Assessment of Existing PM2.5-Speciation Monitoring (Draft)

The results of several data analyses were considered to assess the adequacy of the existing PM2.5-speication monitoring network in the region. Based on this assessment, two key findings should be noted:

- The overall network is well sited and should be maintained. Coverage in both urban areas with higher PM2.5 mass concentrations and in rural areas, in particular, is good.

- A few improvements to the existing network should be considered, including removing one or two redundant sites (in NW OH - SE MI, and in NE IL – NW IN) and adding a new site (in NE WI).

Existing Speciation Monitoring Sites

Currently, there are 48 PM2.5 speciation monitors operating in the region:

	CSN (STN)		IMPROVE
	Urban	Rural	(or IMPROVE-protocol)
IL	5		1
IN	7	1	1
MI	5	2	2
MN	2		4
OH	12	1	1
WI	2	2	
	33	6	9

Figure 1 shows the location of current (and past) speciation sites in the region.

Assessment

Do the existing speciation monitors provide adequate representation of urban areas with high PM2.5 (FRM) concentrations? Are there redundancies? Are there gaps?

Table 1 shows the annual and daily PM2.5 design values for FRM sites in the region (see "Measured Concentration Analysis"). Sites with PM2.5 speciation monitoring are highlighted in yellow. Based on this table and Figure 1, several points should be noted:

- Speciation monitors are located in most urban areas and at most high FRM concentration sites. Thus, the overall network is well sited and, as such, should be maintained.

- The most noticeable redundancies in the speciation network include:

Site Pair	Separation	PM2.5 Corr.[1]
Toledo, OH and Luna Pier (Monroe, MI)	13 miles	
Chicago-Lawndale, IL and Hammond, IN	16 miles	0.92

[1] Based on 2006-2008 PM2.5 mass concentrations.

The two sets of states in question should review these sites and determine whether one site (in each pair) can be eliminated.

- There is no speciation monitor in the following urban area with high concentrations (i.e., > 90% of NAAQS):

  Green Bay, WI 2006-2008 DV = 35 ug/m3

- A few existing speciation monitors are located in the following urban areas with relatively low concentrations (i.e., < 90% of NAAQS):

Elkhart, IN	2006-2008 DVs = 12.3, 31 ug/m3
Grand Rapids, MI	2006-2008 DVs = 11.8, 29 ug/m3
Monroe, MI	2006-2008 DVs = 12.4, 31 ug/m3
Minneapolis, MN	2006-2008 DVs = 9.6, 23 ug/m3
Rochester, MN	2006-2008 DVs = 9.6, 27 ug/m3

  All of these sites, except possibly Monroe (see above), should be maintained: Elkhart is the only site in NE IN-NW OH (an area of higher modeled PM2.5 concentrations – see "Unmonitored Area Analysis"); Grand Rapids is an NCore site; and the two MN sites are located in areas of occasional high daily PM2.5 concentrations.

- Most of the speciation sites have operated at least five years and should continue to build up a long term record of data to support SIP development and trends analyses (see "Length of Record Analysis"). The few sites in operation less than five years are located in areas of high concentration (i.e., > 90% of NAAQS) and, as such, should also be maintained.

- There are 13 speciation sites (i.e., the 10 NCore sites plus three other sites – Chicago Lawndale, Gary-IITRI, and Vanderburgh County, IN) with a high number of pollutant measurements (see Ncore Evaluation in Section 4.4.2 of the Draft Report, and "Number of Parameters Analysis"). Given the importance of mulit-pollutant measurements, these sites have particular value.

Do the existing speciation monitors provide adequate representation of rural areas in the region?

Figure 1 shows IMPROVE and IMPROVE-protocol sites in the U.S., as well as additional state-operated rural sites in the region (white stars). In general, the coverage is rural areas is good and should be maintained.

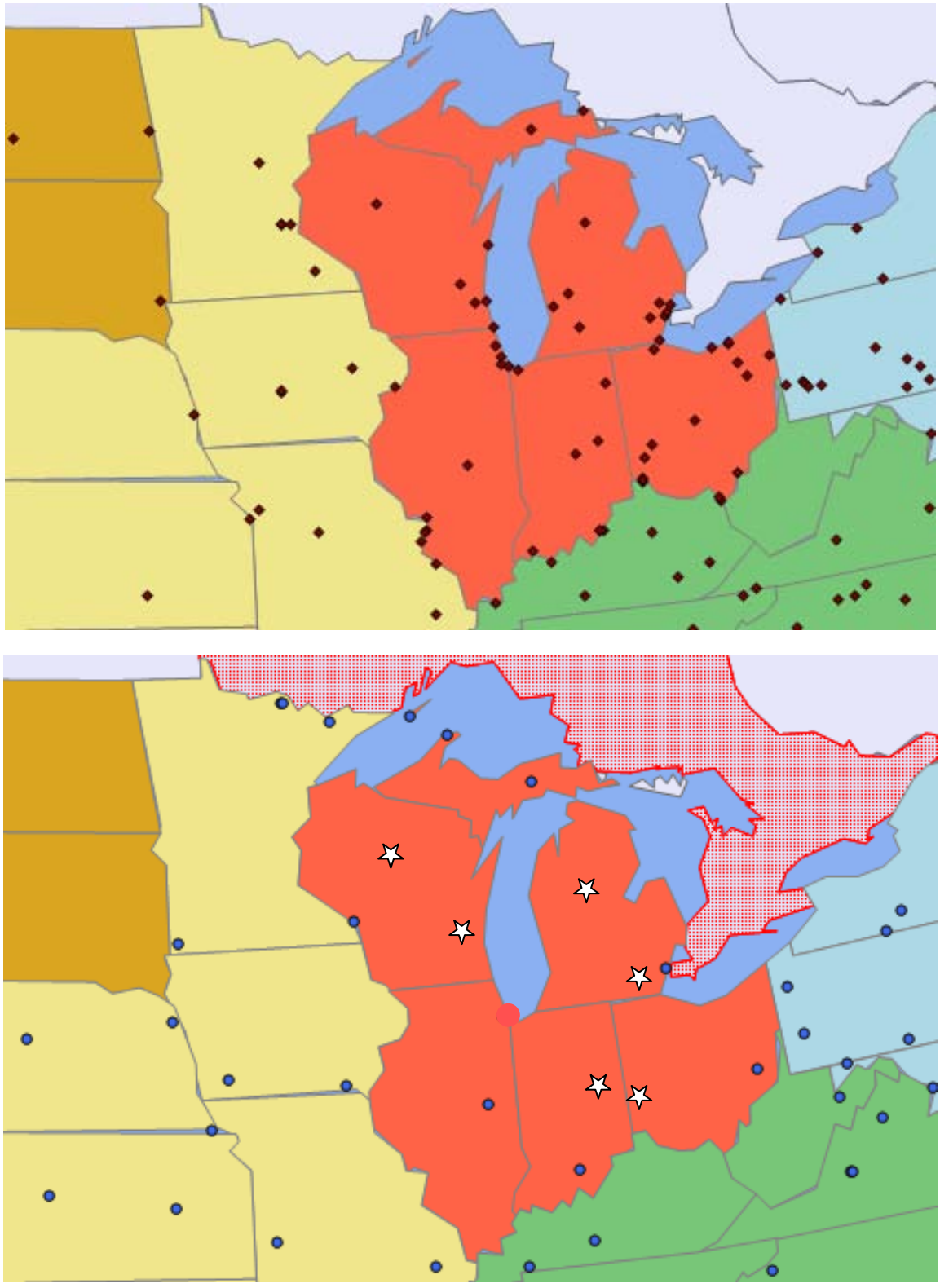

Figure 1: PM2.5 speciation sites – current and past CSN sites (top) and rural CSN/IMPROVE sites (bottom)

COUNTY	SITE ID	2003 - 2005	2004 - 2006	2005 - 2007	2006 - 2008
Adams	170010007	-	-	11.8 [1]	10.5 [1]
Champaign	170190004	12.5	12.1	12.9	11.7
Champaign	170191001	12.6	12.1	12.9	11.7
Cook	170310022	15.6	14.8	15.3	13.8
Cook	170310050	15.2	14.5	14.7	13.1
Cook	170310052	16.0	15.6	15.7	14.1
Cook	170310057	15.3	14.6	15.1	13.6
Cook	170310076	15.2	14.7	14.8	13.2
Cook	170311016	17.2	16.9	16.5	14.7
Cook	170312001	15.1	14.6	14.6	13.3
Cook	170313103	16.8	16.1	15.9	14.6
Cook	170313301	15.6	15.0	15.2	13.5
Cook	170314007	13.2	12.5	12.7	11.8
Cook	170314201	12.6	12.5	13.2	11.7
Cook	170316005	16.1	15.3	15.1	14.1 [1]
DuPage	170434002	13.8	13.7	14.0	12.6
Hamilton	170650002	14.3 [1]	12.7 [1]	13.0 [1]	12.3
Jersey	170831001	13.1 [1]	12.6	13.2	11.6
Kane	170890003	13.5	13.0	13.5	11.9
Kane	170890007	15.9 [1]	14.2 [1]	14.3	12.5
Lake	170971007	11.8	11.6	12.1	10.6
La Salle	170990007	12.8	12.4	12.5	11.4
McHenry	171110001	12.5	12.3	12.4	11.2
McLean	171132003	13.4 [1]	12.4 [1]	12.4	11.5
Macon	171150013	13.3	12.8	13.6	12.7
Madison	171190023	17.7	17.0	17.5	16.0
Madison	171190024	-	-	15.0 [1]	14.7 [1]
Madison	171191007	17.0	16.6	16.5	15.6
Madison	171192009	13.9	13.5	14.7	13.5
Madison	171193007	14.4	14.1	14.5	13.2
Peoria	171430037	13.7	13.1	13.2	12.1
Randolph	171570001	13.2	12.5	13.6	12.0
Rock Island	171613002	12.3	11.5	12.2	11.2
Saint Clair	171630010	15.6	15.5	15.7	14.2
Saint Clair	171634001	14.5	14.2	14.2	13.1
Sangamon	171670012	13.3	12.9	13.2	11.9
Will	171971002	13.7	13.2	14.1	12.8
Will	171971011	11.8	11.1	11.7	10.7
Winnebago	172010013	16.0 [1]	14.1 [1]	13.6	11.8
Allen	180030004	14.1	13.4	13.6	12.3
Clark	180190006	16.5	16.2	16.7	15.3
Clark	180190008	-	-	-	13.4 [1]
Delaware	180350006	14.2 [1]	13.5	13.9	12.3
Dubois	180370004	-	13.6 [1]	14.1 [1]	13.4 [1]
Dubois	180370005	-	13.7 [1]	14.3 [1]	13.7
Dubois	180372001	15.7	15.0	14.9	13.6 [1]
Elkhart	180390008	-	-	-	12.3 [1]
Floyd	180431004	15.0	14.6	15.0	13.6
Gibson	180510012	-	-	-	11.3 [1]
Henry	180650003	13.6	12.9 [1]	13.3 [1]	11.9 [1]
Howard	180670003	14.3	13.6	13.9	12.4
Knox	180830004	14.1	13.8	14.2	12.9
Lake	180890006	14.5	14.0	14.5 [1]	13.2
Lake	180890022	17.0	16.0	15.6	13.7
Lake	180890026	17.5	16.7	16.5	14.9
Lake	180890027	14.1	13.5	13.7 [1]	12.4
Lake	180890031	16.8 [1]	15.1 [1]	14.9 [1]	13.3
Lake	180892004	14.4	13.8	14.0	12.7
Lake	180892010	14.1	13.6	14.0	12.9
LaPorte	180910011	12.8	12.3	12.4	11.6
Madison	180950009	14.4	13.6	13.9	12.6
Marion	180970043	17.3	16.8	17.3	16.0
Marion	180970066	17.8	17.1	17.3	15.2
Marion	180970078	15.4	15.0	15.4	14.3
Marion	180970081	16.4	15.7	16.1	14.7
Marion	180970083	16.3	15.6	15.9	14.4
Porter	181270024	13.3	12.9	13.4	12.2
St. Joseph	181410014	13.7	13.0	13.2	12.1
St. Joseph	181410015	-	12.8 [1]	12.9 [1]	12.4 [1]
Spencer	181470009	14.5	13.9	14.6	13.0
Tippecanoe	181570008	14.1	13.3	13.7	12.3
Vanderburgh	181630006	14.9	14.5	14.7	13.4
Vanderburgh	181630012	15.0	14.6	14.9	13.7
Vanderburgh	181630016	15.1	14.8	15.0	13.6
Vigo	181670018	14.1	13.7	14.2	13.2
Vigo	181670023	13.6	13.2	13.7	12.6
Allegan	260050003	12.0	11.7	11.9	10.9
Bay	260170014	11.1	10.8	10.9	9.7
Berrien	260210014	11.9	11.4	11.8	10.8

COUNTY	SITE ID	2003 - 2005	2004 - 2006	2005 - 2007	2006 - 2008
Adams	170010007	-	-	29 [1]	24 [1]
Champaign	170190004	32	30	33	29
Champaign	170191001	32	28	31	27
Cook	170310022	39	35	36	31
Cook	170310050	38	35	35	29
Cook	170310052	41	40	40	33
Cook	170310057	39	36	38	31
Cook	170310076	39	38	37	32
Cook	170311016	46	42	40	35
Cook	170312001	41	37	36	31
Cook	170313103	46 [1]	40	39	33
Cook	170313301	43	40	38	31
Cook	170314007	36	33	33	29
Cook	170314201	32	30	34	30
Cook	170316005	42	39	37	33 [1]
DuPage	170434002	36	33	35	32
Hamilton	170650002	39 [1]	31 [1]	32	27
Jersey	170831001	33 [1]	31	33	27
Kane	170890003	34	32	35	33
Kane	170890007	44 [1]	35 [1]	35	29
Lake	170971007	31	33	35	27
La Salle	170990007	29	28	30	26
McHenry	171110001	33	31	31	28
McLean	171132003	43 [1]	34 [1]	33	27
Macon	171150013	34	31	34	29
Madison	171190023	38	36	37 [1]	33 [1]
Madison	171190024	-	-	33 [1]	32 [1]
Madison	171191007	40	39	39	35
Madison	171192009	35	34	36	31
Madison	171193007	34	33	35	29
Peoria	171430037	34	32	33	30
Randolph	171570001	30	27	30	26
Rock Island	171613002	31	30	31	26
Saint Clair	171630010	34	33	34	29
Saint Clair	171634001	33	31	33	29
Sangamon	171670012	34	32	34	29
Will	171971002	37	36	37	32
Will	171971011	32	30	32 [1]	26
Winnebago	172010013	47 [1]	37 [1]	35	29
Allen	180030004	35	32	33	30
Clark	180190006	37	37	39	35
Clark	180190008	-	-	-	28 [1]
Delaware	180350006	34	31	32	28
Dubois	180370004	-	34 [1]	34 [1]	32 [1]
Dubois	180370005	-	32 [1]	34 [1]	31
Dubois	180372001	37	34	35	30 [1]
Elkhart	180390008	-	-	-	31 [1]
Floyd	180431004	34	32	35	30
Gibson	180510012	-	-	-	25 [1]
Henry	180650003	32	30 [1]	32 [1]	28 [1]
Howard	180670003	33	31	33	30
Knox	180830004	36	36	36	30
Lake	180890006	35	34	36	31
Lake	180890022	44	38	35	31
Lake	180890026	41	38	36	33
Lake	180890027	34	31	32 [1]	29
Lake	180890031	39 [1]	33 [1]	34	31
Lake	180892004	34	32	33	30
Lake	180892010	36	32	35	30
LaPorte	180910011	34	32 [1]	32 [1]	29
Madison	180950009	34	32	33	29
Marion	180970043	38	38	40	35
Marion	180970066	38	37	40	34
Marion	180970078	38	35	37	33
Marion	180970081	38	37	39	34
Marion	180970083	36	35 [1]	37	33
Porter	181270024	32	31	32	29
St. Joseph	181410014	34	31	33	29
St. Joseph	181410015	-	25 [1]	28 [1]	28 [1]
Spencer	181470009	33	31	33	27
Tippecanoe	181570008	37	34	36	29
Vanderburgh	181630006	35	34	36	30
Vanderburgh	181630012	34	32	33	28 [1]
Vanderburgh	181630016	34	32	33	29
Vigo	181670018	35	34 [1]	35 [1]	29
Vigo	181670023	36	34	35	30
Allegan	260050003	34	34	34	30
Bay	260170014	32	32	31	26
Berrien	260210014	32	30	32	29

Genesee	260490021	11.8	11.4	11.6	10.6
Ingham	260650012	12.5	12.0	12.2	10.9
Kalamazoo	260770008	13.1	12.6	12.9	12.0
Kent	260810007	-	-	12.8 [1]	12.0 [1]
Kent	260810020	13.1	12.8	12.8	11.8
Lenawee	260910007	-	-	-	9.7 [1]
Macomb	260990009	13.0	12.5	12.5	11.3
Manistee	261010922	-	9.1 [1]	8.8 [1]	8.4 [1]
Missaukee	261130001	8.2 [1]	8.2	8.4	7.4
Monroe	261150005	14.1	13.8	13.8	12.4
Muskegon	261210040	11.7	11.5	11.6	10.5
Oakland	261250001	14.3	13.4	13.6	12.1
Ottawa	261390005	12.7	12.4	12.6	11.5
St. Clair	261470005	13.8	13.1	13.2	11.9
Washtenaw	261610008	14.3	13.6	13.7	12.2
Wayne	261630001	15.1	14.5	14.0	12.6
Wayne	261630015	16.4	15.8	15.5	14.0
Wayne	261630016	15.2	14.2	14.3	12.9
Wayne	261630019	14.8	14.1	14.1	12.3
Wayne	261630025	13.9	13.1	13.2	11.9
Wayne	261630033	18.2	17.2	17.2	15.4
Wayne	261630036	15.4	14.3	14.3	12.4
Wayne	261630038	23.1 [1]	19.5 [1]	14.3 [1]	12.8 [1]
Wayne	261630039	16.2 [1]	14.7 [1]	14.4 [1]	13.1
Cass	270210001	5.6	5.8	5.7	5.5 [1]
Dakota	270370470	9.3	9.1	9.6	9.3
Hennepin	270530961	9.3	8.9	9.2	9.0
Hennepin	270530963	9.8	9.3	9.7	9.6
Hennepin	270531007	9.6	9.3	9.8	9.9
Hennepin	270532006	9.4	9.3	9.7 [1]	9.7 [1]
Mille Lacs	270953051	6.5	6.4	6.7	6.6 [1]
Olmsted	271095008	10.1	9.5 [1]	10.0 [1]	9.6 [1]
Ramsey	271230866	11.6	11.2	11.2	11.0
Ramsey	271230868	11.3	10.9	10.9	10.7
Ramsey	271230871	9.7	9.4	9.8	10.0 [1]
Saint Louis	271377001	6.1	6.1	6.2	6.0
Saint Louis	271377550	6.2	6.1	6.3	6.3
Saint Louis	271377551	7.6	7.4	7.6	7.6
Scott	271390505	9.0	8.8	9.2	9.1
Stearns	271453052	8.8	8.4	8.5	8.4
Washington	271630446	-	-	9.5 [1]	8.9 [1]
Athens	390090003	12.3	12.2	12.7	11.8
Butler	390170003	16.2 [1]	15.7 [1]	16.2 [1]	14.4
Butler	390171004				
Butler	390170016	16.1	15.5	15.6	14.2
Clark	390230005	14.7	14.4	14.8	13.5
Clermont	390250022	15.7 [1]	14.2 [1]	14.2	12.8
Cuyahoga	390350027	16.1	15.3	14.9	13.5
Cuyahoga	390350034	14.1	13.4	13.8	12.0
Cuyahoga	390350038	18.1	17.2	16.8	15.1
Cuyahoga	390350045	17.0	16.2	16.2	14.3
Cuyahoga	390350060	17.7	16.9	16.8	14.9
Cuyahoga	390350065	16.4	15.6	15.8	14.5
Cuyahoga	390351002	14.6	13.9	13.9	12.3
Franklin	390490024	16.0	15.0	14.9	13.7
Franklin	390490025	15.5	14.9	14.9	13.6
Franklin	390490081	14.3	13.7 [1]	13.5 [1]	12.3 [1]
Greene	390570005	12.4 [1]	13.2	13.6	12.3
Hamilton	390610006	16.6 [1]	14.9 [1]	14.8	13.5
Hamilton	390610014	17.5	17.1	17.3	15.7
Hamilton	390610040	15.9	15.2	15.4	13.8
Hamilton	390610042	17.3	16.7	16.6	15.1
Hamilton	390610043	15.8	15.4	15.4	14.2
Hamilton	390617001	16.6	16.0	15.9	14.4
Hamilton	390618001	17.9	17.4	17.3	15.5
Jefferson	390810017	15.8 [1]	15.4	15.5	14.8 [1]
Jefferson	390811001	17.2	16.3	16.1	14.8
Lake	390853002	-	11.5 [1]	12.7 [1]	12.3
Lawrence	390870012	-	-	-	13.1 [1]
Lorain	390933002	12.8	12.6	13.0	11.9
Lucas	390950024	14.7	14.1	14.4	13.1
Lucas	390950025	14.4	13.6	13.9	12.6 [1]
Lucas	390950026	14.3	13.8	14.2	13.1
Lucas	390950028	-	-	-	12.0 [1]
Mahoning	390990005	15.0	14.5	14.5	13.5
Mahoning	390990014	15.5	15.0	14.8	13.6
Medina	391030003	15.2 [1]	13.6 [1]	13.3 [1]	12.1
Montgomery	391130032	15.9	15.2	15.5	14.2
Portage	391330002	13.4	13.2	13.6	12.6
Preble	391351001	13.9 [1]	13.5	13.9	12.7
Scioto	391450013	14.6	14.5	14.8	13.5

Genesee	260490021	32	30	29	26
Ingham	260650012	32	32	32	27
Kalamazoo	260770008	33	30	31	28
Kent	260810007	-	-	30 [1]	28 [1]
Kent	260810020	37	37	36	29
Lenawee	260910007	-	-	-	23 [1]
Macomb	260990009	35	36	35	31
Manistee	261010922	-	26 [1]	26 [1]	25 [1]
Missaukee	261130001	25 [1]	24	25	22
Monroe	261150005	40	39	38	31
Muskegon	261210040	37	35	33	28
Oakland	261250001	40	39	40	33
Ottawa	261390005	35	34	34	28
St. Clair	261470005	39	39	41	35
Washtenaw	261610008	41	38	39	31
Wayne	261630001	40	38	36	32
Wayne	261630015	40	41	40	35
Wayne	261630016	45	42	41	34
Wayne	261630019	41	41	40	33
Wayne	261630025	37	34	34	31
Wayne	261630033	44	44	43	37
Wayne	261630036	38	37	36	29
Wayne	261630038	47 [1]	41	40	31 [1]
Wayne	261630039	44 [1]	38 [1]	37	33
Cass	270210001	17	19	18	21 [1]
Dakota	270370470	25	26	25	23
Hennepin	270530961	26	26	25	23
Hennepin	270530963	28	26	24	23
Hennepin	270531007	26	25	25	25
Hennepin	270532006	28	26	25 [1]	24 [1]
Mille Lacs	270953051	22	22	22	21 [1]
Olmsted	271095008	29 [1]	30 [1]	30 [1]	27 [1]
Ramsey	271230866	29	27	27	26
Ramsey	271230868	31	29	26	27
Ramsey	271230871	26	26	27	29
Saint Louis	271377001	20	21	20	17
Saint Louis	271377550	19	19	20	20
Saint Louis	271377551	23	24	24	23
Scott	271390505	26	25	24	23
Stearns	271453052	25 [1]	23 [1]	21	20
Washington	271630446	-	-	47 [1]	35 [1]
Athens	390090003	32	32	33	32
Butler	390170003	41	38	38	31
Butler	390171004				
Butler	390170016	37	37	38	34
Clark	390230005	35	35	36	32
Clermont	390250022	38 [1]	35 [1]	34	30
Cuyahoga	390350027	39	36	35	36
Cuyahoga	390350034	38	35	37	32
Cuyahoga	390350038	47	43	42	38
Cuyahoga	390350045	42	37	37	33
Cuyahoga	390350060	46	41	40	36
Cuyahoga	390350065	41	37	38	33
Cuyahoga	390351002	35	33 [1]	35 [1]	31
Franklin	390490024	40	38	38	32
Franklin	390490025	39	38	38	32
Franklin	390490081	34	33 [1]	33 [1]	30 [1]
Greene	390570005	29 [1]	31 [1]	33	29
Hamilton	390610006	45 [1]	39 [1]	38	32
Hamilton	390610014	39	39	37	35
Hamilton	390610040	36	36	38	31
Hamilton	390610042	37	37	38	33
Hamilton	390610043	36	35	36	32
Hamilton	390617001	40	39	38	33
Hamilton	390618001	40	40	41	34
Jefferson	390810017	42	40	40	37
Jefferson	390811001	46	43	38	34
Lake	390853002	-	28 [1]	34 [1]	32
Lawrence	390870012	-	-	-	28 [1]
Lorain	390933002	32	31	32	31
Lucas	390950024	39	35	35	30
Lucas	390950025	37	34	35	31 [1]
Lucas	390950026	37	34	34	31
Lucas	390950028	-	-	-	21 [1]
Mahoning	390990005	36	35	35	31
Mahoning	390990014	38	37	36	32
Medina	391030003	39 [1]	34 [1]	32 [1]	29
Montgomery	391130032	40	36	37	32
Portage	391330002	34	34	35	30
Preble	391351001	34 [1]	32	34	29
Scioto	391450013	34	33	36	31

Stark	391510017	16.7	16.0	16.1	14.8 [1]
Stark	391510020	15.2	14.2 [1]	14.3 [1]	12.9 [1]
Summit	391530017	15.6	15.0	14.9	14.0
Summit	391530023	14.6	14.1	14.1	13.1
Trumbull	391550007	14.7	14.4	14.5	13.3
Warren	391650007	-	-	14.0 [1]	13.0 [1]
Ashland	550030010	6.0	6.0	6.2	6.3
Brown	550090005	11.0	11.4	11.9	11.9
Dane	550250047	12.0	12.0	12.7	12.6
Dodge	550270007	10.8	11.0	11.3	11.1
Forest	550410007	6.6 [1]	7.0 [1]	7.4	7.1
Grant	550430009	11.5	11.6	12.2	12.3
Kenosha	550590019	11.3	11.8	12.9	12.7
La Crosse	550630012	19.9 [1]	16.1 [1]	14.8 [1]	12.1
Manitowoc	550710007	9.7	10.0	10.9	10.7
Milwaukee	550790010	13.0	13.0	13.9	13.4
Milwaukee	550790026	12.1	12.7	13.8	13.5
Milwaukee	550790043	13.2 [1]	13.5	14.6	13.9
Milwaukee	550790059	12.9	13.3	14.9	14.5
Milwaukee	550790099	12.8	13.4	14.4	14.0
Outagamie	550870009	10.5	10.9	11.5	11.4
Ozaukee	550890009	11.0 [1]	11.0	12.2	11.9
St. Croix	551091002	9.6 [1]	9.3 [1]	10.1	10.3
Sauk	551110007	9.5 [1]	9.9	10.6	10.5
Taylor	551198001	7.9 [1]	8.0	8.4	9.0
Vilas	551250001	6.9	6.6	6.8	6.9
Waukesha	551330027	13.5	13.9	14.3	13.9

[1] Incomplete Data Capture

LEGEND

	Exceeds 1997/2006 Standard	> 15.0 µg/m^3
	> 90% of 2006 Standard	13.5 - 15.0 µg/m3
	> 80% of 2006 Standard	12.0 - 13.4 µg/m3
	> 70% of 2006 Standard	10.5 - 11.9 µg/m3
	< 70% of 2006 Standard	< 10.5 µg/m3

Stark	391510017	38	37	36	35 [1]
Stark	391510020	36	33 [1]	33 [1]	30 [1]
Summit	391530017	40	38	37	34
Summit	391530023	38	37	34	30
Trumbull	391550007	38	36	35	31
Warren	391650007	-	-	34 [1]	29 [1]
Ashland	550030010	17	18	21	19
Brown	550090005	36	37	37	35
Dane	550250047	35	35	37	34
Dodge	550270007	33	32	30	27
Forest	550410007	22 [1]	24 [1]	25	21
Grant	550430009	34	34	35	34
Kenosha	550590019	30 [1]	32	34	31
La Crosse	550630012	33 [1]	32 [1]	33 [1]	32
Manitowoc	550710007	28	29	32	28
Milwaukee	550790010	37	39	40	36
Milwaukee	550790026	33	38	41	37
Milwaukee	550790043	39	41	40	36
Milwaukee	550790059	35	35	37	32
Milwaukee	550790099	37	38	39	36
Outagamie	550870009	30	34	34	32
Ozaukee	550890009	30 [1]	31	34	30
St. Croix	551091002	28 [1]	26 [1]	27	25
Sauk	551110007	29 [1]	29	28	26
Taylor	551198001	25 [1]	25	26	29
Vilas	551250001	22	24	22	29
Waukesha	551330027	36	36	34	31

[1] Incomplete Data Capture

LEGEND

	Exceeds 1997 Standard	> 65 µg/m^3
	Exceeds 2006 Standard	36 - 65 µg/m^3
	> 90% of 2006 Standard	32 - 35 µg/m3
	> 80% of 2006 Standard	28 - 31 µg/m3
	< 80% of 2006 Standard	< 28 µg/m3