

State of Illinois
Ambient Air Monitoring
2024 Network Plan

Illinois Environmental Protection Agency

Bureau of Air

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Introduction

In 1970, Congress enacted the Clean Air Act (CAA), empowering the United States Environmental Protection Agency (USEPA) to develop and implement National Ambient Air Quality Standards (NAAQS) for pollutants shown to threaten human health.

NAAQS exist for six criteria pollutants – carbon monoxide (CO), ozone (O₃), lead (Pb), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), and particulate matter (PM). Particulate matter is measured both with a diameter less than or equal to 10 micrometers (PM₁₀) and a diameter less than or equal to 2.5 micrometers (PM_{2.5}). There are primary and secondary NAAQS. Primary standards protect public health, whereas secondary standards protect public welfare including the environment.

The Illinois operates an air monitoring network that includes monitors for the six criteria pollutants: CO, O₃, Pb, NO₂, SO₂, and PM. The Illinois air monitoring network meets or, in most cases, exceeds the applicable minimum network requirements.

A predominant goal of the air monitors within Illinois' network is to collect data with which to assess compliance with the NAAQS. A listing of these NAAQS can be found at <https://www.epa.gov/criteria-air-pollutants/naaqs-table>.

Illinois has designed its ambient air monitoring network to accomplish more than this primary goal, including to provide timely air pollution data to the public, support compliance with ambient air quality standards and emissions strategy development, and support air pollution research studies. Data gathered from the Illinois EPA's monitoring network is used to produce a daily Air Quality Index (AQI) report, compile daily air quality forecast reports, support short- and long-term health risk assessments, identify localized health concerns, and track long-term trends in air quality that could potentially threaten Illinois citizen's quality of life.

Monitor siting takes into consideration: peak (the highest concentration of pollution in a given area), population (presence of pollutants in areas with high population densities), sources (pollution resulting from significant sources or source categories), background (general pollutant levels), and transport (extent of regional pollutant transport between populated areas). Federal regulations prescribe requirements for monitor and probe siting to ensure that the ambient air quality data is accurately representative. The criteria for the placement and operation of each monitor and probe vary. Site surveys ensure that each requirement is satisfied.

Federal regulations require each State to submit to USEPA an air monitoring network plan annually for the prospective year. Additionally, a five-year network assessment must be completed by USEPA Region 5 monitoring organizations. The last five-year network assessment was completed in 2020 and found the criteria pollutant monitoring network was adequate in meeting USEPA's minimum criteria. The next network assessment will be completed in 2025. The annual network plans take into consideration findings of these assessments. The annual network plan provides a description of the monitoring network for each

criteria pollutant including proposed changes. The air monitoring network plan is subject to public review and comment prior to its submission to the USEPA.

Monitoring Designations

The following designations describe the various types of monitors at the sites within Illinois' air monitoring network:

- **NCore** - National Core multi-pollutant monitoring station. Illinois is required by federal regulations to operate one NCore site, which includes monitors for CO, nitric oxide/reactive nitrogen (NO/NO_y), SO₂, O₃, speciated PM_{2.5}, PM_{2.5}, PM_{10-2.5}, wind speed, wind direction, relative humidity, and ambient temperature. Illinois operates an NCore site in Northbrook and provides support for the federal rural NCore site located in Bondville measuring PM_{2.5}.
- **Near-road** - Placed near busy roadways, near-road sites measure hourly concentrations of NO₂ and sometimes CO or PM_{2.5} in urban areas. Illinois EPA operates two near-road locations, one in Chicago and one in Lansing. The Lansing near-road location began operating off the Kingery Expressway on March 1, 2019. The Chicago near-road location, along the Kennedy Expressway, began operating July 26, 2019.
- **PAMS** - Photochemical Assessment Monitoring Station. In addition to monitoring of criteria pollutants, Illinois also participates in a regional Photochemical Assessment Monitoring Station (PAMS) network in the Chicago MSA. These sites are dedicated to obtaining more information about ozone and its precursors. The Illinois sites participating in the 2023 regional PAMS network will include enhanced monitoring in Schiller Park as well as regulatorily-required monitoring in Northbrook. Illinois' regional PAMS sites will collect and monitor some or all of the following: speciated volatile organic compounds (VOCs), carbonyls, NO₂, NO/NO_y, O₃, CO, and meteorological data in order to monitor potential threats of nonattainment. Required PAMS meteorological data that are not part of the NCore requirements are: atmospheric pressure, precipitation, solar radiation, and ultra-violet radiation.
- **SLAMS** - State or Local Ambient Monitoring Station. SLAMS monitoring is for comparison to the NAAQS.
- **SPM** - Special Purpose Monitor. Monitoring in an agency's monitoring network that the agency has designated as a special purpose monitor station in its annual monitoring network plan and in the AQS, does not count when showing compliance with the minimum requirements for the number and siting of monitors of various types. Any SPM operated by an air monitoring agency must be included in the periodic assessments and annual monitoring network plan.

Siting and operation, including collocation requirements, of each monitor meets the requirements of Part 58 Appendices A, B, C, D, and E.

Monitoring Objectives

Monitoring objectives describe the various purposes of the monitors within Illinois' air monitoring network:

- **General Concentration (Background)** - These sites are positioned to measure the general background concentration of pollutants in an area.
- **Highest Concentration (Highest Conc.)**- These sites are located to determine the expected peak concentrations of pollutants in an area.
- **Max O3 Concentration (Highest Conc.)**- These sites are located to determine the expected peak O3 concentrations of pollutants in an area.
- **Population** - Located in areas categorized by high population density, these sites are used to determine the typical pollutant concentrations in a specific area.
- **Regional Transport (Transport)** - These sites are located to monitor the level of regional pollution transport from one area to the next.
- **Source-Oriented Source (Source)** - As certain sources contribute to pollution more significantly than others, source-oriented monitors are placed in order to identify the impact of these sources.

Spatial Scale Designations

Sites are not only characterized by type and by the objective, but also according to spatial scale. These scales are used to categorize siting areas and link them with the specific monitoring objectives. Spatial scales as outlined by the USEPA include:

- **Micro** - Concentrations in air volumes associated with area dimensions ranging from several meters up to about 100 meters.
- **Middle** - Concentrations typical of areas up to several city blocks in size with dimensions ranging from about 100 meters to 0.5 kilometer.
- **Neighborhood** - Concentrations within some extended area of the city that has relatively uniform land use with dimensions in the 0.5 to 4.0 kilometers range.
- **Urban** - Overall, citywide conditions with dimensions on the order of four to 50 kilometers.
- **Regional** - A rural area of reasonably homogenous geography without large sources, extending from tens to hundreds of kilometers.

Sampling Methodology

Every ambient air monitor can be classified by a specific method number which identifies sample collection and analysis methods. A comprehensive list of these numbers can be found at: <https://www.epa.gov/aqs/aqs-code-list>.

Federal regulations specify that monitoring methods used for comparison to the NAAQS must be Federal Reference or Equivalent Methods (FRM or FEM). Almost all monitors listed in Illinois' network plan use either FRM or FEM with only a few exceptions. Locations hosting continuous PM_{2.5} samplers solely for AQI purposes are not operated as FRM or FEM. The long-term goal, as resources permit, is to phase out these solely AQI PM_{2.5} samplers in favor of FEM samplers capable of both meeting NAAQS and AQI status.

Quality Assurance

Guidance, policies, and federal regulations establish quality system requirements for data submitted to USEPA. Currently, there are two Primary Quality Assurance Organizations under this network plan – the Illinois EPA and the Cook County Department of Environment and Sustainability (CCDES).

Proposed Network for 2024

Ozone

Illinois is required to operate a minimum of 14 O₃ monitoring sites across the state to meet SLAMS O₃ requirements. NCore requires the operation of one of these O₃ monitors year-round. Additionally, 19 other O₃ monitors are operated for purposes of supporting the basic monitoring objectives of public data reporting, air quality mapping, compliance, enhanced monitoring, and supporting air pollution research studies. In 2023, Illinois operated 33 O₃ monitors. Additionally, USEPA operated two ozone monitors as part of the Clean Air Status and Trends Network (CASTNET). In 2022 there were three CASTNET O₃ monitors, but one location, 17-119-9991 Highland (also known as Alhambra), unexpectedly ended due to site owners wishing to repurpose the property. USEPA is looking into the possibility of relocating to a new site with similar a purpose and objective.

Minimum O₃ Monitoring Sites Requirement (CFR 40 Part 58):

MSA population^{1,2}	Most recent 3-year design value concentrations \geq85% of any O₃ NAAQS³	Most recent 3-year design value concentrations $<$85% of any O₃ NAAQS^{3,4}
>10 million	4	2
4-10 million	3	1
350,000-<4 million	2	1
50,000-<350,000 ⁵	1	0

¹ Minimum monitoring requirements apply to the Metropolitan statistical area (MSA).

² Population based on latest available census figures.

³ The ozone (O₃) National Ambient Air Quality Standards (NAAQS) levels and forms are defined in [40 CFR part 50](#).

⁴ These minimum monitoring requirements apply in the absence of a design value.

⁵ Metropolitan statistical areas (MSA) must contain an urbanized area of 50,000 or more population.

Illinois O3 Sites by MSA population requirements:

MSA/(μSA) Name	Population (Census Bureau 2022 est.)	Maximum 2020-2022 8-Hour DV as % of Standard (70 ppb)	Minimum Required Sites	IL Sites in MSA
Chicago-Naperville-Elgin, IL-IN-WI	9,441,957	106%*	3	15**
St. Louis, MO-IL ***	2,801,319	101%*	2	6
Peoria, IL	396,466	93%	2	2
Davenport-Moline-Rock Island, IA-IL	379,374	90%*	2	1**
Rockford, IL	335,342	94%	1	1
Champaign-Urbana, IL	223,265	93%	1	2
Springfield, IL	206,655	89%	1	1
Bloomington, IL	171,141	96%	1	1
Ottawa, IL	146,478	-	0	0
Carbondale-Marion, IL	132,693	-	0	0
Kankakee, IL	106,074	-	0	0
Decatur, IL	101,483	91%	1	1
Quincy, IL-MO (μSA)	74,616	87%	0	1
Effingham, IL (μSA)	34,325	90%	0	1
Outside MSA/(μSA) (Stockton, Knight Prairie, Houston)	N/A	93%	0	3

*Out of state monitors not included in calculation.

**Required sites met or further exceeded by monitors run outside of Illinois boundaries, but within MSA/μSA.

*** Missouri DNR works with EPA Region 7 to verify St. Louis MSA meets monitoring requirements. In doing so, Missouri DNR annually contacts Illinois EPA to make sure any changes in monitoring do not result in requirement not being met.

The trailer at the Zion monitoring location is showing age and may need replaced in the not-too-distant future. A second option under consideration is to move to a nearby Illinois DNR owned building (see Figure 1 for current site location and potential location if trailer vacated). If the site were to be moved to the Illinois DRN building, Illinois EPA will seek approval from USEPA to keep the same Air Quality System Identifier and tie the historical data to the new site given the close proximity. The only anticipated change to Zion monitoring if the site is moved is an update to the GPS coordinates. Final details will depend on feedback and approval from USEPA Region 5.

Figure 1: Zion Current Trailer, and Possible relocate to Illinois DNR building



Fine Particulate Matter (PM_{2.5})

Illinois is required to operate a minimum of 11 FRM or FEM PM_{2.5} monitors. NCore requires one continuous and one filter based PM_{2.5} monitor. One near-road monitoring site with one FRM or FEM PM_{2.5} monitor is also required. Illinois must operate at least one FRM or FEM PM_{2.5} site monitoring regional background and at least one FRM or FEM PM_{2.5} site to monitor regional transport. Additionally, 23 other PM_{2.5} monitoring sites are operated for purposes of supporting the basic monitoring objectives of public data reporting, air quality mapping, compliance, and supporting air pollution research studies. In 2023, 34 PM_{2.5} sites were operating in Illinois. In 2024, the number of PM_{2.5} sites will not change.

Minimum PM2.5 Monitoring Sites Requirement (CFR 40 Part 58):

MSA population^{1,2}	Most recent 3-year design value concentrations \geq85% of any PM_{2.5} NAAQS³	Most recent 3-year design value concentrations $<$85% of any PM_{2.5} NAAQS^{3,4}
>1 million	3	2
500,000-1,000,000	2	1
50,000- $<$ 500,000 ⁵	1	0

¹ Minimum monitoring requirements apply to the Metropolitan statistical area (MSA).

² Population based on latest available census figures.

³ The PM_{2.5} National Ambient Air Quality Standards (NAAQS) levels and forms are defined in [40 CFR part 50](#).

⁴ These minimum monitoring requirements apply in the absence of a design value.

⁵ Metropolitan statistical areas (MSA) must contain an urbanized area of 50,000 or more population.

Illinois PM2.5 Sites by MSA population requirements:

MSA Name	Population (Census Bureau 2022 est.)	Maximum 2022 Annual DV as % of Standard (12 μg/m³)	Maximum 2022 Daily DV as % of Standard (35 μg/m³)	Minimum Required Sites	IL Sites in MSA
Chicago-Naperville-Elgin, IL-IN-WI	9,441,957	88%*	74%*	3	18**
St. Louis, MO-IL	2,801,319	83%*	66%*	2	6***
Peoria, IL	396,466	78%	62%	0	1
Davenport-Moline-Rock Island, IA-IL	379,374	73%*	60%*	0	1
Rockford, IL	335,342	76%	64%	0	1
Champaign-Urbana, IL	223,265	65%	51%	0	2****
Springfield, IL	206,655	69%	55%	0	1
Bloomington, IL	171,141	74%	58%	0	1
Ottawa, IL	146,478	-	-	0	0
Carbondale-Marion, IL	132,693	-	-	0	0
Kankakee, IL	106,074	-	-	0	0
Decatur, IL	101,483	77%	57%	0	1
Outside MSA/(μ SA) (Knight Prairie, Houston)	N/A	74%	53%	1	2

*Out of state monitors not included in calculation.

** Addition PM2.5 NCore site requirement met at Northbrook (1 NCore site with 2 required PM2.5 monitors) and addition PM2.5 Near-Road requirement met at Kingery site and 1 source monitor included in this total.

*** Missouri DNR works with EPA Region 7 to verify St. Louis MSA meets monitoring requirements including PM2.5 near-road requirement. In doing so, Missouri DNR also annually contacts Illinois EPA to make sure any changes in monitoring do not result in requirement not being met. Included in total is 1 source monitor.

**** Of the 2 listed sites 1 site meets PM2.5 regional transport monitoring requirement.

USEPA will be providing funding to convert the remaining FRM PM_{2.5} monitors in the network to continuous FEM monitors. This funding will also help convert FRM PM_{2.5} monitors operated by Cook County Department of Environment and Sustainability to continuous FEM monitors. The sites that currently are planned to have FEM monitors between 2023 and 2024 are listed in

Table 3. At the following locations a Teledyne T640 may replace filter-based FRMs: Alsip, Alton, Aurora, Champaign, Chicago - Springfield Pumping Station, Cicero, Elgin, Granite City – Gateway Medical, Lawndale (ComEd), Mayfair, Summit, and Wood River. At the following locations a Teledyne T640x may replace filter-based FRMs: Chicago – George Washington High School, Lyons Township, and Granite City - 23rd & Madison.

As part of the conversion from FRM to more FEM PM2.5 monitoring, the Champaign site upgrade will require a move to a location with more reliable power. Multiple options are still under consideration with the most likely and closest option being a move across the street. If the site were to be moved, Illinois EPA will seek approval from USEPA to keep the same Air Quality System Identifier and tie the historical data to the new depending on closeness of proximity to the existing site. Besides the change from FRM to continuous FEM monitoring, the only anticipated change to monitoring for Champaign PM2.5 if the site is moved is an update to the GPS coordinates. Final details will depend on the outcome of seeking an alternate location and approval from USEPA Region 5.

Sulfur Dioxide

Illinois is required to operate six SO₂ monitors. One SO₂ monitor is required at each of the Northbrook and Bondville NCore sites to fulfill NCore requirements (The Illinois State Water Survey operates the Bondville SO₂ monitor). Additionally, four SO₂ monitoring sites are operated in Illinois' network supporting the basic monitoring objectives of public data reporting, air quality mapping, compliance, and supporting air pollution research studies. SO₂ data requirements established by USEPA require either modeling or monitoring to characterize current air quality in areas with large sources of SO₂ (40 CFR 51 Subpart BB). Primient – Primary Products Ingredients (formerly known as Tate & Lyle) is contracting with Environmental Resources Management, Inc. operating two SO₂ monitors under this rule. A total of 12 SO₂ monitors were operated in Illinois in 2023. In 2024, the number of SO₂ sites is expected to remain at twelve.

Nitrogen Dioxide

Illinois is required to operate two near-road NO₂ monitors. In addition to area-wide monitors, federal regulations require the Regional Administrator to collaborate with each State in determining the need for additional NO₂ monitoring requirements beyond the minimum, with a primary focus on siting monitors in locations to protect susceptible and vulnerable populations. In Illinois, two NO₂ monitoring sites are designated, East St. Louis and ComEd, as susceptible and vulnerable population monitoring sites. Illinois operates one NO/NO_y monitor in Northbrook. Additionally, the Illinois State Water Survey operates an NO/NO_y monitor at the rural NCore site in Bondville.

In 2023, the monitoring network consisted of eight NO₂ monitoring sites. Two NO/NO_y monitors will continue to be operated by Illinois EPA and the State Water Survey. In 2024, the number of NO₂ sites is expected to remain at eight.

Carbon Monoxide

Illinois must operate one CO monitor in conjunction with one near-road NO₂ monitor. In addition, it must operate one CO monitor at each NCore site, Northbrook and Bondville. (The Illinois State Water Survey operates the Bondville CO monitor at the rural NCore site.) In 2023, three CO monitors were in operation. The number of CO monitors is not expected to change in 2024.

Particulate Matter (PM₁₀)

Illinois must operate three PM₁₀ monitors to satisfy MSA requirements. One PM₁₀ monitor must also be operated for NCore purposes. Additionally, Illinois operates one PM_{10-2.5} (PM coarse) monitor at the Northbrook location to fulfill NCore requirements. The National Park Service operates one PM₁₀ monitor at the Bondville NCore location. In 2023, Illinois EPA operated a total of four PM₁₀ monitoring sites. In 2024, Illinois EPA will continue to operate four PM₁₀ monitoring sites and one PM_{10-2.5} monitoring site. As discussed in the PM_{2.5} section, due to funding provided by USEPA, filter or tape-based PM₁₀ monitors may be replaced with continuous FEM T640x monitors. The location of T640x monitors would include: Chicago – George Washington High School, Lyons Township, and Granite City - 23rd & Madison.

Lead

Illinois is required to operate source-oriented monitors near facilities emitting 0.5 tons/year of lead that also have maximum lead concentrations in ambient air in excess of 50 percent of the NAAQS unless a waiver for that site has been approved. Lead monitoring waivers are currently in place with USEPA for Kincaid Generation Power Plant, Keystone Steel & Wire Corporation, Sterling Steel Corporation, and Gateway Energy and Coke Company. The waivers were approved by USEPA in 2018 for Keystone Steel and Sterling Steel, in 2020 for Gateway Energy and Coke Company, and in 2022 for Kincaid. Waivers must be renewed every five years. Modeling and/or monitoring results for these facilities demonstrated that they do not have the potential to contribute to a maximum lead concentration greater than 50 percent of the NAAQS. Gunite Corporation will no longer require a waiver due to a decrease in emission below a level that would require a waiver.

In 2024, Illinois EPA will operate three lead monitoring sites - one located in Granite City and two in Chicago (Perez Elementary School and George Washington High School).

Lead Monitoring Waiver Request – Keystone Steel & Wire and Sterling Steel

Illinois EPA currently has a lead monitoring waiver in place with USEPA for Keystone Steel & Wire Corporation in Peoria, Illinois and Sterling Steel in Sterling, Illinois. USEPA approved waivers for these facilities in 2018. Illinois EPA is requesting that USEPA renew the existing waivers for Keystone and Sterling as lead emissions from these sites do not contribute to lead concentrations in excess of 50 percent of the NAAQS.

According to 40 CFR Part 58 Appendix D 4.5(ii), if a “State...agency can demonstrate the Pb source will not contribute to a maximum Pb concentration in ambient air in excess of 50 percent of the NAAQS (based on historical monitoring data, modeling, or other means,” then the Regional Administrator may waive the requirement to monitor a Pb source emitting greater than or equal to 0.5 tons per year.

The Modeling Unit of the Illinois EPA’s Bureau of Air conducted modeling utilizing facility reported emissions from 2021 to demonstrate that the facilities qualify for lead monitoring waivers.

Keystone Steel & Wire Corporation

The Keystone facility is located in Peoria County and has a single source of lead emissions from its Electric Arc Furnace Melt Shop. In 2021, Keystone reported total annual lead emissions of 0.8208 tons per year.

The Modeling Unit analysis utilized it’s 2009 Illinois Lead Monitoring Plan modeling demonstration as the baseline for the 2023 modeling analysis. Illinois EPA retained the same building configurations and receptor grid in this analysis but updated release points and meteorological data. In the prior demonstration, a series of volume sources represented the Melt Shop’s lead emissions. At that time the facility was venting all lead emissions to exhaust vents connected to the Melt Shop’s baghouses. Since then, the facility has constructed a single stack designed to vent all exhaust points from the Melt Shop. This change was reflected in the modeling demonstration by representing all lead generating activities as a singular point source.

The 2023 modeling demonstration utilized the maximum reported hourly emission rate of 0.3611 pounds per hour for the Melt Shop. The modeling demonstration conservatively assumed the facility will operate for all hours of the year (8,760 hours). This equates to modeled annual emissions of 1.5816 tpy. This varies from the reported annual emissions, which were calculated based on the facility reported operating hours. The table below displays the difference in modeled emissions from the facility reported emissions.

Process	2021 Facility Reported			Modeled Emissions
	Operating Hours	Hourly Emissions	Annual Emissions	(based on 8,760 hrs)
		(lb/hr)	(tpy)	(tpy)
Melt Shop	4,546	0.3611	0.8208	1.5816

The demonstration resulted in a maximum rolling three-month average concentration of 0.0063 µg/m³. This value demonstrates that Keystone will not contribute to a maximum lead concentration greater than 50 percent of the NAAQS.

Sterling Steel

The Sterling Steel facility is located in Whiteside County and has four sources of lead emissions. In 2022, Sterling conducted stack testing that showed previously estimated and reported lead emissions were considerably higher than actual emissions measured by the stack testing. With the corrected emissions factor, the facility reported total annual lead emissions of 0.0089 tons in 2021.

The Modeling Unit analysis again utilized its 2009 Illinois Lead Monitoring Plan modeling demonstration as the baseline for the 2023 modeling analysis. The same building configurations and receptor grid were retained in the current analysis, but release points and meteorological data were updated. Since the prior demonstration, a few sources are no longer in operation or do not generate lead emissions. The facility no longer operates the Electric Arc Furnace (“EAF”) #7 or the Ladle Metallurgical Furnace (“LMF”) #1. The facility currently operates EAF #8, LMF #2, an EAF dust handling system, and a billet caster. This modeling analysis included two point sources and two groups of volume sources to represent lead-generating activities across the facility.

The 2023 modeling demonstration utilized the maximum reported hourly emission rates for each source, as follows: 0.0056 pounds per hour for EAF #8, 0.001 pounds per hour for the Billet Caster, 0.0004 pounds per hour for LMF #2, and 0.0013 pounds per hour for the EAF Dust Handling System. The modeling demonstration conservatively assumed that each process will operate for all hours of the year (8,760 hours). This equates to modeled annual emissions of 0.0364 tpy. This varies from the reported annual emissions, which were calculated based on the facility reported operating hours. The table below displays the difference in modeled emissions from the facility reported emissions.

Process	2021 Facility Reported			Modeled Emissions
	Operating Hours	Hourly Emission Rate	Annual Emissions	(based on 8,760 hrs)
		(lb/hr)	(tpy)	(tpy)
EAF Dust Handling System	352.5	0.0013	0.0002	0.0057
Electric Arc Furnace (EAF 8)	2,313.2	0.0056	0.0065	0.0245
Billet Caster	2,941.2	0.001	0.0015	0.0044
Ladle Metallurgy Facility (LMF2)	3,087	0.0004	0.0006	0.0018
		Total	0.0089	0.0364

The modeling resulted in a maximum rolling three-month average concentration of 0.0321 $\mu\text{g}/\text{m}^3$. This value demonstrates that Sterling will not contribute to a maximum lead concentration greater than 50 percent of the NAAQS.

Photochemical Assessment Monitoring

Illinois was required to collect and report additional PAMS measurements at the Northbrook monitoring location by June 1, 2021. Existing year round NCore monitoring at Northbrook that also meets PAMS requirements include hourly O₃, NO/NO_y, ambient temperature, relative humidity, atmospheric pressure, vector wind speed, and vector wind direction. In 2021, Illinois added to the existing NCore/PAMS measurements the following items:

Three eight-hour carbonyls samples on a one-in-three day schedule, true nitrogen dioxide (NO₂), hourly precipitation, solar radiation, ultraviolet radiation, averaged mixing height, and hourly average speciated volatile organic compounds (gas chromatograph). This additional PAMS monitoring is expected to continue to be operational for the PAMS 2024 season. At a minimum, Illinois will run these additional items during the PAMS season months of June, July, and August.

Table 1: Illinois Monitoring Network by Criteria Pollutant

AQS ID	County	City	Address	Site Description	Owner	CO	NO ₂	NOy	SO ₂	O ₃	PM ₁₀ / Coarse	PM _{2.5}	Pb
17-001-0007	Adams	Quincy	1301 S. 48th St	John Wood Community College	IEPA					X			
17-019-0006	Champaign	Champaign	904 N. Walnut	Ameren Substation Platform	IEPA							X	
17-019-0007	Champaign	Thomasboro	North Thomas St.	Resident's Building	IEPA					X			
17-019-1001	Champaign	Bondville	Twp. Rd. 500 E.	State Water Survey Climate Station	SWS	X		X	X				
17-019-1001	Champaign	Bondville	Twp. Rd. 500 E.	State Water Survey Climate Station	IEPA							X	
17-019-1001	Champaign	Bondville	Twp. Rd. 500 E.	CASTNET Station	USEPA					X			
17-019-1001	Champaign	Bondville	Twp. Rd. 500 E.	IMPROVE Station	NPS						PM ₁₀ / Coarse		
17-031-0001	Cook	Alsip	4500 W. 123rd St.	Village Garage	CCDES					X		X	
17-031-0022	Cook	Chicago	3535 E. 114th St	Washington High School	CCDES						X*	X*	X
17-031-0032	Cook	Chicago	3300 E. Cheltenham Pl.	South Water Filtration Plant	CCDES					X			
17-031-0052	Cook	Chicago	4850 Wilson Ave.	Mayfair Pump Station	CCDES							X	
17-031-0057	Cook	Chicago	1745 N. Springfield Ave.	Springfield Pump Station	CCDES							X	
17-031-0076	Cook	Chicago	7801 Lawndale	Com Ed Maintenance Bldg. Trailer	CCDES		X		X	X		X	
17-031-0110	Cook	Chicago	1241 19th St.	Perez Elementary School	CCDES								X
17-031-1003	Cook	Chicago	6545 W. Hurlbut St.	Taft High School	CCDES					X			
17-031-0119	Cook	Lansing	Kingery Expy & Torrence Ave.	Kingery Near-road #1	IEPA	X	X					X	
17-031-0219	Cook	Chicago	Kennedy Expy & W. Webster Ave.	Kennedy Near-road #2	IEPA		X						
17-031-1016	Cook	Lyons Township	50th St. & Glencoe	Village Hall	IEPA						X	X	
17-031-1601	Cook	Lemont	729 Houston	Lemont Trailer	CCDES				X	X			
17-031-3103	Cook	Schiller Park	4743 Mannheim Rd.	Schiller Park Trailer	IEPA		X			X		X	

AQS ID	County	City	Address	Site Description	Owner	CO	NO ₂	NOy	SO ₂	O ₃	PM ₁₀ / Coarse	PM _{2.5}	Pb
17-031-3301	Cook	Summit	60th St. & 74th Ave.	Graves Elementary School	CCDES							X	
17-031-4002	Cook	Cicero	1820 S. 51st Ave.	Cicero Trailer	CCDES		X			X			
17-031-4007	Cook	Des Plaines	9511 W. Harrison St.	Regional Office Bldg.	IEPA					X		X	
17-031-4201	Cook	Northbrook	750 Dundee Rd.	Northbrook Water Plant	IEPA	X	X	X	X	X	PM ₁₀ / Coarse	X	
17-031-6005	Cook	Cicero	13th St. & 50th Ave.	Liberty School	CCDES							X	
17-031-7002	Cook	Evanston	531 E. Lincoln	Evanston Water Plant	IEPA					X			
17-043-4002	DuPage	Naperville	400 S. Eagle St.	City Hall	IEPA							X	
17-043-6001	DuPage	Lisle	Route 53	Morton Arboretum	IEPA					X			
17-049-1001	Effingham	Effingham	10421 N. US Hwy. 45	Central Grade School	IEPA					X			
17-065-0002	Hamilton	Knight Prairie Twp	Route 14	Knight Prairie Trailer	IEPA					X		X	
17-083-0117	Jersey	Jerseyville	21965 Maple Summit Rd.	Jerseyville Trailer	IEPA					X		X	
17-085-9991	Jo Daviess	Stockton	10952 E. Parker Rd.	CASTNET Station	USEPA					X			
17-089-0003	Kane	Elgin	258 Lovell St.	McKinley School	IEPA							X	
17-089-0005	Kane	Elgin	665 Dundee Rd.	Larsen Junior High School	IEPA					X			
17-089-0007	Kane	Aurora	1240 N. Highland	Health Department	IEPA							X	
17-097-1007	Lake	Zion	Illinois Beach State Park	Zion Trailer	IEPA					X			
17-099-0007	La Salle	Oglesby	308 Portland Ave.	Oglesby Trailer	IEPA				X				
17-111-0001	McHenry	Cary	First St. & Three Oaks Rd.	Cary Grove High School	IEPA					X		X	
17-113-2003	McLean	Normal	Main & Gregory	Normal-ISU Physical Plant Trailer	IEPA					X		X	
17-115-0013	Macon	Decatur	2200 N. 22nd St.	Decatur Trailer	IEPA				X	X		X	
17-115-0217	Macon	Decatur	Folk & E. Marietta Sts.	Primient Northwest	ERM Inc.				X				

AQS ID	County	City	Address	Site Description	Owner	CO	NO ₂	NO _y	SO ₂	O ₃	PM ₁₀ / Coarse	PM _{2.5}	Pb
17-115-0317	Macon	Decatur	El Dorado St.	Primient Southeast	ERM Inc.				X				
17-117-0002	Macoupin	Nilwood	Heaton & Dubois	Nilwood Trailer	IEPA		X		X	X			
17-119-0120	Madison	Alton	2708 Edwards St.	Horace Mann School	IEPA					X		X	
17-119-0010	Madison	Granite City	15th & Madison	Air Products	IEPA								X
17-119-0024	Madison	Granite City	2100 Madison	Gateway Medical Center	IEPA							X	
17-119-1007	Madison	Granite City	23rd. & Madison	Fire Station # 1	IEPA						X	X	
17-119-0122	Madison	Maryville	8B Schiber Court	Village of Maryville	IEPA					X			
17-119-3007	Madison	Wood River	54 N. Walcott	Wood River Water Treatment Plant	IEPA				X	X		X	
17-119-9991 †	Madison	Highland	5403 State Rd. 160	CASTNET Station	USEPA					†			
17-143-0024	Peoria	Peoria	Hurlburt & MacArthur	Fire Station #8	IEPA					X			
17-143-0037	Peoria	Peoria	613 N.E. Jefferson	City Office Bldg.	IEPA							X	
17-143-1001	Peoria	Peoria Heights	508 E. Glen Ave.	Peoria Heights High School	IEPA					X			
17-157-0001	Randolph	Houston	Hickory Grove & Fallview	Houston Trailer	IEPA					X		X	
17-161-3002	Rock Island	Rock Island	32 Rodman Ave.	Rock Island Arsenal	IEPA					X		X	
17-163-0010	St. Clair	East St. Louis	13th & Tudor	ESTL Trailer	IEPA		X		X	X		X	
17-167-0012	Sangamon	Springfield	State Fair Grounds	Agriculture Bldg.	IEPA							X	
17-167-0014	Sangamon	Springfield	Illinois Building	State Fairgrounds Shelter	IEPA					X			
17-179-0004	Tazewell	Pekin	272 Derby	Pekin Fire Station #3	IEPA				X				
17-197-1002	Will	Joliet	Midland & Campbell Sts.	Pershing Elementary School	IEPA							X	
17-197-1011	Will	Braidwood	36400 S. Essex Rd.	Com Ed Training Ctr. Trailer	IEPA					X		X	
17-201-0118	Winnebago	Rockford	204 South 1 st St.	Fire Department Admin. Bldg.	IEPA							X	

AQS ID	County	City	Address	Site Description	Owner	CO	NO ₂	NO _y	SO ₂	O ₃	PM ₁₀ / Coarse	PM _{2.5}	Pb
17-201-2001	Winnebago	Loves Park	1405 Maple Ave.	Maple Elementary School	IEPA					X			
					IEPA	2	6	1	7	27	4	27	1
					CCDES	0	2	0	2	6	0	7	2
					NPS/SWS	1	0	1	1	0	1	0	0
					ERM Inc.	0	0	0	2	0	0	0	0
					USEPA	0	0	0	0	2	0	0	0
					Total	3	8	2	12	35	5	34	3

* Indicates continuous PM10 monitor run by Illinois EPA at a CCDES site with PM2.5 FRM run by CCDES. Once the PM10 BAM 1020 is upgraded to a T640x, this monitor run by CCDES will also meet PM2.5 FRM/FEM requirements for the site.

† Indicates USEPA CASTNET site terminated end of 2022 with USEPA looking into possibility of establishing an alternate location

Table 2: Ozone Sites

AQS ID	POC	Site	Latitude Longitude	Area Represented	Primary Objective	Secondary Objective	Spatial Scale	Station Type	Monitor Type	Sampling Schedule
17-001-0007	1	Quincy	+39.91540937 -91.33586832	Quincy, IL-MO	Population	Max O3 Conc.	Urban	SLAMS	T400	Hourly/S
17-019-0007	1	Thomasboro	+40.244913 -88.188519	Champaign-Urbana, IL	Population	Max O3 Conc.	Urban	SLAMS	T400	Hourly/S
17-019-1001	1	Bondville	+40.052780 -88.372510	Champaign-Urbana, IL	Welfare Impacts	Transport	Regional	NCORE	49i	Hourly/Y
17-031-0001	1	Alsip	+41.6709919 -87.7324569	Chicago-Naperville-Elgin, IL-IN-WI	Population	N/A	Urban	SLAMS	Ecotech 187	Hourly/S
17-031-0032	1	South Water Filtration Plant	+41.75583241 -87.54534967	Chicago-Naperville-Elgin, IL-IN-WI	Population	Max O3 Conc.	Neighborhood	SLAMS	T400	Hourly/S
17-031-0076	1	Com Ed.	+41.75139998 -87.71348815	Chicago-Naperville-Elgin, IL-IN-WI	Population	N/A	Urban	SLAMS	Ecotech 187	Hourly/S
17-031-1003	2	Taft High School	+41.98433233 -87.7920017	Chicago-Naperville-Elgin, IL-IN-WI	Population	N/A	Urban	SLAMS	Ecotech 187	Hourly/S
17-031-1601	1	Lemont	+41.66812034 -87.99056969	Chicago-Naperville-Elgin, IL-IN-WI	Population	N/A	Urban	SLAMS	T400	Hourly/S
17-031-3103	2	Schiller Park	+41.96519348 -87.87626473	Chicago-Naperville-Elgin, IL-IN-WI	Population	N/A	Neighborhood	PAMS/SLAMS	T400	Hourly/S
17-031-4002	1	Cicero	+41.85524313 -87.7524697	Chicago-Naperville-Elgin, IL-IN-WI	Population	N/A	Neighborhood	SLAMS	Ecotech 187	Hourly/S
17-031-4007	1	Des Plaines	+42.06028469 -87.86322543	Chicago-Naperville-Elgin, IL-IN-WI	Population	N/A	Urban	SLAMS	T400	Hourly/S
17-031-4201	1	Northbrook	+42.13999619 -87.79922692	Chicago-Naperville-Elgin, IL-IN-WI	Population	NA	Urban	PAMS/NCORE	T400	Hourly/Y
17-031-7002	1	Evanston	+42.062053 -87.675254	Chicago-Naperville-Elgin, IL-IN-WI	Population	N/A	Neighborhood	SLAMS	T400	Hourly/S
17-043-6001	1	Lisle	+41.81304939 -88.0728269	Chicago-Naperville-Elgin, IL-IN-WI	Population	N/A	Urban	SLAMS	T400	Hourly/S
17-049-1001	2	Effingham	+39.06715932 -88.54893401	Effingham, IL	Population	N/A	Regional	SLAMS	T400	Hourly/S
17-065-0002	1	Knight Prairie	+38.08215516 -88.6249434	Mt Vernon, IL	Background	N/A	Regional	SLAMS	T400	Hourly/S
17-083-0117	1	Jerseyville	+39.101439 -90.344494	St Louis, IL-MO	Transport	Population	Urban	SLAMS	T400	Hourly/S
17-085-9991	1	Stockton	+42.2869 -89.9997	Stockton, IL	Welfare Impacts	Transport	Regional	SLAMS	49i	Hourly/S
17-089-0005	1	Elgin	+42.04914776 -88.27302929	Chicago-Naperville-Elgin, IL-IN-WI	Population	N/A	Urban	SLAMS	T400	Hourly/S
17-097-1007	1	Zion	+42.4675733 -87.81004705	Chicago-Naperville-Elgin, IL-IN-WI	Transport	Max O3 Conc.	Urban	SLAMS	T400	Hourly/S
17-111-0001	1	Cary	+42.22144166 -88.24220734	Chicago-Naperville-Elgin, IL-IN-WI	Population	N/A	Urban	SLAMS	T400	Hourly/S
17-113-2003	1	Normal	+40.51873537 -88.99689571	Bloomington-Normal, IL	Population	Max O3 Conc.	Urban	SLAMS	T400	Hourly/S

AQS ID	POC	Site	Latitude Longitude	Area Represented	Primary Objective	Secondary Objective	Spatial Scale	Station Type	Monitor Type	Sampling Schedule
17-115-0013	1	Decatur	+39.866933 -88.925452	Decatur, IL	Population	Max O3 Conc.	Urban	SLAMS	T400	Hourly/S
17-117-0002	1	Nilwood	+39.39607533 -89.80973892	St Louis, IL-MO	Transport	Population	Regional	SLAMS	T400	Hourly/S
17-119-0120	1	Alton	+38.901316 -90.146211	St Louis, IL-MO	Transport	Max O3 Conc.	Urban	SLAMS	T400	Hourly/S
17-119-0122	1	Maryville	+38.730263 -89.950053	St Louis, IL-MO	Population	N/A	Urban	SLAMS	T400	Hourly/S
17-119-3007	1	Wood River	+38.86066947 -90.10585111	St Louis, IL-MO	Population	N/A	Urban	SLAMS	T400	Hourly/S
17-143-0024	1	Peoria	+40.68742038 -89.60694277	Peoria, IL	Population	N/A	Neighborhood	SLAMS	T400	Hourly/S
17-143-1001	1	Peoria Heights	+40.74550393 -89.58586902	Peoria, IL	Population	Max O3 Conc.	Urban	SLAMS	T400	Hourly/S
17-157-0001	1	Houston	+38.17627761 -89.78845862	N/A	Background	N/A	Regional	SLAMS	T400	Hourly/S
17-161-3002	1	Rock Island	+41.51472697 -90.51735026	Davenport-Moline-Rock Island, IA-IL	Population	Max O3 Conc.	Neighborhood	SLAMS	T400	Hourly/S
17-163-0010	2	East St. Louis	+38.61203448 -90.16047663	St Louis, IL-MO	Population	N/A	Neighborhood	SLAMS	T400	Hourly/S
17-167-0014	1	Springfield	+39.831522 -89.640926	Springfield, IL	Population	Max O3 Conc.	Urban	SLAMS	T400	Hourly/S
17-197-1011	1	Braidwood	+41.22153707 -88.19096718	Chicago-Naperville-Elgin, IL-IN-WI	Background	N/A	Regional	SLAMS	T400	Hourly/S
17-201-2001	1	Loves Park	+42.33498222 -89.0377748	Rockford, IL	Population	Max O3 Conc.	Urban	SLAMS	T400	Hourly/S

T400 – Teledyne (method 087); 49i – ThermoScientific (method 047); Ecotech 187 – Ecotech Serinus 10 (method 187)

Ozone parameter code – 44201

S = Seasonal – March through October ozone monitoring season

Y = Year-round monitoring

* indicates monitor proposed for removal or has been removed

** indicates monitor proposed for installation or has been installed

Figure 3a: Ozone Sites – Illinois

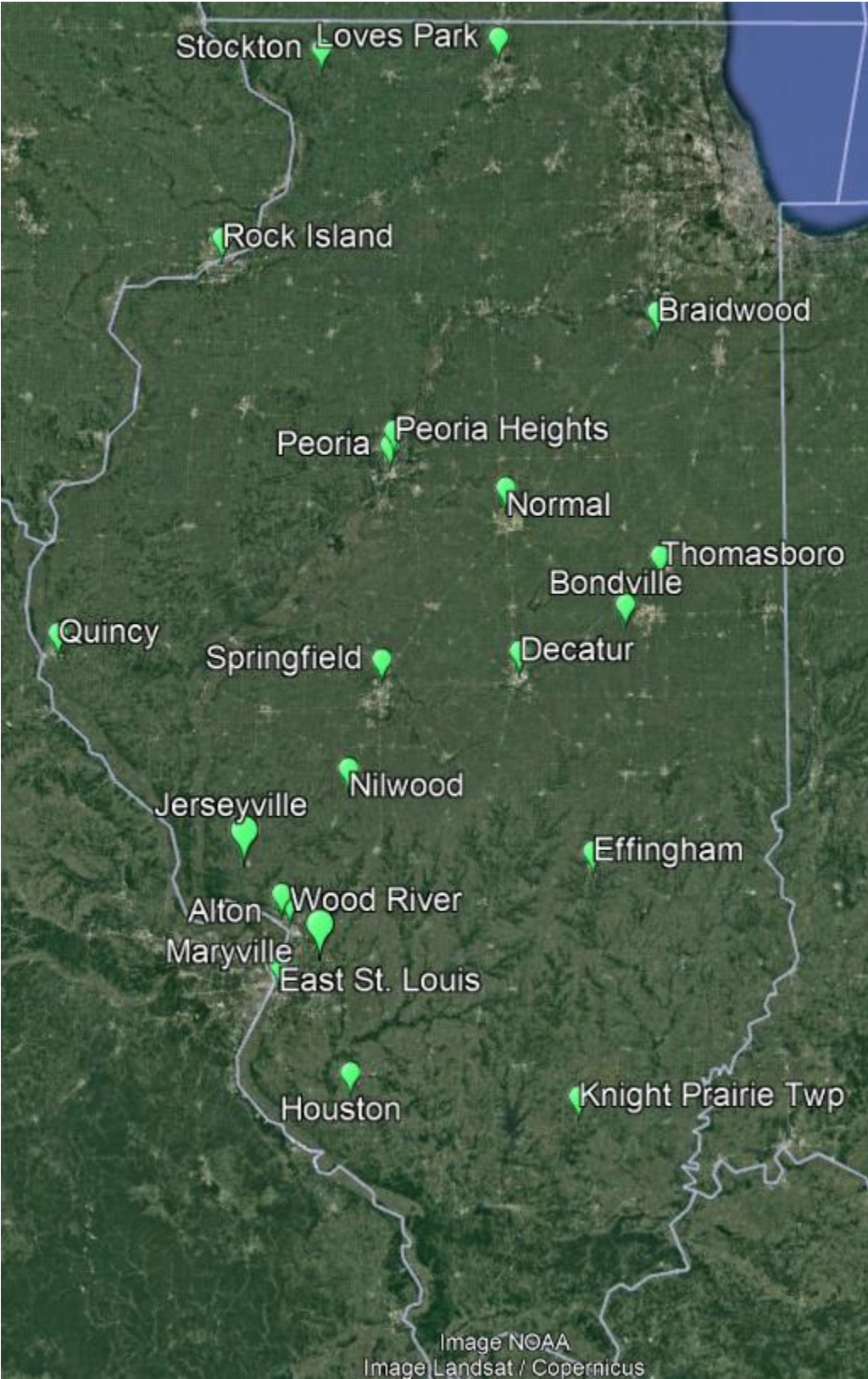


Figure 3b: Ozone Sites – Illinois Chicago Area



Table 3: PM_{2.5} Sites

AQS ID	POC	Site	Latitude Longitude	Area Represented	Primary Objective	Secondary Objective	Spatial Scale	Standard	Station Type	Monitor Type (Primary)	Sampling Schedule	Collocated	Chemical Speciation	Frequency
17-019-0006	3	Champaign	+40.123883 -88.240550	Champaign-Urbana, IL	Population	N/A	Neighborhood	Annual/24	SLAMS	FEM Teledyne T640****	H			
17-019-1001	3, 1	Bondville	+40.052780 -88.372510	Champaign-Urbana, IL	Transport	Population	Regional	Annual/24	RURAL NCORE	FEM Teledyne T640	H	THRM (1/3 day)	YES	1/3
17-031-0001	3	Alsip	+41.6709919 -87.7324569	Chicago-Naperville-Elgin, IL-IN-WI	Population	N/A	Neighborhood	Annual/24	SLAMS, SPM***	FEM Teledyne T640****	H			
17-031-0022	3, 9	Washington High School	+41.68716544 -87.53931548	Chicago-Naperville-Elgin, IL-IN-WI	Population	Source	Neighborhood	Annual/24	SLAMS	FEM Teledyne T640X****	H	Met One (1/12 day)		
17-031-0052	3, 9	Mayfair Pump Station	+41.96548483 -87.74992806	Chicago-Naperville-Elgin, IL-IN-WI	Highest Conc.	Population	Neighborhood	Annual/24	SLAMS	FEM Teledyne T640****	H	Met One (1/12 day)		

AQS ID	POC	Site	Latitude Longitude	Area Represented	Primary Objective	Secondary Objective	Spatial Scale	Standard	Station Type	Monitor Type (Primary)	Sampling Schedule	Collocated	Chemical Speciation	Frequency
17-031-0057	3	Springfield Pump Station	+41.912739 -87.722673	Chicago- Naperville- Elgin, IL-IN-WI	Population	N/A	Neighborhood	Annual/24	SLAMS, SPM***	FEM Teledyne T640****	H		YES	1/6
17-031-0076	3	Com Ed	+41.75139998 -87.71348815	Chicago- Naperville- Elgin, IL-IN-WI	Population	N/A	Neighborhood	Annual/24	SLAMS, SPM***	FEM Teledyne T640****	H		YES	1/3
17-031-1016	3	Lyons Township	+41.801180 -87.832349	Chicago- Naperville- Elgin, IL-IN-WI	Source	Population	Middle	24	SLAMS	FEM Teledyne T640X****	H			
17-031-3103	3, 9	Schiller Park	+41.96519348 -87.87626473	Chicago- Naperville- Elgin, IL-IN-WI	Highest Conc.	Population	Middle	Annual/24	SLAMS	FEM Teledyne T640	H	THRM (1/12 day)		
17-031-3301	3	Summit	+41.78276601 -87.80537679	Chicago- Naperville- Elgin, IL-IN-WI	Population	N/A	Neighborhood	Annual/24	SLAMS	FEM Teledyne T640****	H			
17-031-4007	3	Des Plaines	+42.06028469 -87.86322543	Chicago- Naperville- Elgin, IL-IN-WI	Population	N/A	Urban	Annual/24	SLAMS	FEM Teledyne T640	H			

AQS ID	POC	Site	Latitude Longitude	Area Represented	Primary Objective	Secondary Objective	Spatial Scale	Standard	Station Type	Monitor Type (Primary)	Sampling Schedule	Collocated	Chemical Speciation	Frequency
17-031-4201	3, 1	Northbrook	+42.140204 -87.798989	Chicago- Naperville- Elgin, IL-IN-WI	Population	N/A	Urban	Annual/24	URBAN NCORE	FEM Teledyne T640X	H	THRM 1 (1/3day)	YES	1/3
17-031-6005	3	Cicero	+41.86442642 -87.74890238	Chicago- Naperville- Elgin, IL-IN-WI	Population	N/A	Neighborhood	Annual/24	SLAMS, SPM***	FEM Teledyne T640****	H			
17-031-0119	3	Lansing Kingery near- road #1	+41.578603 -87.557392	Kingery high traffic near- road segment	Highest Conc.	N/A	Micro	Annual/24	SLAMS	FEM Teledyne T640	H			
17-043-4002	3	Naperville	+41.77107094 -88.15253365	Chicago- Naperville- Elgin, IL-IN-WI	Population	N/A	Urban	Annual/24	SLAMS	FEM Teledyne T640	H			
17-065-0002	3	Knight Prairie	+38.08215516 -88.6249434	Mt Vernon, IL	Background	Population	Regional	Annual/24	SLAMS	FEM Teledyne T640	H			
17-083-0117	3	Jerseyville	+39.101439 -90.344494	St Louis, IL- MO	Population	Transport	Urban	Annual/24	SLAMS	FEM Teledyne T640	H			
17-089-0003	3	Elgin	+42.050403 -88.28001471	Chicago- Naperville- Elgin, IL-IN-WI	Population	N/A	Urban	Annual/24	SLAMS	FEM Teledyne T640****	H			
17-089-0007	3	Aurora	+41.78471651 -88.32937361	Chicago- Naperville- Elgin, IL-IN-WI	Population	N/A	Urban	Annual/24	SLAMS	FEM Teledyne T640****	H			
17-111-0001	3	Cary	+42.22144166 -88.24220734	Chicago- Naperville- Elgin, IL-IN-WI	Population	N/A	Urban	Annual/24	SLAMS	FEM Teledyne T640	H			

AQS ID	POC	Site	Latitude Longitude	Area Represented	Primary Objective	Secondary Objective	Spatial Scale	Standard	Station Type	Monitor Type (Primary)	Sampling Schedule	Collocated	Chemical Speciation	Frequency
17-113-2003	3, 9	Normal	+40.51873537 -88.99689571	Bloomington- Normal, IL	Population	N/A	Urban	Annual/24	SLAMS	FEM Teledyne T640	H	FEM Teledyne T640		
17-115-0013	3	Decatur	+39.86683389 -88.92559445	Decatur, IL	Population	Source	Neighborhood	Annual/24	SLAMS	FEM Teledyne T640	H			
17-119-0024	3	Granite City Gateway	+38.7006315 -90.14476267	St Louis, IL- MO	Source	Population	Middle	24	SLAMS	FEM Teledyne T640****	H		YES	1/6
17-119-1007	3	Granite City	+38.70453426 -90.13967484	St Louis, IL- MO	Highest Conc.	Population	Neighborhood	Annual/24	SLAMS, SPM***	FEM Teledyne T640X****	H			
17-119-0120	3	Alton	+38.901316 -90.146211	St Louis, IL- MO	Population	N/A	Urban	Annual/24	SLAMS	FEM Teledyne T640****	H			
17-119-3007	3	Wood River	+38.86066947 -90.10585111	St Louis, IL- MO	Population	N/A	Neighborhood	Annual/24	SLAMS	FEM Teledyne T640****	H			
17-143-0037	3	Peoria	+40.697007 -89.58473722	Peoria, IL	Population	N/A	Urban	Annual/24	SLAMS	FEM Teledyne T640	H			
17-157-0001	3	Houston	+38.17627761 -89.78845862	N/A	Background	Population	Regional	Annual/24	SLAMS	FEM Teledyne T640	H			
17-161-3002	3	Rock Island	+41.51472697 -90.51735026	Davenport- Moline-Rock Island, IA-IL	Population	N/A	Urban	Annual/24	SLAMS	FEM Teledyne T640	H			

AQS ID	POC	Site	Latitude Longitude	Area Represented	Primary Objective	Secondary Objective	Spatial Scale	Standard	Station Type	Monitor Type (Primary)	Sampling Schedule	Collocated	Chemical Speciation	Frequency
17-163-0010	3, 9	East St. Louis	+38.61203448 -90.16047663	St Louis, IL- MO	Population	Source	Neighborhood	Annual/24	SLAMS	FEM Teledyne T640	H	FEM Teledyne T640****		
17-167-0012	3	Springfield	+39.83192087 -89.64416359	Springfield, IL	Population	N/A	Urban	Annual/24	SLAMS	FEM Teledyne T640	H			
17-197-1002	3	Joliet	+41.52688509 -88.11647381	Chicago- Naperville- Elgin, IL-IN-WI	Population	N/A	Neighborhood	Annual/24	SLAMS	FEM Teledyne T640	H			
17-197-1011	3	Braidwood	+41.22153707 -88.19096718	Chicago- Naperville- Elgin, IL-IN-WI	Background	Population	Regional	Annual/24	SLAMS	FEM Teledyne T640	H			
17-201-0118	3	Rockford	+42.2670002 -89.089170	Rockford, IL	Population	N/A	Middle	Annual/24	SLAMS	FEM Teledyne T640	H			

Met One - MetOne sequential (method 545); THRM – ThermoScientific (method 143); FEM Teledyne T640 – Federal Equivalent Method Teledyne T640 Continuous (method 236, 636 post firmware update); FEM Teledyne T640X – Federal Equivalent Method Teledyne T640x Continuous (method 238, 638 post firmware update); H = Hourly.

PM_{2.5} parameter code – 88101 (FRM/FEM), 88502 (non FRM/FEM)

Sites that are part of the Chemical Speciation Network are listed in the Chemical Speciation column.

* indicates monitor proposed for removal

** indicates monitor proposed for installation

*** indicates continuous Special Purpose Monitor currently run as non-regulatory for AQI in conjunction with SLAMS FRM sampler. Plan is to gradually phase in SLAMS FEM continuous monitors listed in the table above that will replace both the SPM monitor and the site FRM sampler.

****indicates current FRM 3 day sampling or 6 day sampling planned to transition to FEM monitoring pending grant funding and equipment availability

Figure 4a: PM_{2.5} Sites – Illinois

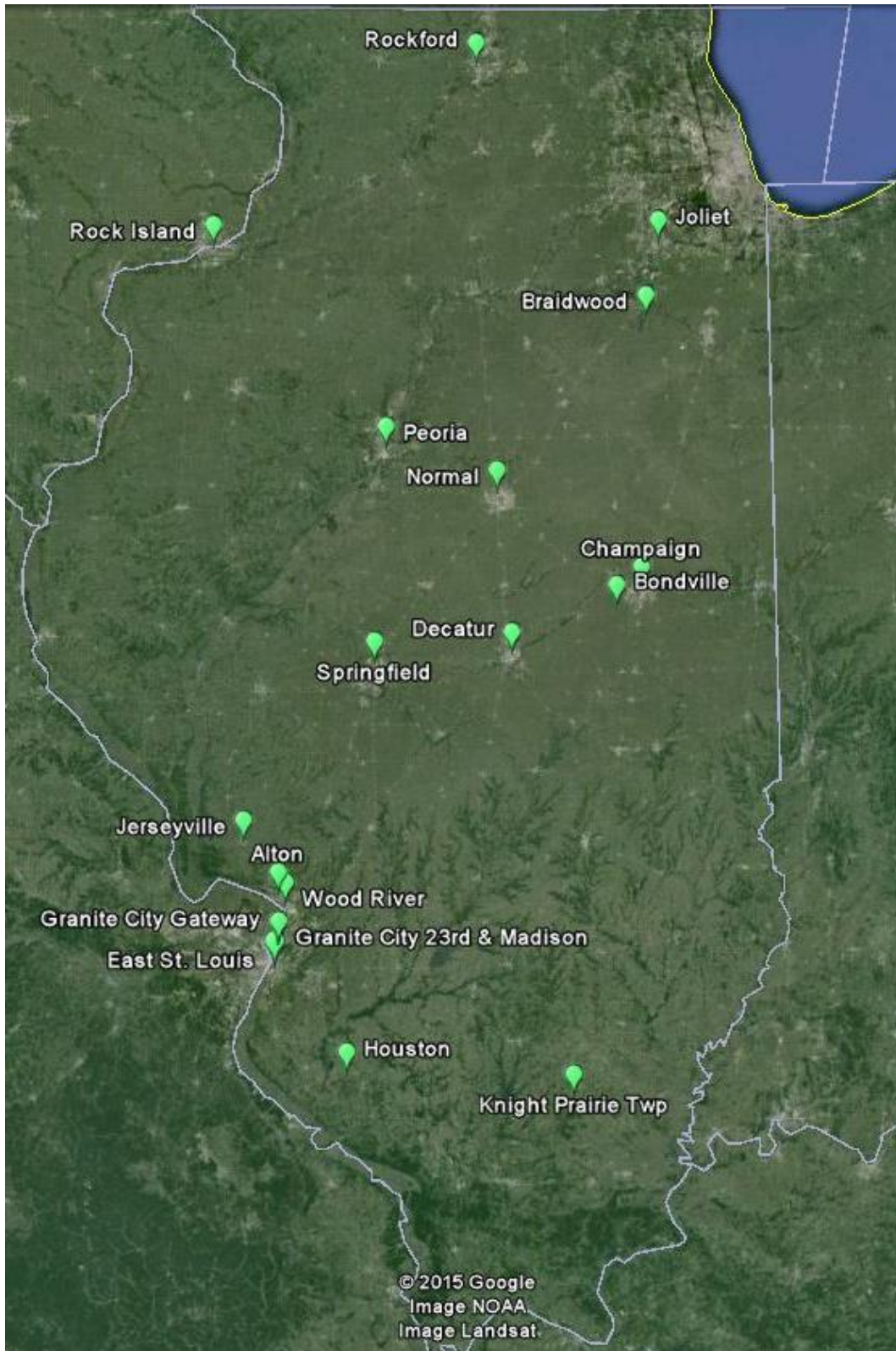


Figure 4b: PM_{2.5} Sites – Illinois Chicago Area

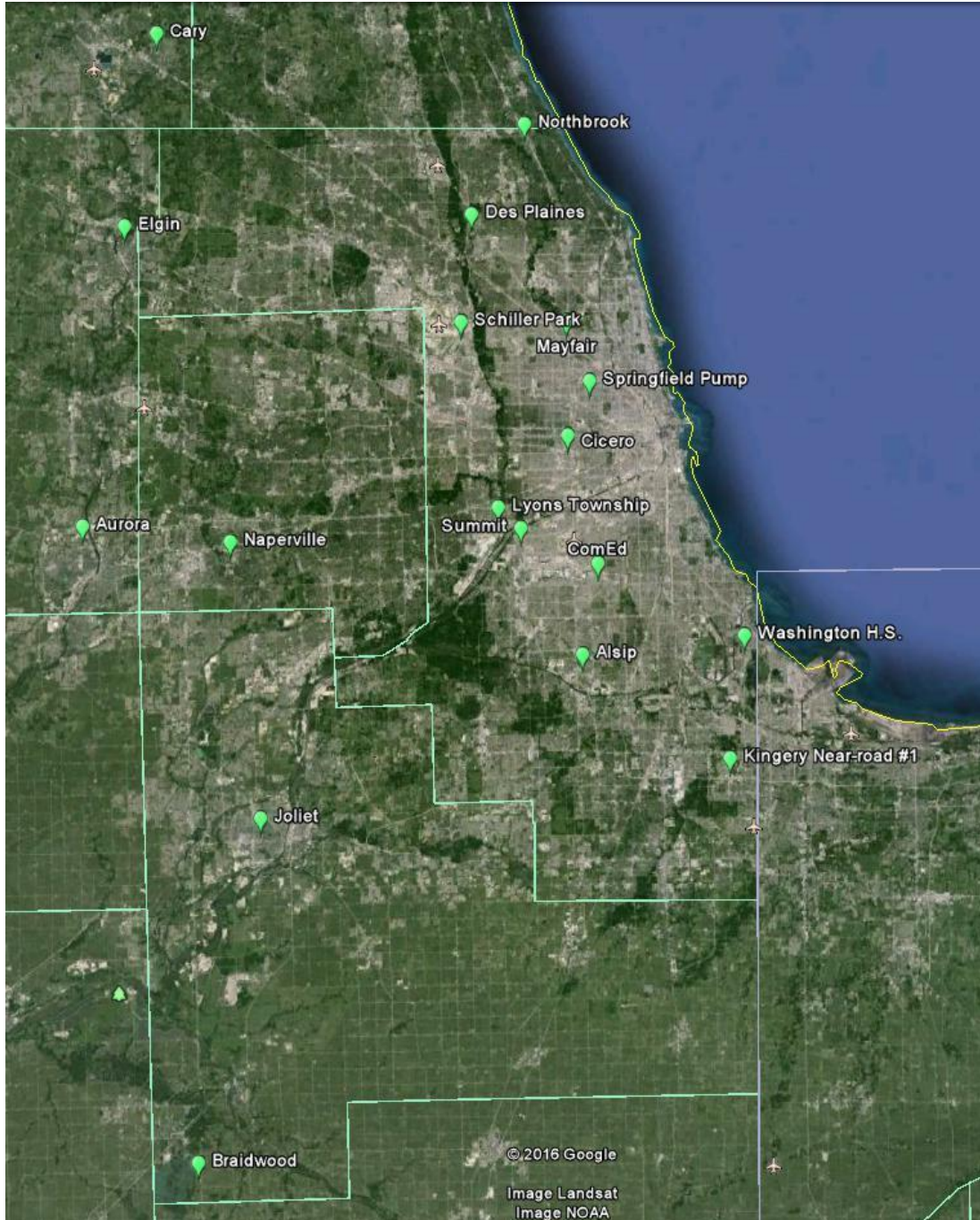


Table 4: SO₂ Sites

AQS ID	POC	Site	Latitude Longitude	Area Represented	Primary Objective	Secondary Objective	Spatial Scale	Station Type	Monitor Type	Sampling Schedule
17-019-1001	2	Bondville	+40.052780 -88.372510	Champaign-Urbana, IL	Regional Transport	Welfare Related	Regional	NCORE	T100U	Hourly
17-031-0076	1	Com Ed	+41.75139998 -87.71348815	Chicago-Naperville- Michigan City, IL-IN-WI	Population	N/A	Urban	SLAMS	T100	Hourly
17-031-1601	1	Lemont	+41.66812034 -87.99056969	Chicago-Naperville- Michigan City, IL-IN-WI	Population	N/A	Neighborhood	SLAMS	T100	Hourly
17-031-4201	2	Northbrook	+42.13999619 -87.79922692	Chicago-Naperville- Michigan City, IL-IN-WI	Population	N/A	Urban	NCORE	T100U	Hourly
17-099-0007	1	Oglesby	+41.29301454 -89.04942498	Ottawa-Streator, IL	Highest Conc.	Source	Neighborhood	SLAMS	T100	Hourly
17-115-0013	1	Decatur	+39.86683389 -88.92559445	Decatur, IL	Population	N/A	Neighborhood	SLAMS	T100	Hourly
17-115-0217	1	Primient NW	+39.850712 -88.933635	Primient (former Tate & Lyle)	Source	N/A	Neighborhood	SLAMS	43i	Hourly
17-115-0317	1	Primient SE	+39.846856 -88.923323	Primient (former Tate & Lyle)	Source	N/A	Neighborhood	SLAMS	43i	Hourly
17-117-0002	1	Nilwood	+39.39607533 -89.80973892	St Louis, IL-MO	Background	Population	Regional	SLAMS	T100	Hourly
17-119-3007	3	Wood River	+38.86066947 -90.10585111	St Louis, IL-MO	Population	N/A	Neighborhood	SLAMS	T100	Hourly
17-163-0010	3	East St. Louis	+38.61203448 -90.16047663	St Louis, IL-MO	Population	N/A	Neighborhood	SLAMS	T100	Hourly
17-179-0004	2	Pekin	+40.55646017 -89.65402807	Peoria, IL	Highest Conc.	Source	Neighborhood	SLAMS	T100	Hourly

T100 – Teledyne (method 100); T100U – Teledyne Trace Level (method 600); 43i – Thermo Scientific Model 43i (method 060)

SO₂ parameter code – 42401

* indicates monitor proposed for removal

** indicates monitor proposed for installation

Figure 5: SO₂ Sites – Illinois

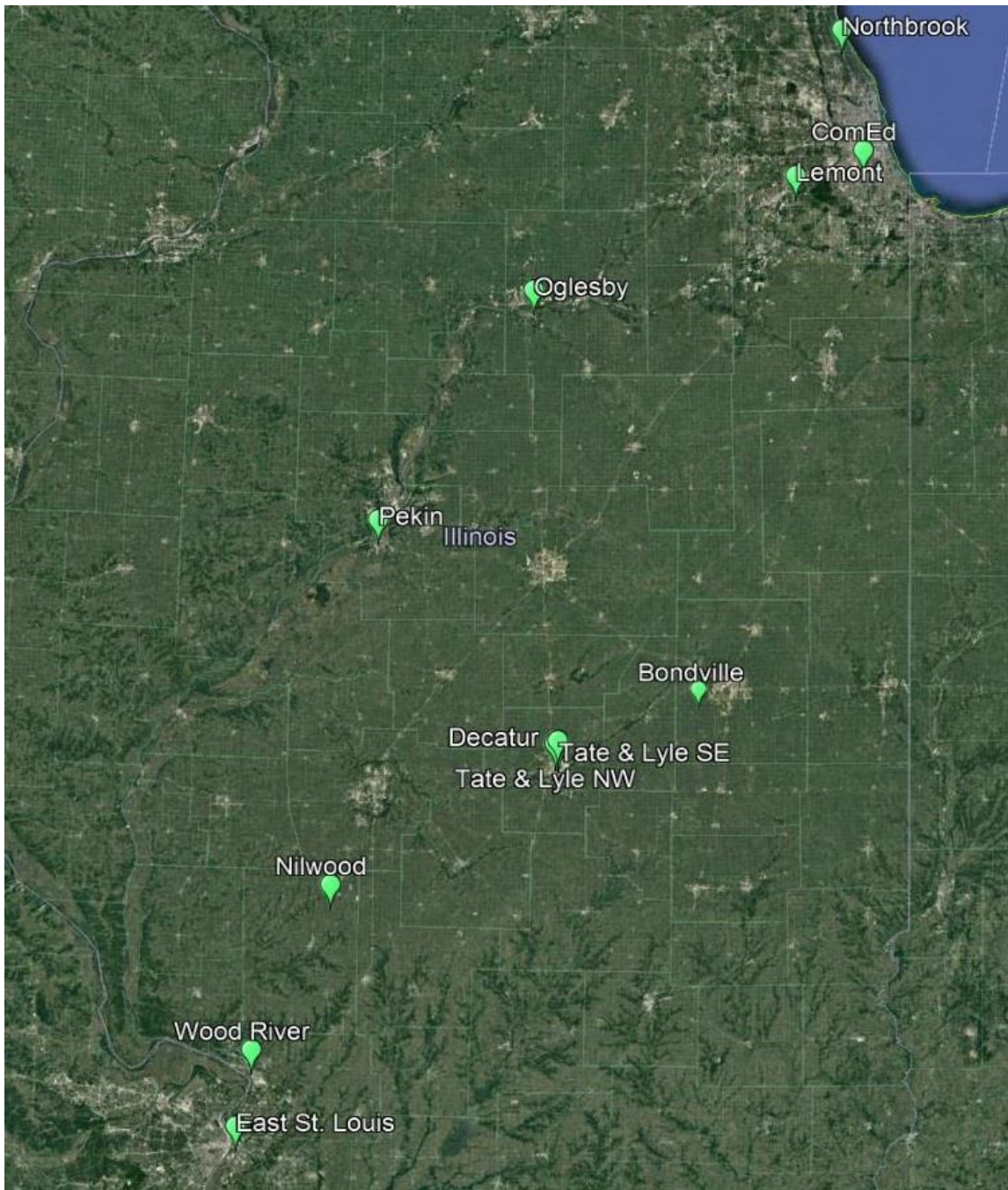


Table 5: NO₂ Sites

AQS ID	POC	Site Description	Latitude Longitude	Area Represented	Monitoring Type	Primary Objective	Secondary Objective	Spatial Scale	Station Type	Monitor Type	Sampling Schedule
17-019-1001	1	Bondville (NO _y)	+40.052780 -88.372510	Champaign-Urbana, IL	Area-wide	Regional Transport	Welfare Related	Regional	NCORE	T200EU/ 501Y	Hourly
17-031-0076	1	Com Ed	+41.75139998 -87.71348815	Chicago-Naperville-Michigan City, IL-IN-WI	Susceptible Population	Population	N/A	Neighborhood	SLAMS	T200	Hourly
17-031-3103	1	Schiller Park	+41.96519348 -87.87626473	Chicago-Naperville-Michigan City, IL-IN-WI	Area-wide	Highest Conc.	Source	Middle	PAMS/SLAMS	T500U	Hourly
17-031-4002	1	Cicero	+41.85524313 -87.7524697	Chicago-Naperville-Michigan City, IL-IN-WI	Area-wide	Population	Highest Conc.	Neighborhood	SLAMS	T200	Hourly
17-031-4201	1	Northbrook	+42.13999619 -87.79922692	Chicago-Naperville-Michigan City, IL-IN-WI	Area-wide	Population	N/A	Urban	PAMS/NCORE	T500U	Hourly
17-031-4201	1	Northbrook (NO _y)	+42.13999619 -87.79922692	Chicago-Naperville-Michigan City, IL-IN-WI	Area-wide	Population	N/A	Urban	PAMS/NCORE	42i-y	Hourly
17-031-0119	1	Lansing Kingery near-road #1	+41.578603 -87.557392	Kingery high traffic road segment	Near-road	Highest Conc.	Source	Micro	SLAMS	T500U	Hourly
17-031-0219	1	Chicago Kennedy near-road #2	+41.920681 -87.674425	Kennedy high traffic road segment	Near-road	Highest Conc.	Source	Micro	SLAMS	T500U	Hourly
17-117-0002	1	Nilwood	+39.39607533 -89.80973892	St Louis, IL-MO	Area-wide	Background	Population	Regional	SPM	T500U	Hourly
17-163-0010	2	East St. Louis	+38.61203448 -90.16047663	St Louis, IL-MO	Susceptible Population	Population	N/A	Neighborhood	SLAMS	T500U	Hourly

T200 – Teledyne (method 099); TE 42i – ThermoScientific (method 074); T500U – Teledyne (method 212); 42i-y – ThermoScientific (NO_y method 674)

NO₂ parameter code – 42602

NO_y parameter code - 42600

* indicates monitor proposed for removal

** indicates monitor proposed for installation

Figure 6: NO₂ Sites – Illinois

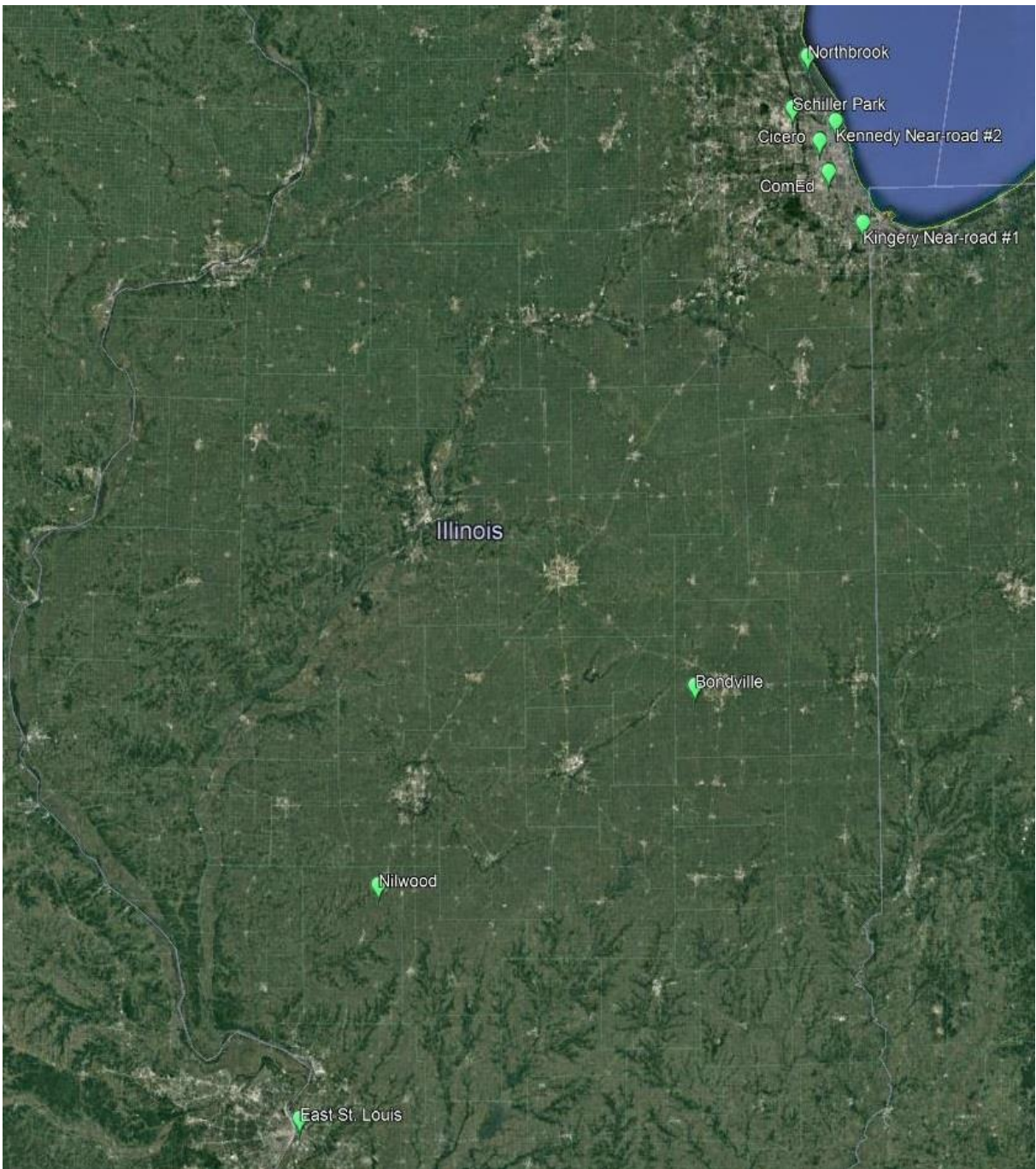


Table 6: CO Sites

AQS ID	POC	Site Description	Latitude Longitude	Area Represented	Primary Objective	Secondary Objective	Spatial Scale	Station Type	Monitor Type	Sampling Schedule
17-019-1001	1	Bondville	+40.052780 -88.372510	Champaign-Urbana, IL	Regional Transport	Welfare Related	Regional	NCORE	API 300EU	Hourly
17-031-4201	1	Northbrook	+42.13999619 -87.79922692	Chicago-Naperville-Michigan City, IL-IN-WI	Population	N/A	Neighborhood	PAMS/NCORE	48iTLE	Hourly
17-031-0119	1	Lansing Kingery near-road #1	+41.578603 -87.557392	Kingery high traffic road segment	Highest Conc.	Source	Micro	SLAMS	API 300	Hourly

48iTLE – ThermoScientific Trace Level (method 554); API 300EU – Teledyne Trace Level (method 593) API 300 – Teledyne/API non-trace level (method 093)

CO parameter code – 42101

* indicates monitor proposed for removal

** indicates monitor proposed for installation

Figure 7: CO Sites – Illinois

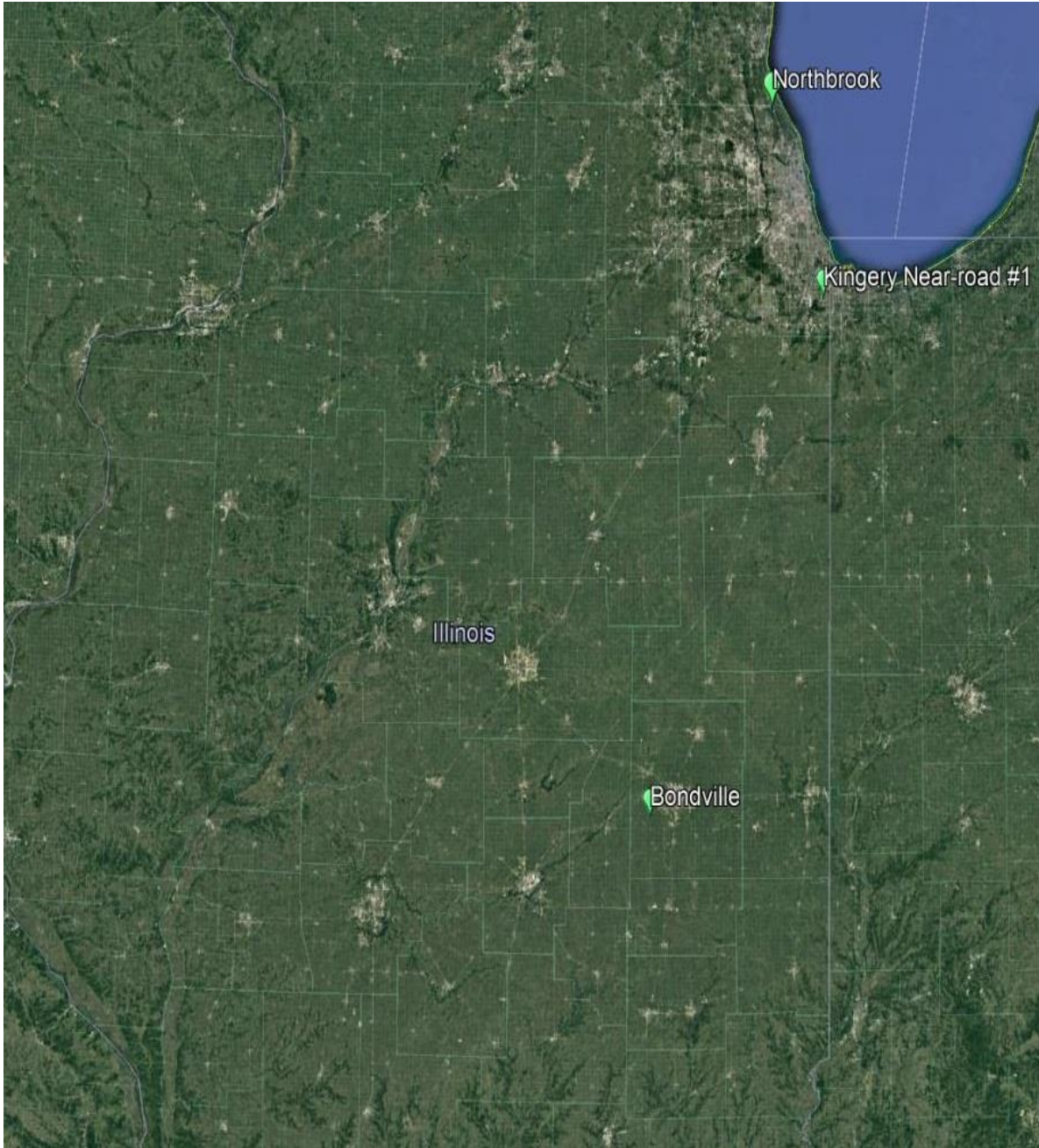


Table 7: PM₁₀ and PM_{10-2.5} Sites

AQS ID	POC	Site Description	Latitude Longitude	Area Represented	Primary Objective	Secondary Objective	Spatial Scale	Station Type	Monitor Type (Primary)	Sampling Schedule	Collocated
17-031-0022	4	Washington High School (PM ₁₀)	+41.68716544 -87.53931548	Chicago-Naperville-Michigan City, IL-IN-WI	Highest Conc.	Source	Neighborhood	SLAMS	Teledyne T640x	Hourly	
17-031-1016	4	Lyons Township (PM ₁₀)	+41.801180 -87.832349	Chicago-Naperville-Michigan City, IL-IN-WI	Highest Conc.	Source	Middle	SLAMS	Teledyne T640x	Hourly	
17-031-4201	1, 9	Northbrook (PM ₁₀)	+42.13999619 -87.79922692	Chicago-Naperville-Michigan City, IL-IN-WI	Population	N/A	Urban	NCORE	SA/GMW	1/6	YES (1/12 day)
17-031-4201	3	Northbrook (PM coarse)	+42.13999619 -87.79922692	Chicago-Naperville-Michigan City, IL-IN-WI	Population	N/A	Urban	NCORE	Teledyne T640X	Hourly	
17-119-1007	3	Granite City (PM ₁₀)	+38.70453426 -90.13967484	St Louis, IL-MO	Highest Conc.	Source	Neighborhood	SLAMS	Teledyne T640X	Hourly	

Teledyne T640x – Federal Equivalent Method Teledyne T640x Continuous (method 239 PM₁₀/method 240 PMcourse, method 639 PM₁₀/method 640 PMcourse post firmware update);

SA/GMW - Sierra Anderson/General Metal Works Hi-Volume Sampler, Standard Conditions (method 063);

The National Park Service operates an additional PM₁₀ monitor in Bondville as part of the IMPROVE network.

PM₁₀ parameter code – 81102

PM coarse parameter code – 86101

* indicates monitor proposed for removal

** indicates monitor proposed for installation

Figure 8: PM₁₀ Sites – Illinois

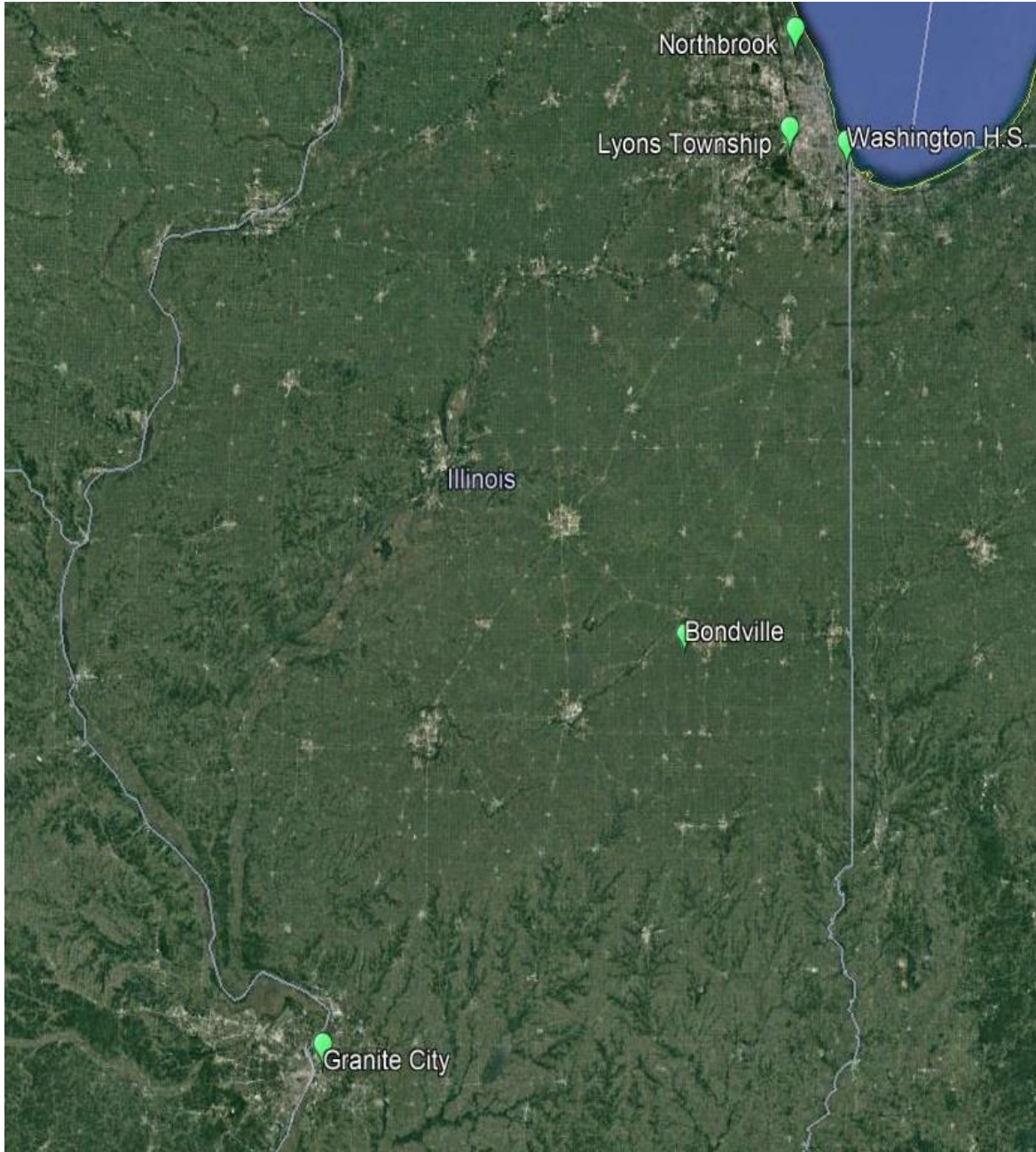


Table 8: Lead Sites

AQS ID	POC	Site Description	Latitude Longitude	Area Represented	Primary Objective	Secondary Objective	Spatial Scale	Station Type	Monitor Type (Primary)	Frequency	Collocated
17-031-0022	2	Washington High School	+41.68716544 -87.53931548	Chicago- Naperville- Michigan City, IL-IN-WI	Highest Conc.	N/A	Neighborhood	SLAMS	Tisch 5170	1/6	
17-031-0110	1, 9	Perez	+41.855917 -87.658419	H. Kramer	Source	N/A	Middle	SLAMS	Tisch 5170	1/6	YES (1/12 day)
17-119-0010	1, 9	Granite City	+38.69443831 -90.15395426	Mayco / US Steel	Highest Conc.	Source	Middle	SLAMS	Hi-Vol	1/6	YES (1/12 day)

Hi-Vol - Environmental Products Hi-Volume Sampler, Local Conditions (laboratory method 045);

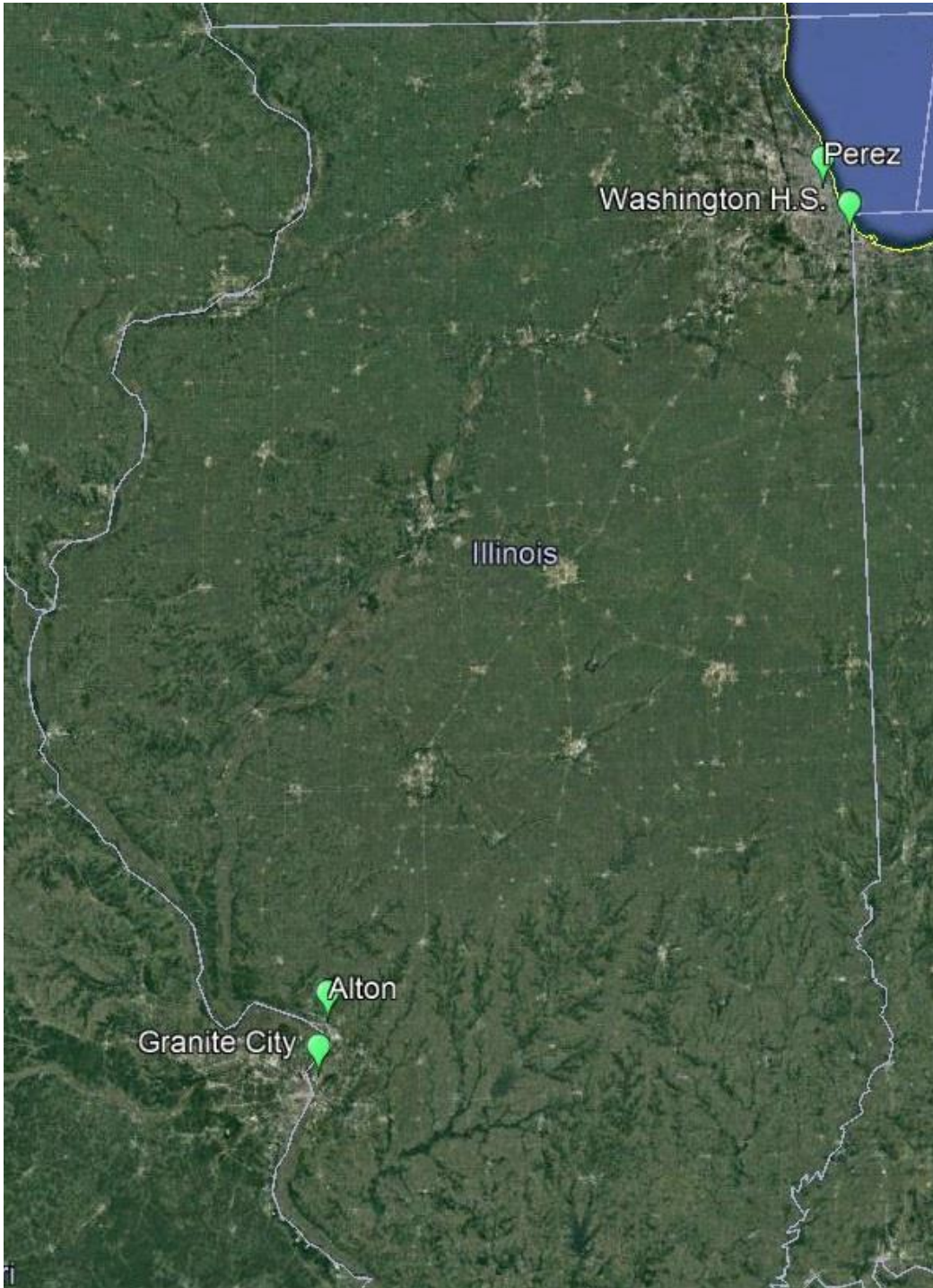
Tisch 5170 – Tisch Model 5170-D Hi-Volume Sampler, Local Conditions (laboratory method 045)

Lead parameter code – 14129

* indicates monitor proposed for removal or has been removed

** indicates monitor proposed for installation or has been installed

Figure 9: Lead Sites – Illinois



Appendix A

Data Requirements Rule SO₂ Emissions Assessment for Illinois Areas Modeled to be in Attainment with the 2010 1-hour SO₂ NAAQS

Background

Pursuant to Section 51.1205(b) of the Data Requirements Rule (DRR) (40 CFR 51 Subpart BB), Illinois EPA is required to submit an annual report to the Regional Administrator that documents the annual SO₂ emissions of each subject source in each area previously modeled to be attaining the 2010 1-hour SO₂ NAAQS. Subject sources refer to stationary sources that are not located in designated nonattainment areas and either have actual annual SO₂ emissions data of 2,000 tons or more or have been identified as requiring further air quality characterization. This report is to be submitted to the Regional Administrator by July 1 of each year and must provide an assessment of the cause of any emissions increases from the previous year and a recommendation regarding the need for additional modeling to determine if the areas are still meeting the 1-hour SO₂ NAAQS.

Multiple areas in Illinois have been designated by USEPA as attaining the 1-hour SO₂ NAAQS, based upon a technical analysis by USEPA that considered, in part, modeling results submitted by Illinois EPA pursuant to the DRR or the 2015 SO₂ Consent Decree. Six of the attainment areas have both active subject DRR sources and model design values greater than 50% of the 1-hour SO₂ NAAQS (see Table A-1). These six areas remain subject to the ongoing data requirements listed under Section 51.1205(b).

Table A-1: SO₂ Attainment/Unclassifiable Areas in Illinois Subject to Ongoing Data Requirements Pursuant to Section 51.1205(b)

Attainment/Unclassifiable Area	Subject Source(s)	Modeled Period	Initial Model Design Value	Percent of 1-hour SO₂ NAAQS*
Jasper County	Newton Power Station	2012-2014	138.89 µg/m ³	70.75%
Massac County	Joppa Power Station	2012-2014	168.29 µg/m ³	85.72%
Crawford County	Rain CII Carbon	2015-2017	118.2 µg/m ³	60.21%
Lake County	Midwest Generation LLC -Waukegan	2013-2015	98.91 µg/m ³	50.38%
Granite City Area	U.S. Steel-Granite City Works; Gateway Energy & Coke Company	2013-2015	190.93 µg/m ³	97.25%
Williamson County	Southern Illinois Power Coop	2013-2015	194.92 µg/m ³	99.29%

*Based on 1-hour SO₂ NAAQS value of 196.32 µg/m³

2016-2022 SO₂ Emission Trends Data and Recommendations

Table A-2 presents the relevant annual SO₂ emissions data for the period 2016 through 2022. Annual SO₂ emissions are listed for the subject DRR source in each area, along with all the background sources that were included in the DRR and SO₂ Consent Decree modeling.

USEPA's implementation of the primary SO₂ NAAQS occurred in phases and continues with ongoing annual emissions assessment requirements. As a result, progressively more recent years of emissions data have been used in modeling demonstrations that have been the basis of some area designations and in verification modeling. The year with the maximum annual emissions in each three-year modeled period was determined for each area and then compared with the area emission totals for 2022. These data were then compared with USEPA's recommended guidelines for additional modeling presented in the Preamble to the DRR (80 FR 51052). Emissions data for 2012-2014 were used in the SO₂ Consent Decree modeling, whereas emissions data for 2013-2015 were used in the DRR modeling. The Crawford County area modeling was updated using emissions data for 2015-2017 due to the 2017 emissions increase. The results of these analyses are presented below:

Jasper County – This area includes a single source. The highest modeled annual SO₂ emissions total for the Jasper County attainment/unclassifiable area was 16,533.83 tons, which occurred in 2012. These emissions resulted in a modeled design value of 138.89 µg/m³ or 70.75% of the SO₂ NAAQS. Emissions from the Newton Power Station (ID: 079808AAA), the only subject SO₂ source for this area, decreased to 6,815.90 tons in 2022 (-58.8%). Given the emissions decrease in 2022, Illinois EPA recommends no additional modeling for the Jasper County attainment/unclassifiable area at this time.

Massac County – This area includes five sources (and a sixth source in McCracken County, KY). The highest modeled annual SO₂ emissions total for the Massac County attainment/unclassifiable area was 48,599.45 tons, which occurred in 2014. These emissions resulted in a modeled design value of 168.29 µg/m³ or 85.72% of the SO₂ NAAQS. Emissions from SO₂ sources in the area decreased to 25,591.20 tons in 2022 (-47.3%). Given the emissions decrease in 2022, Illinois EPA recommends no additional modeling for the Massac County attainment/unclassifiable area at this time.

In addition, the Joppa Power Station, which is the subject DRR source for the Massac County attainment area, officially ceased operation by withdrawal of its operating permit on January 1, 2023. Illinois EPA requests that it be relieved of its ongoing data requirements under Section 51.1205 (b) for this area due to the permanent shutdown of the subject DRR source.

Crawford County – This area includes two sources (and a third source in Sullivan County, IN). The highest modeled annual SO₂ emissions total for the Crawford County attainment/unclassifiable area was 9,625.37 tons, which occurred in 2017. These emissions resulted in a modeled design value of 118.2 µg/m³ or 60.21% of the SO₂ NAAQS. Emissions from SO₂ sources in the area decreased to 4,874.62 tons in 2022 (-49.4%). Given the emission decrease in 2022, Illinois EPA recommends no additional modeling for the Crawford County attainment/unclassifiable area at this time.

Lake County – This area originally included eight sources; however, Bio Energy (Illinois) LLC is no longer operational. (Originally, this area also included Pleasant Prairie Generating Station, located in Kenosha County, WI. However, this facility is no longer operational). The highest modeled annual SO₂ emissions total for the Lake County attainment/unclassifiable area was 9,205.90 tons, which occurred in 2013. These emissions resulted in a modeled design value of 98.91 µg/m³ or 50.38% of the SO₂ NAAQS. Emissions from SO₂ sources in the area decreased to 954.93 tons in 2022 (-89.6%). Given the emissions decrease in 2022, Illinois EPA recommends no additional modeling for the Lake County attainment/unclassifiable area at this time.

Granite City Area – This area includes seven sources, five of which are in Madison County, IL and two of which are in St. Clair County, IL. The highest modeled annual SO₂ emissions total for the Granite City attainment/unclassifiable area was 2,345.30 tons, which occurred in 2014. These emissions resulted in a modeled design value of 190.93 µg/m³ or 97.25% of the SO₂ NAAQS. Emissions from SO₂ sources in the area decreased to 1,320.77 tons in 2022 (-43.7%). Given the emissions decrease in 2022, Illinois EPA recommends that no additional modeling be performed for the Granite City attainment/unclassifiable area at this time.

Williamson County – This area includes two sources. The highest modeled annual SO₂ emissions total for the Williamson County attainment/unclassifiable area was 8,651.62 tons, which occurred in 2014. These emissions resulted in a modeled design value of 194.92 µg/m³ or 99.29% of the SO₂ NAAQS. Emissions from SO₂ sources in the area decreased to 2,810.02 tons in 2022 (-67.5%). Given the emissions decrease in 2022, Illinois EPA recommends no additional modeling for the Williamson County attainment/unclassifiable area at this time.

Table A-2: Annual SO₂ Emissions Data for Attainment/Unclassifiable Areas

Attainment Area	ID Number	Facility Name	2017 Emissions	2018 Emissions	2019 Emissions	2020 Emissions	2021 Emissions	2022 Emissions	Modeled Maximum	2022 Area Total
Jasper County	079808AAA	Newton Power Station	4,873.20	4,638.60	5,000.30	4,632.20	6,453.10	6,815.90	16,533.83	6,815.90
Massac County	127855AAC	Joppa Power Station	10,310.20	11,968.40	10,436.10	8,243.00	13,230.90	10,982.30	48,599.45	25,591.20
	127855AAA	Holcim US Inc.	409.31	332.38	208.59	268.70	308.50	283.23		
	127899AAA	Midwest Electric Power Inc. (MEPI)	0.02	0.01	0.03	0.10	0.29	0.00		
	127855AAB	Trunkline Gas Company	0.12	0.12	0.18	0.10	0.11	0.06		
	127854AAD	Honeywell International Inc.	100.60	0.04	0.00	0.00	0.00	0.00		
	2114500006	TVA – Shawnee Power Plant	<i>20,494.00</i>	<i>15,149.50</i>	<i>16,345.70</i>	<i>9,024.40</i>	<i>14,696.40</i>	<i>14,325.61</i>		
Crawford County	033025AAJ	Rain CII Carbon	6,810.10	4,162.60	5,451.60	4,067.00	1,759.90	700.10	9,625.37	4,874.62
	033808AAB	Marathon Petroleum	177.17	114.07	146.16	138.78	170.53	169.62		
	1815300005	Merom Generating Station	<i>2,638.10</i>	<i>3,802.70</i>	<i>2,897.90</i>	<i>1,587.90</i>	<i>3,866.80</i>	<i>4,004.90</i>		
Lake County	097190AAC	Midwest Generation LLC – Waukegan	1,705.94	1,173.77	754.15	416.40	1,264.35	813.13	9,205.90	954.93
	097190AAP	New NGC Inc.	0.13	0.12	0.13	0.13	0.14	0.15		
	097025AAR	Countryside Genco LLC	41.85	50.73	51.76	43.00	0.00	0.00		
	097806AAG	Countryside Landfill	21.80	17.20	16.20	37.50	63.40	46.50		
	097809AAD	Abbott Laboratories	0.31	0.31	0.31	0.31	0.31	0.32		
	097125AAA	AbbVie Inc.	1.50	1.57	0.40	0.36	0.39	0.24		
	097200AAV	ADS Zion Landfill Inc.	32.87	47.80	81.83	98.09	84.39	94.59		
	097200ABC	Bio Energy (Illinois) LLC	21.60	25.30	32.54	16.89	<i>Shutdown</i>	<i>Shutdown</i>		
230006260	Pleasant Prairie Generating Station	<i>931.00</i>	<i>258.30</i>	<i>Shutdown</i>	<i>Shutdown</i>	<i>Shutdown</i>	<i>Shutdown</i>			
Granite City Area	119813AAI	U.S. Steel – Granite City Works	12.10	350.30	418.67	375.25	260.54	284.85	2,345.30	1,320.77
	119040ATN	Gateway Energy & Coke	1,470.37	2,542.82	1,171.37	976.71	1,118.61	959.92		
	119465AAG	Green Plains Madison LLC	1.96	1.72	0.96	0.60	0.33	2.87		
	119040AAC	Amsted Rail Co. Inc.	3.50	5.10	4.00	1.00	1.10	1.70		
	163121AAB	Afton Chemicals	73.78	71.18	73.40	58.02	57.95	57.06		
	163050AAD	Milam Recycling & Disposal	15.98	24.10	32.87	31.85	29.35	13.85		
	119801AAK	Chain of Rocks Recycling & Disposal	4.66	0.77	0.80	0.76	0.59	0.52		
Williamson County	199856AAC	Southern Illinois Power Coop	3,830.80	5,112.70	5,843.70	2,927.40	1,657.90	2,810.00	8,651.62	2,810.02
	199862AAD	United States Penitentiary	0.02	0.02	0.02	0.02	0.01	0.02		

Source: Illinois EPA Annual Emissions Reports, except for those values listed in *red italics*, which were obtained from USEPA’s Clean Air Markets database