INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

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October 2, 2008

Air Docket
Attention Docket ID No. EPA-HQ-OAR-2007-0562
U.S. Environmental Protection Agency
Mail Code 6102T
1200 Pennsylvania Ave., NW
Washington, DC 20460

To Whom It May Concern:

The State of Indiana appreciates the opportunity to comment on the United States Environmental Protection Agency's (U.S. EPA's) proposed designation determinations for the 24-hour $PM_{2.5}$ NAAQS.

For the reasons discussed further below and documented in the attachments to this letter, Indiana respectfully requests that U.S. EPA reconsider its proposals and designate only Marion County in Indiana as non-attainment for the 24-hour $PM_{2.5}$ NAAQS. Indiana originally proposed Lake, Vanderburgh, Tippecanoe and Knox counties also be designated as non-attainment, however, ambient air quality monitoring through the 2nd quarter of 2008, which reflects the positive impacts of significant emission reduction, particularly of NO_x and SO_2, indicates that these counties will attain the 24-hour $PM_{2.5}$ NAAQS for the three year period of 2006-2008.

Indiana understands that the reason U.S. EPA proposed the designation of Porter County, Lawrenceburg Township in Dearborn County, Warrick County, Dubois County, Montgomery Township in Gibson County, Washington Township in Pike County, Ohio Township in Spencer County, Hamilton County, Hendricks County, Johnson County, Morgan County, Clark County, Floyd County, and Madison Township in Jefferson County as non-attainment is because U.S. EPA believes that emission sources in these Counties "cause or contribute" to non-attainment in nearby counties. Indiana believes that U.S. EPA is mistaken that sources in these counties "cause of contribute" to other non-attainment areas and has provided substantial documentation in the attachments to this letter to explain our position.

Before U.S. EPA finalizes its' recommendations, Indiana respectfully requests that U.S. EPA consider and properly address the following issues which are explained in more detail in Attachment A:

1) Indiana urges U.S. EPA to consider the most recent air quality data. 2005 was a very unusual $PM_{2.5}$ year with measured $PM_{2.5}$ values significantly higher than the years before and after 2005. Quality assured data through the middle of 2008 verifies that

2) all of Indiana except a small portion of Marion County will meet the 24-hour $PM_{2.5}$ NAAQS for the 2006-2008 period--this most representative air quality data should be used by U.S. EPA to make the final designations.

3) U.S. EPA needs to make a documented reasoned determination on Indiana's exceptional events flags for all $PM_{2.5}$ data used to determine compliance with the 24-hour $PM_{2.5}$ NAAQS. The repeated conclusion "Indiana did not fully establish a causal connection to the event and failed to meet the 'but-for' test" does not contain adequate information to understand U.S. EPA's conclusion and what specifically would need to be provided to change U.S. EPA's determination. The fact that U.S. EPA concurred with every exceptional event where the 24-hour concentrations were below 35, but rejected every event where the 24-hour concentration was above 35 appears arbitrary, especially when the rejected episodes all relate to significant wildfires that were widely reported in the news at the time as causing widespread air quality issues (which we indeed saw in our monitoring data).

4) U.S. EPA needs to reconsider its desire that the nonattainment areas for the 24-hour $PM_{2.5}$ NAAQS match those for the annual $PM_{2.5}$ NAAQS and the 8-hour Ozone NAAQS. As explained in Attachment A, both the Clean Air Act instructions on nonattainment designations and the observed $PM_{2.5}$ air quality indicate that while there is a significant regional background, actual $PM_{2.5}$ nonattainment is a very local condition typically related to a limited number of local sources.

5) U.S. EPA needs to reconsider its determination that Townships with significant power plants should be designated as nonattainment based upon the cause or contribute rationale. At a minimum, U.S. EPA should consider the size of the power plant and the emission controls it has implemented. For example, the only significant source in Madison Township in Jefferson County is IKEC's Clifty Creek power plant. Five of the six 217 MW units at this plant have SCRs and scrubbers are currently under construction for all six units with various start up dates in 2009. Unless there is a documented significant contribution from this plant (or Township) to some nonattainment area, the entire designation and SIP process will accomplish nothing but employ U.S. EPA and Indiana staff in a paperwork process that will not improve the environment at all, and in fact, will divert resources from our fully addressing our actual air quality problem in Marion County.

Thank you for your careful consideration of these comments. Indiana will also respond to Lynn Buhl's August 18, 2008 letter to Governor Daniels by the October 20 date suggested by that letter. That response will include this information and any additional clarifications that we can provide to help U.S. EPA support appropriate designations for Indiana under the 24-hour $PM_{2.5}$ NAAQS.

If you have any questions regarding these comments, please contact me or Daniel Murray, Assistant Commissioner, Office of Air Quality, at (317) 232-8222 or by email at dmurray@idem.in.gov.

Sincerely,

Thomas W. Easterly
Commissioner

TWE/sad/skr

Attachments:

Attachment A – Outline of Key Concerns
Attachment B – Indiana $PM_{2.5}$ Summary - Daily Standard
Attachment C – NO_X Emissions Information
Attachment D – Regional Assessment of Daily $PM_{2.5}$ Standard and Technical Support Documents

cc: Lynn Buhl, U.S. EPA Region 5
Cheryl Newton, U.S. EPA Region 5
Daniel Murray, IDEM-OAQ
Scott Deloney, IDEM-OAQ
Christine Pedersen, IDEM-OAQ
Sarah Raymond, IDEM-OAQ

Attachments

Attachment A

Outline of Key Concerns

Indiana urges U.S. EPA to consider the most recent air quality data

- Indiana encourages U.S. EPA to consider the impact of quality assured monitoring data for 2006-2008, which should be available in February 2009, prior to the effective date of the nonattainment designations. Under the annual $PM_{2.5}$ standard, several counties were designated nonattainment and then were reclassified attainment prior to the effective date when new quality assured monitoring data became available. Five monitors in four counties (Tippecanoe, Vanderburgh, Knox and Lake) within Indiana will attain the 24-hour $PM_{2.5}$ standard based on the monitor values from 2006 through 2008. Over half of Indiana's monitors (19 out of 36) have a 2008 critical value above 41 $\mu g/m^3$, meaning the 2008 values will have to be above 41 $\mu g/m^3$ in order for the 2006-2008 design value to be over the standard. The 2008 values in Indiana have not been that high since 2005, and have traditionally been below that mark. Additionally, recent regional modeling conducted by the Lake Michigan Air Directors Consortium (LADCO) has demonstrated that every monitor in Indiana will attain the 24-hour $PM_{2.5}$ standard by the close of 2009. Therefore, U.S. EPA should not base preliminary designations on monitoring information that will be outdated by the time final designations are made. Because there is a stigma associated with nonattainment designations, Indiana urges the U.S. EPA to carefully review all available monitoring information, data analyses, and modeling information prior to imposing undue economic hardship on states and local areas. Please refer to Attachments B, C, and D for additional information concerning these matters.

U.S. EPA needs to make a documented reasoned determination on Indiana's exceptional events flags for all $PM_{2.5}$ data used to determine compliance with the 24-hour $PM_{2.5}$ NAAQS

- As part of Indiana's recommendations made on May 30, 2008, preliminary data related to exceptional events for Indiana were submitted as an appendix. On June 13, 2008 a revised appendix was sent to U.S. EPA that included information for exceptional events that affected Indiana during 2005-2007, including information regarding a July 4th, 2007, exceptional event that was not previously submitted. Indiana is disappointed that U.S. EPA was unable to review and concur with these exceptional events prior to proposing designations. Concurrence from U.S. EPA concerning the exceptional events submission would have altered the proposed designation of Dubois County as nonattainment. Publicly proposing counties as nonattainment in August 2008 without addressing exceptional events leads to a false stigma in relation to air quality in the area. Indiana urges U.S. EPA to take into consideration all exceptional events data before proceeding with making final nonattainment designations. Furthermore, if the effectiveness of designations are to be based on 2006-2008 monitored values, 2008 exceptional event submissions must be reviewed and acted upon prior to the effective date.

U.S. EPA needs to reconsider its desire that the non-attainment areas for the 24-hour $PM_{2.5}$ NAAQS match those for the annual $PM_{2.5}$ NAAQS and the 8-hour Ozone NAAQS

- When designating areas under the annual $PM_{2.5}$ standard, U.S. EPA relied on guidance and criteria established for the 1-hour ozone and carbon monoxide NAAQS. Section 107(d)(4)(A)(iv) is the only citation of the CAA that references a Metropolitan or Consolidated Metropolitan Statistical Area (MSA or CMSA) boundary as the presumptive boundary for a nonattainment area. However, not only is this citation limited to ozone and carbon monoxide

areas, it is limited to areas classified as Serious, Severe, or Extreme under Subpart 2 of the CAA. U.S. EPA relied on Subpart 1 of the CAA when it designated areas under the annual $PM_{2.5}$ standard and no areas were classified. Section 107(d)(4)(B) of the CAA defines a nonattainment area for PM_{10} based on a violation of the standard, suggesting that the boundary should be limited to the jurisdiction where the violation occurs. Both the annual and 24-hour $PM_{2.5}$ standards are a revised version of the PM standards. Therefore, Indiana firmly believes that $PM_{2.5}$ designations should be consistent with designations under the PM_{10} standard. Since U.S. EPA is relying on the nonattainment boundaries for the annual $PM_{2.5}$ standard to serve as the presumptive boundaries for the 24-hour $PM_{2.5}$ standard, and the presumptive boundaries would be more representative of ozone as the pollutant, U.S. EPA must reconsider the criteria and presumptive boundaries prior to proceeding with final designations under the 24-hour $PM_{2.5}$ standard.

- In comparing background monitoring data from the Midwest to that from major urban areas within the Midwest (Chicago, Indianapolis, Detroit, etc.), and in consideration of substantive data analysis work conducted by the Lake Michigan Air Directors Consortium, $PM_{2.5}$ concentrations do not present the same regional characteristics as ozone. In fact, unlike ozone, $PM_{2.5}$ concentrations can be influenced significantly at the local level by a single stationary source. This is further demonstrated in comparing data from multiple monitoring sites within a single urban area, where monitored levels of $PM_{2.5}$ vary significantly based on proximity to industrial activity. Using the greater Indianapolis area as an example, monitored ozone levels throughout the nine county Central Indiana region maintain relative consistency throughout the urban area, with sites in each county measuring air quality above the new ozone standard. Measured ozone levels within the urban core tend to be consistent with what is measured in collar counties, both upwind and downwind. This is not the case with $PM_{2.5}$, where measured levels vary significantly upwind and downwind of the urban core. Unlike with ozone, monitors that measure air quality above the 24-hour $PM_{2.5}$ standard in the urban area are limited to the urban core, and all sites outside the urban core measure air quality below the standard. U.S. EPA must consider the differences between ozone and $PM_{2.5}$ and factor the differences into consideration when developing the criteria and presumptive boundaries for the 24-hour $PM_{2.5}$ standard prior to proceeding with final designations. Please refer to Attachment D for additional information.

- Indiana firmly believes that due to the localized influence (urban excess) of $PM_{2.5}$, nonattainment boundaries for the 24-hour $PM_{2.5}$ standard should be limited only to counties that possess a three-year average ambient monitor-based design value above the standard. However, if the only violating monitor within the county is a source-oriented site, the boundary should be limited to the township in which the monitor resides. This is consistent with U.S. EPA designations under the PM_{10} standard.

- Recognizing that U.S. EPA is obligated to consider a county's contribution to a downwind monitored violation of the standard, sound evidence must exist that demonstrates that a county actually contributes to the downwind violation in order for the upwind county to be designated nonattainment. Such evidence should not only be supported by a culpability demonstration, the culpability of the upwind county, or portion thereof, must be significant. Counties that measure air quality below the standard, and are not proven to be significantly culpable for a downwind violation, should be designated attainment. Counties for which monitoring data does not exist, and are not proven to be significantly culpable for a downwind violation, should be considered unclassifiable and designated attainment.

- Since there are multiple species that comprise $PM_{2.5}$, and the portion of specie contribution varies by season and geographic location, relying solely on precursor emissions data weighted evenly by species is inappropriate and does not constitute a culpability demonstration. Additionally, assuming that mobile source contributions driven by population density substantiate culpability for a collar county is erroneous and contradicted by speciation and source apportionment data available to U.S. EPA.

- Indiana strongly believes that a number of Indiana counties were improperly designated nonattainment under the annual $PM_{2.5}$ standard. For instance, Hamilton, Hendricks, Johnson, and Morgan counties were designated as part of the central Indiana (Indianapolis) nonattainment area due to population density and assumed mobile source contribution to monitored violations in Marion County. However, not only does measured air quality not support the designation of these counties, area and mobile sources are not culpable for the urban excess measured in Marion County. Please refer to Attachment D for additional information.

- Lake and Porter counties were designated as part of the greater Chicago nonattainment area under the annual $PM_{2.5}$ standard due to assumed contribution to monitored violations in northeast Illinois. All monitor sites in Lake and Porter counties have measured air quality that meets the annual standard since 2004, and Lake and Porter counties are more downwind than upwind of the City of Chicago. Culpability analysis prepared and submitted by Indiana to U.S. EPA on April 3, 2008 demonstrates that not only are Lake and Porter counties not culpable for monitored violations in northeast Illinois, counties designated as attainment in southeast Wisconsin are more culpable to measured levels in northeast Illinois than are Lake and Porter counties. Since Indiana expects Lake and Porter counties to measure air quality below the 24-hour $PM_{2.5}$ standard by the close of 2008, U.S. EPA must ensure that these two counties are designated appropriately (as attainment). Please refer to Attachment D for additional information.

- In the case of Southwest Indiana, Vanderburgh and Knox counties will attain the 24-hour $PM_{2.5}$ standard based on monitor values from 2006 through 2008. If U.S. EPA reviews and approves the 2005-2007 exceptional events, Dubois County could be identified as attainment as well. Counties like Warrick County, that measure air quality below the standard and are not proven to be significantly culpable for a downwind violation, should be designated attainment. Therefore, Indiana expects all of Southwest Indiana to attain the standard by the close of 2008 and expects U.S. EPA to recognize the area as attainment in its final designations. Please refer to Attachments B and D for additional information.

U.S. EPA needs to reconsider its' determination that Townships with significant power plants should be designated as non-attainment based upon the cause or contribute rationale

- All five townships in Indiana that U.S. EPA proposed as being nonattainment are identified as contributing to a monitor violation in a nearby county or counties. This is not the case in any of the five townships, which are more downwind than upwind of the violating monitors within the areas U.S. EPA proposed as nonattainment. The stationary sources in those townships are heavily controlled and will continue to be. Should a mandate for the Clean Air Interstate Rule be issued, Indiana will have an equivalent control program in place prior to the mandate being effective. Since all areas are projected to attain based on SIP-quality modeling, and Indiana's control program for electric generating units will be equivalent to Reasonably Available Control Technology, not only are reductions from facilities within the townships that U.S. EPA proposed as nonattainment not necessary, their being designated nonattainment will not result in further emission reductions or serve any purpose. Counties and townships for which monitoring data does not exist, and are not proven to be significantly culpable for a downwind violation, should

be considered unclassifiable and designated attainment. Please refer to Attachment D for additional information.

Indiana PM 2.5 Summary - DAILY Standard

Note: The Daily Standard is 35.0 micrograms per cubic meter (ug/m3) and attainment is determined by the average of the Particulate Matter (PM) 2.5 values over a three-year period. If a monitor is less than or equal to 35.49 ug/m3 it is considered attainment. A monitor that measures 35.5 ug/m3 or higher is considered nonattainment. (Decimals 0.49 or lower are rounded down, decimals 0.50 or higher are rounded up)

The 98th percentile for PM 2.5 is calculated by first sorting all the data values collected in each year from lowest to highest. A rank is assigned to each data value with one being the lowest value. The number of values in each year is multiplied by 0.98 and the value of 1 is added to the interger part of the answer. The corresponding value for the rank is the 98th percentile. The 3-year average is the average of the 98th percentile from each year.

				Yearly 98%					3-year Design Value						
County	Site #	City	Site Name	2004	2005	2006	2007	2008 (1st 2 Quarters ONLY)	2004-2006	2004-2006 rounded	2005-2007	2005-2007 rounded	2006-2008 (1st 2 Quarters of 2008 ONLY)	2006-2008 rounded (1st 2 Quarters of 2008 ONLY)	2008 Critical Value--Yearly Mean (98%) Needed to Make 2006-2008 Design Value Above the Standard
ALLEN	180030004	Fort Wayne	Beacon St	31.0	38.4	26.2	33.7	30.7	31.867	32	32.767	33	30.2	30	45.1
ALLEN	180030014	Fort Wayne	Taylor Univ	28.3	34.9	26.5	32.0	N/A	29.9	30	31.133	31	Monitor Shut Down 12/31/2007		
CLARK*	180190006	Jeffersonville	Pfau*	27.9	35.1	32.2	38.1	24.8	31.7	32	35.13	35	31.700	32	37.7
CLARK	180190006	Jeffersonville	Pfau	28.4	45.5	35.9	38.1	24.8	36.6	37	39.833	40	32.933	33	31.0
DELAWARE	180350006	Muncie	Muncie Central HS	27.2	37.3	27.4	32.9	20.3	30.633	31	32.533	33	26.867	27	44.7
DUBOIS	180370004	Jasper	Sports Complex			33.6	35.2	26.3	33.6	34 [1]	34.4	34 [2]	31.7	32	N/A
DUBOIS	180370005	Jasper	Golf Club			32.2	36.2	21.6	32.2	32 [1]	34.2	34 [2]	30	30	N/A
DUBOIS	180372001	Jasper	200 W 6th St	30.0	41.2	31.6	34.7	26.1	34.267	34	35.833	36	30.8	31	38.7
ELKHART	180390008	Elkhart	Prairie Street	31.4	40.8	25.5	34.6	29.4	32.567	33	33.633	34	29.833	30	44.9
FLOYD	180431004	New Albany	Green Valley School	26.7	40.1	28.2	35.4	18.5	31.667	32	34.567	35	27.367	27	41.4
GIBSON	180510002	Oakland City	2205 S 1350 E.					19.8					19.8	20 [1]	N/A
HENRY	180650003	Not in a City	Shenandoah HS	26.9	37.3	27.2	32.4	23.3	30.467	30	32.3	32	27.633	28	45.4
HOWARD	180670003	Kokomo	215 W Superior St	27.6	37.6	27.6	33.6	27.9	30.933	31	32.933	33	29.7	30	43.8
KNOX	180830004	Not in a City	SW Purdue Ag Cntr	29.9	41.8	36.2	30.9	21.4	35.967	36	36.3	36	29.5	30	37.9
LAKE	180890006	East Chicago	Franklin School	33.0	39.9	29.4	37.2	24.4	34.1	34	35.5	36	30.333	30	38.4
LAKE	180890022	Gary	IITRI	45.8	40.4	28.5	35.2	28.9	38.233	38	34.7	35	30.867	31	41.3
LAKE	180890026	Gary	Burr St	38.6	43.7	30.4	36.8	32.8	37.567	38	36.967	37	33.333	33	37.8
LAKE	180890027	Highland	Eldon Ready School	30.1	37.1	25.8	34.1	25.1	31	31	32.333	32	28.333	28	45.1
LAKE	180890031	Gary	Water Treatment Plant		39.6	27.1	36.2	29.9	33.35	33 [2]	34.3	34	31.067	31	41.7
LAKE	180891003	Gary	Ivanhoe School	30.5	39.0	25.8	33.8	N/A	31.767	32	32.867	33	Monitor Shut Down 12/31/2007		
LAKE	180892004	Hammond	Purdue	31.9	37.6	26.2	34.9	25.0	31.9	32	32.9	33	28.7	29	43.9
LAKE	180892010	Hammond	Robertsdale	28.4	40.9	27.9	35.2	31.8	32.4	32	34.667	35	31.633	32	41.9
LA PORTE	180910011	Michigan City	Marsh Elementary Sch	31.6	37.5	25.5	31.5	24.7	31.533	32	31.5	32	27.233	27	48.0
LA PORTE	180910012	LaPorte	1119 Lake St	26.6	36.5	24.7	31.0	N/A	29.267	29	30.733	31	Monitor Shut Down 12/31/2007		
MADISON	180950009	Anderson	44 W 5th St	28.2	38.3	28.0	34.3	25.5	31.5	32	33.533	34	29.267	29	42.7
MARION	180970042	Indianapolis	Mann Road	29.3	39.4	31.0	35.6	N/A	33.233	33	35.333	35	Monitor Shut Down 12/31/2007		
MARION	180970043	Indianapolis	S. West St	31.7	43.9	37.5	38.3	26.9	37.7	38	39.9	40	34.233	34	29.2
MARION	180970066	Indianapolis	English Ave	31.1	44.0	36.2	38.8	24.2	37.1	37	39.667	40	33.067	33	30.0
MARION	180970078	Indianapolis	Washington Park	31.0	42.5	31.7	38.8	24.0	35.067	35	37.667	38	31.5	32	34.5
MARION	180970079	Indianapolis	7250 E. 75th St	28.7	43.4	30.7	33.5	N/A	34.267	34	35.867	36	Monitor Shut Down 12/31/2007		
MARION	180970081	Indianapolis	W 18th St	31.9	45.7	34.8	38.4	26.7	37.467	37	39.633	40	33.3	33	31.8
MARION	180970083	Indianapolis	2302 E. Michigan St.	31.3	40.3	33.5	37.2	24.9	35.033	35	37	37	31.867	32	34.3
PORTER	181270020	Not in a City	Dunes Natl Lakeshore	29.7	37.6	26.6	30.6	N/A	31.3	31	31.6	32	Monitor Shut Down 12/31/2007		
PORTER	181270024	Ogden Dunes	Water Treatment Plant	29.1	37.5	26.1	33.3	22.8	30.9	31	32.3	32	27.4	27	45.6
ST JOSEPH	181410014	South Bend	Nuner Elementary Sch	26.7	40.2	24.9	33.8	28.9	30.6	31	32.967	33	29.2	29	46.3
ST JOSEPH	181410015	South Bend	Shields Drive			24.9	30.8	25.0	24.9	25 [1]	27.85	28 [2]	26.9	27	N/A
ST JOSEPH	181411008	South Bend	Angela & Eddy	27.4	37.3	24.7	N/A	N/A	29.8	30			Monitor Shut Down May 2006		
ST JOSEPH	181412004	South Bend	LaSalle HS	25.1	35.8	24.1	31.3	N/A	28.333	28	30.4	30	Monitor Shut Down 12/31/2007		
SPENCER	181470009	Dale	David Turnham Sch	25.2	39.7	27.7	31.4	19.9	30.867	30	32.933	33	26.333	26	45.9
TIPPECANOE	181570008	Lafayette	3401 Greenbush St	26.4	49.3	27.0	34.2	25.9	34.233	34	36.833	37	29.033	29	43.8
VANDERBURGH	181630006	Evansville	Civic Center	28.3	42.5	30.5	33.6	21.9	33.767	34	35.533	36	28.667	29	40.9
VANDERBURGH	181630012	Evansville	W Mill Rd	27.5	41.5	27.9	29.9	22.4	32.3	32	33.1	33	26.733	27	47.2
VANDERBURGH	181630016	Evansville	Univ of Evansville	28.3	37.0	29.5	31.5	25.2	31.6	32	32.667	33	28.733	29	44.0
VIGO	181670018	Terre Haute	Lafayette St	26.9	43.1	31.0	31.0	24.0	33.667	34	35.033	35	28.667	29	43.0
VIGO	181670023	Terre Haute	Devaney School	30.4	42.5	29.1	32.2	24.5	34	34	34.6	35	28.6	29	43.7

[1] One year of Data [2] Two Years of Data Values above the standard

*2004-2006 Exceptional Events Backed-Out

CAIR	Utility	FACILITY_NAME	ORISPL_CODE	UNIT ID	Fuel type	2005 SO2 emissions (tons)	2005 or before SO2 control	Phase I growth factor (2014/2005)	Phase I (2006-2014) controls/changes	Phase I (2006-2014) control efficiency (%)	Phase I SO2 emissions (tons)
IN	AEP-I&M	Rockport	6166	MB1	coal	31947		1.07			34,183
IN	AEP-I&M	Rockport	6166	MB2	coal	35259		1.07			37,727
IN	AEP-I&M	Tanners Creek	988	U1	coal	4105		1.07			4,392
IN	AEP-I&M	Tanners Creek	988	U2	coal	4286		1.07			4,587
IN	AEP-I&M	Tanners Creek	988	U3	coal	5093		1.07			5,450
IN	AEP-I&M	Tanners Creek	988	U4	coal	33049		1.07			35,363
	Total emissions					**113,739**					**121,701**
IN	DPL Energy-LLC	Montpelier Electric Gen Station	55229	G1CT1	NG/distillate oil	0		1.83			0
IN	DPL Energy-LLC	Montpelier Electric Gen Station	55229	G1CT2	NG/distillate oil	0		1.83			0
IN	DPL Energy-LLC	Montpelier Electric Gen Station	55229	G2CT1	NG/distillate oil	0		1.83			0
IN	DPL Energy-LLC	Montpelier Electric Gen Station	55229	G2CT2	NG/distillate oil	0		1.83			0
IN	DPL Energy-LLC	Montpelier Electric Gen Station	55229	G3CT1	NG/distillate oil	0		1.83			0
IN	DPL Energy-LLC	Montpelier Electric Gen Station	55229	G3CT2	NG/distillate oil	0		1.83			0
IN	DPL Energy-LLC	Montpelier Electric Gen Station	55229	G4CT1	NG/distillate oil	0		1.83			0
IN	DPL Energy-LLC	Montpelier Electric Gen Station	55229	G4CT2	NG/distillate oil	0		1.83			0
	Total emissions					**0**					**0**
IN	Duke Energy	Cayuga	1001	1	coal	34362		1.07	FGD(2008)	95	1,838
IN	Duke Energy	Cayuga	1001	2	coal	43279		1.07	FGD(2008)	95	2,315
IN	Duke Energy	Cayuga	1001	4	NG/distillate oil	0		1.83			0

CAIR	Utility	FACILITY_NAME	ORISPL_CODE	UNIT ID	Fuel type	2005 SO2 emissions (tons)	2005 or before SO2 control	Phase I growth factor (2014/2005)	Phase I (2006-2014) controls/changes	Phase I (2006-2014) control efficiency (%)	Phase I SO2 emissions (tons)
IN	Duke Energy	Edwardsport	1004	6-1	distillate oil			1.83	IGCC (2012) - permitted emissions		254
IN	Duke Energy	Edwardsport	1004	7-1	coal	2201					
IN	Duke Energy	Edwardsport	1004	7-2	coal	2525					
IN	Duke Energy	Edwardsport	1004	8-1	coal	2416					
IN	Duke Energy	Gibson	6113	1	coal	35140		1.07	FGD(2007)	95	1,880
IN	Duke Energy	Gibson	6113	2	coal	40372		1.07	FGD(2007)	95	2,160
IN	Duke Energy	Gibson	6113	3	coal	49859		1.07	FGD (2006)	95	2,667
IN	Duke Energy	Gibson	6113	4	coal	9105	FGD	1.07			9,743
IN	Duke Energy	Gibson	6113	5	coal	19758	FGD	1.07			21,141
IN	Duke Energy	Henry County Generating Station	7763	1	NG	0		1.83			0
IN	Duke Energy	Henry County Generating Station	7763	2	NG	0		1.83			0
IN	Duke Energy	Henry County Generating Station	7763	3	NG	0		1.83			0
IN	Duke Energy	Noblesville	1007	CT3	NG	0		1.83			1
IN	Duke Energy	Noblesville	1007	CT4	NG	0		1.83			1
IN	Duke Energy	Noblesville	1007	CT5	NG	0		1.83			1
IN	Duke Energy	R Gallagher	1008	1	coal	14834		1.07			15,872
IN	Duke Energy	R Gallagher	1008	2	coal	15158		1.07			16,219
IN	Duke Energy	R Gallagher	1008	3	coal	12301		1.07			13,162
IN	Duke Energy	R Gallagher	1008	4	coal	14374		1.07			15,380
IN	Duke Energy	Vermillion Energy Facility	55111	1	NG	0		1.83			0
IN	Duke Energy	Vermillion Energy Facility	55111	2	NG	0		1.83			0
IN	Duke Energy	Vermillion Energy Facility	55111	3	NG	0		1.83			0
IN	Duke Energy	Vermillion Energy Facility	55111	4	NG	0		1.83			0
IN	Duke Energy	Vermillion Energy Facility	55111	5	NG	0		1.83			0
IN	Duke Energy	Vermillion Energy Facility	55111	6	NG	0		1.83			0
IN	Duke Energy	Vermillion Energy Facility	55111	7	NG	0		1.83			0
IN	Duke Energy	Vermillion Energy Facility	55111	8	NG	0		1.83			0
IN	Duke Energy	Wabash River Gen Station	1010	1	IGCC	380		1.07			407

CAIR	Utility	FACILITY_NAME	ORISPL_CODE	UNIT ID	Fuel type	2005 SO2 emissions (tons)	2005 or before SO2 control	Phase I growth factor (2014/2005)	Phase I (2006-2014) controls/changes	Phase I (2006-2014) control efficiency (%)	Phase I SO2 emissions (tons)
IN	Duke Energy	Wabash River Gen Station	1010	2	coal	8179		1.07			8,751
IN	Duke Energy	Wabash River Gen Station	1010	3	coal	8252		1.07			8,830
IN	Duke Energy	Wabash River Gen Station	1010	4	coal	8864		1.07			9,484
IN	Duke Energy	Wabash River Gen Station	1010	5	coal	9387		1.07			10,044
IN	Duke Energy	Wabash River Gen Station	1010	6	coal	31713		1.07			33,933
IN	Duke Energy	Wheatland Generating Facility LLC	55224	EU-01	NG	0		1.83			0
IN	Duke Energy	Wheatland Generating Facility LLC	55224	EU-02	NG	0		1.83			0
IN	Duke Energy	Wheatland Generating Facility LLC	55224	EU-03	NG	0		1.83			0
IN	Duke Energy	Wheatland Generating Facility LLC	55224	EU-04	NG	0		1.83			0
	Total emissions					**362,460**					**174,084**
IN	Hoosier Energy	Frank E Ratts	1043	1SG1	coal	8634		1.07			9,238
IN	Hoosier Energy	Frank E Ratts	1043	2SG1	coal	6490		1.07			6,944
IN	Hoosier Energy	Merom	6213	1SG1	coal	9778	FGD	1.07			10,463
IN	Hoosier Energy	Merom	6213	2SG1	coal	11041	FGD	1.07			11,814
IN	Hoosier Energy	Worthington Generation	55148	1	NG	0		1.83			0
IN	Hoosier Energy	Worthington Generation	55148	2	NG	0		1.83			0
IN	Hoosier Energy	Worthington Generation	55148	3	NG	0		1.83			0
IN	Hoosier Energy	Worthington Generation	55148	4	NG	0		1.83			0
	Total emissions					**35,943**					**38,459**
IN	IKEC	Clifty Creek	983	1	coal	12085		1.07	FGD (2010)	95	647
IN	IKEC	Clifty Creek	983	2	coal	11633		1.07	FGD (2010)	95	622
IN	IKEC	Clifty Creek	983	3	coal	13176		1.07	FGD (2010)	95	705
IN	IKEC	Clifty Creek	983	4	coal	13124		1.07	FGD (2010)	95	702
IN	IKEC	Clifty Creek	983	5	coal	12673		1.07	FGD (2010)	95	678
IN	IKEC	Clifty Creek	983	6	coal	11968		1.07	FGD (2010)	95	640

CAIR	Utility	FACILITY_NAME	ORISPL_CODE	UNIT ID	Fuel type	2005 SO2 emissions (tons)	2005 or before SO2 control	Phase I growth factor (2014/2005)	Phase I (2006-2014) controls/changes	Phase I (2006-2014) control efficiency (%)	Phase I SO2 emissions (tons)
	Total emissions					**74,659**					**3,994**
IN	IMPA	Anderson	7336	ACT1	NG/distillate oil	0		1.83			0
IN	IMPA	Anderson	7336	ACT2	NG/distillate oil	0		1.83			0
IN	IMPA	Richmond (IN)	7335	RCT1	NG/distillate oil	0		1.83			0
IN	IMPA	Richmond (IN)	7335	RCT2	NG/distillate oil	0		1.83			0
	Total emissions					**1**					**1**
IN	IPL/AES	Georgetown Substation	7759	GT1	NG	0		1.83			0
IN	IPL/AES	Georgetown Substation	7759	GT2	NG	0		1.83			0
IN	IPL/AES	Georgetown Substation	7759	GT3	NG	0		1.83			0
IN	IPL/AES	Georgetown Substation	7759	GT4	NG	0		1.83			0
IN	IPL/AES	Harding Street Station (EW Stout)	990	9	distillate oil	0		1.83			0
IN	IPL/AES	Harding Street Station (EW Stout)	990	10	distillate oil	0		1.83			0
IN	IPL/AES	Harding Street Station (EW Stout)	990	50	coal	9241		1.07			9,888
IN	IPL/AES	Harding Street Station (EW Stout)	990	60	coal	9884		1.07			10,576
IN	IPL/AES	Harding Street Station (EW Stout)	990	70	coal	30222		1.07	FGD (2007)	98	647
IN	IPL/AES	Harding Street Station (EW Stout)	990	GT4	NG/distillate oil	1		1.83			2
IN	IPL/AES	Harding Street Station (EW Stout)	990	GT5	NG/distillate oil	2		1.83			4
IN	IPL/AES	Harding Street Station (EW Stout)	990	GT6	NG	0		1.83			0

CAIR	Utility	FACILITY_NAME	ORISPL_CODE	UNIT ID	Fuel type	2005 SO2 emissions (tons)	2005 or before SO2 control	Phase I growth factor (2014/2005)	Phase I (2006-2014) controls/changes	Phase I (2006-2014) control efficiency (%)	Phase I SO2 emissions (tons)
IN	IPL/AES	IPL Eagle Valley Generating Station	991	1	distillate oil	0		1.83			1
IN	IPL/AES	IPL Eagle Valley Generating Station	991	2	distillate oil	0		1.83			1
IN	IPL/AES	IPL Eagle Valley Generating Station	991	3	coal	3010		1.07			3,221
IN	IPL/AES	IPL Eagle Valley Generating Station	991	4	coal	3933		1.07			4,209
IN	IPL/AES	IPL Eagle Valley Generating Station	991	5	coal	3862		1.07			4,132
IN	IPL/AES	IPL Eagle Valley Generating Station	991	6	coal	7006		1.07			7,496
IN	IPL/AES	Petersburg	994	1	coal	546	FGD	1.07			585
IN	IPL/AES	Petersburg	994	2	coal	1424	FGD	1.07			1,524
IN	IPL/AES	Petersburg	994	3	coal	17832	FGD	1.07			19,080
IN	IPL/AES	Petersburg	994	4	coal	17850	FGD	1.07			19,100
	Total emissions					**104,815**					**80,466**
IN	MIRANT	Sugar Creek Power Company, LLC	55364	CT11	NG	1		1.83			1
IN	MIRANT	Sugar Creek Power Company, LLC	55364	CT12	NG	1		1.83			1
	Total emissions					**1**					**2**
IN	NIPSCO	Bailly Generating Station	995	7	coal	2539	FGD	1.07			2,717
IN	NIPSCO	Bailly Generating Station	995	8	coal	2181	FGD	1.07			2,334

CAIR	Utility	FACILITY_NAME	ORISPL_CODE	UNIT ID	Fuel type	2005 SO2 emissions (tons)	2005 or before SO2 control	Phase I growth factor (2014/2005)	Phase I (2006-2014) controls/changes	Phase I (2006-2014) control efficiency (%)	Phase I SO2 emissions (tons)
IN	NIPSCO	Dean H Mitchell Generating Station	996	4	coal						-
IN	NIPSCO	Dean H Mitchell Generating Station	996	5	coal						-
IN	NIPSCO	Dean H Mitchell Generating Station	996	6	coal						-
IN	NIPSCO	Dean H Mitchell Generating Station	996	11	coal						-
IN	NIPSCO	Michigan City Generating Station	997	4							-
IN	NIPSCO	Michigan City Generating Station	997	5	NG			1.83			-
IN	NIPSCO	Michigan City Generating Station	997	6							-
IN	NIPSCO	Michigan City Generating Station	997	12	coal	16745		1.07			17,917
IN	NIPSCO	R M Schahfer Generating Station	6085	14	coal	12804		1.07			13,700
IN	NIPSCO	R M Schahfer Generating Station	6085	15	coal	10511		1.07			11,246
IN	NIPSCO	R M Schahfer Generating Station	6085	17	coal	8902	FGD	1.07	FGD upgrade (95%from 90%)		4,451
IN	NIPSCO	R M Schahfer Generating Station	6085	18	coal	8118	FGD	1.07	FGD upgrade (95%from 90%)		4,059
	Total emissions					**61,800**					**56,425**
IN	RPL	Whitewater Valley	1040	1	coal	4284		1.07			4,584

CAIR	Utility	FACILITY_NAME	ORISPL_CODE	UNIT ID	Fuel type	2005 SO2 emissions (tons)	2005 or before SO2 control	Phase I growth factor (2014/2005)	Phase I (2006-2014) controls/changes	Phase I (2006-2014) control efficiency (%)	Phase I SO2 emissions (tons)
IN	RPL	Whitewater Valley	1040	2	coal	7549	Dry limestone injection	1.07			8,077
	Total emissions					**11,833**					**12,661**
IN	SIGECO	A B Brown Generating Station	6137	1	coal	5993	FGD	1.07			6,413
IN	SIGECO	A B Brown Generating Station	6137	2	coal	3045	FGD	1.07			3,259
IN	SIGECO	A B Brown Generating Station	6137	3	NG/distillate oil	0		1.83			0
IN	SIGECO	A B Brown Generating Station	6137	4	NG/distillate oil	0		1.83			0
IN	SIGECO	Alcoa Allowance Management Inc	6705	4	coal	32779		1.07	FGD (2008)	90	3,507
IN	SIGECO	F B Culley Generating Station	1012	1	coal	2827		0			-
IN	SIGECO	F B Culley Generating Station	1012	2	coal	1136	FGD	1.07			1,215
IN	SIGECO	F B Culley Generating Station	1012	3	coal	1548	FGD	1.07			1,657
	Total emissions					**47,329**					**16,051**
IN	SL-Dominion	State Line Generating Station (IN)	981	3	coal	3572		1.07			3,822
IN	SL-Dominion	State Line Generating Station (IN)	981	4	coal	4377		1.07			4,683
	Total emissions					**7,949**					**8,506**
IN	Whiting Clean Energy, Inc.	Whiting Clean Energy, Inc.	55259	CT1	NG	1		1.83			2
IN	Whiting Clean Energy, Inc.	Whiting Clean Energy, Inc.	55259	CT2	NG	2		1.83			3

CAIR	Utility	FACILITY_NAME	ORISPL_CODE	UNIT ID	Fuel type	2005 SO2 emissions (tons)	2005 or before SO2 control	Phase I growth factor (2014/2005)	Phase I (2006-2014) controls/changes	Phase I (2006-2014) control efficiency (%)	Phase I SO2 emissions (tons)
	Total emissions					**3**					**5**

Utility	FACILITY_NAME	UNITID	OP_YEAR	Fuel type (USEPA - 2006 NEEDS)	2005 NOX (tons)	2005 or before NOX control	Phase I NOX control (2006-2014) or changes	Phase I (2006-2014) NOx control efficiency (%)	2014/2005 growth factor (AEO 2008)	Phase I projected emissions (tons)-see worksheet for projected control-highlighted	Phase I projected emissions (tons)-SCR/SNCR extended operation
AEP-I&M	Rockport	MB1	2005	coal	10,019				1.07	10,720	10,720
AEP-I&M	Rockport	MB2	2005	coal	11,103				1.07	11,880	11,880
AEP-I&M	Tanners Creek	U1	2005	coal	1,397		SNCR (2010)		1.07	1,495	1,150
AEP-I&M	Tanners Creek	U2	2005	coal	1,443		SNCR (2010)		1.07	1,544	1,190
AEP-I&M	Tanners Creek	U3	2005	coal	1,781		SNCR (2010)		1.07	1,906	1,450
AEP-I&M	Tanners Creek	U4	2005	coal	3,341				1.07	3,575	3,575
	Total Emissions				**29,084**					**31,120**	**29,965**
DPL Energy LLC	Montpelier Electric Gen Station	G1CT1	2005	NG/distillate oil	4				1.83	7	7
DPL Energy LLC	Montpelier Electric Gen Station	G1CT2	2005	NG/distillate oil	3				1.83	5	5
DPL Energy LLC	Montpelier Electric Gen Station	G2CT1	2005	NG/distillate oil	4				1.83	7	7
DPL Energy LLC	Montpelier Electric Gen Station	G2CT2	2005	NG/distillate oil	4				1.83	7	7
DPL Energy LLC	Montpelier Electric Gen Station	G3CT1	2005	NG/distillate oil	4				1.83	7	7
DPL Energy LLC	Montpelier Electric Gen Station	G3CT2	2005	NG/distillate oil	4				1.83	7	7
DPL Energy LLC	Montpelier Electric Gen Station	G4CT1	2005	NG/distillate oil	3				1.83	5	5
DPL Energy LLC	Montpelier Electric Gen Station	G4CT2	2005	NG/distillate oil	4				1.83	7	7
	Total Emissions				**30**					**55**	**55**
Duke Energy	Cayuga	1	2005	coal	4,619				1.07	4,942	4,942
Duke Energy	Cayuga	2	2005	coal	6,931				1.07	7,416	7,416
Duke Energy	Cayuga	4	2005	NG/distillate oil	12				1.83	22	22

Utility	FACILITY_NAME	UNITID	OP_YEAR	Fuel type (USEPA - 2006 NEEDS)	2005 NOX (tons)	2005 or before NOX control	Phase I NOX control (2006-2014) or changes	Phase I (2006-2014) NOx control efficiency (%)	2014/2005 growth factor (AEO 2008)	Phase I projected emissions (tons)-see worksheet for projected control-highlighted	Phase I projected emissions (tons)-SCR/SNCR extended operation
Duke Energy	Connersville Peaking Station	1A	2005	distillate oil	1				1.83	2	2
Duke Energy	Connersville Peaking Station	1B	2005	distillate oil	1				1.83	2	2
Duke Energy	Connersville Peaking Station	2A	2005	distillate oil	0				1.83	0	0
Duke Energy	Connersville Peaking Station	2B	2005	distillate oil	0				1.83	0	0
Duke Energy	Edwardsport	6-1	2005	distillate oil					1.83	0	0
Duke Energy	Edwardsport	7-1	2005	coal	501		IGCC (2012) -use permitted emissions		1	2,050	2,050
Duke Energy	Edwardsport	7-2	2005	coal	526		IGCC (2012)				0
Duke Energy	Edwardsport	8-1	2005	coal	529		IGCC (2012)				0
Duke Energy	Gibson	1	2005	coal	4,059	SCR			1	4,059	1,122
Duke Energy	Gibson	2	2005	coal	5,337	SCR			1	5,337	1,281
Duke Energy	Gibson	3	2005	coal	6,980	SCR			1	6,980	1,483
Duke Energy	Gibson	4	2005	coal	7,237	SCR			1	7,237	1,507
Duke Energy	Gibson	5	2005	coal	6,671	SCR			1	6,671	1,411
Duke Energy	Henry County Generating Station	1	2005	NG	16				1.83	29	29
Duke Energy	Henry County Generating Station	2	2005	NG	16				1.83	29	29
Duke Energy	Henry County Generating Station	3	2005	NG	17				1.83	31	31
Duke Energy	Noblesville	CT3	2005	NG	7				1.83	13	13
Duke Energy	Noblesville	CT4	2005	NG	11				1.83	20	20
Duke Energy	Noblesville	CT5	2005	NG	10				1.83	18	18
Duke Energy	R Gallagher	1	2005	coal	1,393				1.07	1,491	1,491

Utility	FACILITY_NAME	UNITID	OP_YEAR	Fuel type (USEPA - 2006 NEEDS)	2005 NOX (tons)	2005 or before NOX control	Phase I NOX control (2006-2014) or changes	Phase I (2006-2014) NOx control efficiency (%)	2014/2005 growth factor (AEO 2008)	Phase I projected emissions (tons)-see worksheet for projected control-highlighted	Phase I projected emissions (tons)-SCR/SNCR extended operation
Duke Energy	R Gallagher	2	2005	coal	1,401				1.07	1,499	1,499
Duke Energy	R Gallagher	3	2005	coal	1,148				1.07	1,228	1,228
Duke Energy	R Gallagher	4	2005	coal	1,363				1.07	1,458	1,458
Duke Energy	Vermillion Energy Facility	1	2005	NG	3				1.83	5	5
Duke Energy	Vermillion Energy Facility	2	2005	NG	3				1.83	5	5
Duke Energy	Vermillion Energy Facility	3	2005	NG	3				1.83	5	5
Duke Energy	Vermillion Energy Facility	4	2005	NG	3				1.83	5	5
Duke Energy	Vermillion Energy Facility	5	2005	NG	3				1.83	5	5
Duke Energy	Vermillion Energy Facility	6	2005	NG	3				1.83	5	5
Duke Energy	Vermillion Energy Facility	7	2005	NG	2				1.83	4	4
Duke Energy	Vermillion Energy Facility	8	2005	NG	3				1.83	5	5
Duke Energy	Wabash River Gen Station	1	2005	coal	245				1.07	262	262
Duke Energy	Wabash River Gen Station	2	2005	coal	1,088				1.07	1,164	1,164
Duke Energy	Wabash River Gen Station	3	2005	coal	1,101				1.07	1,178	1,178
Duke Energy	Wabash River Gen Station	4	2005	coal	1,175				1.07	1,257	1,257
Duke Energy	Wabash River Gen Station	5	2005	coal	1,242				1.07	1,329	1,329
Duke Energy	Wabash River Gen Station	6	2005	coal	4,150				1.07	4,441	4,441
Duke Energy	Wheatland Generating Facility LLC	EU-01	2005	NG	2				1.83	4	4
Duke Energy	Wheatland Generating Facility LLC	EU-02	2005	NG	3				1.83	5	5
Duke Energy	Wheatland Generating Facility LLC	EU-03	2005	NG	2				1.83	4	4
Duke Energy	Wheatland Generating Facility LLC	EU-04	2005	NG	2				1.83	4	4
	Total Emissions				**57,819**					**60,225**	**36,745**
Hoosier Energy	Frank E Ratts	1SG1	2005	coal	1,576		over fire air (2008)	25	1.07	1,265	1,265
Hoosier Energy	Frank E Ratts	2SG1	2005	coal	1,129		over fire air (2008)	25	1.07	906	906
Hoosier Energy	Merom	1SG1	2005	coal	5,096	SCR			1.07	5,453	1,098
Hoosier Energy	Merom	2SG1	2005	coal	4,948	SCR			1.07	5,294	1,234
Hoosier Energy	Worthington Generation	1	2005	NG	9				1.83	16	16

Utility	FACILITY_NAME	UNITID	OP_YEAR	Fuel type (USEPA - 2006 NEEDS)	2005 NOX (tons)	2005 or before NOX control	Phase I NOX control (2006-2014) or changes	Phase I (2006-2014) NOx control efficiency (%)	2014/2005 growth factor (AEO 2008)	Phase I projected emissions (tons)-see worksheet for projected control-highlighted	Phase I projected emissions (tons)-SCR/SNCR extended operation
Hoosier Energy	Worthington Generation	2	2005	NG	8				1.83	15	15
Hoosier Energy	Worthington Generation	3	2005	NG	9				1.83	16	16
Hoosier Energy	Worthington Generation	4	2005	NG	8				1.83	15	15
	Total Emissions				**12,783**					**12,980**	**4,565**
IKEC	Clifty Creek	1	2005	coal	3,184	SCR			1.07	3,407	576
IKEC	Clifty Creek	2	2005	coal	2,563	SCR			1.07	2,742	516
IKEC	Clifty Creek	3	2005	coal	3,534	SCR			1.07	3,781	631
IKEC	Clifty Creek	4	2005	coal	4,545	SCR			1.07	4,863	704
IKEC	Clifty Creek	5	2005	coal	4,369	SCR			1.07	4,675	679
IKEC	Clifty Creek	6	2005	coal	4,427				1.07	4,737	4,737
	Total Emissions				**22,622**					**24,206**	**7,842**
IMPA	Anderson	ACT1	2005	NG/distillate oil	1				1.83	2	2
IMPA	Anderson	ACT2	2005	NG/distillate oil	1				1.83	2	2
IMPA	Richmond (IN)	RCT1	2005	NG/distillate oil	1				1.83	2	2
IMPA	Richmond (IN)	RCT2	2005	NG/distillate oil	1				1.83	2	2
	Total Emissions				**4**					**7**	**7**
IPL/AES	Eagle Valley Generating Station	1	2005	distillate oil	1.14				1.83	2	2
IPL/AES	Eagle Valley Generating Station	2	2005	distillate oil	2.121				1.83	4	4
IPL/AES	Eagle Valley Generating Station	3	2005	coal	868.091				1.07	929	929
IPL/AES	Eagle Valley Generating Station	4	2005	coal	1044.547				1.07	1,118	1,118
IPL/AES	Eagle Valley Generating Station	5	2005	coal	608.147				1.07	651	651
IPL/AES	Eagle Valley Generating Station	6	2005	coal	1012.02				1.07	1,083	1,083
IPL/AES	Georgetown Substation	GT1	2005	NG	3				1.83	5	5

Utility	FACILITY_NAME	UNITID	OP_YEAR	Fuel type (USEPA - 2006 NEEDS)	2005 NOX (tons)	2005 or before NOX control	Phase I NOX control (2006-2014) or changes	Phase I (2006-2014) NOx control efficiency (%)	2014/2005 growth factor (AEO 2008)	Phase I projected emissions (tons)-see worksheet for projected control-highlighted	Phase I projected emissions (tons)-SCR/SNCR extended operation
IPL/AES	Georgetown Substation	GT2	2005	NG	4				1.83	7	7
IPL/AES	Georgetown Substation	GT3	2005	NG	4				1.83	7	7
IPL/AES	Georgetown Substation	GT4	2005	NG	5				1.83	9	9
IPL/AES	Harding Street Station (EW Stout)	9	2005	distillate oil	0				1.83	0	0
IPL/AES	Harding Street Station (EW Stout)	10	2005	distillate oil	1				1.83	2	2
IPL/AES	Harding Street Station (EW Stout)	50	2005	coal	1,048	SNCR			1.07	1,121	891
IPL/AES	Harding Street Station (EW Stout)	60	2005	coal	964	SNCR			1.07	1,031	963
IPL/AES	Harding Street Station (EW Stout)	70	2005	coal	2,495	SCR			1.07	2,670	722
IPL/AES	Harding Street Station (EW Stout)	GT4	2005	NG/distillate oil	17				1.83	31	31
IPL/AES	Harding Street Station (EW Stout)	GT5	2005	NG/distillate oil	23				1.83	42	42
IPL/AES	Harding Street Station (EW Stout)	GT6	2005	NG	9				1.83	16	16
IPL/AES	Petersburg	1	2005	coal	2,356				1.07	2,521	2,521
IPL/AES	Petersburg	2	2005	coal	3,175	SCR			1.07	3,397	973
IPL/AES	Petersburg	3	2005	coal	4,519	SCR			1.07	4,835	1,263
IPL/AES	Petersburg	4	2005	coal	5,472				1.07	5,855	5,855
	Total Emissions				**23,631**					**25,338**	**17,094**
Mirant	Sugar Creek Power Company, LLC	CT11	2005	NG	18	SCR			1.83	33	33
Mirant	Sugar Creek Power Company, LLC	CT12	2005	NG	40	SCR			1.83	73	73
	Total Emissions				**58**					**106**	**106**
NIPSCO	Bailly Generating Station	7	2005	coal	4,076		SCR (2008)			3,510	556
NIPSCO	Bailly Generating Station	8	2005	coal	8,254	SCR			1.07	8,832	1,230
NIPSCO	Bailly Generating Station	10	2005	NG	2				1.83	4	4

Utility	FACILITY_NAME	UNITID	OP_YEAR	Fuel type (USEPA - 2006 NEEDS)	2005 NOX (tons)	2005 or before NOX control	Phase I NOX control (2006-2014) or changes	Phase I (2006-2014) NOx control efficiency (%)	2014/2005 growth factor (AEO 2008)	Phase I projected emissions (tons)-see worksheet for projected control-highlighted	Phase I projected emissions (tons)-SCR/SNCR extended operation
NIPSCO	Dean H Mitchell Generating Station	4	2005	coal						0	0
NIPSCO	Dean H Mitchell Generating Station	5	2005	coal						0	0
NIPSCO	Dean H Mitchell Generating Station	6	2005	coal						0	0
NIPSCO	Dean H Mitchell Generating Station	11	2005	coal						0	0
NIPSCO	Michigan City Generating Station	4	2005							0	0
NIPSCO	Michigan City Generating Station	5	2005	NG					1.83	0	0
NIPSCO	Michigan City Generating Station	6	2005							0	0
NIPSCO	Michigan City Generating Station	12	2005	coal	5,069	SCR			1.07	5,424	989
NIPSCO	R M Schahfer Generating Station	14	2005	coal	7,195	SCR			1.07	7,699	1,231
NIPSCO	R M Schahfer Generating Station	15	2005	coal	2,835		SOFA (2008)	35	1.07	1,972	1,972
NIPSCO	R M Schahfer Generating Station	17	2005	coal	3,315				1.07	3,547	3,547
NIPSCO	R M Schahfer Generating Station	18	2005	coal	3,456				1.07	3,698	3,698
NIPSCO	R M Schahfer Generating Station	16A	2005	NG	28				1.83	51	51
NIPSCO	R M Schahfer Generating Station	16B	2005	NG	24				1.83	44	44
	Total Emissions				**34,254**					**34,779**	**13,321**
RPL	Whitewater Valley	1	2005	coal	414	SNCR			1.07	443	358
RPL	Whitewater Valley	2	2005	coal	704	SNCR			1.07	753	608
	Total Emissions				**1118**					**1196**	**965**

Utility	FACILITY_NAME	UNITID	OP_YEAR	Fuel type (USEPA - 2006 NEEDS)	2005 NOX (tons)	2005 or before NOX control	Phase I NOX control (2006-2014) or changes	Phase I (2006-2014) NOx control efficiency (%)	2014/2005 growth factor (AEO 2008)	Phase I projected emissions (tons)-see worksheet for projected control-highlighted	Phase I projected emissions (tons)-SCR/SNCR extended operation
SIGECO	A B Brown Generating Station	1	2005	coal	2,590	SCR			1.07	2,771	593
SIGECO	A B Brown Generating Station	2	2005	coal	2,496	SCR			1.07	2,671	541
SIGECO	A B Brown Generating Station	3	2005	NG/distillate oil	12				1.83	22	22
SIGECO	A B Brown Generating Station	4	2005	NG/distillate oil	5				1.83	9	9
SIGECO	Alcoa Allowance Management Inc	4	2005	coal	4,095	SCR			1.07	4,382	873
SIGECO	Broadway Avenue Generating Station	1	2005	NG/distillate oil	14				1.83	26	26
SIGECO	Broadway Avenue Generating Station	2	2005	NG/distillate oil	21				1.83	38	38
SIGECO	F B Culley Generating Station	1	2005		931				0	0	0
SIGECO	F B Culley Generating Station	2	2005	coal	767				1.07	821	821
SIGECO	F B Culley Generating Station	3	2005	coal	1,673	SCR			1.07	1,790	678
	Total Emissions				**12,604**					**12,530**	**3,600**
SL-Dominion	State Line Generating Station (IN)	3	2005	coal	1,189				1.07	1,272	1,272
SL-Dominion	State Line Generating Station (IN)	4	2005	coal	5,659				1.07	6,055	6,055
	Total Emissions				**6,848**					**7,327**	**7,327**
Whiting Clean Energy, Inc.	Whiting Clean Energy, Inc.	CT1	2005	NG	23				1.83	42	42
Whiting Clean Energy, Inc.	Whiting Clean Energy, Inc.	CT2	2005	NG	28				1.83	51	51
	Total Emissions				**51**					**93**	**93**
	Total utilities emissions (tons)				**200,906**					**209,963**	

Utility	FACILITY_NAME	UNITID	OP_YEAR	Fuel type (USEPA - 2006 NEEDS)	2005 NOX (tons)	2005 or before NOX control	Phase I NOX control (2006-2014) or changes	Phase I (2006-2014) NOx control efficiency (%)	2014/2005 growth factor (AEO 2008)	Phase I projected emissions (tons)-see worksheet for projected control-highlighted	Phase I projected emissions (tons)-SCR/SNCR extended operation
Projected New Control Emission Estimate Worksheet											
Unit	NIPSCO Bailly 7										
Projected control	SCR										
Projected installation date	2008										
2005 annual heat input (MMBTU)	10,722,366										
2005 ozone season heat input (MMBTU)	4,548,989										
2005 annual emissions (tons)	4075.65										
2005 ozone season emissions (tons)	1020.70										
2005 non-ozone season heat input (MMBTU)	6,173,377										
2005 non-ozone season emissions (tons)	3054.96										

Utility	FACILITY_NAME	UNITID	OP_YEAR	Fuel type (USEPA - 2006 NEEDS)	2005 NOX (tons)	2005 or before NOX control	Phase I NOX control (2006-2014) or changes	Phase I (2006-2014) NOx control efficiency (%)	2014/2005 growth factor (AEO 2008)	Phase I projected emissions (tons)-see worksheet for projected control-highlighted	Phase I projected emissions (tons)-SCR/SNCR extended operation
2005 non-ozone emission rate (lb/MMBTU)	0.99										
Control efficiency (%)	90										
Controlled rate (lb/MMBTU)	0.10										
Floor rate (lb/MMBTU)	0.06										
Applicable Controlled rate (lb/MMBTU)	0.10										
Projection year/Base year	2014/2005										
Growth factor	1.07										
Projected ozone season heat input (MMBTU)	4,867,418										
Projected non-ozone season heat input (MMBTU	6,605,513										
Projected ozone season emissions (tons)	241										
Projected non-ozone season emissions (tons)	3,269										

Utility	FACILITY_NAME	UNITID	OP_YEAR	Fuel type (USEPA - 2006 NEEDS)	2005 NOX (tons)	2005 or before NOX control	Phase I NOX control (2006-2014) or changes	Phase I (2006-2014) NOx control efficiency (%)	2014/2005 growth factor (AEO 2008)	Phase I projected emissions (tons)-see worksheet for projected control-highlighted	Phase I projected emissions (tons)-SCR/SNCR extended operation
Total projected emissions (tons)	3,510										

Attachment D

Indiana's Assessment of the 24-hour Fine Particulate ($PM_{2.5}$) Standard and Technical Support Documents October 2, 2008

In response to U.S. EPA's proposed nonattainment designations dated August 18, 2008 the Indiana Department of Environmental Management (IDEM) has developed the following evaluation of nonattainment area boundaries for designating areas under the revised 24-hour National Ambient Air Quality Standard (NAAQS) for fine particulate matter ($PM_{2.5}$).

Indiana Analysis by Region

Central Indiana Area

Indiana Recommendation

On May 30, 2008, Indiana recommended Marion County be the only Central Indiana county designated as nonattainment.

U.S. EPA Proposed Nonattainment Boundary

On August 18, 2008, U.S. EPA proposed to include Hamilton, Hendricks, Marion, Morgan and Johnson counties in the Indianapolis nonattainment area.

U.S. EPA proposed the 24-hour $PM_{2.5}$ Indianapolis nonattainment area to be identical to the nonattainment area designated under the 1997 $PM_{2.5}$ standard to simplify planning by assuring that the corresponding requirements for the two sets of air quality standards apply to the same area. Indiana strongly believes that a number of Indiana counties were improperly designated nonattainment under the annual $PM_{2.5}$ standard including Hamilton, Hendricks, Morgan and Johnson counties. Furthermore, U.S. EPA stated that a county will be designated as nonattainment if it has an air quality monitor that is violating the standard or if the county is determined to be contributing to a violation of the standard outside the county. Potential contributions to $PM_{2.5}$ concentrations in the area are based on the nine factors recommended in U.S. EPA guidance including pollutant emissions, air quality data, population density and degree of urbanization, traffic and commuting patterns, growth, meteorology, geography and topography, jurisdictional boundaries and levels of control of emission sources.

U.S. EPA's proposed designations are based on a violation of the 24-hour $PM_{2.5}$ standard from 2005-2007 in Marion County. There are no $PM_{2.5}$ monitors in Central Indiana outside of Marion County, but monitors upwind and downwind of the urban core and closest to the collar counties consistently measure air quality below the standard.

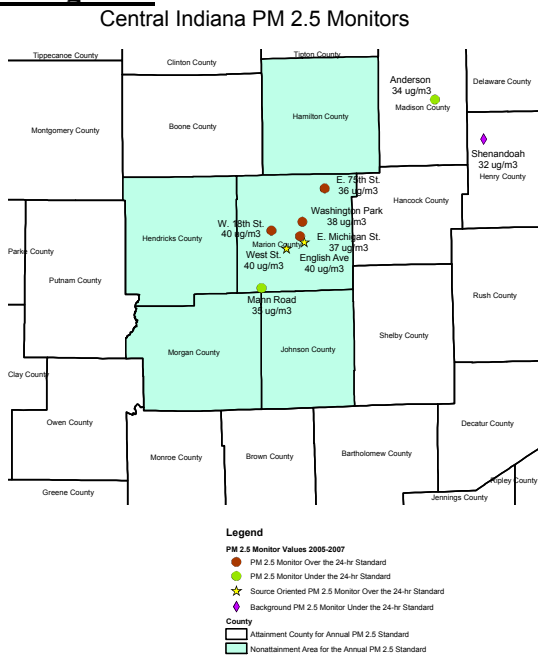
The proposed nonattainment designation for Hamilton, Hendricks, Morgan and Johnson counties is based on the assumption that these counties are contributing to violations in the Indianapolis area and relies on guidance criteria applicable for ozone, and not $PM_{2.5}$.

U.S. EPA stated that while Marion County has the greatest contribution to violations within the county, Hamilton, Hendricks, Morgan and Johnson counties all have substantial emissions, are commonly upwind of the violating monitors on high concentration days, and are relatively close to the violating monitor. However, the monitors within Marion County that the surrounding counties would influence the most measure air quality below the standard. Additionally, the precursor emissions from these counties do not coincide with the primary specie contributing with elevated values in central Marion County, that being sulfates. Lastly, U.S. EPA provides no culpability information to support its proposed designation of Hamilton, Hendricks, Morgan, and Johnson counties. U.S. EPA must substantiate its assumption that Hamilton, Hendricks, Morgan, and Johnson counties contribute to upwind or downwind monitored violations with source apportionment analysis and a model-based culpability analysis.

Indiana disagrees with these conclusions based on the information provided in this attachment.

Indiana believes that Hamilton, Hendricks, Morgan and Johnson counties do not adversely affect measured air quality within Marion County, or the area's ability to attain the 24-hour standard. Indiana firmly believes that due to the localized influence (urban excess) of $PM_{2.5}$, nonattainment boundaries for the 24-hour $PM_{2.5}$ standard should be limited only to Marion County. This is substantiated by the fact that the monitoring sites within Marion County that are closest to the collar counties measure air quality below the standard consistent with background sites around the state, and that speciation data demonstrates that the urban excess component within Marion County's urban core is due to localized industrial activity and not population driven emissions from surrounding counties (mobile or area sources).

Central Indiana Monitoring Data



Monitor Values ($\mu g/m^3$)							
County	**Monitor Location**	**Daily 98th Percentile Values**				**Daily Site Design Value 2004-2006**	**Daily Site Design Value 2005-2007**
		2004	**2005**	**2006**	**2007**		
Madison	Anderson-W 5th St.	28.2	38.3	28.0	34.3	32 (31.50)	34 (33.533)
Marion	Indianapolis-Mann Rd.	29.3	39.4	31.0	35.6	33 (33.23)	35 (35.333)
Marion	Indianapolis-Washington Park	31.0	42.5	31.7	38.8	35 (35.067)	38 (37.667)
Marion	Indianapolis-75th St.	28.7	43.4	30.7	33.5	34 (34.267)	36 (35.867)
Marion	Indianapolis-W 18th St.	31.9	45.7	34.8	38.4	37 (37.467)	40 (39.633)
Marion	Indianapolis-Michigan St.	31.3	40.3	33.5	37.2	35 (35.033)	37 (37.0)
Marion	Indianapolis-West St.	31.7	43.9	37.5	38.3	38** (37.70)	40** (39.9)
Marion	Indianapolis-English Ave	31.1	44.0	36.2	38.8	37** (37.10)	40** (39.667)

***Source Oriented Monitor*

Highlighted values are values that are over the 24-hr standard of 35 $\mu g/m^3$

		2004-2008 Monitor Values								
County	**Monitor Location**	**2004**	**2005**	**2006**	**2007**	**2008 (1st 2 Quarters ONLY)**	**2004 - 2006**	**2005 - 2007**	**2006-2008 rounded (1st 2 Quarters of 2008 ONLY)**	**2008 Critical Value—Yearly Mean (98%) Needed to make 2006-2008 Design Value Above the Standard**
HENRY	Shenandoah HS	26.9	37.3	27.2	32.4	23.3	30	32	28	45.4
MADISON	44 W 5th St	28.2	38.3	28.0	34.3	25.5	32	34	29	42.7
MARION	Mann Road	29.3	39.4	31.0	35.6	N/A	33	35	Monitor Shut Down 12/31/2007	
MARION	S. West St	31.7	43.9	37.5	38.3	26.9	38	40	34	29.2
MARION	English Ave	31.1	44.0	36.2	38.8	24.2	37	40	33	30.0
MARION	Washington Park	31.0	42.5	31.7	38.8	24.0	35	38	32	34.5
MARION	7250 E. 75th St	28.7	43.4	30.7	33.5	N/A	34	36	Monitor Shut Down 12/31/2007	
MARION	W 18th St	31.9	45.7	34.8	38.4	26.7	37	40	33	31.8
MARION	2302 E. Michigan St.	31.3	40.3	33.5	37.2	24.9	35	37	32	34.3
									Values above the standard	

There are seven monitors in the Indianapolis MSA and one monitor within the Anderson MSA. Based on data from 2005-2007, six of the seven monitors in the Indianapolis MSA (including four ambient and two source-oriented monitors) were over the standard. The only monitor in the Indianapolis MSA that is not over the standard is the Mann Road monitor, which is the closest site to Hendricks, Johnson, and Morgan counties. The monitor located in the Anderson MSA is below the standard as well, and based on the Anderson site's downwind proximity to Hamilton County, it would be impacted more by Hamilton County than any site in Marion County.

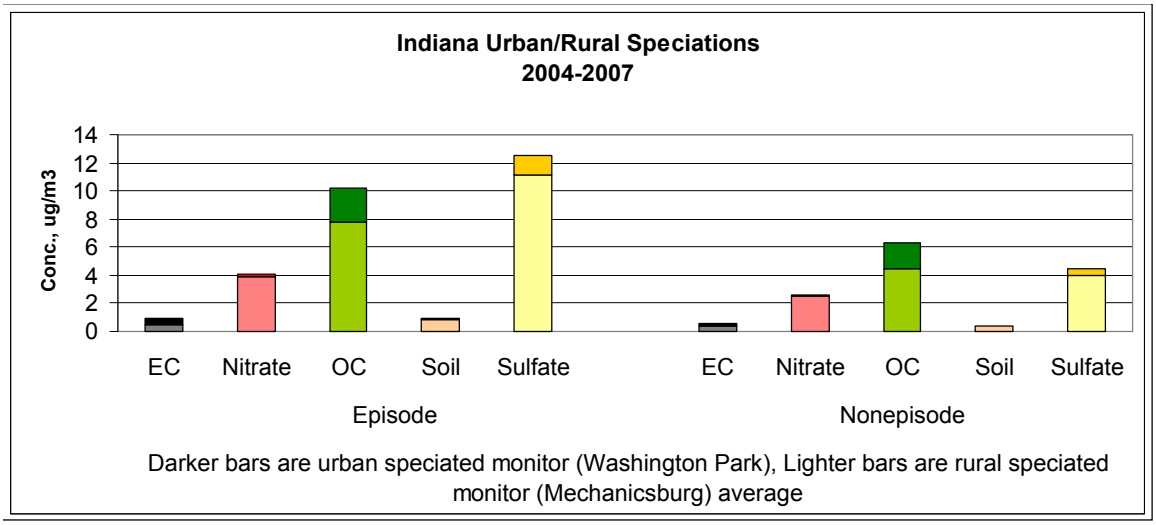
The Indianapolis-West St. and Indianapolis-English Ave. monitors located in Marion County are source-oriented monitors that are intended to reflect air quality in a relatively small geographic area directly influenced by a specific source or sources of air pollution. These two monitors were sited based on U.S. EPA monitoring objectives directed at high concentrations, high population and high source impact; these monitors are in areas of high population and are largely influenced by nearby sources. The source oriented monitors were not used to determine attainment status with the annual $PM_{2.5}$ standard, but U.S. EPA determined they could be used to determine attainment status for the daily $PM_{2.5}$ standard. Indiana considers these source oriented monitors to be hot spots and not reflective of the true air quality in the area. Indiana will work with the sources to address emissions that are contributing to the high annual values at these sites.

Based on $PM_{2.5}$ data collected across Indiana, areas were identified with essentially the same concentrations, therefore seven $PM_{2.5}$ monitoring sites were identified as not being necessary and were discontinued at the end of December 2007. Two of those sites (Mann Road and 75th Street) are located in Indianapolis in Marion County. The Indianapolis-Mann Road monitoring site was originally set up as a background site for the Indianapolis area. It has been consistently lower than the other sites in the city. The Indianapolis-75th Street monitoring site is generally lower than the remainder of the sites in the more urbanized area of Indianapolis. The site will be relocated farther northeast of the city in neighboring Hamilton County in 2008.

Unlike ozone, $PM_{2.5}$ monitoring values indicate that $PM_{2.5}$ values decrease further away from the core of the Indianapolis urban area into the suburban area. This is represented by the lower values registered at the Mann Road monitor which was southwest of the core urban area and by the 75th Street monitor which was northeast of the core urban area. Both of these monitors were discontinued at the end of 2007. The Madison County monitor, also northeast of the core urban area, registers values below the standard. The monitor locations are aligned so their readings describe the profile of $PM_{2.5}$ levels from the urban edges through the urban center. Recent analysis indicates a common "cone-shaped" profile of $PM_{2.5}$ values in densely populated urban areas with the peak value at the urban center (core) and values decreasing gradually based on distance from the urban core (both upwind and downwind). The Indianapolis urban area appears to follow this profile, with the peak value being represented at the W. 18th Street monitor at 40 $\mu g/m^3$ (close to the center or core of the urban area). The Michigan Street monitor is just southeast of the W. 18th Street monitor and it follows this "cone-shape" profile as well, at 37 $\mu g/m^3$. Starting from the urban center, the W. 18th Street monitor in this instance, the following table illustrates that the actual monitor values indeed follow a "cone-shaped" curve.

Location	Miles	Actual Design Value 04-06 ($\mu g/m^3$)	Actual Design Value 05-07 ($\mu g/m^3$)
W. 18th Street	0	37	40
Michigan Street	5.0	35	37
Washington Park	5.6	35	38
Mann Road	10.0	33	35
75th Street	11.8	34	36
Anderson	36.1	32	34

U.S. EPA has recommended, in its "*Guidance on the Use of Models and Other Analyses for Demonstrating Attainment of Air Quality Goals for Ozone, $PM_{2.5}$ and Regional Haze*" (EPA-454/B-07-002, April 2007), an "unmonitored area analysis" for areas without monitors that could potentially exceed the NAAQS if monitors existed in those areas. The "unmonitored area analysis" uses a combination of ambient data to provide spatial fields for monitored and unmonitored areas and model output for predicted concentrations throughout a region. Hamilton, Hendricks, Johnson and Morgan counties were designated as nonattainment for the annual $PM_{2.5}$ standard despite the fact that there are no $PM_{2.5}$ monitors in those counties. These four counties are adjacent to Marion County, which has monitors in the southwest, central, and northeastern portions of the county.



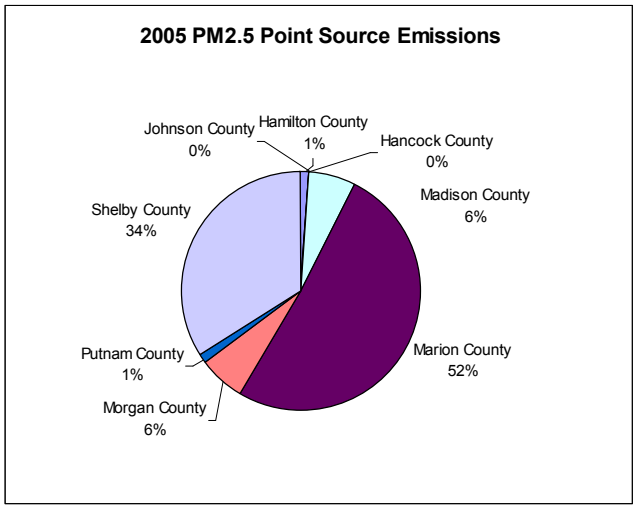
The speciation chart above demonstrates three critical points. First, in comparing mass and specie data for a Marion County urban core site with a relevant background site, the vast majority of the mass and precursor species are deriving from background contribution beyond that of the surrounding counties. Second, sulfate is the dominant specie and the surrounding counties are not large emitters of sulfates. Third, the urban excess component is minimal compared to background, but just enough to result in violation of the standard. Again, IDEM feels strongly that monitoring, specie, and emissions data clearly illustrate that the excess component is a result of industrial activity specific to southwest Marion County, and not the collar counties.

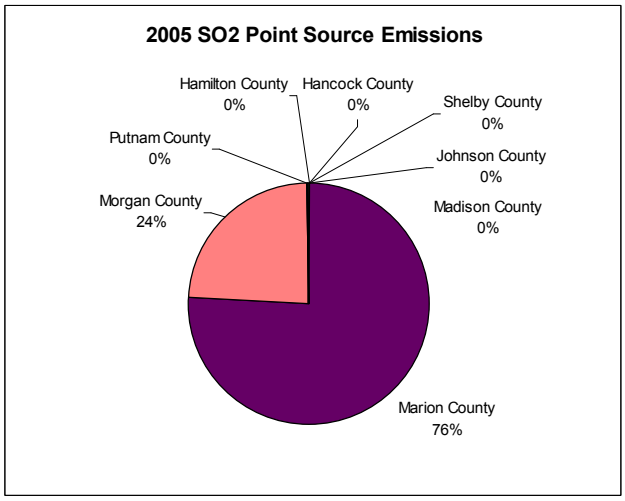
The only monitored violations of the standard within the MSA occur in Indianapolis (Marion County). Not including the source-oriented monitors, four out of the five ambient monitors within the MSA exceed the standard using monitored values from 2005-2007. The monitors in Henry and Madison counties are well below the 24-hour $PM_{2.5}$ standard. The monitor values in Marion County are trending downward and predicted to attain the standard by 2009. Recent regional modeling conducted by LADCO has demonstrated that every monitor in Indiana will attain the 24-hour $PM_{2.5}$ standard by the

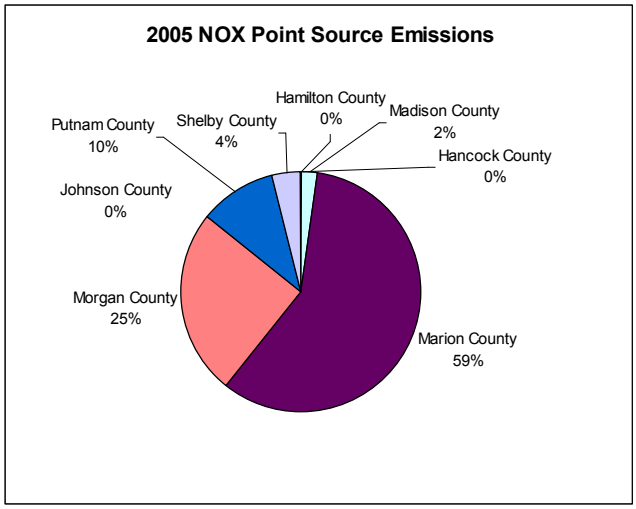
close of 2009. U.S. EPA should review the 2006-2008 monitoring data prior to designating any counties to nonattainment. Not only will the designation of non-contributing counties in Central Indiana be unnecessary and serve no air quality-related purpose, it will result in a tremendous amount of unnecessary work for IDEM and U.S.EPA in redesignating the area shortly after designations are effective.

Central Indiana Emissions Data

	2005 Point Source Emissions (Tons per Year)					
	$PM_{2.5}$	% of Area	SO_2	% of Area	NO_X	% of Area
Boone County*						
Brown County*						
Hamilton County	12.88105	0.98%	1.837319	0.00%	28.50699	0.16%
Hancock County	1.0108	0.08%	0.0798	0.00%	13.3	0.08%
Hendricks County*						
Johnson County	0.516572	0.04%	0.03885	0.00%	6.475073	0.04%
Madison County	83.21265	6.35%	219.5807	0.31%	334.7421	1.91%
Marion County	667.4369	50.91%	53045.92	75.42%	10207.22	58.30%
Morgan County	83.20904	6.35%	16855.27	23.96%	4456.811	25.45%
Putnam County	14.85077	1.13%	204.6015	0.29%	1789.476	10.22%
Shelby County	447.9542	34.17%	7.641528	0.01%	673.0331	3.84%
Total	1311.072		70334.96		17509.57	
***No emissions data for 2005**						







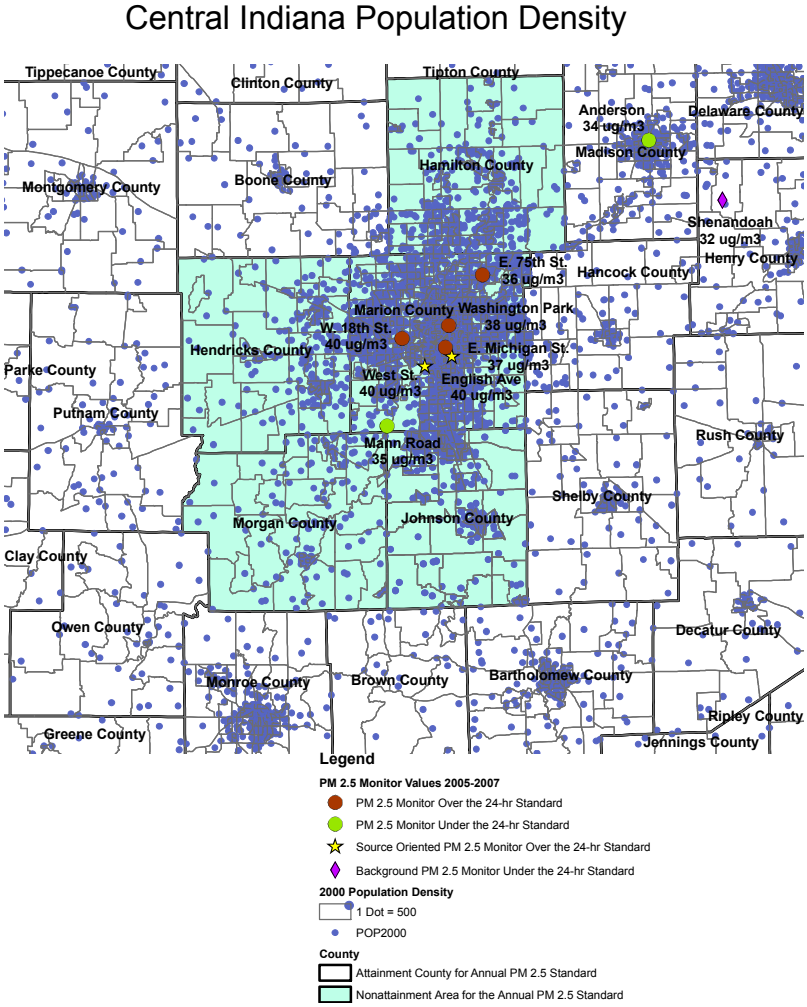
Mobile source emissions represent the largest portion of the total 2005 VOC and NO_x emissions for Marion County, as well as the MSA as a whole. Mobile sources are an insignificant contributor of SO_2 and $PM_{2.5}$ direct. Stationary sources within Marion County account for half (50.9%) of the direct $PM_{2.5}$ emissions from stationary sources within Central Indiana and the next closest is Shelby County with 34.2%. Sources within Marion County also account for 75.4% of the SO_2 emissions, which according to speciation data, accounts for the majority of the $PM_{2.5}$ mass within the area. Marion County alone also accounts for 58.3% of the NO_x emissions from stationary sources within the Central Indiana Area. It is worth noting that despite its large geographic size, the total direct $PM_{2.5}$ and SO_2 emissions inventories for stationary sources within Central Indiana are relatively small in comparison with other MSAs within the state (e.g., Northwest Indiana and Evansville).

Marion County has the highest emissions of any of the counties in Central Indiana, but emissions are expected to decrease in the near future. The IPL-Harding Street power plant located in Marion County is currently controlled by low NOx burner technology with separated overfire air. The IPL-Harding Street power plant has installed FGDs on all units at the plant in 2007. When the control units became operational, it resulted in a 60% reduction of SO_2. These controls are in place prior to the attainment date and emissions from IPL-Harding Street are not expected to increase in the near future. Morgan County contributes a small portion of the emissions to the Indianapolis area from the IPL-Eagle Valley power plant. This power plant is currently controlled by low NOx burner technology with separated overfire air. These controls are expected to remain in place and emissions from this plant should not increase in the future. The other counties in Central Indiana, including Hendricks and Johnson counties, have similar emissions that are not contributing to the Indianapolis area.

As noted above, Marion County accounts for the majority of the $PM_{2.5}$ direct and precursor emissions. Morgan County does account for a small portion of the $PM_{2.5}$ and SO_2 emissions within the MSA, however, Indiana believes that these emissions have little to no effect on the $PM_{2.5}$ values in Marion County. This is supported by the fact that the

closest downwind monitor to Morgan County (Mann Road) has the lowest $PM_{2.5}$ value in Marion County.

Central Indiana Population Density



Marion County maintains the highest concentration of population density, compared to the other counties within the MSA, though the density does extend into the outer fringe of the collar counties, namely Hamilton, Hendricks, and Johnson counties.

Marion County has the highest population in the area, with Hamilton, Hendricks and Johnson counties having the next largest populations. Marion County maintains a high concentration of employment by residents of the county with an in county ratio of 93.5%, meaning that a significantly large portion of Central Indiana's VMT is limited to people who work and live in Marion County.

Central Indiana Traffic Patterns

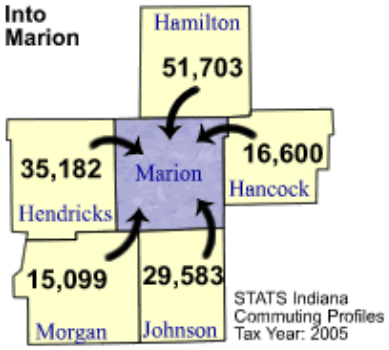
2005 Commuting Patterns

	Total Workforce: Number of persons who live in County and work	Number of persons who live AND work in County	Number of persons who live in County and work in another County	Percent In County	Percent Out of County
Boone County	34,668	19,662	15,006	56.7%	43.3%
Brown County	10,541	6,028	4,513	57.2%	42.8%
Hamilton County	153,555	92,215	61,340	60.1%	39.9%
Hancock County	44,125	23,464	20,661	53.2%	46.8%
Hendricks County	82,878	42,363	40,515	51.1%	48.9%
Johnson County	84,147	48,675	35,472	57.8%	42.2%
Madison County	83,093	66,277	16,816	79.8%	20.2%
Marion County	526,530	492,379	34,151	93.5%	6.5%
Morgan County	45,434	24,955	20,479	54.9%	45.1%
Putnam County	22,366	15,927	6,439	71.2%	28.8%
Shelby County	29,050	20,578	8,472	70.8%	29.2%

Top five counties sending workers INTO Marion County:

Hamilton County	51,703	**34.90%**
Hendricks County	35,182	**23.74%**
Johnson County	29,583	**19.97%**
Hancock County	16,600	**11.20%**
Morgan County	15,099	**10.19%**
Total of above	148,167	workers

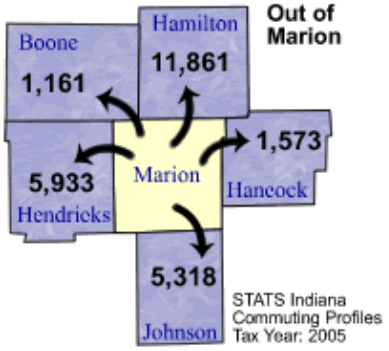
(21.4% of Marion County work force)



Top five counties receiving workers FROM Marion County:

Hamilton County	11,861	**45.89%**
Hendricks County	5,933	**22.96%**
Johnson County	5,318	**20.58%**
Hancock County	1,573	**6.09%**
Boone County	1,161	**4.49%**
Total of above	25,846	workers

(4.9% of Marion County labor force)



Marion County maintains the highest concentration for employment, and vehicle miles traveled (VMT) compared to the other counties within the MSA. The majority of the traffic congestion occurs in Marion County. A significant level of commuting occurs

from the surrounding counties to Marion County, meaning that a fairly large portion of Marion County's VMT originates from the surrounding counties. The Indianapolis MSA's population density is spreading well beyond Marion County, but Marion County maintains the highest population and an in-county workforce ratio of 93.5%. It should be noted that gasoline-powered vehicles are not significant emitters of sulfates, which is the driving precursor for measured $PM_{2.5}$ levels in Marion County. Therefore, population growth and commuting patterns are believed to be irrelevant to the urban excess component within Marion County.

Northwest Indiana Area

Indiana Recommendation

On May 30, 2008, Indiana recommended that Lake County be designated as a single county nonattainment area, and Porter County and other counties in Northwest Indiana be designated attainment.

U.S. EPA Proposed Nonattainment Designation

On August 18, 2008, U.S. EPA proposed to designate both Lake and Porter counties as part of the Chicago nonattainment area.

U.S. EPA proposed the 24-hour $PM_{2.5}$ Chicago nonattainment area to be identical to the nonattainment area designated under the 1997 annual $PM_{2.5}$ standard to simplify planning by assuring that the corresponding requirements for the two sets of air quality standards apply to the same area. Indiana strongly believes that a number of Indiana counties were improperly designated nonattainment under the annual $PM_{2.5}$ standard including Lake and Porter counties. Additionally, U.S. EPA stated that a county will be designated as nonattainment if it has an air quality monitor that is violating the standard or if the county is determined to be contributing to a violation of the standard outside the county. Potential contributions to $PM_{2.5}$ concentrations in the area are based on the nine factors recommended in U.S. EPA guidance including pollutant emissions, air quality data, population density and degree of urbanization, traffic and commuting patterns, growth, meteorology, geography and topography, jurisdictional boundaries and levels of control of emission sources.

The proposed nonattainment designation for Lake County is based on a violation of the 24-hour $PM_{2.5}$ standard from 2005-2007; however, the county will attain the standard based on monitoring data from 2006-2008. Porter county will continue to measure air quality below the standard from 2006-2008. U.S. EPA also stated that Lake and Porter counties have among the highest emissions in the area that routinely contribute to the violations observed in Illinois. Indiana believes that Lake and Porter counties do not significantly impact monitored violations in the Chicago area Based on a culpability analysis conducted to determine the impacts of sources in Lake and Porter counties on $PM_{2.5}$ monitors in the Chicago area. This analysis focused on days between 2005 and 2007 that represented the highest monitored values that drove the 24-hour design value up for violating monitors in northeast Illinois. U.S. EPA also stated that Lake and Porter counties have high numbers of commuters that drive into other parts of the Chicago metropolitan area. However, specie data, especially for episodic events, do not suggest that mobile sources are a significant contributor to violations of the standard in the Chicago region. Additionally, mobile source contributions from Indiana are less than those from Wisconsin.

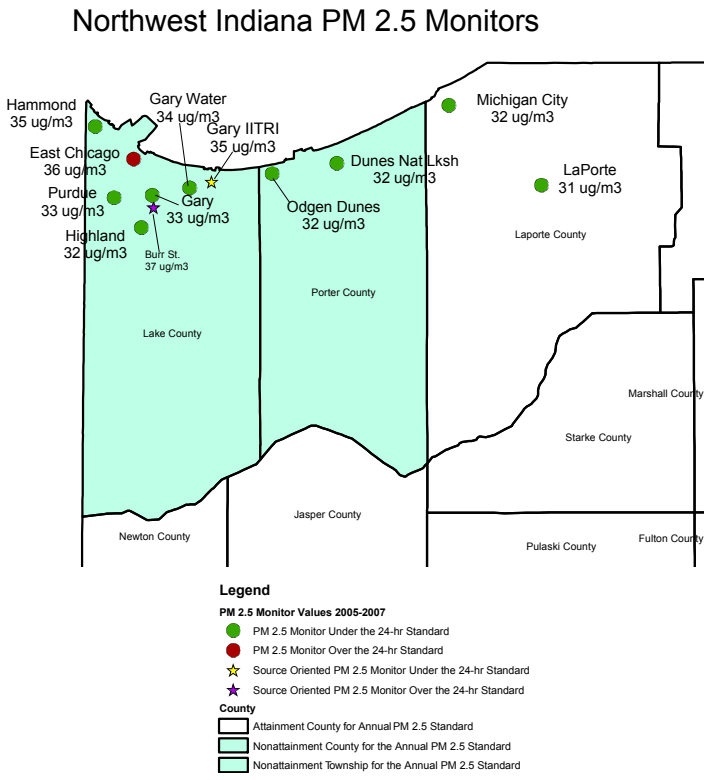
Indiana disagrees with these conclusions based on the information provided in this attachment.

Background

Lake and Porter counties were designated under the annual $PM_{2.5}$ standard as part of the greater Chicago nonattainment area due to assumed contribution to monitored violations in northeast Illinois. All monitor sites in Lake and Porter counties have measured air quality that meets the annual standard since 2004, and Lake and Porter counties are more downwind than upwind of the City of Chicago. A culpability analysis prepared and submitted by Indiana to U.S. EPA on April 3, 2008 demonstrates that not only are Lake and Porter counties not culpable for monitored violations in northeast Illinois, counties designated as attainment in southeast Wisconsin are more culpable to measured levels of $PM_{2.5}$ in northeast Illinois than are Lake and Porter counties.

The Indiana portion of the Chicago Metropolitan Statistical Area (MSA) includes Jasper, Lake, Newton, and Porter counties. There are no monitors in Jasper or Newton counties.

Northwest Indiana Monitoring Data



Monitor Values ($\mu g/m^3$)							
County	Monitor Location	Daily 98th Percentile Values				Daily Site Design Value 2004-2006	Daily Site Design Value 2005-2007
		2004	2005	2006	2007		
Lake	East Chicago-Franklin Sch	33.0	39.9	29.4	37.2	34 (34.1)	36 (35.5)
Lake	Highland-Eldon Ready Sch	30.1	37.1	25.8	34.1	31 (31.0)	32 (32.333)
Lake	Gary-Water Trmt Plant	Monitor Began operation in 2005	39.6	27.1	36.2	33 (32.9)	34 (34.3)
Lake	Gary	30.5	39.0	25.8	33.8	32 (31.767)	33 (32.867)
Lake	Gary-ITTRI	45.8	40.4	28.5	35.2	38** (38.233)	35** (34.7)
Lake	Gary-Burr St	38.6	43.7	30.4	36.8	38** (37.567)	37** (36.967)
Lake	Hammond-Purdue	31.9	37.6	26.2	34.9	32 (31.9)	33 (32.9)
Lake	Hammond	28.4	40.9	27.9	35.2	32 (32.4)	35 (34.667)
LaPorte	Michigan City	31.6	37.5	25.5	31.5	32 (31.533)	32 (31.5)
LaPorte	LaPorte	26.6	36.5	24.7	31.0	29 (29.267)	31 (30.733)
Porter	Dunes Natl Lakeshore	29.7	37.6	26.6	30.6	31 (31.3)	32 (31.6)
Porter	Ogden Dunes	29.1	37.5	26.1	33.3	31 (30.9)	32 (32.3)

***Source Oriented Monitor*

Highlighted values are values that are over the 24-hr standard of 35 $\mu g/m^3$

		2004-2008 Monitor Values								
County	Monitor Location	2004	2005	2006	2007	2008 (1st 2 Quarters ONLY)	2004-2006	2005-2007	2006-2008 rounded (1st 2 Quarters of 2008 ONLY)	2008 Critical Value--Yearly Mean (98%) Needed to Make 2006-2008 Design Value Above the Standard
LAKE	Franklin School	33.0	39.9	29.4	37.2	24.4	34	36	30	38.4
LAKE	IITRI	45.8	40.4	28.5	35.2	28.9	38	35	31	41.3
LAKE	Burr St	38.6	43.7	30.4	36.8	32.8	38	37	33	37.8
LAKE	Eldon Ready School	30.1	37.1	25.8	34.1	25.1	31	32	28	45.1
LAKE	Water Treatment Plant		39.6	27.1	36.2	29.9	33 *	34	31	41.7
LAKE	Ivanhoe School	30.5	39.0	25.8	33.8	N/A	32	33	Monitor Shut Down 12/31/2007	
LAKE	Purdue	31.9	37.6	26.2	34.9	25.0	32	33	29	43.9
LAKE	Robertsdale	28.4	40.9	27.9	35.2	31.8	32	35	32	41.9
LA PORTE	Marsh Elementary Sch	31.6	37.5	25.5	31.5	24.7	32	32	27	48.0
LA PORTE	1119 Lake St	26.6	36.5	24.7	31.0	N/A	29	31	Monitor Shut Down 12/31/2007	
PORTER	Dunes Natl Lakeshore	29.7	37.6	26.6	30.6	N/A	31	32	Monitor Shut Down 12/31/2007	
PORTER	Water Treatment Plant	29.1	37.5	26.1	33.3	22.8	31	32	27	45.6
						* Two Years of Data		Values above the standard		

There are ten monitors in the Indiana portion of the Chicago MSA (Lake and Porter counties) and two monitors in the Michigan City (LaPorte County) MSA. Of the ten monitors located in Lake and Porter counties, two were above the standard at the close of 2007.
The East Chicago and Burr Street monitors in Lake County were above the standard based on 2005-2007 monitoring data. These two monitors will attain the 24-hour $PM_{2.5}$ standard based on values from 2006 to 2008, which is consistent with the most recent LADCO modeling as well. U.S. EPA should review the 2006-2008 monitoring data, and factor speciation and culpability information into its final designations. Indiana believes that if U.S. EPA relies on the technical information available, Lake and Porter counties should be designated attainment based on 2006-2008 monitored values, and a lack of model-based culpability to demonstrate significant contribution elsewhere.

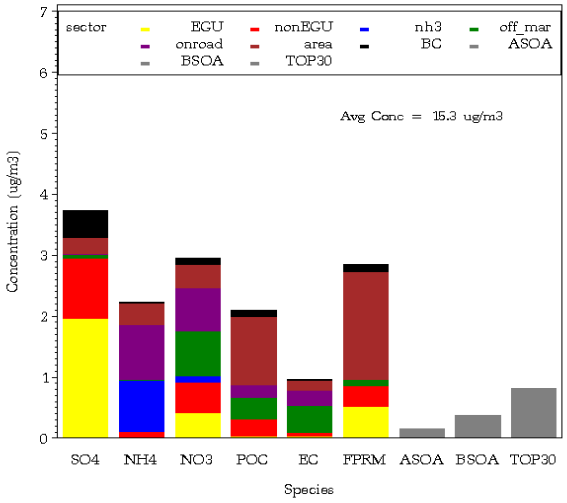
The monitors in the Chicago area located closest to the Indiana state line and the lakefront, and that should be more directly impacted by emissions from Lake and Porter county sources, are monitoring attainment of the 24-hour standard. If emissions from Lake and Porter counties were significantly contributing to the violating monitors in Illinois, higher levels at the monitors located between Indiana and the violating monitors would be expected. The Illinois monitors that measure values above the 24-hour $PM_{2.5}$ standard are more inland and are most likely affected by localized emission sources.

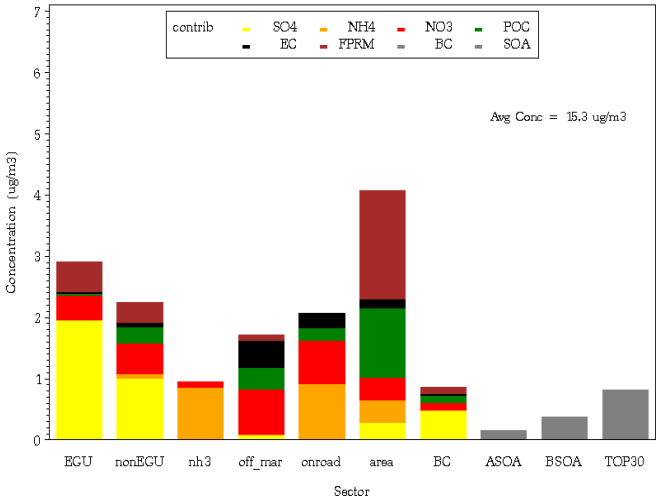
Lake and Porter counties do not significantly impact monitored violations in the Chicago area. Indiana has conducted an evaluation to determine the impacts of sources in Lake and Porter counties on $PM_{2.5}$ monitors in the Chicago area. As a result, Indiana has determined that emissions from Lake and Porter counties do not affect the downwind area's ability to attain the 24-hour standard. Therefore, Lake and Porter counties should be designated separate from the Chicago MSA. There are a total of 18 $PM_{2.5}$ monitors in Chicago. Of those monitors in Chicago, only 7 of them (including five ambient and two source oriented monitors) are violating the 24-hour $PM_{2.5}$ standard. Therefore, it is unnecessary to extend the restrictions of a nonattainment area outside the Chicago area.

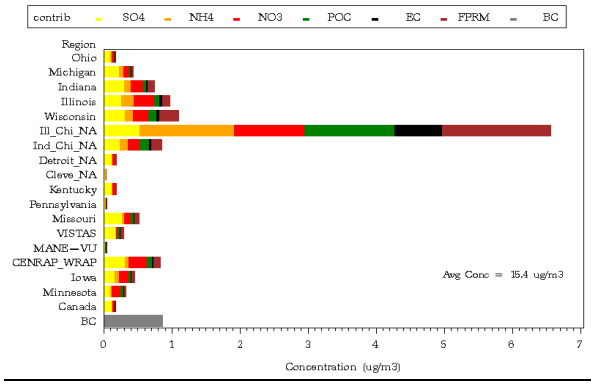
Furthermore, the monitors above the 24-hour $PM_{2.5}$ standard in Chicago are affected to a greater degree by emissions from Wisconsin, primarily from southeast Wisconsin, than from Lake and Porter counties. The U.S. EPA did not designate any portion of Wisconsin, including the southeast counties, nonattainment under the annual standard for $PM_{2.5}$. For U.S. EPA to be consistent in issuing designations, the same criteria should be applied to Lake and Porter counties that was used in exempting the southeast Wisconsin area from a nonattainment designation under the annual standard, since both areas monitored attainment and do not adversely affect the downwind area's ability to attain the standard.

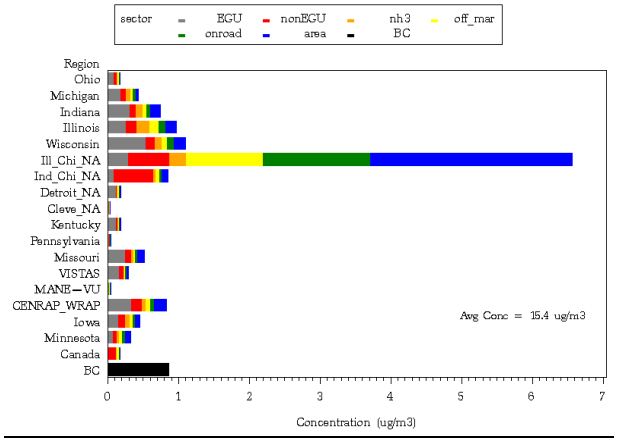
Particulate source apportionment (PSAT) shows the breakdown of the modeled fine particle impacts by the different constituents of fine particles, the emissions sectors from which fine particles or their precursors are emitted and by geographic regions. The charts below show the PSAT modeled results for Chicago for the year 2012.

$PM_{2.5}$ Source Apportionment Results for Chicago for 2012





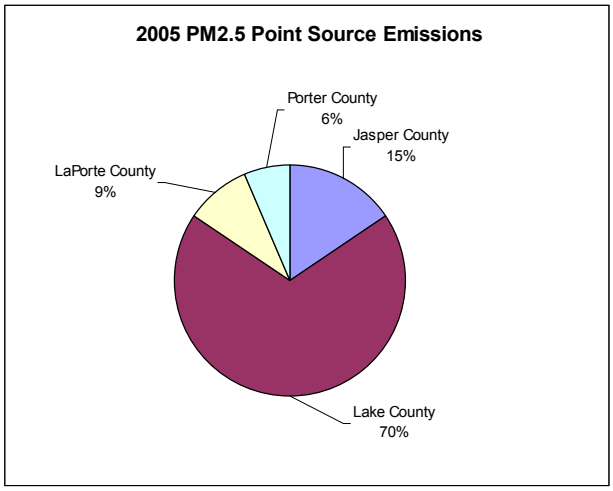


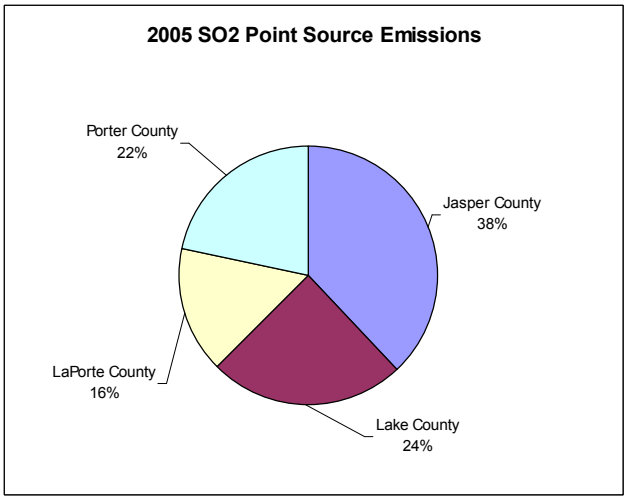


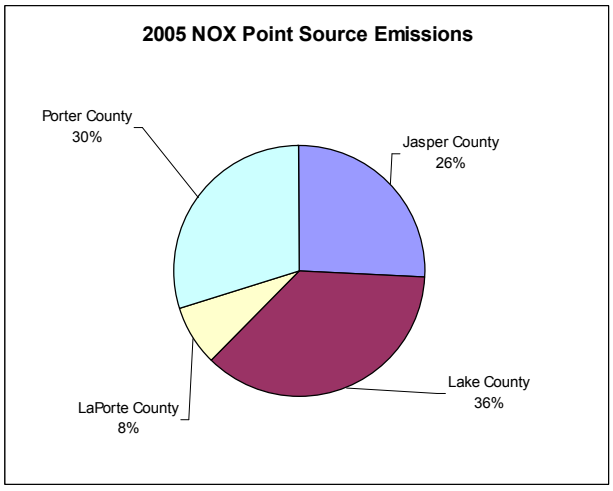
The biggest contribution among the constituents of fine particles in the Chicago area is sulfates (SO4). The biggest contribution among emission sectors was area sources. The fine particle contribution from Indiana's portion of the Chicago nonattainment area is less than 1.0 ug/m^3. These results verify that Lake and Porter counties do not contribute significantly to measured values in Illinois and that the driving precursors and sources derive from Northeast Illinois.

Northwest Indiana Emissions Data

	2005 Point Source Emissions (Tons per Year)					
	$PM_{2.5}$	% of Area	SO_2	% of Area	NO_X	% of Area
Jasper County	1083.06	15.45%	40438.19	38.14%	16844.17	25.78%
Lake County	4838.74	69.02%	25959.59	24.48%	23769.48	36.38%
LaPorte County	645.8606	9.21%	16747.21	15.79%	5175.872	7.92%
Newton County*						
Porter County	442.993	6.32%	22887.82	21.59%	19550.84	29.92%
Total	7010.653		106032.8		65340.36	
***No emissions data for 2005**						







Note: These charts do not account for emissions from Illinois Sources, which would alter the ratios significantly.

Because most of the area in Lake and Porter counties is urban, the two counties account for 66.3% of Northwest Indiana's total oxides of nitrogen (NO_x) emissions. Sources within Lake and Porter counties account for 75.3% of the direct $PM_{2.5}$ emissions from stationary sources, and 46.1% of the sulfur dioxide (SO_2) emissions from stationary sources. The area's direct $PM_{2.5}$ emissions from stationary sources originating in Lake County are 69.0%. The total NO_x emissions of the area derive primarily from Lake (36.4%) and Porter (29.9%) counties. The SO_2 emissions released by stationary sources within Indiana's portion of the MSA are primarily from Jasper (38.1%) and Lake (24.5%) counties. There are no major stationary sources located within Jasper or Newton counties. It does not appear that the emissions from Jasper or Newton counties have a significant impact on air quality within the MSA. The City of Chicago and State of Indiana have and will continue to communicate with the State of Illinois concerning the Chicago nonattainment status. As can be seen in the chart below the emissions from Northwest Indiana are only about 10% of the total Chicago area emissions. Overall $PM_{2.5}$ values have continued to drop and NO_x and SO_2 emissions are expected to decrease throughout the Midwest over the next few years.

		2002 Emissions	2010 Emissions	2020 Emissions	2030 Emissions
Illinois	Direct PM 2.5	3070.78	1,634.99	1,042.49	1,029.25
	NOx	167,630.81	78,495.92	26,035.81	18,853.12
NW Indiana	Direct PM 2.5	562.64	159.16	114.31	116.47
	NOx	30,397.97	8,459.90	3,002.86	2,065.35
Entire Chicago MSA (Including NW Indiana)	Direct PM 2.5	3,633.42	1,794.15	1,156.80	1,145.72
	NOx	198,028.78	86,955.82	29,038.67	20,918.47
NW Indiana % of Chicago MSA	Direct PM 2.5	15.49%	8.87%	9.88%	10.17%
	NOx	15.35%	9.73%	10.34%	9.87%

Lake and Porter counties are subject to the most stringent group of emission controls within the State of Indiana. This collection of permanent and enforceable controls is equally as stringent as those that apply elsewhere within the Chicago MSA and in some cases, more stringent. For example, organic carbon accounts for a significant portion of fine particle mass and it is believed that the majority of organic carbon in urban areas originates from mobile source emissions, especially poorly maintained vehicles. Indiana believes that the monitoring sites in Illinois that currently measure $PM_{2.5}$ concentrations above the 24-hour standard are affected by "urban excess", mostly attributable to localized mobile sources.

Indiana is confident that the portion of the total vehicle miles traveled (VMT) in close proximity to these sites from vehicles registered in Lake and Porter counties is a small (minute) percentage of the total VMT affecting these monitoring sites. Regardless, vehicles registered in Lake and Porter counties are subject to reformulated gasoline and enhanced vehicle inspection and maintenance requirements. Enhanced vehicle inspection and maintenance is the most effective control for organic carbon. Indiana maintains a comprehensive vehicle inspection and maintenance program in Lake and Porter counties for all vehicles of model year 1976 and newer. Lake and Porter counties' motor vehicle

control program is more stringent than that which applies to the vast majority of the fleet that accounts for the VMT and long-term idling in close proximity to the aforementioned sites. In fact, the greatest portion of the fleet defined as "high-emitters" for organic carbon and other precursors are pre-1996 model year vehicles, none of which are subject to vehicle inspection and maintenance requirements in Illinois.

Comparison of 2005 Estimated and 2020 Projected Annual Emission Estimates Northwest Indiana Area

	2005	2020	Change	% Change
NO_x (tons/year)	71,282.12	41,363.20	(29,918.92)	(41.97)
SO_2 (tons/year)	50,993.81	49,799.70	(1,194.11)	(2.34)
Direct $PM_{2.5}$ (tons/year)	7,434.48	8,135.17	700.69	9.42

NO_x emissions within Northwest Indiana area are projected to decline by almost 42% between 2005 and 2020. Emission reduction benefits from federal rules are factored into the changes. These rules include the NO_x SIP Call, Tier 2 Motor Vehicle Emissions Standards and Gasoline Sulfur Control Requirements, the Highway Heavy-Duty Engine Rule, and the Non-Road Diesel Engine Rule. Further, due to implementation of the NO_x SIP Call across the eastern United States, fine particles and precursors for fine particle emissions entering this area are also decreasing.

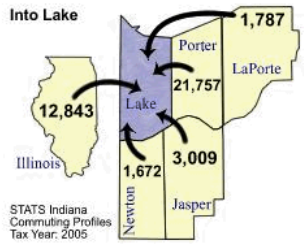
Northwest Indiana Traffic Patterns

2005 Commuting Patterns					
	Total Workforce: Number of persons who live in County and work	**Number of persons who live AND work in County**	**Number of persons who live in County and work in another County**	**Percent In County**	**Percent Out of County**
Jasper County	21,011	14,832	6,179	70.6%	29.4%
Lake County	292,153	234,039	58,114	80.1%	19.9%
LaPorte County	68,408	57,393	11,015	83.9%	16.1%
Newton County	9,548	5,805	3,743	60.8%	39.2%
Porter Cty	102,586	68,058	34,528	66.3%	33.7%

Top five counties sending workers INTO Lake County:

Porter County	21,757
Illinois	12,843
Jasper County	3,009
LaPorte County	1,787
Newton County	1,672
Total of above	41,068 workers

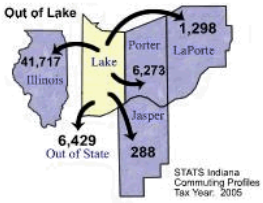
(14.8% of Lake County work force)



Top five counties receiving workers FROM Lake County:

Illinois	41,717
Out of State	6,429
Porter County	6,273
LaPorte County	1,298
Jasper County	288
Total of above	56,005 workers

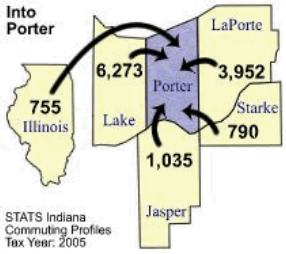
(19.2% of Lake County labor force)



Top five counties sending workers INTO Porter County:

Lake County	6,273
LaPorte County	3,952
Jasper County	1,035
Starke County	790
Illinois	755
Total of above	12,805 workers

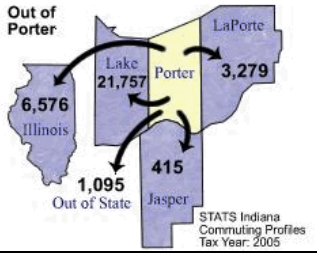
(15.6% of Porter County work force)



Top five counties receiving workers FROM Porter County:

Lake County	21,757
Illinois	6,576
LaPorte County	3,279
Out of State	1,095
Jasper County	415
Total of above	33,122 workers

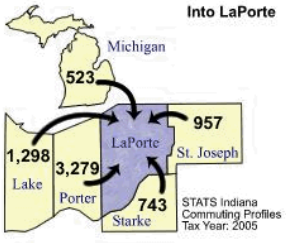
(32.3% of Porter County labor force)



Top five counties sending workers INTO LaPorte County:

Porter County	3,279
Lake County	1,298
St Joseph County	957
Starke County	743
Michigan	523
Total of above	6,800 workers

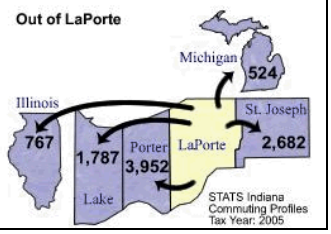
(10.4% of LaPorte County work force)



Top five counties receiving workers FROM LaPorte County:

Porter County	3,952
St Joseph County	2,682
Lake County	1,787
Illinois	767
Michigan	524
Total of above	9,712 workers

(14.2% of LaPorte County labor force)



Within Northwest Indiana, LaPorte County maintains the highest concentration (83.9%) of employment by residents of the county, compared to the other counties within the area. Over 80% of Lake County's workforce is employed within the county. Over 60% of Porter County's workforce is employed within the county, and the majority of those employed outside the county commute to Lake County, and not to Chicago. Therefore, the portion of commute traffic within Chicago from Lake and Porter counties is insignificant and dwarfed by that generated within Northeast Illinois. It should also be noted that gasoline-powered commuter vehicles are insignificant emitters of sulfates, which is the driving precursor for violating sites in Northeast Illinois.

Northwest Indiana Growth Rates and Patterns

Lake and Porter counties have experienced below average growth over the past decade. Additionally, stagnant growth is forecasted for the future. Therefore, growth within Lake and Porter counties is not expected to impact future air quality within or outside of Northwest Indiana.

	Population 1990	Population 2000	Percent Change from 1990 to 2000	Population Estimate 2006	Percent Change from 2000 to 2006	Population Estimate 2010	Percent Change from 2000 to 2010	Population Estimate 2020	Percent Change from 2000 to 2020
Jasper County	24,823	30,043	21.0%	32,296	7.5%	32,534	8.3%	35,206	17.2%
Lake County	475,594	484,564	1.9%	494,202	2.0%	483,183	-0.3%	503,203	3.8%
La Porte County	107,066	110,106	2.8%	110,479	0.3%	110,376	0.2%	110,656	0.5%
Newton County	13,551	14,566	7.5%	14,293	-1.9%	14,444	-0.8%	14,097	-3.2%
Porter County	128,932	146,798	13.9%	160,105	9.1%	156,755	6.8%	175,175	19.3%

Northwest Indiana Meteorology

Indiana further analyzed the days that the monitoring levels in the Chicago area were substantially higher than the next highest monitor value in the region on that date, as shown below. Indiana then compared those days to wind data to determine the direction of prevailing winds during those days. Average hourly meteorological data was taken from Gary and Hammond meteorological stations, located in Lake County, as well as the Great Lakes Environmental Research Laboratory (GLERC) Meteorological Observation station, Harrison-Dever Crib, located approximately 3 miles offshore of downtown Chicago. The comparison for the highest monitor value days for the Chicago monitors show winds from different directions with winds predominately from the east, south, west, and southwest. Based on this sample of high fine particle monitor value days, while emissions from all surrounding areas may have small impacts, it is evident that there is no significant impact from Northwest Indiana.

Comparison of Regional High Monitor Values

Date	Wilson Avenue Monitor Value ($\mu g/m^3$)	Next Highest Monitor Value in Region ($\mu g/m^3$)	Monitor Location	Highest NW Indiana Monitor Value ($\mu g/m^3$)	Wind Direction
10-27-2004	33.7	32.6	Cicero	27.8	ESE, SE
02-03-2005	62.6	43.8	Blue Island	42.0	W, WNW
01-23-2006	40.8	22.8	Northbrook	24.7	WSW, NNW

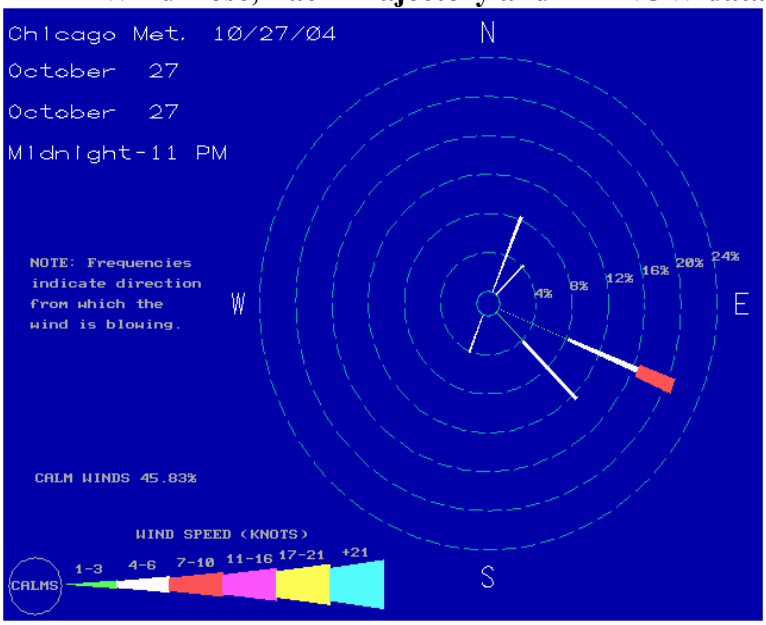
Further analysis of high fine particle days included a back trajectory analysis, using the HYSPLIT (HYbrid Single-Particle Lagrangian Integrated Trajectory) model from National Oceanic and Atmospheric Administration's (NOAA) Air Resources Laboratory (ARL). Back trajectory analyses provide an indication of the origin of the air from the previous day that may impact the Chicago area. A back trajectory measures the winds at different heights in the atmosphere to determine from what locations pollutants may be picked up and transported to an area. The back trajectory analysis for the high fine particles monitor value days at the Wilson Avenue monitor were taken from the Chicago - O'Hare International Airport and show various wind directions and different origins of the air pollutants found in Chicago on the day of the higher fine particle monitor values.

$PM_{2.5}$/Meterological Data Analysis for October 27, 2004

The October 27, 2004, wind rose and back trajectory for the Chicago area are shown below. On this day, the Wilson Ave. monitor had a monitored maximum value of 33.7 $\mu g/m^3$ for $PM_{2.5}$. The next highest monitored value within the area was 32.6 $\mu g/m^3$ at the Cicero monitor.

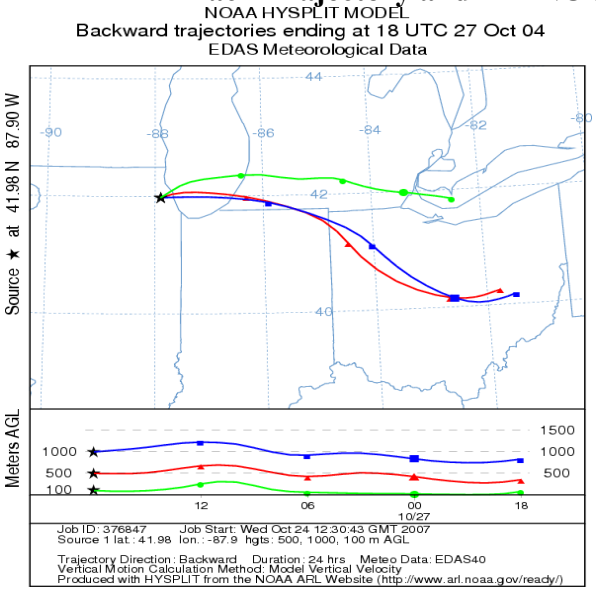
The results of the wind rose, in the figure below, shows light northerly, easterly and southeasterly winds on that day. Archived AIRNOW fine particles data from October 26 and 27, 2004, show the regional nature of $PM_{2.5}$ concentrations during this time period. Northwest Indiana could be considered upwind of Chicago for this day and potential impact on the $PM_{2.5}$ monitors in Illinois exists.

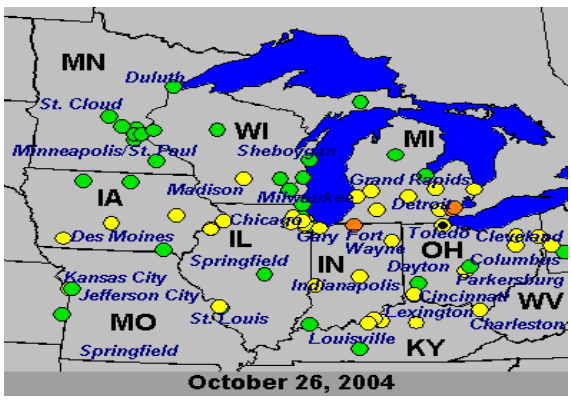
Wind Rose, Back Trajectory and AIRNOW data for October 27, 2004

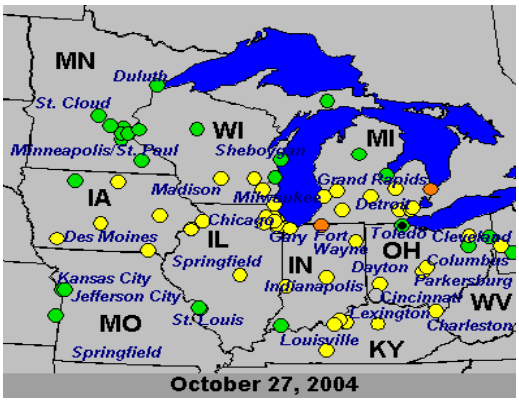


All winds were less than 10 knots (11.5 miles per hour). These lighter winds indicate more stagnant surface conditions during the day, resulting in a greater impact from local emissions on the fine particle monitors in Illinois.

Back Trajectory and AIRNOW data for October 27, 2004







The back trajectory, in the figure above, shows the air from the previous day (October 26) came from Ohio, southern Michigan and the northeast corner of Indiana and impacted the Chicago area on October 27. AIRNOW data shows that $PM_{2.5}$ concentrations were in the Moderate (yellow or 15 to 40 $\mu g/m^3$) range of the Air Quality Index (AQI) with some areas in the Unhealthy for Sensitive Groups (orange or 40 to 65 $\mu g/m^3$) range throughout northern Ohio, southern Michigan and northern Indiana for both days. While not completely eliminating Northwest Indiana's potential culpability on this day, it appears that there was transport of $PM_{2.5}$ and its precursors from other regions located east of Chicago, and that local sources contributed at least 5.0 to 6.0 $\mu g/m^3$ to the high values at these monitors.

$PM_{2.5}$ Monitored Values for October 27, 2004

$PM_{2.5}$ Monitored Values for October 27, 2004		
Site ID	**Monitoring Site**	**Monitored Values ($\mu g/m^3$)**
17-031-0052	Wilson Ave.	33.7
17-031-2001	Blue Island	28.0
17-031-4201	Northbrook	Did not report
17-031-6005	Cicero	32.6
18-089-1003	Gary-Ivanhoe	27.4
18-089-2010	Hammond-Clark H.S.	27.8
18-127-0024	Ogden Dunes	27.2

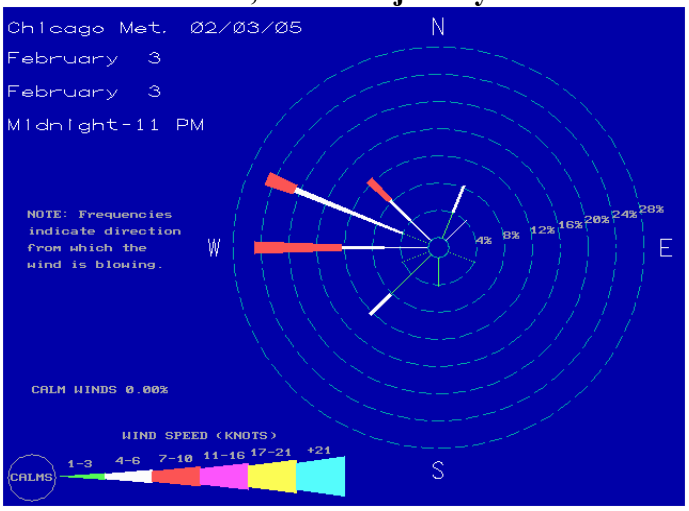
$PM_{2.5}$/Meterological Data Analysis for February 3, 2005

The February 3, 2005, wind rose and back trajectory analysis for the Chicago area are shown below. On this day, the Wilson Ave. monitor had a maximum monitored value of 62.6 $\mu g/m^3$ for $PM_{2.5}$ and the next highest monitored value was 47.0 $\mu g/m^3$at the Cicero monitor.

The results of the wind rose, in the figure below, show light westerly winds on that day. Archived AIRNOW fine particles data from February 2 and 3, 2005 show the regional nature of $PM_{2.5}$ concentrations during this time period. Northwest Indiana could be considered downwind of Chicago for this day and not likely to have an impact on the $PM_{2.5}$ monitors in Illinois.

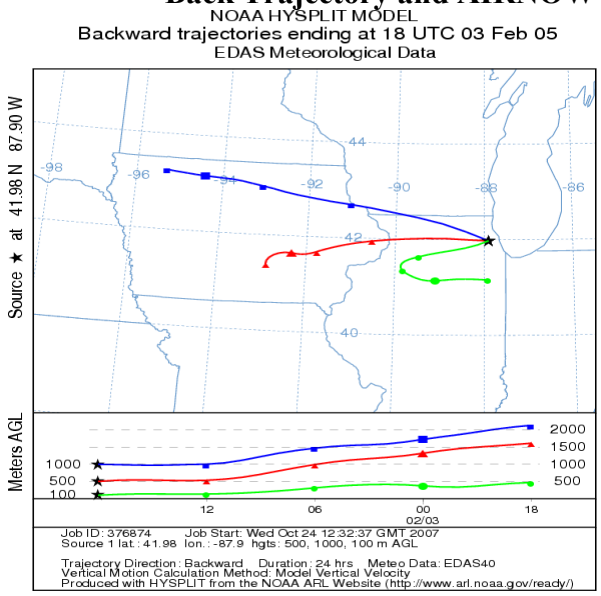
The entire upper Midwest was in the middle of a $PM_{2.5}$ episode on this date, with $PM_{2.5}$ monitored values in excess of 50.0 and 60.0 $\mu g/m^3$. Meteorological conditions contributed to a stagnant air mass over the entire upper Midwest area and conditions were conducive for fine particle build-up.

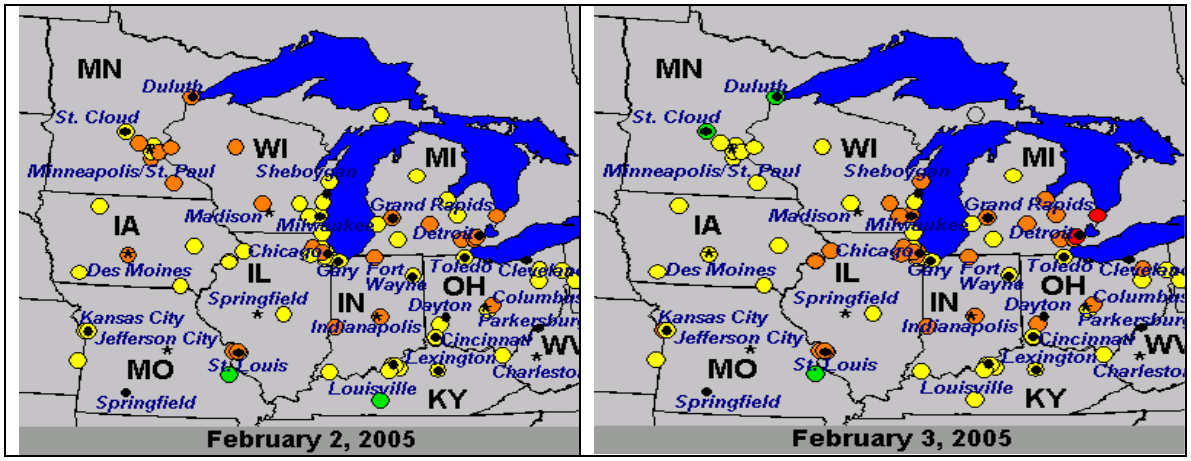
Wind Rose, Back Trajectory and AIRNOW data for February 3, 2005



The winds appear to have been less than 10 knots (11.5 miles per hour). This would indicate lighter wind speeds and more stagnant surface conditions, resulting in a greater impact from local emissions on the fine particle monitors in Illinois.

Back Trajectory and AIRNOW data for February 3, 2005





The back trajectory from the previous day (February 2) shows the air came from Iowa and northern Illinois on February 3. The wind directions at the lower levels of the atmosphere appear to change directions, indicating recirculation of northeast Illinois' air from the previous day. AIRNOW data show that $PM_{2.5}$ concentrations were in the Moderate range (yellow or 15 to 40 µg/m^{3}range) of the AQI with some areas in the Unhealthy for Sensitive Groups (orange or 40 to 65 µg/m^3) range throughout Illinois, Iowa and southern Wisconsin for both February 2 and February 3. It appears that there is pollution transport in the upper atmosphere from regions west of Chicago along with recirculation of surface air from northeast Illinois due to a large high pressure system which persisted for several days. The unique meteorological conditions suppressed mixing in the atmosphere and pollutants were trapped at the surface. The concentrations at the regional monitoring sites, excluding the Wilson Ave. site, ranged from 10 to 12 µg/m^3. However, the Wilson Ave. monitor had concentrations more than 15.0 to 25.0

µg/m^3 higher than other sites located in Northwest Indiana or at sites between Indiana and the Wilson Ave. site, indicating greater local source contributions at this monitor.

$PM_{2.5}$ Monitored Values for February 3, 2005

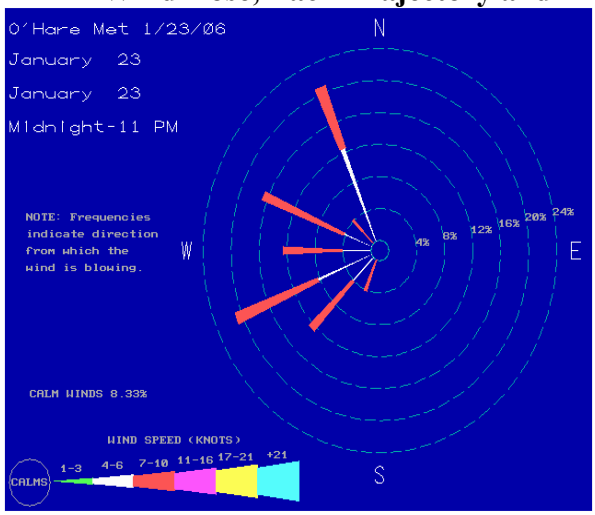
$PM_{2.5}$ Monitored Values for February 3, 2005		
Site ID	**Monitoring Site**	**Monitored Value (µg/m^3)**
17-031-0052	Wilson Ave.	62.6
17-031-2001	Blue Island	43.8
17-031-4201	Northbrook	35.8
17-031-6005	Cicero	47
18-089-1003	Gary-Ivanhoe	37
18-089-2010	Hammond-Clark H.S.	42
18-127-0024	Ogden Dunes	Did not report

$PM_{2.5}$/Meterological Data Analysis for January 23, 2006

The January 23, 2006, wind rose and back trajectory analysis for the Chicago area are shown below. On this day, the Wilson Ave. monitor had a maximum monitored value of 40.8 µg/m^3 for $PM_{2.5}$ and the next highest monitored value within the area was 28.7 µg/m^3.

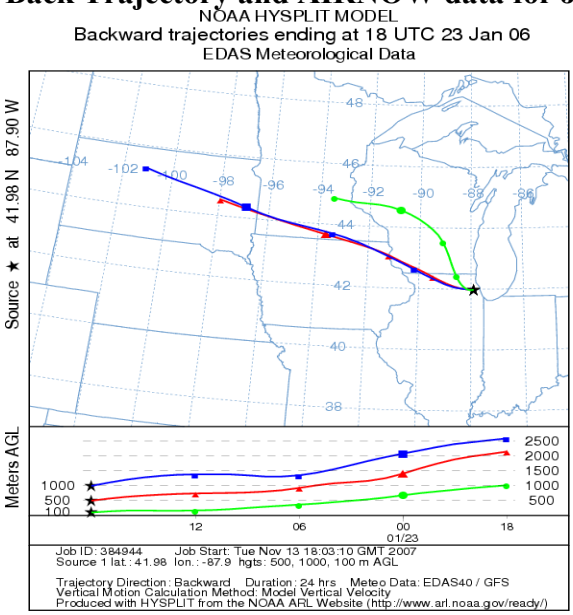
The results of the wind rose, shown below, show southwesterly winds on this day. Archived AIRNOW $PM_{2.5}$ data from January 22 and 23, 2006, show the regional nature of $PM_{2.5}$ concentrations during this time period with higher concentrations in the upper Midwest. Northwest Indiana could be considered downwind for this day, thus it is unlikely that it contributed to $PM_{2.5}$ concentrations measured in Illinois.

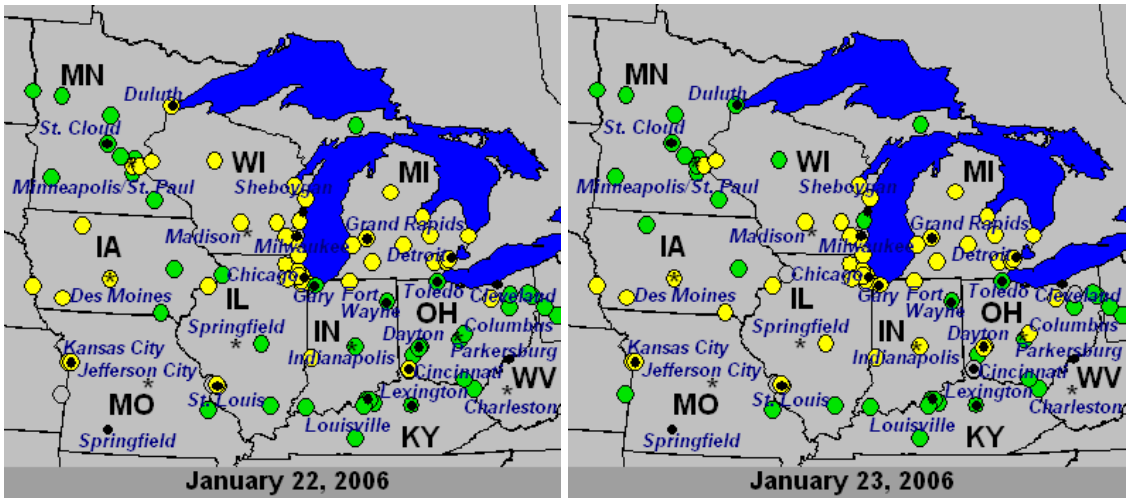
Wind Rose, Back Trajectory and AIRNOW data for January 23, 2006



Winds appear to be between 7 and 10 knots (8 to 12 miles per hour) from the north and northwest and west and southwest. This would indicate higher wind speeds, resulting in more transport of fine particles and their precursors at the surface from the southwest to the fine particle monitors in the Chicago area.

Back Trajectory and AIRNOW data for January 23, 2006





The back trajectory, shown in the figure above, from the previous day (January 22, 2006) shows the air coming from Nebraska, southern Minnesota, northern Iowa, southern Wisconsin and northern Illinois on January 23. AIRNOW data show that $PM_{2.5}$ concentrations were in the range of 15.0 to 40.0 µg/m^3 throughout southern Minnesota, northern Iowa, southern Wisconsin and northern Illinois. It appears that there was transport from southern Minnesota, northern Iowa, southern Wisconsin and northern Illinois. Northwest Indiana should be considered downwind of Chicago for this date, thus it is highly unlikely that Lake and Porter counties contributed to $PM_{2.5}$ concentrations measured in Illinois. Meteorological data indicate that Northwest Indiana sources were downwind on January 23 with higher wind speeds and monitoring data from nearby sites indicating local sources contributed to the higher values at Wilson Ave. The monitoring sites had some variation in their concentrations, from 4.0 to 7.0 µg/m^3. However, the Wilson Ave. monitor had concentrations at least 16.0 µg/m^3 higher than other sites

located between Lake and Porter counties and the Wilson Ave. site, indicating greater local source contributions at this monitor during this $PM_{2.5}$ episode.

$PM_{2.5}$ Monitored Values for January 23, 2006

$PM_{2.5}$ Monitored Values for January 23, 2006		
Site ID	**Monitoring Site**	**Monitored Value ($\mu g/m^3$)**
17-031-0052	Wilson Ave.	40.8
17-031-2001	Blue Island	21.6
17-031-4201	Northbrook	22.8
17-031-6005	Cicero	28.7
18-089-1003	Gary-Ivanhoe	24.7
18-089-2010	Hammond-Clark H.S.	24.1

As demonstrated above, the monitoring sites in the Chicago area that currently measure $PM_{2.5}$ concentrations above the 24-hour standard are affected by "urban excess", mostly attributable to localized mobile sources. If emissions deriving from Lake and Porter counties were significantly contributing to the violating monitors in Illinois, similar elevated values would be expected at the sites located between Lake and Porter counties and the Cicero and Wilson Avenue monitors, as well as in Lake and Porter counties, particularly Hammond. The location of the two violating monitors in northeast Illinois results in elevated concentrations representative of "urban excess", primarily attributable to localized mobile source emissions. Indiana is confident that its contribution to this localized effect is negligible.

Northwest Indiana Geography

Aside from Lake Michigan, the Northwest Indiana area does not have any geographical features that make it unique in regards to its air shed.

Northwest Indiana Level of Control of Emission Sources

Most of the major $PM_{2.5}$ precursor sources within the area are subject to the NO_x SIP Call or RACT requirements. Major stationary source located within and outside of the Chicago MSA are subject to the NO_x SIP Call and CAIR (or Indiana's equivalent, depending on the vacatur).

Southeast Indiana Area

Indiana Recommendation
On May 30, 2008, Indiana recommended that Clark and Floyd counties and Madison Township in Jefferson County be designated as attainment. Indiana also recommended that Dearborn County be designated attainment.

U.S. EPA Proposed Nonattainment Boundary
On August 18, 2008, U.S. EPA proposed to designate Clark and Floyd counties, and Madison Township in Jefferson County as part of the Louisville nonattainment area. U.S. EPA also proposed to designate a portion of Dearborn County (Lawrenceburg Township) as part of the Cincinnati nonattainment area.

U.S. EPA stated that a county will be designated as nonattainment if it has an air quality monitor that is violating the standard or if the county is determined to be contributing to a violation of the standard outside the county. Potential contributions to $PM_{2.5}$ concentrations in the area are based on the nine factors recommended in U.S. EPA guidance including precursor emissions, air quality data, population density and degree of urbanization, traffic and commuting patterns, growth, meteorology, geography and topography, jurisdictional boundaries and levels of control of emission sources. These criteria were originally established for evaluating areas under the 1-hour ozone standard, and are not appropriate for use in designating areas under a PM standard.

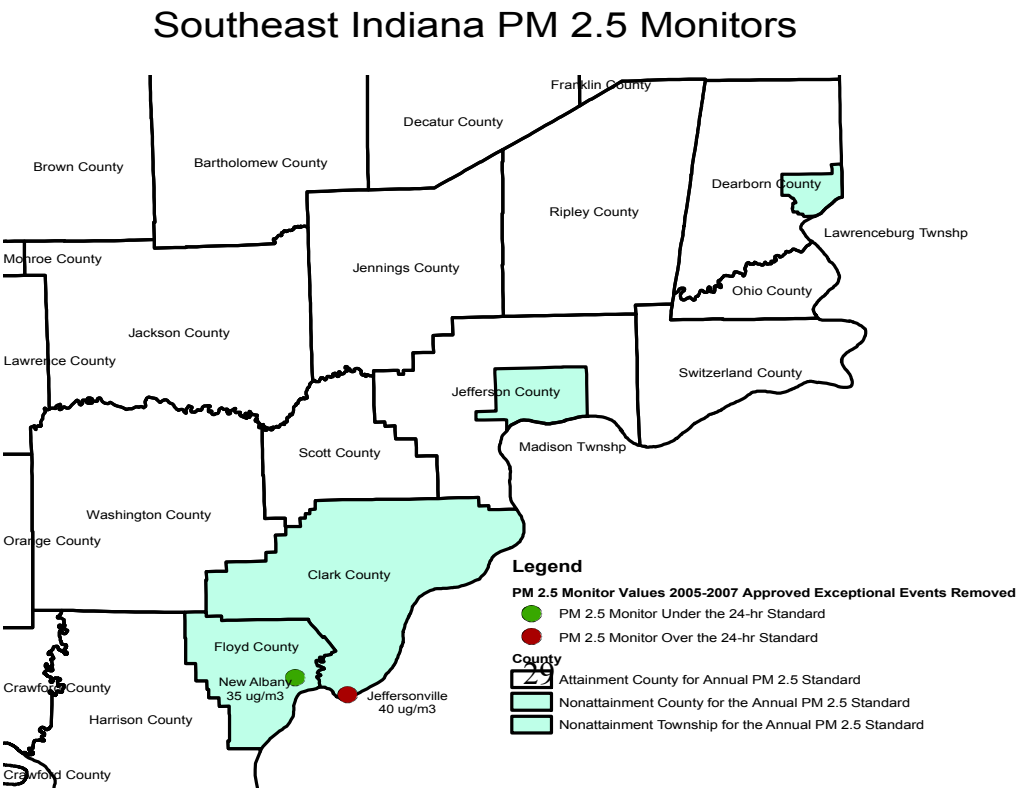
The proposed nonattainment designation for Clark and Floyd counties, and Madison Township (Jefferson County) is based on a violation of the 24-hour $PM_{2.5}$ standard in Clark County from 2005-2007. However, this is solely based on the fact that U.S. EPA failed to approve all of the exceptional events submitted for the years 2005 and 2006 by Indiana and Kentucky. Indiana encourages U.S. EPA to reconsider the events within the submissions, with careful consideration to the criteria established for qualifying events. Indiana believes that its submission was valid and should be recognized accordingly. Otherwise, the entire Louisville region, including Clark and Floyd counties would be eligible for designation as attainment. Clark County may attain the standard based on monitoring data from 2006-2008. In addition, Indiana does not believe that emissions from Clark and Floyd counties affect the downwind area's ability to attain the 24-hour standard, noting that Clark and Floyd counties, as well as Madison Township (Jefferson County) are downwind of Louisville.

The nonattainment designation for Madison Township in Jefferson County is based on the assumption that the township contributes to violations in the Louisville area. Indiana has no $PM_{2.5}$ monitors in Jefferson County. U.S. EPA stated that Madison Township in Jefferson County has high emissions and the wind blows with sufficient frequency on high concentration days from Jefferson County toward the violating monitors in Louisville. The Clifty Creek power plant located in Madison Townships in Jefferson County is currently controlled by Selective Catalytic Reduction and Overfire Air. The Clifty Creek power plant is installing FGDs on all six units anticipating operation starting

in 2010. When the new controls become operational it will result in a significant reduction (94%) of SO_2. These controls will be in place prior to the attainment date. U.S. EPA also proposed the 2006 24-hour $PM_{2.5}$ Louisville nonattainment area to be identical to the nonattainment area designated under the 1997 $PM_{2.5}$ standard to simply planning by assuring that the corresponding requirements for the two sets of air quality standards apply to the same area. Indiana strongly believes that a number of Indiana counties were improperly designated nonattainment under the annual $PM_{2.5}$ standard including Madison Township in Jefferson County. Indiana believes that emissions from Jefferson County do not affect the downwind area's ability to attain the 24-hour standard and the county is downwind of Louisville for the majority of the year. U.S. EPA must substantiate its assumption that this township is contributing to upwind monitored violations with source apportionment analysis and a model-based culpability analysis.

U.S. EPA's basis for a nonattainment designation for Lawrenceburg Township in Dearborn County is based on the assumption that the county contributes to violations in the Cincinnati Combined Statistical Area. Indiana has no fine particle monitors in Dearborn County. U.S. EPA stated that Dearborn County has high emissions relatively close to the locations of violations and is commonly upwind on days with high concentrations. The AEP-Tanners Creek power plant located in Lawrenceburg Townships in Dearborn County is covered by a consent decree and several, but not all, units will have to apply controls. Currently the power plant is controlled by Low NOx Burner Technology (Dry Bottom only) and Overfire Air. AEP-Tanners Creek will be installing SNCRs on three of its four units, with operation to begin in mid-2009. This will achieve an additional 30% reduction in NOx. Indiana believes that emissions from Dearborn County do not affect the downwind area's ability to attain the 24-hour standard. U.S. EPA must substantiate its assumption that this township is contributing to upwind monitored violations with source apportionment analysis and a model-based culpability analysis.

Southeast Indiana Monitoring Data



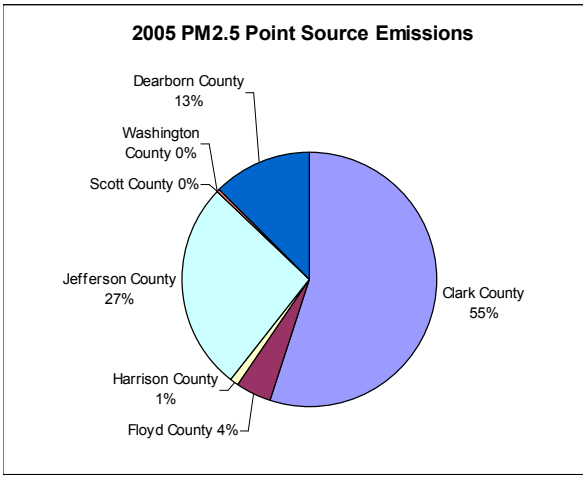
Monitor Values ($\mu g/m^3$)							
		Daily 98th Percentile Values				Daily Site Design Values 2004-2006	Daily Site Design Values 2005-2007
County	Monitor Location	2004	2005	2006	2007		
Clark	Jeffersonville (Exceptional Events Left In)	28.4	45.5	35.9	38.1	37 (36.6)	40 (39.833)
Clark	Jeffersonville (Exceptional Events Taken Out)	27.9	35.1	32.2	38.1	32 (31.733)	35 (35.133)
Floyd	New Albany (Exceptional Events Left In)	26.7	40.1	28.2	35.4	32 (31.667)	35 (34.567)
Floyd	New Albany (Exceptional Events Taken Out)	26.6	39.0	27.4	35.4	31 (31.0)	34 (33.933)

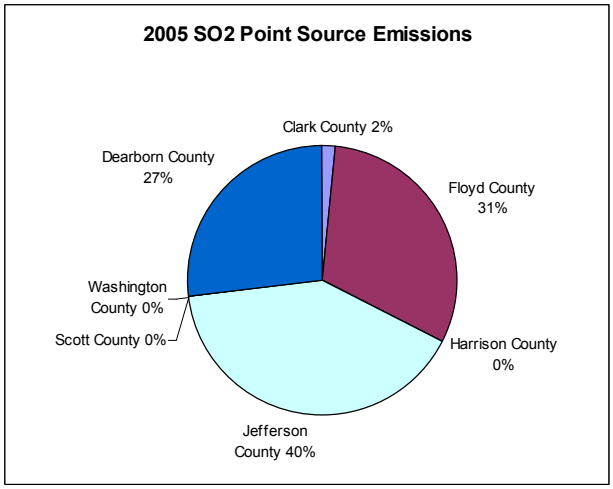
There are two $PM_{2.5}$ monitors within the Louisville MSA, one located in Jeffersonville, Clark County and one located in New Albany, Floyd County. The monitor in Clark County is over the 24-hour standard but the monitor in Floyd County is not. The difference between the monitor values at these two sites is not that large, but does suggest geographically isolated spikes associated with the Clark County monitor from a local source or sources within Clark County.

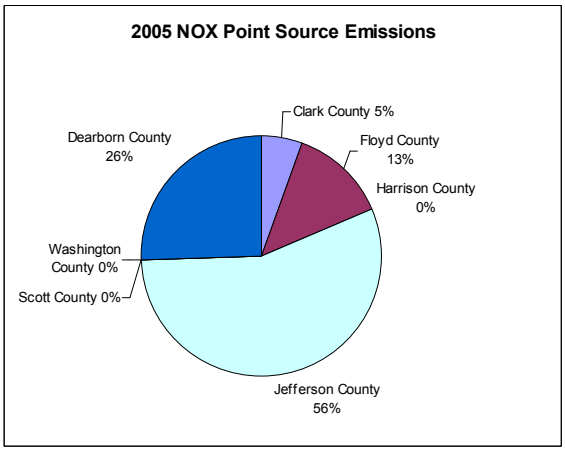
There are no monitors located within the Indiana portion of the Cincinnati Metropolitan Statistical Area (MSA). If monitors were located in the Indiana portion of the MSA, it is reasonable to assume that the values would be consistent with background values elsewhere in the state and Midwest. Therefore, Indiana does not believe the $PM_{2.5}$ concentrations in this area exceed the standard in Indiana. Additionally, based on analysis of similar urban areas, Indiana does not believe that emissions from Dearborn and surrounding counties contribute significantly to $PM_{2.5}$ values elsewhere in the Cincinnati MSA. For example, Morgan County is an upwind county within the Indianapolis MSA and it contains a power plant. The closest downwind monitor within the core county (Marion) maintains a value below the standard, illustrating that emissions from Morgan County are unlikely contributing to the values in Marion County. Indiana feels it reasonable to assume that the same would stand true with regard to Dearborn, Franklin and Ohio counties' impact on values within the Cincinnati MSA.

Southeast Indiana Emissions Data

	2005 Point Source Emissions (Tons per Year)					
	$PM_{2.5}$	% of Area	SO_2	% of Area	NO_X	% of Area
Clark County	611.2872	55.13%	3206.904	1.74%	2225.529	5.48%
Floyd County	48.89421	4.41%	56666.9	30.81%	5305.991	13.07%
Harrison County	10.72435	0.97%	0.057589	0.00%	5.6023	0.01%
Jefferson County	295.7041	26.67%	74659.12	40.60%	22629.02	55.76%
Scott County	0.739746	0.07%	0.058401	0.00%	9.7335	0.02%
Washington County	2.203444	0.20%	0.386947	0.00%	1.75771	0.00%
Dearborn County	139.2471	12.56%	49361.23	26.84%	10407.81	25.64%
Franklin County*						
Ohio County*						
Total	1108.8		183894.7		40585.45	
***No emissions data for 2005**						



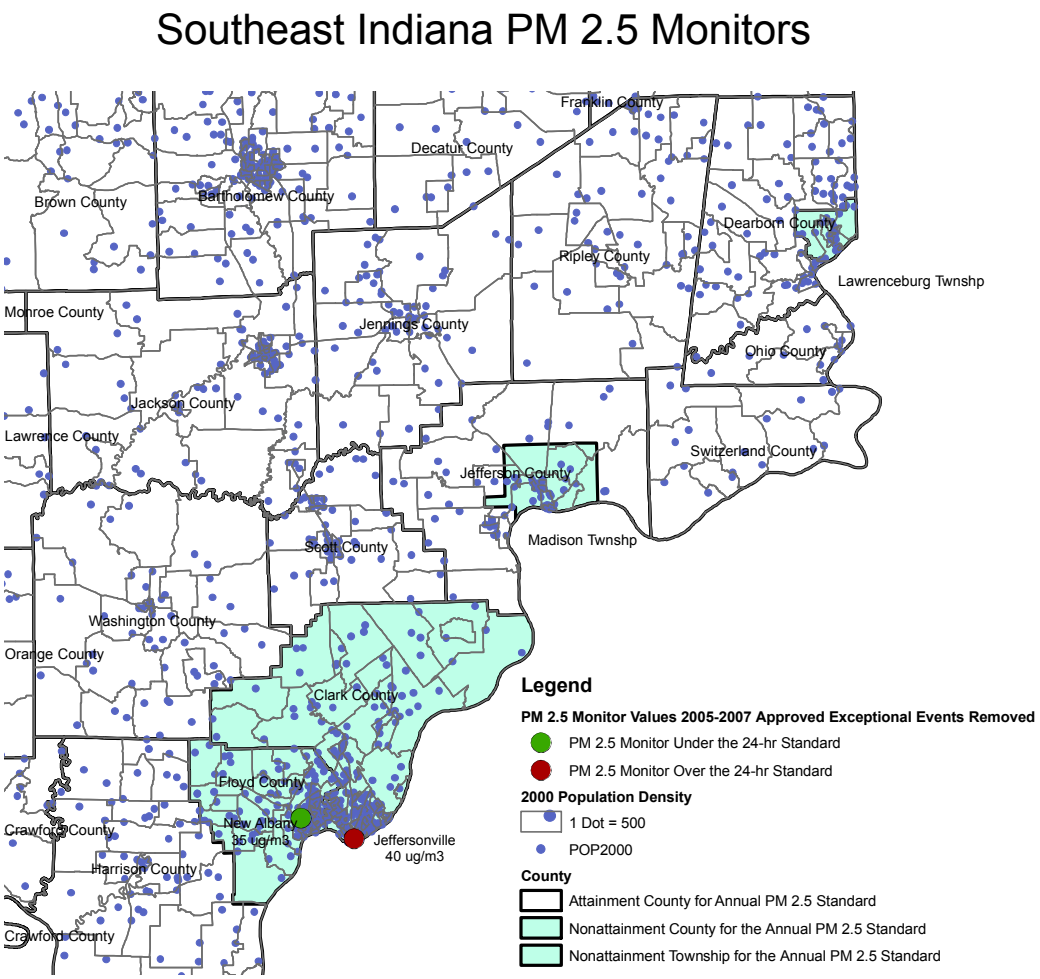




U.S. EPA stated that Floyd County has relatively high emissions as well as substantial population. The Gallagher power plant located in Floyd County is currently controlled by low NOx burner technology with separated overfire air. The Gallagher power plant is installing SCRs anticipating operation starting in 2015.

Sources within Clark and Jefferson counties account for 81.8% of the direct $PM_{2.5}$ emissions from stationary sources. The total oxides of nitrogen (NO_x) emissions of the area derive primarily from the Indiana counties of Jefferson (55.8%) and Dearborn (25.6%). The sulfur dioxide (SO_2) emissions released by stationary sources within the Indiana's portion of the MSA are primarily from the Indiana counties of Jefferson (40.6%), Floyd (30.8%) and Dearborn (26.8%). There are no major stationary sources in Indiana located within Harrison or Scott counties. Overall $PM_{2.5}$ values have continued to drop and NO_x and SO_2 emissions are expected to decrease throughout the Midwest over the next few years. Louisville, Kentucky is the core of the MSA and its population and emissions dwarf those in Clark and Floyd counties.

Southeast Indiana Population Density



Both Clark and Floyd counties maintain high concentrations of population density, compared to the other counties within the MSA and Southeast Indiana area. Harrison, Jefferson, Scott and Washington counties are predominantly rural in nature, with low to moderate population density.

Southeast Indiana Traffic Patterns

2005 Commuting Patterns

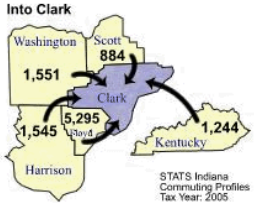
	Total Workforce: Number of persons who live in County and work	Number of persons who live AND work in County	Number of persons who live in County and work in another County	Percent In County	Percent Out of County
Clark County	65,436	41,174	24,262	62.9%	37.1%
Floyd County	47,821	27,161	20,660	56.8%	43.2%
Harrison County	25,340	15,113	10,227	59.6%	40.4%

Jefferson County	20,946	17,871	3,075	85.3%	14.7%
Scott County	14,924	10,464	4,460	70.1%	29.9%
Washington County	17,418	11,516	5,902	66.1%	33.9%
Dearborn County	33,085	19,014	14,071	57.5%	42.5%
Franklin County	15,381	8,335	7,046	54.2%	45.8%
Ohio County	4,093	2,128	1,965	52.0%	48.0%

Top five counties sending workers INTO Clark County:

Floyd County	5,295
Washington County	1,551
Harrison County	1,545
Kentucky	1,244
Scott County	884
Total of above	10,519 workers

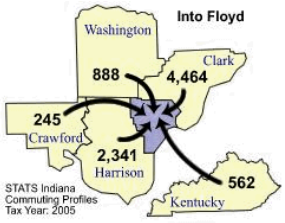
(19.9% of Clark County work force)



Top five counties sending workers INTO Floyd County:

Clark County	4,464
Harrison County	2,341
Washington County	888
Kentucky	562
Crawford County	245
Total of above	8,500 workers

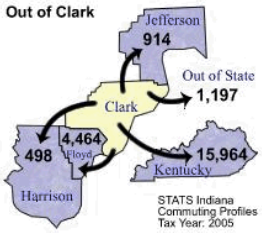
(23.5% of Floyd County work force)



Top five counties receiving workers FROM Clark County:

Kentucky	15,964
Floyd County	4,464
Out of State	1,197
Jefferson County	914
Harrison County	498
Total of above	23,037 workers

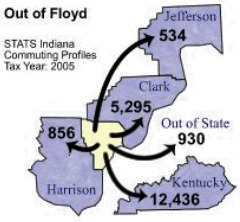
(35.2% of Clark County labor force)



Top five counties receiving workers FROM Floyd County:

Kentucky	12,436
Clark County	5,295
Out of State	930
Harrison County	856
Jefferson County	534
Total of above	20,051 workers

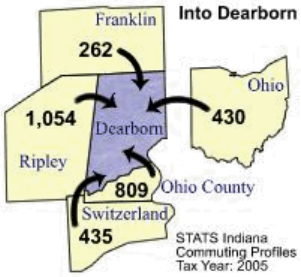
(41.9% of Floyd County labor force)



Top five counties sending workers INTO Dearborn County:

Ripley County	1,054
Ohio County	809
Switzerland County	435
Ohio (State)	430
Franklin County	262
Total of above	2,990 workers

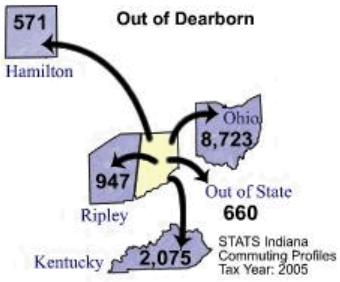
(13.3% of Dearborn County work force)



Top five counties receiving workers FROM Dearborn County:

Ohio (State)	8,723
Kentucky	2,075
Ripley County	947
Out of State	660
Hamilton County	571
Total of above	12,976 workers

(39.2% of Dearborn County labor force)



Within the Southeast Indiana area, the highest concentrations of employment by residents of the county and vehicle miles traveled (VMT) is split between Clark and Floyd counties. Although mild urban growth is occurring in neighboring counties, the majority of the region's VMT and traffic congestion is generated within the core urban areas of Jeffersonville (Clark County) and New Albany (Floyd County). Jefferson County maintains the highest concentration of employment by residents of the county at 85.3% compared to the other counties within the area, meaning that there is not much commuting occurring between Jefferson County residents and the remainder of the MSA.

Jefferson County also has a lower population density than the other counties within the region. Hamilton County, Ohio (Cincinnati, the core of the urban area) maintains the highest concentration of employment by residents of the county, and VMT compared to the other counties within the Cincinnati MSA. Within the Indiana portion of the Cincinnati MSA, Dearborn County maintains the highest population and an in-county workforce ratio of 57.5%.

Southeast Indiana Growth Rates and Patterns

	Population 1990	Population 2000	Percent Change from 1990 to 2000	Population Estimate 2006	Percent Change from 2000 to 2006	Population Estimate 2010	Percent Change from 2000 to 2010	Population Estimate 2020	Percent Change from 2000 to 2020
Clark County	87,774	96,472	9.9%	103,569	7.4%	101,969	5.7%	111,310	15.4%
Floyd County	64,404	70,823	10.0%	72,570	2.5%	71,992	1.7%	73,569	3.9%
Harrison County	29,890	34,325	14.8%	36,992	7.8%	38,203	11.3%	41,185	20.0%
Jefferson County	29,797	31,705	6.4%	32,668	3.0%	33,293	5.0%	34,209	7.9%
Scott County	20,991	22,960	9.4%	23,704	3.2%	24,947	8.7%	25,850	12.6%
Washington County	23,717	27,223	14.8%	28,062	3.1%	29,613	8.8%	30,015	10.3%
Dearborn County	38,835	46,109	18.7%	49,663	7.7%	50,855	10.3%	54,017	17.2%
Franklin County	19,580	22,151	13.1%	23,373	5.5%	24,035	8.5%	24,413	10.2%
Ohio County	5,315	5,623	5.8%	5,826	3.6%	6,092	8.3%	6,220	10.6%

Southeast Indiana Meteorology

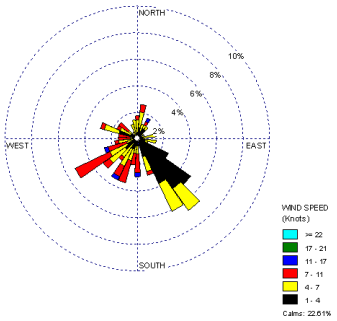
Based on a southwesterly predominant prevailing wind direction throughout the year, Clark and Floyd counties are considered downwind of the Louisville metropolitan area. An analysis was conducted to determine the wind direction at Louisville during elevated $PM_{2.5}$ events recorded at the Jeffersonville, Clark County and New Albany, Floyd County $PM_{2.5}$ monitors. Elevated $PM_{2.5}$ events are defined as days when $PM_{2.5}$ monitors in Clark and Floyd counties recorded $PM_{2.5}$ readings above 30 micrograms per cubic meter. A preliminary look at the wind roses taken from data from the Louisville Standiford Airport showed wind directions on the elevated days ranging from calm conditions to winds from the south, west, southwest, southeast and east.

The majority of the elevated $PM_{2.5}$ readings occurring from 2005 through 2007 happened during the summertime. The elevated $PM_{2.5}$ readings during the summer resulted from mainly south to southwest surface winds with back trajectories, which show the direction from which the air impacting the monitor came, showing a southerly or westerly component with stagnant conditions evident (air recirculated or circled around the Louisville area). Of the few elevated $PM_{2.5}$ readings that occurred during the wintertime, wind directions were mainly from the north and west with back trajectories coming from north and west directions.

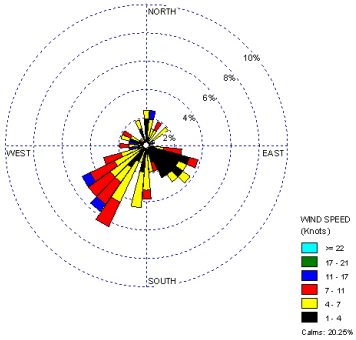
Below is the summation of the wind directions and wind speeds of all elevated $PM_{2.5}$ days for 2005, 2006 and 2007. As can be seen, a strong correlation can be drawn that winds with a southerly component were most prevalent during the elevated $PM_{2.5}$ days in

the Louisville area. Calm conditions or very light wind speeds played a large role in the elevated $PM_{2.5}$ readings in the area.

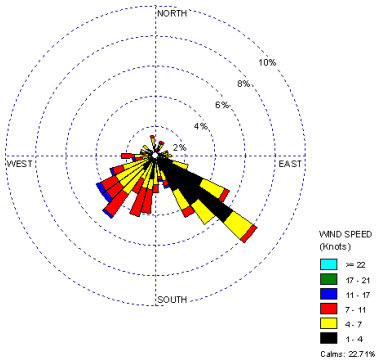
Wind rose for 2005



Wind rose for 2006

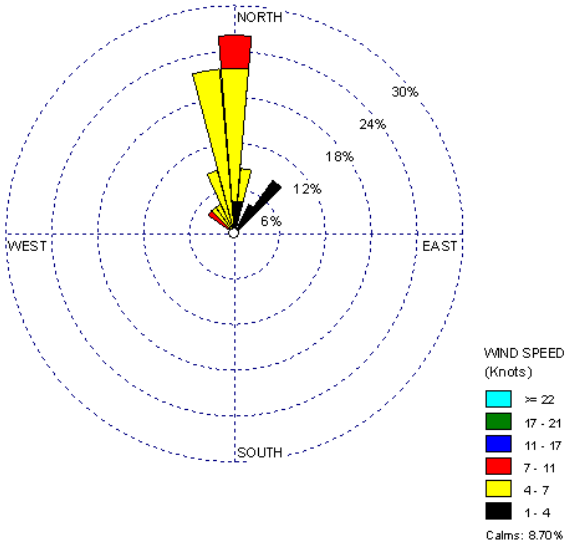


Wind rose for 2007

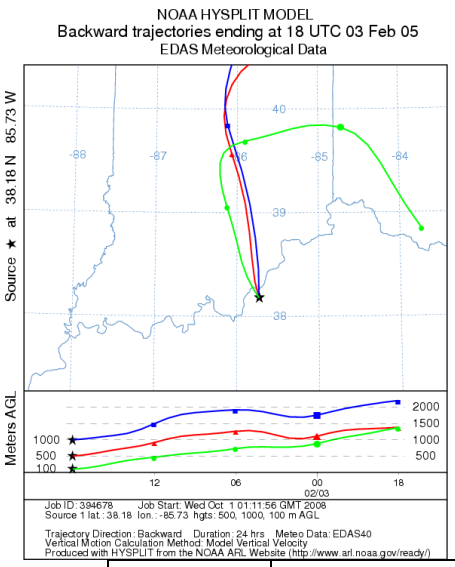


Based on the analysis, elevated $PM_{2.5}$ readings in Southern Indiana occur with south, west or east wind directions and based on AIRNOW maps, the elevated $PM_{2.5}$ readings occurred throughout the Midwest and were considered more regional in nature during the summer.

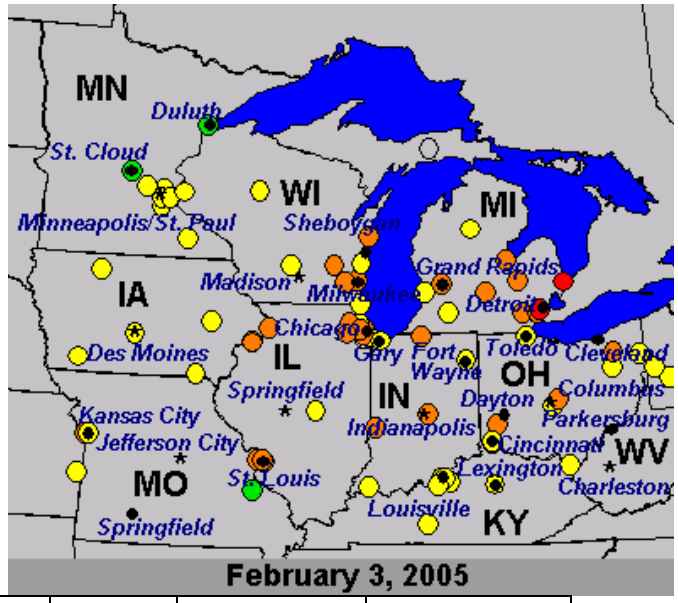
Wind Rose – Louisville



Back Trajectory – Louisville

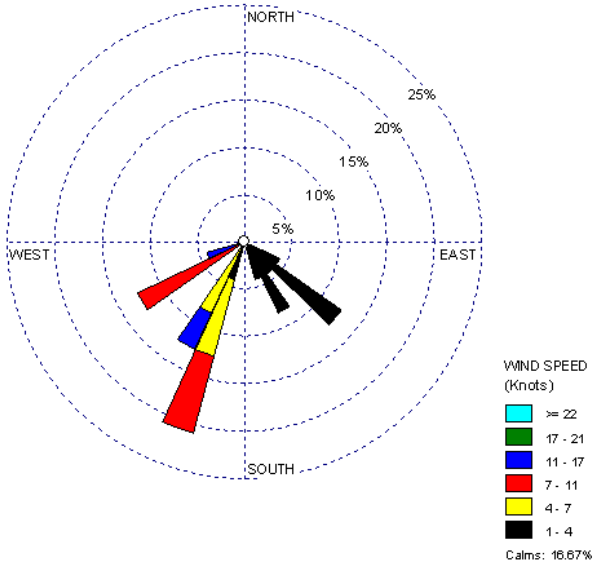


AirNow - Midwest

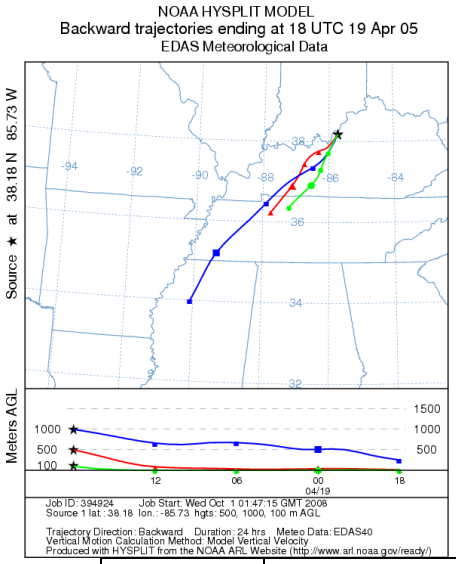


	Maximum Temp	Precip.	Jeffersonville	New Albany
2/3/2005	48 °F	trace	34.3 µg/m3	29.1 µg/m3

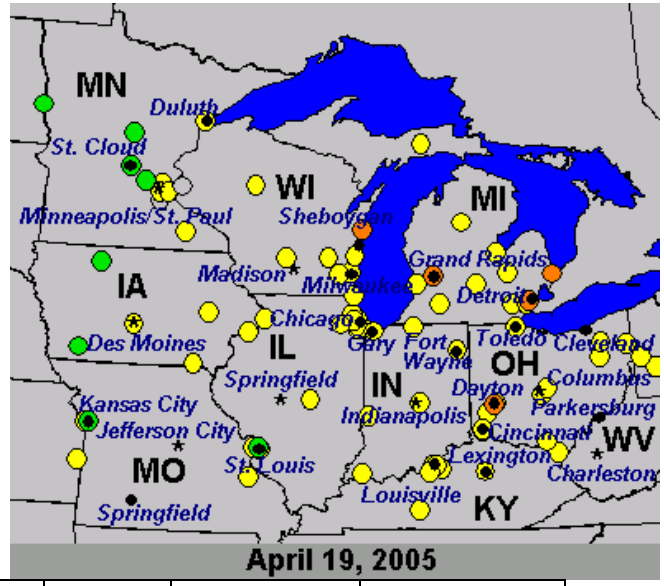
Wind Rose - Louisville



Back Trajectory – Louisville

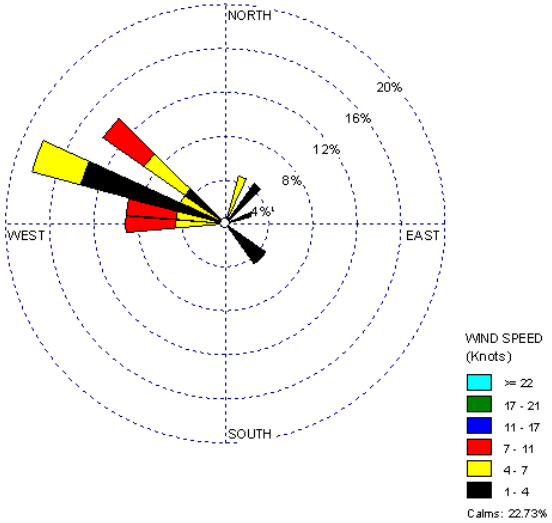


AirNow - Midwest

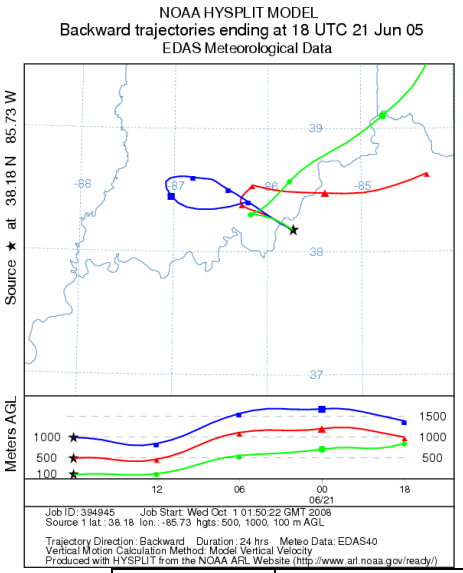


	Maximum Temp	Precip.	Jeffersonville	New Albany
4/19/2005	81 °F	none	32.3 µg/m3	26.0 µg/m3

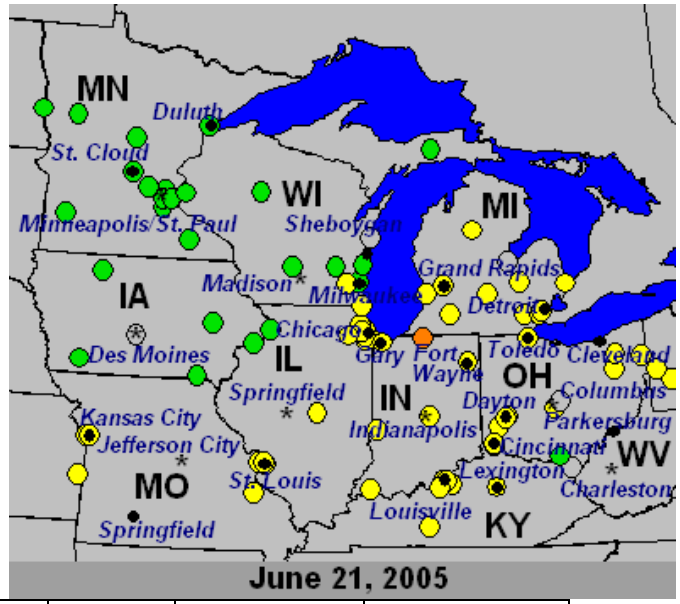
Wind Rose - Louisville



Back Trajectory – Louisville

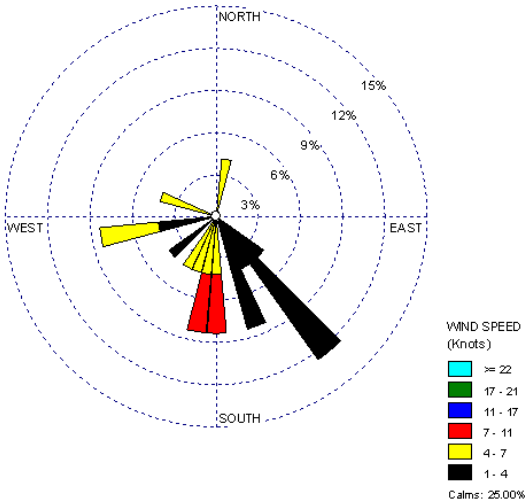


AirNow - Midwest

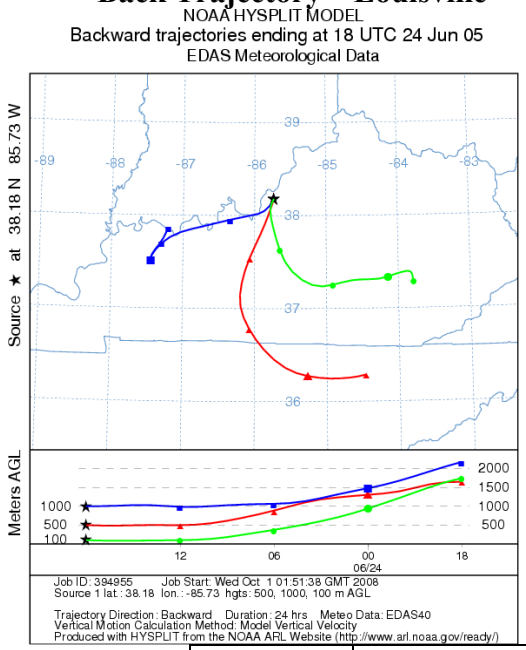


	Maximum Temp	Precip.	Jeffersonville	New Albany
6/21/2005	85 °F	none	33.2 µg/m3	29.0 µg/m3

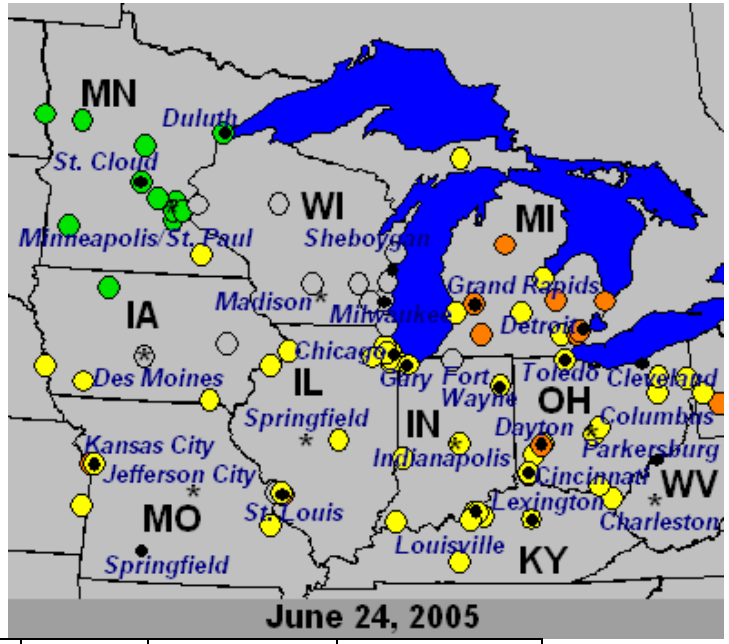
Wind Rose - Louisville



Back Trajectory – Louisville

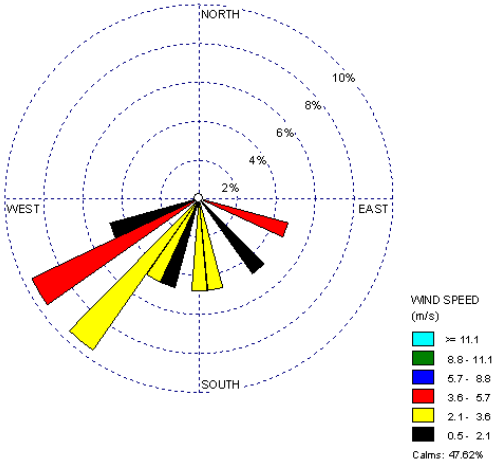


AirNow - Midwest

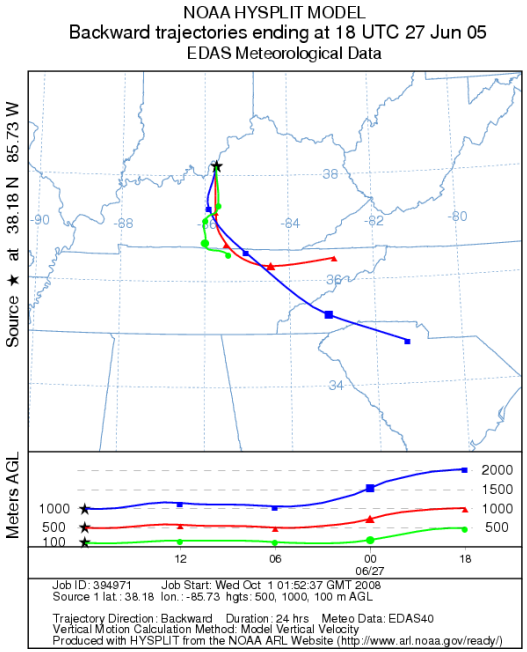


	Maximum Temp	Precip.	Jeffersonville	New Albany
6/24/2005	93 °F	none	33.0 µg/m3	29.9 µg/m3

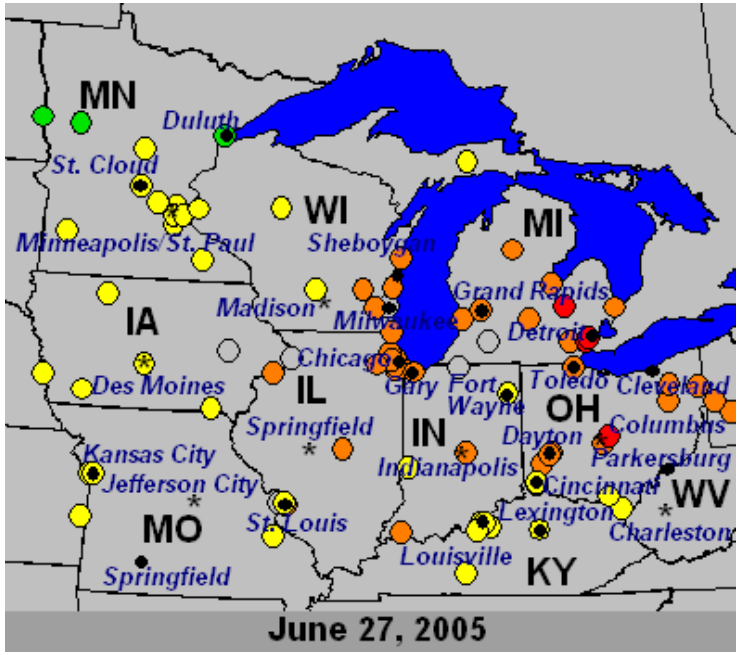
Wind Rose - Louisville



Back Trajectory – Louisville

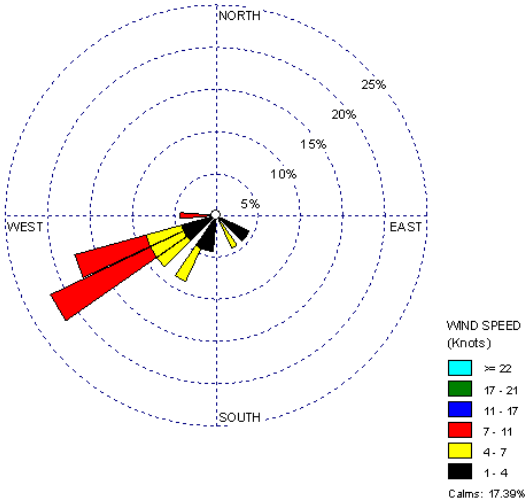


AirNow - Midwest

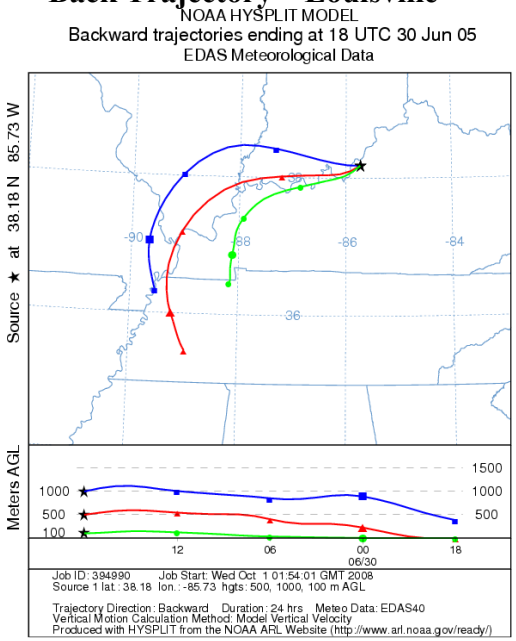


	Maximum Temp	Precip.	Jeffersonville	New Albany
6/27/2005	92 °F	none	33.7 µg/m3	39.3 µg/m3

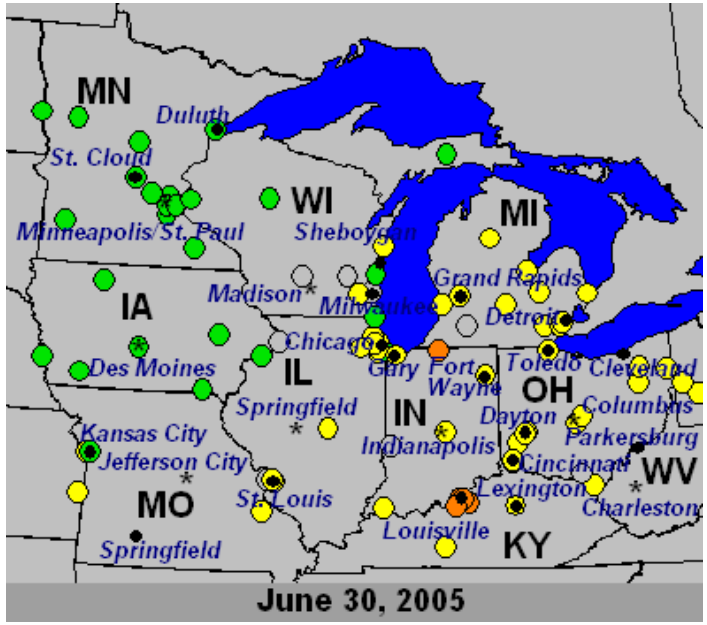
Wind Rose - Louisville



Back Trajectory – Louisville

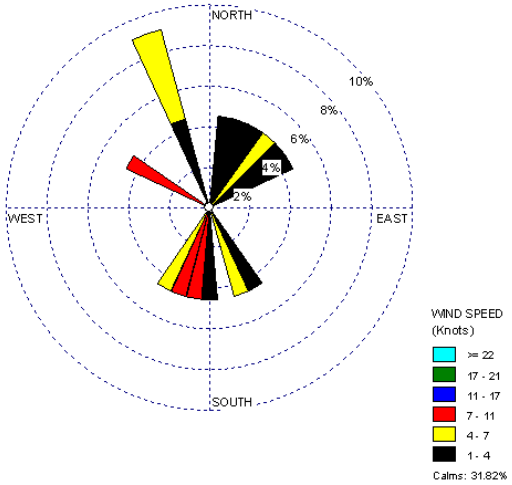


AirNow - Midwest

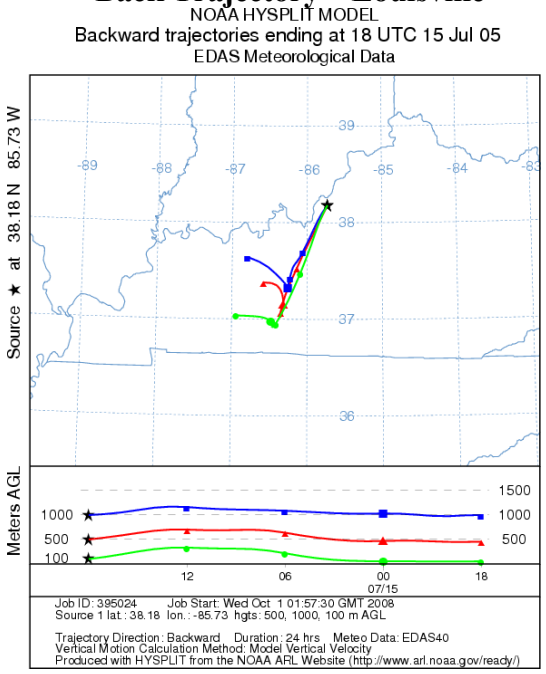


	Maximum Temp	Precip.	Jeffersonville	New Albany
6/30/2005	94 °F	none	45.9 µg/m3	39.0 µg/m3

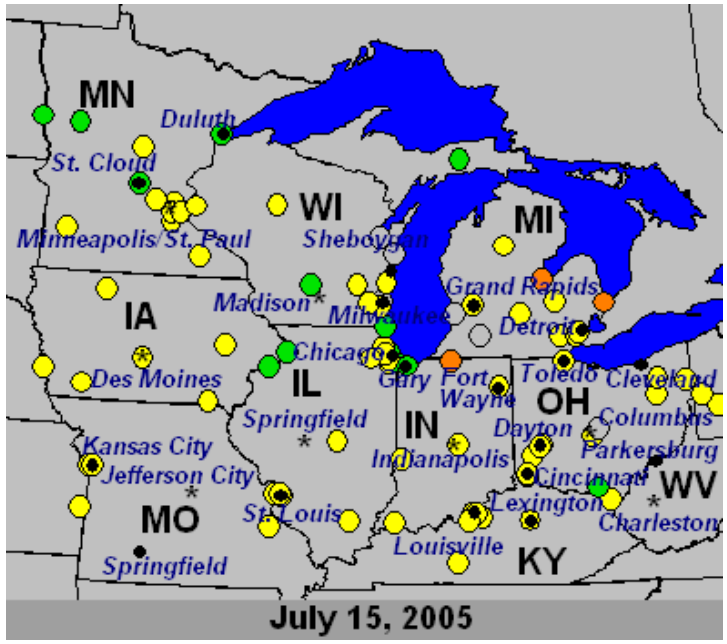
Wind Rose - Louisville



Back Trajectory – Louisville

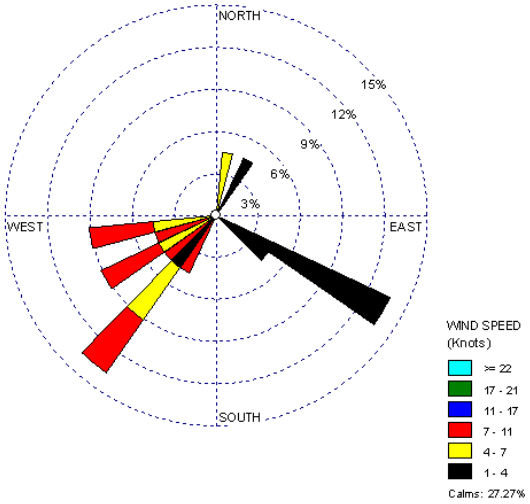


AirNow - Midwest

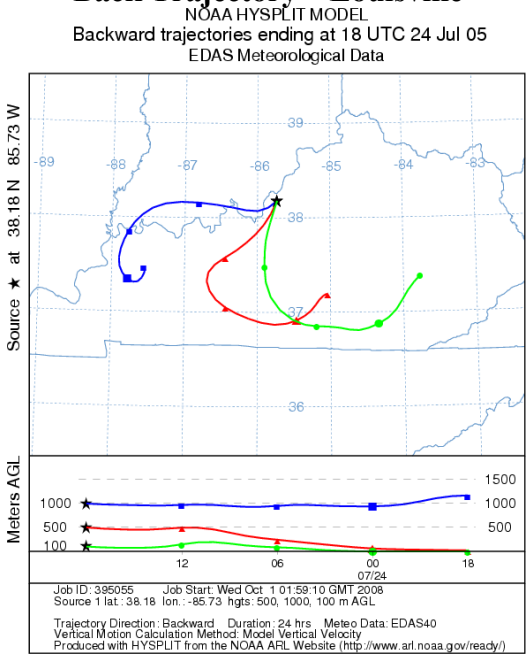


	Maximum Temp	Precip.	Jeffersonville	New Albany
7/15/2005	85 °F	none	32.3 µg/m3	30.0 µg/m3

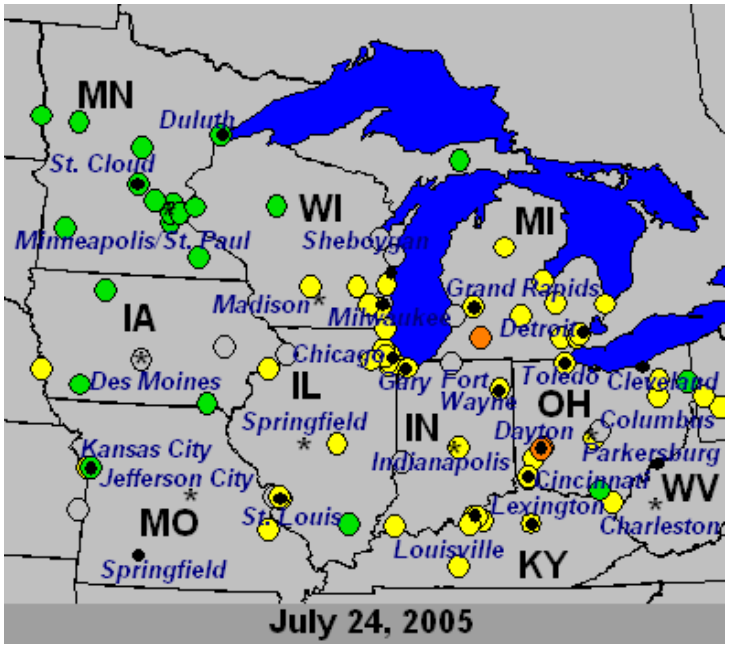
Wind Rose - Louisville



Back Trajectory – Louisville

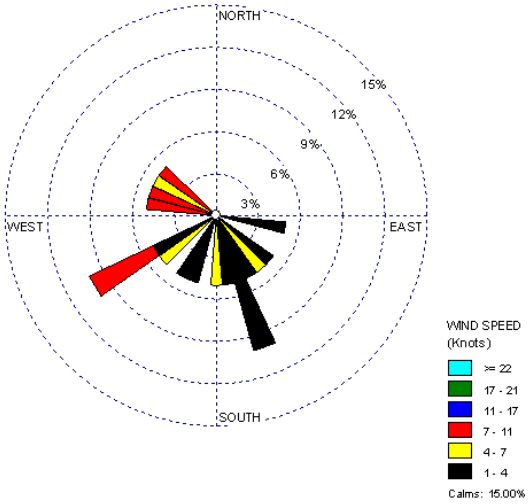


AirNow - Midwest

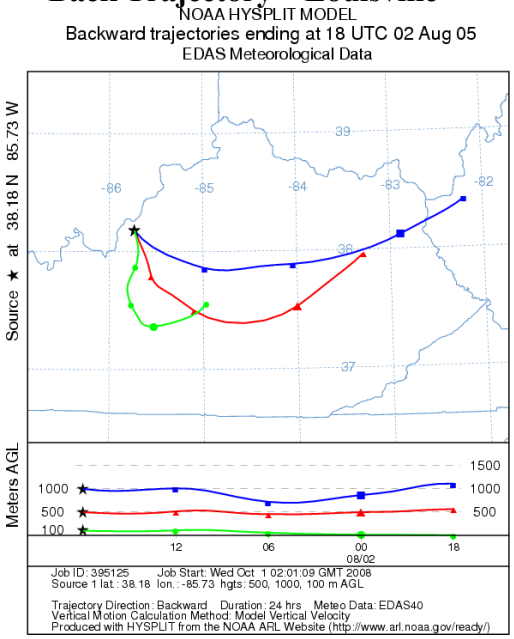


	Maximum Temp	Precip.	Jeffersonville	New Albany
7/24/2005	95 °F	none	35.1 µg/m3	34.1 µg/m3

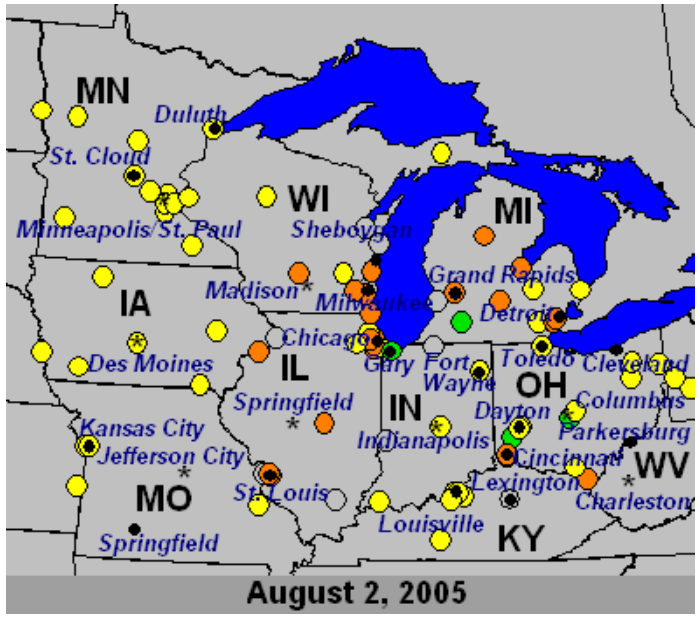
Wind Rose - Louisville



Back Trajectory – Louisville

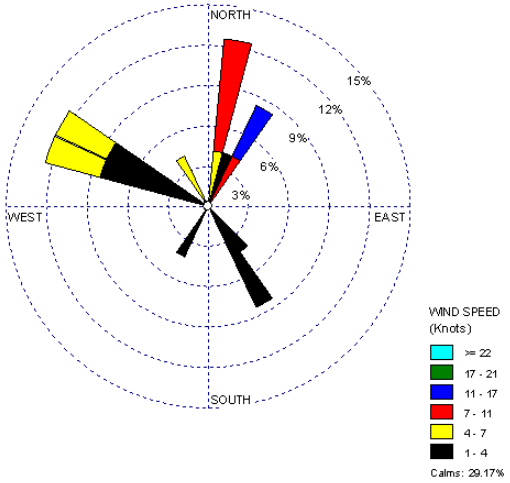


AirNow - Midwest

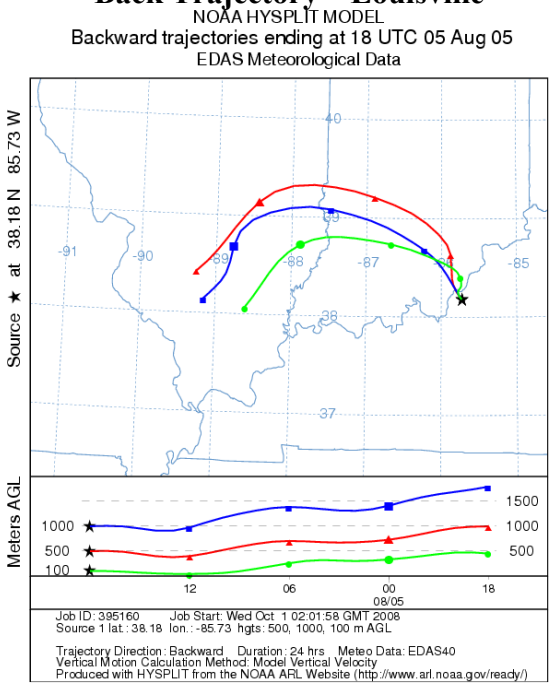


	Maximum Temp	Precip.	Jeffersonville	New Albany
8/2/2005	97 °F	none	29.1 µg/m3	32.5 µg/m3

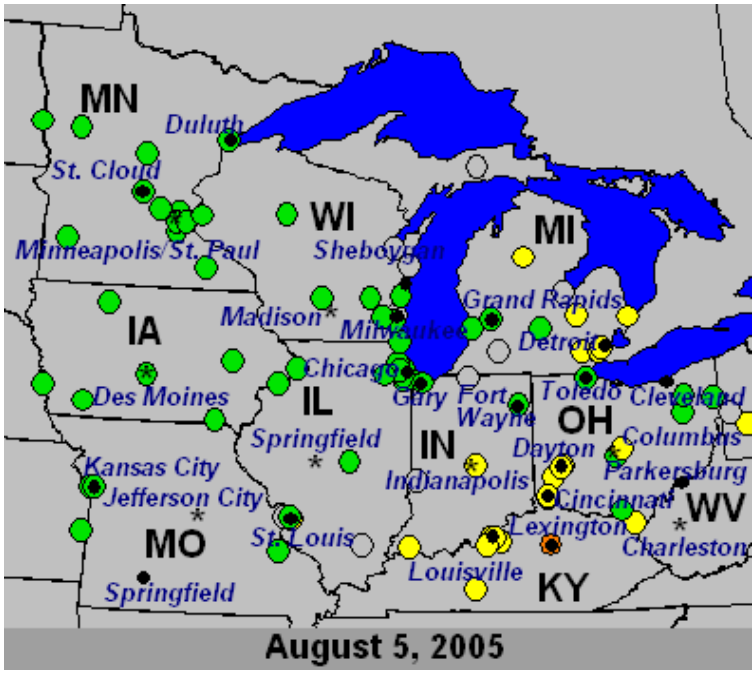
Wind Rose - Louisville



Back Trajectory – Louisville

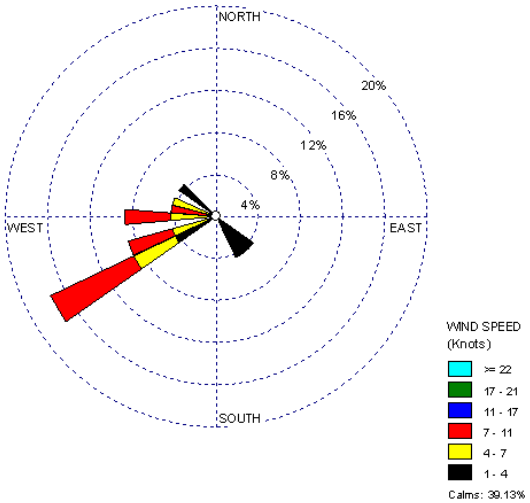


AirNow - Midwest

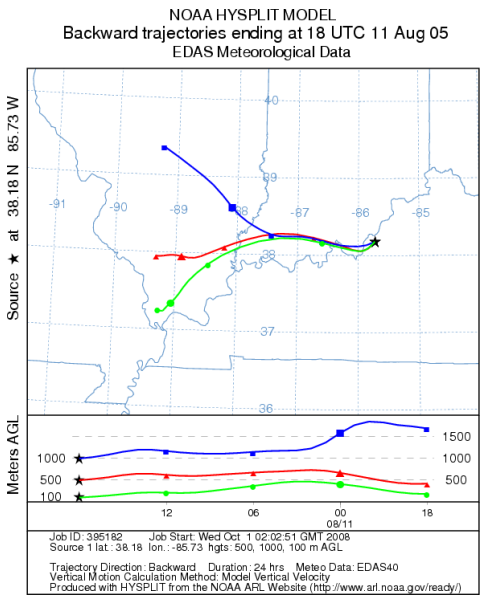


	Maximum Temp	Precip.	Jeffersonville	New Albany
8/5/2005	94 ^{o}F	1.03 in	31.4 µg/m3	28.2 µg/m3

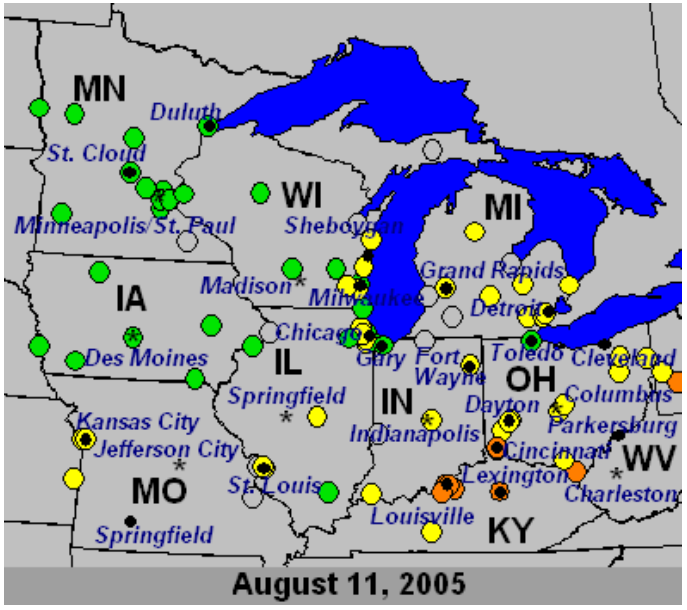
Wind Rose - Louisville



Back Trajectory – Louisville

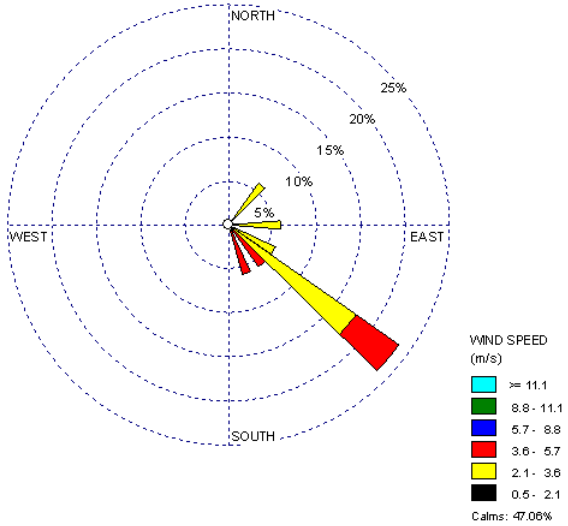


AirNow - Midwest

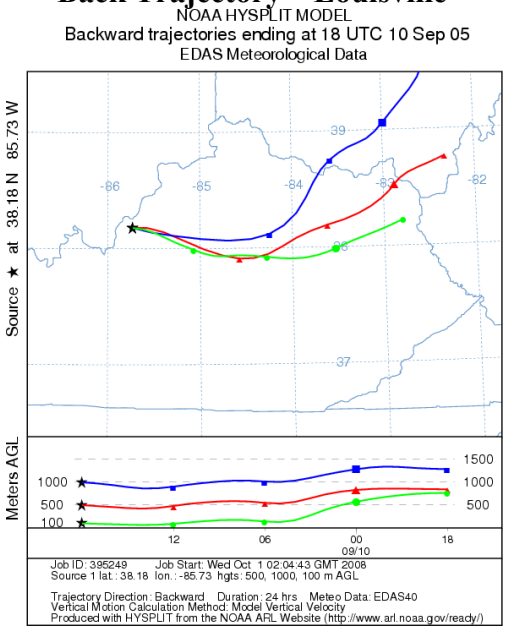


	Maximum Temp	Precip.	Jeffersonville	New Albany
8/11/2005	96 °F	none	43.6 µg/m3	42.0 µg/m3

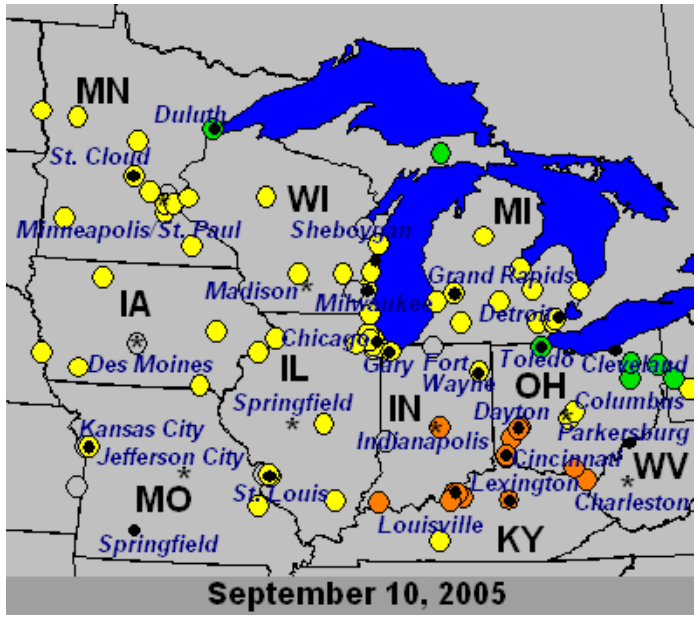
Wind Rose - Louisville



Back Trajectory – Louisville

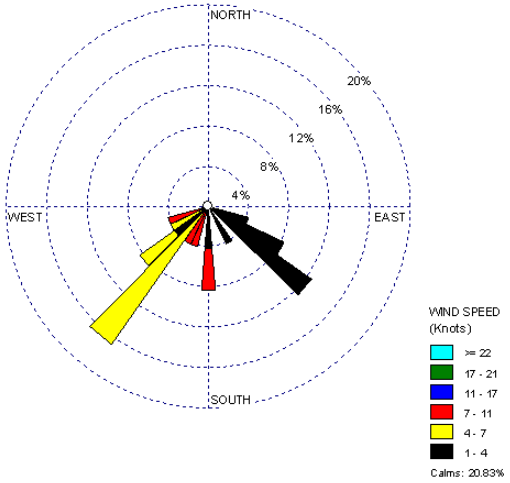


AirNow - Midwest

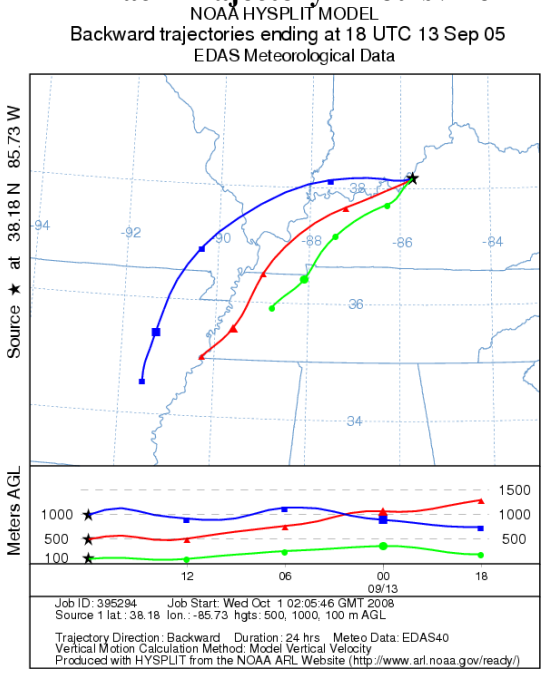


	Maximum Temp	Precip.	Jeffersonville	New Albany
9/10/2005	88 ^{o}F	none	45.6 µg/m3	40.1 µg/m3

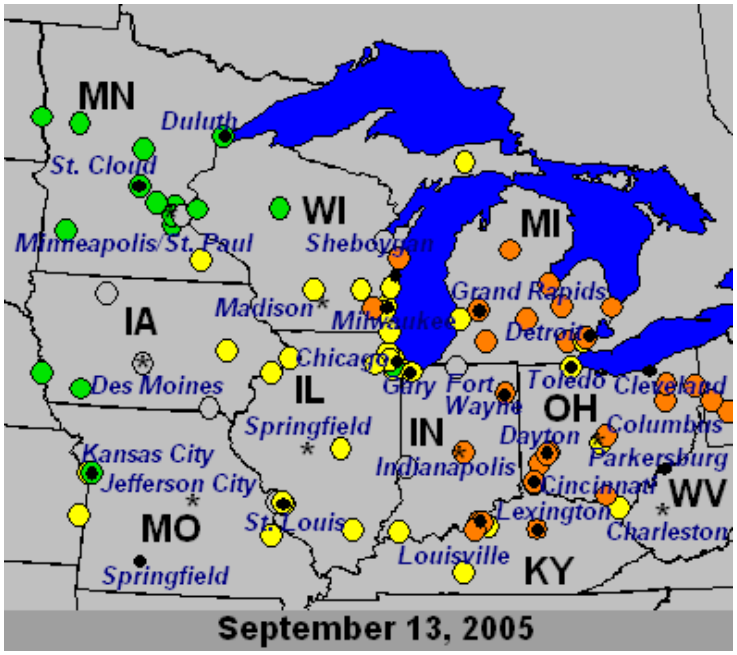
Wind Rose - Louisville



Back Trajectory – Louisville

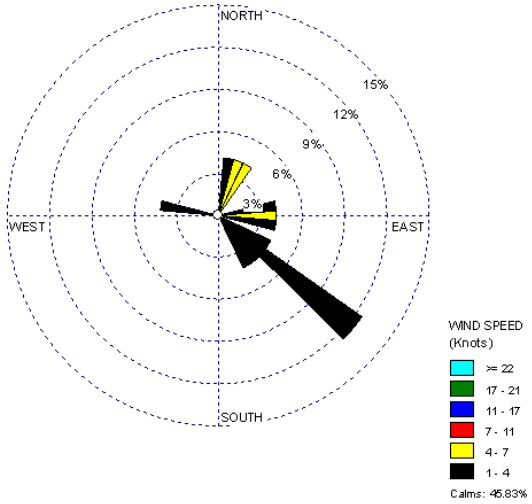


AirNow - Midwest

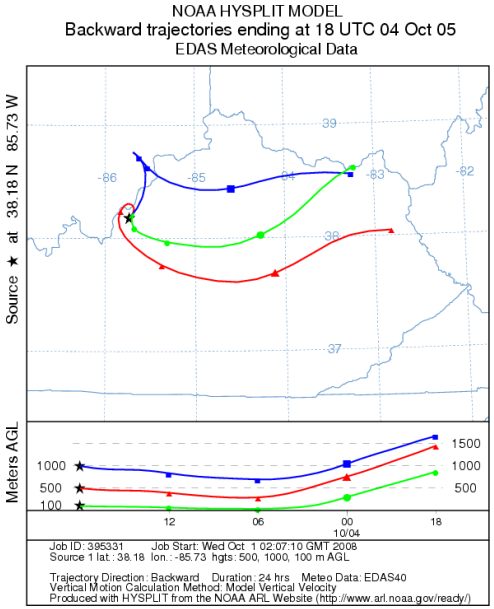


	Maximum Temp	Precip.	Jeffersonville	New Albany
9/13/2005	87 °F	none	45.5 µg/m3	42.5 µg/m3

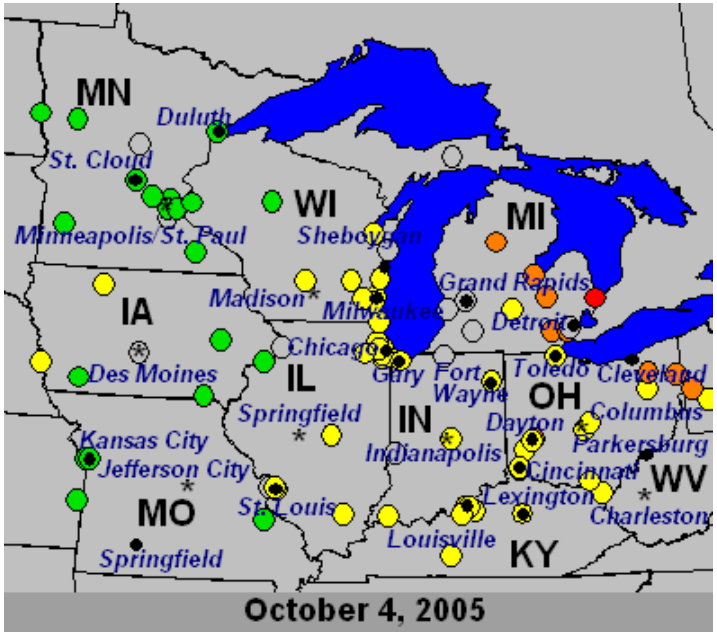
Wind Rose - Louisville



Back Trajectory – Louisville

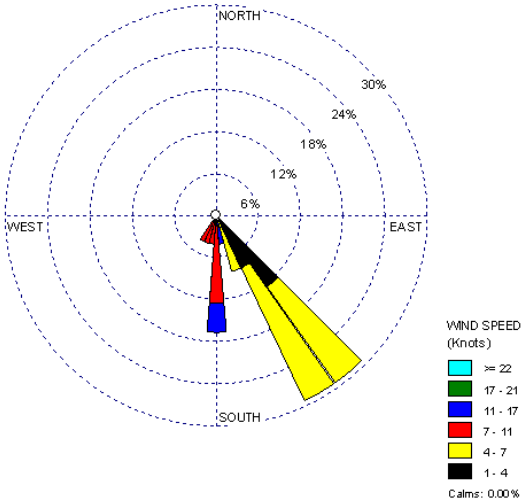


AirNow - Midwest

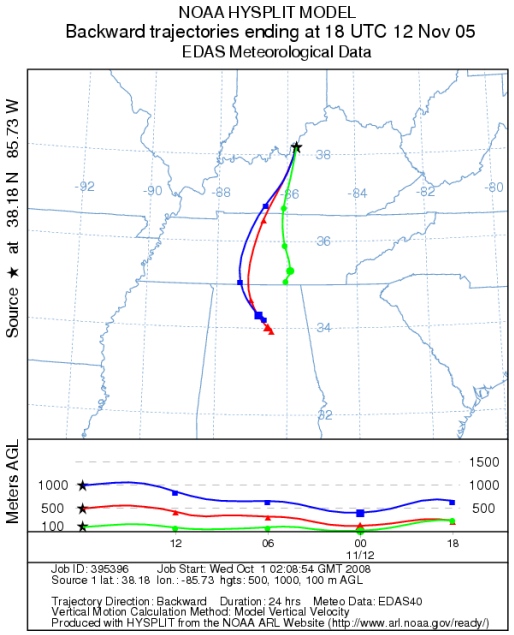


	Maximum Temp	Precip.	Jeffersonville	New Albany
10/4/2005	87 °F	none	31.5 µg/m3	29.6 µg/m3

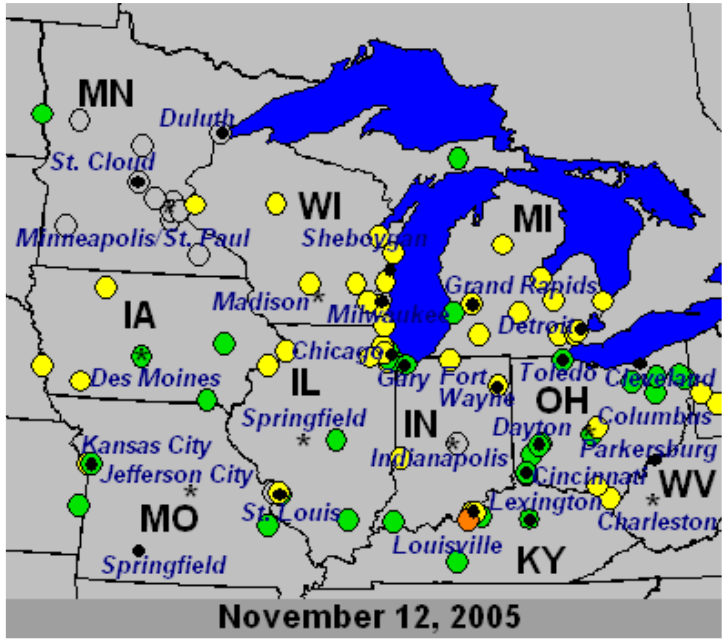
Wind Rose - Louisville



Back Trajectory – Louisville

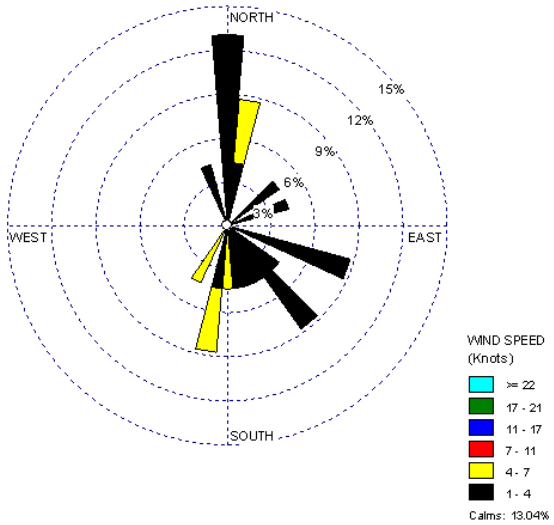


AirNow - Midwest

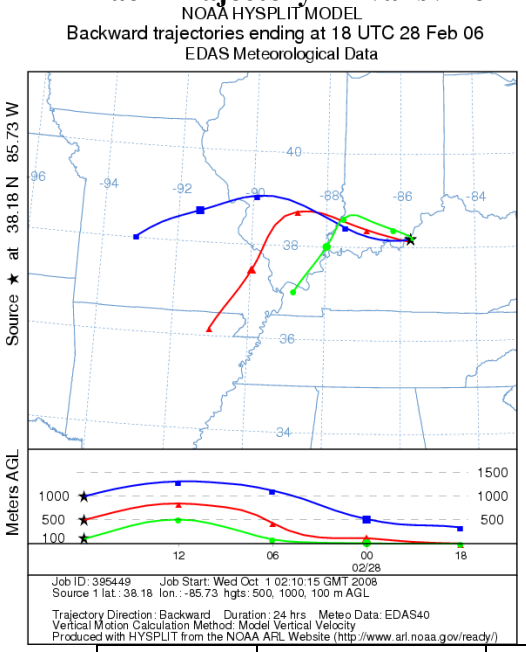


	Maximum Temp	Precip.	Jeffersonville	New Albany
11/12/2005	71 °F	none	21.4 µg/m3	33.2 µg/m3

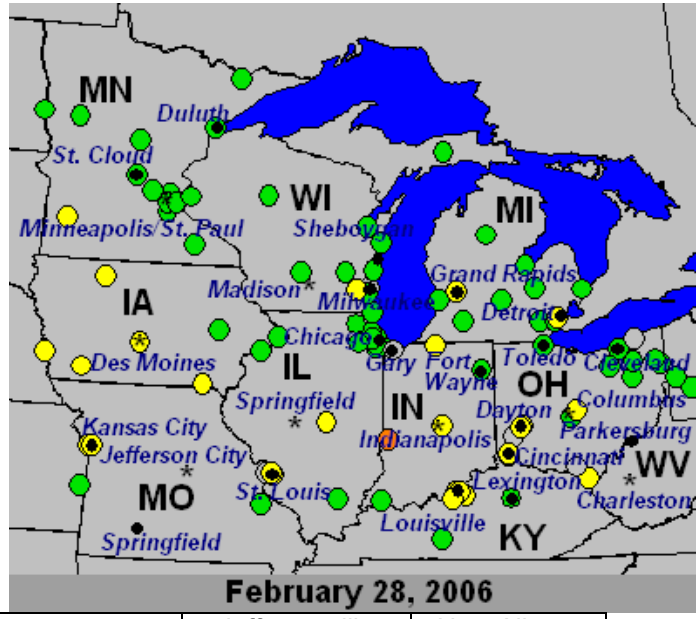
Wind Rose – Louisville



Back Trajectory – Evansville

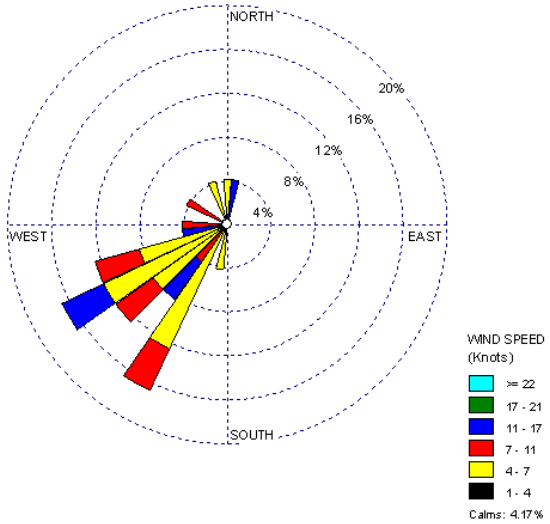


AirNow - Midwest

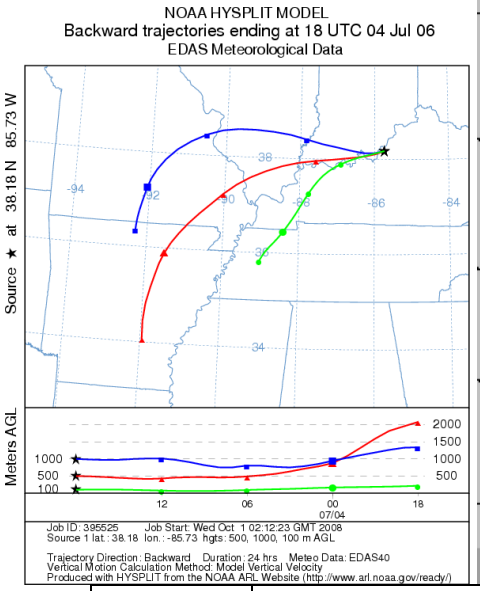


	Maximum Temp	Precip.	Jeffersonville	New Albany
2/28/2006	64 °F	none	32.2 µg/m3	18.3 µg/m3

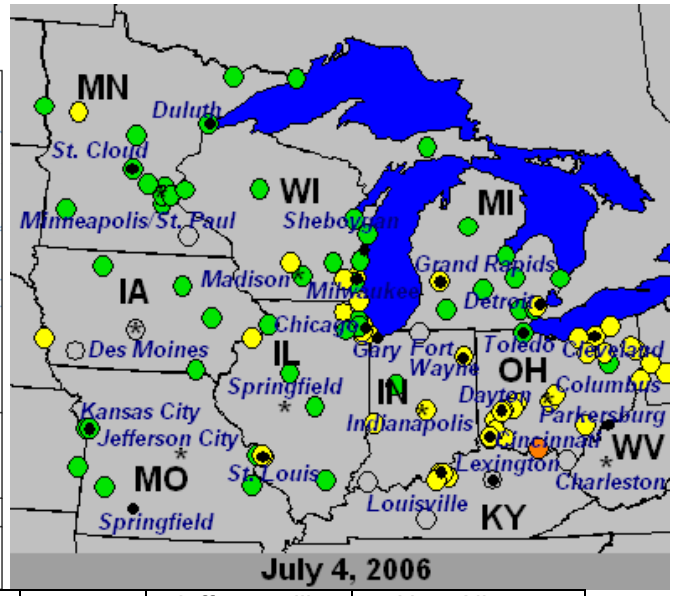
Wind Rose - Louisville



Back Trajectory – Louisville

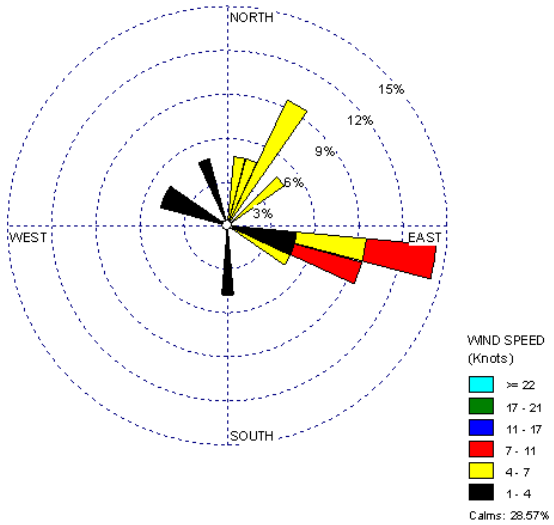


AirNow - Midwest

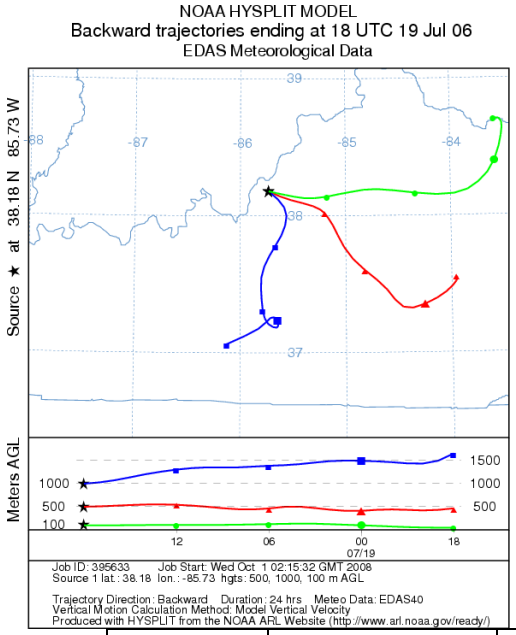


	Maximum Temp	Precip.	Jeffersonville	New Albany
7/4/2006	Did not report	Did not report	31.4 µg/m3	21.4 µg/m3

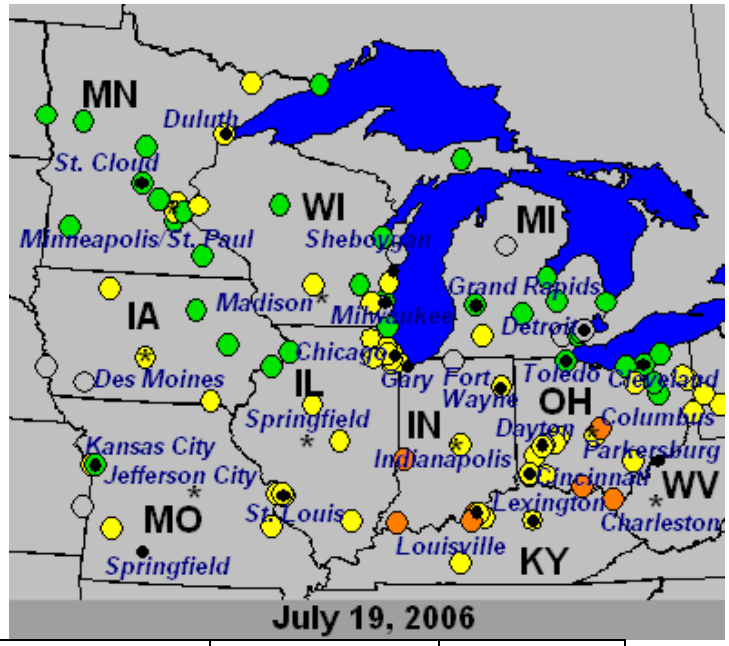
Wind Rose - Louisville



Back Trajectory – Louisville

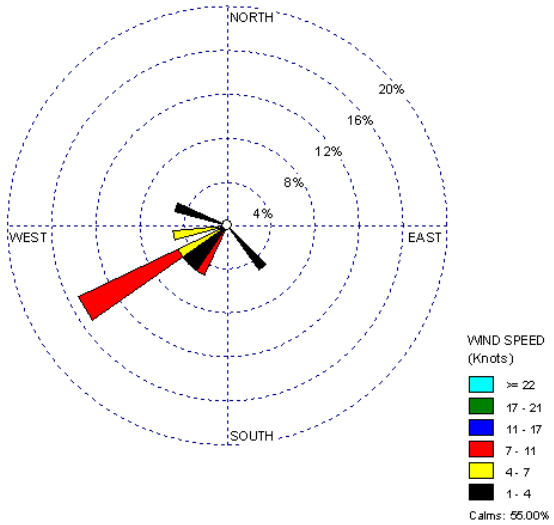


AirNow - Midwest

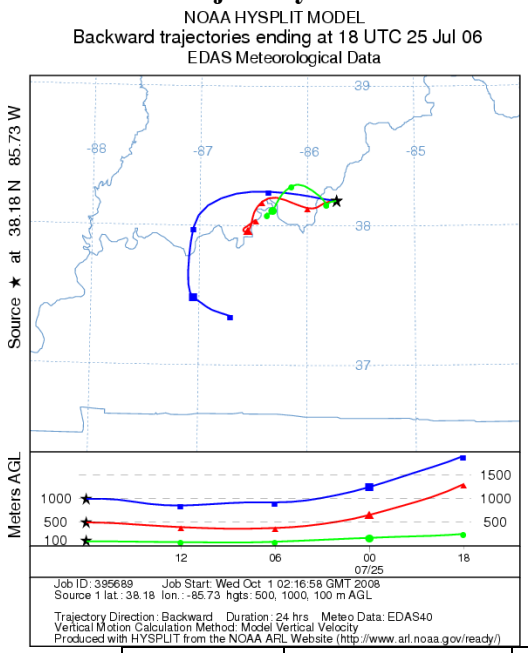


	Maximum Temp	Precip.	Jeffersonville	New Albany
7/19/2006	Did not report	Did not report	36.4 µg/m3	38.1 µg/m3

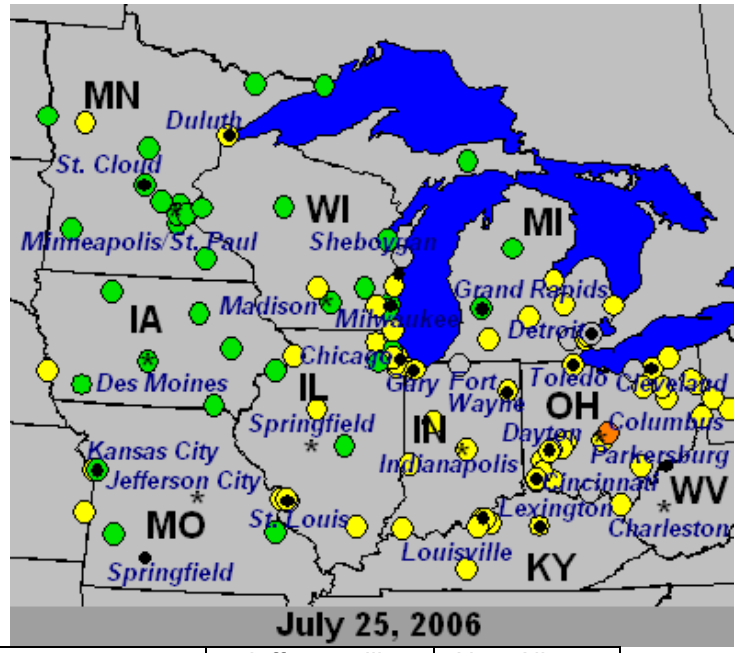
Wind Rose - Louisville



Back Trajectory – Louisville

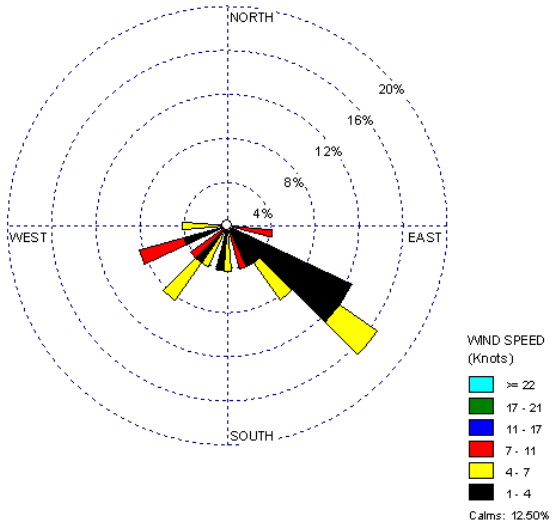


AirNow - Midwest

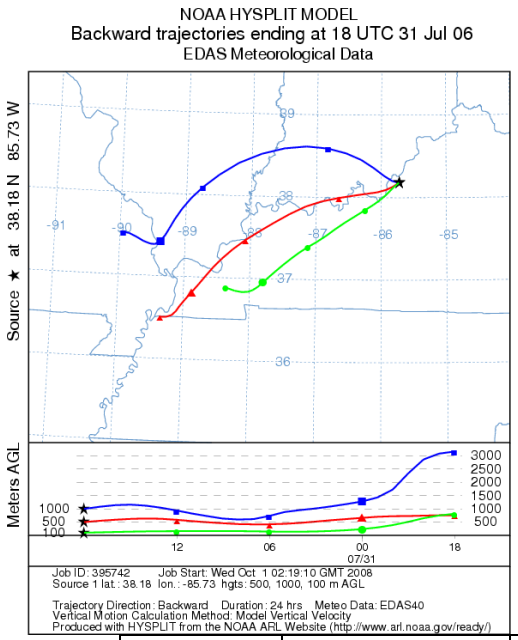


	Maximum Temp	Precip.	Jeffersonville	New Albany
7/25/2006	Did not report	Did not report	35.9 µg/m3	24.8 µg/m3

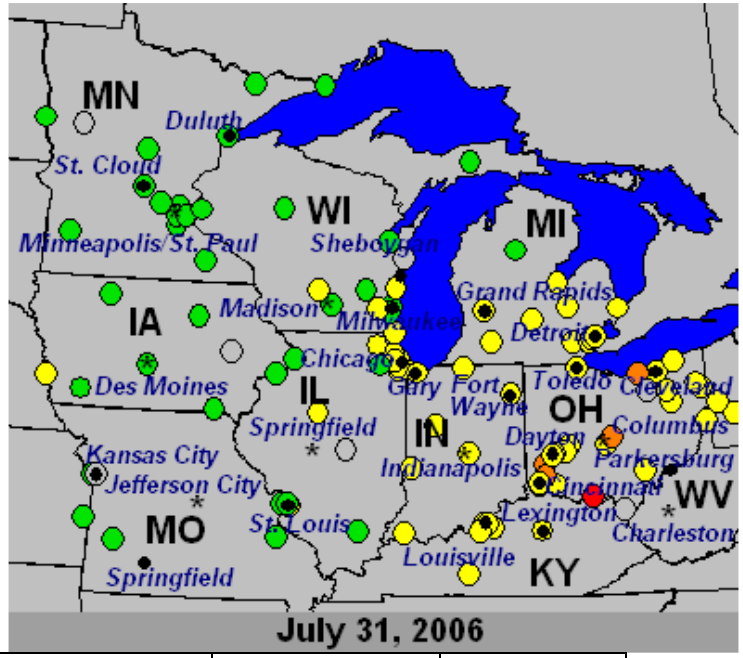
Wind Rose - Louisville



Back Trajectory – Louisville

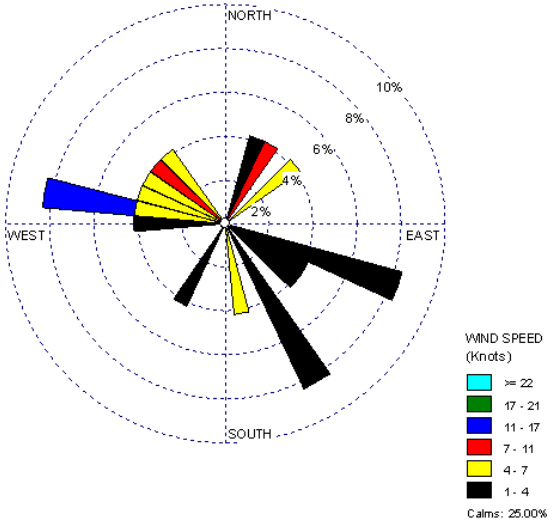


AirNow - Midwest

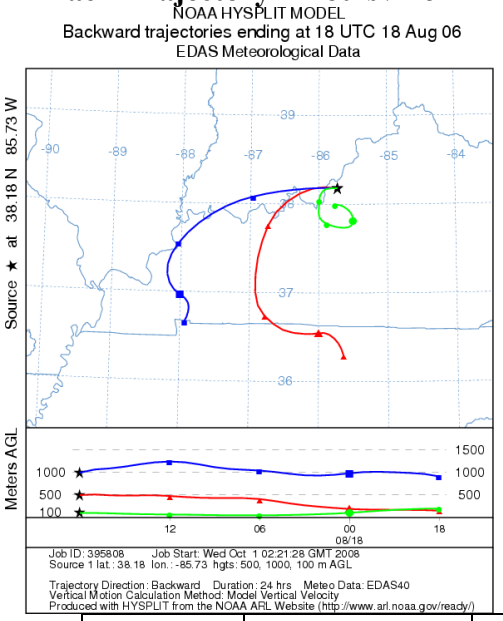


	Maximum Temp	Precip.	Jeffersonville	New Albany
7/31/2006	Did not report	Did not report	31.4µg/m3	26.5 µg/m3

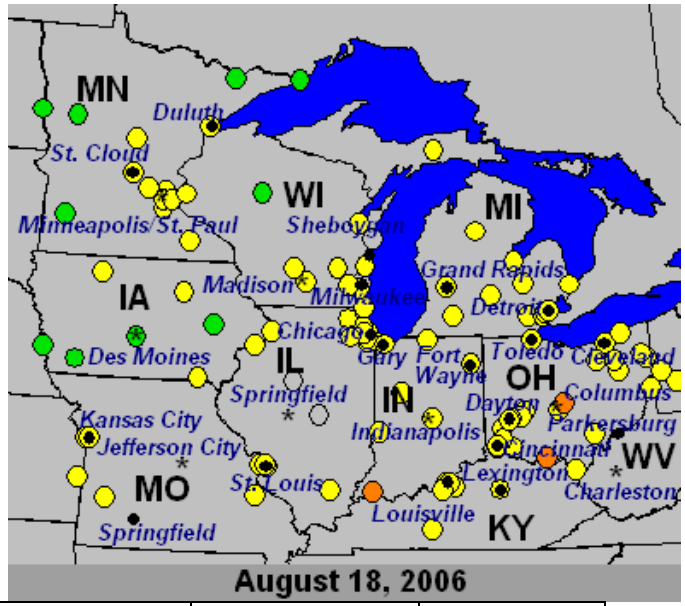
Wind Rose - Louisville



Back Trajectory – Louisville

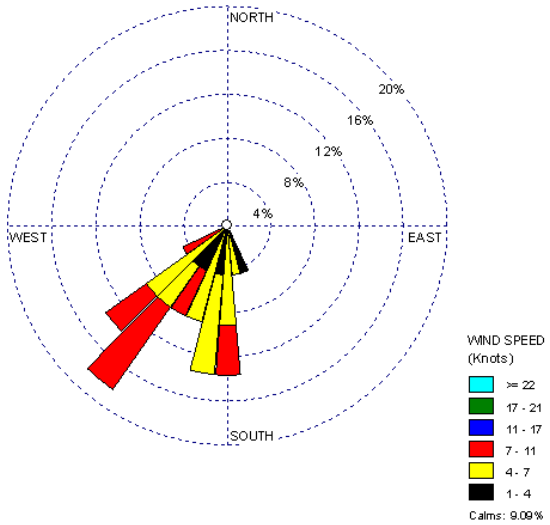


AirNow - Midwest

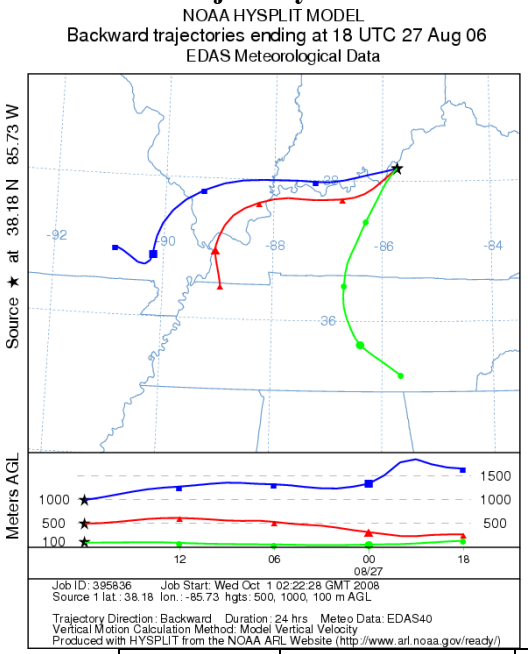


	Maximum Temp	Precip.	Jeffersonville	New Albany
8/18/2006	91 °F	trace	36.2 µg/m3	32.1 µg/m3

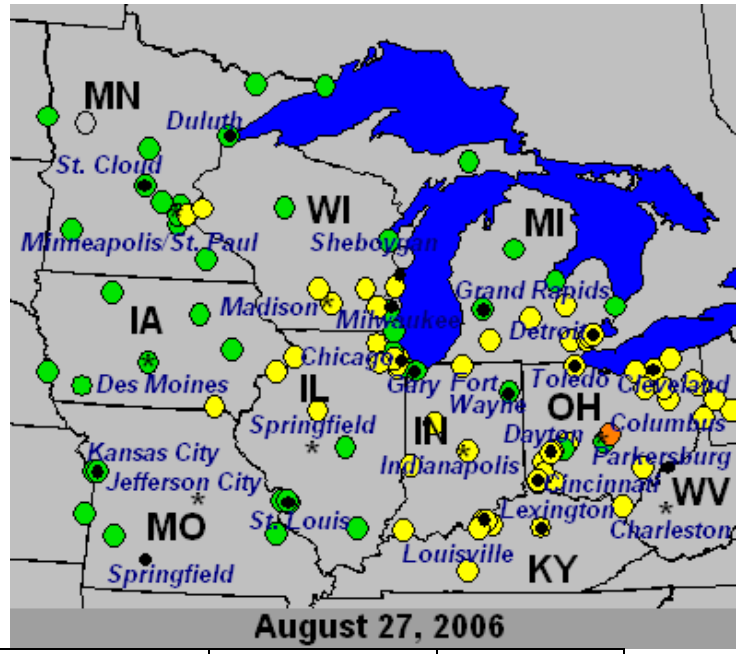
Wind Rose - Louisville



Back Trajectory – Louisville

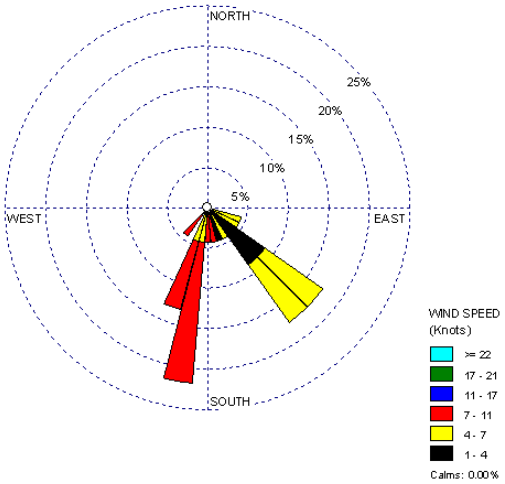


AirNow - Midwest

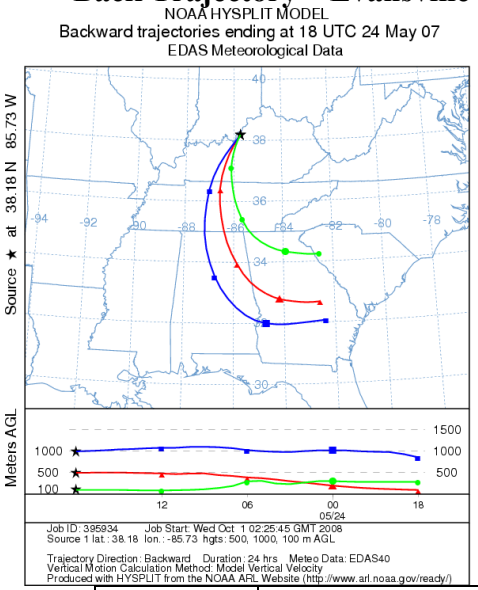


	Maximum Temp	Precip.	Jeffersonville	New Albany
8/27/2006	91 ° F	none	30.9 µg/m3	28.2 µg/m3

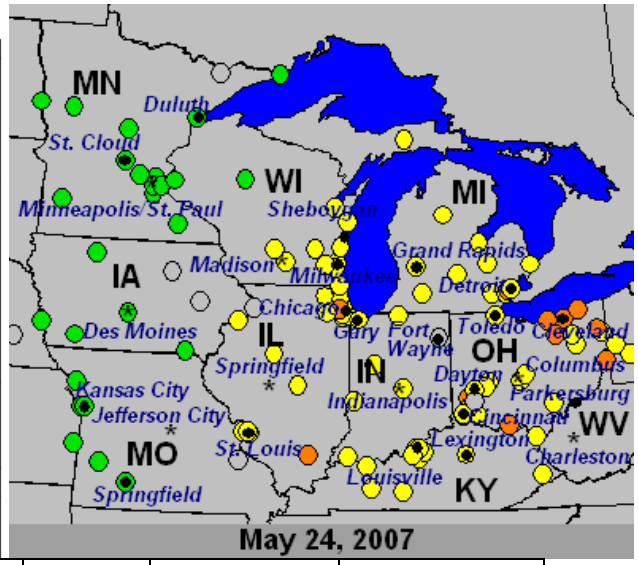
Wind Rose – Louisville



Back Trajectory – Evansville

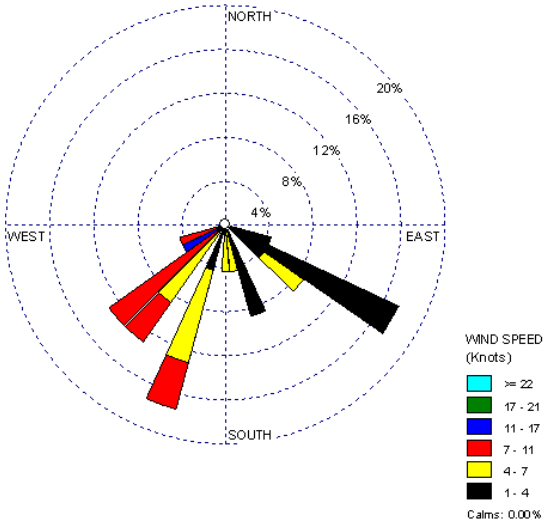


AirNow - Midwest

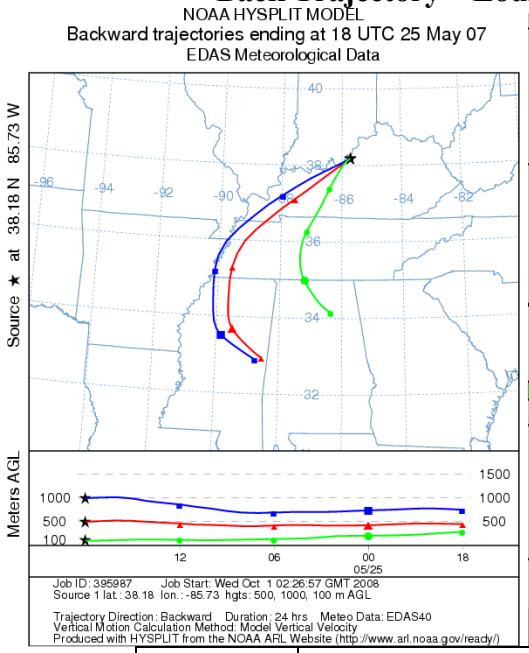


	Maximum Temp	Precip.	Jeffersonville	New Albany
5/24/2007	86 °F	none	32.0 µg/m3	29.7 µg/m3

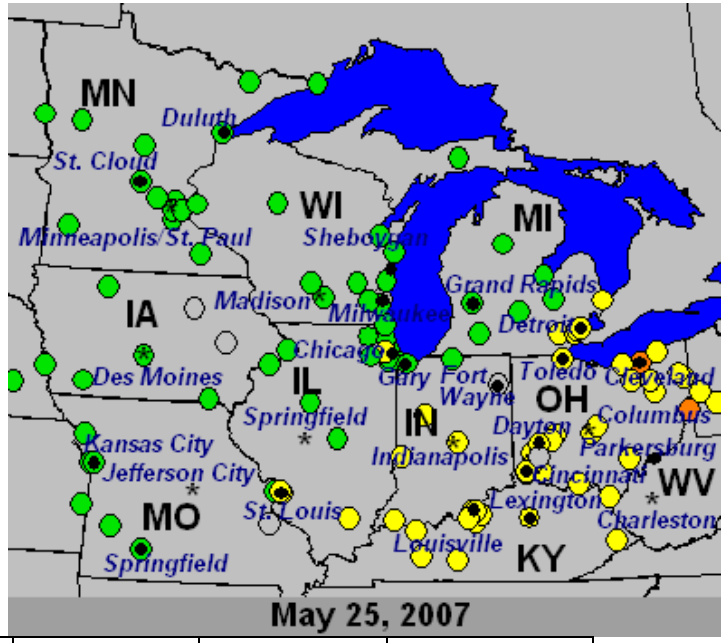
Wind Rose - Louisville



Back Trajectory – Louisville

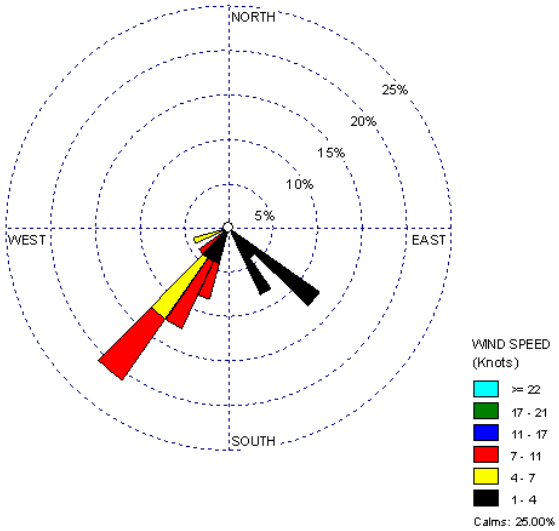


AirNow - Midwest

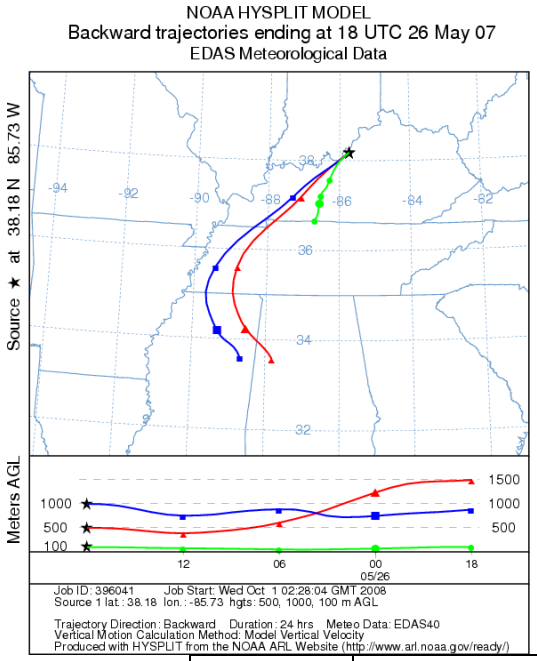


	Maximum Temp	Precip.	Jeffersonville	New Albany
5/25/2007	86 °F	none	32.8 µg/m3	Did not report

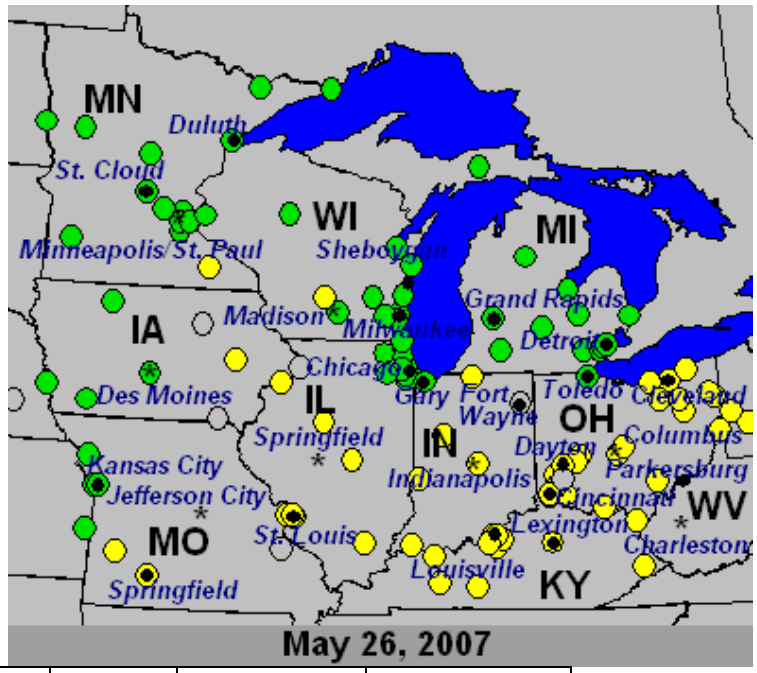
Wind Rose - Louisville



Back Trajectory – Louisville

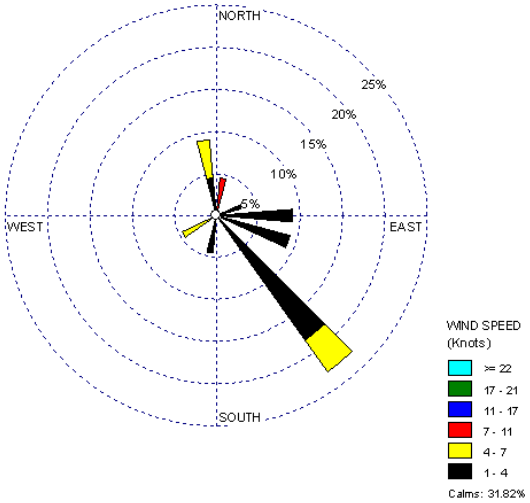


AirNow - Midwest

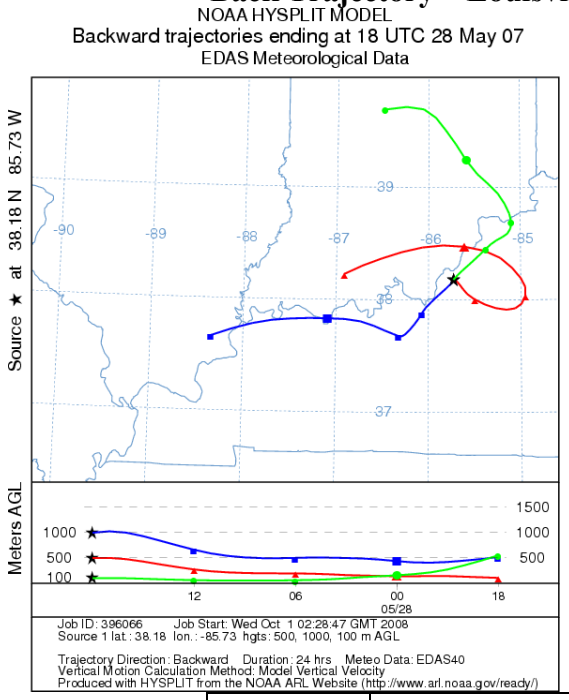


	Maximum Temp	Precip.	Jeffersonville	New Albany
5/26/2007	87 ^{o} F	none	32.6 µg/m3	Did not report

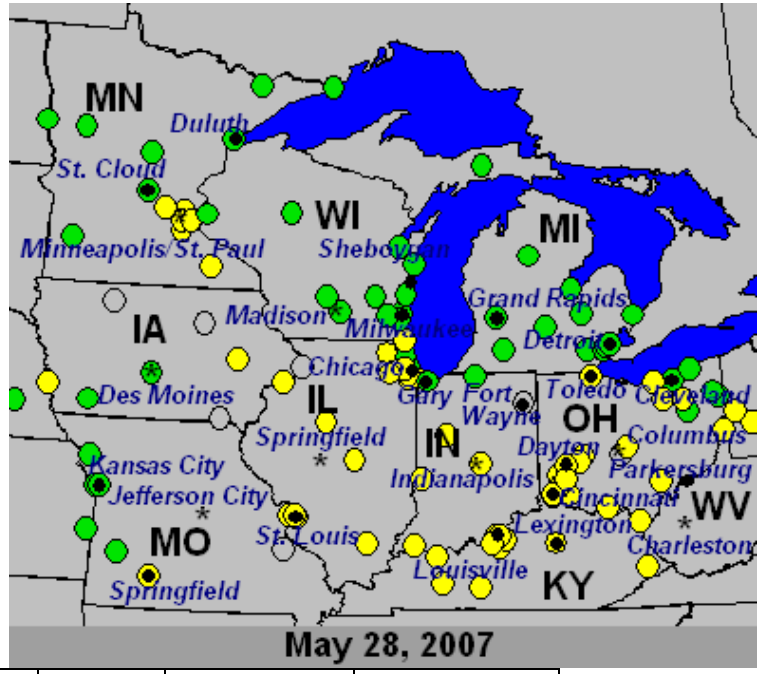
Wind Rose - Louisville



Back Trajectory – Louisville

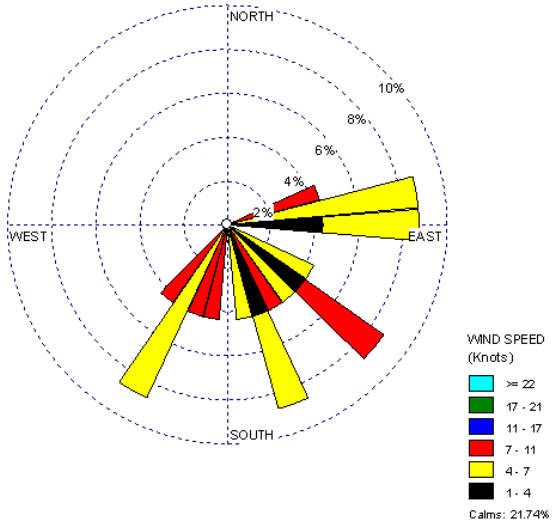


AirNow - Midwest

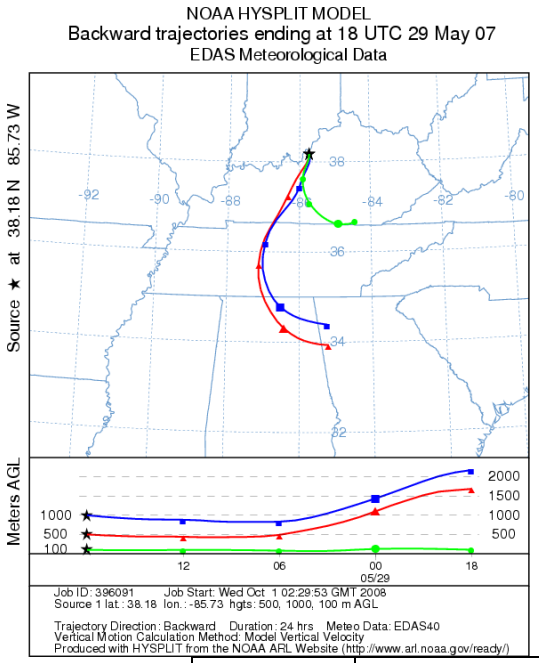


	Maximum Temp	Precip.	Jeffersonville	New Albany
5/28/2007	88 °F	none	33.8 µg/m3	Did not report

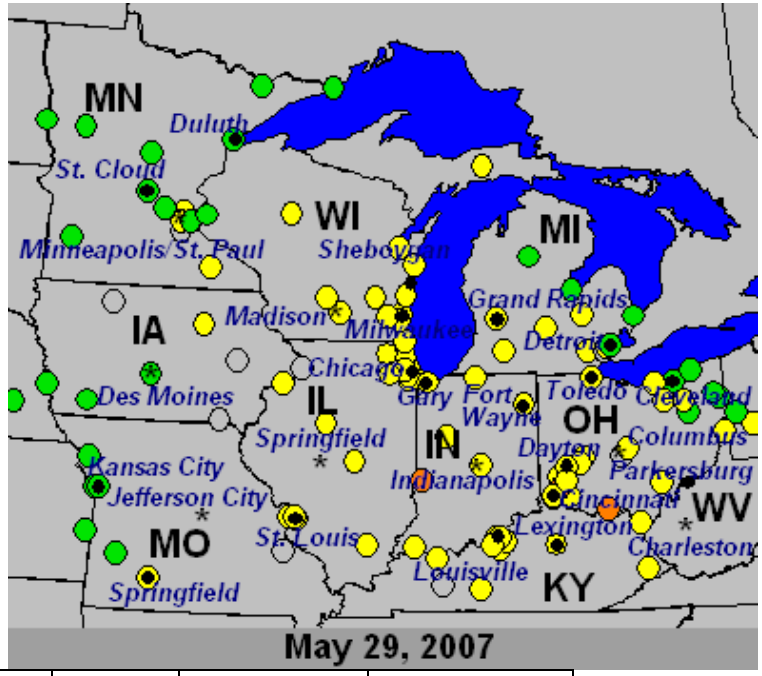
Wind Rose - Louisville



Back Trajectory – Louisville

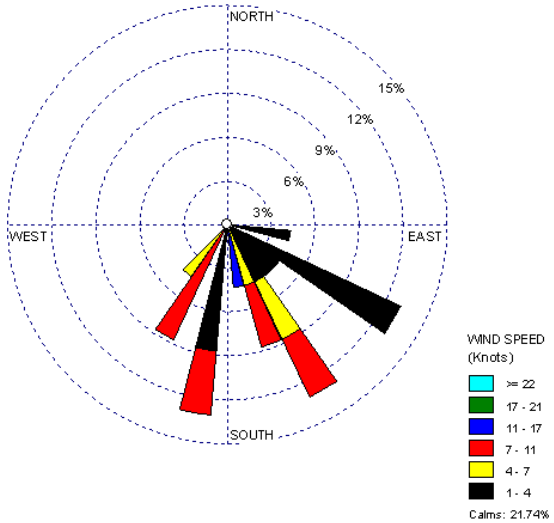


AirNow - Midwest

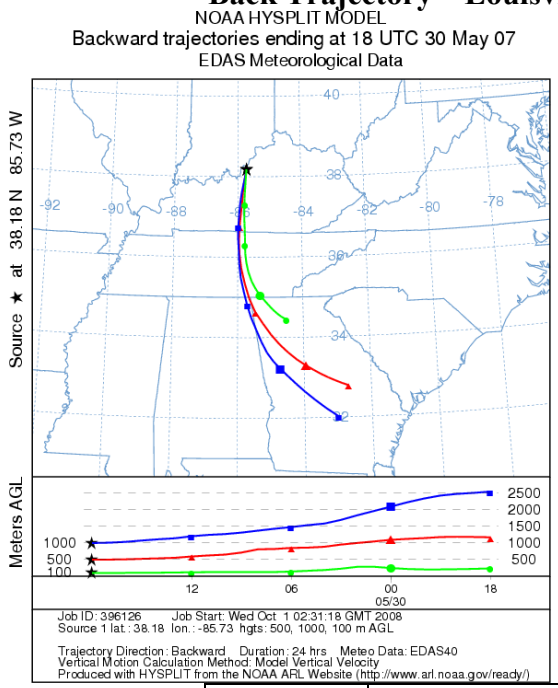


	Maximum Temp	Precip.	Jeffersonville	New Albany
5/29/2007	88 °F	none	38.2 µg/m3	Did not report

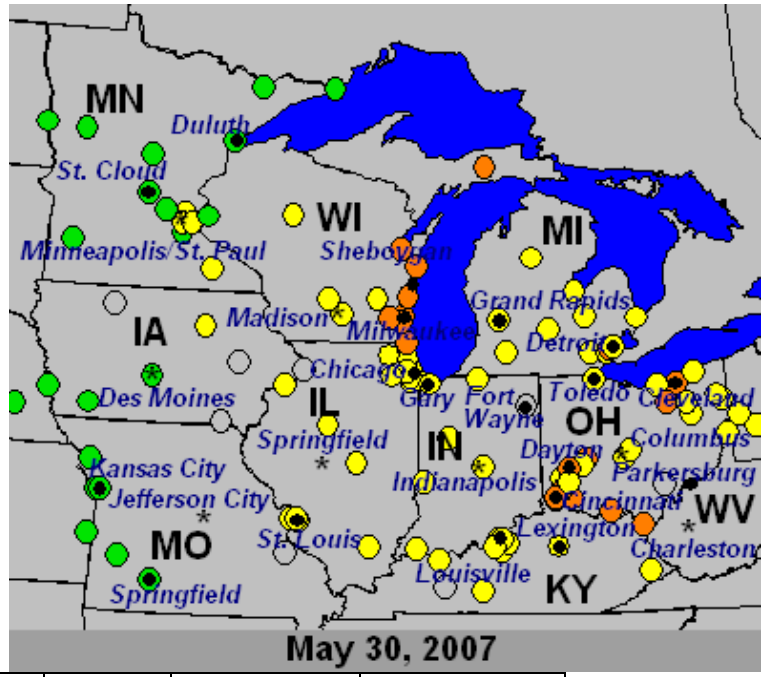
Wind Rose - Louisville



Back Trajectory – Louisville

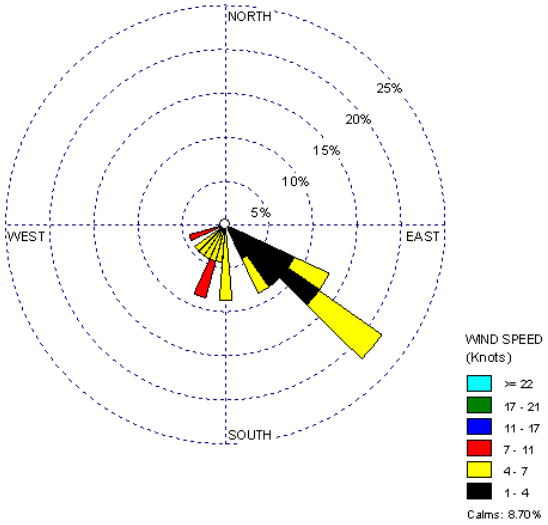


AirNow - Midwest

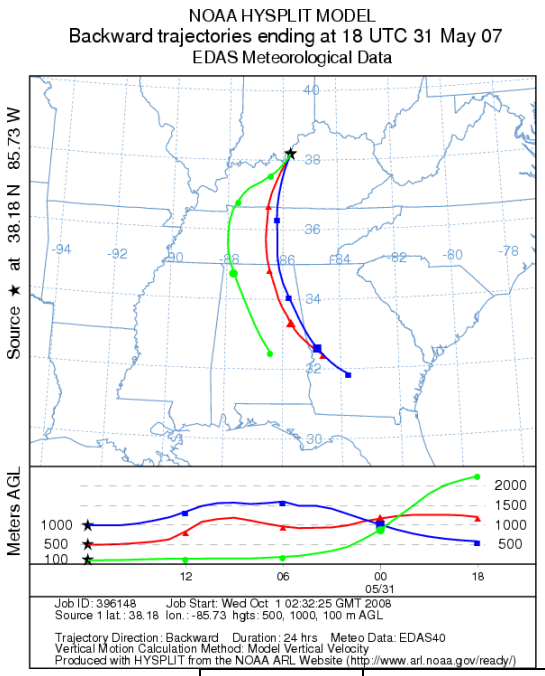


	Maximum Temp	Precip.	Jeffersonville	New Albany
5/30/2007	90 ^{o} F	none	29.2 µg/m3	28.4 µg/m3

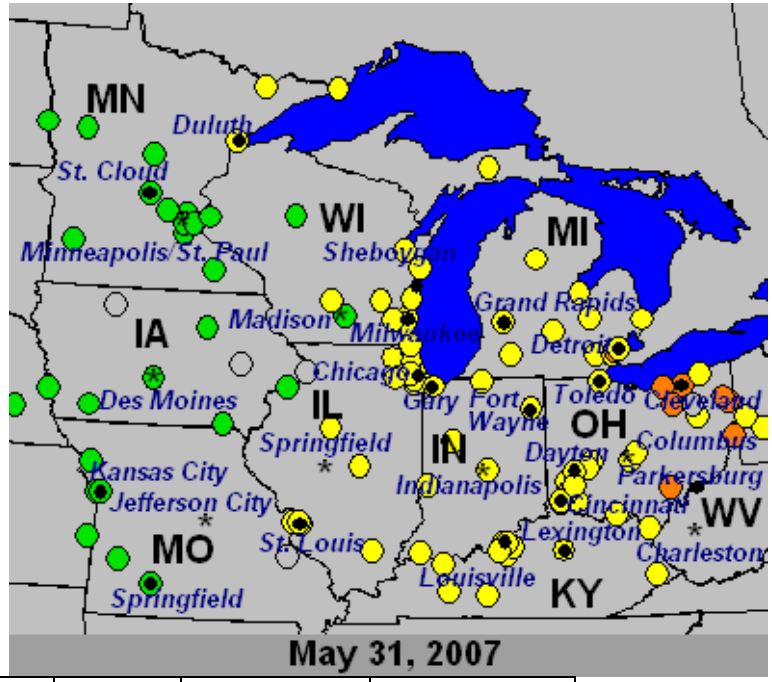
Wind Rose - Louisville



Back Trajectory – Louisville

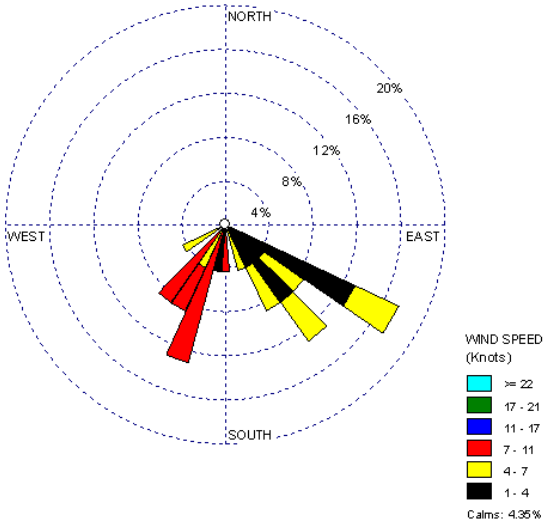


AirNow - Midwest

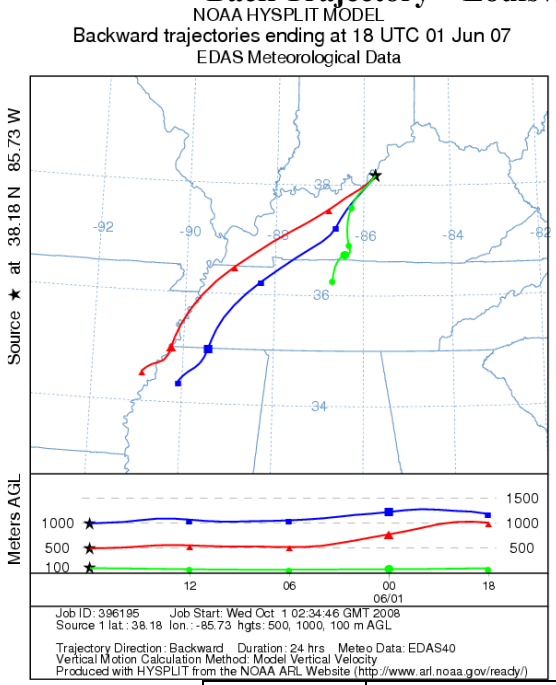


	Maximum Temp	Precip.	Jeffersonville	New Albany
5/31/2007	85 °F	none	33.4 µg/m3	Did not report

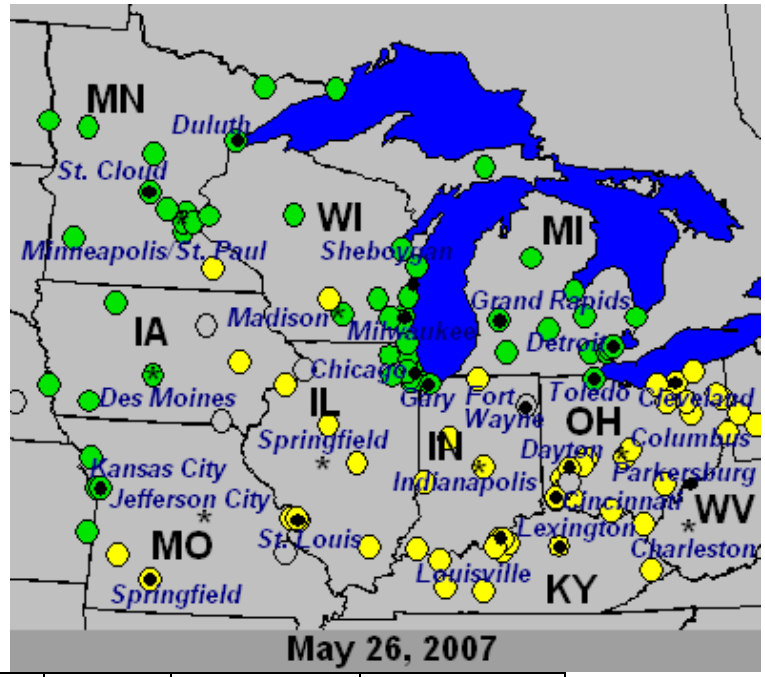
Wind Rose - Louisville



Back Trajectory – Louisville

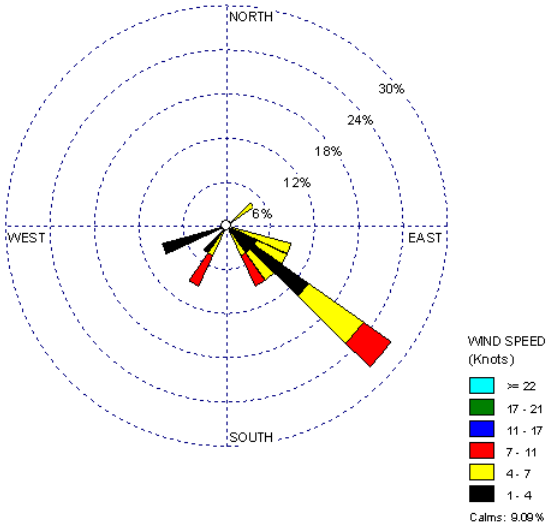


AirNow - Midwest

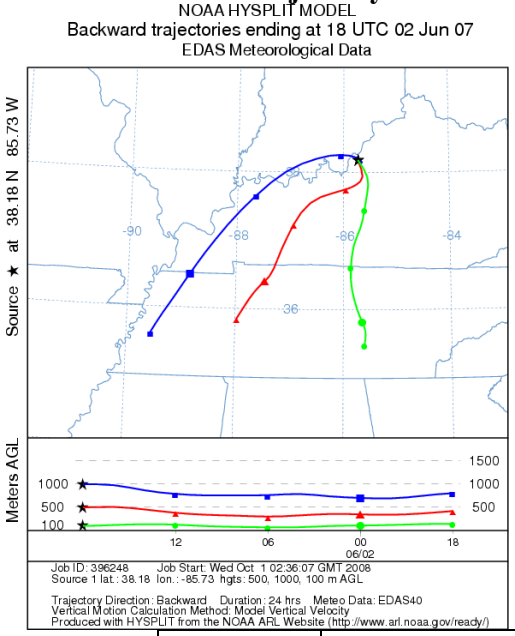


	Maximum Temp	Precip.	Jeffersonville	New Albany
6/1/2007	90 ^{o} F	none	32.3 µg/m3	Did not report

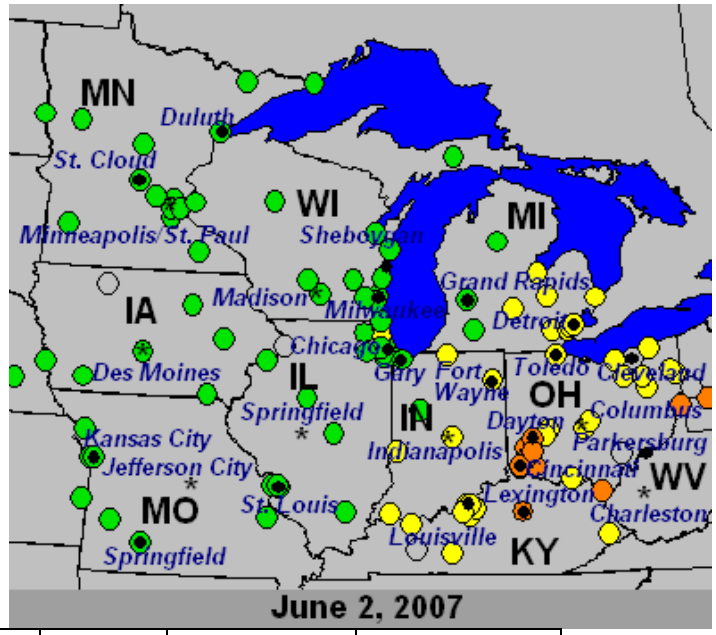
Wind Rose - Louisville



Back Trajectory – Louisville

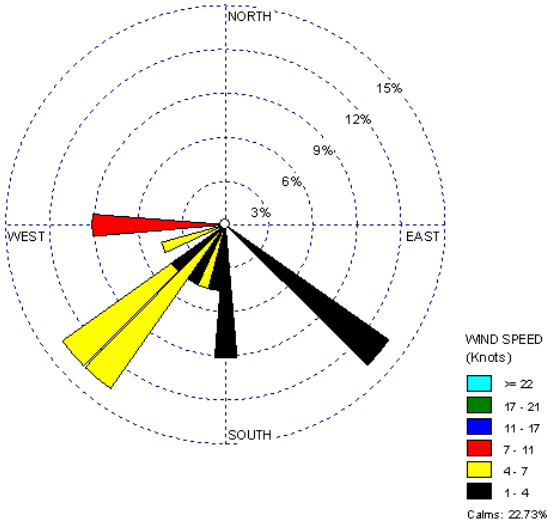


AirNow - Midwest

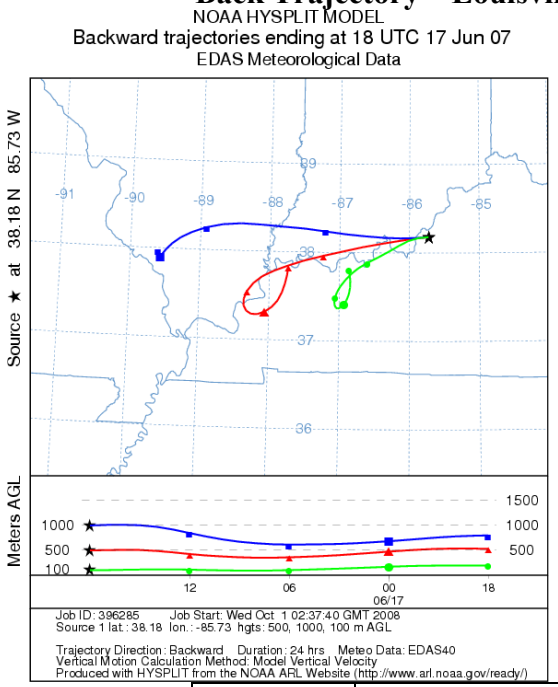


	Maximum Temp	Precip.	Jeffersonville	New Albany
6/2/2007	88 °F	none	40.2 µg/m3	35.1 µg/m3

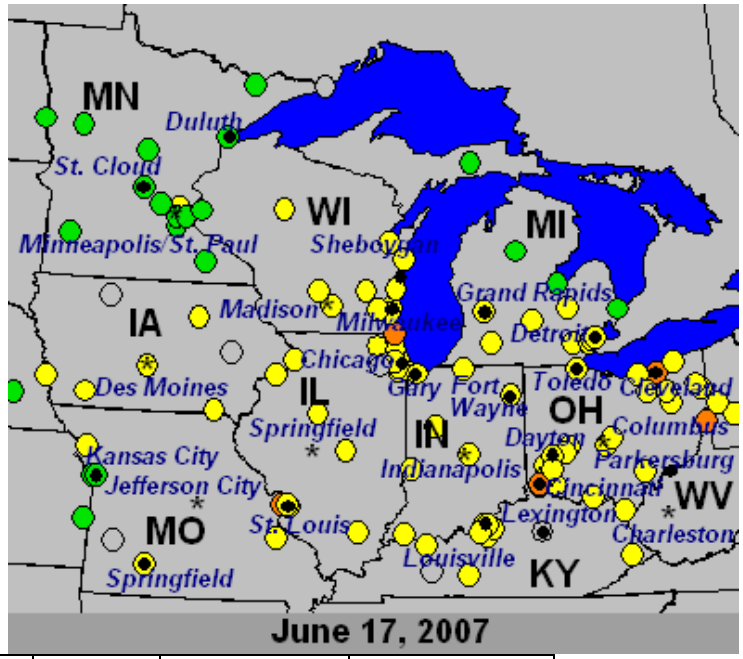
Wind Rose - Louisville



Back Trajectory – Louisville

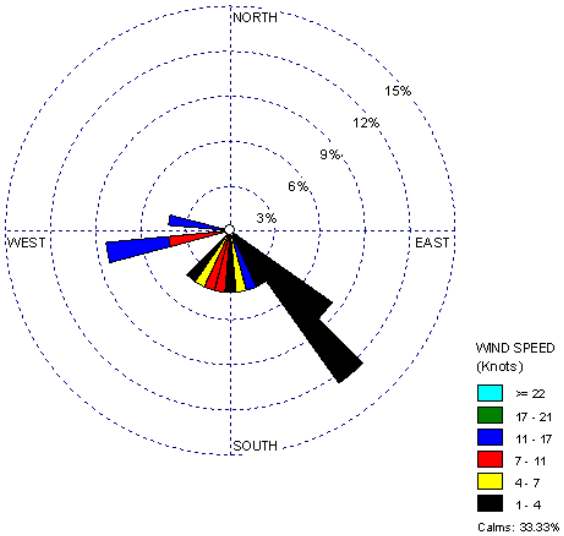


AirNow - Midwest

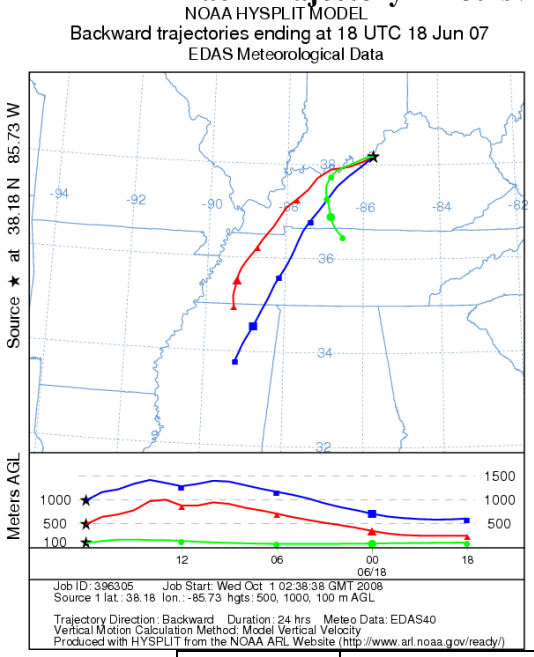


	Maximum Temp	Precip.	Jeffersonville	New Albany
6/17/2007	95 ^{o} F	none	33.5 µg/m3	29.1 µg/m3

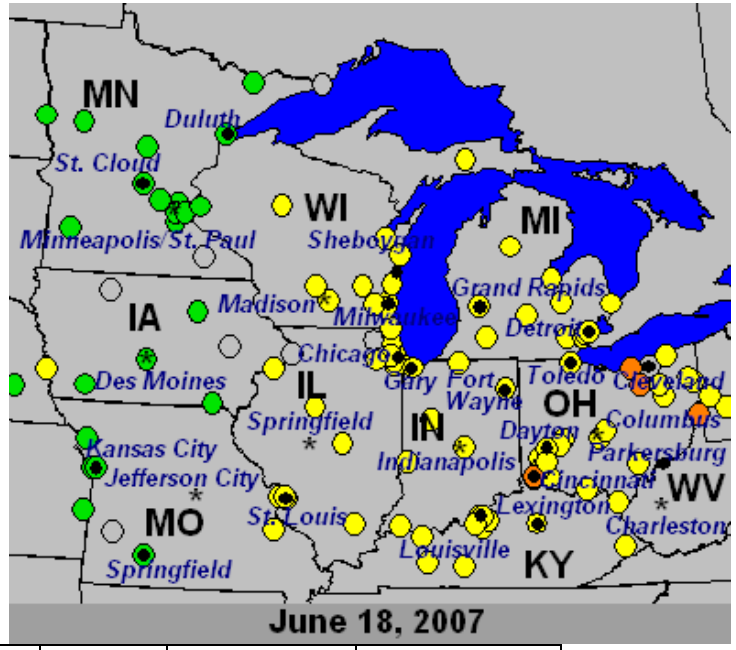
Wind Rose - Louisville



Back Trajectory – Louisville

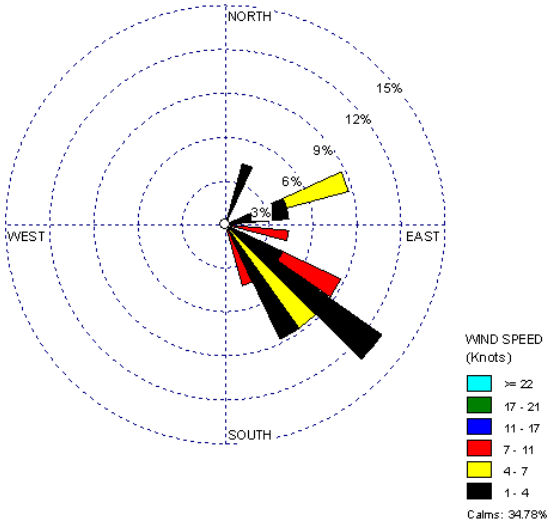


AirNow - Midwest

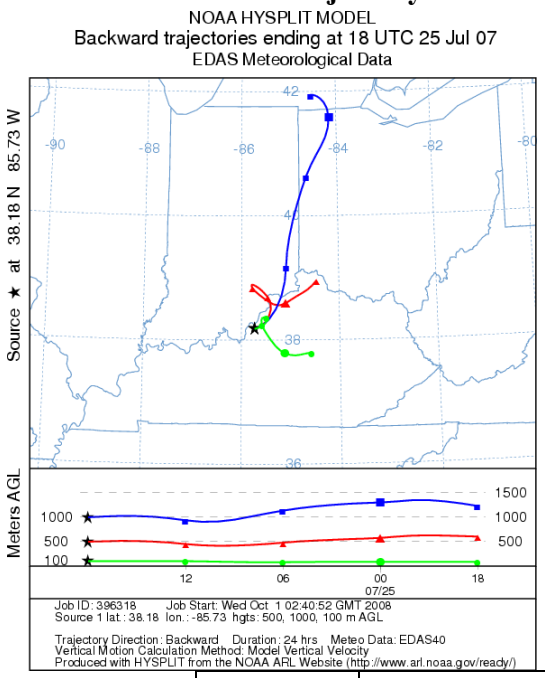


	Maximum Temp	Precip.	Jeffersonville	New Albany
6/18/2007	90 ^{o}F	trace	30.4 µg/m3	Did not report

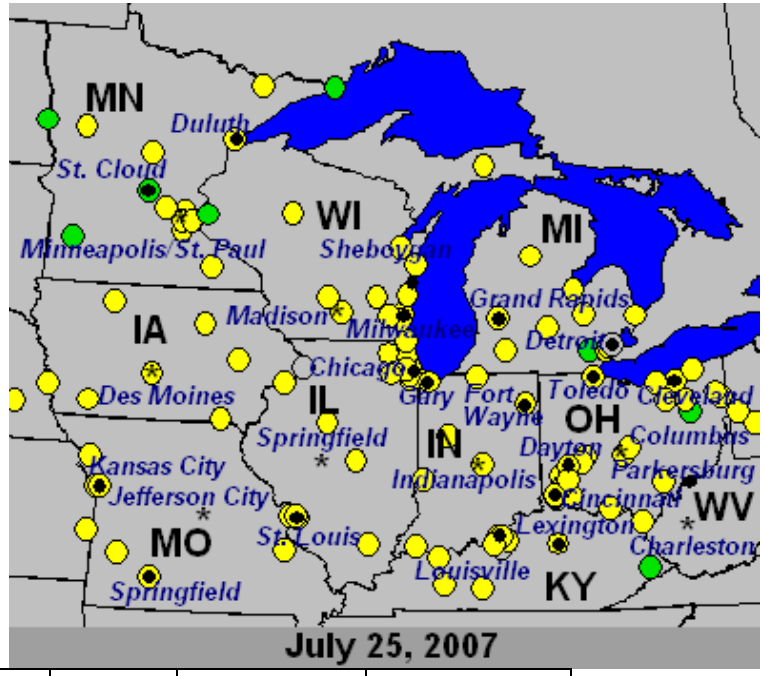
Wind Rose - Louisville



Back Trajectory – Louisville

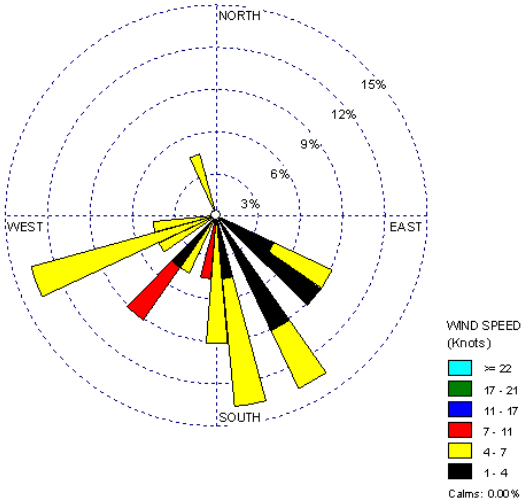


AirNow - Midwest

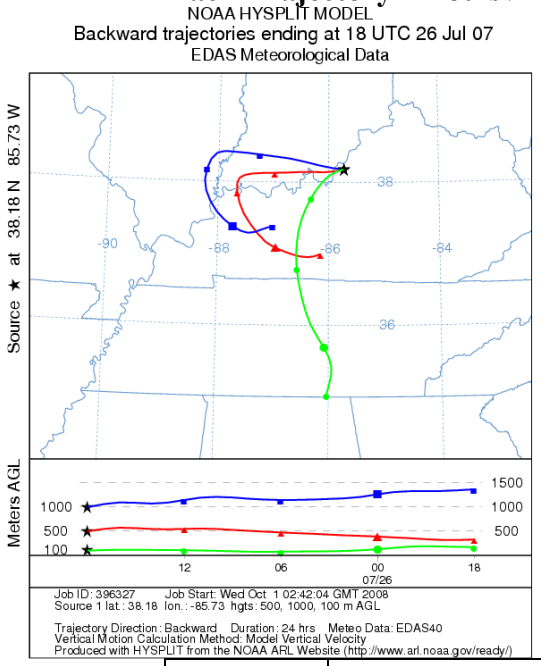


	Maximum Temp	Precip.	Jeffersonville	New Albany
7/25/2007	87 °F	none	32.0 µg/m3	Did not report

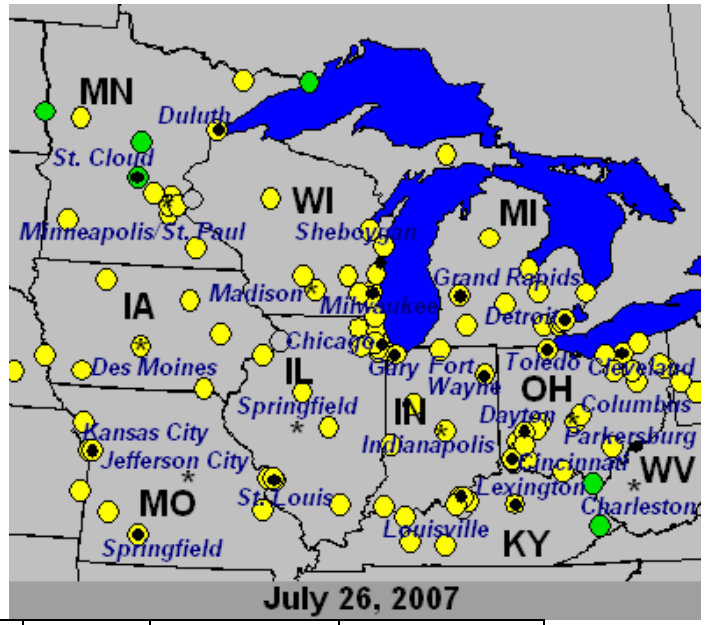
Wind Rose - Louisville



Back Trajectory – Louisville

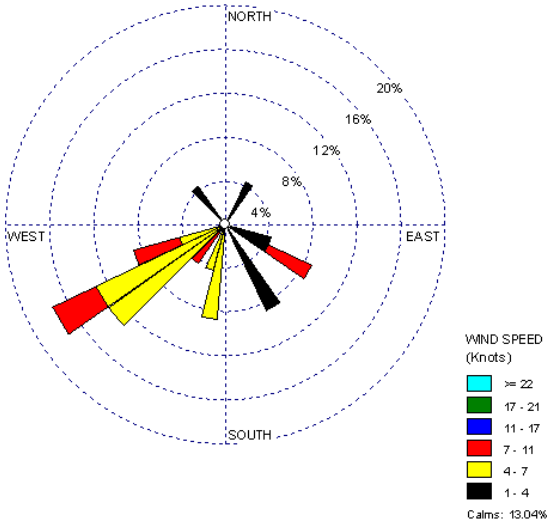


AirNow - Midwest

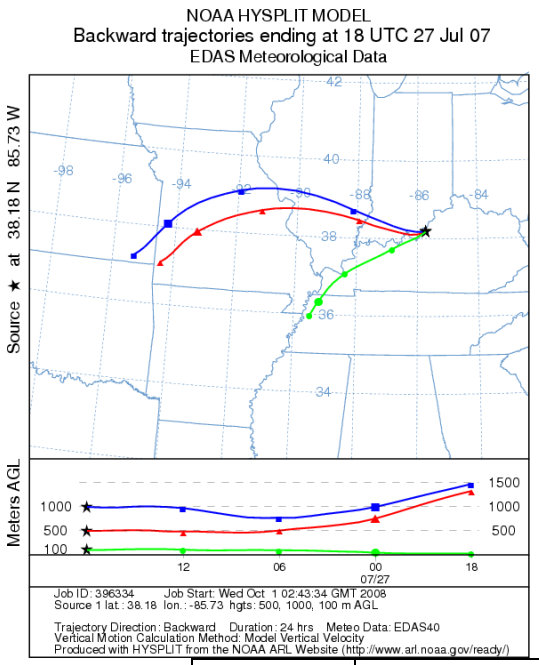


	Maximum Temp	Precip.	Jeffersonville	New Albany
7/26/2007	89 °F	0.01 in	36.2 µg/m3	35.4 µg/m3

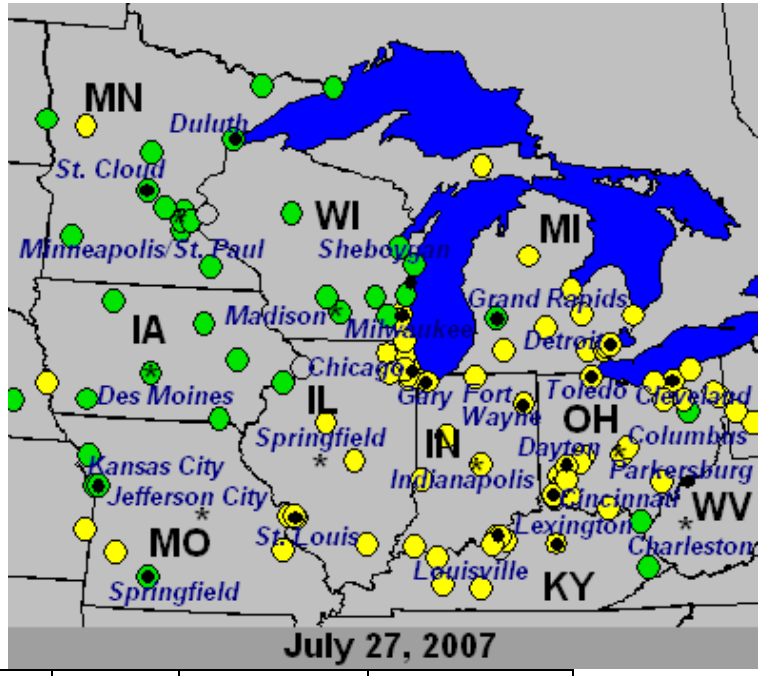
Wind Rose - Louisville



Back Trajectory – Louisville

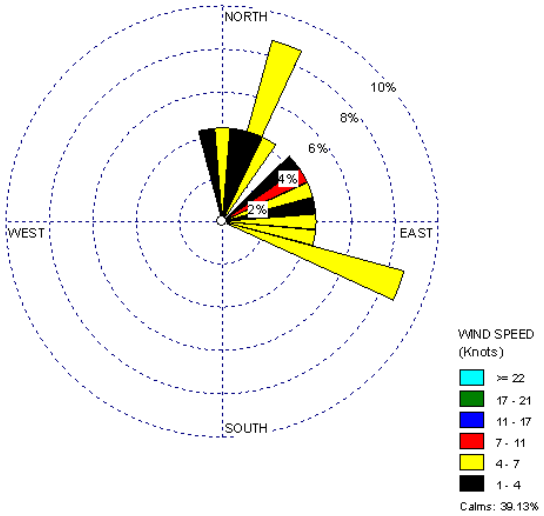


AirNow - Midwest

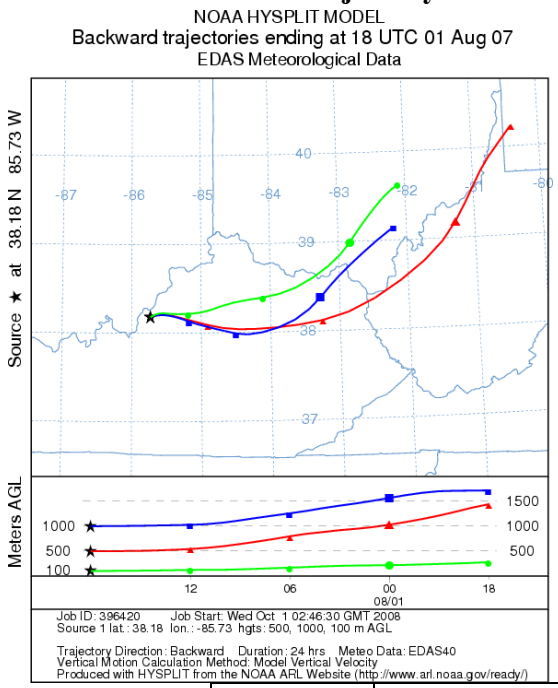


	Maximum Temp	Precip.	Jeffersonville	New Albany
7/27/2007	88 °F	0.57 in	37.0 µg/m3	Did not report

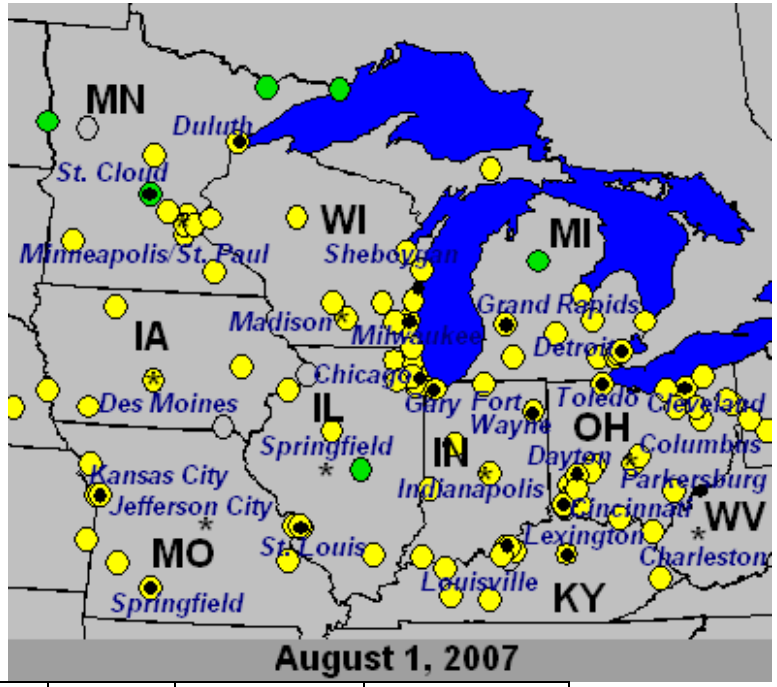
Wind Rose - Louisville



Back Trajectory – Louisville

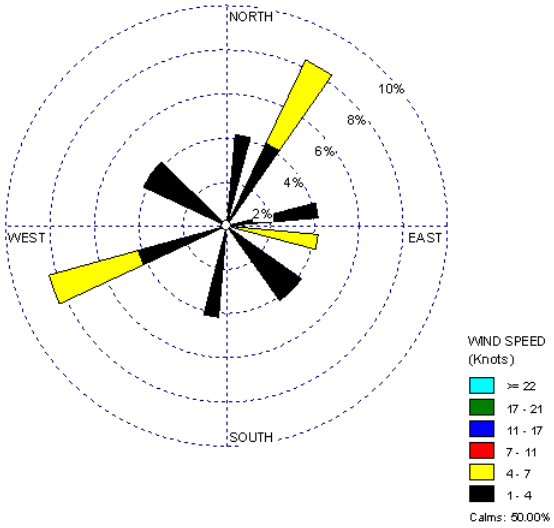


AirNow - Midwest

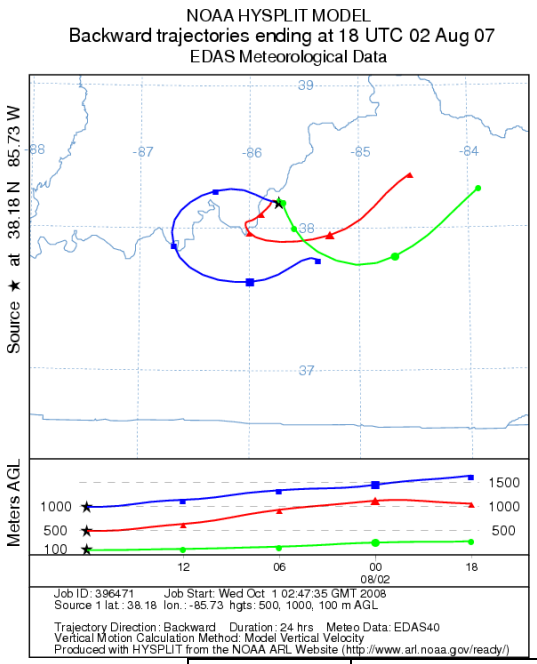


	Maximum Temp	Precip.	Jeffersonville	New Albany
8/1/2007	94 ^{o}F	none	30.2 µg/m3	27.8 µg/m3

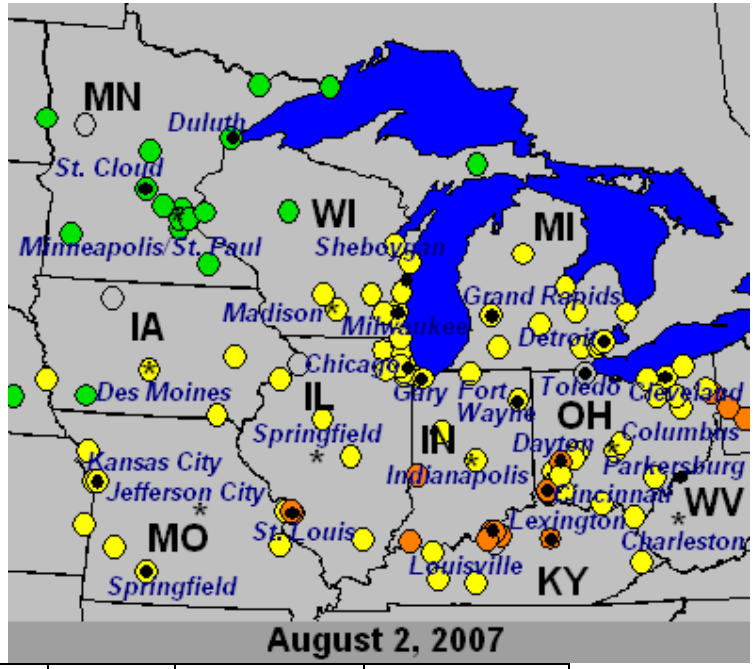
Wind Rose - Louisville



Back Trajectory – Louisville

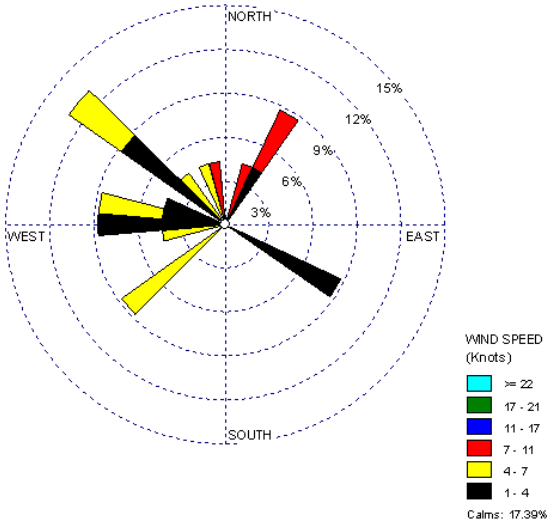


AirNow - Midwest

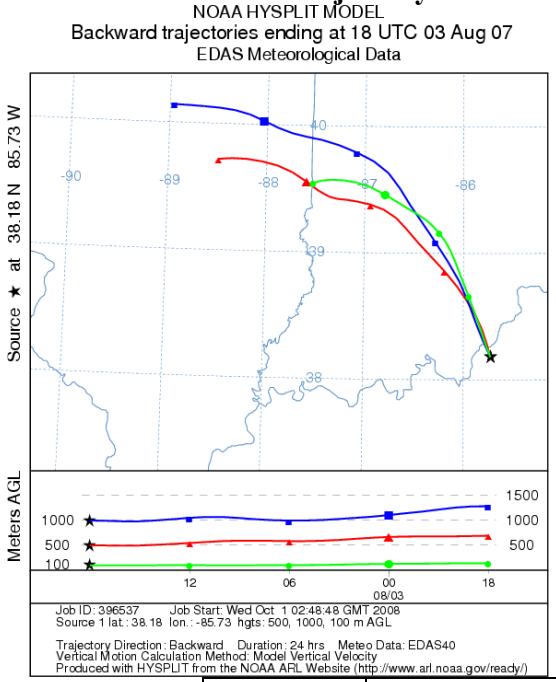


	Maximum Temp	Precip.	Jeffersonville	New Albany
8/2/2007	96 °F	none	50.2 µg/m3	Did not report

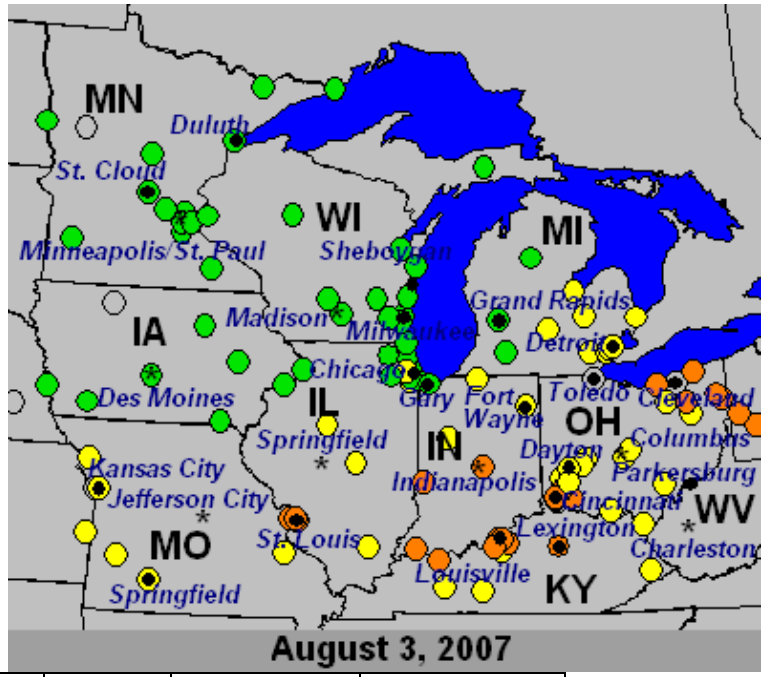
Wind Rose - Louisville



Back Trajectory – Louisville

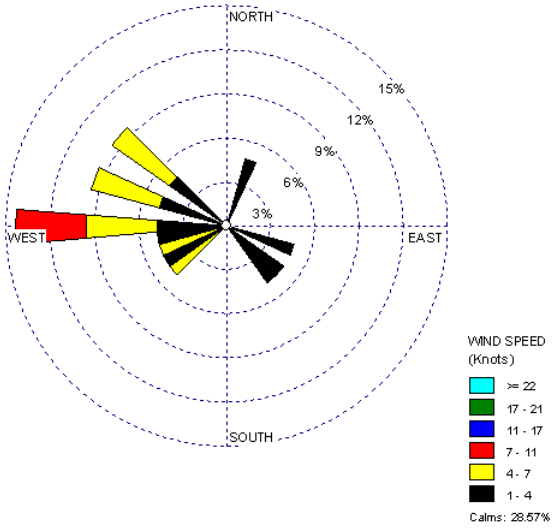


AirNow - Midwest

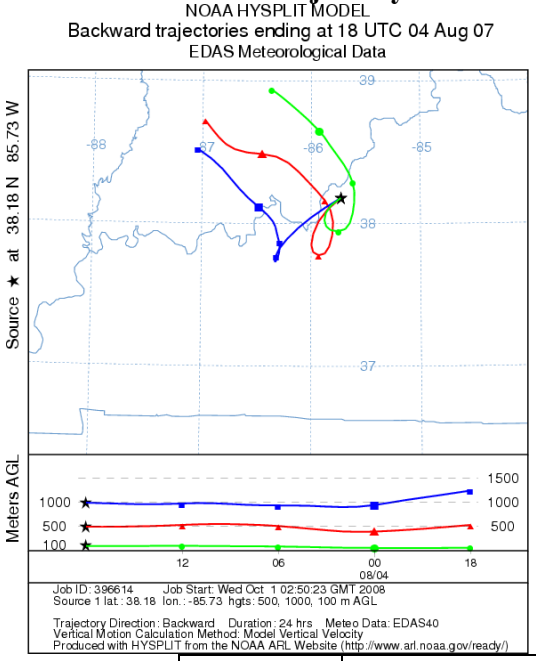


	Maximum Temp	Precip.	Jeffersonville	New Albany
8/3/2007	95 ^{o} F	none	43.5 µg/m3	43.1 µg/m3

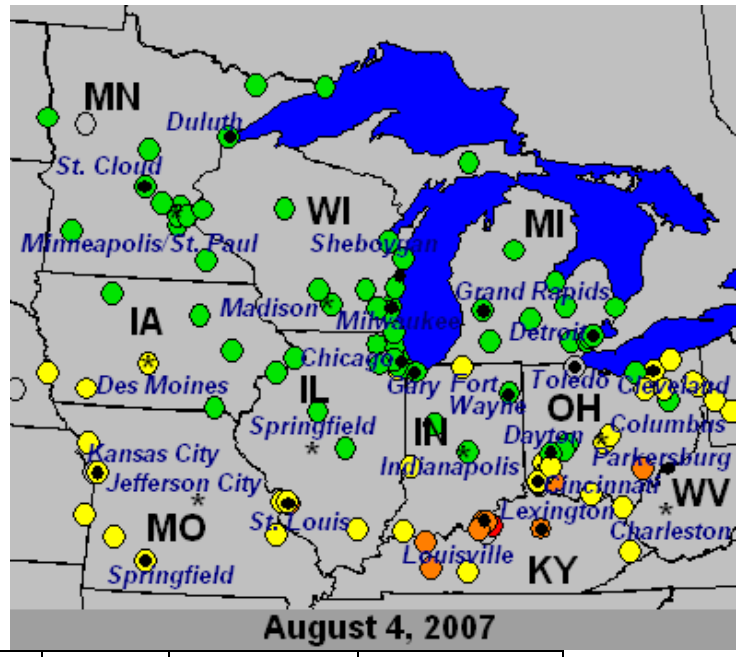
Wind Rose - Louisville



Back Trajectory – Louisville

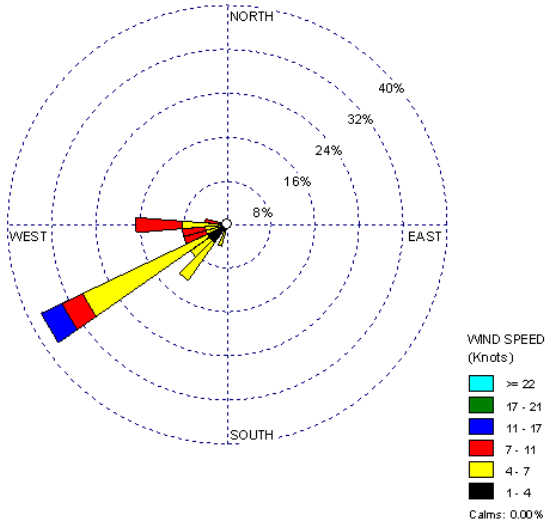


AirNow - Midwest

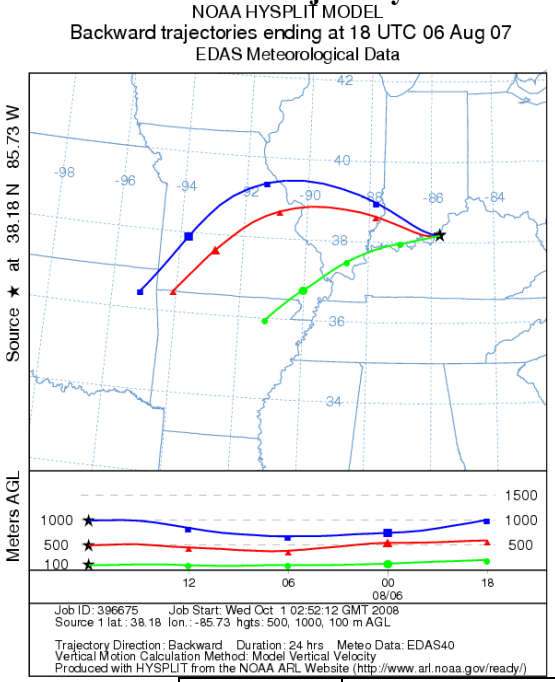


	Maximum Temp	Precip.	Jeffersonville	New Albany
8/4/2007	96 °F	0.11 in	43.2 µg/m3	Did not report

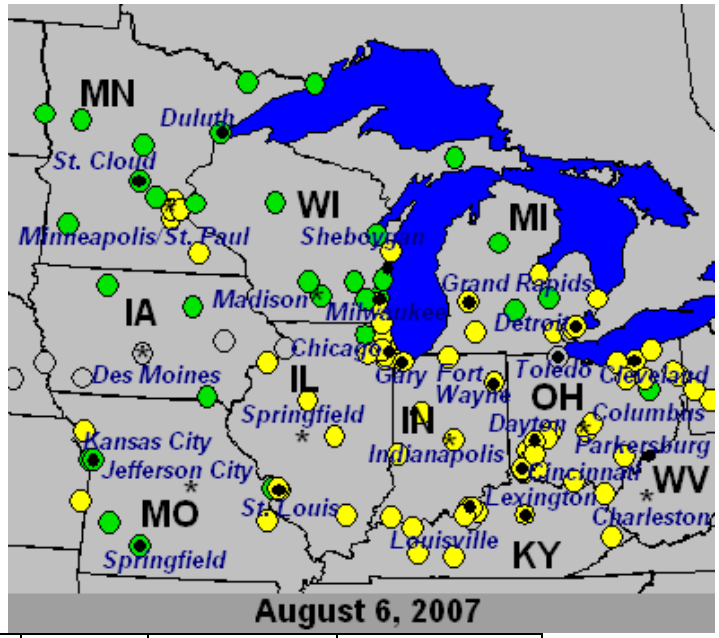
Wind Rose - Louisville



Back Trajectory – Louisville

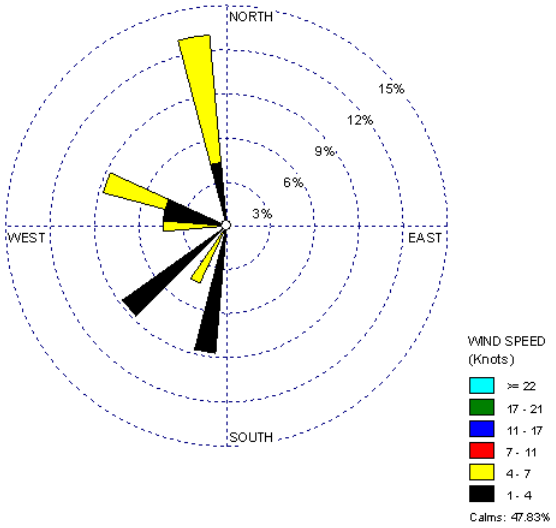


AirNow - Midwest

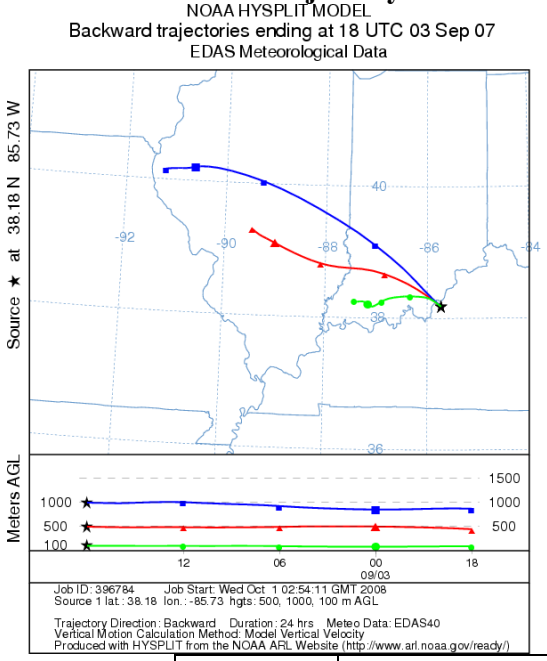


	Maximum Temp	Precip.	Jeffersonville	New Albany
8/6/2007	99 ^{o} F	none	30.9 µg/m3	Did not report

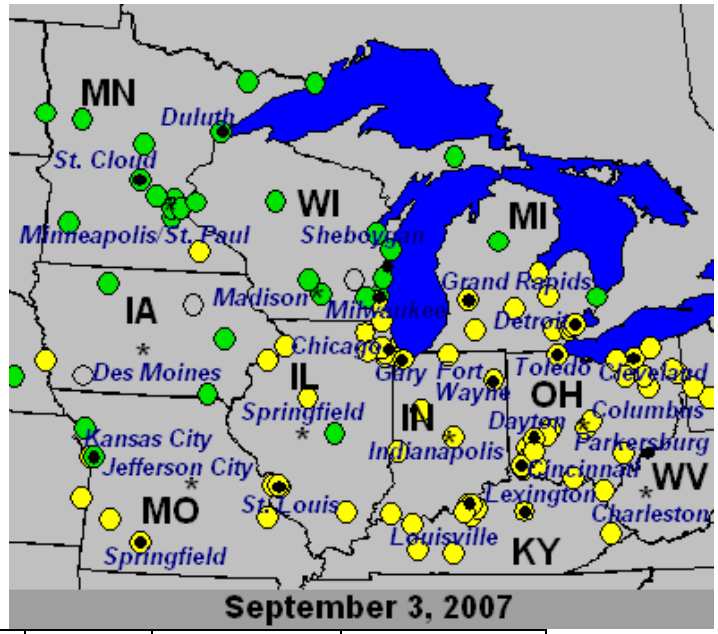
Wind Rose - Louisville



Back Trajectory – Louisville

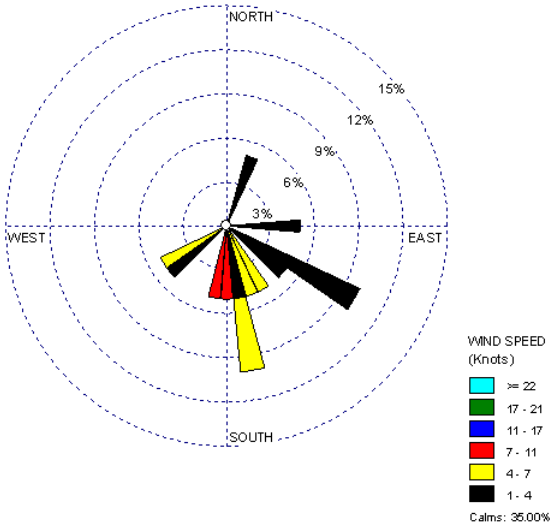


AirNow - Midwest

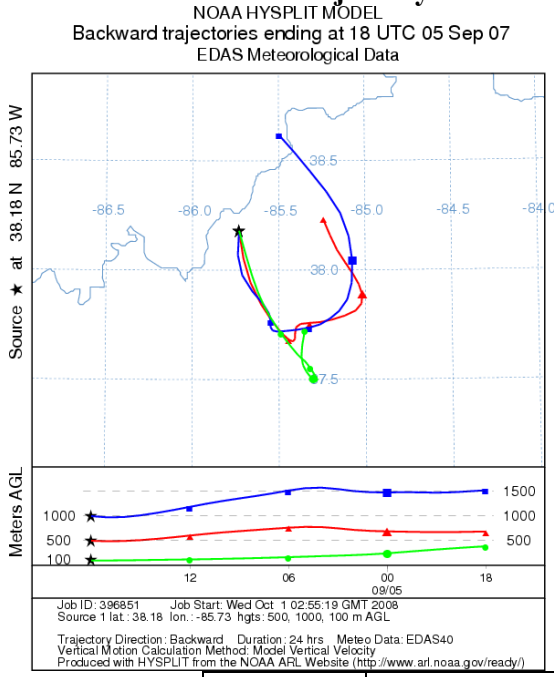


	Maximum Temp	Precip.	Jeffersonville	New Albany
9/3/2007	97 ^{o}F	none	31.4 µg/m3	28.3 µg/m3

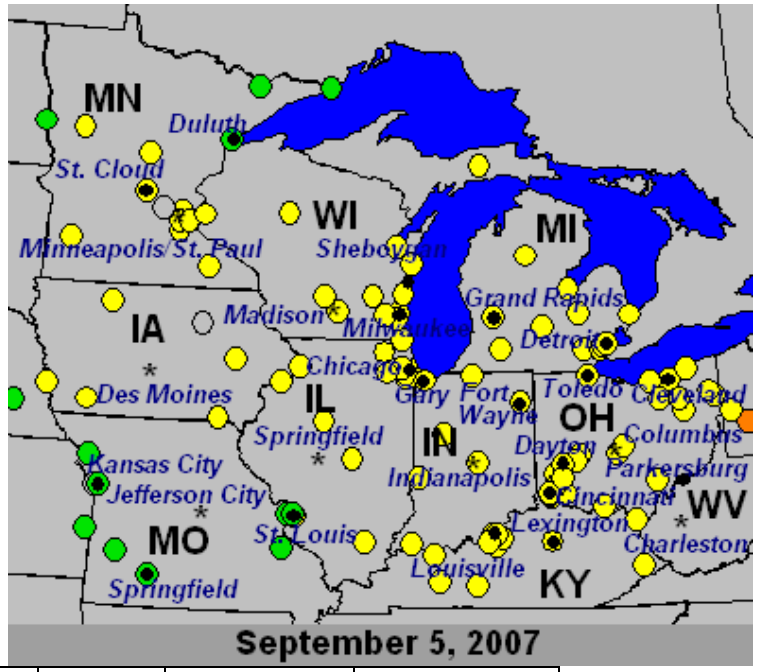
Wind Rose - Louisville



Back Trajectory – Louisville

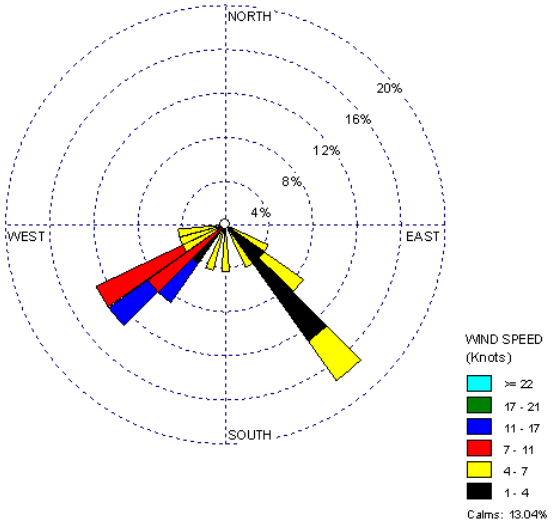


AirNow - Midwest

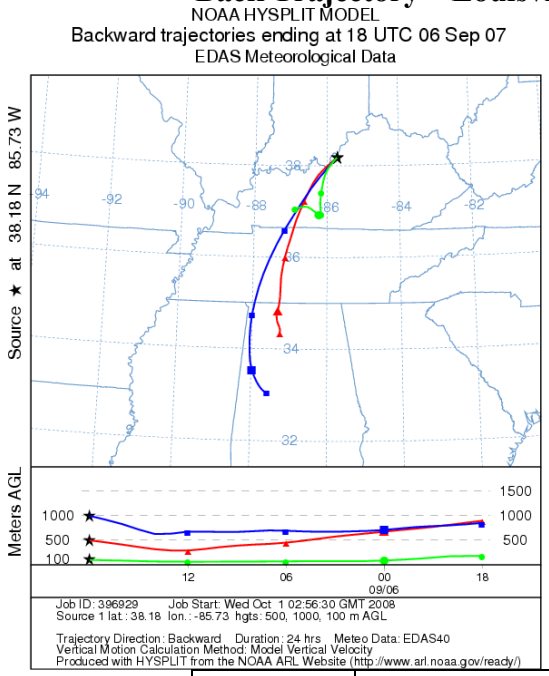


	Maximum Temp	Precip.	Jeffersonville	New Albany
9/5/2007	99 ^{o} F	none	33.0 µg/m3	Did not report

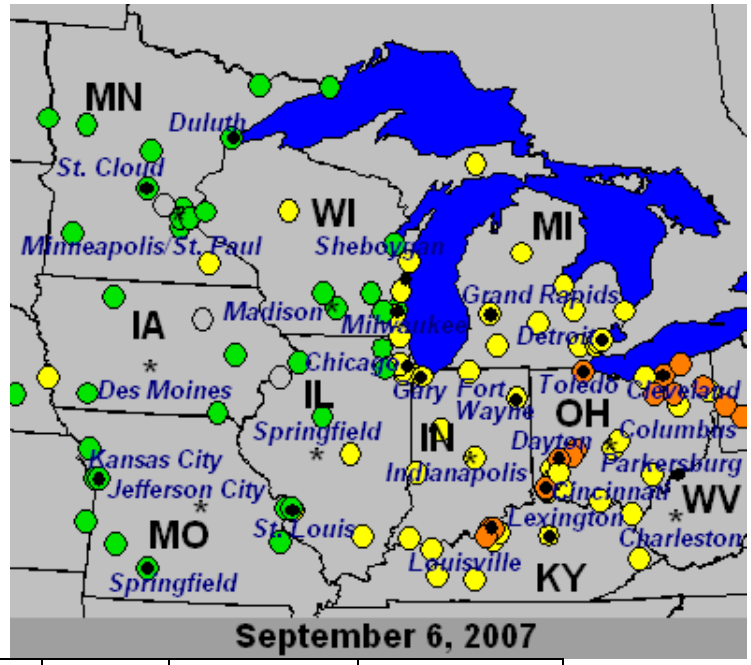
Wind Rose - Louisville



Back Trajectory – Louisville

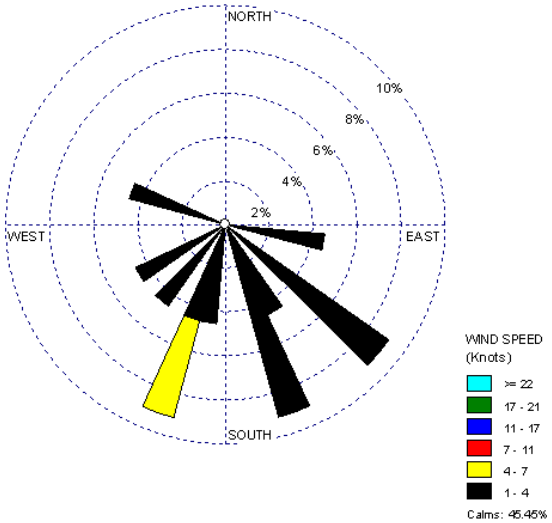


AirNow - Midwest

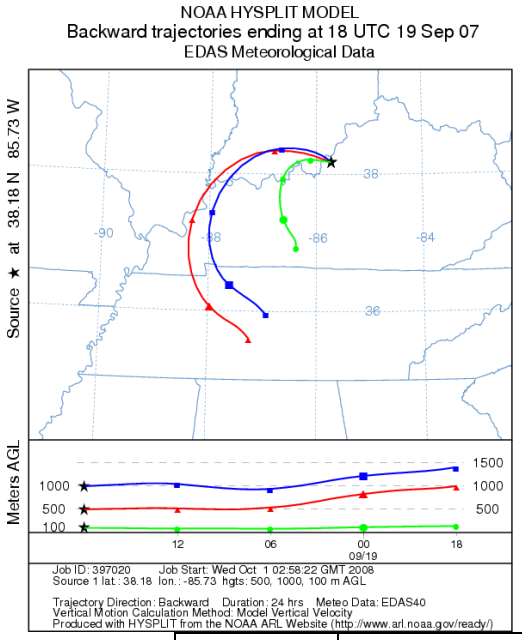


	Maximum Temp	Precip.	Jeffersonville	New Albany
9/6/2007	91 °F	trace	43.3 µg/m3	39.6 µg/m3

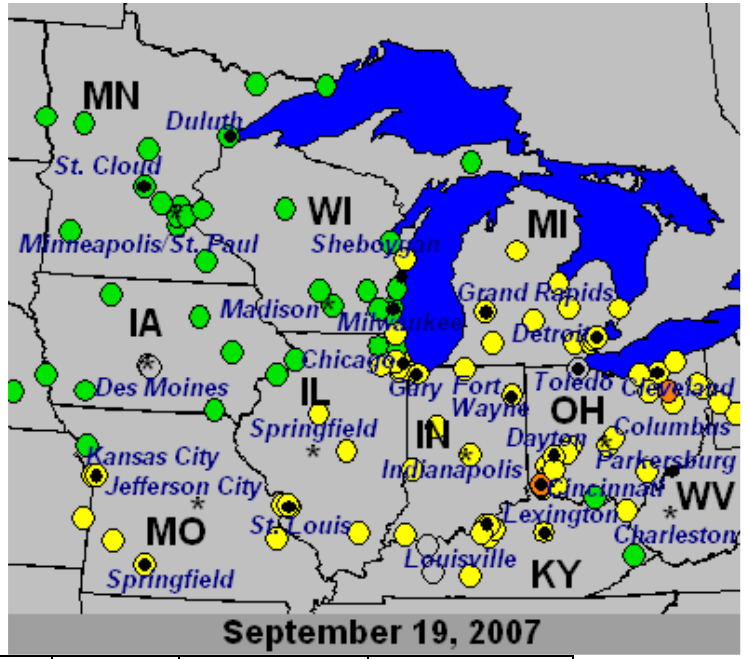
Wind Rose - Louisville



Back Trajectory – Louisville

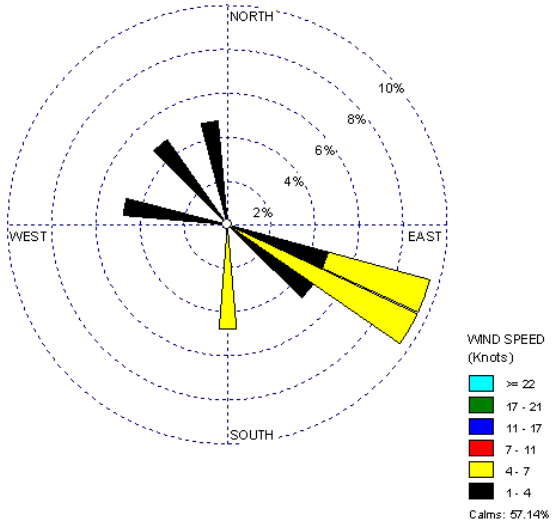


AirNow - Midwest

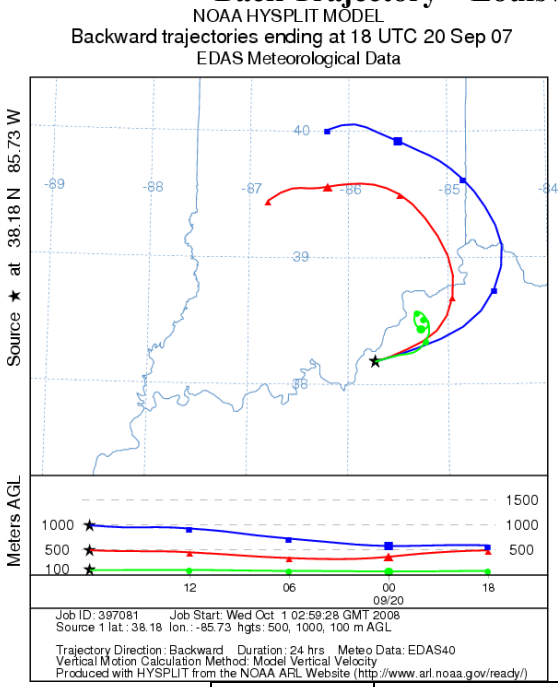


	Maximum Temp	Precip.	Jeffersonville	New Albany
9/19/2007	89 °F	none	38.1 µg/m3	Did not report

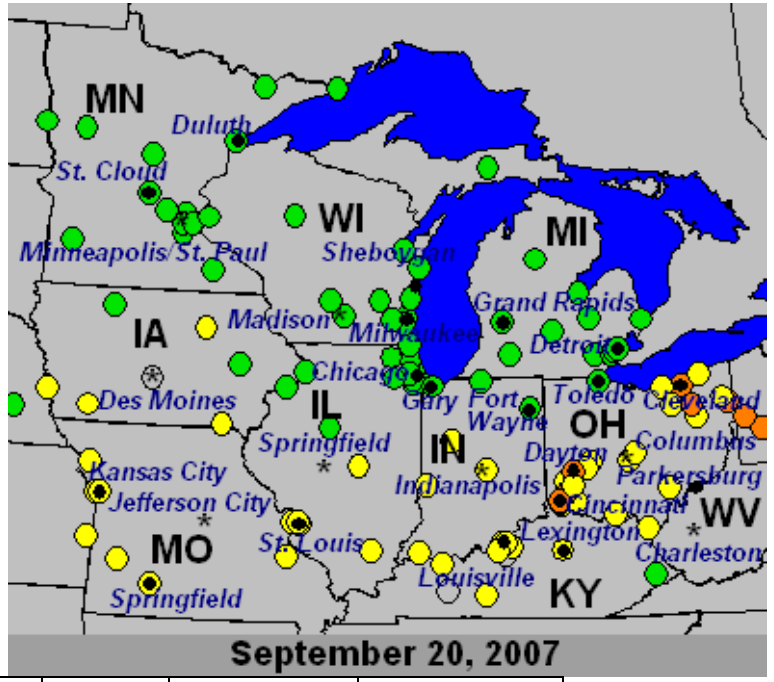
Wind Rose - Louisville



Back Trajectory – Louisville



AirNow - Midwest



	Maximum Temp	Precip.	Jeffersonville	New Albany
9/20/2007	93 °F	none	30.9 µg/m3	Did not report

Southwest Indiana Area

Indiana Recommendation
On May 30, 2008, Indiana recommended Vanderburgh County be designated as nonattainment. Indiana also recommended that Knox County be designated as nonattainment separately.

U.S. EPA Proposed Nonattainment Designation
On August 18, 2008, U.S. EPA proposed to designate Dubois, Vanderburgh and Warrick counties along with Washington Township in Pike County, Montgomery Township in Gibson County, and Ohio Township in Spencer County as the Evansville nonattainment area. U.S. EPA also recommended that Knox County represent the Vincennes nonattainment area. Indiana concurs with U.S. EPA's proposed boundary for Knox County. However, if the county attains by the close of 2008, as projected, Indiana desires Knox County to be designated attainment in accordance with the measured air quality.

U.S. EPA proposed the 24-hour $PM_{2.5}$ Evansville nonattainment area to be identical to the nonattainment area designated under the 1997 $PM_{2.5}$ standard to simplify planning by assuring that the corresponding requirements for the two sets of air quality standards apply to the same area. Indiana strongly believes that a number of Indiana counties were improperly designated nonattainment under the annual $PM_{2.5}$ standard including Warrick County, along with Washington Township in Pike County, Montgomery Township in Gibson County, and Ohio Township in Spencer County.

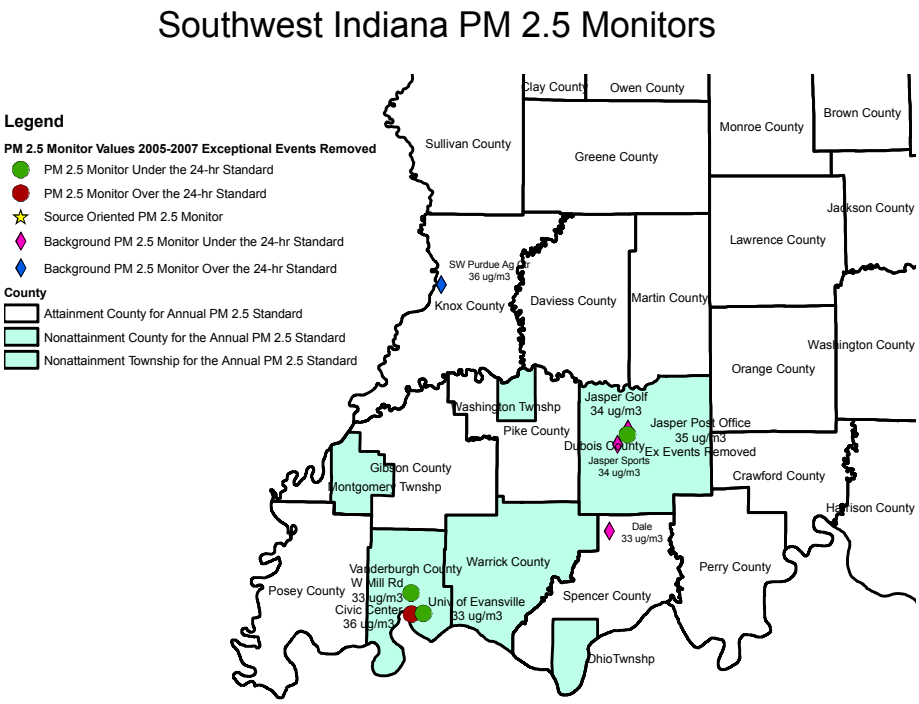
U.S. EPA stated that a county will be designated as nonattainment if it has an air quality monitor that is violating the standard or if the county is determined to be contributing to a violation of the standard outside the county. Potential contributions to $PM_{2.5}$ concentrations in the area are based on the nine factors recommended in U.S. EPA guidance including precursor emissions, air quality data, population density and degree of urbanization, traffic and commuting patterns, growth, meteorology, geography and topography, jurisdictional boundaries and levels of control of emission sources. These criteria were originally established for evaluating areas under the 1-hour ozone standard, and are not appropriate for use in designating areas under a PM standard.

The proposed nonattainment designation for the Evansville area is based on a violation of the 24-hour $PM_{2.5}$ standard from 2005-2007 in Vanderburgh and Dubois counties. However, with U.S. EPA concurrence of Indiana's 2007 exceptional events submittal, Dubois county would be eligible for an attainment designation, and Vanderburgh County will attain the standard based on monitoring data from 2006-2008. Therefore, if both counties maintain design values below the standard at the close of 2008 with exceptional events factored in, Indiana desires the entire region to be designated attainment in accordance with the measured air quality.

The nonattainment designation for Warrick County is based on the belief that the county is contributing to violations in the Evansville area. U.S. EPA stated that Warrick County

has relatively high emissions that are commonly upwind of violating monitors. The SIGECO-F.B. Culley power plant located in Warrick County was required to shut down one of its units. The other two units are under a consent decree to operate at 95% efficiency at all times the units are in operation. With the consent decree, the controls result in a significant reduction of SO_2 and NOx. These controls will be in place prior to the attainment date and emissions from the power plant will not increase in the near future. The ALCOA power plant located in Warrick County is currently controlled by low NOx burner technology with overfire air. The ALCOA power plant is installing FGDs on all four units at the plant that will be operational in 2008. The controls are required by their permit to operate at 90% control efficiency at all times the units are in operation, which will result in a 90% reduction of SO_2. These controls will be in place prior to the attainment date. Indiana believes that emissions from Warrick County do not affect the downwind area's ability to attain the 24-hour $PM_{2.5}$ standard.

Southwest Indiana Monitoring Data



2005-2007 Monitor Values ($\mu g/m^3$)								
County	Monitor Location	Daily 98th Percentile Values				Daily Site Design Value 2004-2006	Daily Site Design Value 2005-2007
		2004	2005	2006	2007		
Vanderburgh	Evansville-Civic Center	28.3	42.5	30.5	33.6	34 (33.767)	36 (35.533)
Vanderburgh	Evansville-W Mill Rd	27.5	41.5	27.9	29.9	32 (32.333)	33 (32.833)
Vanderburgh	Evansville-Univ of Evansville	28.3	37.0	29.5	31.5	32 (31.6)	33 (32.667)
Dubois*	Jasper Sports Complex	Site Began Operating 02/01/06		33.6	35.2	34* (33.6)	34* (34.0)
Dubois*	Jasper Golf Course	Site Began Operating 02/01/06		32.2	36.2	32* (32.2)	34* (34.2)
Dubois	Jasper Post Office (Exceptional Events Left In)	30.0	41.2	31.6	34.7	34 (34.267)	36 (35.833)
Dubois	Jasper Post Office (Exceptional Events Taken Out)	30.0	41.2	31.6	31	34 (34.267)	35 (34.6)
Spencer	Dale	25.2	36.1	27.7	31.4	31 (30.867)	33 (32.933)
Knox	SW Purdue Ag Center	29.9	41.8	36.2	30.9	36* (35.967)	36* (36.3)

**Background Monitor*

Highlighted values are values that are over the 24-hr standard of 35 $\mu g/m^3$

2004-2008 Monitor Values											
County	Monitor Location	2004	2005	2006	2007	2008 (1st 2 Quarters ONLY)	2004-2006	2005-2007	2006-2008 (1st 2 Quarters of 2008 ONLY)	2006-2008 (1st 2 Quarters of 2008 ONLY)	2008 Critical Value--Yearly Mean (98%) Needed to Make 2006-2008 Design Value Above the Standard
Dubois	Jasper Sports Complex			33.6	35.2	26.3	34 [1]	34 [2]	31.7	32	N/A
Dubois	Jasper Golf Club			32.2	36.2	21.6	32 [1]	34 [2]	30	30	N/A
Dubois	Jasper Post Office	30.0	41.2	31.6	34.7	26.1	34	36	30.8	31	38.7
Gibson	Oakland City					19.8			19.8	20 [1]	N/A
Knox	SW Purdue Ag Center	29.9	41.8	36.2	30.9	21.4	36	36	29.5	30	37.9
Spencer	Dale	25.2	39.7	27.7	31.4	19.9	30	33	26.333	26	45.9
Vanderburgh	Evansville	28.3	42.5	30.5	33.6	21.9	34	36	28.667	29	40.9
Vanderburgh	Evansville	27.5	41.5	27.9	29.9	22.4	32	33	26.733	27	47.2
Vanderburgh	Evansville	28.3	37.0	29.5	31.5	25.2	32	33	28.733	29	44.0

[1] One year of Data [2] Two Years of Data

Values above the standard

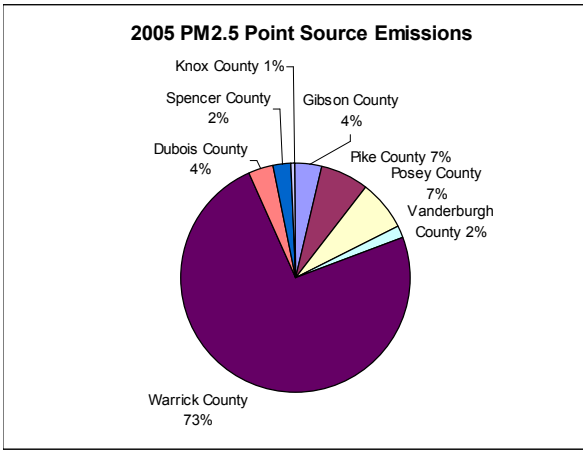
There are three $PM_{2.5}$ monitors in the Evansville MSA, all located in Vanderburgh County. Only one of the monitors in Vanderburgh County is above the standard based on monitor values from 2005-2007; however, it is projected to attain the standard at the end of 2008. There are three monitors in Dubois County, Indiana. Two of these monitors are background monitors (Jasper-Sports Complex and Jasper-Golf Course). These

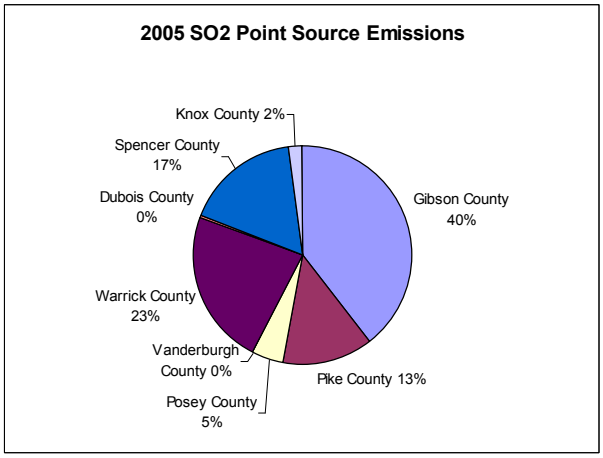
background monitors are intended to reflect ambient air quality from regional transport. The background monitors were sited based on U.S. EPA monitoring objectives directed at population and aiding in determining the transport of $PM_{2.5}$ downwind of a large metropolitan area. Although these two monitors are background monitors, the data from the monitors can be used to determine attainment status for the daily $PM_{2.5}$ standard. The data from the two background monitors are deemed incomplete due to missing data, meaning that the 2005-2007 average value cannot be truly determined. These two monitors have incomplete data because they have only been monitoring for a short amount of time and do not have three years of data to determine the 2005-2007 design value. Both of the background monitors commenced operation on February 1, 2006.

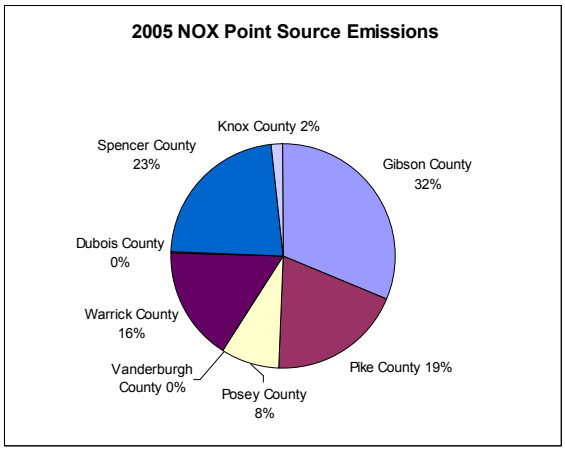
As part of the data review and certification process, Indiana performs a thorough review of all data that exceed an ambient air quality standard. This review is conducted to ensure the data are correct and not influenced by an exceptional event. Exceptional events are unusual or naturally occurring events that can affect air quality but are not reasonably controllable by state and local agencies. Data which are affected by these events are "flagged" meaning the high monitored values are not the norm and were influenced by an exceptional event. Indiana has identified one exceptional event from a wildfire that occurred during the 2007 monitoring period. After the removal of the exceptional event that occurred during 2007, the 2005-2007 design value for the daily $PM_{2.5}$ value at the Dubois Post Office monitor drops from 36 (35.833) $\mu g/m^3$ to 35 (34.6) $\mu g/m^3$. The exceptional event data exclusions result in a 2005-2007 design value below the daily $PM_{2.5}$ NAAQS at the Post Office monitor in Dubois County.

Southwest Indiana Emissions Data

	2005 Point Source Emissions (Tons per Year)					
	$PM_{2.5}$	% of Area	SO_2	% of Area	NO_X	% of Area
Gibson County	133.9193	3.84%	154234.9	39.36%	30364.55	31.52%
Pike County	233.0928	6.68%	52814.92	13.48%	18299.68	19.00%
Posey County	252.1298	7.22%	18206.7	4.65%	8064.244	8.37%
Vanderburgh County	62.0218	1.78%	7.13388	0.00%	119.0433	0.12%
Warrick County	2574.6786	73.74%	90788.32	23.17%	15689.05	16.29%
Dubois County	126.3941	3.62%	317.2333	0.08%	328.8121	0.34%
Spencer County	85.75531	2.46%	68364.89	17.45%	21781.17	22.61%
Knox County	23.64142	0.68%	7141.653	1.82%	1675.214	1.74%
Total	3491.633		391875.8		96321.77	







The area's direct $PM_{2.5}$ emissions from stationary sources originating in Warrick County are 73.7%. The total nitrogen oxide (NO_x) emissions of the area derive primarily from Gibson (31.5%) and Spencer (22.6%) and Pike (19.0%) counties. The sulfur dioxide (SO_2) emissions released by stationary sources within the Indiana's portion of the MSA are primarily from Gibson (39.4%) and Warrick (23.2%) counties. Overall, $PM_{2.5}$ values have continued to drop and NO_x and SO_2 emissions are expected to decrease throughout the Midwest over the next few years. Reductions expected to occur in Warrick and Gibson counties over the next two years will significantly alter the contribution from these counties and further improve air quality in the near future.

NO_x emissions from electric generating units in the Southwest Indiana area have decreased substantially during the past few years. The decrease in NO_x can be largely attributed to those electric generating units located within and surrounding the Southwest Indiana area that have reduced their NO_x emissions as a result of the NO_x SIP Call. Also, ALCOA will install scrubbers on all units by 2008 that will result in a 90% reduction in SO_2 emissions. Cayuga, Clifty Creek and Wabash Valley are in the process of installing Flue Gas Desulfurization (FGD) systems which will also result in 90% reductions in SO_2 at those facilities. Edwardsport is replacing all of the coal-fired boilers with an Integrated Gasification Combined Cycle (IGCC) system which will result in a slight increase in NO_x of 32.49 tons per year and a huge reduction in SO_2 of 9,834 tons per year. As a result of

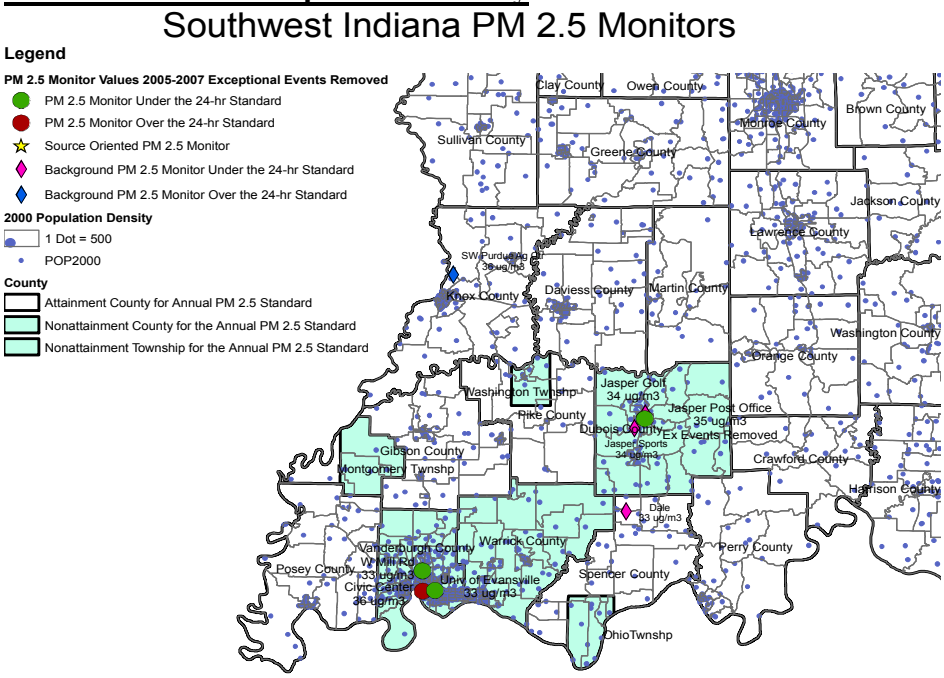
a recent settlement agreement, AEP Rockport is installing scrubbers to achieve a 90% reduction in SO_2.

Comparison of 2005 Estimated and 2020 Projected Emission Estimates Southwest Indiana Area (Annual-Tons)

	2005	2020	Change	% Change
NO_x	100,738.05	33,920.55	-66,817.5	66.33% decrease
SO_2	367,861.51	133,918.53	-233,942.98	63.60% decrease
Direct $PM_{2.5}$	4,566.88	4,688.54	121.66	2.66% increase

NO_x emissions within the Southwest Indiana area are projected to decline by 66.33% between 2005 and 2020. Emission reduction benefits from federal rules covering the NO_x SIP Call, Tier 2 Motor Vehicle Emissions Standards and Gasoline Sulfur Control Requirements, the Highway Heavy-Duty Engine Rule and the Nonroad Diesel Engine Rule are factored into the percent changes. Further, due to implementation of the NO_x SIP Call across the eastern United States, NO_x and ozone levels entering this area will also be decreasing.

Southwest Indiana Population Density



Vanderburgh County has the highest concentration of population density compared to the other counties in Southwest Indiana. However, the density does extend into the neighboring counties, namely Warrick County. All other counties within the region are rural and have very low population densities.

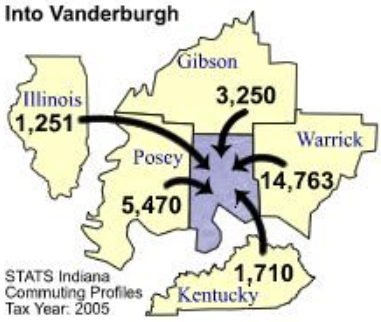
Southwest Indiana Traffic Patterns

2005 Commuting Patterns					
	Total Workforce: Number of persons who live in County and work	**Number of persons who live AND work in County**	**Number of persons who live in County and work in another County**	**Percent In County**	**Percent Out of County**
Gibson County	22,549	17,602	4,947	78.1%	21.9%
Pike County	8,810	5,355	3,455	60.8%	39.2%
Posey County	18,251	11,775	6,476	64.5%	35.5%
Vanderburgh County	112,618	104,410	8,208	92.7%	7.3%
Warrick County	38,704	20,449	18,255	52.8%	47.2%
Dubois County	29,793	27,867	1,926	93.5%	6.5%
Spencer County	14,400	9,323	5,077	64.7%	35.3%
Knox County	24,052	21,289	2,763	88.5%	11.5%

Top five counties sending workers INTO Vanderburgh County:

Warrick County	14,763
Posey County	5,470
Gibson County	3,250
Kentucky	1,710
Illinois	1,251
Total of above	26,444 workers

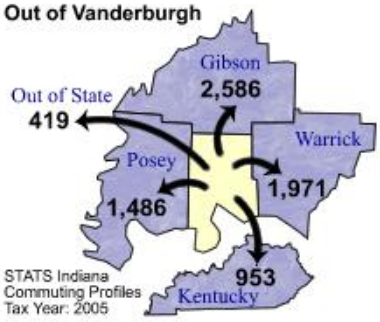
(19.7% of Vanderburgh County work force)



Top five counties receiving workers FROM Vanderburgh County:

Gibson County	2,586
Warrick County	1,971
Posey County	1,486
Kentucky	953
Out of State	419
Total of above	7,415 workers

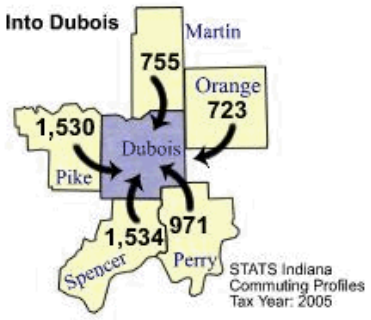
(6.6% of Vanderburgh County labor force)



Top five counties sending workers INTO Dubois County:

Spencer County	1,534
Pike County	1,530
Perry County	971
Martin County	755
Orange County	723
Total of above	5,513 workers

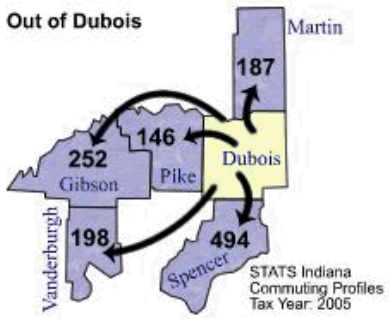
(15.5% of Dubois County work force)



Top five counties receiving workers FROM Dubois County:

Spencer County	494
Gibson County	252
Vanderburgh County	198
Martin County	187
Pike County	146
Total of above	1,277 workers

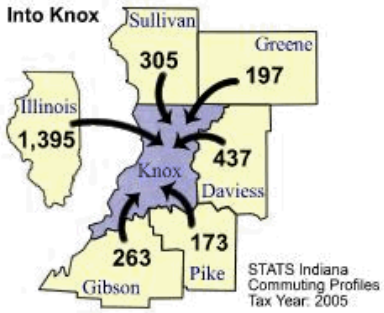
(4.3% of Dubois County labor force)



Top five counties sending workers INTO Knox County:

Illinois	1,395
Daviess County	437
Sullivan County	305
Gibson County	263
Greene County	197
Total of above	2,597 workers

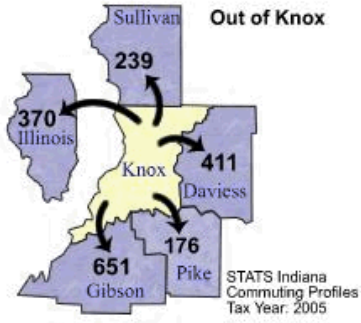
(10.5% of Knox County work force)



Top five counties receiving workers FROM Knox County:

Gibson County	651
Daviess County	411
Illinois	370
Sullivan County	239
Pike County	176
Total of above	1,847 workers

(7.7% of Knox County labor force)



Vanderburgh County maintains the highest concentration of employment by residents of the county and vehicle miles traveled (VMT) compared to the other Indiana counties in Southwest Indiana. Although urban growth in Indiana is occurring in Warrick and Gibson counties, the majority of the region's (including Kentucky) VMT and traffic congestion is generated within the core urban area of Evansville in Vanderburgh County. Vanderburgh County has the highest population density and maintains an in-county

workforce ratio of 92.7%. Posey County has a low population density and less of an emissions base than the other counties within the region. Dubois County has a low population density and the majority of Dubois County's VMT and traffic congestion is generated within the core urban area of Jasper, Indiana. Dubois County has an in-county workforce ratio of 93.5%. The volume in terms of commuters and VMT is extremely low in comparison with medium to large metropolitan areas, and since sulfates are the primary driver for $PM_{2.5}$ levels in the region, and gasoline-powered vehicles are not a major emission source for sulfates, these factors should not be a consideration for the nonattainment area boundaries.

Southwest Growth Rates and Patterns

	Population 1990	Population 2000	Percent Change from 1990 to 2000	Population Estimate 2006	Percent Change from 2000 to 2006	Population Estimate 2010	Percent Change from 2000 to 2010	Population Estimate 2020	Percent Change from 2000 to 2020
Gibson County	31,913	32,500	1.8%	33,396	2.8%	32,904	1.2%	35,004	7.7%
Pike County	12,509	12,837	2.6%	12,855	0.1%	13,317	3.7%	12,986	1.2%
Posey County	25,968	27,061	4.2%	26,765	-1.1%	26,605	-1.7%	26,053	-3.7%
Vanderburgh County	165,058	171,922	4.2%	173,356	0.8%	174,355	1.4%	174,827	1.7%
Warrick County	44,920	52,383	16.6%	57,090	9.0%	56,631	8.1%	62,845	20.0%
Dubois County	36,616	39,674	8.4%	41,212	3.9%	39,987	0.8%	42,736	7.7%
Spencer County	19,490	20,391	4.6%	20,596	1.0%	20,241	-0.7%	20,337	-0.3%
Knox County	39,884	39,256	-1.6%	38,241	-2.6%	39,399	0.4%	37,886	-3.5%

Southwest Indiana as a region has not grown very rapidly over the past decade, nor is it expected to in the future. There are signs of population shifts, but no expectation for regional growth that would adversely affect air quality.

Southwest Indiana Meteorology

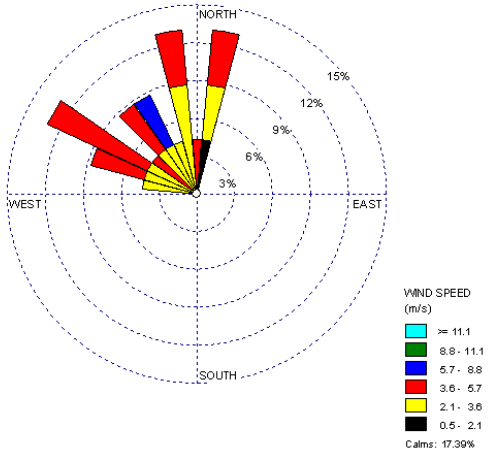
Based on a southwesterly predominant prevailing wind direction throughout the year, Vanderburgh and Warrick counties are considered upwind of Dubois County. An analysis was conducted to determine the wind direction at Vanderburgh and Jasper County monitoring sites during elevated $PM_{2.5}$ events. Elevated $PM_{2.5}$ events are defined as days when $PM_{2.5}$ monitors in Dubois, Knox, Spencer and Vanderburgh counties recorded $PM_{2.5}$ readings above 30 micrograms per cubic meter. A preliminary look at the wind roses from the Evansville Airport and Jasper County meteorological station showed wind directions on the elevated days ranging from northwest, east, southwest, south and northeast. This demonstrates potential background contribution from all portions of the Midwest.

Elevated $PM_{2.5}$ readings during the summertime resulted from mainly south to southwest surface winds with back trajectories, which show the direction from which the air impacting the monitor came, showing an east, south or west component with stagnant conditions evident. Elevated $PM_{2.5}$ readings during the wintertime were not as prevalent

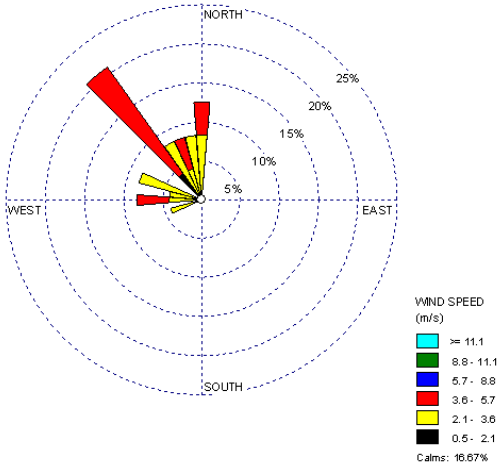
and wind directions during the wintertime events were from the northwest with back trajectories showing north, northwest, east and west directions.

Based on the analysis, elevated $PM_{2.5}$ readings in Southwest Indiana occur at differing wind directions and based on AIRNOW maps, the elevated $PM_{2.5}$ readings occur throughout the Midwest and would be considered more regional in nature.

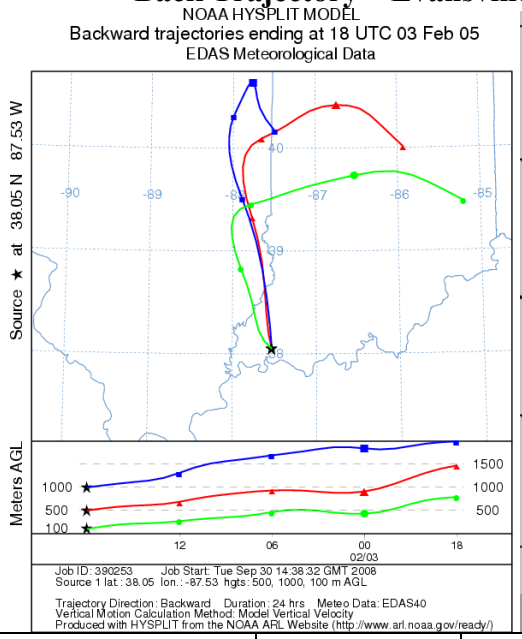
Wind Rose – Vanderburgh County



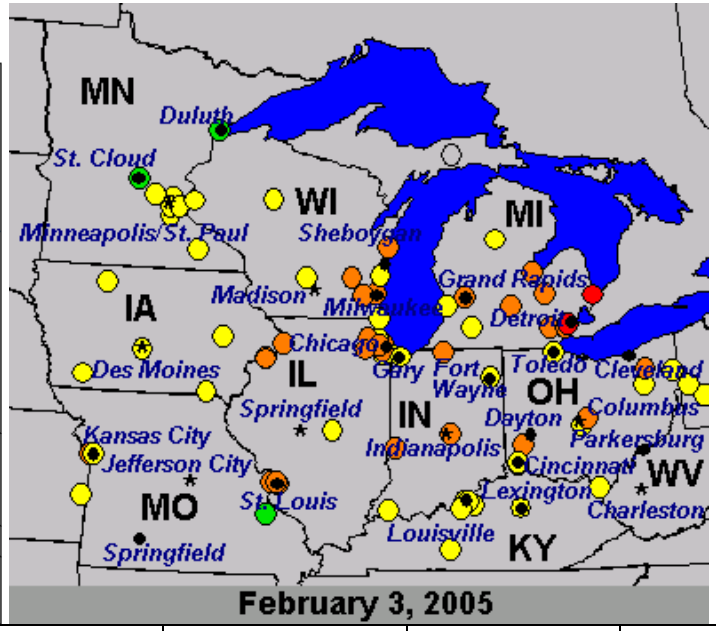
Wind Rose – Dubois County



Back Trajectory – Evansville

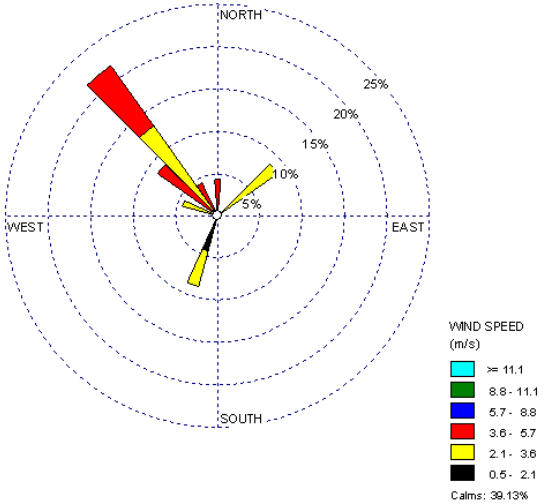


AirNow - Midwest

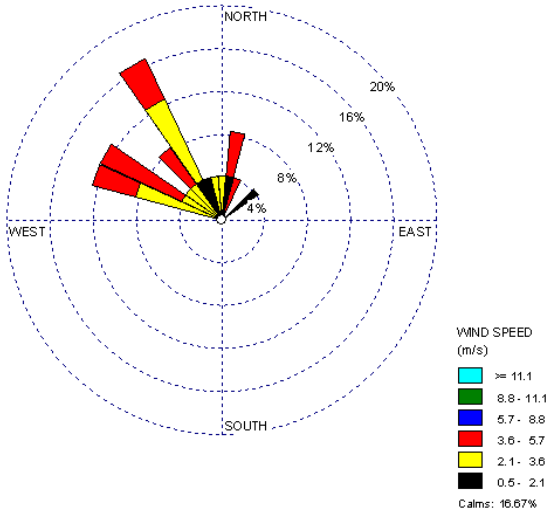


	Jasper Post Office	Knox Co	Spencer Co.	Civic Center	W. Mill Road	Univ. Of Evansville
2/3/2005	Did not report	33.8 ug/m3	36.1	34.6	33.1	36.2

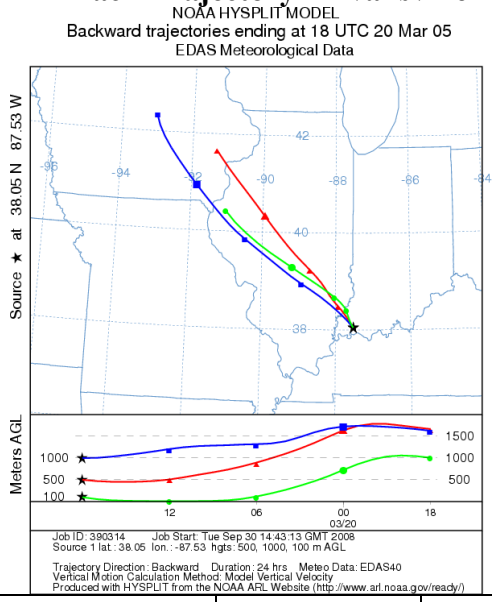
Wind Rose - Evansville



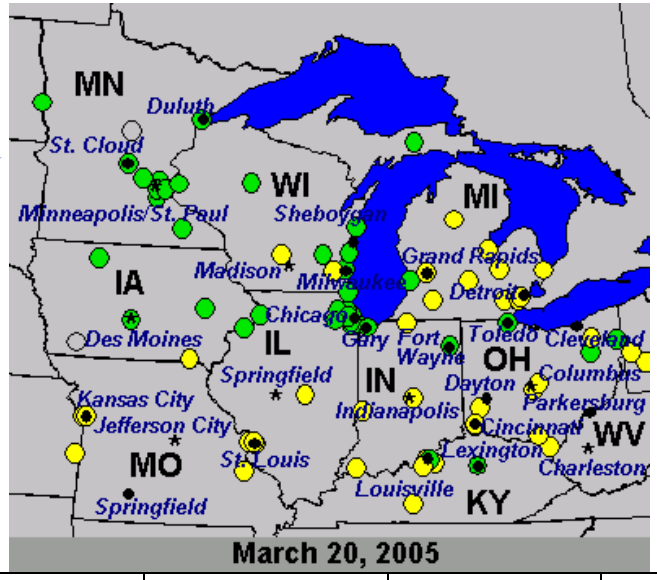
Wind Rose – Dubois County



Back Trajectory – Evansville

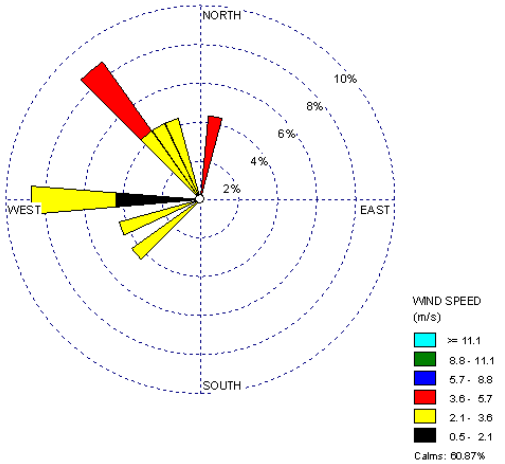


AirNow - Midwest

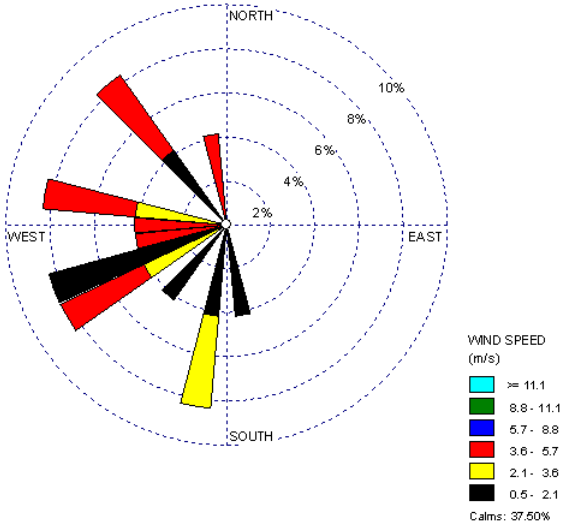


	Jasper Post Office	Knox Co	Spencer Co.	Civic Center	W. Mill Road	Univ. Of Evansville
3/20/2005	29.2	24.8	Did not report	34.3	33.3	31.5

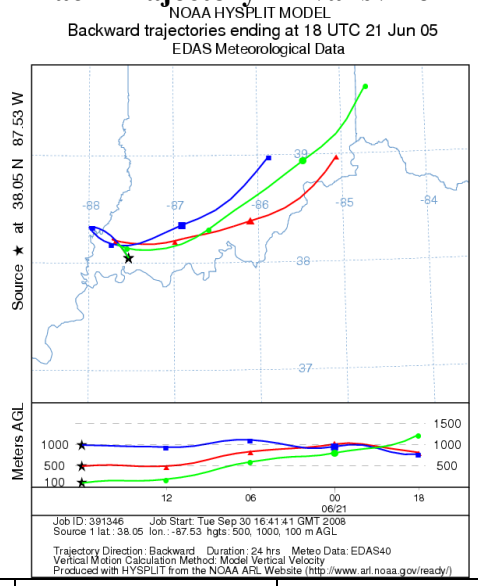
Wind Rose - Evansville



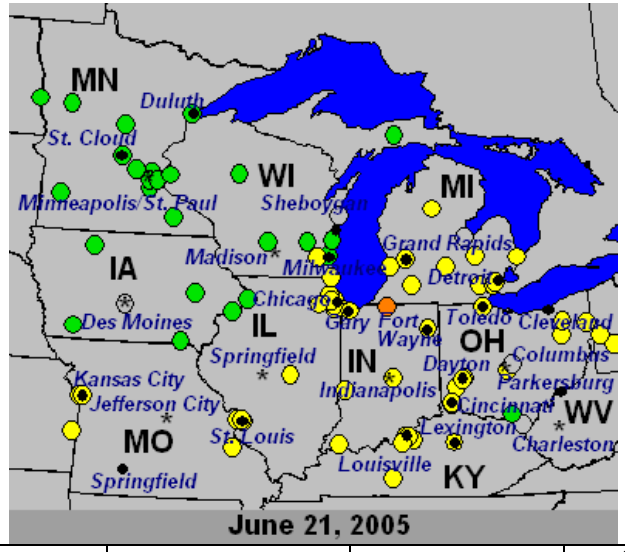
Wind Rose – Dubois County



Back Trajectory – Evansville

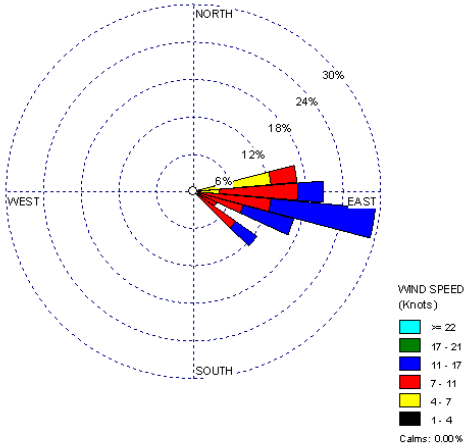


AirNow - Midwest

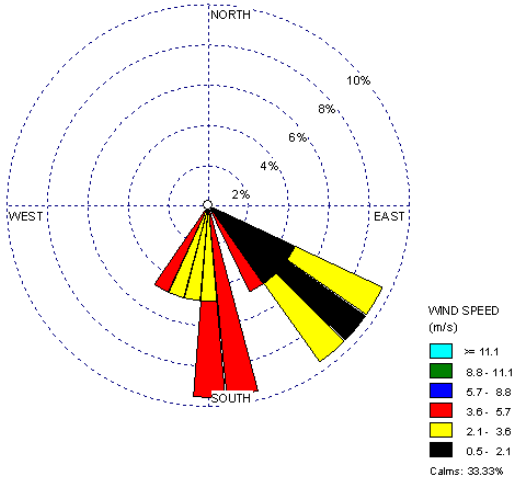


	Jasper Post Office	Knox Co	Spencer Co.	Civic Center	W. Mill Road	Univ. Of Evansville
6/21/2005	29.1	23.3	29.8	30.3	28.4	30.8

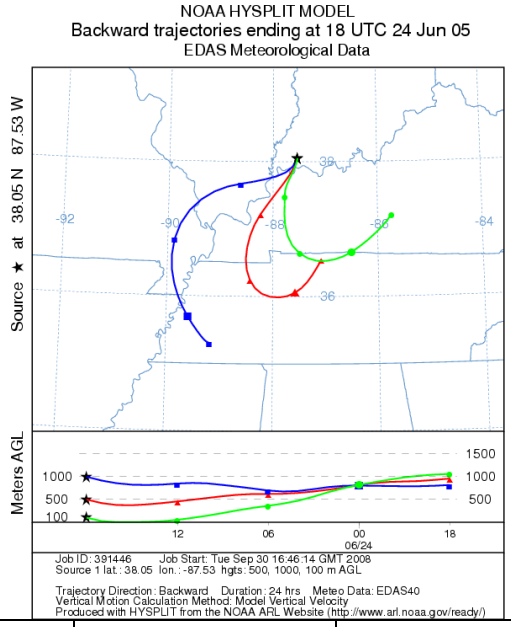
Wind Rose - Evansville



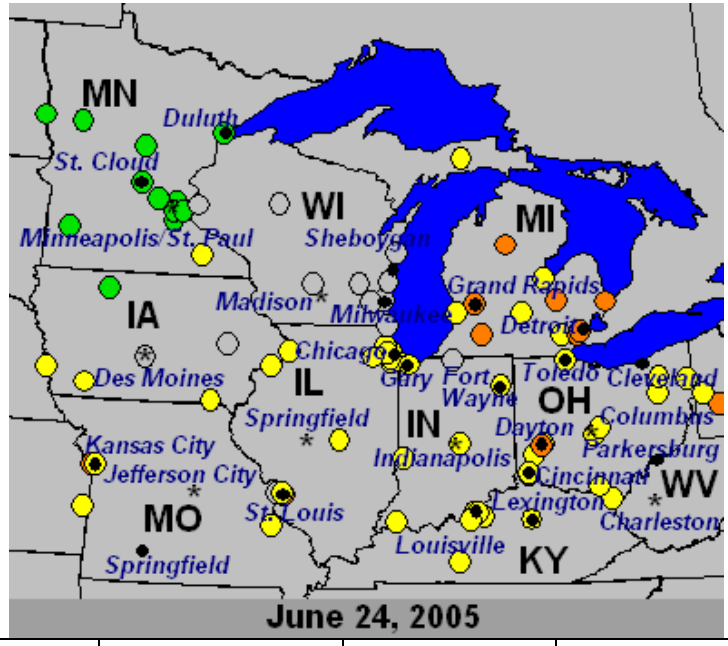
Wind Rose – Dubois County



Back Trajectory – Evansville

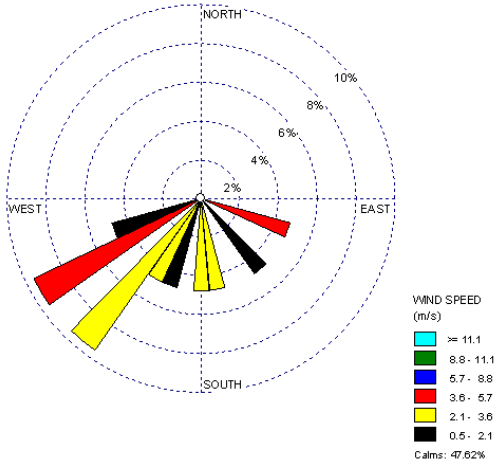


AirNow - Midwest

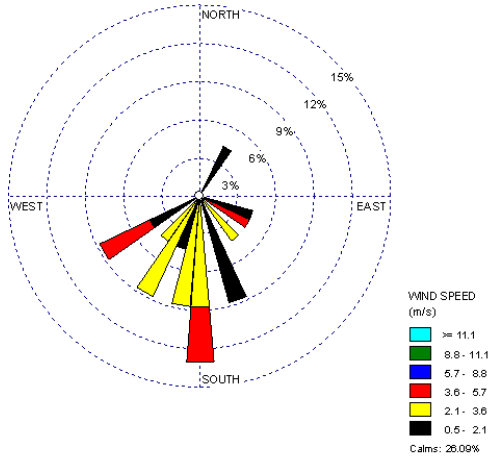


	Jasper Post Office	Knox Co	Spencer Co.	Civic Center	W. Mill Road	Univ. Of Evansville
6/24/2005	29.3	32.5	Did not report	29.1	31.1	30.0

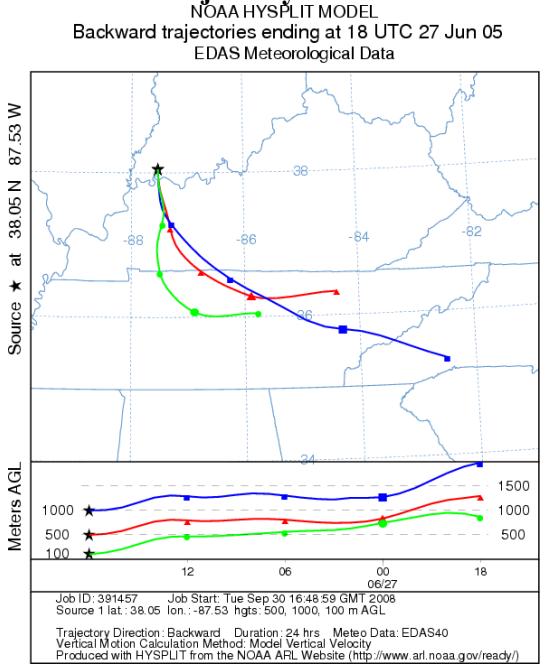
Wind Rose - Evansville



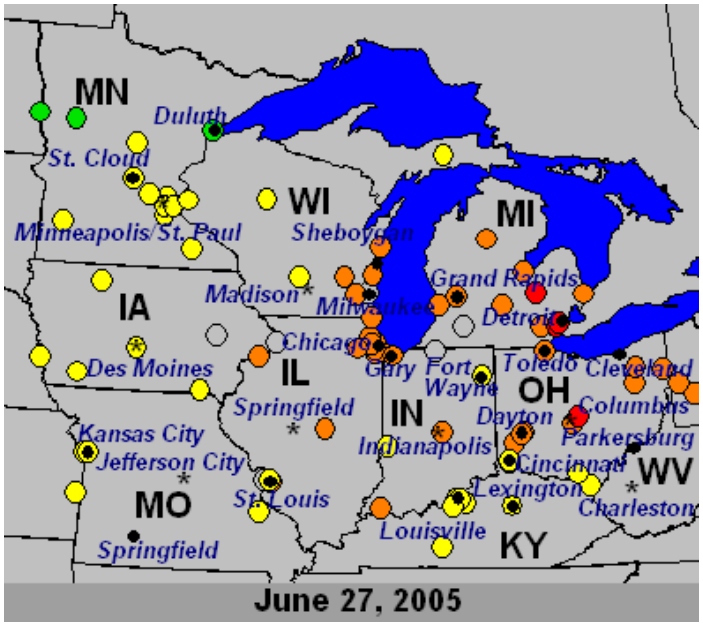
Wind Rose – Dubois County



Back Trajectory – Evansville

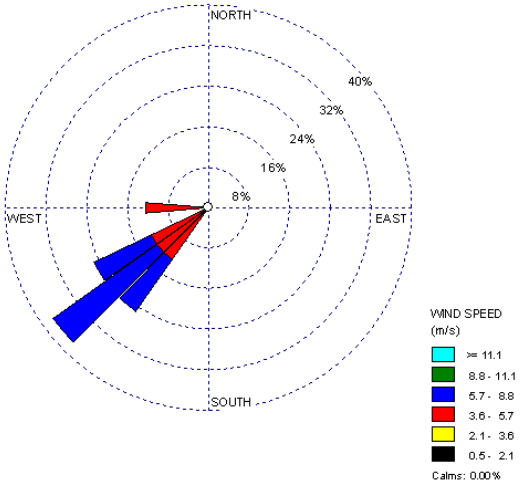


AirNow - Midwest

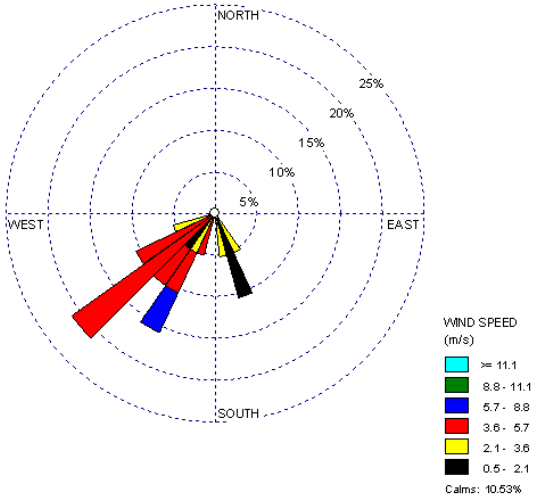


	Jasper Post Office	Knox Co	Spencer Co.	Civic Center	W. Mill Road	Univ. Of Evansville
6/27/2005	56.3	51.5	Did not report	43.2	43.4	Did not report

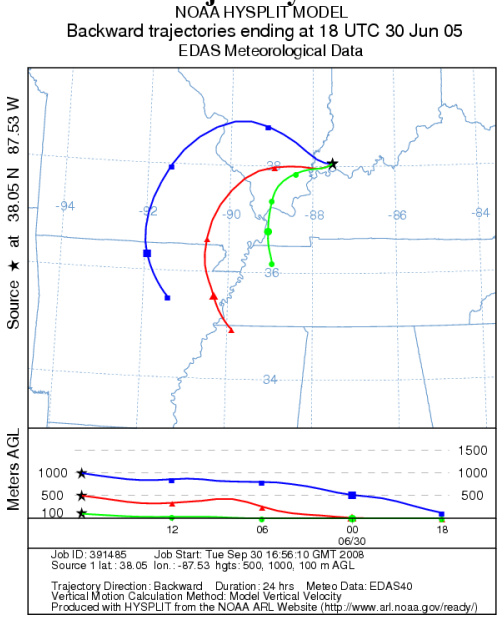
Wind Rose - Evansville



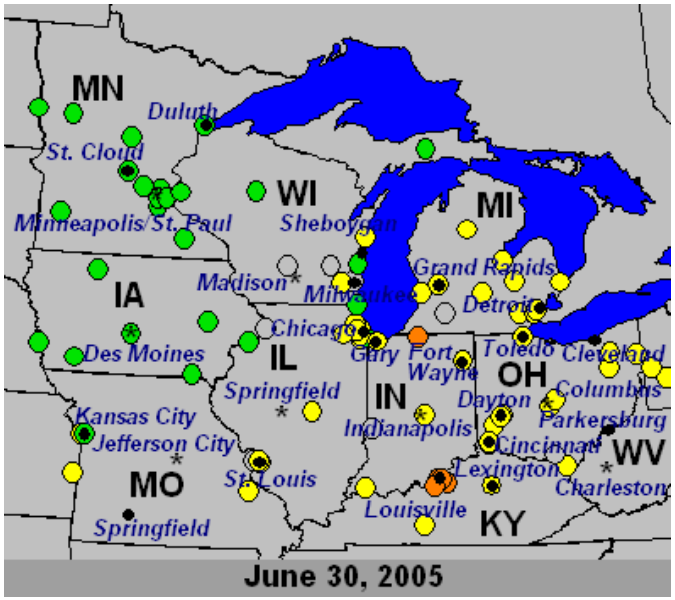
Wind Rose – Dubois County



Back Trajectory – Evansville

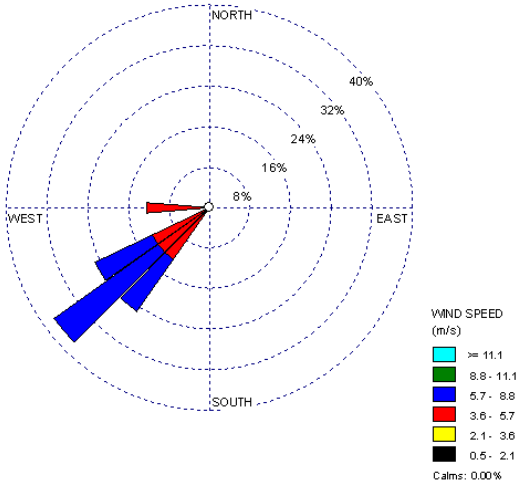


AirNow - Midwest

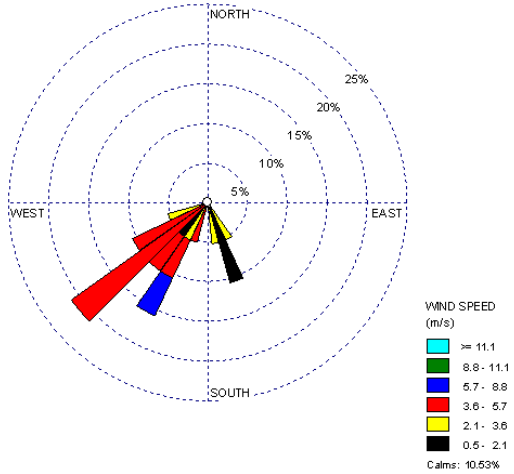


	Jasper Post Office	Knox Co	Spencer Co.	Civic Center	W. Mill Road	Univ. Of Evansville
6/30/2005	35.4	Did not report	Did not report	31.4	31.8	31.6

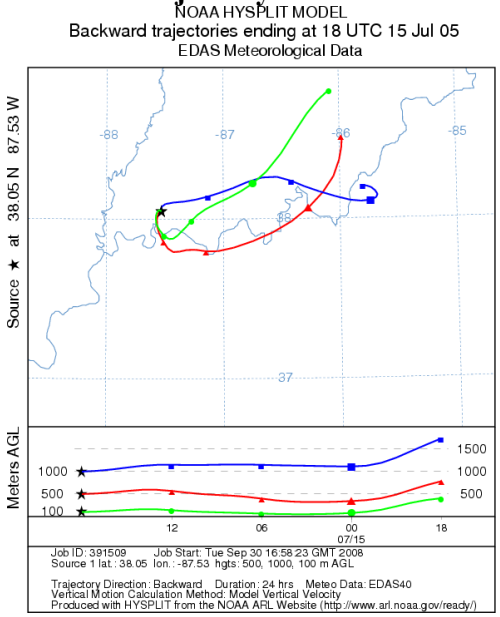
Wind Rose - Evansville



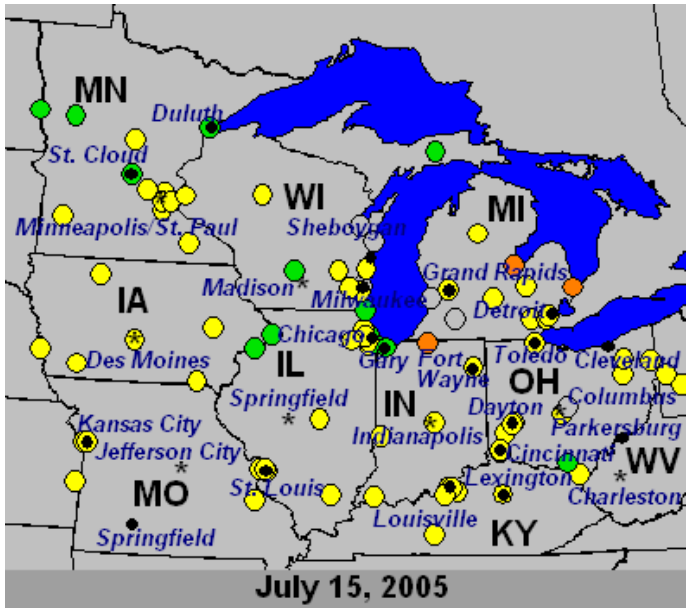
Wind Rose – Dubois County



Back Trajectory – Evansville

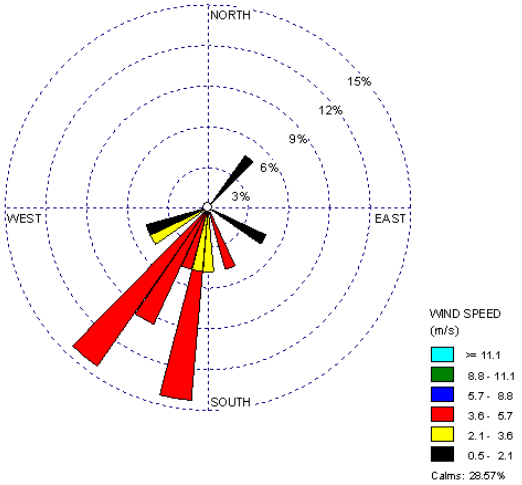


AirNow - Midwest

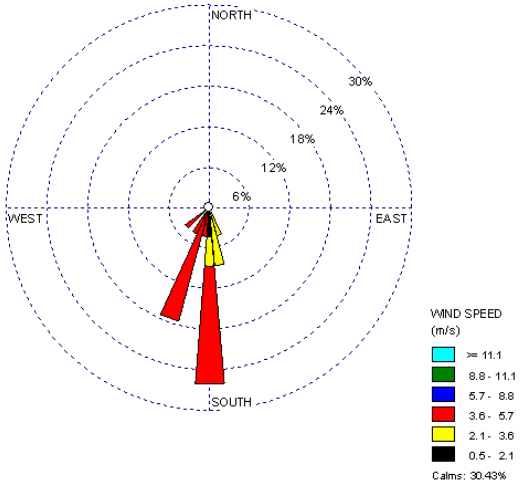


	Jasper Post Office	Knox Co	Spencer Co.	Civic Center	W. Mill Road	Univ. Of Evansville
7/15/2005	31.5	20.3	33.9	33.6	32.6	32.9

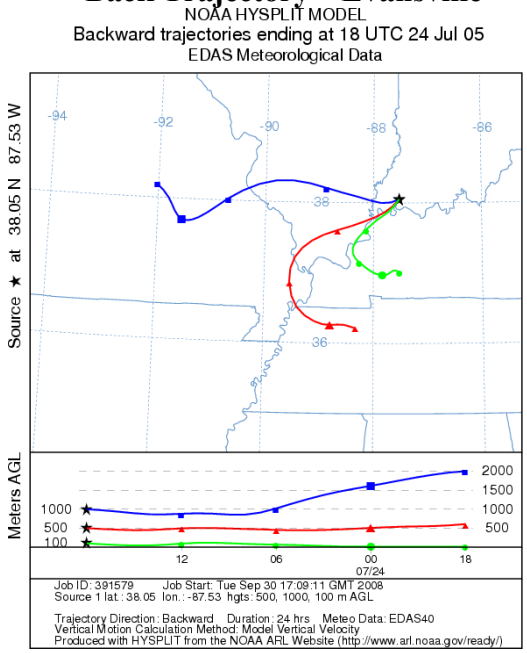
Wind Rose - Evansville



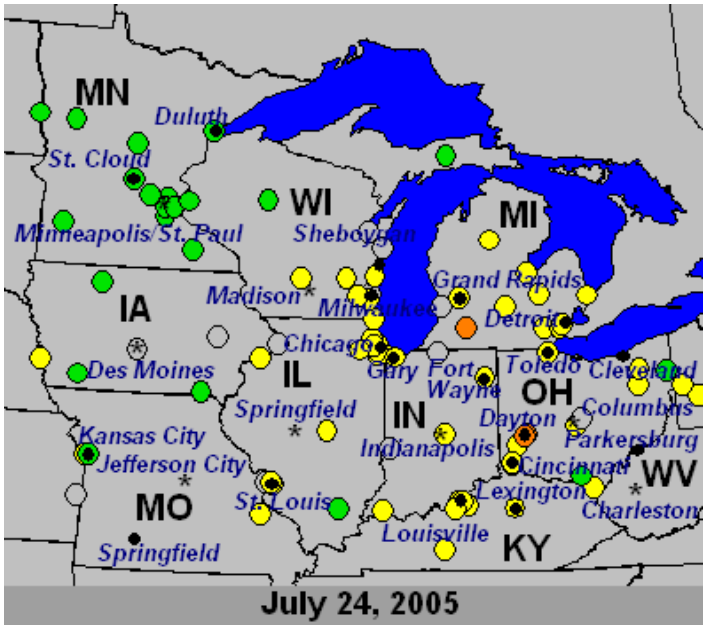
Wind Rose – Dubois County



Back Trajectory – Evansville

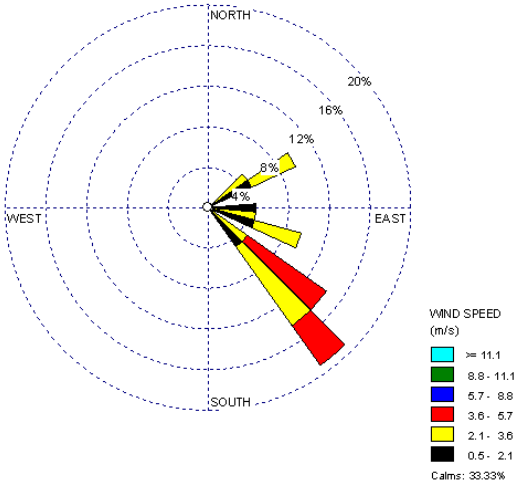


AirNow - Midwest

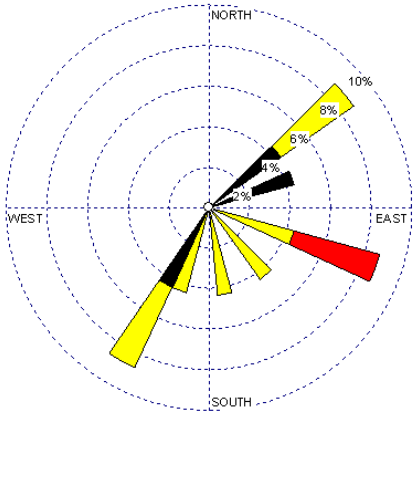


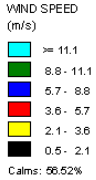
	Jasper Post Office	Knox Co	Spencer Co.	Civic Center	W. Mill Road	Univ. Of Evansville
7/24/2005	38.6	37.9	Did not report	35.5	33.1	34.0

Wind Rose - Evansville

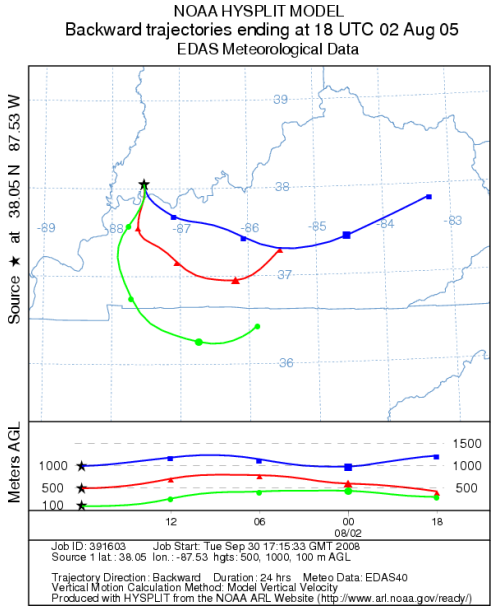


Wind Rose – Dubois County

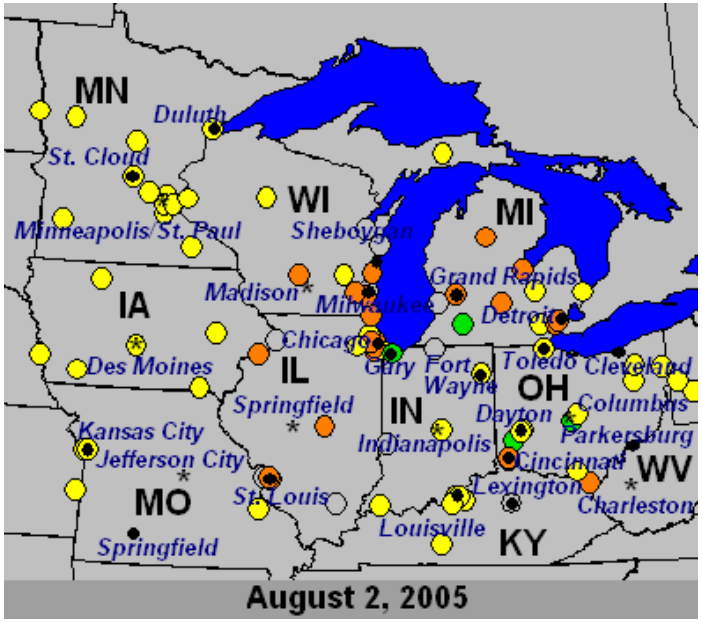




Back Trajectory – Evansville

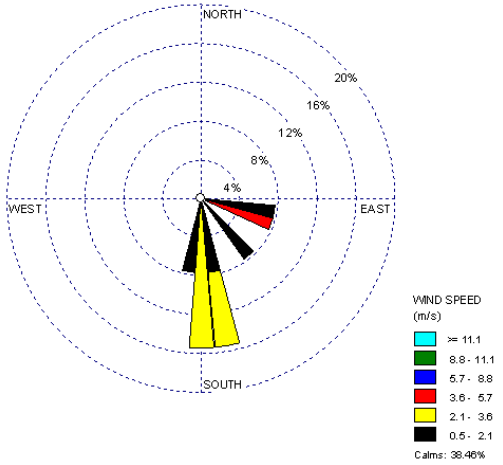


AirNow - Midwest

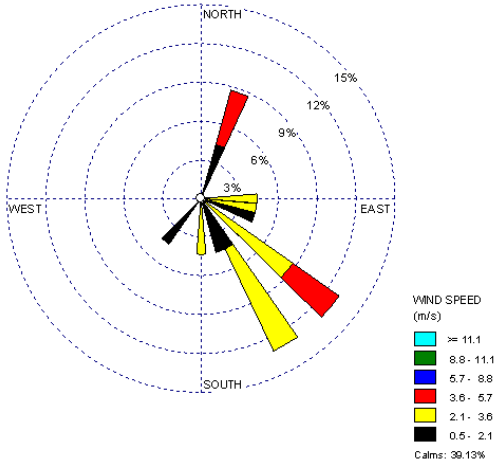


	Jasper Post Office	Knox Co	Spencer Co.	Civic Center	W. Mill Road	Univ. Of Evansville
8/2/2005	28.5	41.8	32.1	27.1	29.0	27.7

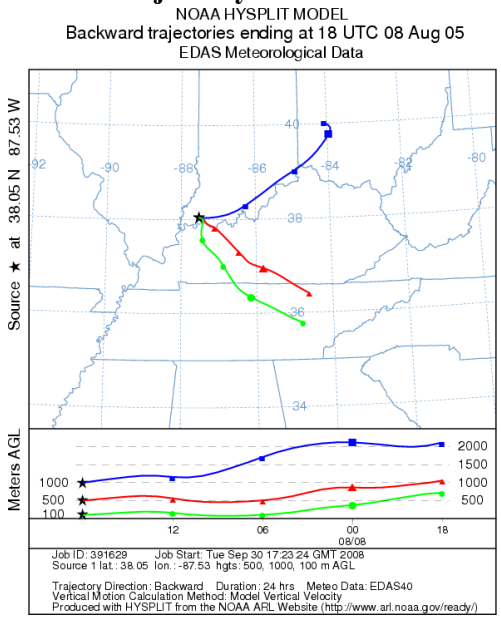
Wind Rose - Evansville



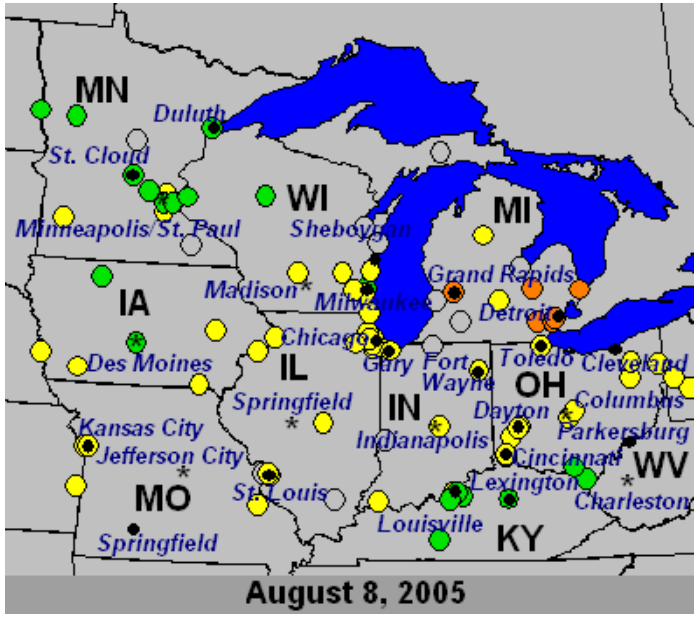
Wind Rose – Dubois County



Back Trajectory – Evansville

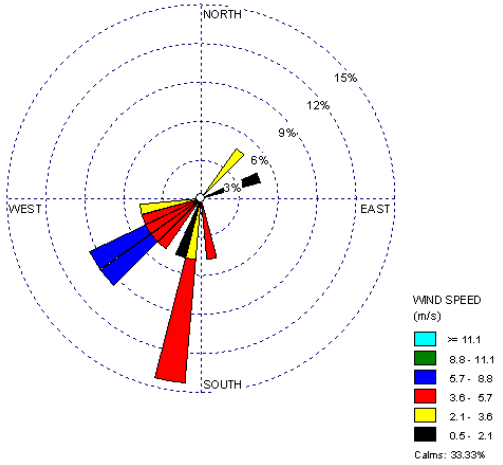


AirNow - Midwest

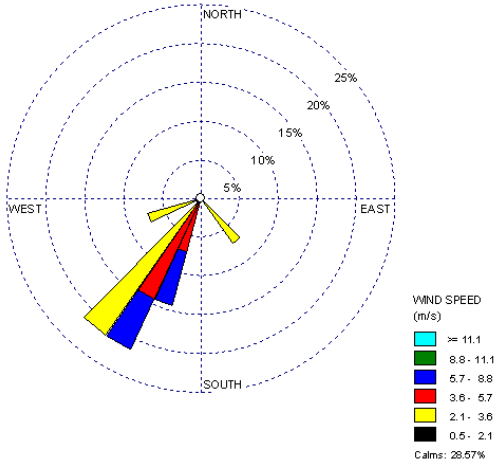


	Jasper Post Office	Knox Co	Spencer Co.	Civic Center	W. Mill Road	Univ. Of Evansville
8/8/2005	23.7	40.5	21.2	31.2	28.4	29.7

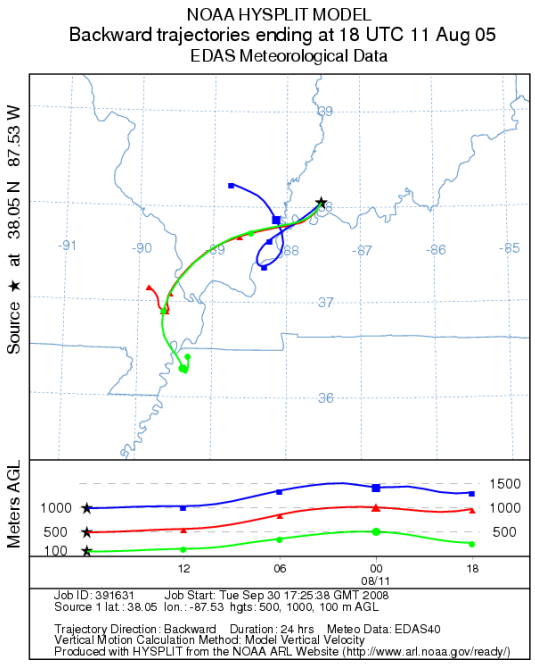
Wind Rose - Evansville



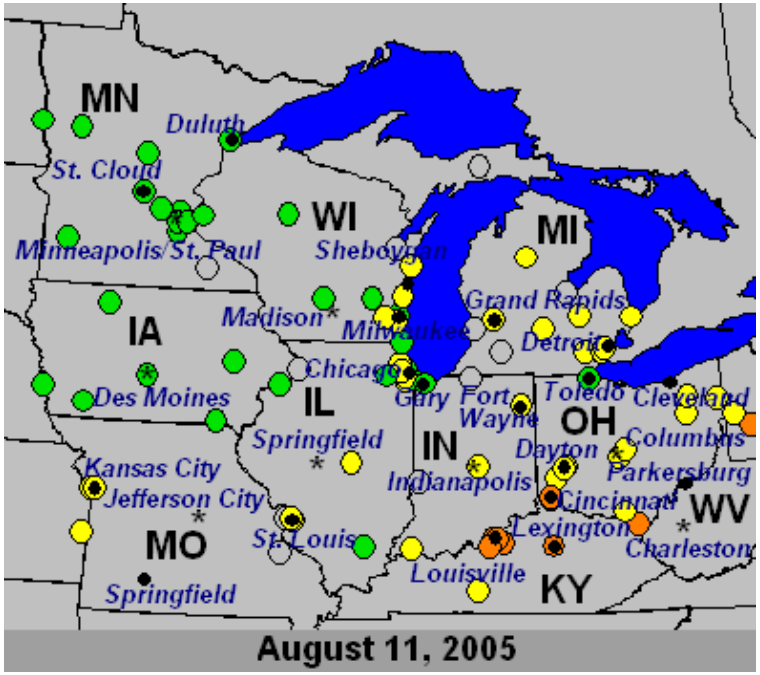
Wind Rose – Dubois County



Back Trajectory – Evansville

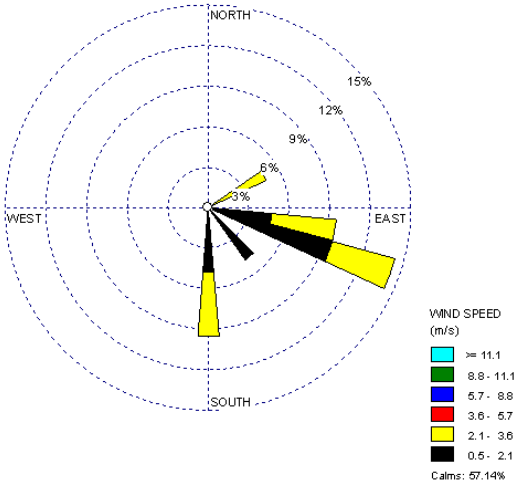


AirNow - Midwest

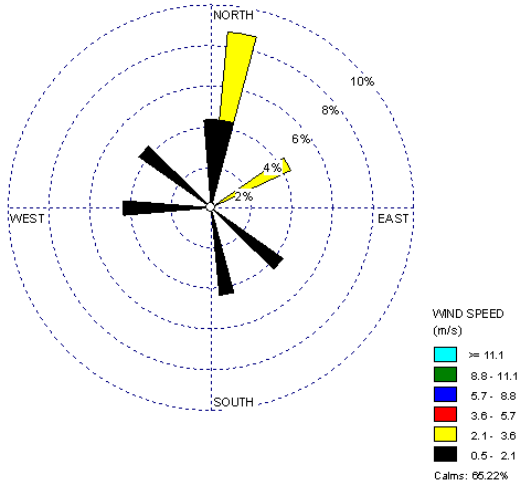


	Jasper Post Office	Knox Co	Spencer Co.	Civic Center	W. Mill Road	Univ. Of Evansville
8/11/2005	32.9	22.3	Did not report	24.4	Did not report	25.0

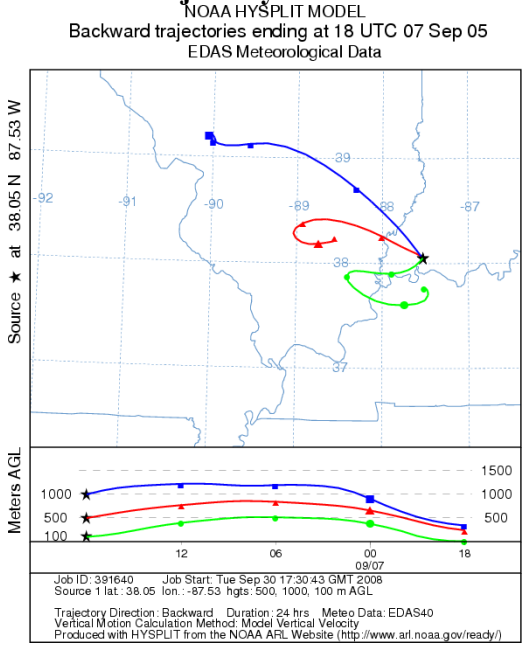
Wind Rose - Evansville



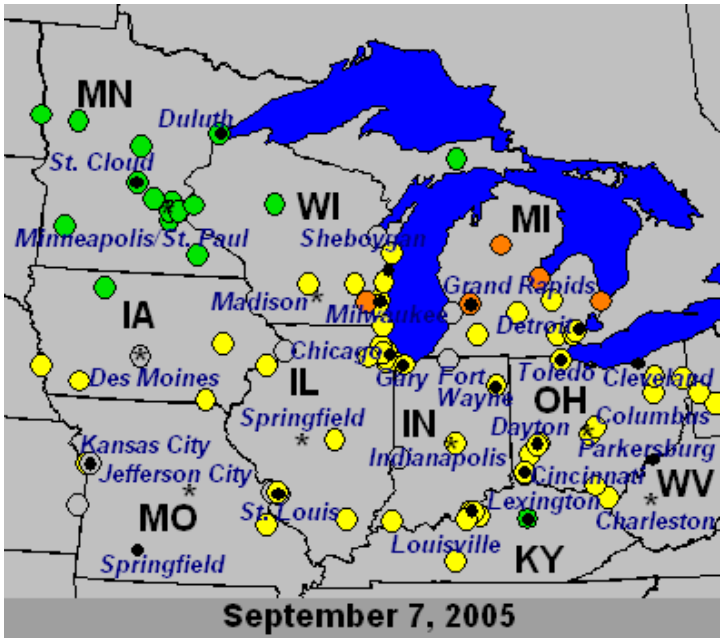
Wind Rose – Dubois County



Back Trajectory – Evansville

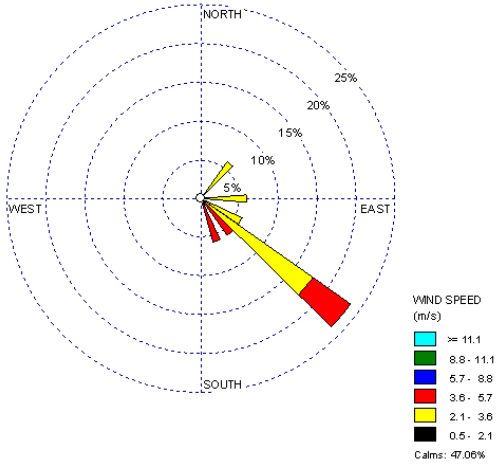


AirNow - Midwest

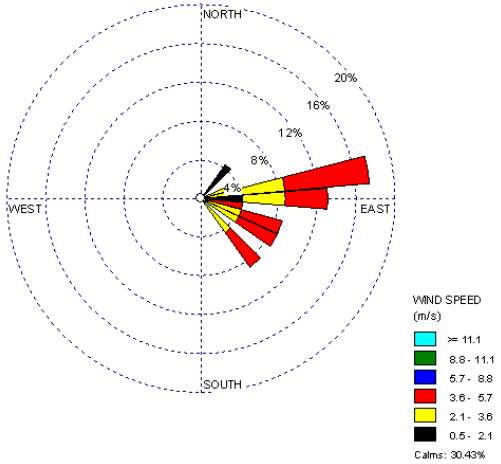


	Jasper Post Office	Knox Co	Spencer Co.	Civic Center	W. Mill Road	Univ. Of Evansville
9/7/2005	42.1	37.9	40.9	42.5	41.5	41.7

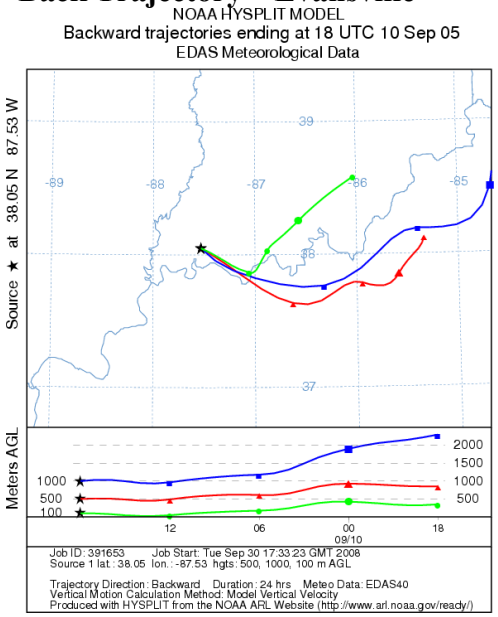
Wind Rose - Evansville



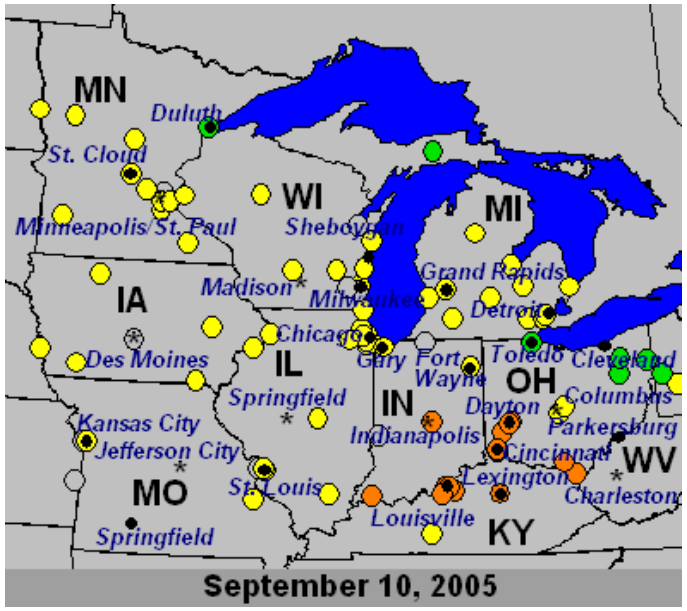
Wind Rose – Dubois County



Back Trajectory – Evansville

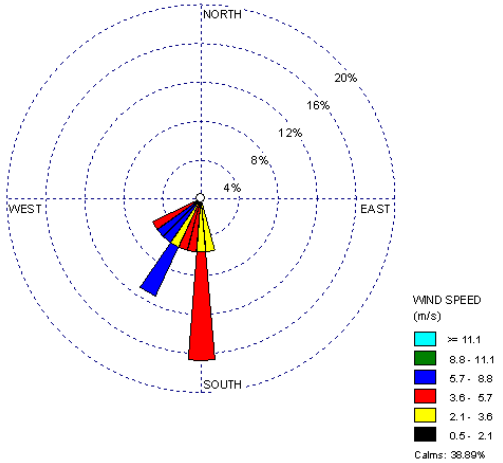


AirNow - Midwest

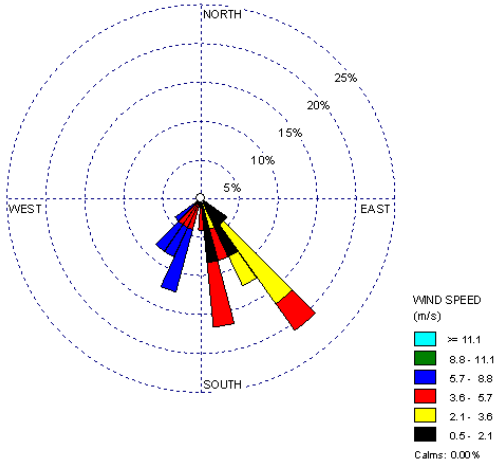


	Jasper Post Office	Knox Co	Spencer Co.	Civic Center	W. Mill Road	Univ. Of Evansville
9/10/2005	41.2	41.8	Did not report	42.6	43.2	41.7

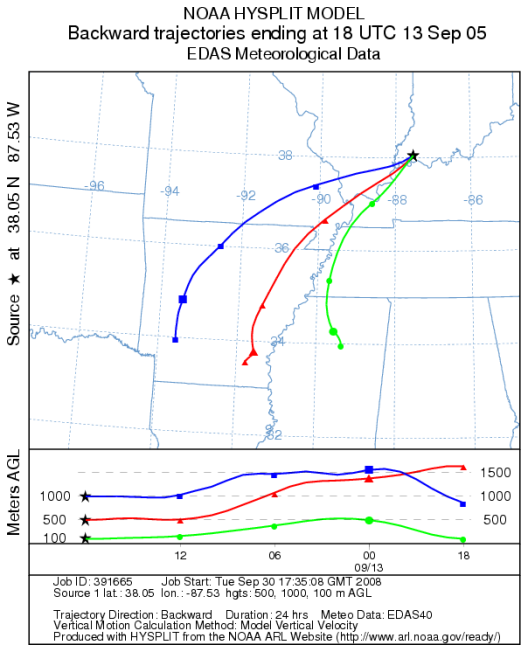
Wind Rose - Evansville



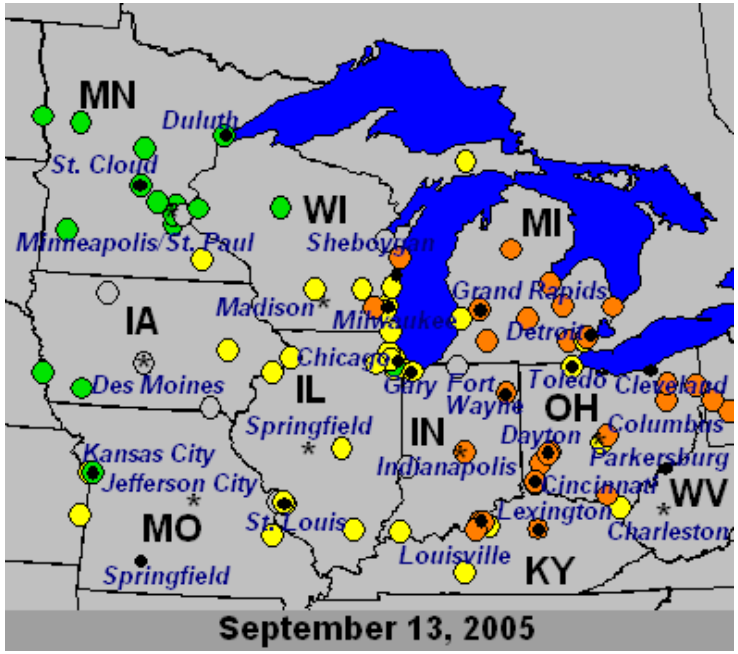
Wind Rose – Dubois County



Back Trajectory – Evansville

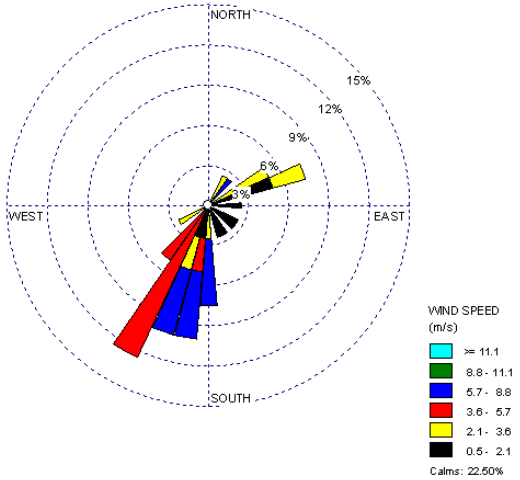


AirNow - Midwest

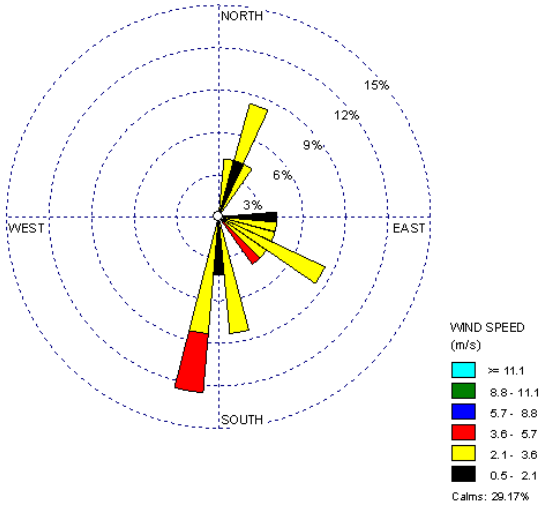


	Jasper Post Office	Knox Co	Spencer Co.	Civic Center	W. Mill Road	Univ. Of Evansville
9/13/2005	39.4	37.1	39.7	37.1	37.0	37.0

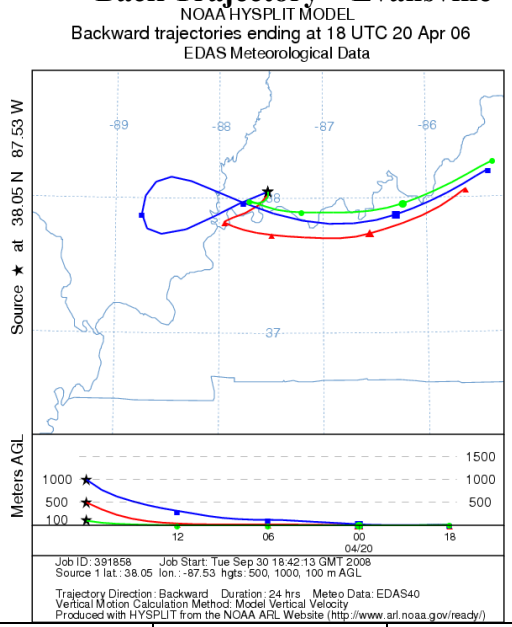
Wind Rose – Vanderburgh County



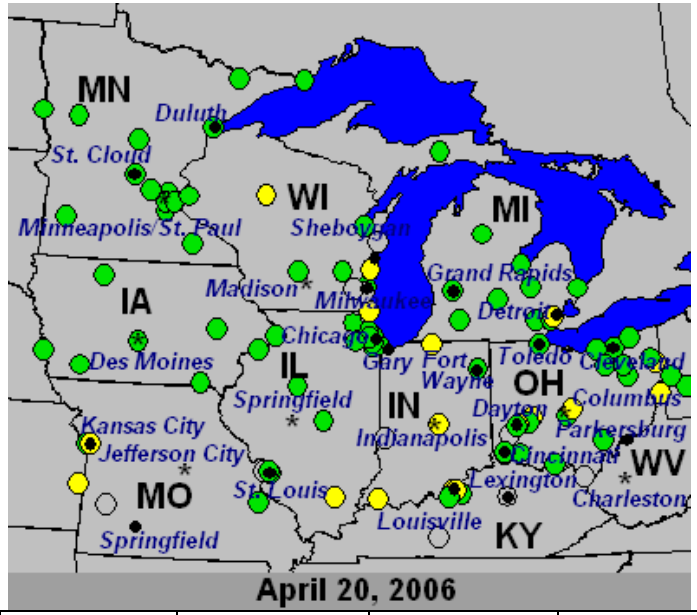
Wind Rose – Dubois County



Back Trajectory – Evansville

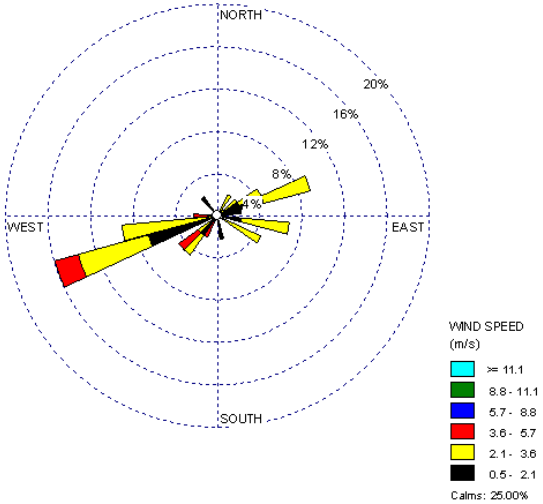


AirNow - Midwest

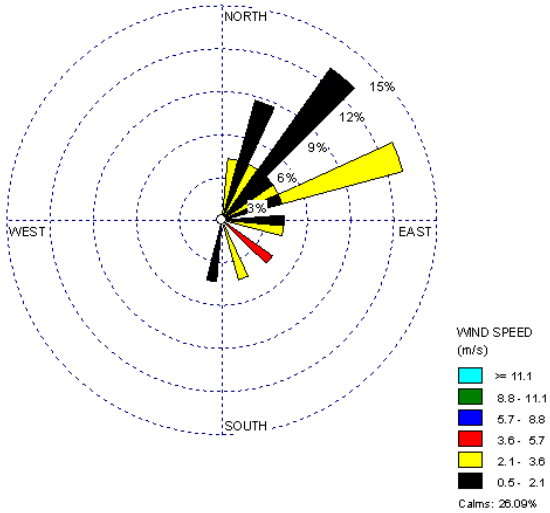


	Jasper Golf Course	Sports Complex	Jasper Post Office	Knox Co	Spencer Co.	Civic Center	W. Mill Road	Univ. Of Evansville
4/20/2006	Did not report	Did not report	Did not report	33.8 ug/m3	36.1	34.6	33.1	36.2

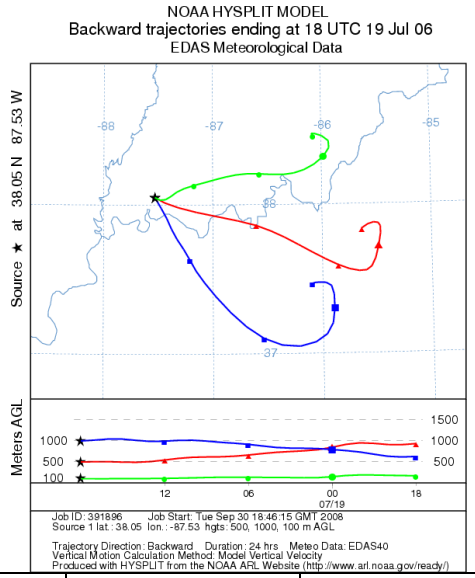
Wind Rose - Evansville



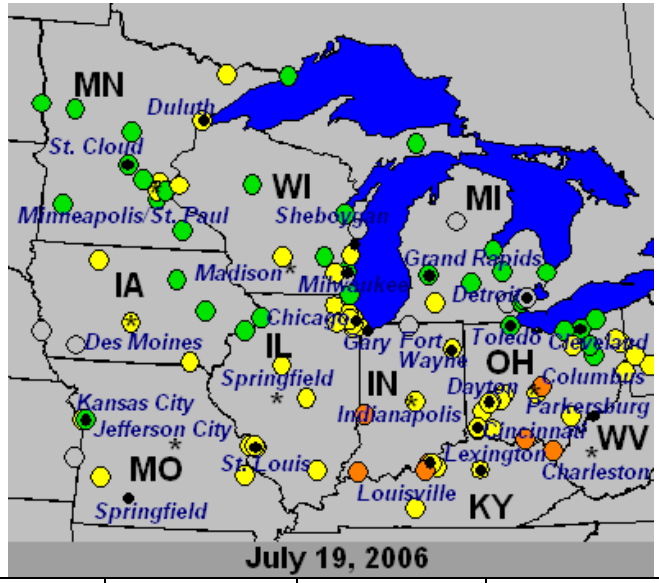
Wind Rose – Dubois County



Back Trajectory – Evansville

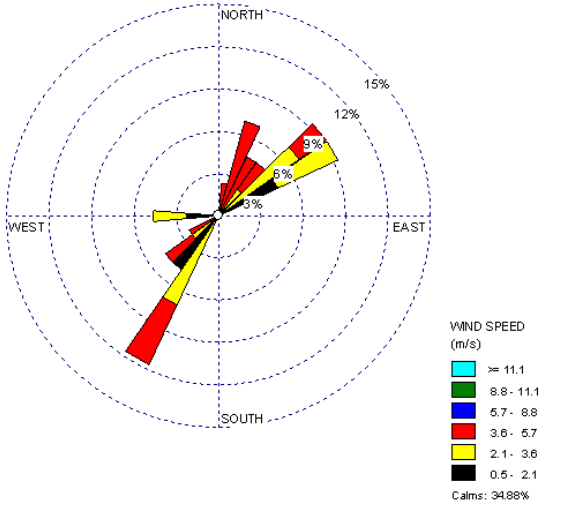


AirNow - Midwest

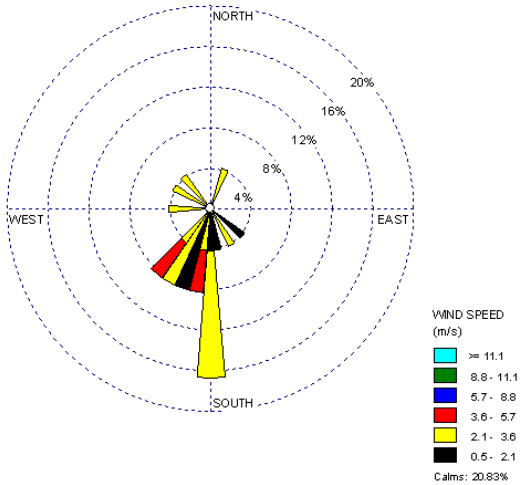


	Jasper Golf Course	Sports Complex	Jasper Post Office	Knox Co	Spencer Co.	Civic Center	W. Mill Road	Univ. Of Evansville
7/19/2006	45.9	45.2	45.2	47.8	45.3	55.8	53.4	55.9

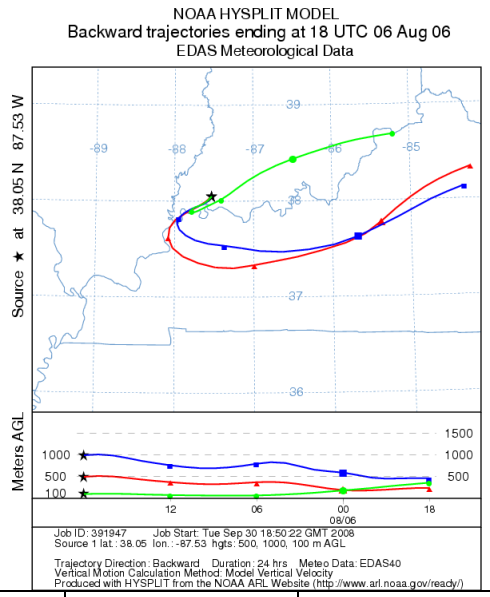
Wind Rose - Evansville



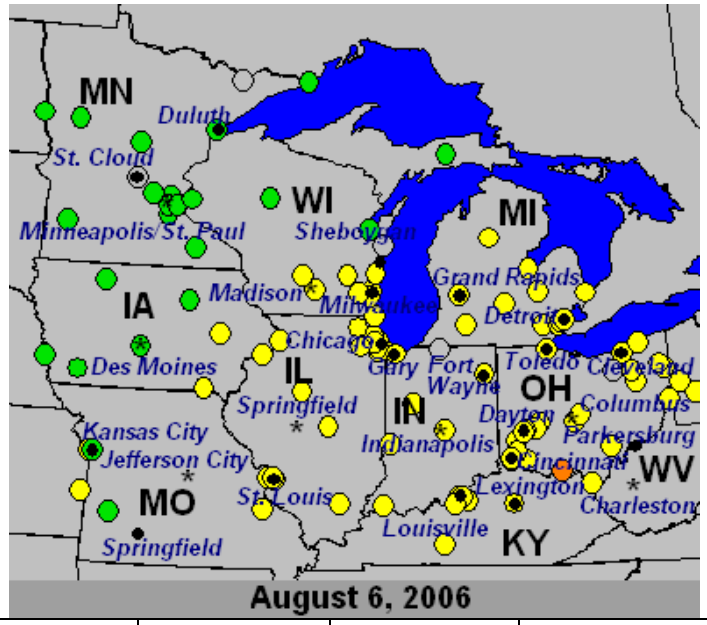
Wind Rose – Dubois County



Back Trajectory – Evansville

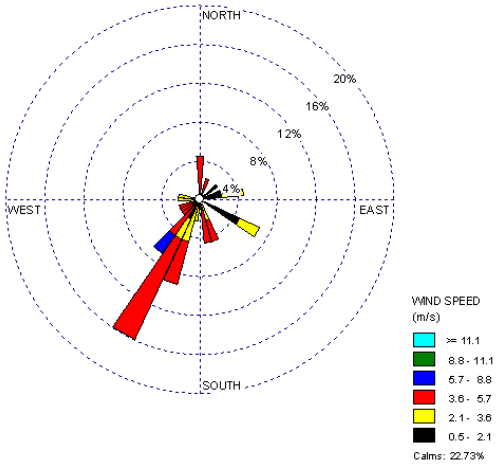


AirNow - Midwest

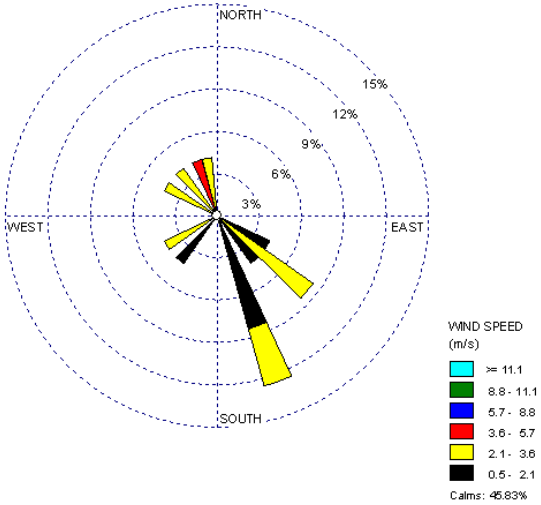


	Jasper Golf Course	Sports Complex	Jasper Post Office	Knox Co	Spencer Co.	Civic Center	W. Mill Road	Univ. Of Evansville
8/6/2006	33.6	32.2	31.6	36.2	29.7	28.2	27.9	26.3

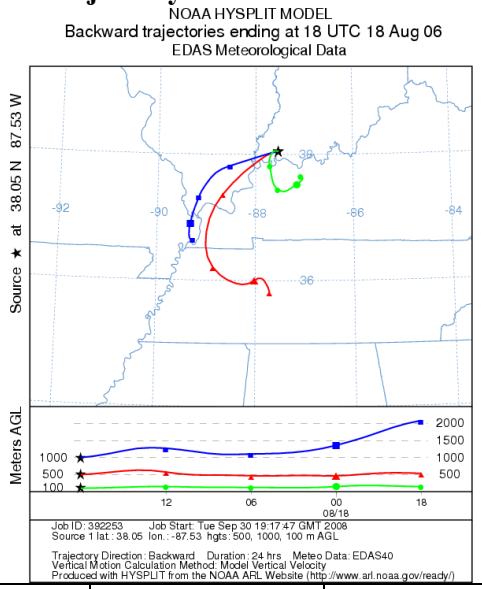
Wind Rose - Evansville



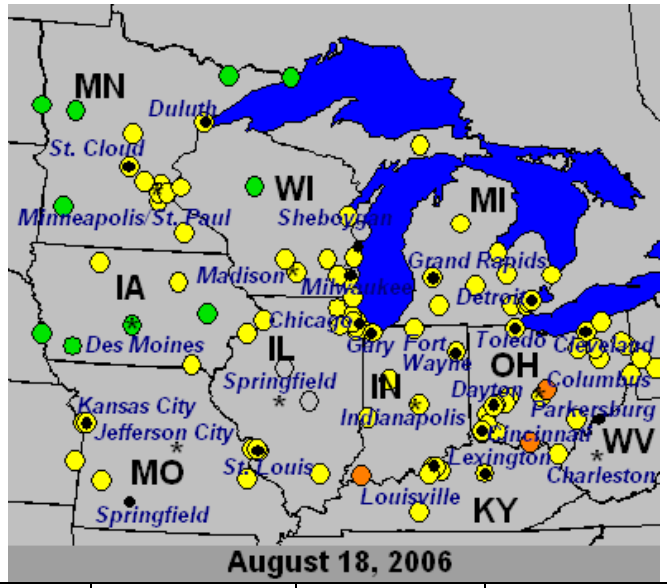
Wind Rose – Dubois County



Back Trajectory – Evansville

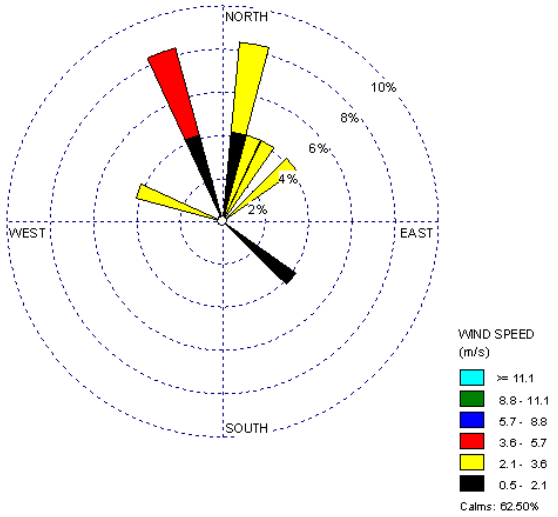


AirNow - Midwest

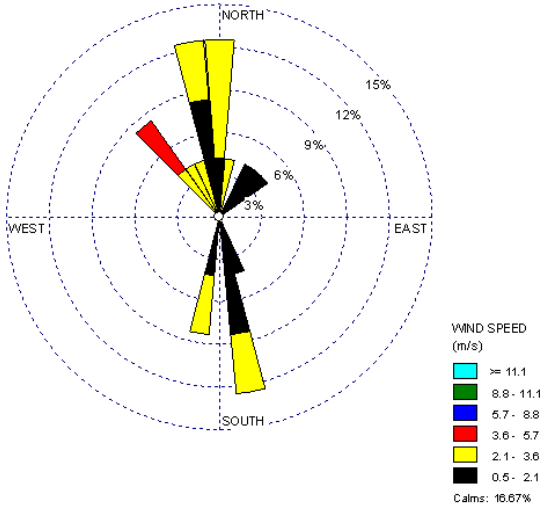


	Jasper Golf Course	Sports Complex	Jasper Post Office	Knox Co	Spencer Co.	Civic Center	W. Mill Road	Univ. Of Evansville
8/18/2006	Did not report	43.1	44.3	38.4	Did not report	39.6	40.2	40.5

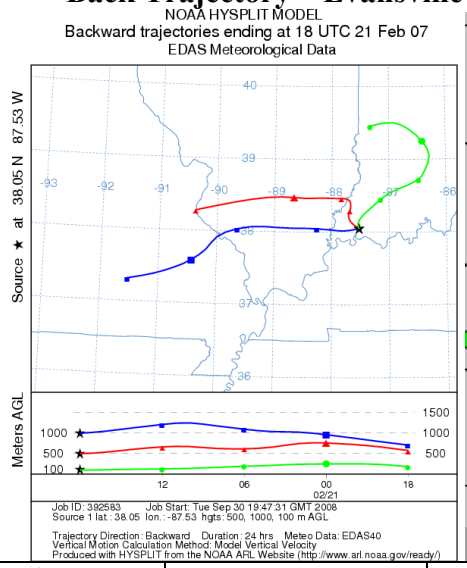
Wind Rose – Vanderburgh County



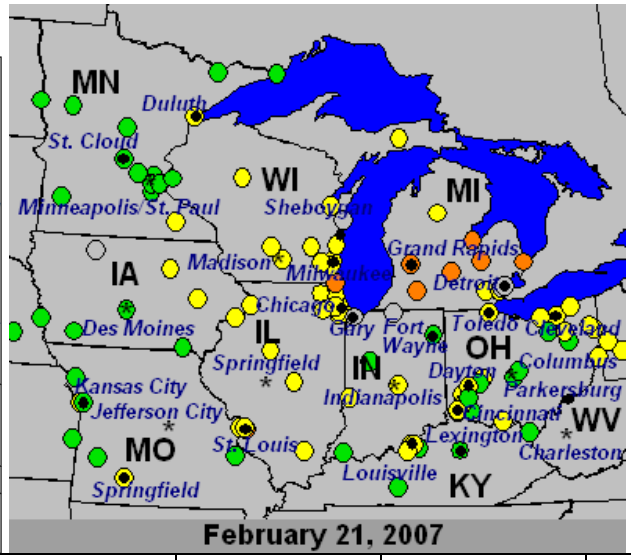
Wind Rose – Dubois County



Back Trajectory – Evansville

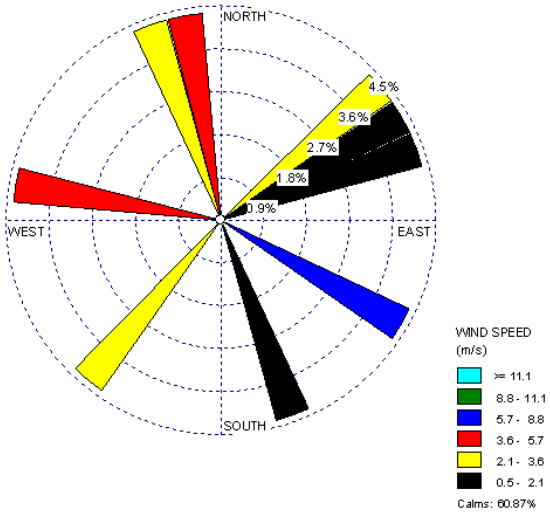


AirNow - Midwest

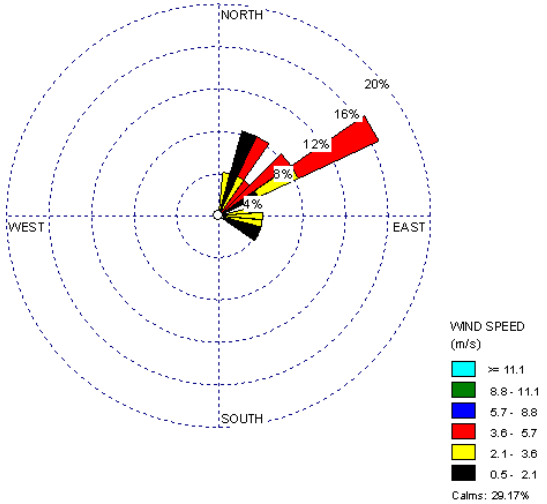


	Sports Complex	Jasper Golf Course	Jasper Post Office	Knox Co	Spencer Co.	Civic Center	W. Mill Road	Univ. Of Evansville
2/21/2007	Did not report	Did not report	34.7	Did not report	Did not report	Did not report	Did not report	Did not report

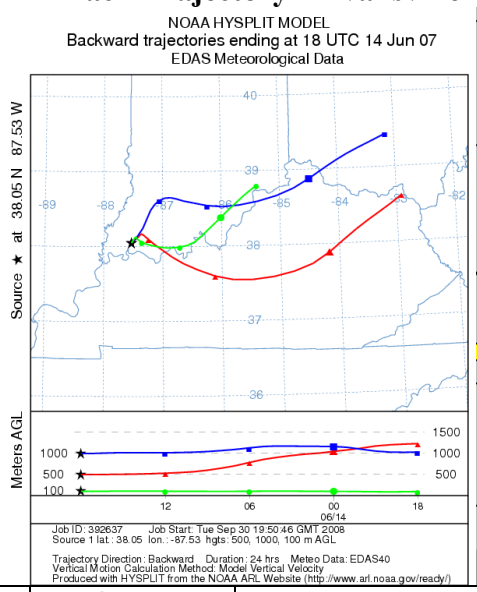
Wind Rose - Evansville



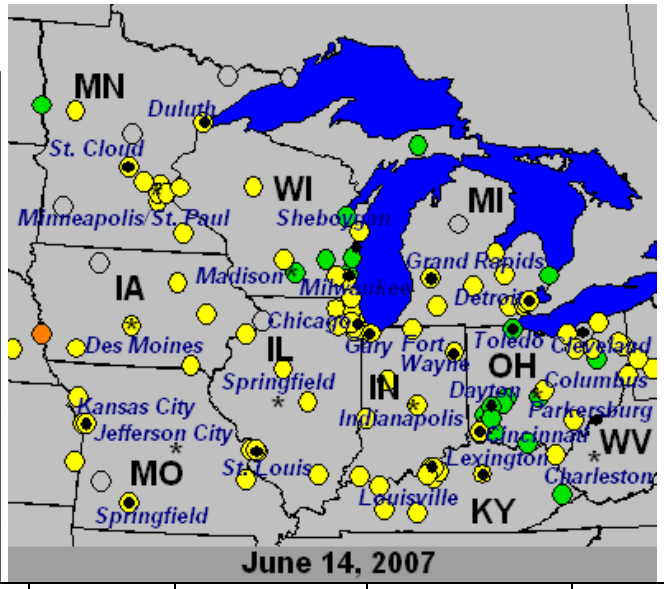
Wind Rose – Dubois County



Back Trajectory – Evansville

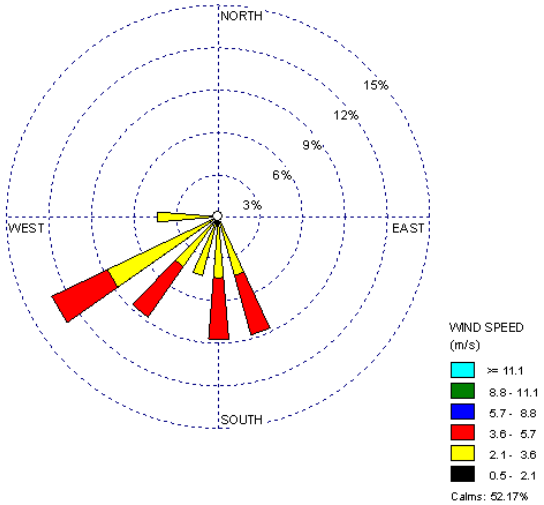


AirNow - Midwest

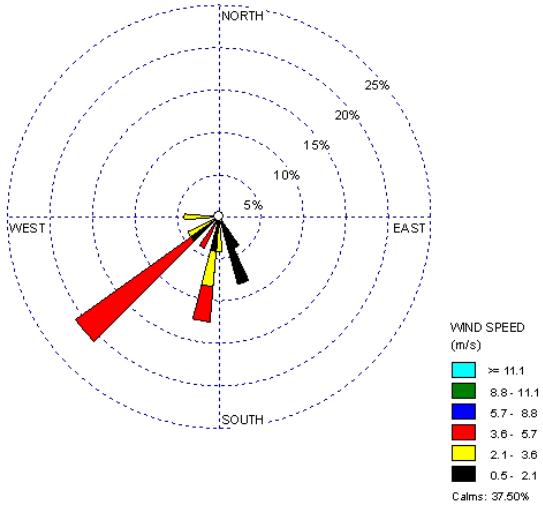


	Sports Complex	Jasper Golf Course	Jasper Post Office	Knox Co	Spencer Co.	Civic Center	W. Mill Road	Univ. Of Evansville
6/14/2007	24.2	Did not report	23.6	24.5	25.4	Did not report	28.2	31.5

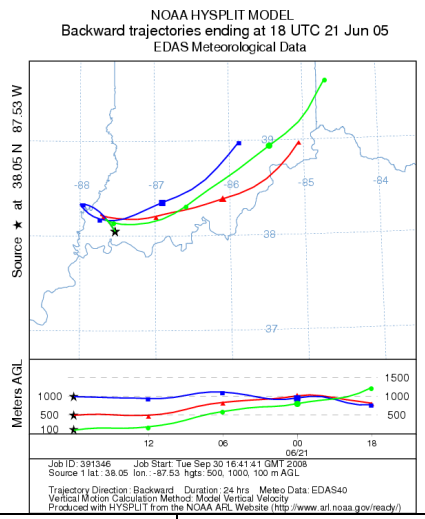
Wind Rose - Evansville



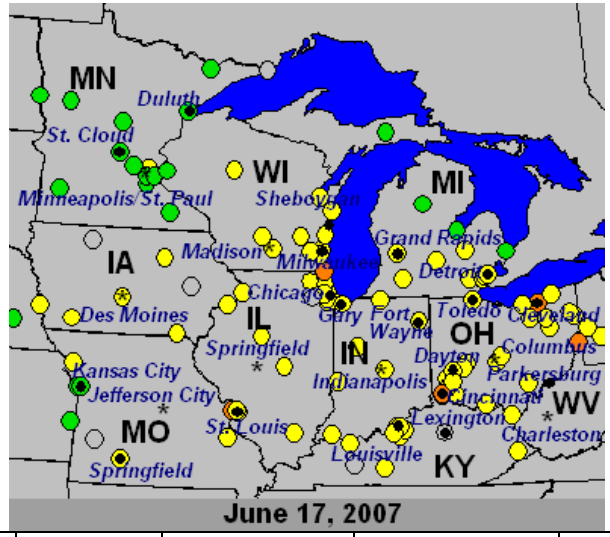
Wind Rose – Dubois County



Back Trajectory – Evansville



AirNow - Midwest



	Sports Complex	Jasper Golf Course	Jasper Post Office	Knox Co	Spencer Co.	Civic Center	W. Mill Road	Univ. Of Evansville
6/17/2007	32.5	31.9	31.0	31.2	31.1	Did not report	29.1	29.6

Southwest Indiana Major Stationary Source Controls

U.S. EPA and LADCO modeling for future year design values have consistently shown that existing national emission control measures will bring the Southwest Indiana counties into attainment of the annual $PM_{2.5}$ NAAQS. Emission control measures to be implemented over the next several years will provide even greater assurance that air quality will continue to meet the standard into the future. U.S. EPA future year modeling of national emission control strategies showed the Southwest Indiana counties will attain the 24-hour $PM_{2.5}$ NAAQS without additional national emission controls by 2009. Future national and local emission control strategies will ensure that each $PM_{2.5}$ attainment area in Southwest Indiana will be maintained with an increasing margin of safety over time.

Most of the primary stationary sources within the Southwest Indiana region are already subject to federal control programs, including Best Available Retrofit Technology (BART). Since BART is considered equivalent to Reasonably Available Control Technology (RACT), these sources would not be subject to RACT requirements for nonattainment areas under the implementation rule for $PM_{2.5}$. As a result, the inclusion of counties beyond those where monitored violations occur will not achieve additional emission reductions or advance the attainment date under the 24-hour $PM_{2.5}$ standard.

The designation of counties that measure air quality that meets the standard (i.e., Dubois and Spencer), or counties or portions of counties with major stationary sources would serve no purpose. Additional emission reductions will not be achieved, currently violating counties will achieve compliance in advance of the applicable deadline, and the attainment date will not move forward or backward as a result.

Tippecanoe County

Indiana Recommendation

On May 30, 2008, Indiana recommended Tippecanoe County be designated as nonattainment based on 2005-2007 monitoring data.

U.S. EPA Proposed Nonattainment Designation

On August 18, 2008, U.S. EPA indicated its intention to include Tippecanoe County in the Lafayette nonattainment area.

The proposed nonattainment designation for Tippecanoe County is based solely on a violation of the 24-hour $PM_{2.5}$ standard from 2005-2007. However, air quality has improved significantly and the area will attain the standard by the close of 2008. U.S. EPA must ensure that designations are effective based on 2006-2008 monitoring data and that Tippecanoe County is designated in accordance with the most current measured air quality.