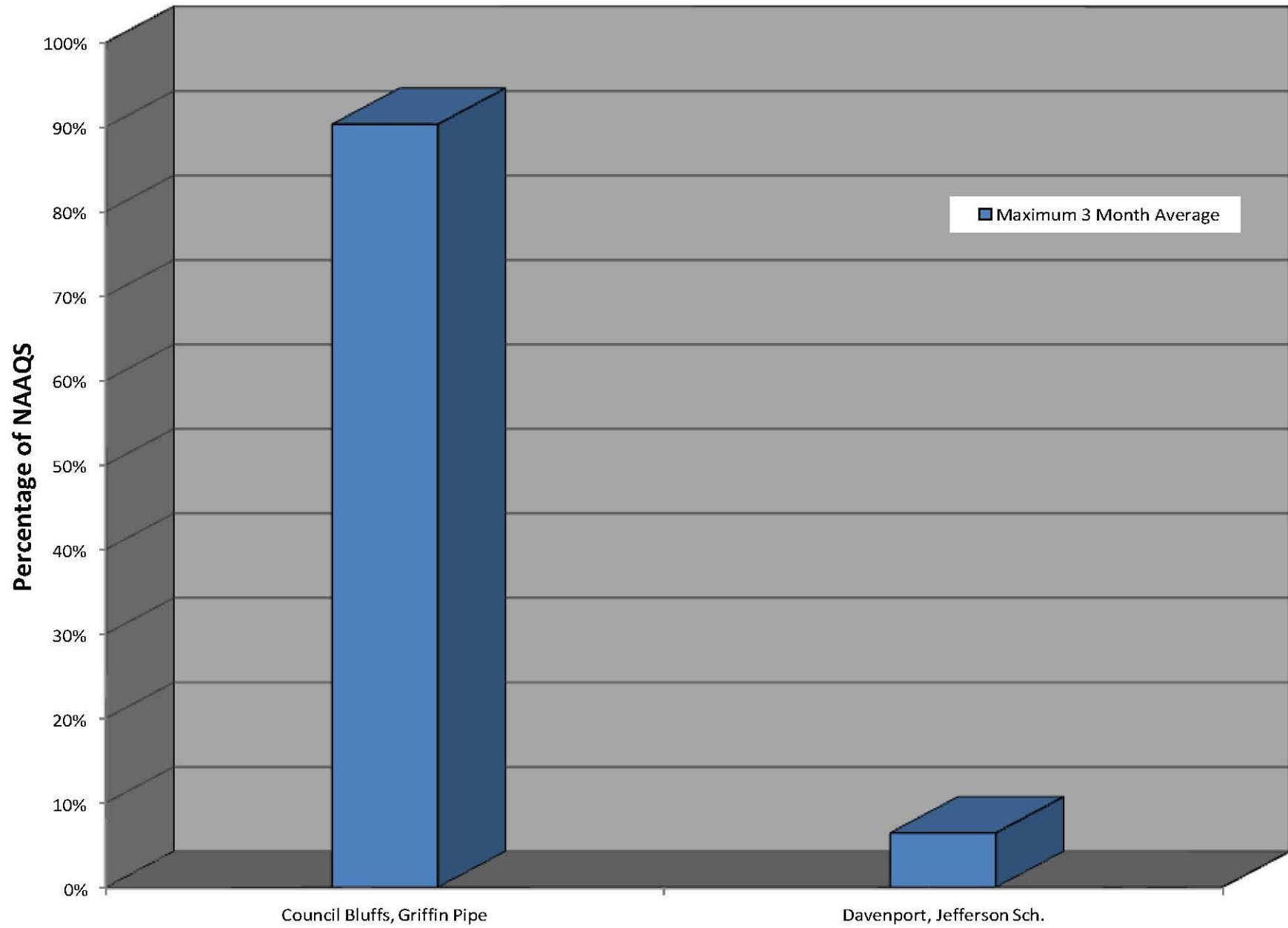
Lead Monitoring Sites**Site Locations**

| Site | Name | City | County | Site Label |
|-------------|------------------|----------------|---------------|------------------------------|
| 191550011 | Griffin Pipe | Council Bluffs | Pottawattamie | Council Bluffs, Griffin Pipe |
| 191630015 | Jefferson School | Davenport | Scott | Davenport, Jefferson Sch. |

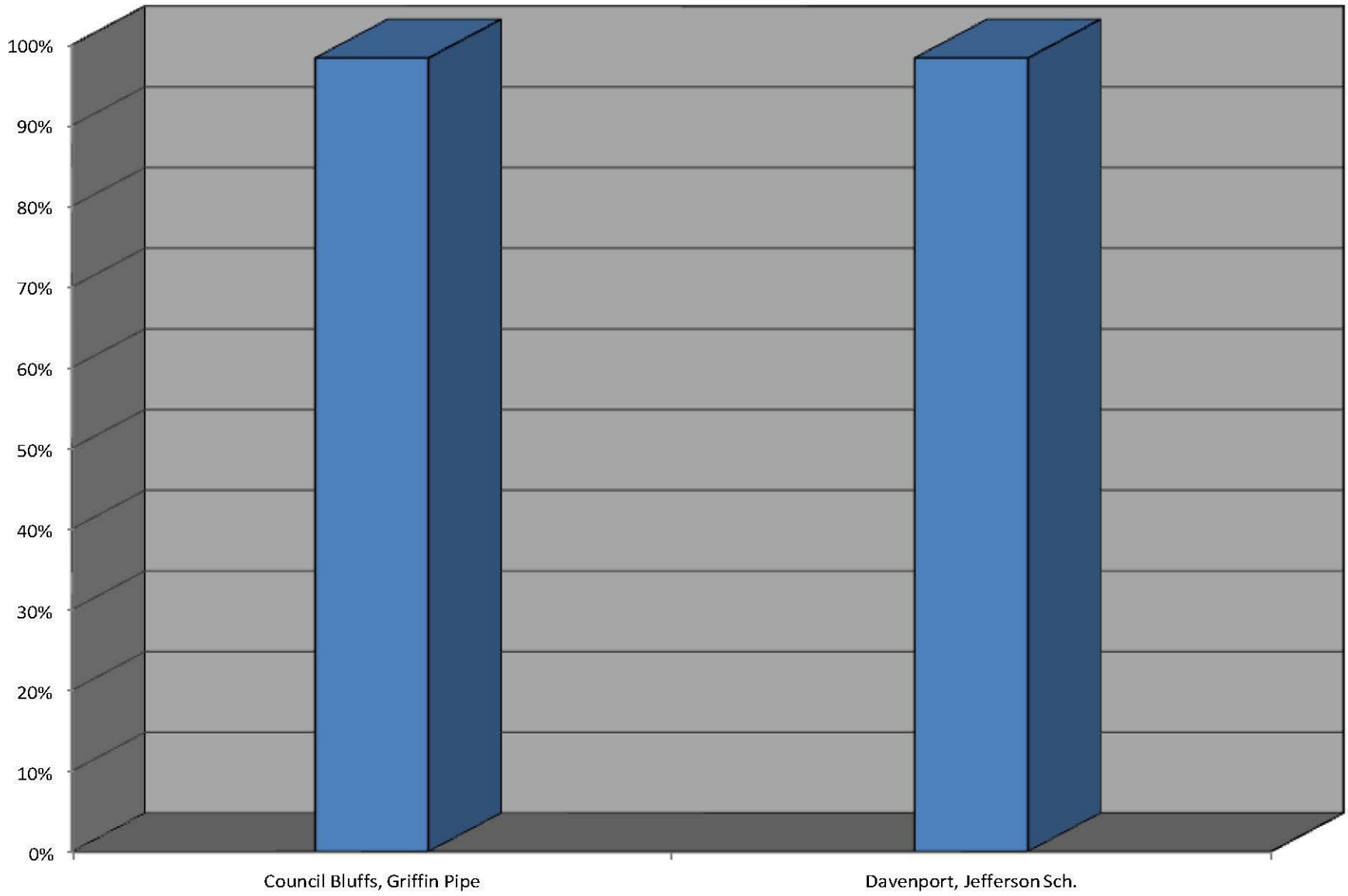
Lead Monitoring Locations



Comparison of 2011 Lead Data with the National Ambient Air Quality Standard



Data Completeness



Additional Chart Information

Listed below is additional information that may be useful in interpreting the charts contained in this review

Ozone

Comparison of 2011 Ozone Data with National Ambient Air Quality Standards

This chart shows the highest eight hour ozone average (expressed as a percentage of the 76 ppb eight-hour NAAQS) for each ozone monitor operated in 2011. The National Ambient Air Quality Standard for ozone was changed from 85 ppb to 76 ppb in May of 2008.

Data Completeness

This chart shows the total number of valid ozone monitoring days (expressed as a percentage of the total number of days in the ozone season) for each ozone monitor operated in 2011. According to EPA guidelines, an ozone monitoring day is considered valid if at least 75% of the 24 8-hour averages for the day are valid. An 8-hour average is valid if at least 75% of the hourly average values for the 8-hour period are available. In the event that less than 75% of the 8-hour averages are available, a day is also counted as valid if the daily maximum 8-hour average for that day exceeds the NAAQS (≥ 76 ppb). Ozone season runs from April through October; this amounts to 214 possible sampling days. An ozone monitor that recorded data for all 214 days of the season would have a data capture rate of 100%.

PM_{2.5}

Comparison of 2011 PM_{2.5} Data with National Ambient Air Quality Standards

This chart shows the highest 24 hour value (expressed as a percentage of the 35.5 $\mu\text{g}/\text{m}^3$ 24-hour NAAQS), and the annual average (expressed as a percentage of the 15.05 $\mu\text{g}/\text{m}^3$ annual NAAQS) for each PM_{2.5} monitor operated in 2011.

Data Completeness

This chart shows the fraction of scheduled sampling days for each PM_{2.5} monitor operated in 2011, where a valid PM_{2.5} sample was collected. During 2011, PM_{2.5} samplers in Iowa were scheduled to operate at a sampling frequency of either one sample every third day (121 scheduled samples) or one sample every day (365 scheduled samples). The sampling frequency of each monitor is indicated by the color of the bar.

PM₁₀

Comparison of 2011 PM₁₀ Data with National Ambient Air Quality Standards

This chart shows the highest 24 hour value (expressed as a percentage of the 155 $\mu\text{g}/\text{m}^3$ 24-hour NAAQS) for each PM₁₀ monitor operated in 2011.

Data Completeness

This chart shows the fraction of scheduled sampling days in 2011, for each PM₁₀ monitor operated in 2011, where a valid PM₁₀ sample was collected. During 2011, PM₁₀ samplers in Iowa were scheduled to operate at a frequency of one sample every third day (121 scheduled samples), one sample every other day (183 scheduled samples), or one sample every day (365 scheduled samples). The sampling frequency of each monitor is indicated by the color of the bar in the chart.

Sulfur Dioxide

Comparison of 2011 Sulfur Dioxide Data with National Ambient Air Quality Standards

This chart shows the highest 1 hour value (expressed as a percentage of the 75.5 ppb 1 hour NAAQS), and highest 3 hour value (expressed as a percentage of the 0.55 ppm 3 hour NAAQS) for each sulfur dioxide monitor operated in Iowa in 2011.

Data Completeness

This chart shows the total number of hourly sulfur dioxide values (expressed as a percentage of the total number of hours in 2011) for each sulfur dioxide monitor that operated in 2011. A sulfur dioxide monitor that recorded data for all 8760 hours during 2011 would have a data capture rate of 100%.

Carbon Monoxide

Comparison of 2011 Carbon Monoxide Data with National Ambient Air Quality Standards

This chart shows the highest 1 hour value (expressed as a percentage of the 35.5 ppm 1 hour NAAQS) and the highest 8 hour value (expressed as a percentage of the 9.5 ppm 8 hour NAAQS) for each carbon monoxide monitor operated in 2011.

Data Completeness

This chart shows the total number of hourly carbon monoxide values (expressed as a percentage of the total number of hours in 2011). A carbon monoxide monitor that recorded data for all 8760 hours during 2011 would have a data capture rate of 100%.

Nitrogen Dioxide

Comparison of 2011 Nitrogen Dioxide Data with National Ambient Air Quality Standards

This chart shows the maximum 1 hour value (expressed as a percentage of the 100.5 ppb 1 hour NAAQS), and the annual average (expressed as a percentage of the 0.0535 ppm annual NAAQS) for each nitrogen dioxide monitoring site that operated in 2011.

Data Completeness

This chart shows the total number of hourly nitrogen dioxide values (expressed as a percentage of the total number of hours in 2011). A nitrogen dioxide monitor that recorded data for all 8760 hours during 2011 would have a data capture rate of 100%.

Lead

Comparison of 2011 Lead Data with National Ambient Air Quality Standards

This chart shows the maximum three month average (expressed as a percentage of the 0.155 $\mu\text{g}/\text{m}^3$ annual NAAQS) for each lead monitoring site that operated in 2011.

Data Completeness

This chart shows the fraction of scheduled sampling days for each lead monitor operated in 2011, where a valid lead sample was actually collected. During 2011, lead samplers in Iowa were scheduled to operate at a one in three day sampling frequency (121 scheduled samples) or one in six day sampling frequency (61 scheduled samples).