IOWA DEPARTMENT OF NATURAL RESOURCES

2010 – 2014 AERMOD Meteorological Data

Technical Support Document

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Contents

Introduction 1
Data Acquisition 2
Meteorological Data - Surface 2
Meteorological Data - Upper Air 2
Meteorological Data - 1-Minute 2
Land Cover Data 2
Locations and Elevations 2
Representivity Analysis 4
Instrument Exposure 4
Temporal Proximity 5
Geographic Features, Land Cover and Spatial Proximity 5
Fill Missing Surface Data 20
Fill Missing Upper Air Data 22
1-Minute Data (AERMINUTE) 23
Land Use Analysis 24
Snow Cover and Surface Moisture Conditions 24
Land Cover Data 29
Processing Data in AERSURFACE 39
Comparison of Model Results 40
References 47

Appendix A – Meteorological Observation Station Information
Appendix B – Comparison of Model Results by Location

Introduction

This document serves as a technical discussion of the methodology used to process the 2010 – 2014 meteorological data for AERMOD. It focuses on those portions of the process that are not described in the AERMET user guide, or where the instructions in the AERMET user guide were expanded upon. These topics include:

- Data acquisition
- Representivity analysis
- Filling missing data
- Use of AERMINUTE to process 1-minute wind data
- Land-use analysis
- Analysis of the expected change in AERMOD predictions as a result of using the new meteorological data

For a detailed description of the methodology used to process meteorological data using EPA's AERMET preprocessor, please refer to the AERMET user guide.

Data Acquisition

Meteorological Data – Hourly Surface

The 2010-2014 surface meteorological data were obtained from the National Climatic Data Center (NCDC) (1). The TD-3505, or Integrated Surface Hourly (ISH) data, was chosen because it is the most comprehensive format available that is compatible with AERMET. This dataset was downloaded as compressed files from the NCDC's online file transfer protocol (ftp) directory (2). A total of 91 surface observation stations in and around Iowa were extracted from the compressed files.

Meteorological Data - Upper Air

The 2010-2014 upper air data were obtained from the online National Oceanic and Atmospheric Association Earth System Research Laboratory (NOAA/ESRL) Radiosonde Database (3). The Forecast Systems Laboratory (FSL) format was chosen because it is the only format available from this website that is compatible with AERMET. This dataset was obtained as a series of text files. Data were obtained for a total of four upper-air observation stations in and around Iowa.

Meteorological Data - 1-Minute Surface

The 2010-2014 1-minute wind data were obtained from the NCDC's online file transfer protocol (ftp) directory (4). The 1-minute data are divided into two datasets: 6405 and 6406. The 6405 dataset contains primarily wind data (5) whereas the 6406 dataset contains temperature, dew point, precipitation and pressure (6). The AERMINUTE preprocessor only uses the wind data, so only the 6405 dataset was downloaded. This dataset was obtained as a series of text files. Of the 91 surface observation stations, 1-minute data was downloaded for 23 stations.

Land Cover Data

Land cover data were obtained from the U.S Geological Survey's The National Map (7). The land cover data are from the 1992 National Land Cover Dataset (NLCD 1992), and were obtained in GEOTIFF format because that is the format compatible with the AERSURFACE preprocessor.

Locations and Elevations

There is some uncertainty regarding the accuracy of the location information provided with Automated Surface Observing System (ASOS) data. It has been shown that the location provided for many of the ASOS stations can be off by several hundred meters or more (8) (9). This uncertainty necessitates an alternate method for determining the actual locations of these sites.

Online sources of aerial photography, such as Google Earth (10), Bing Maps (11) and the Iowa Geographic Map Server (12) were used to visually locate the instrument towers. Most ASOS sites near major cities are easily identifiable because these locations are generally covered by high-resolution photography. The tower is not as easily identifiable in lower resolution photographs, but the tower location at airports is consistently near the main runway(s). This knowledge was useful in deciphering which object in the low resolution photography could be the meteorological instrument tower. In a few cases, the actual location was confirmed via physical inspection of the site. The locations of the upper-air sites were based on the observed location of the rawinsonde balloon inflation

shelter/radiotheodolite radome at each site. The shelter and associated radome are easily identifiable in even low-resolution aerial photographs. Once each location was found visually, the coordinates and elevation of that location were determined using Google Earth. These data is summarized for each site in Appendix A, along with a description of the confidence of the coordinates at each location.

The elevation above ground of the anemometer at each location was determined using the data available on the National Weather Service's (NWS) website (13).

Representivity Analysis

A representivity analysis was conducted in preparation for the processing of new meteorological data for use in the AERMOD dispersion model. The analysis was conducted in order to determine which surface and upper air measurement sites should represent the various areas of the state, and was conducted prior to processing the data for AERMOD. As such, the results of this analysis were also utilized as a guide when making decisions related to filling missing data.

As stated in the Guideline on Air Quality Models "the meteorological data used as input to a dispersion model should be selected on the basis of spatial and climatological (temporal) representativeness as well as the ability of the individual parameters selected to characterize the transport and dispersion conditions in the area of concern" (14). Furthermore, representativeness has been defined as "the extent to which a set of measurements taken in a space-time domain reflects the actual conditions in the same or different space-time domain taken on a scale appropriate for a specific application" (15). In other words, the goal of the meteorological dataset used in a model such as AERMOD, is to provide a statistically suitable sample of the range of meteorological conditions that could occur within the modeling domain, and the frequency with which they tend to occur. The representivity of meteorological data is influenced by the following (14):

- Exposure of the instruments at the meteorological monitoring site
- Temporal proximity to the period being modeled
- Geographic features and land cover in the vicinity of the meteorological monitoring site
- Spatial proximity to the area being modeled

More detail on each of these items follows.

Instrument Exposure

Instrument exposure refers to the ability of the instruments to measure meteorological conditions without the influence of manmade or natural obstructions. If obstructions are present, they can influence the measurements of the meteorological monitoring site. For example, a tree located a few dozen feet away from an instrument tower could alter the speed and direction of the wind at the instrument. These effects may be useful in defining the microscale atmospheric conditions in the immediate vicinity of the obstruction, but would be inappropriate if applied over an entire modeling domain. As such any instrument affected by such local-scale influences should not be used to develop meteorological data for use in a dispersion model.

All surface stations used in the development of the 2010 – 2014 AERMOD meteorological data were ASOS, and all are located at airports in and around Iowa. Airport-based ASOS stations are purposely sited with good exposure so that they may provide accurate weather information for the aviation community. It is stated that "the NWS will follow the guidelines documented in the Federal Standard for Siting Meteorological Sensors at Airports" when siting ASOS stations (16). These standards include siting and exposure requirements that limit the effects of any obstructions within 1000 feet of the

anemometer (17). For these reasons it was determined that instrument exposure would not affect the representativeness of any data obtained from airport-based ASOS stations.

Instrument exposure is not a concern with upper air data because the observations occur above the surface of the earth, away from any obstructions that could affect them.

Temporal Proximity

"Consecutive years from the most recent, readily available 5-year period are preferred" for use with regulatory air dispersion modeling analyses (14). At the time that these data were obtained, 2014 was the most recent complete year available. Therefore the years 2010 – 2014 were used in the processing of the AERMOD meteorological data sets. The data observed at all surface and upper air stations were considered temporally representative of all locations in Iowa for the purposes of this analysis.

Geographic Features, Land Cover and Spatial Proximity

An objective technique using wind roses as a surrogate for the effects of local geographic features and land cover was developed to determine the best meteorological data to represent the various areas of the state. The premise of this technique is that similar wind roses from different locations are an indication that both sites are influenced by similar conditions attributable to the mesoscale flow, the geographic features, and land cover in the vicinity of each observation site.

When the wind fields observed at a significant number of sites are compared to one another, patterns emerge from the data that reveal clues about the geographic features and land cover at each site. For instance, the wind direction at a site that is located within a river valley may be aligned with the direction of the river valley instead of the predominant wind directions seen at a nearby site that is not within the valley. Similarly, due to the higher surface roughness, the average wind speed observed at a site surrounded by forests may be lower than the wind speed observed at a site surrounded by grassland. Taking these examples a step further, the geographic features and land use that exist around the measurement site will affect the shape and magnitude of the wind rose for that site. Thusly, assuming no differences in overlying mesoscale conditions and adequate instrument exposure, it can be concluded that two sites whose wind roses are similar either have similar surrounding geographic features and land cover, or the geographic features and land cover surrounding both sites have little or similar effect. In either case the meteorological observations made at one site would be considered representative of the other site.

<u>Correlating Observations between Different Measurement Sites</u>

Before the similarity of the wind roses can be determined it is first necessary to collect data from a large enough number of locations to provide adequate horizontal resolution of the wind patterns in the state. Ideally, there should be at least one observation site in each area for which representativeness will be determined. Historically, representativeness has been determined at the county level with the boundaries of the representative areas being defined by the county borders. Unfortunately, there is not a meteorological station located in every county in Iowa, so the focus was placed on finding the largest number of sites where data are collected in as similar a fashion as possible. This provided a reasonably

large sample while also minimizing biases caused by siting or data collection differences. ASOS and Automated Weather Observing System (AWOS) sites are conveniently similar in both data availability and siting criteria. Therefore, wind roses were created for a total of 91 ASOS and AWOS sites in and around Iowa using Trinity Consultants' BREEZE MetView program (18) (see example in Table 1).

Table 1. Example Joint Frequency Table of wind direction and wind speed

Dir \ Spd	≤ 3knots	≤ 6 knots	≤ 10 knots	≤ 16 knots	≤ 21 knots	> 21 knots	Total
0.0	0.14 %	0.27 %	0.91 %	0.67 %	0.10 %	0.03 %	2.12 %
10.0	0.12 %	0.38 %	0.89 %	0.49 %	0.10 %	0.00 %	1.98 %
20.0	0.14 %	0.34 %	0.93 %	0.37 %	0.04 %	0.00 %	1.82 %
30.0	0.11 %	0.30 %	0.64 %	0.30 %	0.03 %	0.00 %	1.38 %
40.0	0.12 %	0.27 %	0.35 %	0.15 %	0.01 %	0.00 %	0.91 %
50.0	0.11 %	0.20 %	0.46 %	0.15 %	0.02 %	0.01 %	0.94 %
60.0	0.09 %	0.21 %	0.38 %	0.13 %	0.02 %	0.00 %	0.83 %
70.0	0.09 %	0.18 %	0.40 %	0.13 %	0.03 %	0.00 %	0.83 %
80.0	0.08 %	0.19 %	0.40 %	0.12 %	0.03 %	0.00 %	0.82 %
90.0	0.09 %	0.19 %	0.41 %	0.13 %	0.02 %	0.00 %	0.84 %
100.0	0.12 %	0.24 %	0.50 %	0.17 %	0.01 %	0.00 %	1.05 %
110.0	0.11 %	0.29 %	0.52 %	0.17 %	0.02 %	0.00 %	1.10 %
120.0	0.10 %	0.29 %	0.65 %	0.28 %	0.03 %	0.02 %	1.37 %
130.0	0.13 %	0.26 %	0.60 %	0.31 %	0.08 %	0.01 %	1.39 %
140.0	0.18 %	0.39 %	0.79 %	0.38 %	0.05 %	0.00 %	1.79 %
150.0	0.24 %	0.48 %	0.86 %	0.24 %	0.02 %	0.00 %	1.83 %
160.0	0.29 %	0.51 %	0.93 %	0.37 %	0.08 %	0.00 %	2.19 %
170.0	0.29 %	0.58 %	1.48 %	0.77 %	0.12 %	0.00 %	3.24 %
180.0	0.29 %	0.63 %	1.64 %	0.80 %	0.13 %	0.02 %	3.51 %
190.0	0.20 %	0.52 %	1.77 %	1.24 %	0.26 %	0.05 %	4.04 %
200.0	0.16 %	0.49 %	1.66 %	1.02 %	0.18 %	0.04 %	3.54 %
210.0	0.11 %	0.31 %	1.05 %	0.70 %	0.10 %	0.01 %	2.28 %
220.0	0.09 %	0.22 %	0.52 %	0.17 %	0.01 %	0.00 %	1.03 %
230.0	0.11 %	0.27 %	0.56 %	0.24 %	0.04 %	0.01 %	1.23 %
240.0	0.15 %	0.24 %	0.40 %	0.14 %	0.02 %	0.00 %	0.96 %
250.0	0.21 %	0.40 %	0.53 %	0.11 %	0.01 %	0.00 %	1.26 %
260.0	0.18 %	0.36 %	0.37 %	0.09 %	0.01 %	0.00 %	1.00 %
270.0	0.14 %	0.19 %	0.24 %	0.04 %	0.00 %	0.00 %	0.62 %
280.0	0.13 %	0.25 %	0.37 %	0.05 %	0.00 %	0.00 %	0.80 %
290.0	0.19 %	0.43 %	0.76 %	0.19 %	0.02 %	0.00 %	1.59 %
300.0	0.22 %	0.50 %	0.99 %	0.35 %	0.03 %	0.00 %	2.09 %
310.0	0.21 %	0.61 %	1.26 %	0.57 %	0.04 %	0.00 %	2.70 %
320.0	0.25 %	0.63 %	1.36 %	0.80 %	0.12 %	0.02 %	3.18 %
330.0	0.23 %	0.62 %	1.62 %	1.22 %	0.26 %	0.04 %	4.00 %
340.0	0.18 %	0.42 %	1.15 %	0.97 %	0.19 %	0.03 %	2.95 %
350.0	0.11 %	0.23 %	0.99 %	0.91 %	0.18 %	0.03 %	2.45 %
Total	5.71 %	12.90 %	29.34 %	14.95 %	2.40 %	0.34 %	65.64 %
Calms							20.19 %
Missing							14.17 %
Total							100.00 %

To avoid introducing biases, all wind roses were created from the raw ISH data for each site without filling gaps with data from surrounding locations. The wind roses were created using the joint frequency distribution of the wind data at each location. Table 1 depicts an example of wind rose joint frequency data for one location. The wind directions are shown along the vertical axis and the wind speeds (knots) along the horizontal axis. The values shown within the body of the table are the percentages of time that the wind was observed for each combination of wind direction and speed at that location. The similarity of each pair of wind roses was determined by calculating the correlation coefficient of the joint frequency data outlined in red from the corresponding table for each site. A higher correlation indicates

the wind roses are more similar in both shape and magnitude (frequency of wind direction and wind speed), whereas a lower correlation indicates they are more dissimilar.

For example, the wind roses from Charles City, IA (Figure 1) and Oelwein, IA (Figure 2) are very similar, and have a correlation coefficient of 0.927.

Figure 1. Wind Rose for Charles City, IA (KCCY)

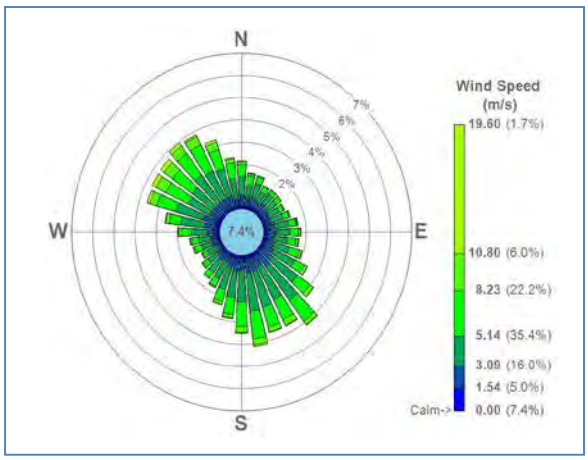
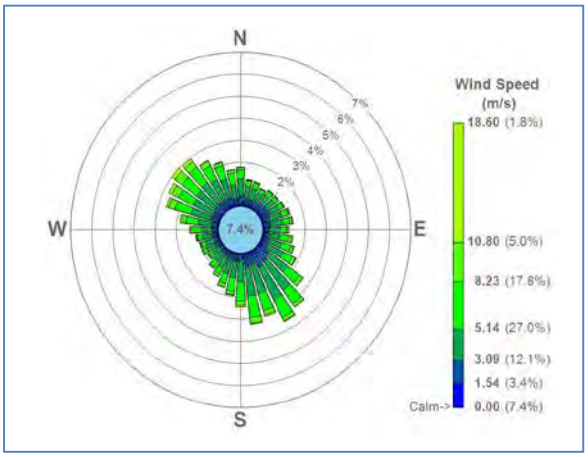


Figure 2. Wind Rose for Oelwein, IA (KOLZ)



On the other hand, the wind roses from Omaha, NE (Figure 3) and Boscobel, WI (Figure 4) are very dissimilar, and have a correlation coefficient of 0.037.

Figure 3. Wind Rose for Omaha, NE (KOMA)

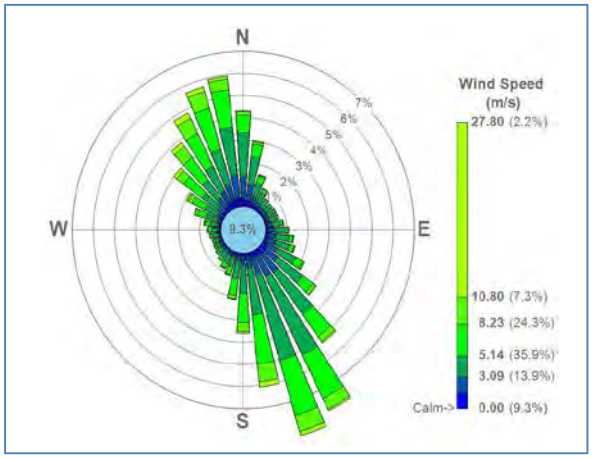
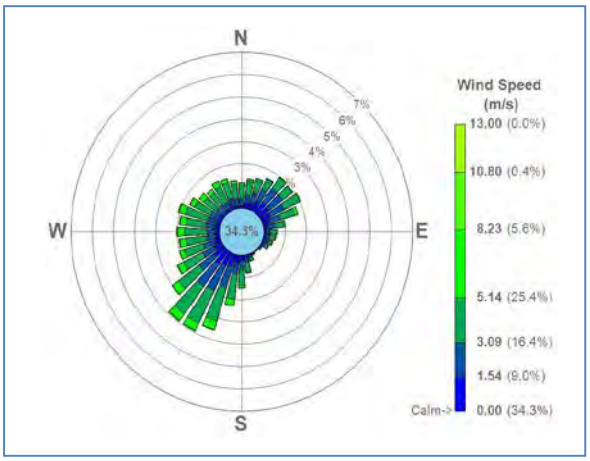


Figure 4. Wind Rose for Boscobel, WI (KOVS)



Generally, correlation coefficients of 0.9 or higher were observed when two wind roses were very similar and 0.8 or higher when only mild differences were observed between two wind roses. The differences between wind roses became more evident when the correlation coefficient was less than 0.8. For these reasons, 0.9 and 0.8 were chosen as thresholds to indicate ideal and good similarity respectively. These criteria were then used as a baseline for the remainder of this analysis. The wind roses for all sites used in this analysis can be found in Appendix A.

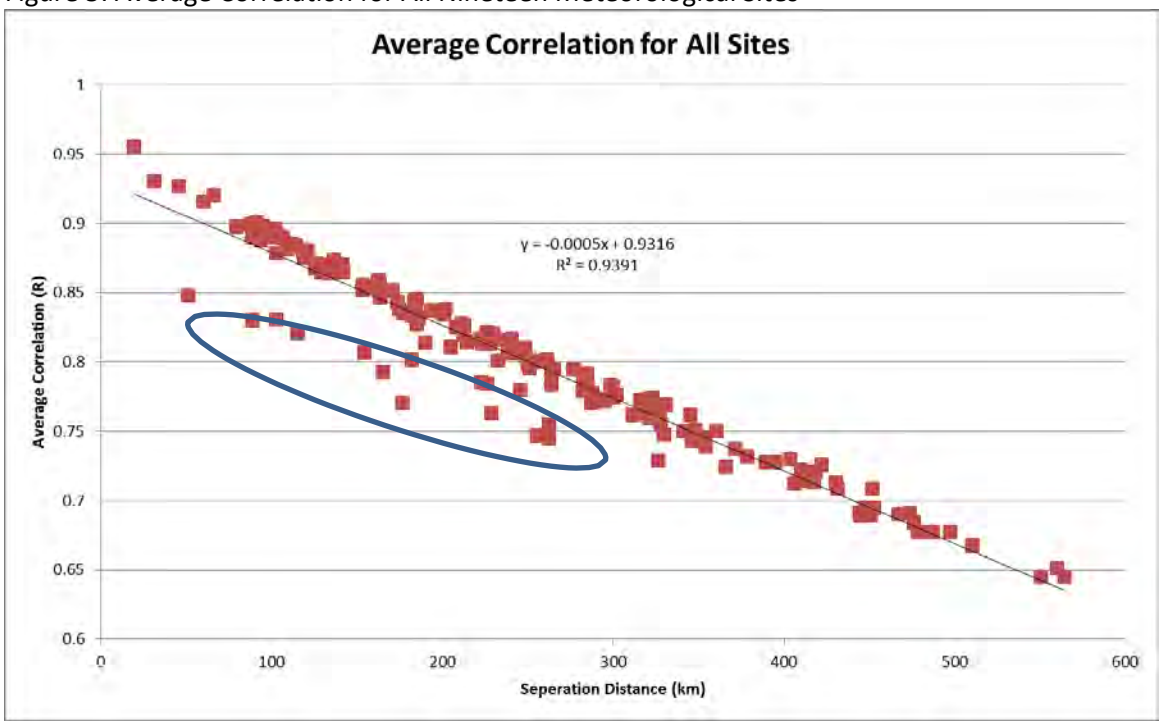
Determining the Effect of Separation Distance on Representivity

To account for spatial proximity, it was decided to apply a distance-weighted scaling factor to the wind correlation coefficient. Doing so serves to account for the potential differences caused purely by the distance between two points in the overlying mesoscale conditions, such as temperature, pressure, and cloud cover. A sensitivity analysis was conducted to evaluate the effect that separation distance has on these meteorological variables.

Nineteen ASOS meteorological sites across Iowa and surrounding states were used: Ames, Burlington, Cedar Rapids, Davenport, Des Moines, Dubuque, Estherville, Iowa City, La Crosse, Lamoni, Marshalltown, Mason City, Moline, Omaha, Ottumwa, Sioux City, Sioux Falls, Spencer and Waterloo. Hourly temperature, pressure and cloud cover observations from the existing 2005-2009 dataset were used. Using these data allowed the sensitivity analysis to be conducted prior to the processing of the 2010-2014 data for which the results would be used. Temperature, pressure and cloud cover were chosen because those are the primary meteorological variables that are used in dispersion modeling (other than wind speed and direction). Wind was not included because it can be affected by localized terrain influences, and is already considered in the wind correlation analysis described above.

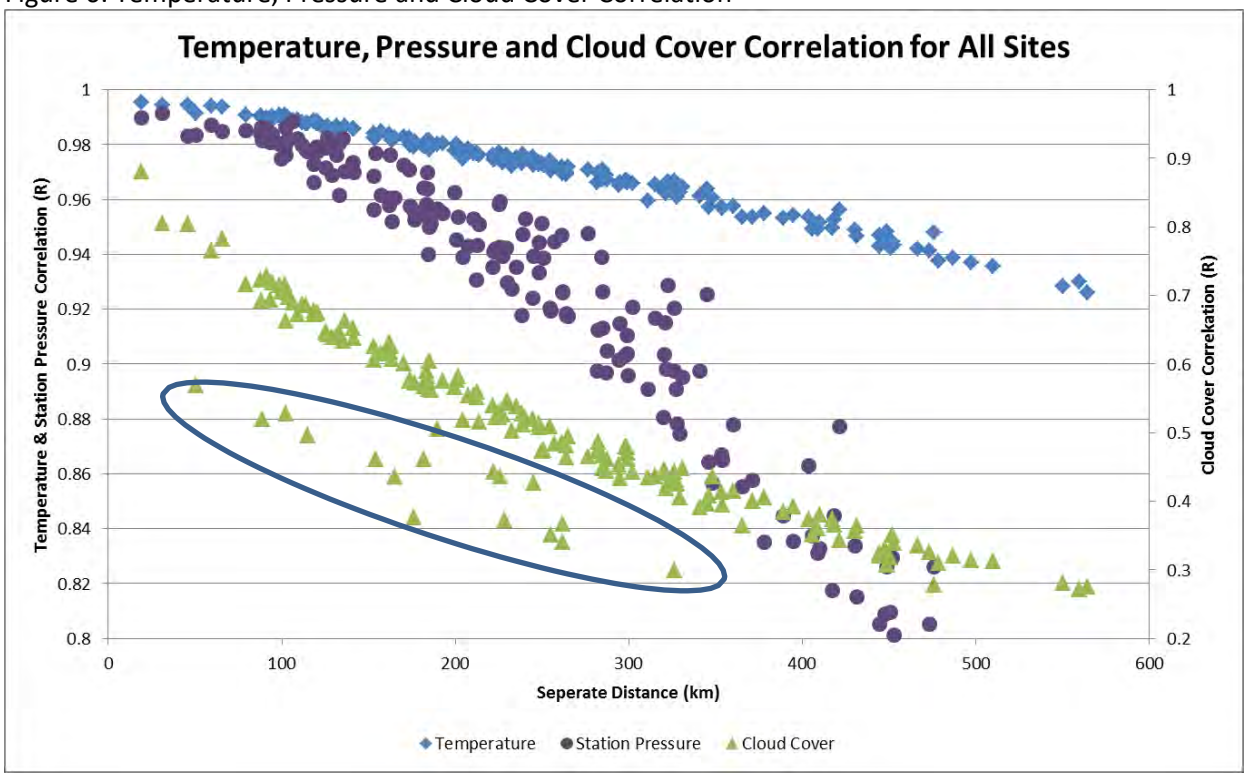
First, the distance between each pair of meteorological sites was determined. Next, the correlation between the hourly data at each pair of meteorological sites was calculated for each of the three variables. Finally, the correlations of the three variables for each pair of meteorological sites were averaged, resulting in a single correlation between each pair of sites. Figure 5 shows how the average correlation varies with distance.

Figure 5. Average Correlation for All Nineteen Meteorological Sites



As expected, the average correlation decreases with distance. Unexpectedly there were several site correlations (circled above) that appeared to be outliers. After further investigating the outliers, it was revealed that each included Des Moines as one of the sites. To determine what was causing the discrepancy each variable was plotted individually as shown in Figure 6.

Figure 6. Temperature, Pressure and Cloud Cover Correlation



The temperature and pressure correlation are plotted on the left and the cloud cover correlation is plotted on the right in order to see each variables distribution on the same figure. The cloud cover has the same distinct group of outliers as Figure 5.

In order to find out why Des Moines cloud cover correlation was lower than expected the cloud cover data were analyzed. AERMET breaks cloud cover into tenths. The numbers are based on sky coverage; no cloud coverage (0) – total cloud coverage (10). Table 2 shows the hourly breakdown of the Des Moines cloud cover from 2005-2009.

Table 2. Des Moines Cloud Cover

Des Moines Cloud Cover Count										
0	1	2	3	4	5	6	7	8	9	10
9,580	0	28	6,077	19	4,303	0	35	1,135	5,404	17,243

The same method was performed for the Ames and La Crosse stations. Ames was analyzed because it is the closest site to Des Moines and therefore should have the most similar cloud cover. La Crosse was

analyzed because it had the lowest cloud cover correlation with Des Moines. The hourly cloud cover breakdown for both sites is listed in Table 3.

Table 3. Ames and La Crosse Cloud Cover

Ames Cloud Cover Count										
0	1	2	3	4	5	6	7	8	9	10
22,573	0	0	4,183	0	1,966	0	0	53	3,209	11,840
La Crosse Cloud Cover Count										
0	1	2	3	4	5	6	7	8	9	10
22,058	0	5	2,192	6	1,539	0	5	0	3,017	15,002

In comparing the Des Moines breakdown to the other two sites it is clear that Des Moines is reporting greater numbers of cloudy hours and fewer clear hours then Ames and La Crosse. The Des Moines National Weather Service Office (19) was contacted and provided an explanation for this observation. The Des Moines International Airport records cloud cover above 12,000 feet due to its classification and contract with the Federal Aviation Administration (FAA). The Des Moines National Weather Service confirmed that all of the other 18 meteorological sites used in this representivity analysis do not report clouds above 12,000 feet. If no clouds are detected below 12,000 feet the hour is reported as clear, which translates into a zero for cloud cover, even if higher-altitude clouds were present. To ensure that this was indeed the reason for the group of outliers, the Des Moines cloud cover data was adjusted by changing all non-zero cloud cover observations above 12,000 feet into zeros. The revised data was then re-processed through AERMET. Table 4 is the Des Moines cloud cover results with clear skies above 12,000 feet.

Table 4. Clear Skies above 12,000 feet

Des Moines Cloud Cover Count										
0	1	2	3	4	5	6	7	8	9	10
17,604	0	28	6,076	19	4,300	0	11	607	1,976	13,203

Figure 7 and 8 shows how the cloud cover correlation changed with the removal of cloudy skies over 12,000 feet in the Des Moines meteorological data.

Figure 7. Original Cloud Cover Correlation

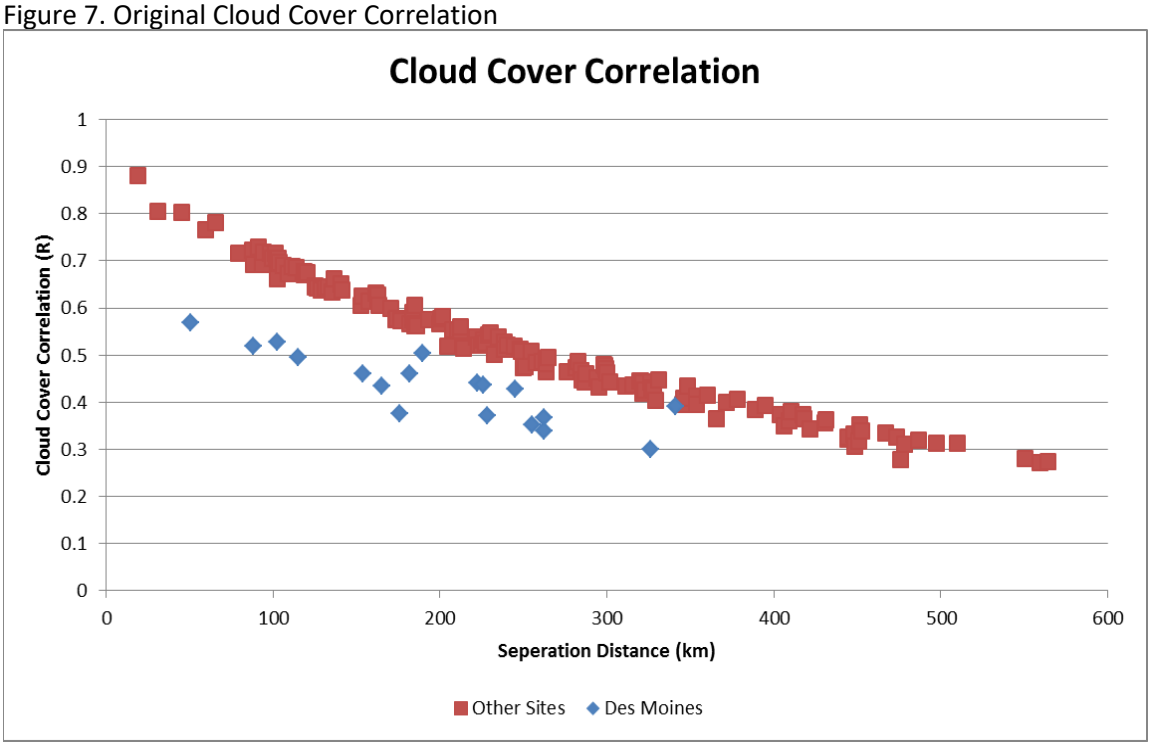
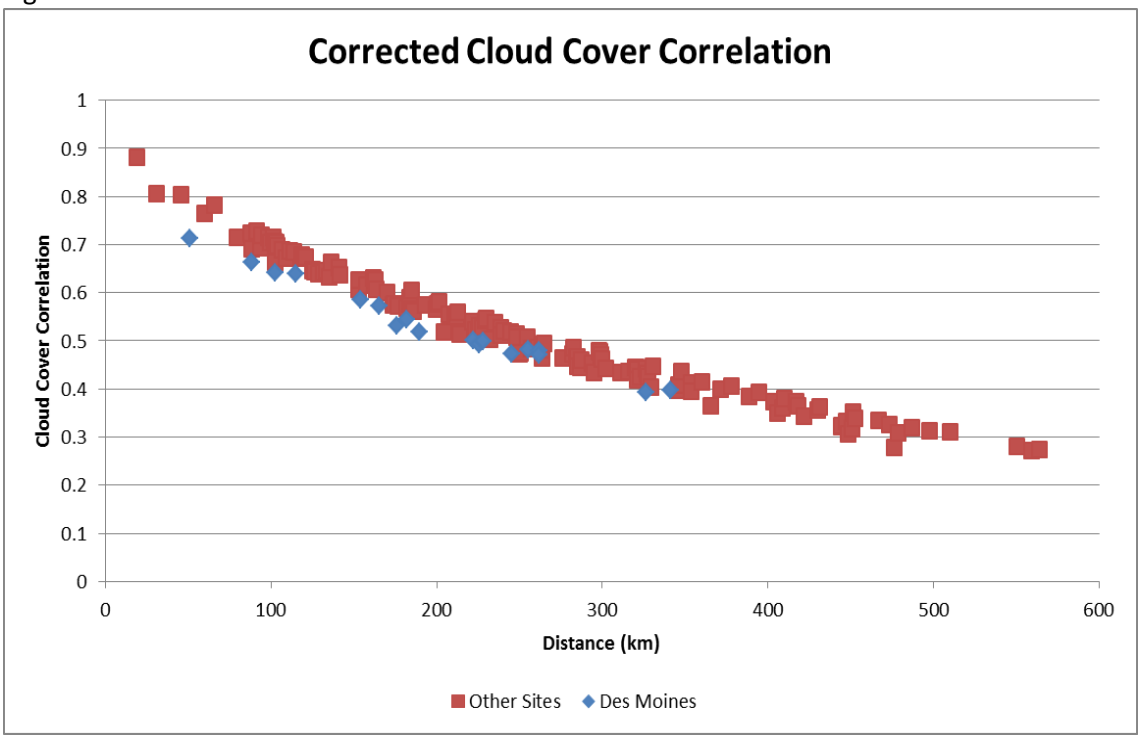
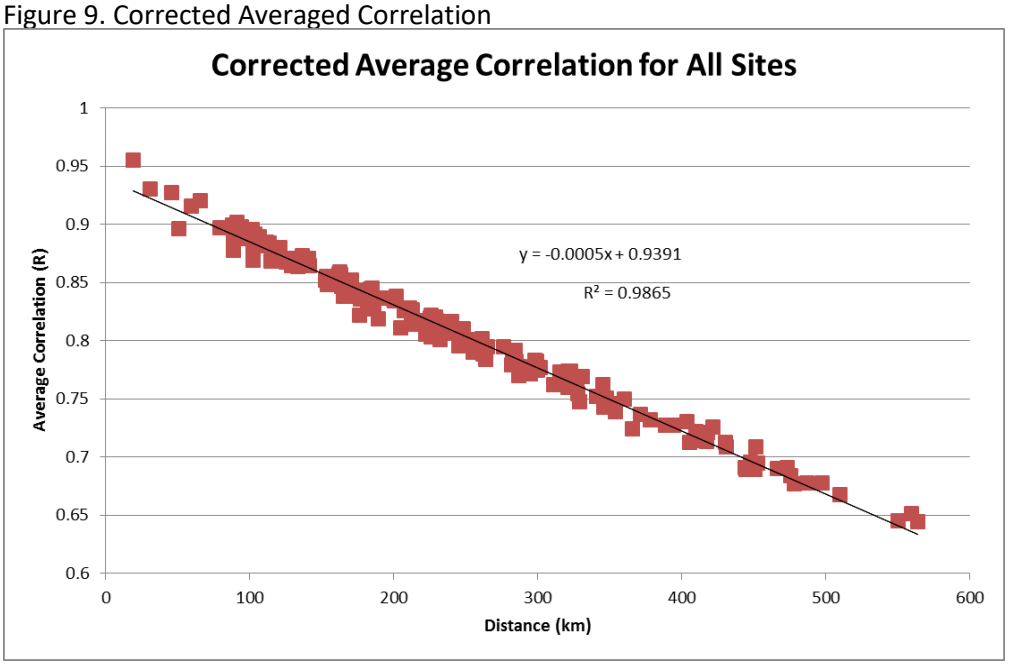


Figure 8. Corrected Cloud Cover Correlation



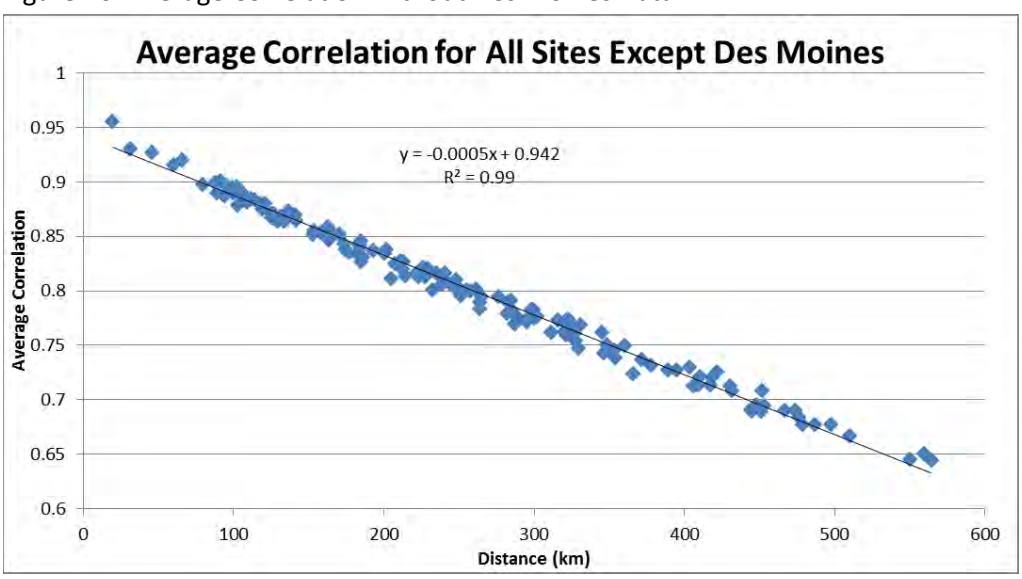
Replacing cloudy skies with sunny skies for cloud cover over 12,000 feet removed the outlier group; concluding that this discrepancy in ASOS reporting is the cause. Using the adjusted cloud cover correlation the average correlation for all sites is re-plotted in Figure 9.

Figure 9. Corrected Averaged Correlation



However to find a distance cutoff the Des Moines data was excluded due to the discrepancy stated above. Since EPA does not have guidance on this reporting difference, the cloud cover above 12,000 feet was not removed from the Des Moines data. As shown previously in Figure 5 this difference does affect the overall correlation and in order to get the correct distance cutoff the Des Moines data was removed (Figure 10).

Figure 10. Average Correlation without Des Moines Data



The outlier group has disappeared and the correlation and distance are almost perfectly related. In this analysis a 0.8 correlation is considered the minimum good fit correlation. Using the best fit equation

and substituting 0.8 for "y", we determine that a meteorological site could be separated from the application site by 284 km before causing a correlation below 0.8.

The relationship between correlation and separation distance was then converted into a function that could be used to apply a distance-weighted scaling factor to each wind correlation coefficient. This function was developed in such a way that the resulting scaling factor would not modify the wind correlation coefficient when there was no separation error, and would reduce the wind correlation coefficient between two perfectly correlated sites that are separated by 284 km to the minimum correlation considered a good fit (0.8).

This was accomplished using Equation 1:

$$Q = 1 - (M * D) \qquad \text{Eq. (1)}$$

Where: Q = Distance-weighted scaling factor
M = Mesoscale coefficient
D = Distance (km)

The mesoscale coefficient is derived from the data in Figure 9 using Equation 2:

$$M = (1-R_{MIN})/D_{MAX} \qquad \text{Eq. (2)}$$

Where: R_{MIN} = Minimum desired correlation
D_{MAX} = Maximum distance (km) at which R_{MIN} is met

Substituting 0.8 for R_{MIN}, and 284 km for D_{MAX} results in M = 0.000704225. Thus, Equation 1 becomes:

$$Q = 1 - (0.000704225 * D) \qquad \text{Eq. (3)}$$

Where: Q = Distance-weighted scaling factor
D = Separation distance (km)

Applying Equation 3 to the correlation coefficients of every pair of wind roses results in a distance-weighted correlation coefficient. Using two perfectly correlated (correlation coefficient = 1.0) wind roses as an example:

- If the wind roses are from collocated sites (D = 0), Equation 3 becomes:

  $Q = 1 - (0.000704225 * 0) = 1 - 0 = \underline{1}$

  The correlation coefficient (1.0) for the two identical wind roses from collocated sites would be multiplied by 1, and therefore remain perfectly correlated (1.0).

- If the wind roses are from sites separated by 284 kilometers (D = 284), Equation 3 becomes:

  $Q = 1 - (0.000704225 * 284) \approx 1 - 0.2 = \underline{0.8}$

The correlation coefficient (1.0) for the two identical wind roses from sites separated by a distance of 284 kilometers would be multiplied by 0.8, and therefore be reduced to the minimum correlation previously defined as being a good fit (0.8).

A distance-weighting factor was calculated as described above for every possible combination of measurement sites, and then applied to the corresponding correlation coefficients for those combinations. Using Golden Software's Surfer program (20), these distance-weighted correlation coefficients were then plotted on a map of Iowa using the 0.9 and 0.8 thresholds to depict the areas of the state that are well represented by each meteorological station. These plots are available for all sites used in this analysis in Appendix A.

Selection of AERMOD Meteorological Sites

For various reasons, only a portion of the 91 sites for which wind roses were created could be used to process data for use in AERMOD. The following factors were considered when determining which of the sites would be further analyzed for use in the model:

- Existence of concurrent 1-minute data.
- Fulfillment of the 90% data completeness criterion.
- Correlation of the wind roses.

A summary of these criteria are available for all sites used in this analysis in Appendix A.

Of the 91 sites, there were no additional sites that could be added to the 19 already used in the 2005-2009 dataset that would significantly improve the coverage of the meteorological data. The 19 existing locations all met the required data completeness requirements and 1-minute data was available for each. For these reasons it was decided to maintain the same meteorological sites (see Table 5).

Table 5. Surface Stations Used to Process Data for AERMOD

Station	Call Sign
Ames, IA	KAMW
Burlington, IA	KBRL
Cedar Rapids, IA	KCID
Davenport, IA	KDVN
Des Moines, IA	KDSM
Dubuque, IA	KDBQ
Estherville, IA	KEST
Iowa City, IA	KIOW
La Crosse, WI	KLSE
Lamoni, IA	KLWD
Marshalltown, IA	KMIW
Mason City, IA	KMCW
Moline, IA	KMLI
Omaha, NE	KOMA
Ottumwa, IA	KOTM
Sioux City, IA	KSUX
Sioux Falls, SD	KFSD
Spencer, IA	KSPW
Waterloo, IA	KALO

Determination of the Areas Represented by Each Meteorological Site

The final step in the process was to use the distance-weighted correlation coefficients to determine those portions of the state for which each meteorological station listed in Table 5 is representative. Traditionally, county borders have been used as convenient boundaries that can be easily referenced to determine which meteorological dataset to use for various areas of the state. However, research conducted by the Iowa DNR shows that there are areas of the state where meteorological representivity may vary within a county, specifically: areas affected by portions of the Missouri and Mississippi River valleys. Figure 3 provides an example of such an area.

The Omaha, NE meteorological measurement site is located within the Missouri River valley. Its wind rose is most correlated with the wind rose from Tekamah, NE, which is also located in the Missouri River valley approximately 50 km N-NW, but is far less correlated with the wind rose from Council Bluffs, IA, which is located on the bluff above the Missouri River valley only 8 km to the East (even with the distance-weighting applied). This is an obvious indication that the Missouri River valley is having an effect on the overlying mesoscale flow along this stretch of the river. Similar effects can be seen along the remainder of the Missouri River valley bordering Iowa, and along the stretch of the Mississippi River valley between La Crosse, WI and Moline, IL.

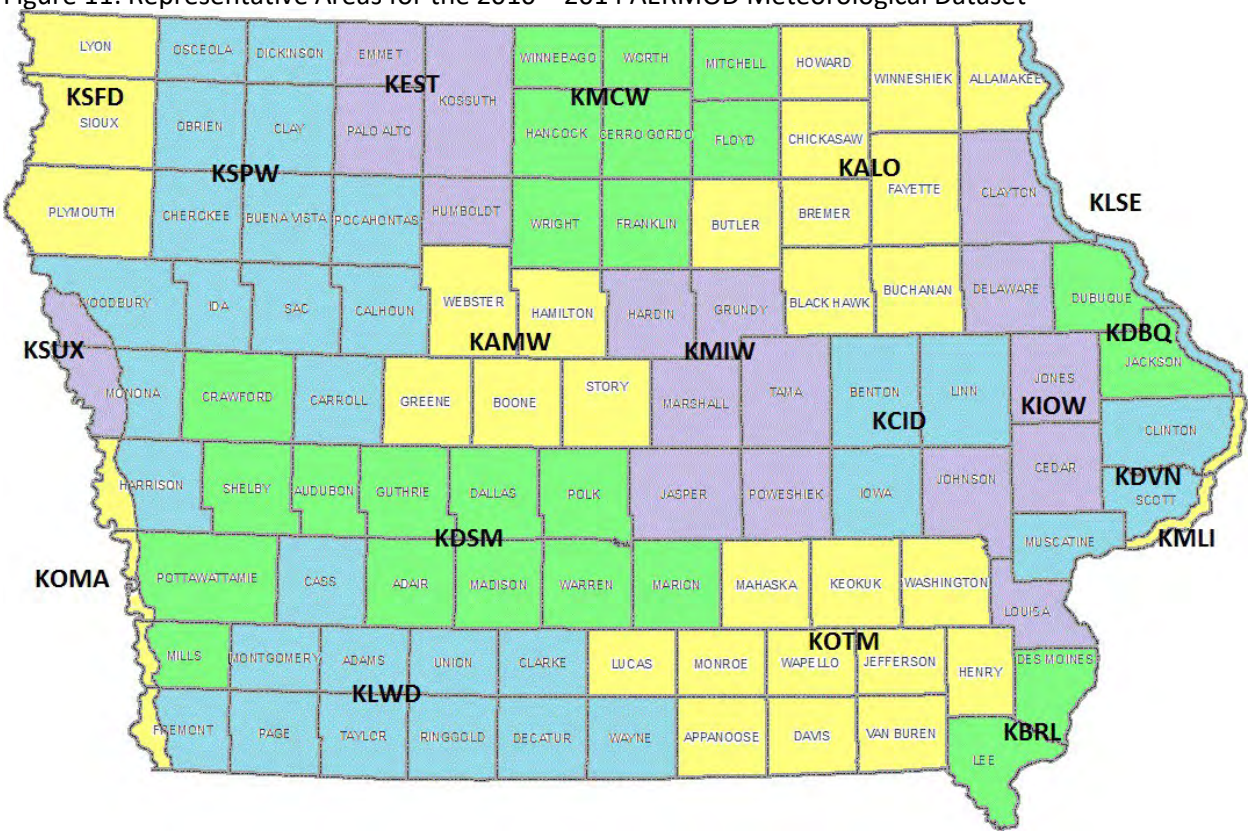
In order to determine if a meteorological site was influenced by a river valley, an extension analysis was performed. The aim of the extension analysis was to find a numerical cutoff for determining when a site was influenced by river valley terrain. The wind patterns are quantified using a diurnal temperature in order to calculate an index value for every wind direction. The index value of 0.0023 was used as a

cutoff, anything above this cutoff is considered influenced by river valley terrain and anything below is not. This index value cutoff corresponds to a valley depth of 60 meters (or greater). The 60 meter depth threshold is used to identify the portions of the Mississippi and Missouri River valley that are influenced by river valley terrain. Counties in Iowa affected by river valley wind channeling were subdivided into a portion of the county represented by a valley site and the remaining portion represented by a non-valley site.

In order to determine which areas of the state would be represented by each meteorological site the distance-weighted correlation coefficient data were input into Golden Software's Surfer program (20). Using this program, a grid was placed across the entire state with grid nodes in the center of each county and along the Missouri and Mississippi Rivers at the midway point along each county boundary that borders those rivers. Surfer was then used to calculate the distance-weighted correlation coefficient at each grid point for each meteorological site listed in Table 5.

In most cases, the meteorological site with the highest distance-weighted correlation coefficient at each grid point was then assigned as the most representative site for that county or stretch of river valley. In some cases there were two or more meteorological sites that were estimated to be similarly representative. When this occurred the chosen site was often the location that would prevent a meteorological site from representing multiple non-contiguous areas of the state. In Muscatine County, the two highest-correlated sites were Iowa City (0.91) and Davenport (0.88). In this case, Davenport was chosen as the representative site because a thorough representivity analysis has already been conducted as part of several modeling analyses conducted in Muscatine. This separate representivity analysis supports the use of Davenport data in Muscatine and the small difference in distance-weighted correlation between Davenport and Iowa City does not justify changing this conclusion. In those areas of the state where counties were subdivided into valley and non-valley areas, only sites within the valley were considered for areas within the valley, and sites within the valley were never considered for areas outside the valley. The resulting representative areas are depicted in Figure 11.

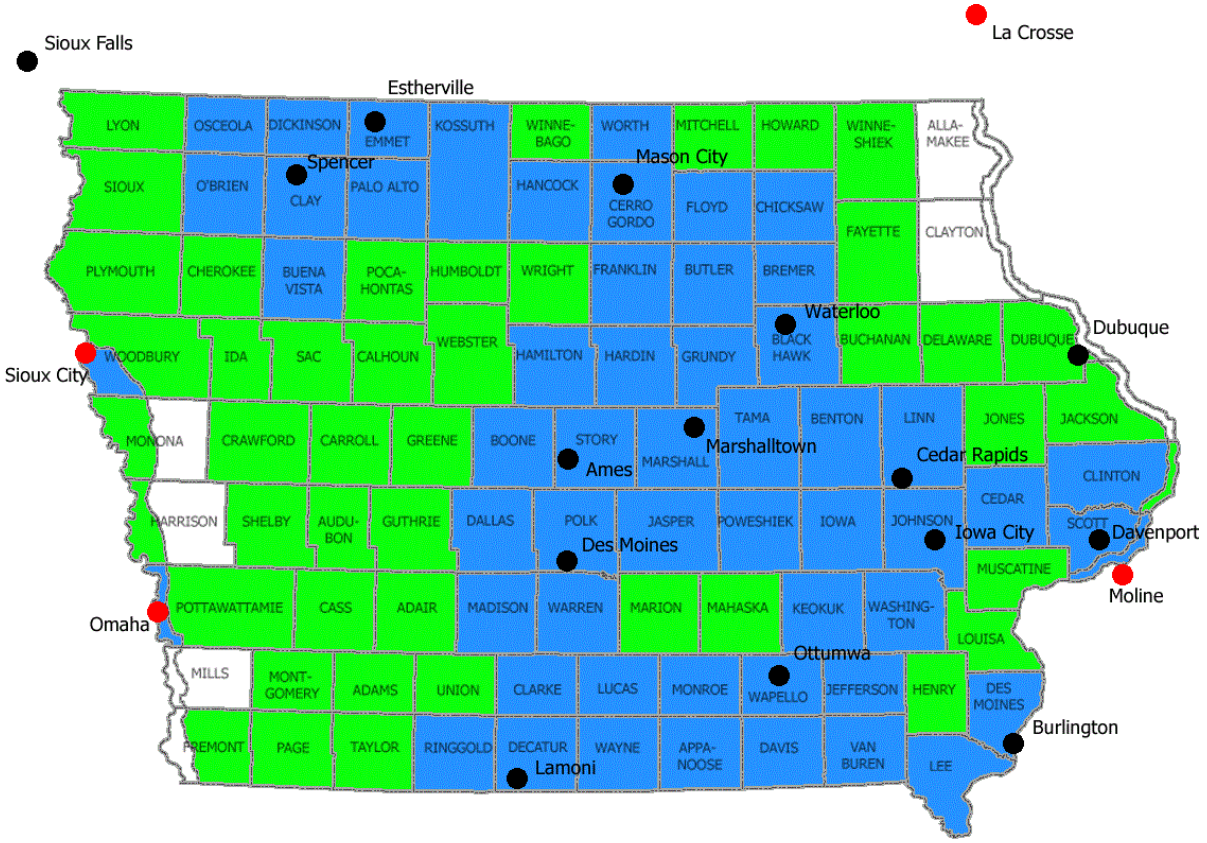
Figure 11. Representative Areas for the 2010 – 2014 AERMOD Meteorological Dataset



As noted above, for those counties that were subdivided into valley and non-valley areas, the edge of the flood plain defines the border of the corresponding representative area. For areas on the map where the county is subdivided, a modeling analysis with sources located within the floodplain would use the meteorological data from the subdivision representing the river valley in that area, and an analysis with sources located anywhere other than the floodplain would use the meteorological data from the subdivision representing the remainder of the county. The abrupt increase in elevation adjacent to the floodplain used to define the boundary can be determined by inspecting topographic maps of the area.

The distance-weighted correlation coefficient of the chosen representative site for each area is depicted in Figure 12. Areas where the distance-weighted correlation is 0.9 or greater are shaded in blue. Areas where the distance-weighted correlation is 0.8 or greater, but less than 0.9 are shaded in green. Areas where the distance weighted correlation is less than 0.8 are not shaded. The red dots represent the valley-based meteorological stations used to represent the portions of the Missouri and Mississippi River valleys where the wind patterns are significantly affected by those valleys, and the black dots represent the remaining meteorological stations.

Figure 12. Distance-Weighted Correlation of Chosen Representative Sites



As shown by the map, approximately 95% of the state is represented by a meteorological station that is either ideally or well correlated (distance-weighted correlation coefficient greater than 0.9 or 0.8 respectively). Only about 5% is represented by less-correlated meteorological stations. This is mainly due to a lack of data in these areas of the state.

There is a significant gap in available meteorological stations in the Western third of the state, with the only available sites being Omaha and Sioux City (both of which are influenced by the Missouri River valley. This necessitated the use of Spencer data for the non-Missouri River valley portions of Harrison and Monona counties. These areas are separated by a significant distance from Spencer and as such the distance-weighted correlation coefficient is reduced. The conversion of any of the existing AWOS sites in this area (Atlantic, Audubon, Carroll, Denison or Harlan) to ASOS with available 1-minute data would be an ideal solution to this problem.

Another area of low correlation in the Western part of the state is the Missouri River valley portions of Fremont and Mills counties. The cause of this is the low correlation between Omaha (which is located in the valley) and Nebraska City (which is located on the bluff just above the valley across the river from Fremont county), which creates a large correlation gradient for the Omaha data making it appear to not represent the valley portions of Fremont and Mills counties. Given the close proximity of these areas to the Omaha meteorological site, and the similarity in orientation of the valley it is likely that the correlation is actually higher than implied on this map.

The Northeast corner of the state is the area where the representivity of the chosen meteorological station is most questionable. This area of the state is unique in that it is rather hilly, and has a higher density of forested land. Unfortunately, Decorah is the only meteorological station in this area that is not located in a valley that significantly affects the wind patterns. Decorah's wind rose is marked by generally decreased wind speeds and a high occurrence of calm conditions. These observations are likely due to the higher surface roughness that exists in this area of the state, but the lack of other observation sites to confirm this assumption presents a problem for verifying the accuracy of the correlation (or lack thereof) in this area. The only other nearby sites are Prairie Du Chien and Boscobel, both of which are located in the Wisconsin River valley (Prairie Du Chien at the confluence with the Mississippi River) which is oriented perpendicular to the Mississippi River valley. Since the wind fields at both Prairie Du Chien and Boscobel are significantly influenced by the valley this causes a very sharp correlation gradient in this area. The result is lower confidence in the representivity of the chosen meteorological sites for these areas, although the La Crosse data is likely more representative of the Mississippi River valley than implied on the map, especially in areas where the orientation of the valley is more similar to that seen near La Crosse (generally oriented North – South or Northwest – Southeast).

The representativeness of the upper air data was determined purely based on spatial proximity because the measurements are taken above the surface where local geographic features and land cover do not have an effect. The two nearest upper air sites are Omaha, NE and Davenport, IA. These data were applied to roughly the half of the state each is nearest to. The surface data from KFSD, KSUX, KOMA, KSPW, KLWD, KEST, KAMW, KDSM and KMCW were paired with the Omaha upper air data. The surface data from KALO, KMIW, KOTM, KCID, KIOW, KBRL, KLSE, KDBQ, KDVN and KMLI were paired with the Davenport upper air data.

It should be noted that this representivity analysis is intended to provide a guide for general representivity only. The meteorological data assigned to each area of the state by this analysis is only representative to the extent that no local features would significantly alter the meteorological conditions in the area where it is to be applied.

Filling Missing Surface Data

Surface data were only filled for the 19 meteorological stations that were chosen during the representivity analysis. An Excel spreadsheet consisting of a series of embedded programs was used to fill all missing surface data. This program was developed in-house, and is called AERFILL.

The AERFILL program fills missing data using the recommendations in "Procedures for Substituting Values for Missing NWS Meteorological Data for Use in Regulatory Air Quality Models" by Dennis Atkinson and Russell F. Lee (21), and Quality Assures (QA) the results following the recommendations in EPA's "Meteorological Monitoring Guidance for Regulatory Modeling Applications" document (22). Much of the data filling was performed automatically by AERFILL. Longer, or more problematic gaps, and most quality assurance related decisions were addressed manually.

The data were filled via many different techniques, ranging from simple interpolations or persistence, to complicated spatially and temporally-weighted averages based on surrounding meteorological stations. In many instances, the data were filled based on the application of meteorological principles and techniques. Comments were included in the file indicating what method was used (one comment for each time the data were edited). The results of the representivity analysis were used to determine which alternate source of data was most likely to provide the best fit. Generally, data from the most representative station was available and was determined to be appropriate. If the data from the most representative neighboring station did not appear to fit or was also missing, the data from the next most representative station was evaluated. This process continued down the hierarchy of most representative stations until acceptable data was found.

After the data were completely filled, a QA procedure was executed. All QA flags were reviewed for relevance and importance. In most cases the flags did not signify inaccurate data, just extremes in the data due to the applicable weather conditions. The more questionable data were cross-checked with other sources of information including one or more of the following:

- The raw ISH data for the station in question.
- ASOS data from the Iowa Environmental Mesonet (IEM) (23) for the station in question.
- The raw ISH data for neighboring stations.
- ASOS data from the IEM for neighboring stations.
- AWOS/RWIS data from the IEM for neighboring stations.

If the data appeared to be meteorologically impossible or improbable, and could not be correlated with the cross-referenced sources, it was adjusted using data-filling schemes similar to those used to fill missing data. An example of this would be if the station pressure for five consecutive hours was 980.0 mb, 980.1 mb, 915.5 mb, 980.3 mb and 980.5 mb. In this case, it is obvious that the third value is invalid, and would have been replaced with a value of 980.2 mb.

If the data seemed to be meteorologically possible, or correlated with the cross-referenced sources, it was not modified. An example of this would be the occurrence of a cold front. A cold front could cause

a rapid shift in pressure, temperature, wind and cloud cover, all of which would be flagged by AERFILL's QA routine, even though they were valid data.

After the QA was complete the data were exported from AERFILL in the format of an AERMET QA input file, ready to be merged with the 1-minute and upper air data.

Filling Missing Upper Air Data

It has been shown that missing upper air data can cause an under-prediction bias in AERMOD. These effects, and procedures for filling missing upper air data, are outlined in the document "A Method for Filling AERMET Upper Air Data" (24). The procedures described in that document were used to fill the missing data.

The raw data from four sites (Davenport, IA; Lincoln, IL; Minneapolis, MN; and Omaha, NE) were processed using AERMET. The output from AERMET was then imported into Excel and sorted in order to create a list of available morning soundings at each location. Evening soundings are not currently used by AERMET, and were therefore not evaluated. The morning sounding inventory is summarized in Table 6.

Table 6. Morning Sounding Inventory

Station	Available Morning Soundings	
	Count	Percentage
Davenport, IA	1,807	99.0%
Lincoln, IL	1,819	99.6%
Minneapolis, MN	1,815	99.4%
Omaha, NE	1,815	99.4%

Using this information, the raw data were edited to fill in the missing morning soundings. Only data from the two nearest sites (Davenport and Omaha) were used to process data for AERMOD, so only those data were filled. In cases where the data from only one of these locations was missing, the corresponding sounding from the other location was used to fill in the gap. When the same sounding was missing from both Davenport and Omaha, data from either Lincoln, IL or Minneapolis, MN were used to fill the gap. There were no instances where the sounding was missing from all four sites.

These edited data were then reprocessed with AERMET to produce the files necessary to be merged with the surface and 1-minute data.

1-Minute Data (AERMINUTE)

The latest version of AERMINUTE available at the time of processing (dated 14337) was used to process the 1-minute data for each of the meteorological stations processed for use in AERMOD. The 1-minute wind data was obtained from the NCDC's online ftp directory (4) in the 6405 format which is compatible with the AERMINUTE program. The downloaded data consists of text files; each text file contains data for one station-month.

Ten of the meteorological stations processed for use in AERMOD (KAMW, KBRL, KDVN, KEST, KIOW, KLWD, KMCW, KMIW, KOTM, and KSPW) did not have all 12 months available for download from the NCDC for the calendar year 2013, only the first five months were available for these stations via the downloadable text files. Blake Lasher was contacted at the NCDC to inquire about the missing files and he replied that that is all the data they had for 2013 at those sites. Therefore, only five months of data was processed through AERMINUTE for 2013 at the ten above mentioned sites.

The 1-minute wind data consists of running 2-minute average winds that are reported every minute at each ASOS station. The archived 1-minute winds contained in the downloaded text files from the NCDC were used to calculate hourly average wind speed and directions which could then be used to supplement the standard archive of hourly observed winds in the surface data – reducing the number of calms, variable winds and missing data.

The AERMINUTE preprocessor requires the user to indicate the start and end month and year of the data being processed as well as whether or not the station is part of the Ice Free Winds (IFW) group. The IFW group refers to ASOS sites that use sonic anemometers instead of cup and vane anemometers to measure winds. If the station is part of the IFW group during the data period being processed by AERMINUTE, then the IFW installation date must be entered into the program. The website indicated in section 3.1.2 of the AERMINUTE user guide (25) was used to determine if the stations were part of the IFW group and their respective installation dates.

AERMINUTE gives an option to include data files of standard NWS observations in order to compare the non-quality controlled 1-minute winds from the 1-minute data files against the quality controlled standard observations. The raw ISH data for each of the nineteen stations being processed was included in the AERMINUTE input file for comparison with each of these stations 1–minute raw data files.

The combination of the above described data was processed by AERMINUTE to produce the necessary output file for merging with the filled and edited surface and upper air data.

Land Use Analysis

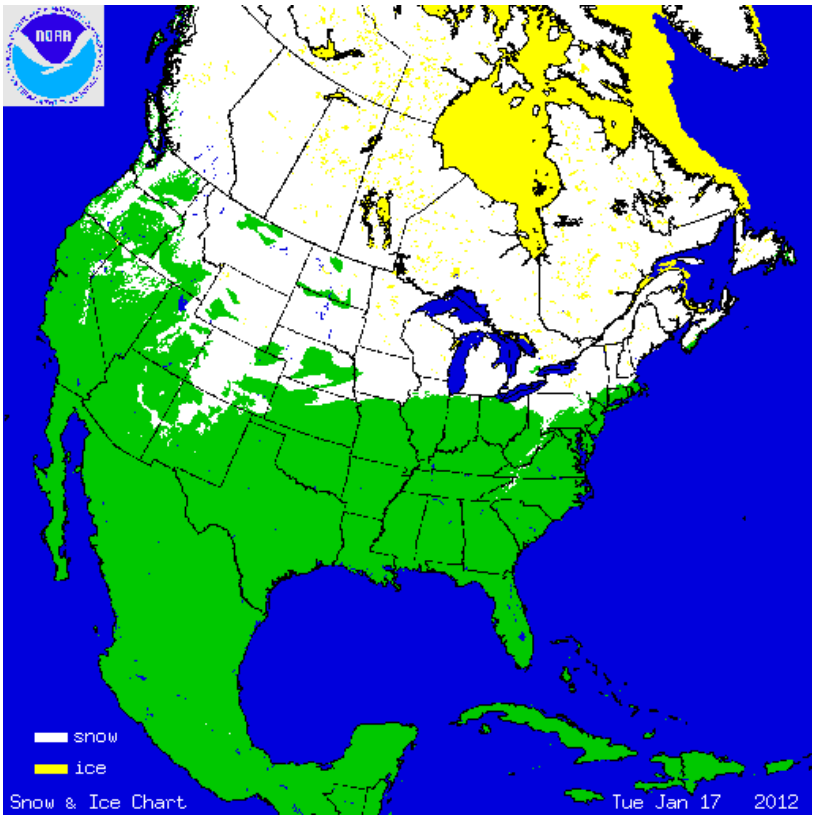
The latest version of AERSURFACE (dated 13016) was used to conduct the land use analysis for each meteorological site. While the data were processed in accordance with the guidance available in the AERSURFACE user guide (9), two additional levels of detail were added to this stage of processing. These include refinements to the snow cover and surface moisture condition estimates.

Snow Cover and Surface Moisture Conditions

The AERSURFACE preprocessor requires the user to indicate whether or not the site experiences continuous snow cover during the winter months, and if the area experienced below normal, above normal or average surface moisture conditions.

Daily snow cover maps from NCDC were analyzed for the entire 2010 – 2014 period (26). An example of a daily snow cover map is depicted in Figure 13 below.

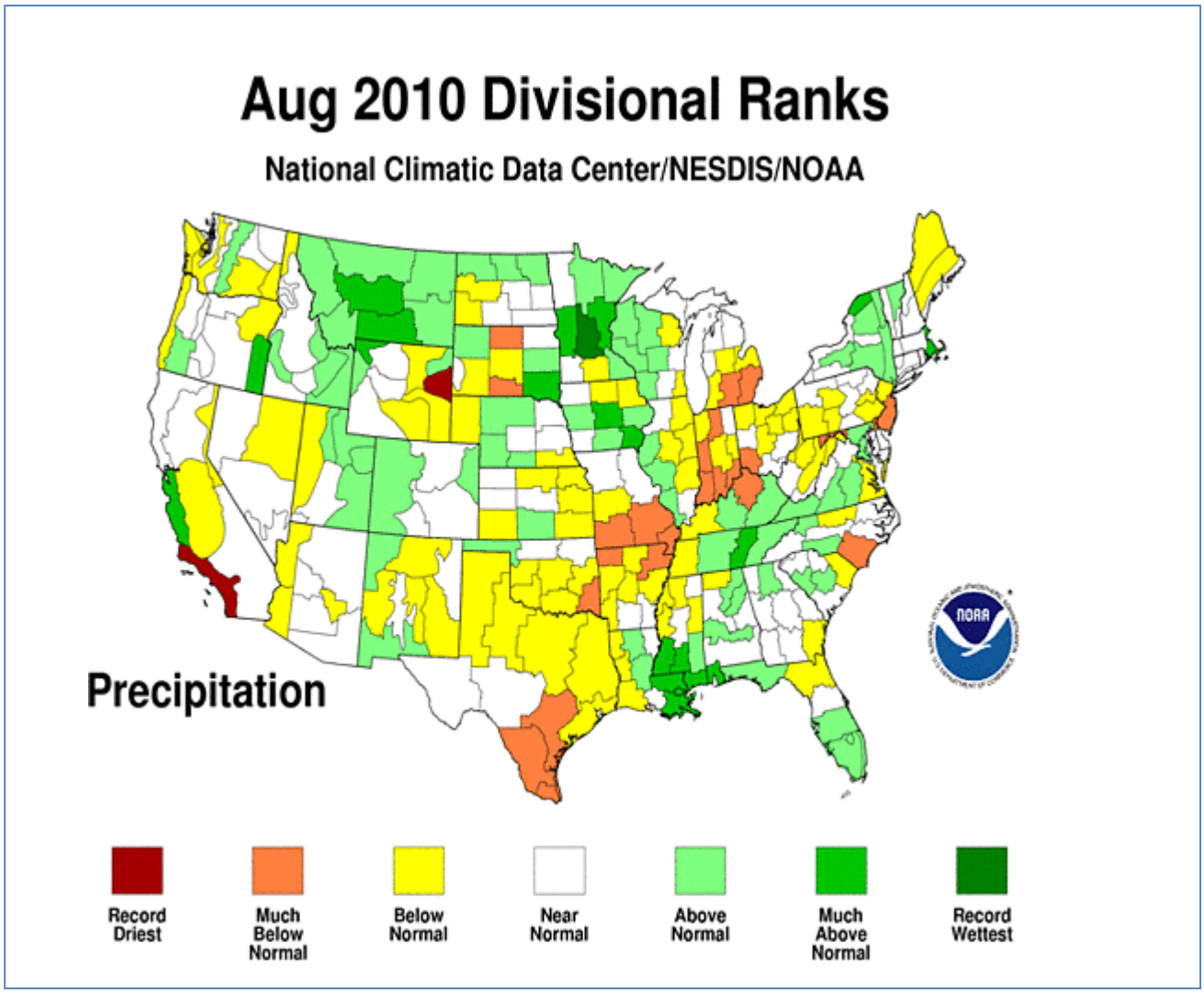
Figure 13. Example Daily Snow Cover Map



For each day of the period, a determination of whether or not snow cover was present at each meteorological station was made based on visual estimates of the proximity of snow cover shown on the maps to the stations being processed. These data were then combined to determine which months of the year should be considered as having continuous snow cover at each station. Continuous snow cover was assumed for each month during which there was snow cover during at least half of the days in that month at that site (marked by the letter “X” in Tables 7 – 11).

To determine the relative surface moisture conditions during each month of the period, monthly climatological divisional precipitation rank maps were analyzed (27). An example of a monthly climatological divisional precipitation rank map is depicted in Figure 14 below.

Figure 14. Example Monthly Climatological Divisional Precipitation Rank Map



Areas shown as “Record Driest” or “Much Below Normal” were categorized as being dry. Areas shown as “Below Normal”, “Near Normal” or “Above Normal” were categorized as average. Areas shown as “Much Above Normal” or “Record Wettest” were categorized as wet. These categories approximate the guidance in section 2.2 of the AERSURFACE user guide (9):

> *The surface moisture condition can be determined by comparing precipitation for the period of data to be processed to the 30-year climatological record, selecting “wet” conditions if precipitation is in the upper 30th-percentile, “dry” conditions if precipitation is in the lower 30th-percentile, and “average” conditions if precipitation is in the middle 40th-percentile.*

Dry conditions are represented in Table 7 – 11 with orange-shaded cells, wet conditions are represented with blue-shaded cells and average conditions are not shaded.

Table 7. Snow Cover and Moisture Conditions – 2010

	January	February	March	April	May	June	July	August	September	October	November	December
KALO	X	X										X
KAMW	X	X										X
KBRL	X	X										X
KCID	X	X										X
KDBQ	X	X										X
KDSM	X	X										X
KDVN	X	X										X
KEST	X	X	X								X	X
KFSD	X	X	X									X
KIOW	X	X										X
KLSE	X	X										X
KLWD	X	X										X
KMCW	X	X	X									X
KMIW	X	X										X
KMLI	X	X										X
KOMA	X	X										X
KOTM	X	X										X
KSPW	X	X	X								X	X
KSUX	X	X	X									X

Table 8. Snow Cover and Moisture Conditions - 2011

	January	February	March	April	May	June	July	August	September	October	November	December
KALO	X	X										
KAMW	X	X										
KBRL	X	X										
KCID	X	X										
KDBQ	X	X										
KDSM	X	X										
KDVN	X	X										
KEST	X	X										
KFSD	X	X	X									
KIOW	X	X										
KLSE	X	X	X									X
KLWD	X	X										
KMCW	X	X										
KMIW	X	X										
KMLI	X	X										
KOMA	X	X										
KOTM	X	X										
KSPW	X	X										
KSUX	X	X										

Table 9. Snow Cover and Moisture Conditions - 2012

	January	February	March	April	May	June	July	August	September	October	November	December
KALO	X	X										X
KAMW	X	X										
KBRL												
KCID												
KDBQ	X	X										X
KDSM		X										
KDVN	X											
KEST	X	X	X									X
KFSD	X											X
KIOW	X											
KLSE	X	X	X									X
KLWD												
KMCW	X		X									X
KMIW	X											
KMLI	X											
KOMA		X										
KOTM												
KSPW	X	X	X									X
KSUX	X	X										X

Table 10. Snow Cover and Moisture Conditions - 2013

	January	February	March	April	May	June	July	August	September	October	November	December
KALO	X	X	X									X
KAMW	X	X	X									X
KBRL	X	X										X
KCID		X	X									X
KDBQ	X	X	X									X
KDSM	X	X	X									X
KDVN	X	X	X									X
KEST	X	X	X									X
KFSD	X	X	X									X
KIOW		X	X									X
KLSE	X	X	X									X
KLWD												X
KMCW	X	X	X									X
KMIW	X	X	X									X
KMLI	X	X	X									X
KOMA	X	X										
KOTM		X	X									X
KSPW	X	X	X									X
KSUX	X		X									X

Table 11. Snow Cover and Moisture Conditions - 2014

	January	February	March	April	May	June	July	August	September	October	November	December
KALO	X	X	X								X	
KAMW	X	X									X	
KBRL	X	X										
KCID	X	X										
KDBQ	X	X	X									
KDSM	X	X										
KDVN	X	X										
KEST	X	X									X	X
KFSD	X	X									X	X
KIOW	X	X										
KLSE	X	X	X								X	X
KLWD	X	X										
KMCW	X	X	X								X	X
KMIW	X	X										
KMLI	X	X										
KOMA		X									X	
KOTM	X	X										
KSPW	X	X									X	
KSUX		X										

Land Cover Data

The National Land Cover Dataset from 1992 (NLCD92) was chosen for this analysis because it is the format currently compatible with the AERSURFACE preprocessor. The land cover data were obtained from the USGS Seamless Server (7) in GEOTIFF format. The classifications included in this data are summarized in Table 12.

Table 12. 1992 National Land Cover Dataset Classification Summary

Classification	**Class Number**	**Color Code**	**Land Cover Category**
Water	11		Open Water
	12		Perennial Ice/Snow
Developed	21		Low Intensity Residential
	22		High Intensity Residential
	23		Commercial/Industrial/Transportation
Barren	31		Bare Rock/Sand/Clay
	32		Quarries/Strip Mines/Gravel Pits
	33		Transitional
Forested Upland	41		Deciduous Forest
	42		Evergreen Forest
	43		Mixed Forest
Shrubland	51		Shrubland
Non-natural Woody	61		Orchards/Vineyards/Other
Herbaceous Upland	71		Grasslands/Herbaceous
Herbaceous Planted/Cultivated	81		Pasture/Hay
	82		Row Crops
	83		Small Grains
	84		Fallow
	85		Urban/Recreational Grasses
Wetlands	91		Woody Wetlands
	92		Emergent Herbaceous Wetlands

Figures 15 – 33 depict the land cover around each of the 19 surface stations. Each figure represents the 10 km by 10 km domain used by AERSURFACE to calculate the Bowen Ratio and Albedo for each site. The circle in the middle of each figure represents the 1 km upwind fetch used by AERSURFACE to calculate the surface roughness.

Figure 15. Land Cover - Ames, IA (KAMW)

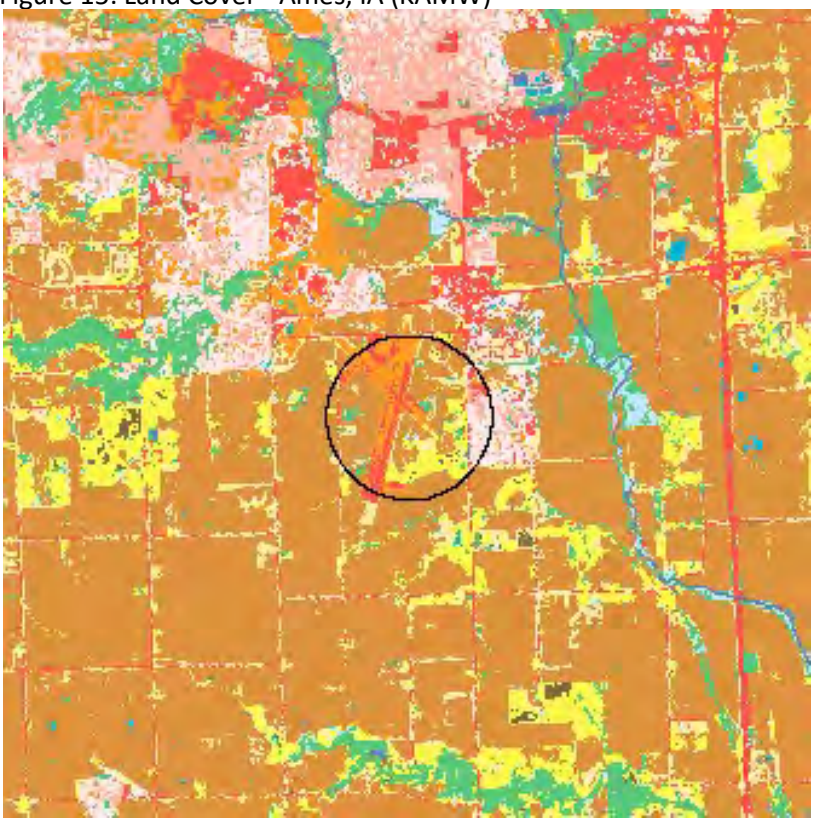


Figure 16. Land Cover - Burlington, IA (KBRL)

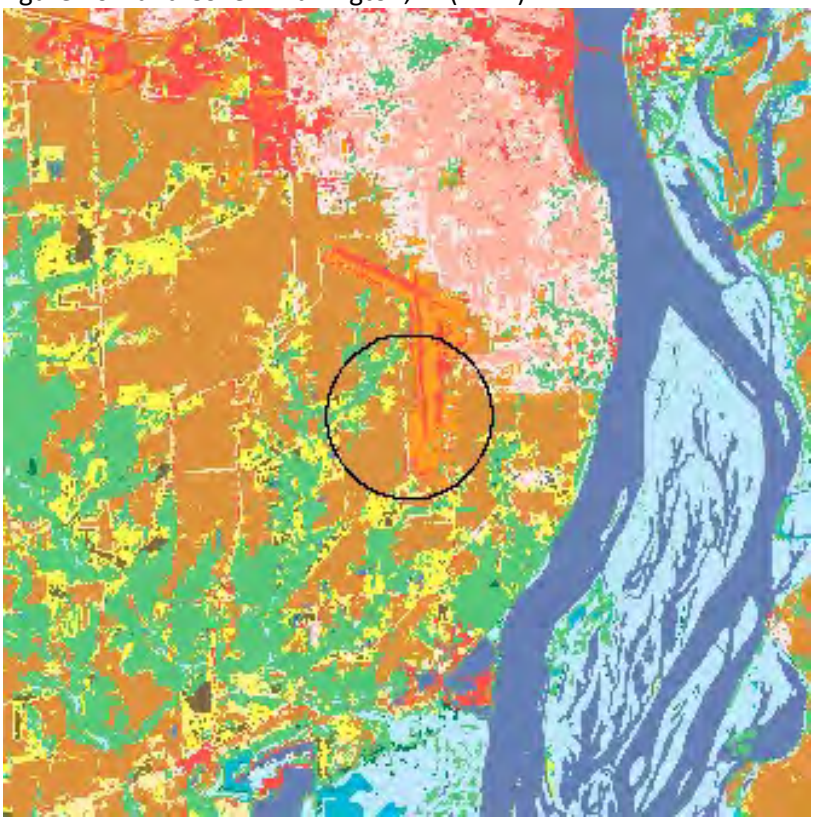


Figure 17. Land Cover - Cedar Rapids, IA (KCID)

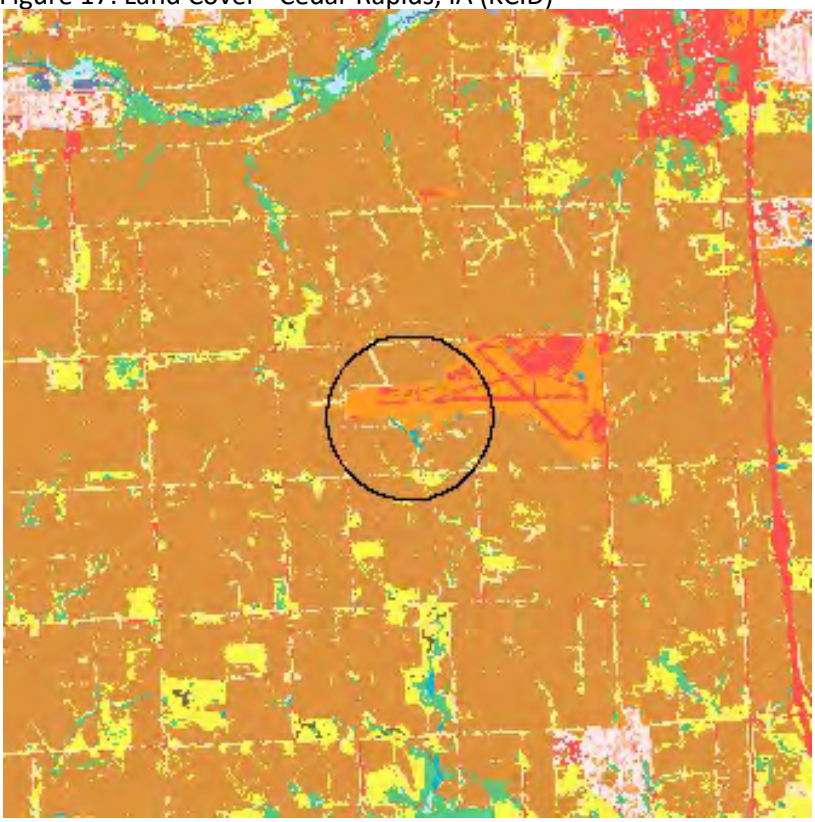


Figure 18. Land Cover - Davenport, IA (KDVN)

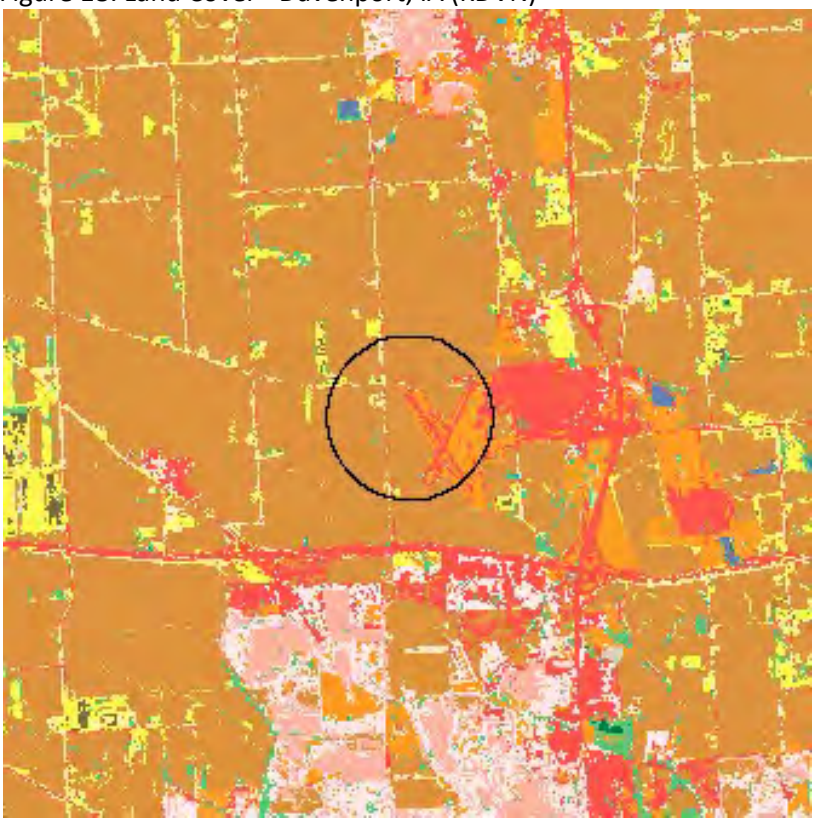


Figure 19. Land Cover - Des Moines, IA (KDSM)

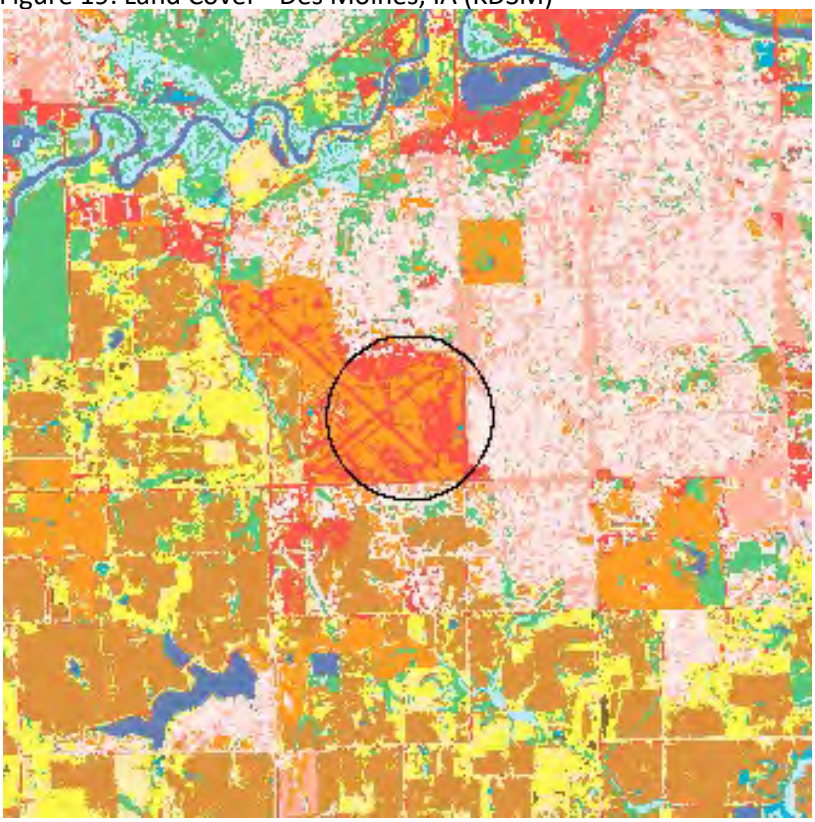


Figure 20. Land Cover - Dubuque, IA (KDBQ)

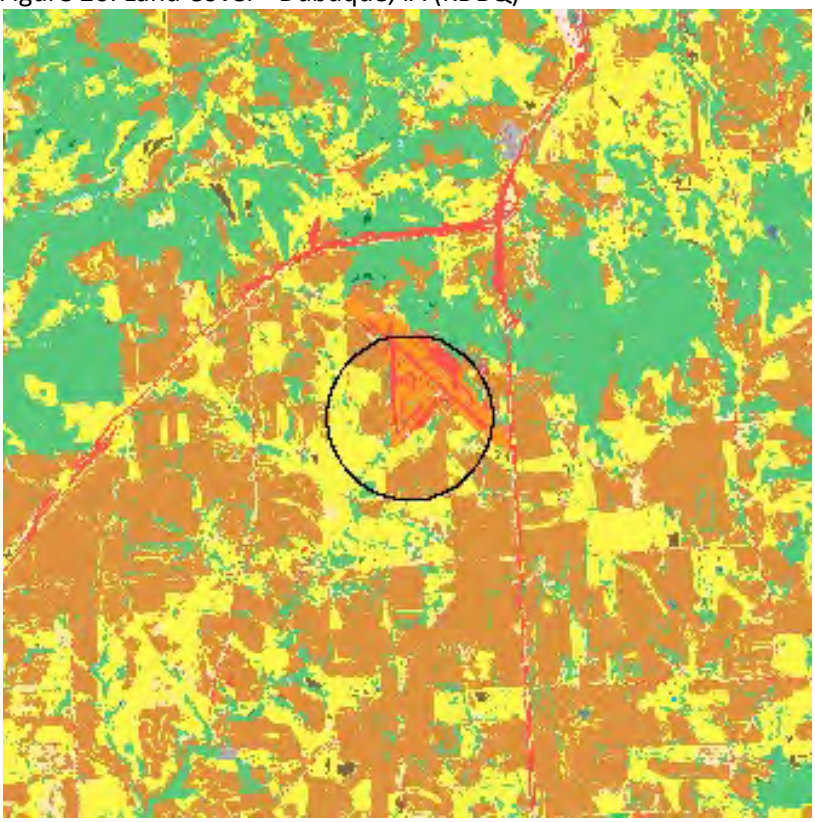


Figure 21. Land Cover - Estherville, IA (KEST)

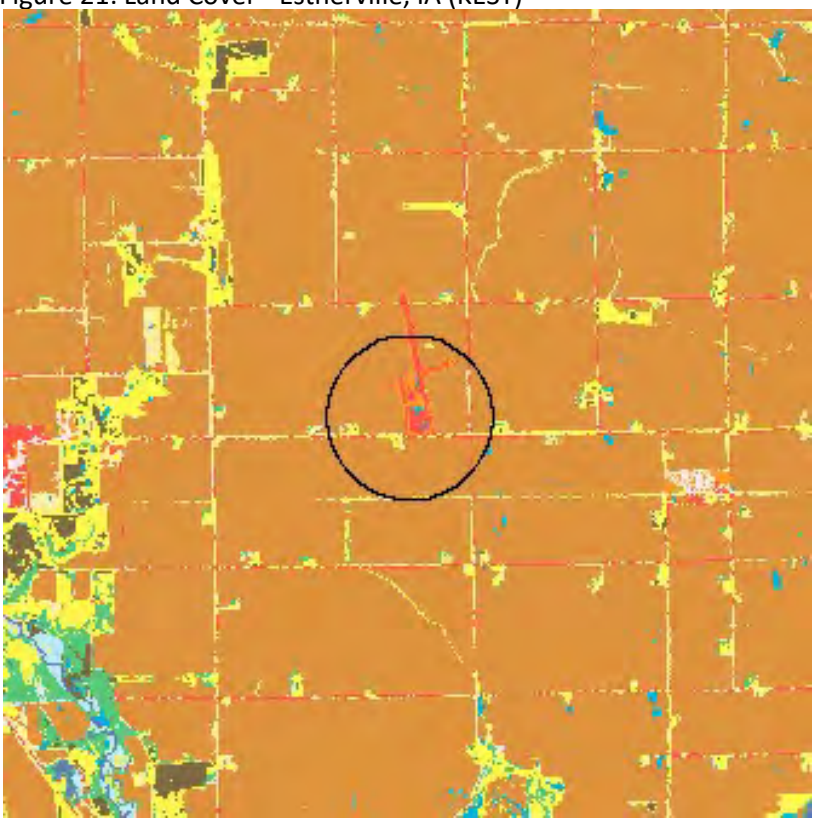


Figure 22. Land Cover - Iowa City, IA (KIOW)

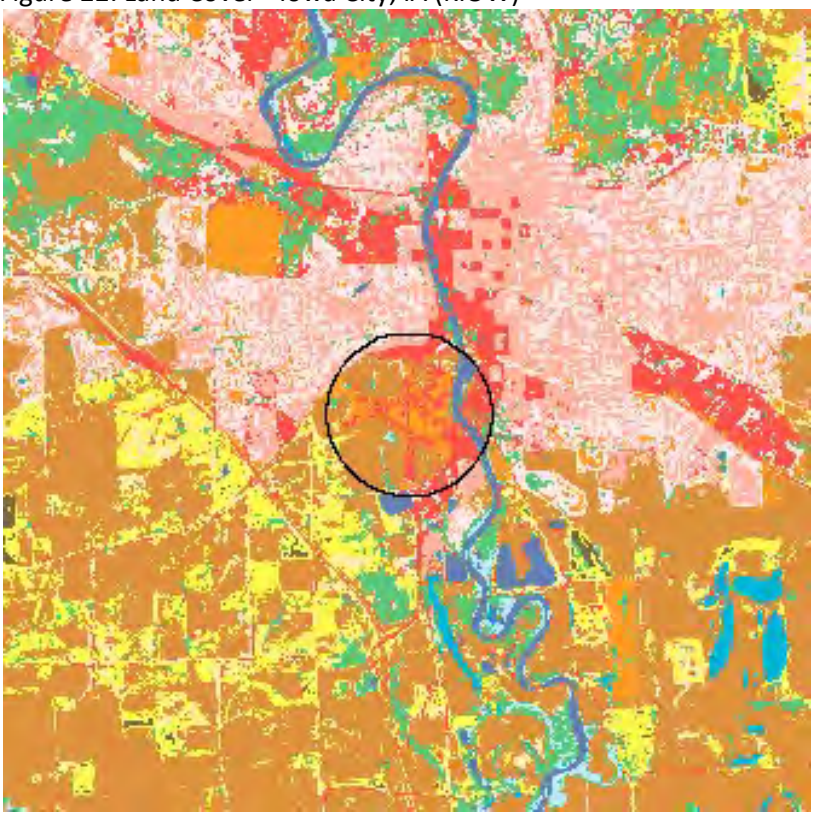


Figure 23. Land Cover - La Crosse, WI (KLSE)

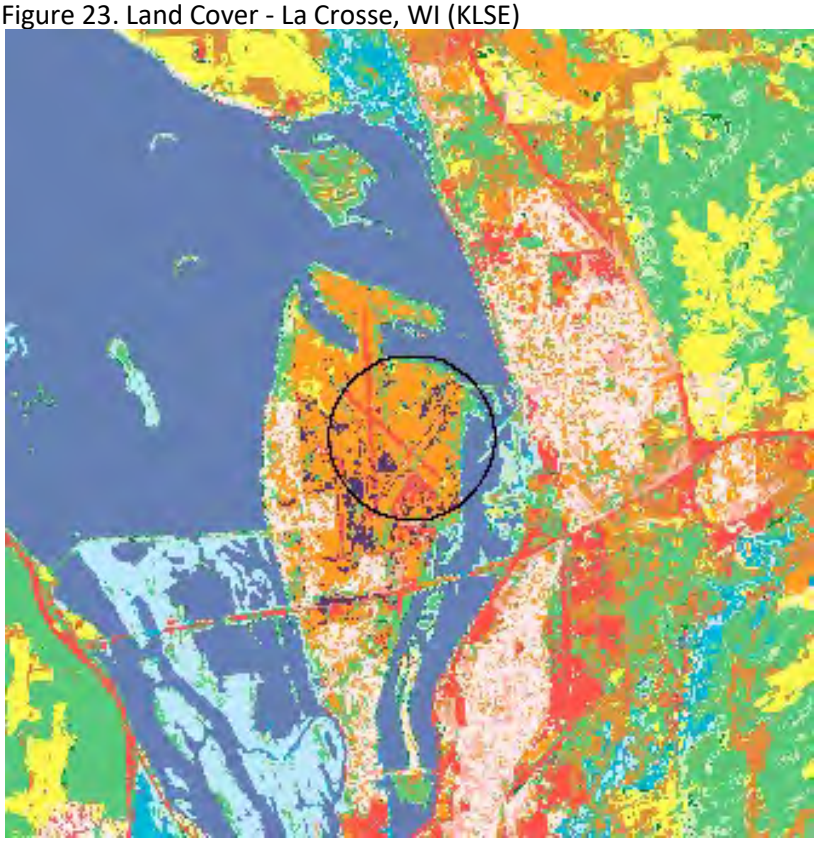


Figure 24. Land Cover - Lamoni, IA (KLWD)

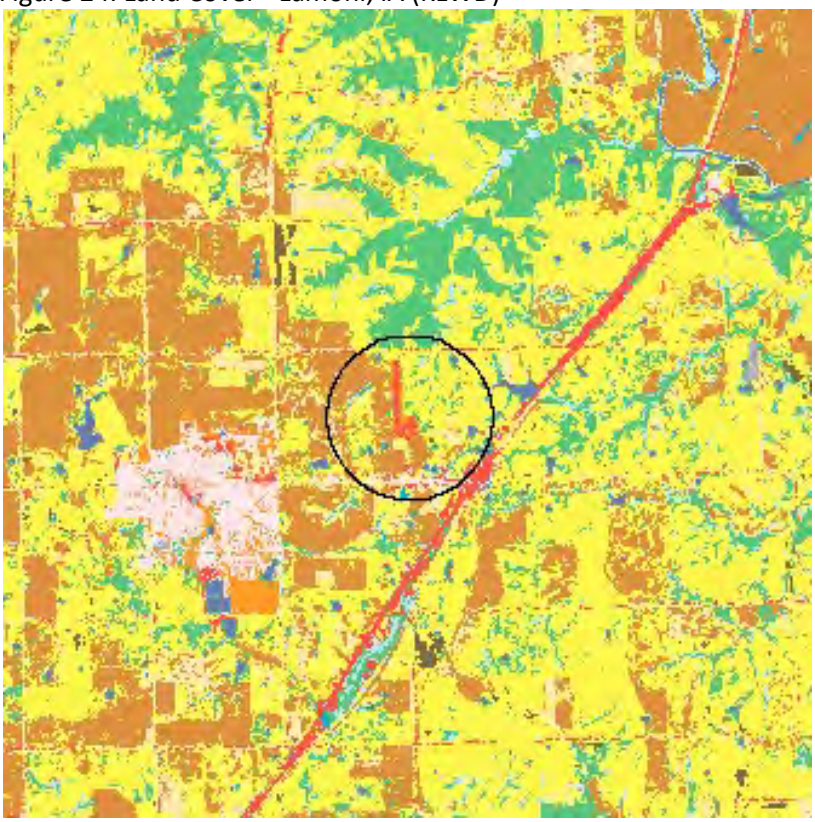


Figure 25. Land Cover - Marshalltown, IA (KMIW)

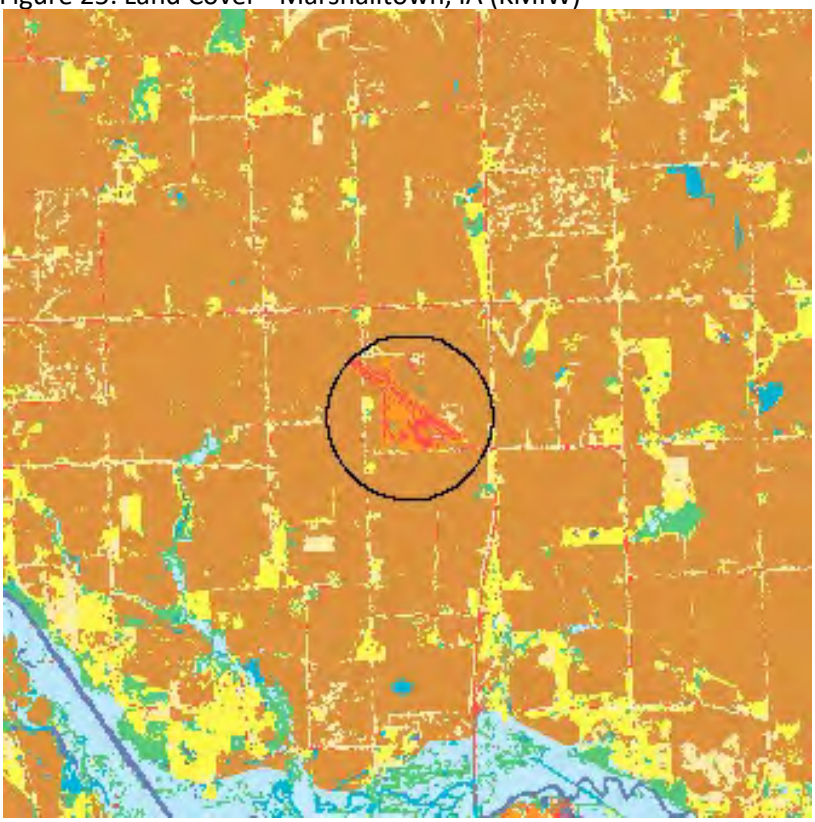


Figure 26. Land Cover - Mason City, IA (KMCW)

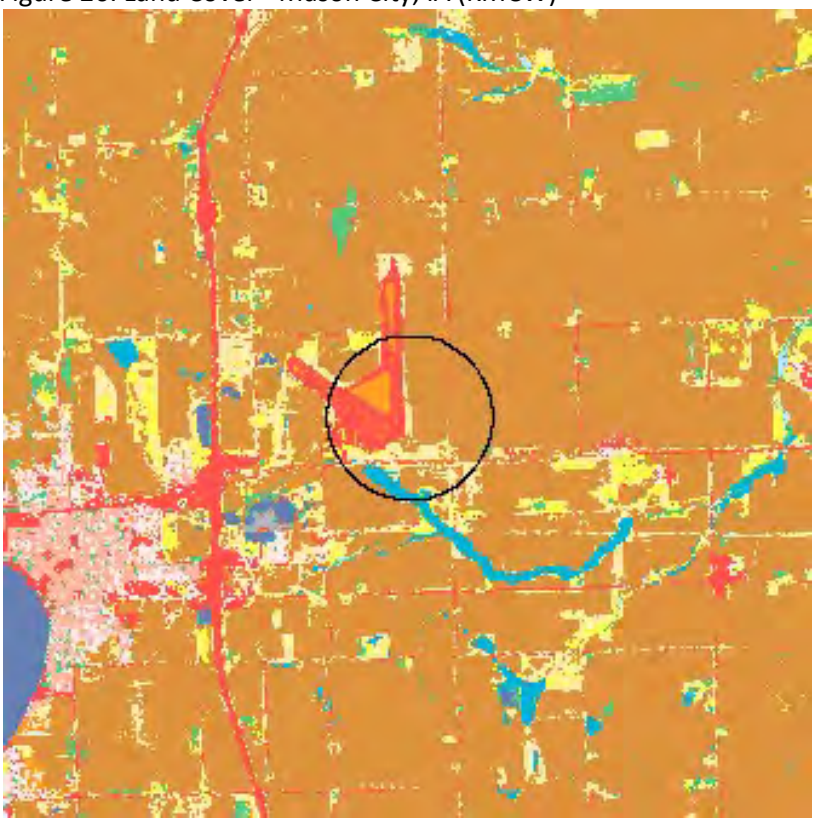


Figure 27. Land Cover - Moline, IL (KMLI)

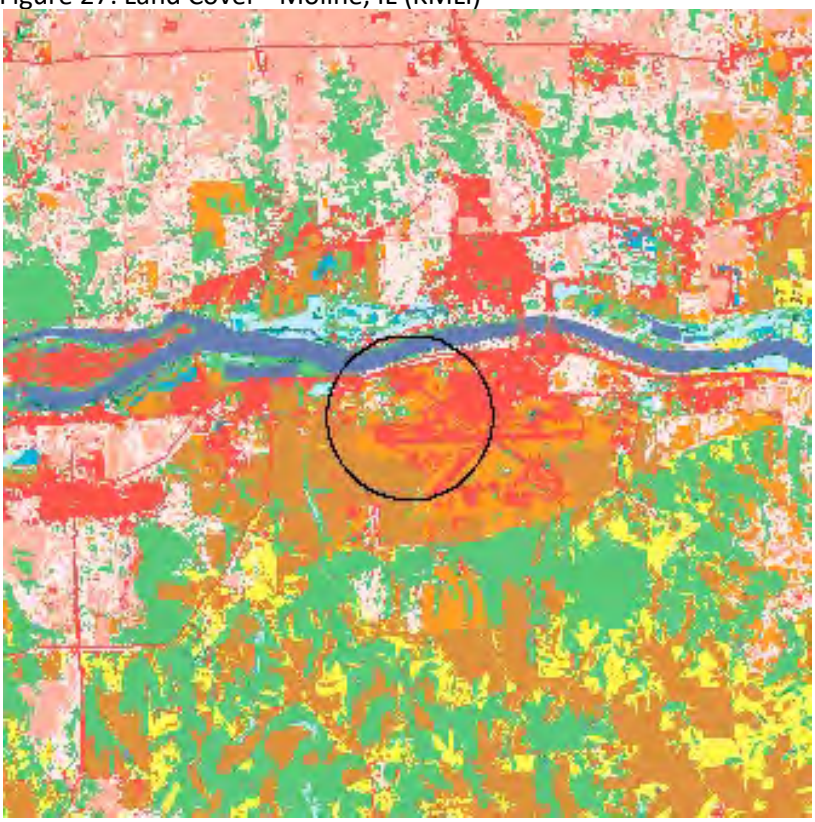


Figure 28. Land Cover - Omaha, NE (KOMA)

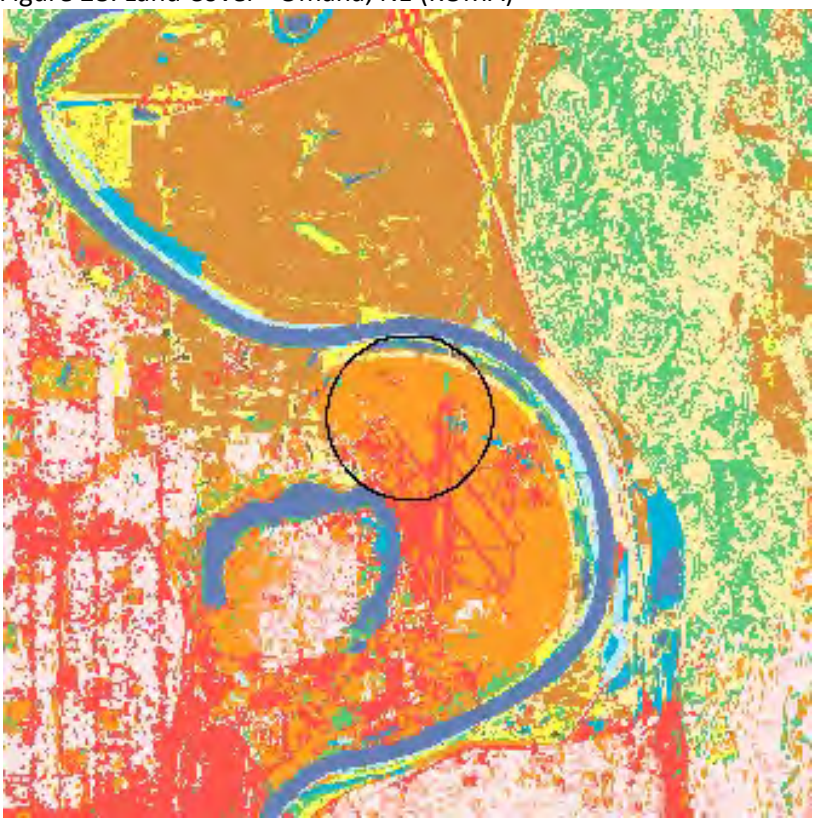


Figure 29. Land Cover - Ottumwa, IA (KOTM)

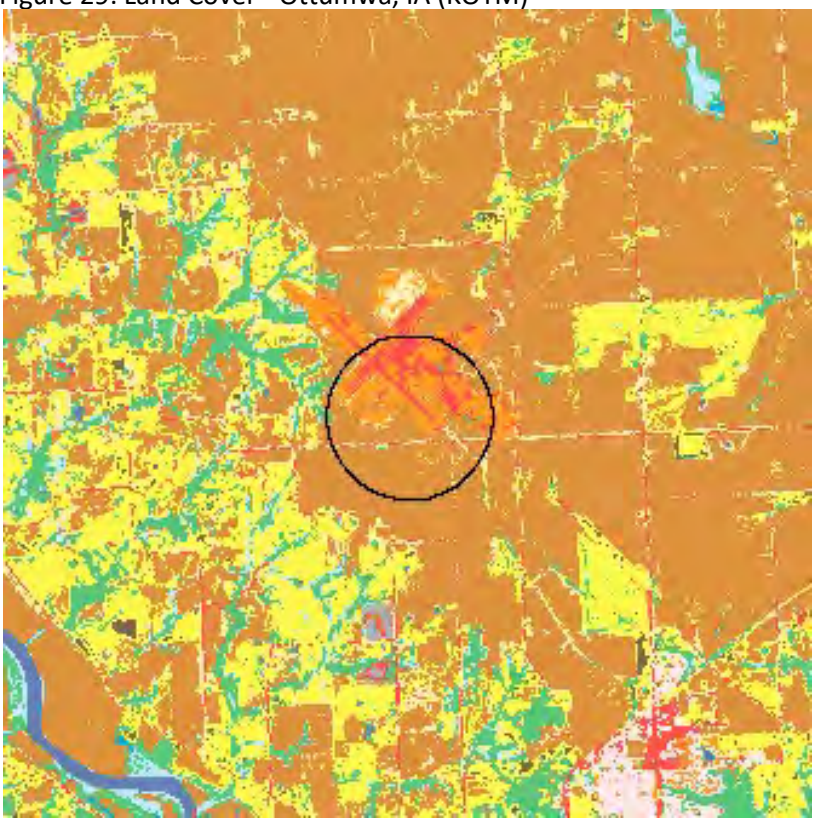


Figure 30. Land Cover - Sioux City, IA (KSUX)

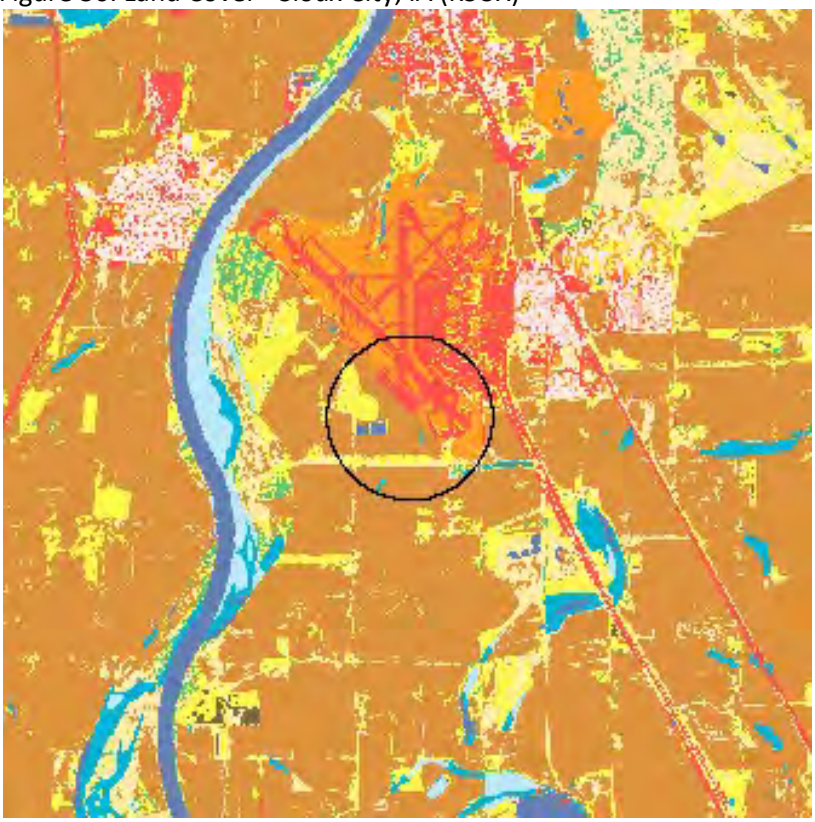


Figure 31. Land Cover - Sioux Falls, SD (KFSD)

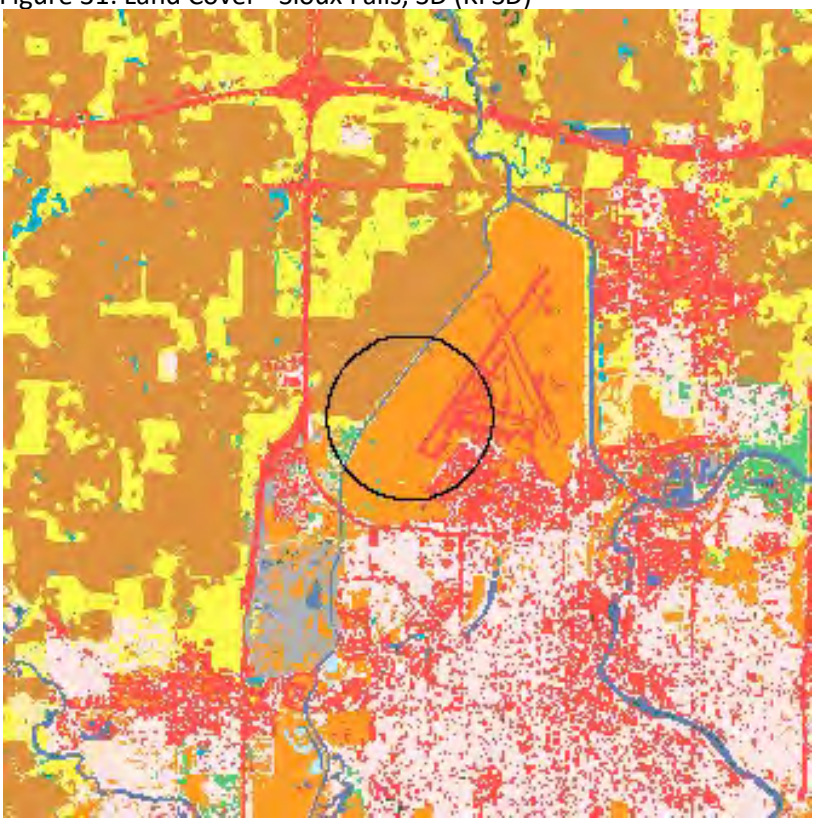


Figure 32. Land Cover - Spencer, IA (KSPW)

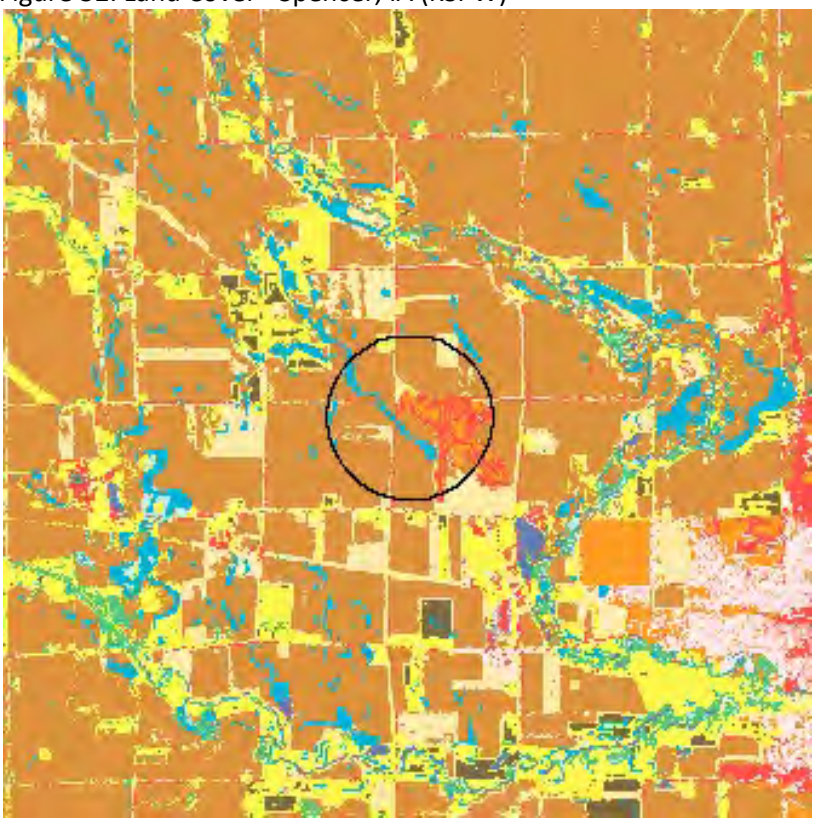
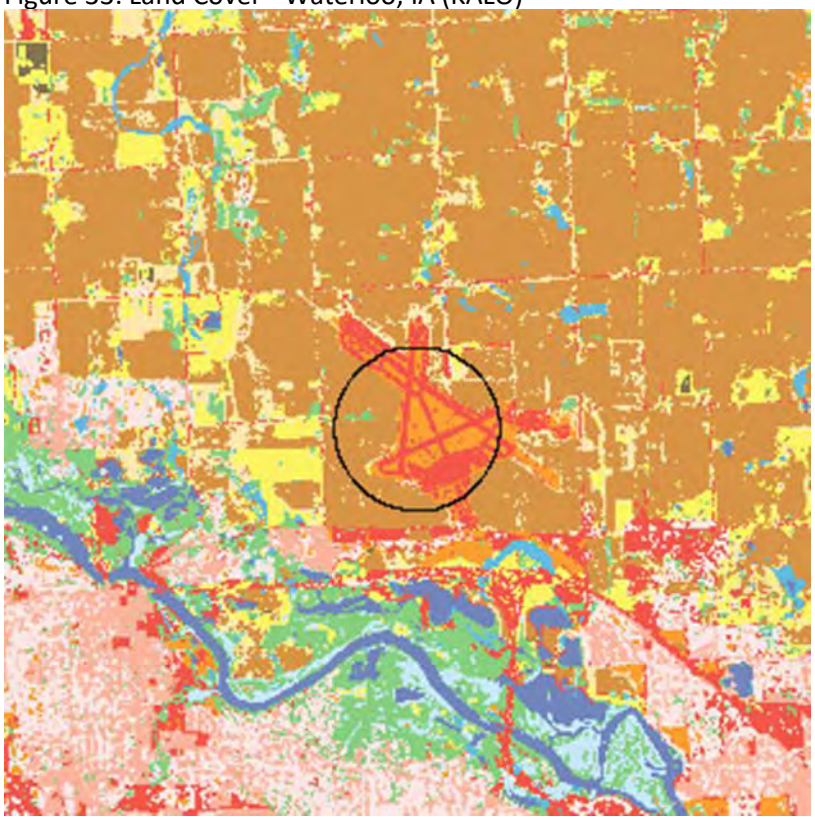


Figure 33. Land Cover - Waterloo, IA (KALO)



Processing Data in AERSURFACE

AERSURFACE was executed using the maximum 12 sectors for determining surface roughness for varying directions. Using the land cover and snow cover data described above, each site was processed three times (once each for “dry”, “average” and “wet” surface moisture conditions). The output for the individual months from these three runs were then manually combined into one output file for each site based on the moisture conditions determined for each month in Tables 7 – 11. These combined output files were then used in the final stage of AERMET.

Comparison of Model Results

The latest version of AERMOD available at the time (dated 15181) was used to conduct a sensitivity analysis using both the 2005 – 2009 and 2010 – 2014 meteorological datasets. The goal of this analysis was to determine the expected change in model results due to the change in meteorological years and the change in the methods used to process the data. This section summarizes the results from this sensitivity analysis.

A series of point, volume and area sources were modeled with varying release heights between zero and 65 meters above ground, with release heights set at every 5 meters. Two types of each source were modeled at each release height – one with characteristics resulting in more initial dispersion, the other with characteristics resulting in less. The less disperse point sources were modeled with an ambient exhaust temperature (varies with and is the same as the atmospheric temperature) and horizontally-oriented release, whereas the more disperse point sources were modeled with a bouyant exhaust temperature of 100° C and vertically-oriented release. The less disperse volume sources were modeled with 1-meter horizontal and vertical dimensions, whereas the more disperse volume sources were modeled with 10-meter horizontal and vertical dimensions. The less disperse area sources were modeled with no initial vertical dimension, whereas the more disperse area sources were modeled with a 10-meter initial vertical dimension. This variety of sources were modeled for the 1-hour, 3-hour, 8-hour, 24-hour and annual averaging periods using both sets of meteorological data.

The concentrations predicted using the new meteorological data were then divided by the concentrations predicted using the old meteorological data to determine the ratio of the difference in concentration caused by the change. Ratios greater or less than 1.0 indicate an expected increase or decrease in concentration respectively, while a ratio equal to 1.0 indicates no expected change in concentration.

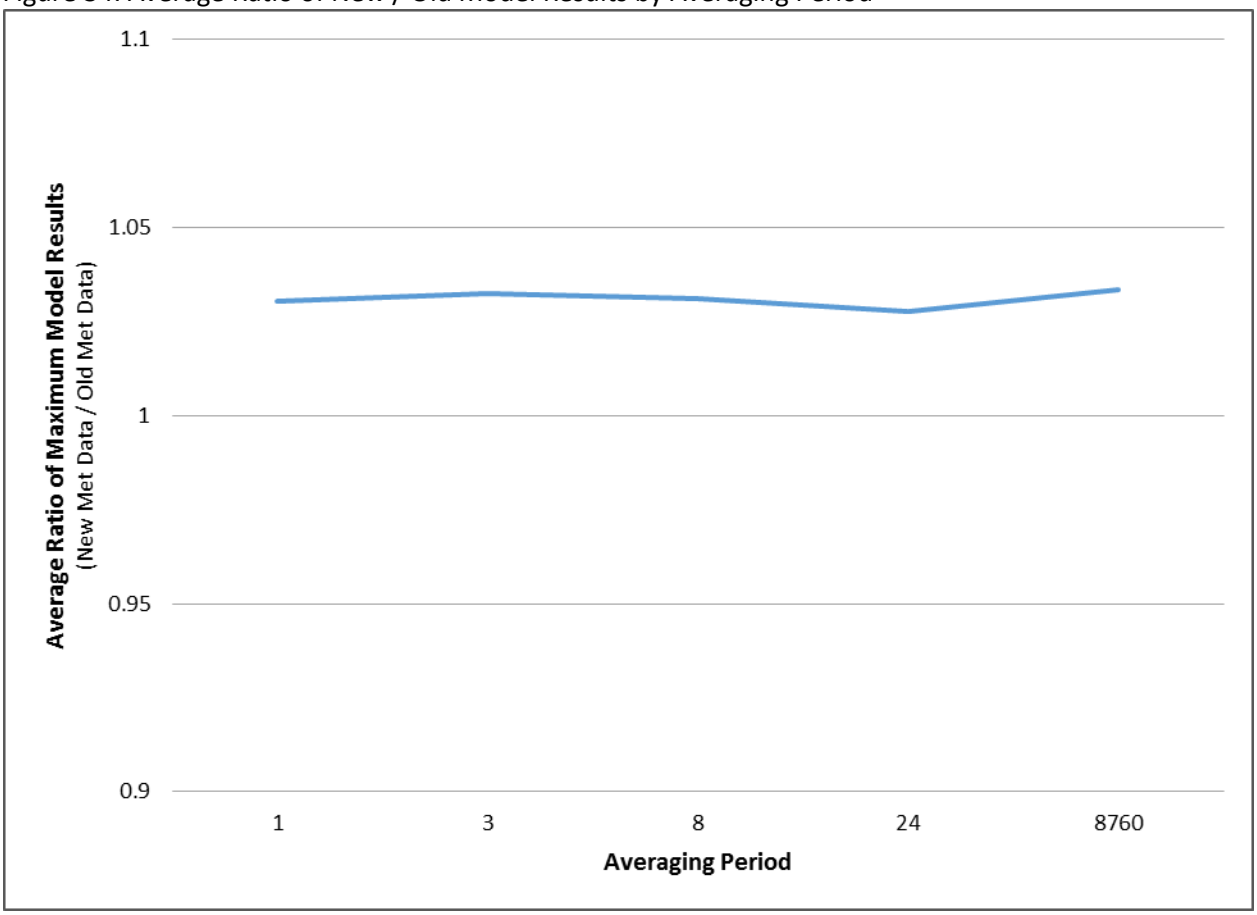
In the interest of consistency, and in an effort to retain data that would be helpful in explaining any potential biases or patterns in the data, all combinations of source types, release heights and averaging periods were modeled even though several of those combinations have little or no real-world relevance:

- Point sources are generally used to represent smokestacks or vents, and normally do not exhaust at ground level.
- Area sources are most commonly used to represent storage piles or other broad ground-based sources, and are almost never applied to sources released higher than ten meters above the ground.
- Volume sources are most commonly used to represent sources of emissions that have already been dispersed to some degree before being released into the general atmospheric flow, such as emissions from haul roads or emissions vented into a building that seep out various points in the structure. These types of sources are generally released within 20 meters of the ground.
- Both area and volume sources are almost always used to represent particulate emissions, to which only the 24-hour and annual averaging periods are important (with respect to the applicable NAAQS).

The data presented in this summary were filtered to exclude all such non-realistic data in order to provide a more real-world depiction of the expected change in model results. A detailed comparison that includes all possible combinations of source types, release heights and averaging periods can be found in Appendix B.

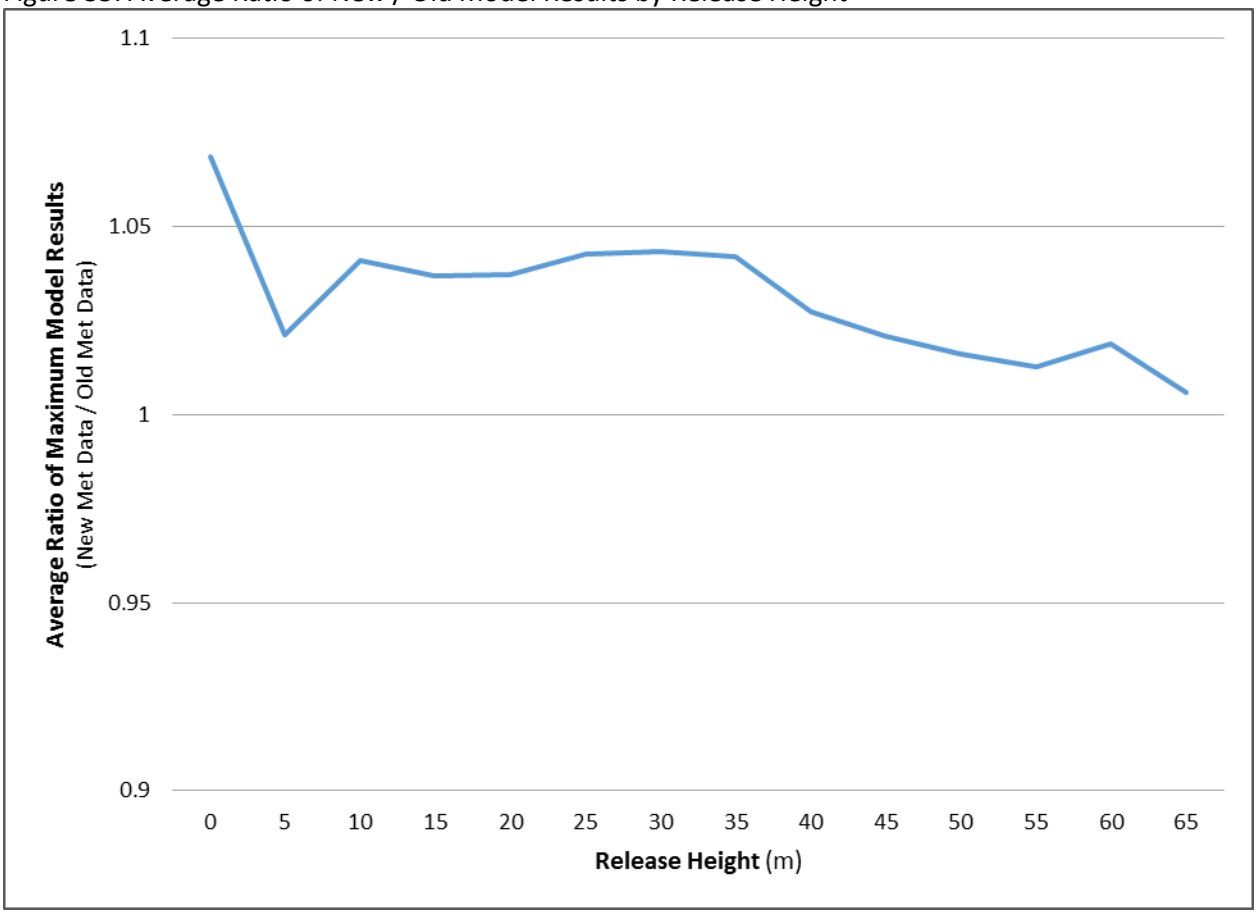
On average the model results are predicted to increase slightly for all averaging periods modeled (1-hour, 3-hour, 8-hour, 24-hour and Annual) (Figure 34).

Figure 34. Average Ratio of New / Old Model Results by Averaging Period



The expected change in model results also varies by release height (Figure 35). On average the model results are expected to increase the most for ground-level releases and releases approximately 10 – 35 meters above the ground.

Figure 35. Average Ratio of New / Old Model Results by Release Height



All results depicted up to this point are averages of all maximum concentrations regardless of source type. As multiple types of sources were modeled, it is also worthwhile to analyze the expected change in results based on source type. Figures 36 – 41 depict the expected change in model concentration by averaging period for the various combinations of source types and characteristics (averaged across all applicable release heights). Figures 42 – 47 depict the expected change in model concentration by release height for the various combinations of source types and characteristics (averaged across all applicable averaging periods).

One of the most important results to note applies to the "more disperse" point source category (Figures 37 and 43). These are stacks with a vertical exhaust that is hotter than the surrounding air (generators, boilers, combustion turbines, etc.). This type of source constitutes a large percentage of modeled sources. Based on these figures, there is expected to be a very slight increase in concentration, on average, for most averaging periods and all release heights, with the largest predicted increase affecting the annual averaging period.

Overall, the largest expected increase in model concentration will affect the 24-hour averaging period for ground-based area sources that have little or no initial dispersion (see Figures 40 and 46). This is likely due to the lack of meander for area sources as described in section 6.2 of the AERMOD implementation guide (28). In cases where an area source produces large concentrations during periods

with very light wind speeds it may be appropriate to instead characterize the source using a volume source which is likely to alleviate the erroneous over-prediction (see Figure 44). The 8-hour averaging period for non-buoyant, horizontal/obstructed exhaust point sources with release heights between 10 meters and 35 meters above the ground are also predicted to have higher concentrations when using the new meteorological data (see Figures 36 and 42).

Figure 36.

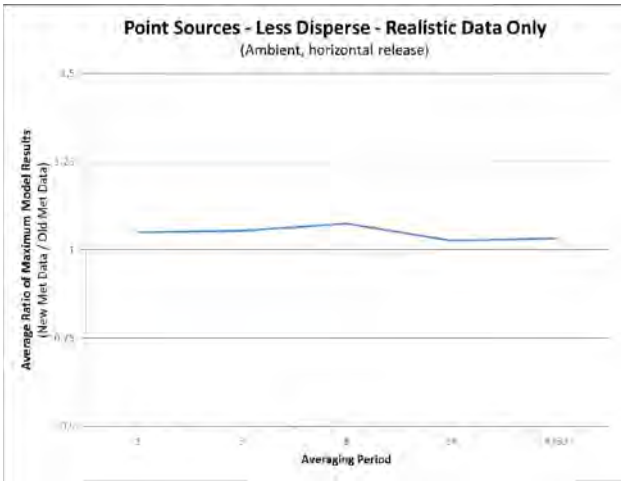


Figure 37.

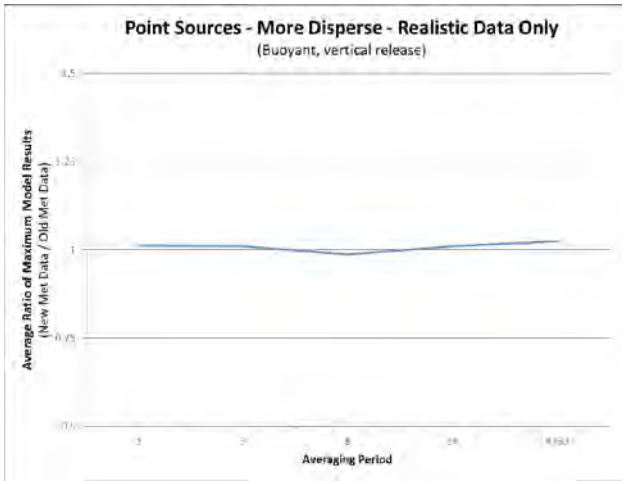


Figure 38.

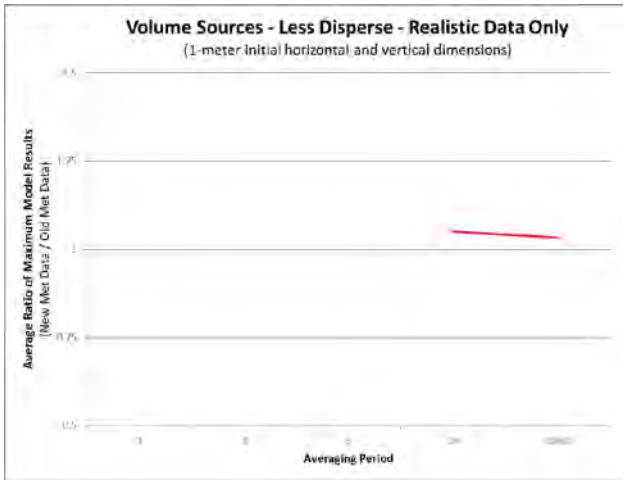


Figure 39.

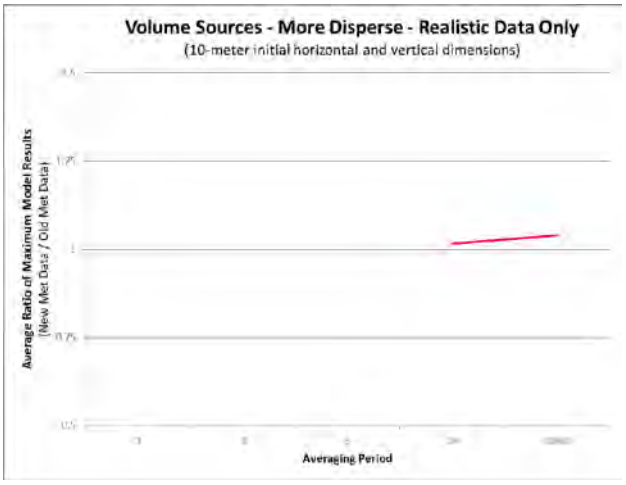


Figure 40.

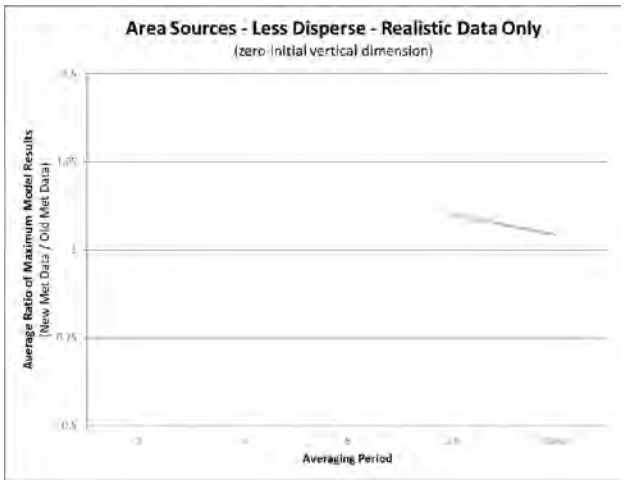


Figure 41.

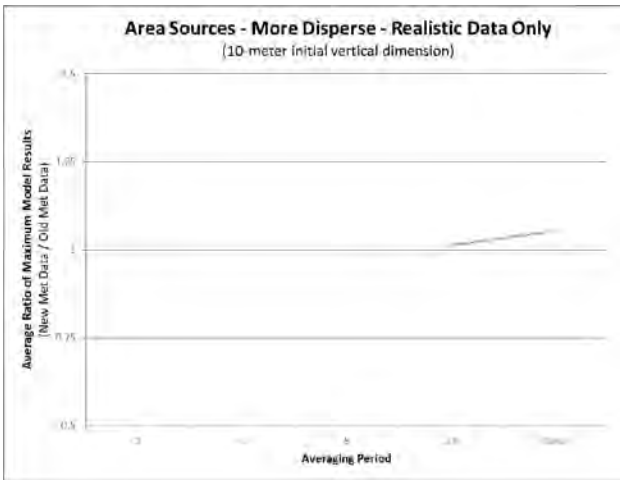


Figure 42.

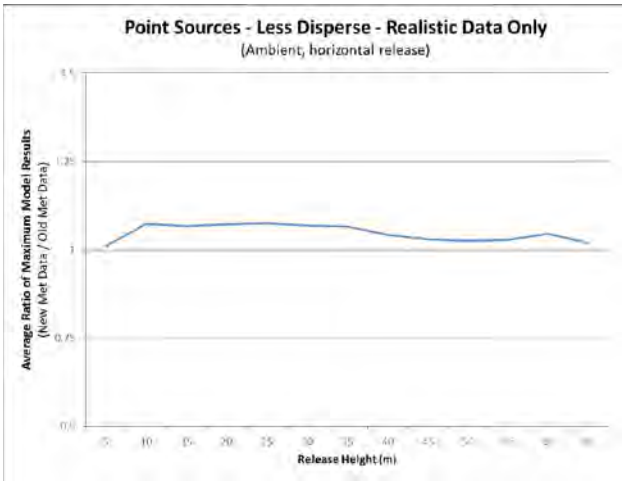


Figure 43.

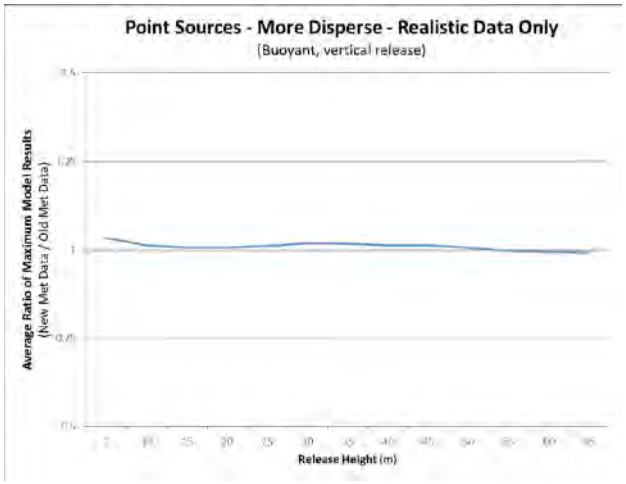


Figure 44.

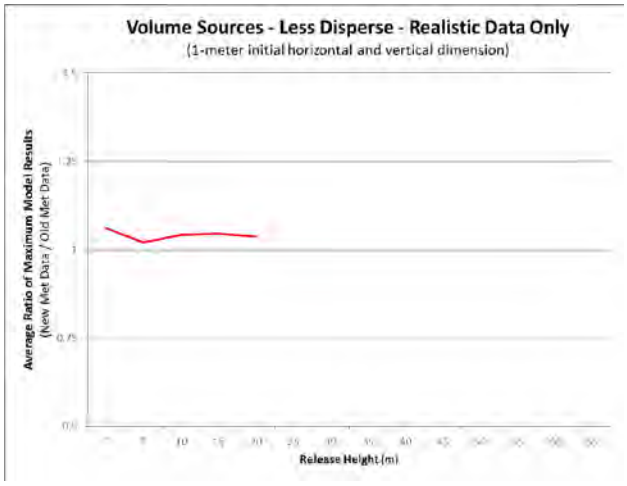


Figure 45.

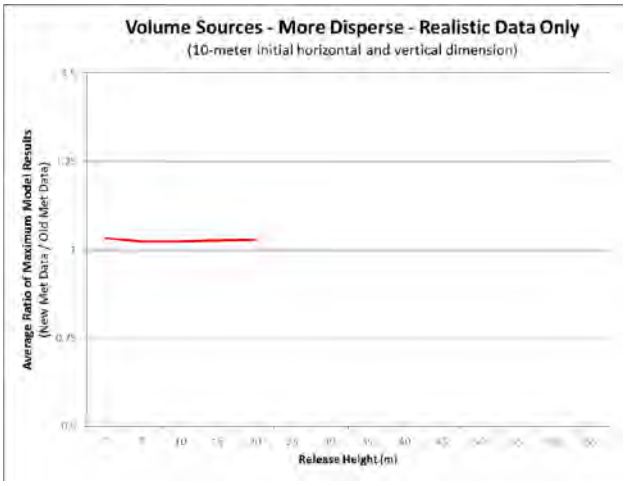


Figure 46.

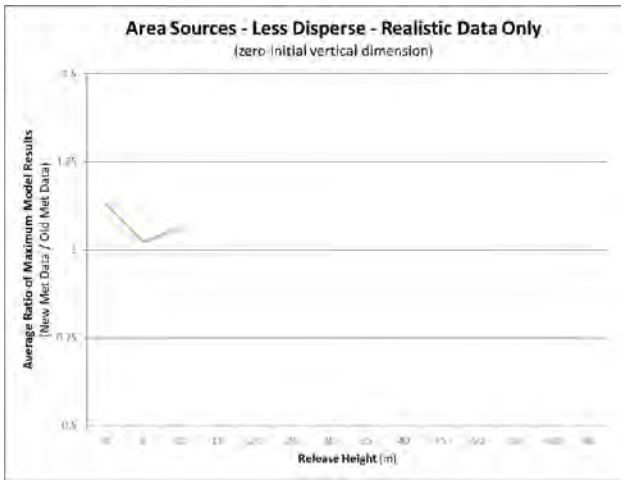
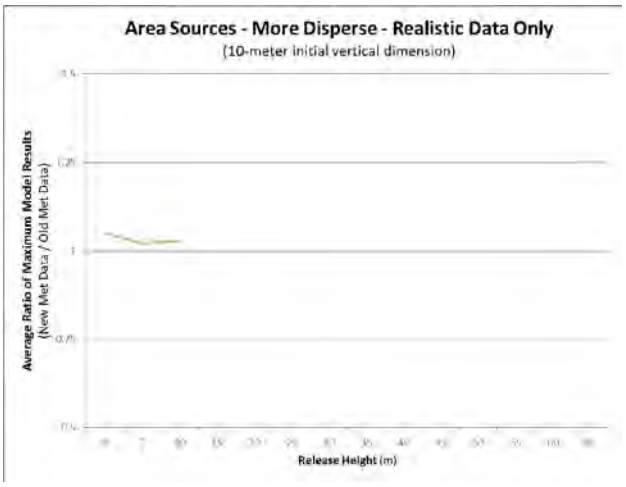


Figure 47.



The comparisons described above were conducted by pairing the results using the 2005 – 2009 meteorological data from one site to the model results using the 2010 – 2014 meteorological data from the same site. These comparisons only depict the expected change in model results due to the change in model years and processing methodology, not the expected change in model prediction caused by a change in the representative site. A more detailed comparison of model results was conducted using all 19 meteorological sites that includes the expected change in concentration due to a change in representative site. The results of this analysis are presented in Appendix B. In addition, the data in Appendix B have not been filtered to exclude the unrealistic source type/release height/averaging period combinations.

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Appendix A – Meteorological Observation Station Information

This appendix contains information about the various meteorological observation stations used in the processing of the meteorological data for AERMOD.

Two maps are provided depicting the locations of all of the surface stations used in the representivity analysis and the processing of the AERMOD meteorological data. One of these maps includes county names while the other includes terrain elevations for the state of Iowa. On the terrain map, the sites that are located in river valleys are highlighted. This distinction is provided for reference only and is not an indication of the valley's influence on the meteorological observations at that location. The aerial photographs used to determine the locations of all surface and upper air sites used in the processing of the AERMOD meteorological data follow these maps. Finally, station summary information is provided for each surface station.

The upper left corner of each surface station summary includes the station identifiers, anemometer height, 1-minute data availability date, ice-free winds (IFW) commission date, location information and the confidence of the location.

The Weather Bureau Army Navy (WBAN) and World Meteorological Organization (WMO) identifiers, as well as the data availability dates were obtained from the raw data. The anemometer heights for all ASOS sites were based on the data available on the National Weather Service's website. The location information was determined by examining aerial photography from online sources such as Google Earth, Bing Maps and the Iowa Geographic Image Map Server. Depending on the quality of the aerial photographs available for each area, the confidence in the location of the meteorological instruments varied from high to low. If the meteorological instrument was readily visible in a high-resolution aerial photograph, the coordinates were based on the actual location of the instrument, and the confidence was set to high. If an object appearing to be the meteorological instrument was observed in a low resolution aerial photograph, the coordinates were based on the location of the object appearing to be the instrument, and the confidence was set to medium. In the case where no meteorological instrument was observable in any aerial photograph, the coordinates were an estimate, based on an open area where an instrument could be located near the center of the runway(s), and the confidence was set to low.

The wind rose for each site is provided in the upper right corner of each station summary. This wind rose is based on the raw data prior to any data filling and does not include the 1-minute wind data.

In the center of each station summary is a map depicting the level of representativeness of that station to other areas of the state, and a list of the most closely correlated nearby sites. Areas of the state shaded in blue and green have a distance-weighted correlation coefficient of 0.9 and 0.8 respectively. Stations that were included in the AERMOD meteorological dataset are bolded in the list of most representative sites.

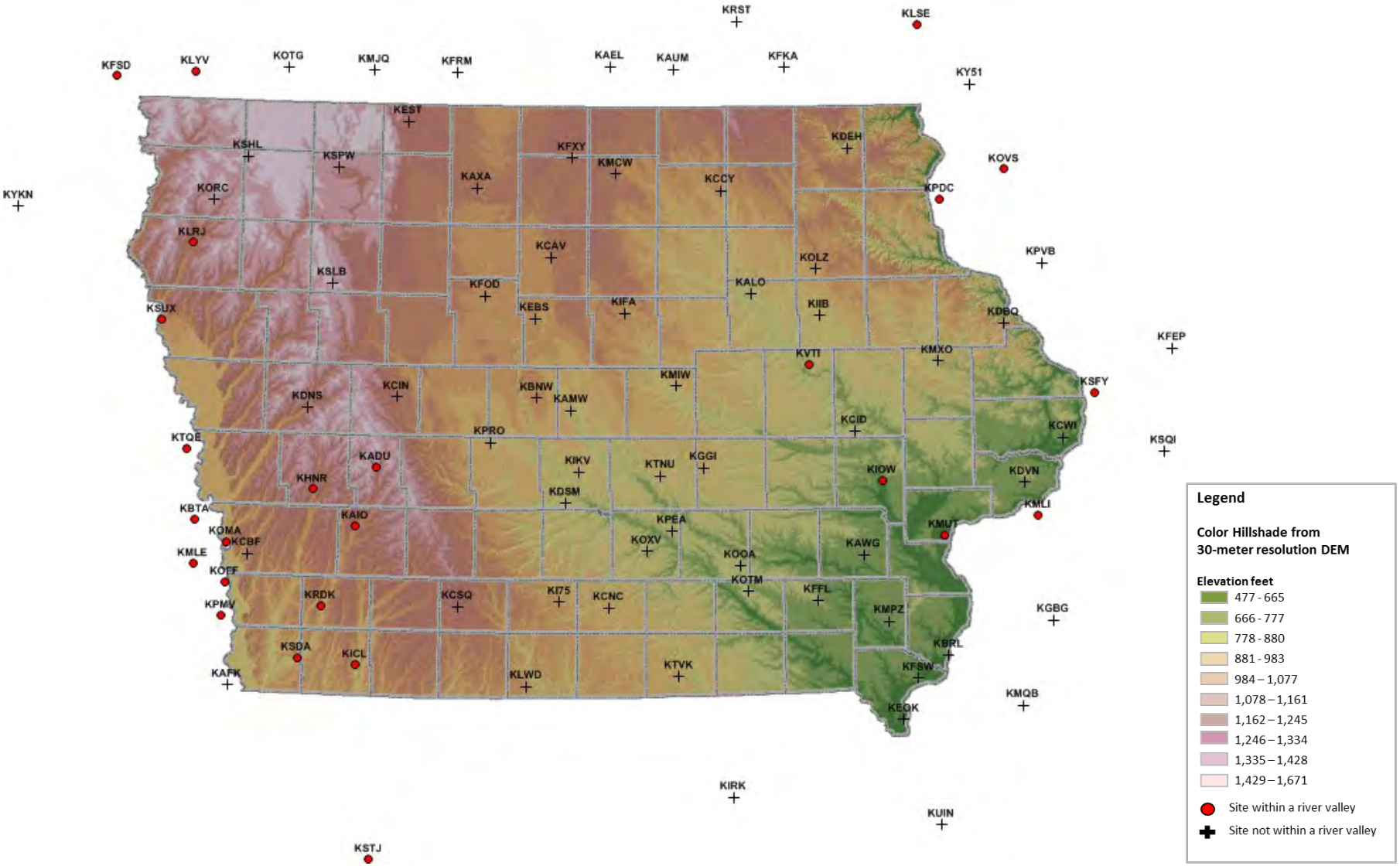
At the bottom of each station summary is the terrain-wind index.

On the second page of each station summary is a quarterly inventory of the raw Integrated Surface Hourly (ISH) data. Only the variables required by AERMET are shown. All data not meeting the 90%

data completeness criterion are highlighted in red. Note that in some instances the 1-minute wind data or collocated data from another source were used to supplement the raw ISH data to qualify it for use.

Surface Station Location Map – Counties

Surface Station Location Map – Terrain

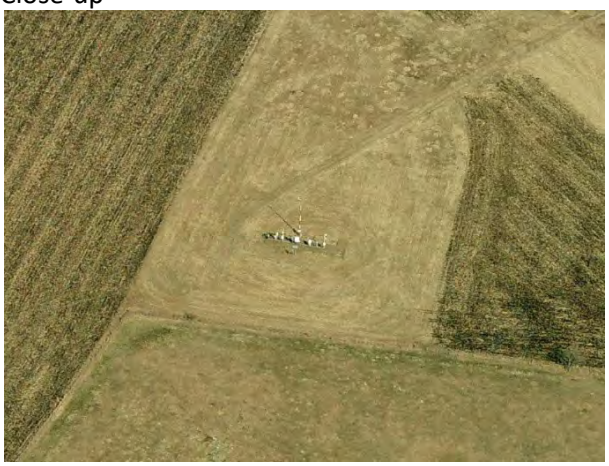


Aerial Photographs - Surface Observation Stations

Ames, IA (KAMW)

Overview

Close-up



Burlington, IA (KBRL)

Overview

Close-up

Cedar Rapids, IA (KCID)

Overview

Close-up

Davenport, IA (KDVN)

Overview

Close-up

Des Moines, IA (KDSM)

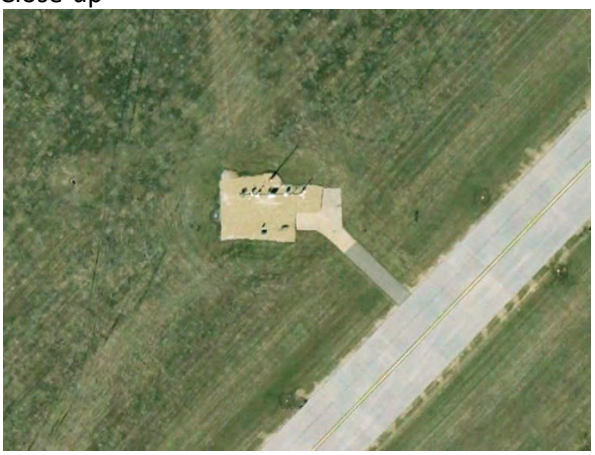
Overview

Close-up

Dubuque, IA (KDBQ)

Overview

Close-up



Estherville, IA (KEST)

Overview

Close-up

Iowa City, IA (KIOW)

Overview

Close-up

La Crosse, WI (KLSE)

Overview

Close-up

Lamoni, IA (KLWD)

Overview

Close-up

Marshalltown, IA (KMIW)

Overview

Close-up

Mason City, IA (KMCW)

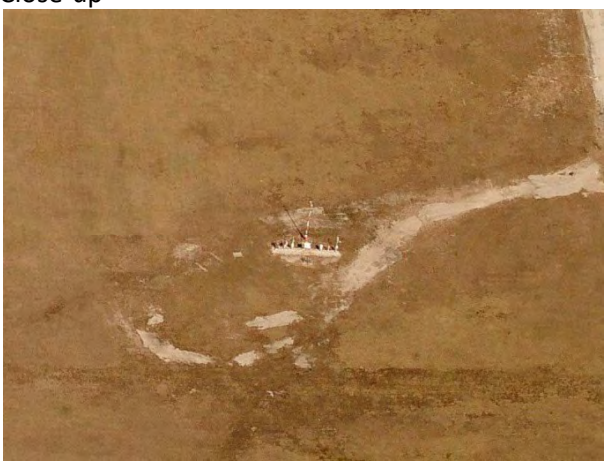
Overview

Close-up

Moline, IL (KMLI)

Overview

Close-up



Omaha, NE (KOMA)

Overview

Close-up

Ottumwa, IA (KOTM)

Overview

Close-up

Sioux City, IA (KSUX)

Overview

Close-up

Sioux Falls, SD (KFSD)

Overview

Close-up

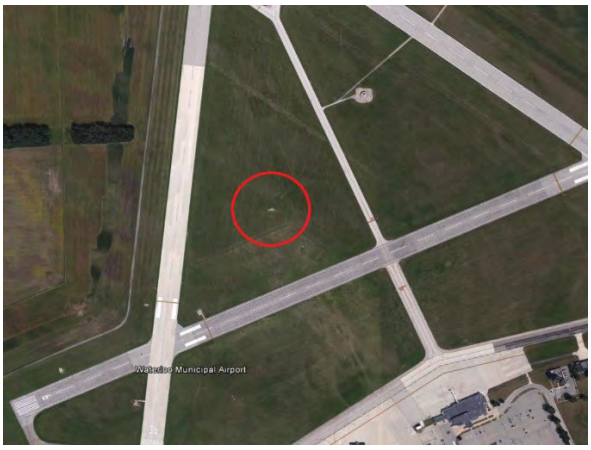
Spencer, IA (KSPW)

Overview

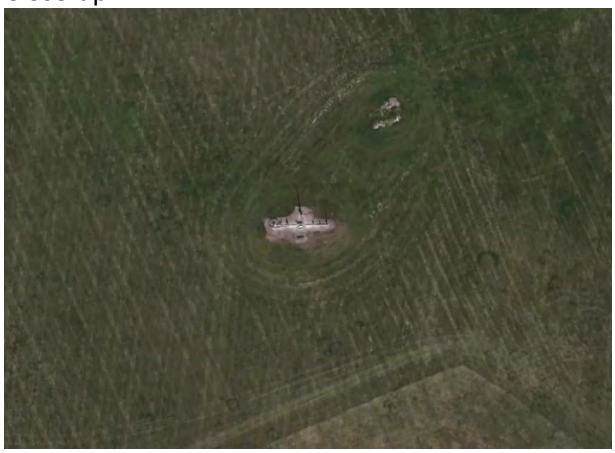
Close-up

Waterloo, IA (KALO)

Overview



Close-up



Aerial Photographs – Upper Air Observation Stations

Davenport, IA (KDVN)

Overview

Close-up

Omaha, NE (KOAX)

Overview

Close-up

Surface Observation Station List

Alphabetically by Call Sign

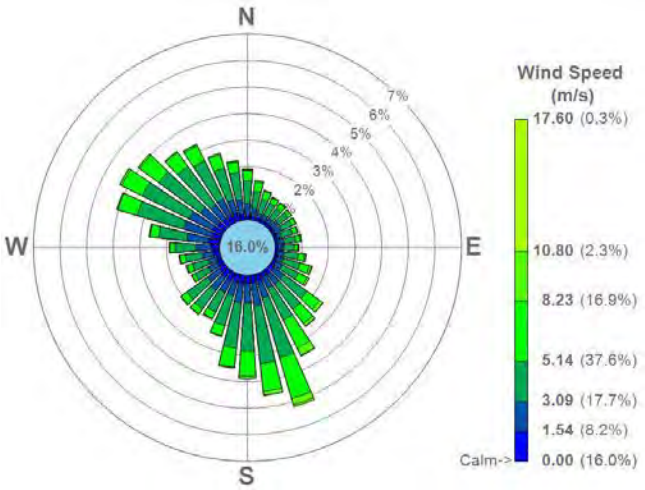
Call Sign	City	Call Sign	City
KADU	Audubon	KIRK	Kirksville
KAEL	Albert Lea	KLRJ	Le Mars
KAFK	Nebraska City	KLSE	La Crosse
KAIO	Atlantic	KLWD	Lamoni
KALO	Waterloo	KLYV	Luverne
KAMW	Ames	KMCW	Mason City
KAUM	Austin	KMIW	Marshalltown
KAWG	Washington	KMJQ	Jackson
KAXA	Algona	KMLE	Millard
KBNW	Boone	KMLI	Moline
KBRL	Burlington	KMPZ	Mount Pleasant
KBTA	Blair	KMQB	Macomb
KCAV	Clarion	KMUT	Muscatine
KCBF	Council Bluffs	KMXO	Monticello
KCCY	Charles City	KOFF	Offutt
KCID	Cedar Rapids	KOLZ	Oelwein
KCIN	Carroll	KOMA	Omaha (Eppley)
KCKP	Cherokee	KOOA	Oskaloosa
KCNC	Chariton	KORC	Orange City
KCSQ	Creston	KOTG	Worthington
KCWI	Clinton	KOTM	Ottumwa
KDBQ	Dubuque	KOVS	Boscobel
KDEH	Decorah	KOXV	Knoxville
KDNS	Denison	KPDC	Prairie Du Chien
KDSM	Des Moines	KPEA	Pella
KDVN	Davenport	KPMV	Plattsmouth
KEBS	Webster City	KPRO	Perry
KEOK	Keokuk	KPVB	Platteville
KEST	Estherville	KRDK	Red Oak
KFEP	Freeport	KRST	Rochester
KFFL	Fairfield	KSDA	Shenandoah
KFKA	Preston	KSFY	Savanna
KFOD	Fort Dodge	KSHL	Sheldon
KFRM	Fairmont	KSLB	Storm Lake
KFSD	Sioux Falls	KSPW	Spencer
KFSW	Fort Madison	KSQI	Sterling
KFXY	Forest City	KSTJ	St. Joseph
KGBG	Galesburg	KSUX	Sioux City
KGGI	Grinnell	KTNU	Newton
KHNR	Harlan	KTQE	Tekamah
KI75	Osceola	KTVK	Centerville
KICL	Clarinda	KUIN	Quincy
KIFA	Iowa Falls	KVTI	Vinton
KIIB	Independence	KY51	Viroqua
KIKV	Ankeny	KYKN	Yankton
KIOW	Iowa City		

Surface Observation Station List

Alphabetically by City

Call Sign	City
Albert Lea	KAEL
Algona	KAXA
Ames	KAMW
Ankeny	KIKV
Atlantic	KAIO
Audubon	KADU
Austin	KAUM
Blair	KBTA
Boone	KBNW
Boscobel	KOVS
Burlington	KBRL
Carroll	KCIN
Cedar Rapids	KCID
Centerville	KTVK
Chariton	KCNC
Charles City	KCCY
Cherokee	KCKP
Clarinda	KICL
Clarion	KCAV
Clinton	KCWI
Council Bluffs	KCBF
Creston	KCSQ
Davenport	KDVN
Decorah	KDEH
Denison	KDNS
Des Moines	KDSM
Dubuque	KDBQ
Estherville	KEST
Fairfield	KFFL
Fairmont	KFRM
Forest City	KFXY
Fort Dodge	KFOD
Fort Madison	KFSW
Freeport	KFEP
Galesburg	KGBG
Grinnell	KGGI
Harlan	KHNR
Independence	KIIB
Iowa City	KIOW
Iowa Falls	KIFA
Jackson	KMJQ
Keokuk	KEOK
Kirksville	KIRK
Knoxville	KOXV
La Crosse	KLSE
Lamoni	KLWD
Le Mars	KLRJ
Luverne	KLYV
Macomb	KMQB
Marshalltown	KMIW
Mason City	KMCW
Millard	KMLE
Moline	KMLI
Monticello	KMXO
Mount Pleasant	KMPZ
Muscatine	KMUT
Nebraska City	KAFK
Newton	KTNU
Oelwein	KOLZ
Offutt	KOFF
Omaha (Eppley)	KOMA
Orange City	KORC
Osceola	KI75
Oskaloosa	KOOA
Ottumwa	KOTM
Pella	KPEA
Perry	KPRO
Platteville	KPVB
Plattsmouth	KPMV
Prairie Du Chien	KPDC
Preston	KFKA
Quincy	KUIN
Red Oak	KRDK
Rochester	KRST
Savanna	KSFY
Sheldon	KSHL
Shenandoah	KSDA
Sioux City	KSUX
Sioux Falls	KFSD
Spencer	KSPW
St. Joseph	KSTJ
Sterling	KSQI
Storm Lake	KSLB
Tekamah	KTQE
Vinton	KVTI
Viroqua	KY51
Washington	KAWG
Waterloo	KALO
Webster City	KEBS
Worthington	KOTG
Yankton	KYKN

Albert Lea, MN
(KAEL)



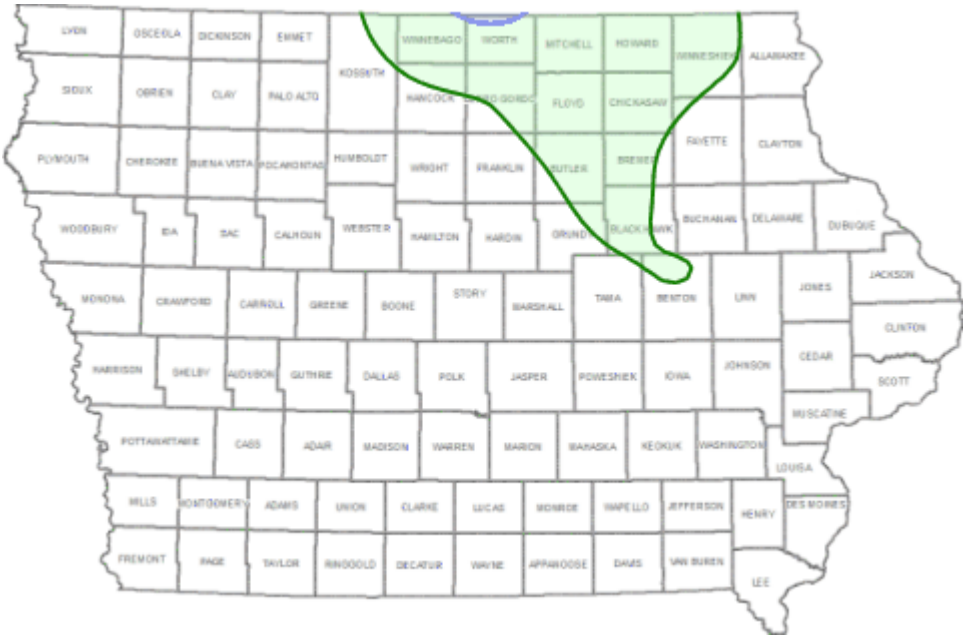
Station Info

WBAN:	94968
WMO:	726589
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	43.6824 N, 93.3695 W
UTM (NAD83, Z15):	470218.09, 4836665.02
Elevation:	381.9 m
Confidence:	Medium

Wind Correlation



Station	Correlation
KAUM	0.885
KRST	0.839
KDEH	0.835
KFKA	0.835
KCCY	0.831
KALO	0.823
KFXY	0.819
KVTI	0.811
KMCW	0.810
KEBS	0.789
KFOD	0.778
KFRM	0.775
KCAV	0.772
KY51	0.771
KAXA	0.770
KIFA	0.762
KOLZ	0.761
KMJQ	0.761
KEST	0.759
KMIW	0.758

Terrain-Wind Index (Range = 0.001359436)

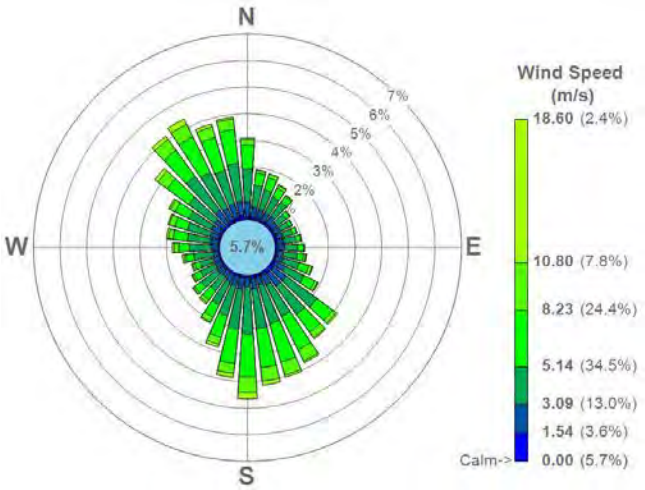
Albert Lea, MN
(KAEL)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	98.89%	98.89%	98.80%	98.80%	95.51%	98.80%	98.80%	20.14%
	Q2	97.53%	97.53%	97.44%	97.53%	97.53%	97.53%	97.53%	16.99%
	Q3	96.78%	96.78%	96.65%	93.39%	96.78%	96.69%	96.69%	26.95%
	Q4	99.46%	99.46%	99.41%	99.41%	99.46%	99.46%	99.46%	15.72%
2011	Q1	100.00%	100.00%	99.91%	99.91%	100.00%	99.91%	99.91%	10.60%
	Q2	99.54%	99.54%	99.31%	99.08%	99.54%	99.54%	99.54%	10.49%
	Q3	96.83%	96.83%	96.33%	94.02%	96.83%	96.83%	96.83%	28.31%
	Q4	99.73%	99.73%	99.68%	79.35%	99.73%	99.64%	99.68%	12.55%
2012	Q1	99.95%	99.95%	99.91%	99.73%	99.95%	99.86%	99.86%	11.63%
	Q2	99.95%	99.95%	97.62%	99.95%	99.95%	99.86%	99.95%	13.32%
	Q3	99.77%	99.77%	99.18%	99.77%	99.77%	99.73%	99.77%	24.86%
	Q4	96.29%	96.29%	96.24%	95.70%	96.24%	96.29%	96.29%	14.18%
2013	Q1	99.72%	99.72%	99.72%	98.38%	99.68%	99.72%	99.72%	12.64%
	Q2	95.88%	95.88%	95.70%	95.79%	95.83%	95.83%	95.88%	10.71%
	Q3	99.77%	99.77%	99.59%	99.73%	99.73%	99.64%	99.73%	23.60%
	Q4	99.32%	99.32%	99.32%	97.96%	99.28%	99.32%	99.32%	12.68%
2014	Q1	99.77%	99.77%	99.77%	98.29%	99.72%	99.77%	99.77%	8.29%
	Q2	99.77%	99.77%	99.45%	99.50%	99.68%	99.73%	99.73%	10.67%
	Q3	99.91%	99.91%	99.64%	99.73%	99.91%	99.91%	99.91%	24.00%
	Q4	99.46%	99.46%	99.37%	98.19%	98.78%	98.87%	99.05%	8.83%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Algona, IA
(KAXA)



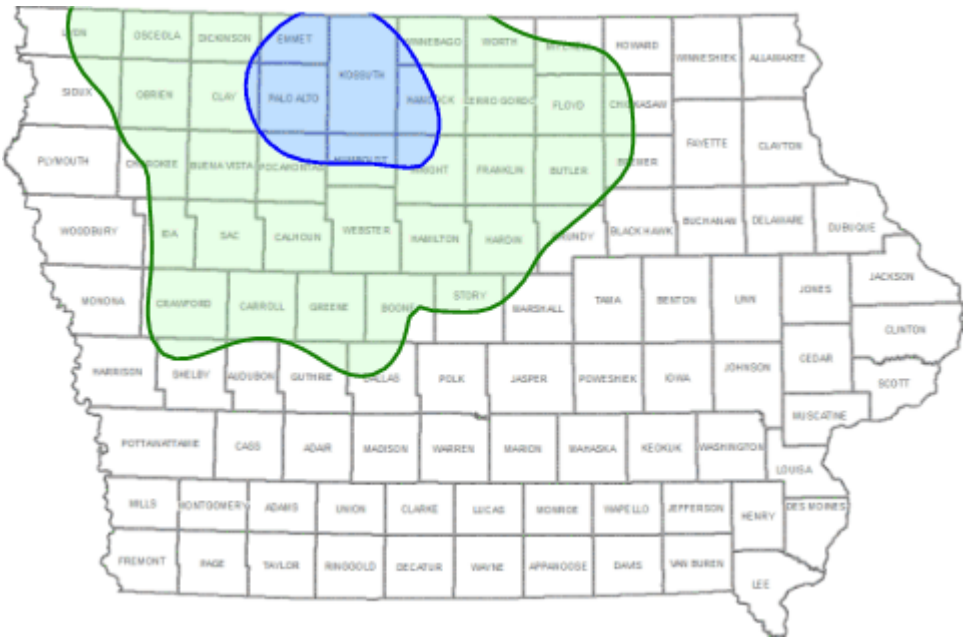
Station Info

WBAN:	NA
WMO:	725457
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	43.0798 N, 94.2741 W
UTM (NAD83, Z15):	396422.17, 4770439.91
Elevation:	370.3 m
Confidence:	Medium

Wind Correlation



Station	Correlation
KEST	0.909
KCAV	0.899
KFRM	0.887
KEBS	0.884
KSPW	0.882
KFXY	0.866
KSHL	0.866
KMCW	0.859
KSLB	0.855
KOTG	0.846
KMJQ	0.839
KFOD	0.833
KCCY	0.827
KDNS	0.823
KCIN	0.815
KPRO	0.813
KIFA	0.810
KRST	0.807
KCKP	0.807
KBNW	0.799

Terrain-Wind Index (Range = 0.001010057)

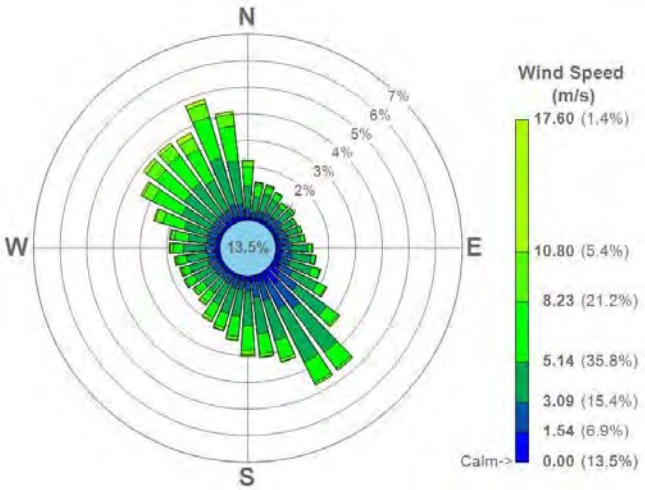
Algona, IA
(KAXA)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	88.84%	88.84%	88.80%	9.95%	88.84%	88.84%	88.84%	8.43%
	Q2	39.51%	39.51%	39.51%	39.51%	39.51%	39.51%	39.51%	2.52%
	Q3	89.36%	89.36%	89.27%	89.22%	89.36%	89.36%	89.36%	11.50%
	Q4	92.75%	92.75%	92.66%	92.66%	92.75%	92.75%	92.75%	5.93%
2011	Q1	96.11%	96.11%	96.06%	31.90%	96.11%	96.11%	96.11%	5.46%
	Q2	81.55%	81.55%	81.50%	81.55%	81.55%	81.55%	81.55%	2.84%
	Q3	81.70%	81.70%	81.66%	80.93%	81.70%	81.70%	81.70%	11.46%
	Q4	98.41%	98.41%	98.41%	71.78%	98.41%	98.41%	98.41%	4.71%
2012	Q1	99.40%	99.40%	99.36%	63.46%	99.40%	99.40%	99.40%	5.49%
	Q2	89.42%	89.42%	89.42%	89.19%	89.42%	88.74%	89.42%	3.66%
	Q3	99.28%	99.28%	93.34%	87.73%	93.34%	90.63%	93.34%	9.69%
	Q4	99.23%	99.23%	99.23%	99.09%	99.23%	98.82%	99.23%	4.17%
2013	Q1	99.49%	99.49%	99.49%	99.40%	99.49%	98.98%	99.49%	3.70%
	Q2	99.36%	99.36%	99.36%	99.27%	99.36%	97.99%	99.36%	3.75%
	Q3	82.74%	82.74%	82.74%	78.94%	82.74%	80.66%	82.74%	8.20%
	Q4	99.14%	99.14%	99.14%	99.05%	99.14%	98.73%	99.14%	3.89%
2014	Q1	99.86%	99.86%	99.86%	99.54%	99.86%	99.72%	99.86%	3.29%
	Q2	99.91%	99.91%	99.91%	99.86%	99.91%	98.53%	99.91%	4.30%
	Q3	99.55%	99.55%	99.55%	99.32%	99.55%	96.74%	99.55%	7.43%
	Q4	99.82%	99.82%	99.82%	99.64%	99.82%	99.09%	99.82%	3.76%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Ames, IA
(KAMW)



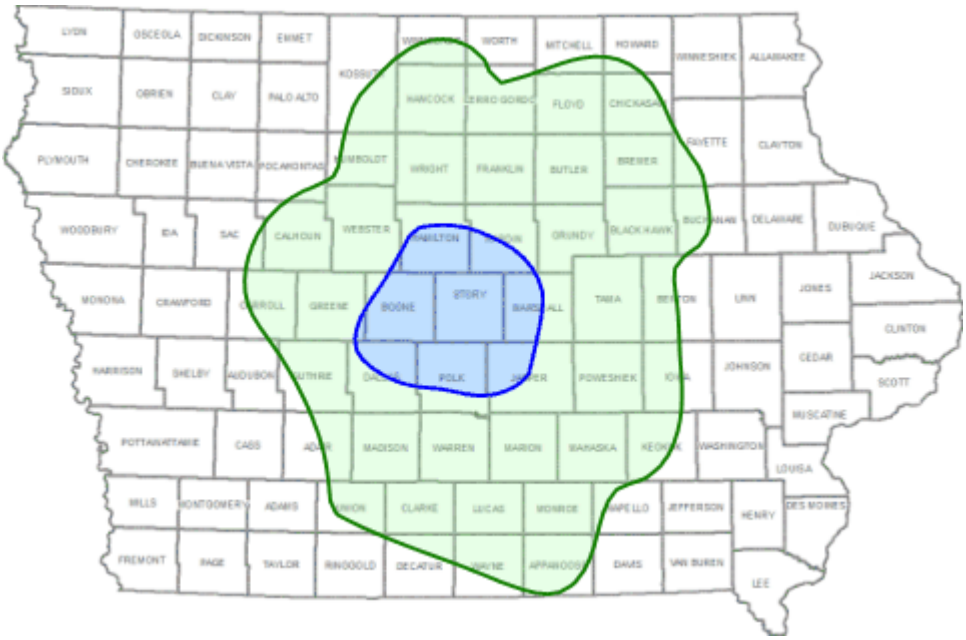
Station Info

WBAN:	94989
WMO:	725472
Anemometer Height:	10.0 m
1-Min Availability Date:	3/3/2005
IFW Installation Date:	10/27/2005

Location Info

Lat-Long:	41.9904 N, 93.6185 W
UTM (NAD83, Z15):	448769.50, 4648895.34
Elevation:	280.4 m
Confidence:	High

Wind Correlation



Station	Correlation
KBNW	0.926
KIKV	0.923
KPRO	0.916
KEBS	0.898
KTNU	0.894
KMIW	0.892
KIFA	0.880
KDSM	0.874
KOXV	0.862
KFXY	0.847
KOOA	0.847
KPEA	0.846
KCAV	0.837
KI75	0.832
KCCY	0.831
KCNC	0.830
KCIN	0.826
KGGI	0.826
KALO	0.821
KTVK	0.819

Terrain-Wind Index (Range = 0.002033596)

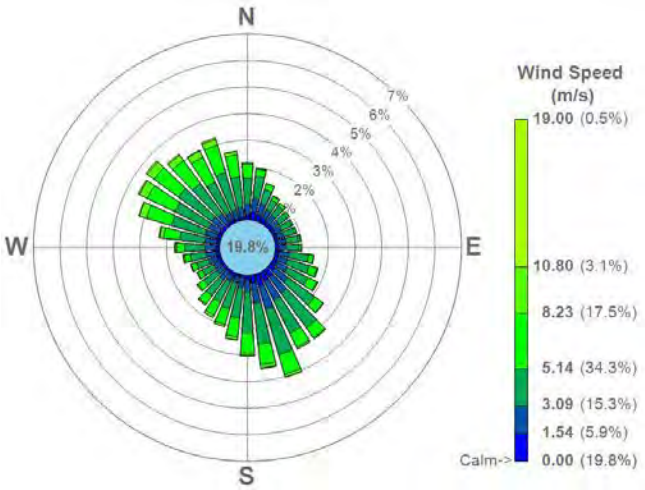
Ames, IA
(KAMW)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	100.00%	100.00%	100.00%	99.91%	100.00%	99.86%	100.00%	11.48%
	Q2	100.00%	100.00%	100.00%	99.91%	100.00%	98.35%	99.95%	15.48%
	Q3	99.77%	99.77%	99.73%	99.68%	99.73%	97.87%	99.68%	19.38%
	Q4	99.95%	99.95%	99.95%	99.59%	99.95%	99.14%	99.86%	13.13%
2011	Q1	99.91%	99.91%	99.91%	99.81%	99.91%	99.07%	99.91%	8.10%
	Q2	99.95%	99.95%	99.95%	99.50%	99.91%	98.40%	99.86%	8.70%
	Q3	99.91%	99.91%	99.91%	98.60%	99.91%	97.42%	99.77%	23.78%
	Q4	100.00%	100.00%	99.95%	99.91%	99.95%	99.64%	99.91%	12.86%
2012	Q1	100.00%	100.00%	100.00%	99.27%	99.31%	98.72%	99.18%	11.63%
	Q2	99.86%	99.86%	99.86%	99.77%	99.86%	98.49%	99.82%	10.39%
	Q3	100.00%	100.00%	99.86%	99.82%	100.00%	97.60%	100.00%	27.76%
	Q4	100.00%	100.00%	99.82%	99.86%	100.00%	99.64%	100.00%	13.00%
2013	Q1	100.00%	100.00%	100.00%	99.95%	100.00%	99.35%	99.91%	9.81%
	Q2	99.95%	99.95%	99.63%	99.86%	99.95%	98.99%	99.91%	9.34%
	Q3	100.00%	100.00%	99.68%	99.95%	100.00%	97.46%	99.95%	21.29%
	Q4	100.00%	100.00%	99.95%	99.91%	98.41%	99.68%	99.95%	9.42%
2014	Q1	100.00%	100.00%	100.00%	99.91%	100.00%	98.80%	99.17%	4.68%
	Q2	100.00%	100.00%	99.95%	99.22%	99.91%	98.12%	99.50%	10.07%
	Q3	99.91%	99.91%	99.91%	99.82%	99.91%	97.06%	99.41%	18.89%
	Q4	100.00%	100.00%	100.00%	99.82%	99.95%	99.05%	99.68%	9.28%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Ankeny, IA
(KIKV)



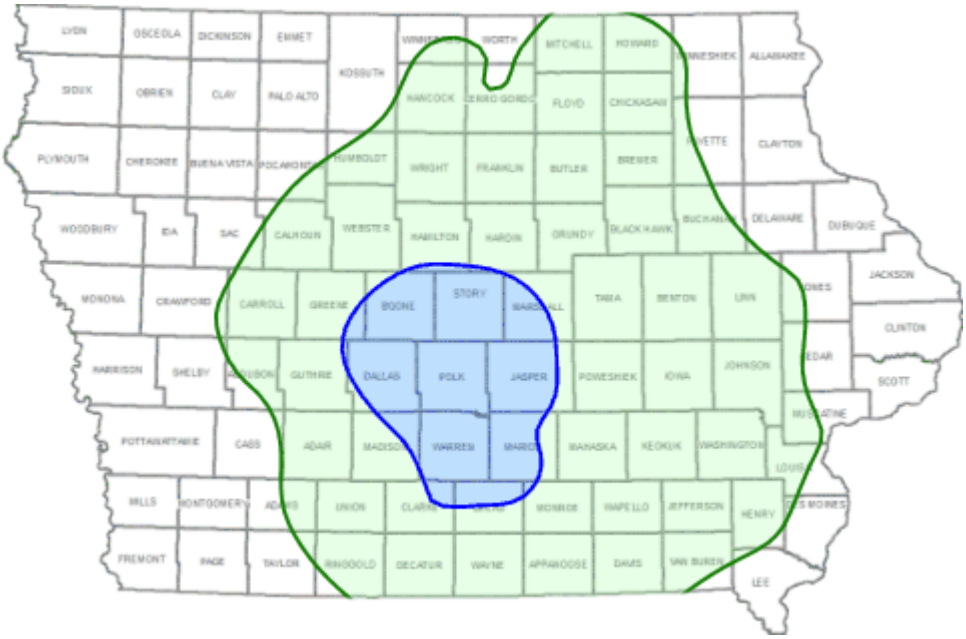
Station Info

WBAN:	NA
WMO:	725466
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	41.6878 N, 93.5695 W
UTM (NAD83, Z15):	452605.44, 4615270.63
Elevation:	270.7 m
Confidence:	High

Wind Correlation



Station	Correlation
KPRO	0.928
KTNU	0.928
KAMW	0.923
KBNW	0.921
KDSM	0.915
KOXV	0.914
KI75	0.902
KCNC	0.898
KOOA	0.891
KMIW	0.891
KPEA	0.886
KEBS	0.878
KTVK	0.877
KIFA	0.872
KGGI	0.871
KOTM	0.857
KVTI	0.850
KALO	0.847
KFFL	0.845
KCSQ	0.838

Terrain-Wind Index (Range = 0.001383007)

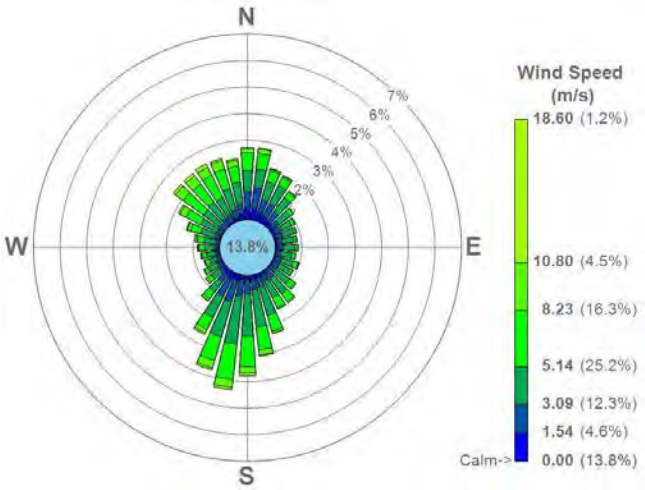
Ankeny, IA
(KIKV)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	99.17%	99.17%	99.17%	99.12%	99.17%	99.17%	99.17%	21.44%
	Q2	97.76%	97.76%	97.53%	97.62%	97.76%	97.76%	97.76%	23.86%
	Q3	96.29%	96.29%	96.29%	90.76%	96.24%	96.29%	96.29%	27.36%
	Q4	92.35%	92.35%	92.30%	92.21%	92.35%	92.35%	92.35%	22.10%
2011	Q1	96.25%	96.25%	96.20%	95.93%	96.20%	96.25%	96.25%	13.70%
	Q2	84.98%	84.98%	84.43%	83.61%	84.89%	84.89%	84.89%	14.42%
	Q3	99.82%	99.82%	99.73%	98.64%	99.82%	99.82%	99.82%	38.95%
	Q4	99.73%	99.73%	99.68%	99.59%	99.73%	99.73%	99.73%	24.14%
2012	Q1	99.59%	99.59%	99.54%	99.50%	99.59%	99.59%	99.59%	16.94%
	Q2	99.86%	99.86%	99.86%	99.86%	99.86%	99.86%	99.86%	15.84%
	Q3	98.73%	98.73%	98.69%	98.73%	98.73%	98.73%	98.73%	33.29%
	Q4	99.64%	99.64%	99.64%	98.60%	99.64%	99.64%	99.64%	19.97%
2013	Q1	99.49%	99.49%	99.49%	99.44%	99.49%	99.49%	99.49%	12.87%
	Q2	80.77%	80.77%	80.72%	79.95%	80.77%	79.67%	80.72%	9.94%
	Q3	99.68%	99.68%	99.68%	90.49%	99.68%	96.33%	99.64%	23.60%
	Q4	99.59%	99.59%	99.59%	99.28%	99.59%	89.58%	90.44%	12.77%
2014	Q1	99.49%	99.49%	99.49%	99.40%	99.49%	98.06%	99.44%	7.08%
	Q2	96.75%	96.75%	96.75%	96.57%	96.75%	94.00%	96.43%	15.06%
	Q3	99.37%	99.37%	99.37%	98.91%	99.37%	95.97%	99.18%	28.67%
	Q4	99.77%	99.77%	99.77%	99.73%	99.77%	98.51%	99.73%	13.13%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Atlantic, IA
(KAIO)



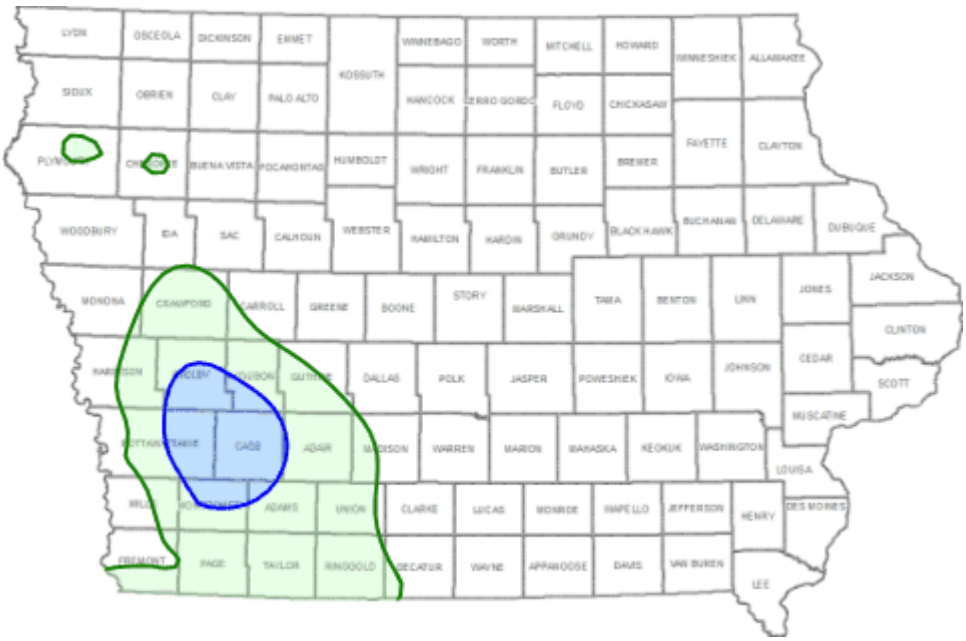
Station Info

WBAN:	14930
WMO:	725453
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	41.4046 N, 95.0476 W
UTM (NAD83, Z15):	328941.80, 4585838.37
Elevation:	351.1 m
Confidence:	Medium

Wind Correlation



Station	Correlation
KHNR	0.934
KRDK	0.897
KDNS	0.868
KADU	0.865
KAFK	0.853
KLRJ	0.831
KICL	0.824
KCSQ	0.824
KCBF	0.813
KSTJ	0.809
KCKP	0.809
KLWD	0.801
KSDA	0.793
KCNC	0.773
KDSM	0.770
KBTA	0.769
KFOD	0.764
KI75	0.755
KORC	0.743
KAXA	0.742

Terrain-Wind Index (Range = 0.001970343)

Atlantic, IA

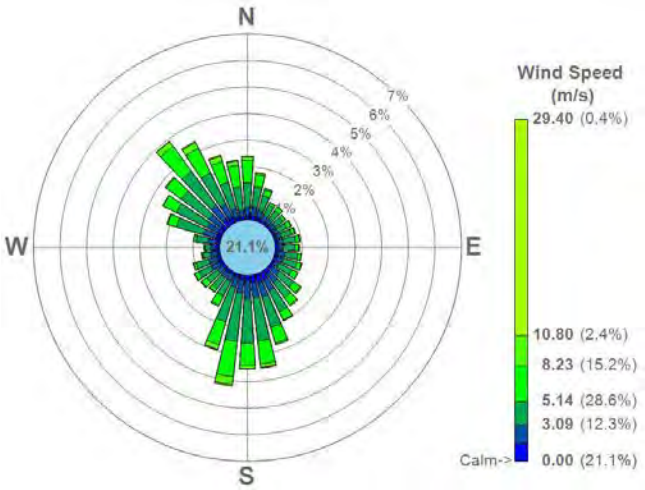
(KAIO)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	87.59%	87.59%	81.20%	85.93%	87.59%	87.59%	87.59%	21.67%
	Q2	43.96%	43.96%	43.91%	43.54%	43.91%	43.96%	43.96%	6.78%
	Q3	0.05%	0.05%	0.05%	0.00%	0.05%	0.05%	0.05%	0.00%
	Q4	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2011	Q1	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Q2	90.34%	90.34%	90.34%	89.56%	90.34%	90.34%	90.34%	11.49%
	Q3	97.74%	97.74%	97.55%	96.56%	97.74%	97.74%	97.74%	32.20%
	Q4	99.86%	99.86%	99.86%	99.82%	99.86%	99.86%	99.86%	23.41%
2012	Q1	99.82%	99.82%	99.82%	99.73%	99.82%	99.82%	99.82%	21.15%
	Q2	53.34%	53.34%	53.34%	53.16%	53.34%	51.83%	53.34%	6.87%
	Q3	99.23%	99.23%	99.23%	99.05%	99.23%	96.15%	99.23%	22.92%
	Q4	99.00%	99.00%	99.00%	91.80%	99.00%	98.01%	99.00%	16.67%
2013	Q1	99.58%	99.58%	99.58%	90.88%	99.58%	98.24%	99.58%	10.32%
	Q2	99.31%	99.31%	99.27%	99.04%	99.27%	97.02%	99.27%	10.99%
	Q3	99.64%	99.64%	99.64%	99.23%	99.59%	96.38%	99.64%	20.61%
	Q4	99.59%	99.59%	99.59%	99.55%	99.59%	98.55%	99.59%	14.40%
2014	Q1	99.54%	99.54%	99.54%	99.44%	99.54%	97.78%	99.54%	9.72%
	Q2	99.86%	99.86%	99.86%	99.59%	99.82%	96.98%	99.86%	12.87%
	Q3	99.41%	99.41%	99.41%	99.00%	99.41%	95.29%	99.41%	22.28%
	Q4	95.83%	95.83%	95.83%	95.74%	95.83%	95.02%	95.83%	12.09%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Audubon, IA
(KADU)



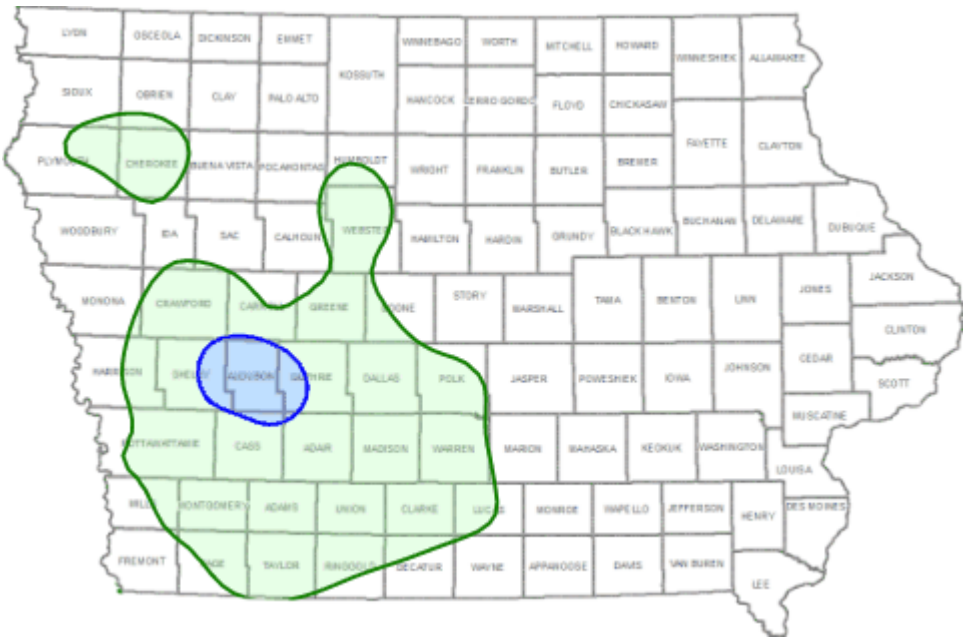
Station Info

WBAN:	NA
WMO:	725498
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	41.7010 N, 94.9205 W
UTM (NAD83, Z15):	340207.22, 4618183.59
Elevation:	390.4 m
Confidence:	Medium

Wind Correlation



Station	Correlation
KHNR	0.884
KRDK	0.873
KAIO	0.865
KDNS	0.857
KCKP	0.845
KCBF	0.831
KPRO	0.831
KFOD	0.825
KDSM	0.824
KIKV	0.819
KCSQ	0.817
KLRJ	0.815
KICL	0.813
KI75	0.811
KAFK	0.810
KCNC	0.809
KLWD	0.792
KORC	0.788
KEBS	0.785
KBTA	0.784

Terrain-Wind Index (Range = 0.001622841)

Audubon, IA

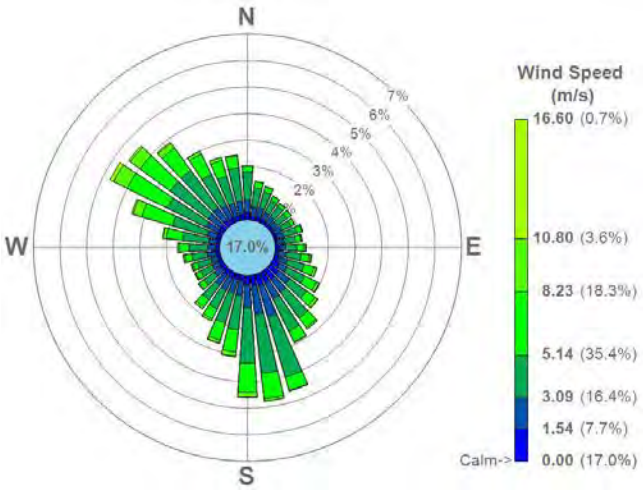
(KADU)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	96.81%	96.81%	96.81%	95.69%	96.81%	96.81%	96.81%	25.65%
	Q2	8.15%	8.15%	8.15%	6.78%	8.15%	8.15%	8.15%	1.42%
	Q3	0.05%	0.05%	0.05%	0.00%	0.05%	0.05%	0.05%	0.00%
	Q4	41.94%	41.94%	41.94%	41.80%	40.40%	41.94%	41.94%	8.70%
2011	Q1	95.69%	95.69%	95.69%	95.23%	95.28%	95.69%	95.69%	15.05%
	Q2	95.56%	95.56%	95.15%	95.10%	95.56%	95.56%	95.56%	15.20%
	Q3	82.29%	82.29%	82.25%	82.20%	81.84%	82.29%	82.29%	33.38%
	Q4	98.78%	98.78%	98.78%	98.69%	98.78%	98.78%	98.78%	28.22%
2012	Q1	99.36%	99.36%	99.36%	99.31%	99.36%	99.36%	99.36%	21.84%
	Q2	99.95%	99.95%	99.95%	90.43%	99.95%	99.95%	99.95%	19.73%
	Q3	92.12%	92.12%	91.94%	33.47%	92.12%	92.12%	92.12%	38.68%
	Q4	98.91%	98.91%	98.91%	97.87%	98.82%	98.91%	98.91%	25.68%
2013	Q1	99.58%	99.58%	99.58%	98.84%	99.54%	99.58%	99.58%	15.51%
	Q2	99.59%	99.59%	99.59%	99.59%	99.59%	99.59%	99.59%	17.81%
	Q3	99.55%	99.55%	99.55%	99.50%	99.55%	99.55%	99.55%	38.00%
	Q4	99.28%	99.28%	99.28%	98.96%	99.28%	99.28%	99.28%	22.28%
2014	Q1	99.68%	99.68%	99.68%	99.26%	99.68%	99.68%	99.68%	15.00%
	Q2	99.95%	99.95%	99.95%	99.68%	99.95%	99.95%	99.95%	22.30%
	Q3	99.64%	99.64%	99.64%	99.50%	99.64%	99.64%	99.64%	36.32%
	Q4	99.82%	99.82%	99.82%	99.18%	99.82%	99.82%	99.82%	19.79%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Austin, MN
(KAUM)



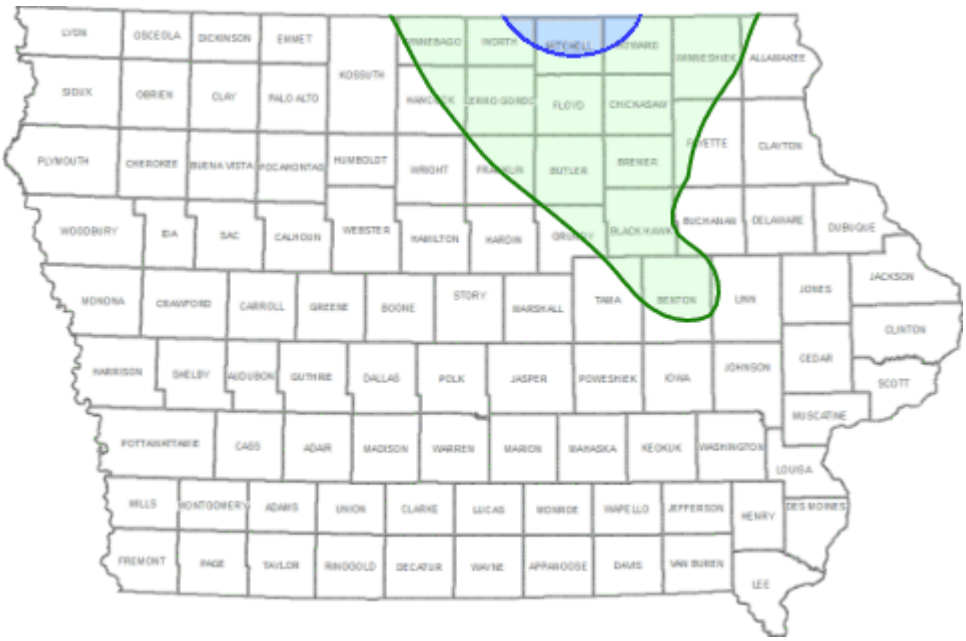
Station Info

WBAN:	04902
WMO:	727566
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	43.6688 N, 92.9321 W
UTM (NAD83, Z15):	505474.01, 4835090.50
Elevation:	376.4 m
Confidence:	Medium

Wind Correlation



Station	Correlation
KFKA	0.886
KAEL	0.885
KRST	0.884
KCCY	0.858
KDEH	0.843
KMCW	0.831
KVTI	0.825
KALO	0.824
KFXY	0.823
KLSE	0.804
KOLZ	0.798
KIKV	0.793
KCID	0.790
KFOD	0.783
KIFA	0.781
KCAV	0.779
KEBS	0.778
KFRM	0.778
KIIB	0.777
KY51	0.766

Terrain-Wind Index (Range = 0.001567781)

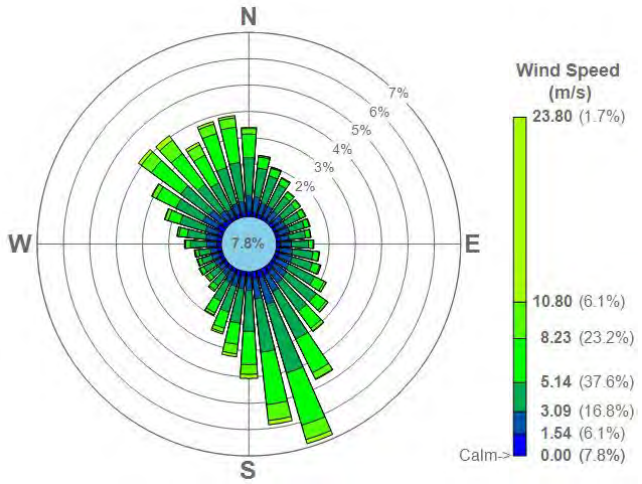
Austin, MN
(KAUM)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	99.68%	99.68%	99.63%	95.97%	96.30%	99.68%	99.68%	18.19%
	Q2	96.93%	96.93%	96.89%	89.84%	96.93%	96.89%	96.93%	14.79%
	Q3	98.05%	98.05%	98.01%	97.60%	98.05%	98.05%	98.05%	18.43%
	Q4	99.55%	99.55%	99.37%	96.29%	96.92%	99.55%	99.55%	19.34%
2011	Q1	99.86%	99.86%	99.81%	89.54%	98.89%	99.86%	99.86%	21.20%
	Q2	99.63%	99.63%	99.63%	98.99%	99.63%	99.63%	99.63%	13.78%
	Q3	99.18%	99.18%	99.18%	97.69%	99.18%	99.18%	99.18%	28.03%
	Q4	99.32%	99.32%	99.28%	99.14%	99.28%	99.32%	99.32%	17.21%
2012	Q1	100.00%	100.00%	100.00%	99.08%	99.82%	99.95%	99.95%	14.10%
	Q2	100.00%	100.00%	99.95%	99.91%	100.00%	100.00%	100.00%	14.19%
	Q3	99.77%	99.77%	99.73%	99.64%	99.77%	99.77%	99.77%	30.16%
	Q4	98.23%	98.23%	98.19%	96.74%	98.10%	98.23%	98.23%	14.81%
2013	Q1	99.54%	99.54%	99.49%	98.15%	98.80%	99.54%	99.54%	14.12%
	Q2	98.95%	98.95%	98.90%	98.08%	98.95%	98.95%	98.95%	12.87%
	Q3	99.77%	99.77%	99.77%	99.50%	98.78%	99.77%	99.77%	21.33%
	Q4	97.51%	97.51%	97.42%	95.65%	97.33%	97.42%	97.51%	11.59%
2014	Q1	98.98%	98.98%	98.94%	98.94%	98.06%	98.98%	98.98%	8.38%
	Q2	97.71%	97.71%	97.71%	97.57%	97.71%	97.71%	97.71%	10.44%
	Q3	98.60%	98.60%	98.55%	98.05%	98.46%	98.23%	98.60%	23.23%
	Q4	99.91%	99.91%	99.91%	99.91%	99.91%	99.91%	99.91%	12.05%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Blair, NE
(KBTA)



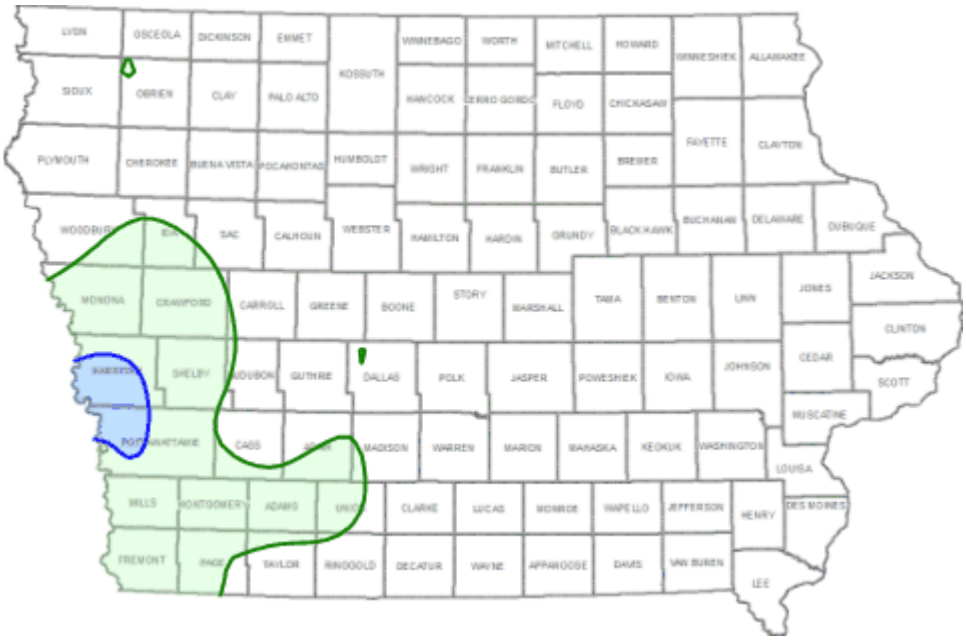
Station Info

WBAN:	NA
WMO:	720405
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	41.417 N, 96.117 W
UTM (NAD83, Z14):	240158.3, 4589471.4
Elevation:	403.9 m
Confidence:	Medium

Wind Correlation



Station	Correlation
KCBF	0.907
KOMA	0.892
KTQE	0.877
KSDA	0.871
KRDK	0.870
KPMV	0.866
KDNS	0.860
KHNR	0.847
KAFK	0.821
KCSQ	0.820
KSHL	0.806
KPRO	0.803
KOFF	0.796
KICL	0.793
KCKP	0.790
KADU	0.784
KDSM	0.781
KLRJ	0.780
KEBS	0.780
KSPW	0.780

Terrain-Wind Index (Range = 0.001305718)

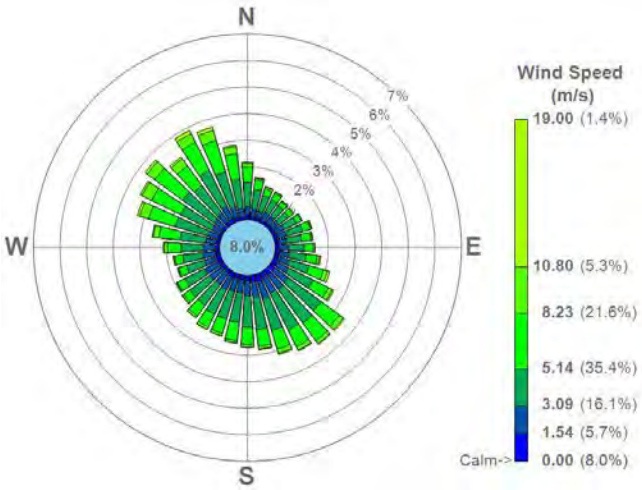
Blair, NE
(KBTA)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	98.52%	98.52%	98.52%	98.29%	96.34%	98.52%	98.52%	10.65%
	Q2	97.21%	97.21%	97.16%	97.07%	97.21%	97.21%	97.21%	7.10%
	Q3	99.77%	99.77%	99.77%	99.46%	99.73%	99.77%	99.77%	11.64%
	Q4	99.05%	99.05%	99.05%	99.00%	99.05%	99.05%	99.05%	9.69%
2011	Q1	99.95%	99.95%	99.95%	99.91%	99.44%	99.95%	99.95%	3.89%
	Q2	98.99%	98.99%	98.99%	98.86%	98.95%	98.99%	98.99%	4.53%
	Q3	99.86%	99.86%	99.86%	99.73%	99.86%	99.86%	99.86%	15.90%
	Q4	98.37%	98.37%	98.37%	98.32%	98.32%	98.37%	98.37%	8.33%
2012	Q1	98.81%	98.81%	98.81%	98.76%	97.62%	98.81%	98.81%	7.55%
	Q2	99.68%	99.68%	99.68%	99.68%	99.68%	99.68%	99.68%	5.72%
	Q3	98.69%	98.69%	98.64%	98.55%	98.64%	98.64%	98.64%	10.28%
	Q4	99.59%	99.59%	99.59%	99.55%	99.59%	99.59%	99.59%	6.75%
2013	Q1	99.54%	99.54%	99.49%	99.49%	99.49%	99.49%	99.49%	4.03%
	Q2	99.13%	99.13%	99.13%	96.57%	99.13%	99.13%	99.13%	5.72%
	Q3	98.96%	98.96%	98.96%	98.87%	98.96%	98.96%	98.96%	10.78%
	Q4	98.96%	98.96%	98.96%	98.87%	98.96%	98.96%	98.96%	5.53%
2014	Q1	98.33%	98.33%	98.33%	98.29%	98.33%	98.33%	98.33%	4.21%
	Q2	98.17%	98.17%	98.17%	97.99%	98.17%	98.17%	98.17%	6.32%
	Q3	97.92%	97.92%	97.92%	97.83%	96.92%	97.92%	97.92%	11.96%
	Q4	99.64%	99.64%	99.64%	99.59%	99.64%	99.64%	99.64%	6.02%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Boone, IA
(KBNW)



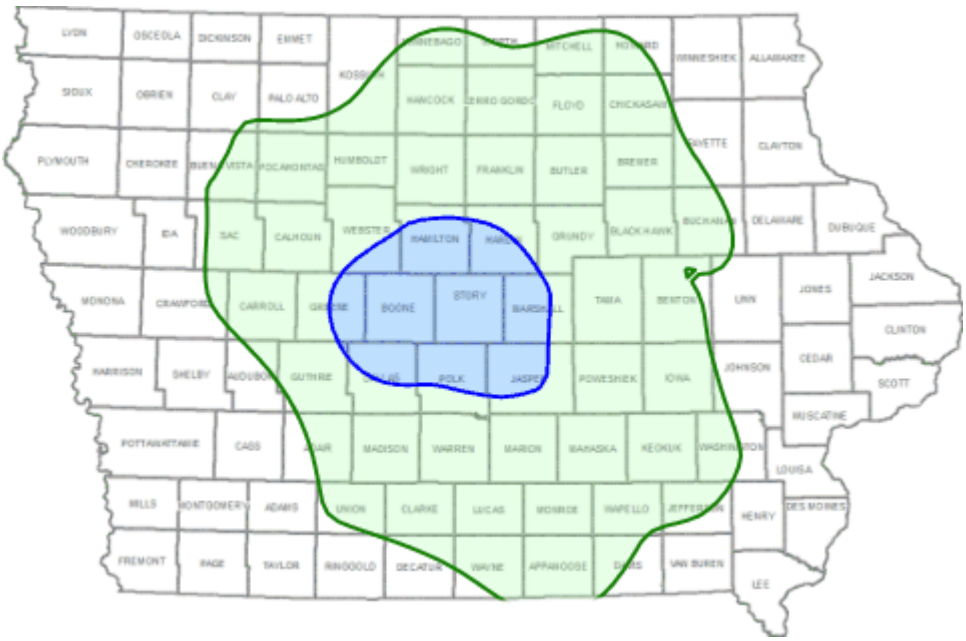
Station Info

WBAN:	NA
WMO:	725486
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	42.0486 N, 93.8486 W
UTM (NAD83, Z15):	429774.20, 4655520.57
Elevation:	348.4 m
Confidence:	High

Wind Correlation



Station	Correlation
KPRO	0.928
KAMW	0.926
KIKV	0.921
KTNU	0.910
KEBS	0.906
KMIW	0.899
KIFA	0.896
KOXV	0.881
KGGI	0.866
KDSM	0.862
KOOA	0.856
KCIN	0.853
KI75	0.852
KFXY	0.848
KCAV	0.847
KCCY	0.846
KPEA	0.845
KCNC	0.840
KIIB	0.838
KTVK	0.836

Terrain-Wind Index (Range = 0.000940395)

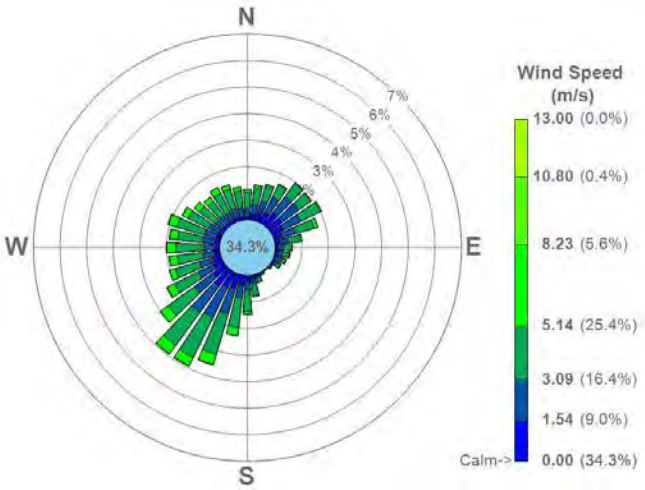
Boone, IA
(KBNW)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	94.91%	94.91%	94.81%	94.86%	94.91%	94.91%	94.91%	13.84%
	Q2	93.68%	93.68%	93.68%	93.64%	93.68%	93.68%	93.68%	9.11%
	Q3	95.06%	95.06%	95.06%	95.02%	95.06%	95.06%	95.06%	13.90%
	Q4	73.37%	73.37%	73.37%	73.23%	73.37%	73.37%	73.37%	4.89%
2011	Q1	96.67%	96.67%	96.67%	96.48%	96.67%	96.67%	96.67%	5.19%
	Q2	99.18%	99.18%	99.18%	99.13%	99.18%	99.18%	99.18%	4.30%
	Q3	96.01%	96.01%	96.01%	94.70%	95.92%	96.01%	96.01%	20.74%
	Q4	99.68%	99.68%	99.68%	99.68%	99.68%	99.68%	99.68%	7.07%
2012	Q1	99.77%	99.77%	99.77%	99.77%	99.77%	99.77%	99.77%	6.55%
	Q2	99.95%	99.95%	99.95%	99.86%	99.95%	99.95%	99.95%	8.75%
	Q3	99.55%	99.55%	99.55%	99.50%	99.55%	99.55%	99.55%	15.94%
	Q4	99.64%	99.64%	99.64%	99.46%	99.64%	99.64%	99.64%	6.16%
2013	Q1	99.68%	99.68%	99.68%	99.63%	99.68%	99.68%	99.68%	4.72%
	Q2	96.06%	96.06%	96.06%	96.02%	96.06%	96.06%	96.06%	3.75%
	Q3	70.06%	70.06%	70.06%	69.52%	70.06%	70.06%	70.06%	8.65%
	Q4	76.13%	76.13%	76.13%	75.86%	68.57%	75.54%	75.91%	2.67%
2014	Q1	99.40%	99.40%	99.40%	98.98%	89.95%	98.38%	99.03%	2.50%
	Q2	99.91%	99.91%	99.91%	99.54%	99.91%	97.80%	99.73%	4.58%
	Q3	99.32%	99.32%	99.32%	98.96%	99.32%	94.38%	99.32%	12.91%
	Q4	99.77%	99.77%	99.77%	99.46%	99.77%	82.11%	82.88%	4.12%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Boscobel, WI
(KOVS)



Station Info

WBAN:	94994
WMO:	726438
Anemometer Height:	10.0 m
1-Min Availability Date:	3/3/2005
IFW Installation Date:	10/7/2005

Location Info

Lat-Long:	43.1567 N, 90.6781 W
UTM (NAD83, Z15):	688776.00, 4780833.37
Elevation:	203.0 m
Confidence:	Medium

Wind Correlation

Station	Correlation
KFEP	0.646
KY51	0.582
KDBQ	0.581
KSFY	0.552
KMLI	0.547
KEOK	0.532
KPVB	0.526
KIRK	0.522
KBRL	0.521
KFKA	0.514
KDEH	0.500
KSQI	0.494
KDVN	0.485
KFSW	0.475
KCWI	0.472
KAWG	0.469
KMQB	0.465
KMPZ	0.445
KOXV	0.436
KAEL	0.435

Terrain-Wind Index (Range = 0.003083437)

Boscobel, WI

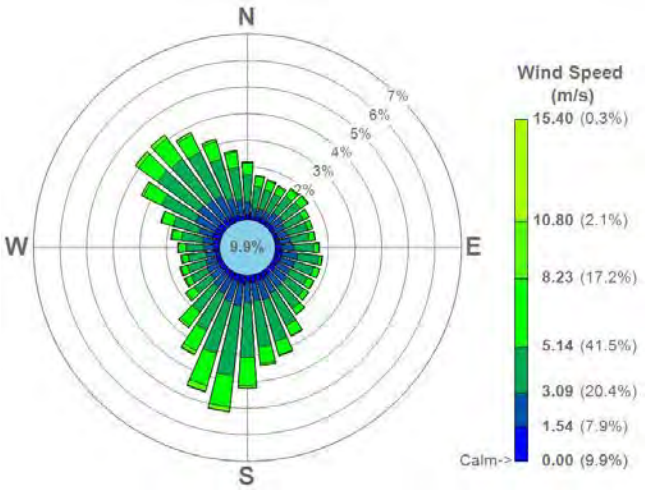
(KOVS)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	99.91%	99.91%	99.91%	99.81%	99.91%	95.09%	99.91%	37.31%
	Q2	100.00%	100.00%	100.00%	100.00%	100.00%	91.03%	99.91%	35.07%
	Q3	99.95%	99.95%	99.95%	99.68%	99.91%	92.12%	99.77%	44.07%
	Q4	99.91%	99.91%	99.86%	98.87%	99.50%	92.57%	98.46%	37.32%
2011	Q1	99.77%	99.77%	99.77%	99.21%	99.49%	89.58%	95.05%	27.92%
	Q2	100.00%	100.00%	100.00%	100.00%	100.00%	90.66%	100.00%	27.56%
	Q3	99.59%	99.59%	99.59%	98.55%	99.59%	90.58%	99.59%	48.28%
	Q4	99.59%	99.59%	99.50%	97.19%	99.23%	90.40%	96.47%	36.32%
2012	Q1	100.00%	100.00%	100.00%	99.36%	100.00%	92.03%	99.95%	29.90%
	Q2	99.73%	99.73%	99.73%	99.68%	99.73%	88.46%	99.68%	32.83%
	Q3	99.32%	99.32%	99.32%	99.18%	99.32%	91.26%	99.32%	50.09%
	Q4	99.82%	99.82%	99.82%	99.05%	99.82%	93.75%	99.82%	42.03%
2013	Q1	99.77%	99.77%	99.77%	98.56%	99.72%	94.12%	99.72%	31.11%
	Q2	99.31%	99.31%	98.86%	97.66%	99.18%	88.97%	99.04%	27.38%
	Q3	99.37%	99.37%	99.00%	97.74%	99.32%	88.09%	98.87%	39.49%
	Q4	100.00%	100.00%	100.00%	99.95%	100.00%	92.03%	99.55%	24.82%
2014	Q1	100.00%	100.00%	100.00%	100.00%	100.00%	94.03%	99.68%	19.63%
	Q2	100.00%	100.00%	99.91%	99.86%	100.00%	87.77%	99.68%	24.36%
	Q3	100.00%	100.00%	100.00%	99.82%	99.95%	87.18%	99.14%	39.09%
	Q4	99.46%	99.46%	99.41%	97.74%	99.41%	92.03%	98.46%	29.71%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Burlington, IA
(KBRL)



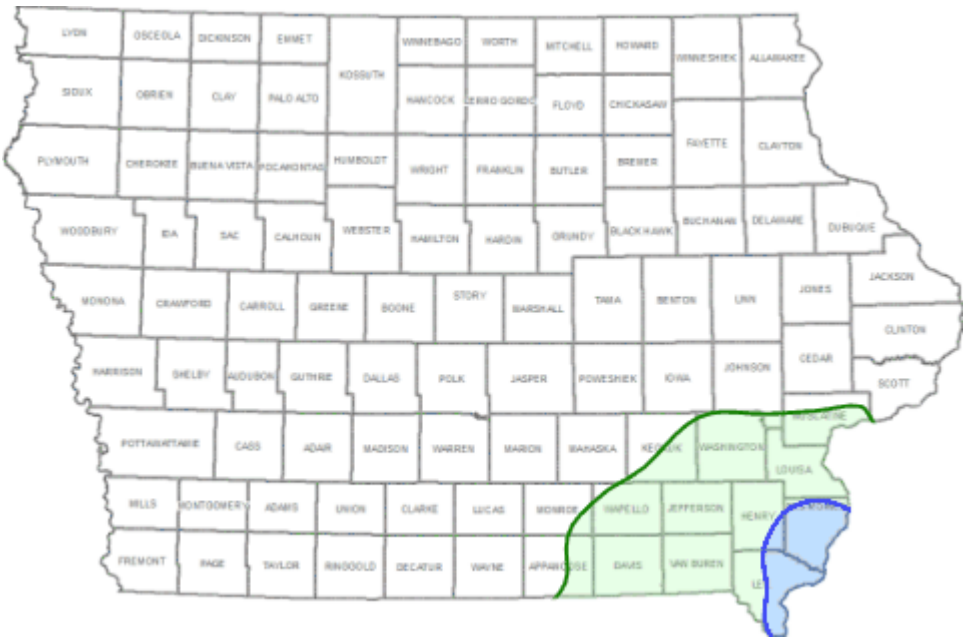
Station Info

WBAN:	14931
WMO:	725455
Anemometer Height:	10.0 m
1-Min Availability Date:	3/3/2005
IFW Installation Date:	4/17/2007

Location Info

Lat-Long:	40.7728 N, 91.1254 W
UTM (NAD83, Z15):	658201.07, 4515226.66
Elevation:	209.7 m
Confidence:	High

Wind Correlation



Station	Correlation
KFSW	0.909
KEOK	0.907
KMPZ	0.891
KUIN	0.875
KMQB	0.855
KAWG	0.849
KIRK	0.849
KFFL	0.839
KOTM	0.819
KMUT	0.818
KGBG	0.804
KDVN	0.800
KOXV	0.795
KTVK	0.793
KCNC	0.787
KOOA	0.778
KCID	0.776
KI75	0.771
KDBQ	0.771
KIOW	0.767

Terrain-Wind Index (Range = 0.00115573)

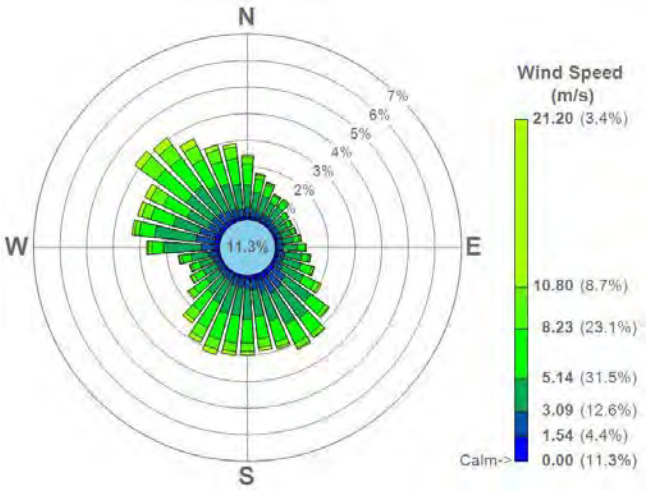
Burlington, IA
(KBRL)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	99.95%	99.95%	99.95%	99.40%	99.77%	98.66%	99.31%	8.19%
	Q2	99.95%	99.95%	99.95%	99.91%	99.95%	98.40%	99.95%	12.91%
	Q3	99.86%	99.86%	99.86%	98.64%	98.64%	97.55%	99.05%	16.30%
	Q4	99.91%	99.91%	99.64%	99.77%	99.86%	99.14%	99.82%	9.28%
2011	Q1	100.00%	100.00%	100.00%	99.91%	100.00%	99.40%	99.95%	5.83%
	Q2	100.00%	100.00%	100.00%	99.73%	100.00%	96.52%	98.08%	6.50%
	Q3	99.95%	99.95%	99.95%	99.00%	99.95%	97.28%	99.95%	16.39%
	Q4	99.91%	99.91%	99.86%	99.86%	99.91%	99.14%	99.91%	8.02%
2012	Q1	100.00%	100.00%	100.00%	99.95%	100.00%	99.45%	100.00%	7.74%
	Q2	99.95%	99.95%	99.95%	99.31%	99.45%	97.48%	99.31%	9.39%
	Q3	99.91%	99.91%	99.91%	98.91%	99.23%	94.70%	97.60%	17.39%
	Q4	99.95%	99.95%	99.95%	99.91%	99.95%	99.23%	99.91%	7.93%
2013	Q1	99.95%	99.95%	99.95%	98.61%	98.80%	97.92%	98.80%	7.04%
	Q2	97.39%	97.39%	97.39%	97.25%	95.92%	95.38%	97.34%	8.79%
	Q3	99.91%	99.91%	99.64%	99.77%	99.91%	97.46%	99.86%	14.81%
	Q4	99.91%	99.91%	99.91%	99.82%	99.91%	99.18%	99.91%	6.52%
2014	Q1	99.95%	99.95%	99.95%	99.86%	97.69%	99.31%	99.95%	4.58%
	Q2	100.00%	100.00%	99.95%	99.91%	99.91%	98.03%	99.77%	6.36%
	Q3	99.91%	99.91%	99.91%	99.73%	99.91%	96.69%	99.73%	15.40%
	Q4	99.95%	99.95%	99.95%	99.77%	99.86%	99.18%	99.82%	6.75%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Carroll, IA
(KCIN)



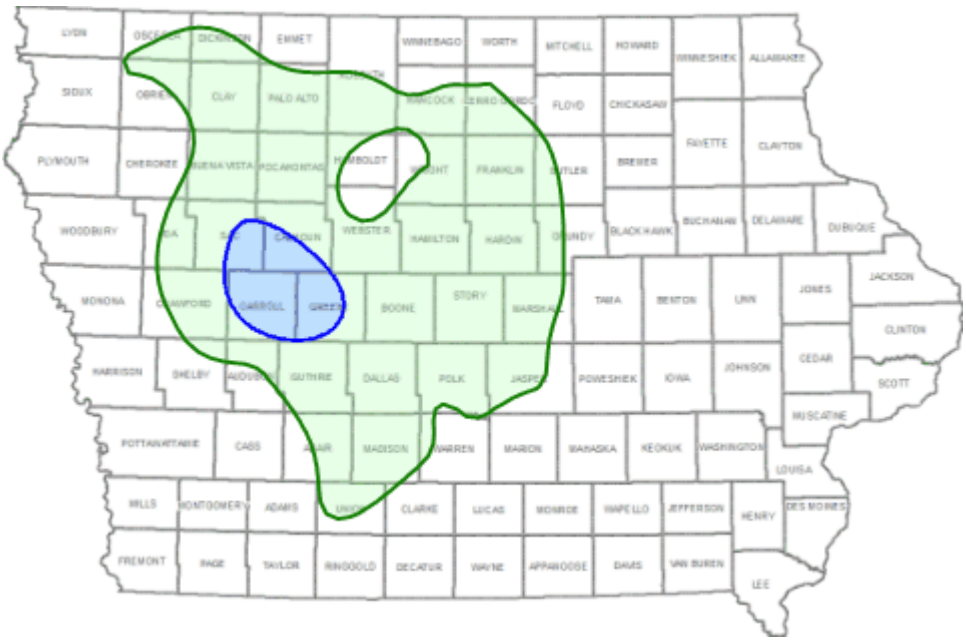
Station Info

WBAN:	NA
WMO:	725468
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	42.0444 N, 94.7889 W
UTM (NAD83, Z15):	351948.07, 4656254.05
Elevation:	365.5 m
Confidence:	Medium

Wind Correlation



Station	Correlation
KSLB	0.882
KPRO	0.872
KBNW	0.853
KEBS	0.843
KIFA	0.832
KSPW	0.828
KAMW	0.826
KIKV	0.825
KAXA	0.815
KCSQ	0.814
KDNS	0.814
KTNU	0.813
KMIW	0.808
KSHL	0.806
KMCW	0.800
KCAV	0.799
KCNC	0.798
KDSM	0.795
KFXY	0.793
KOXV	0.790

Terrain-Wind Index (Range = 0.001704905)

Carroll, IA

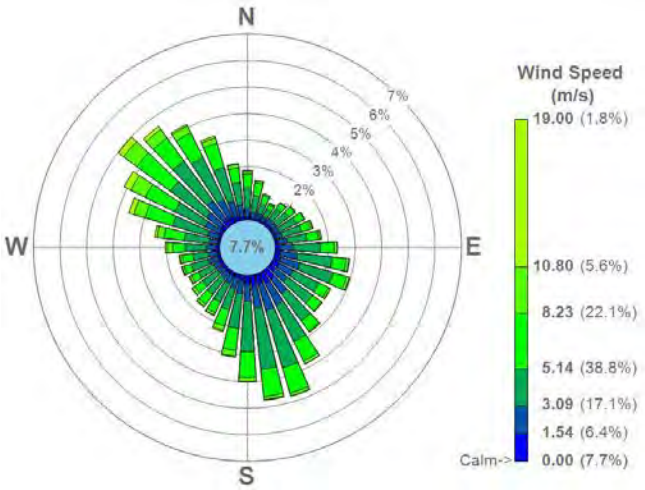
(KCIN)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	90.56%	90.56%	90.56%	90.42%	90.56%	90.56%	90.56%	13.61%
	Q2	95.01%	95.01%	94.92%	95.01%	95.01%	95.01%	95.01%	12.91%
	Q3	90.35%	90.35%	90.31%	90.35%	90.35%	90.35%	90.35%	19.34%
	Q4	98.91%	98.91%	98.91%	98.87%	98.91%	98.91%	98.91%	12.45%
2011	Q1	95.97%	95.97%	95.97%	95.79%	95.93%	95.97%	95.97%	7.27%
	Q2	90.89%	90.89%	90.84%	90.89%	90.89%	90.89%	90.89%	6.00%
	Q3	75.09%	75.09%	75.05%	74.64%	75.09%	75.09%	75.09%	20.52%
	Q4	99.68%	99.68%	99.09%	99.64%	99.68%	99.68%	99.68%	12.00%
2012	Q1	99.36%	99.36%	98.76%	99.27%	99.36%	99.36%	99.36%	9.94%
	Q2	73.67%	73.67%	73.67%	73.63%	73.67%	73.35%	73.67%	6.55%
	Q3	99.37%	99.37%	99.37%	99.14%	99.37%	95.20%	99.37%	18.80%
	Q4	99.05%	99.05%	99.05%	95.52%	99.05%	98.37%	99.05%	8.29%
2013	Q1	99.58%	99.58%	99.58%	99.21%	99.58%	98.98%	99.58%	5.28%
	Q2	99.27%	99.27%	99.27%	99.04%	99.27%	98.40%	99.27%	6.32%
	Q3	99.59%	99.59%	99.59%	99.37%	99.59%	97.46%	99.59%	17.84%
	Q4	99.05%	99.05%	99.05%	98.73%	99.05%	98.60%	99.05%	7.07%
2014	Q1	99.58%	99.58%	99.58%	99.31%	99.58%	99.07%	99.58%	5.14%
	Q2	99.91%	99.91%	99.91%	99.86%	99.91%	97.89%	99.91%	7.60%
	Q3	99.55%	99.55%	99.55%	99.23%	99.55%	95.83%	99.55%	21.51%
	Q4	99.82%	99.82%	99.82%	99.55%	99.82%	98.64%	99.77%	7.52%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Cedar Rapids, IA
(KCID)



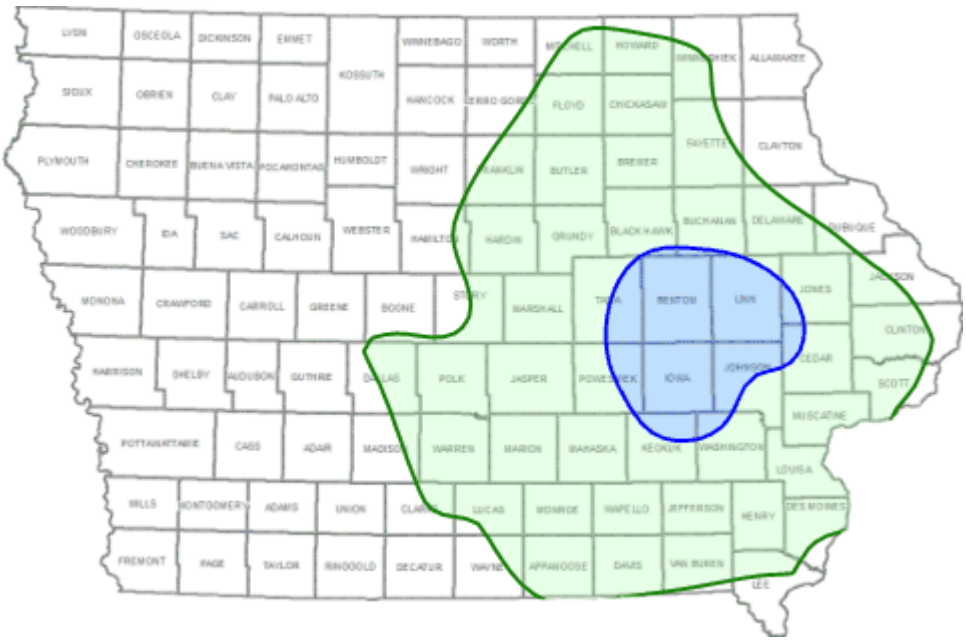
Station Info

WBAN:	14990
WMO:	725450
Anemometer Height:	7.9 m
1-Min Availability Date:	3/3/2005
IFW Installation Date:	4/18/2007

Location Info

Lat-Long:	41.8829 N, 91.7246 W
UTM (NAD83, Z15):	605819.99, 4637561.24
Elevation:	256.3 m
Confidence:	High

Wind Correlation



Station	Correlation
KVTI	0.924
KMUT	0.890
KAWG	0.886
KOOA	0.881
KIOW	0.880
KGGI	0.878
KALO	0.873
KIIB	0.869
KFFL	0.868
KOTM	0.867
KMXO	0.863
KMIW	0.857
KMPZ	0.855
KOLZ	0.854
KTNU	0.840
KIKV	0.833
KOXV	0.832
KCCY	0.829
KTVK	0.827
KDVN	0.824

Terrain-Wind Index (Range = 0.001202125)

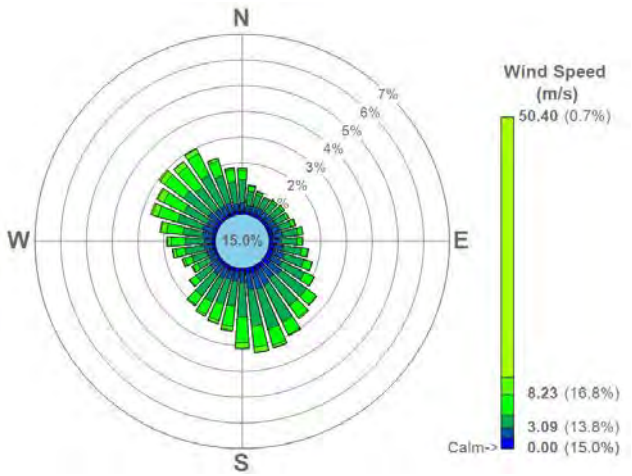
Cedar Rapids, IA
(KCID)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	100.00%	100.00%	99.91%	100.00%	100.00%	99.44%	99.68%	4.77%
	Q2	100.00%	100.00%	100.00%	99.40%	99.59%	97.89%	99.54%	8.38%
	Q3	100.00%	100.00%	100.00%	99.86%	100.00%	99.05%	99.86%	12.32%
	Q4	99.95%	99.95%	99.50%	99.73%	99.95%	99.37%	99.95%	7.97%
2011	Q1	100.00%	100.00%	100.00%	99.86%	99.86%	99.35%	99.86%	4.49%
	Q2	100.00%	100.00%	100.00%	100.00%	99.91%	99.18%	100.00%	5.49%
	Q3	99.95%	99.95%	99.95%	97.87%	99.50%	97.28%	99.41%	14.45%
	Q4	99.95%	99.95%	99.23%	98.28%	98.78%	98.28%	98.69%	6.39%
2012	Q1	99.91%	99.91%	99.91%	99.91%	99.91%	99.40%	99.82%	6.36%
	Q2	100.00%	100.00%	100.00%	100.00%	100.00%	98.17%	99.95%	7.33%
	Q3	100.00%	100.00%	100.00%	100.00%	100.00%	98.32%	99.86%	13.54%
	Q4	100.00%	100.00%	99.95%	99.14%	99.32%	98.19%	99.05%	6.97%
2013	Q1	99.91%	99.91%	98.75%	98.56%	98.52%	97.96%	98.47%	5.23%
	Q2	100.00%	100.00%	100.00%	99.86%	99.86%	98.58%	99.82%	7.74%
	Q3	100.00%	100.00%	99.91%	99.95%	100.00%	97.42%	99.95%	12.00%
	Q4	100.00%	100.00%	99.95%	100.00%	99.68%	99.55%	99.86%	5.93%
2014	Q1	99.95%	99.95%	99.95%	99.91%	99.95%	99.44%	99.86%	4.63%
	Q2	100.00%	100.00%	99.86%	100.00%	100.00%	98.21%	99.86%	4.12%
	Q3	99.95%	99.95%	99.95%	99.95%	99.95%	97.87%	99.86%	10.24%
	Q4	100.00%	100.00%	100.00%	100.00%	99.59%	99.46%	100.00%	5.25%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Centerville, IA
(KTVK)



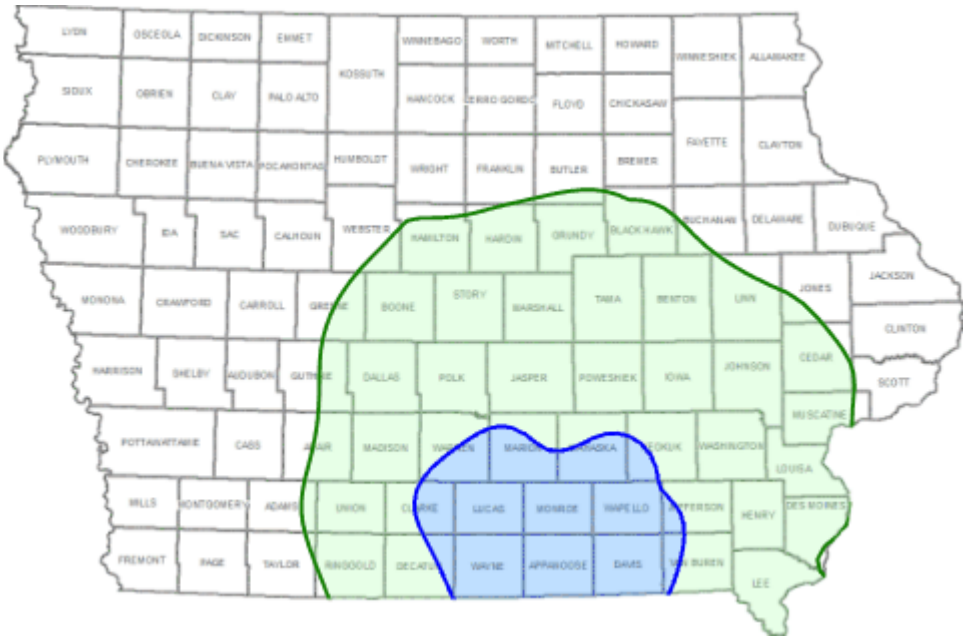
Station Info

WBAN:	NA
WMO:	722274
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	40.6832 N, 92.8984 W
UTM (NAD83, Z15):	508585.50, 4503595.19
Elevation:	313.6
Confidence:	Medium

Wind Correlation



Station	Correlation
KCNC	0.929
KOXV	0.925
KOOA	0.925
KI75	0.918
KOTM	0.898
KFFL	0.897
KMPZ	0.883
KTNU	0.881
KIKV	0.877
KAWG	0.875
KPEA	0.875
KGGI	0.873
KDSM	0.869
KIRK	0.863
KLWD	0.857
KCSQ	0.844
KPRO	0.844
KMIW	0.841
KBNW	0.836
KUIN	0.832

Terrain-Wind Index (Range = 0.001024412)

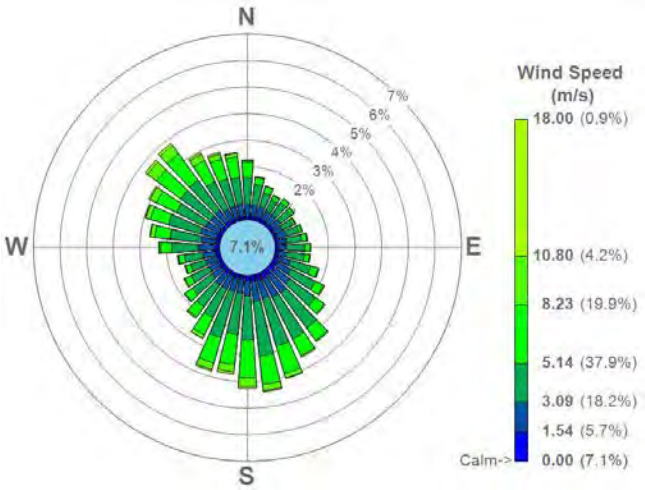
Centerville, IA
(KTVK)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	96.85%	96.85%	96.85%	96.34%	90.88%	90.88%	90.88%	13.70%
	Q2	97.80%	97.80%	97.80%	97.48%	87.64%	87.50%	87.50%	20.65%
	Q3	91.67%	91.67%	91.67%	90.99%	80.93%	28.80%	28.80%	8.83%
	Q4	97.15%	97.15%	97.15%	96.83%	97.15%	75.18%	75.18%	11.68%
2011	Q1	87.73%	87.73%	87.73%	87.31%	85.00%	85.00%	85.00%	12.50%
	Q2	88.83%	88.83%	88.78%	87.73%	88.83%	88.83%	88.83%	21.84%
	Q3	71.15%	71.15%	71.15%	70.47%	71.15%	71.15%	71.15%	43.93%
	Q4	99.82%	99.82%	99.82%	99.64%	99.82%	99.77%	99.77%	3.49%
2012	Q1	98.95%	98.95%	98.95%	98.53%	98.90%	98.12%	98.12%	3.66%
	Q2	99.95%	99.95%	99.95%	99.86%	99.95%	99.95%	99.95%	4.72%
	Q3	99.82%	99.82%	99.82%	99.55%	99.82%	99.82%	99.82%	7.65%
	Q4	99.32%	99.32%	99.32%	78.08%	99.32%	98.64%	98.64%	3.35%
2013	Q1	99.58%	99.58%	99.58%	95.32%	99.58%	98.15%	98.15%	3.10%
	Q2	99.45%	99.45%	99.45%	99.45%	99.45%	99.45%	99.45%	12.87%
	Q3	99.50%	99.50%	99.50%	99.50%	99.50%	99.50%	99.50%	67.39%
	Q4	99.23%	99.23%	99.23%	96.78%	99.23%	95.83%	95.83%	19.84%
2014	Q1	77.36%	77.36%	77.31%	72.59%	77.36%	62.13%	62.13%	16.71%
	Q2	66.07%	66.07%	66.07%	63.97%	66.07%	66.07%	66.07%	3.80%
	Q3	94.84%	94.84%	94.84%	94.75%	94.84%	94.84%	94.84%	14.90%
	Q4	99.64%	99.64%	99.64%	87.32%	99.64%	99.64%	99.64%	4.94%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Chariton, IA
(KCNC)



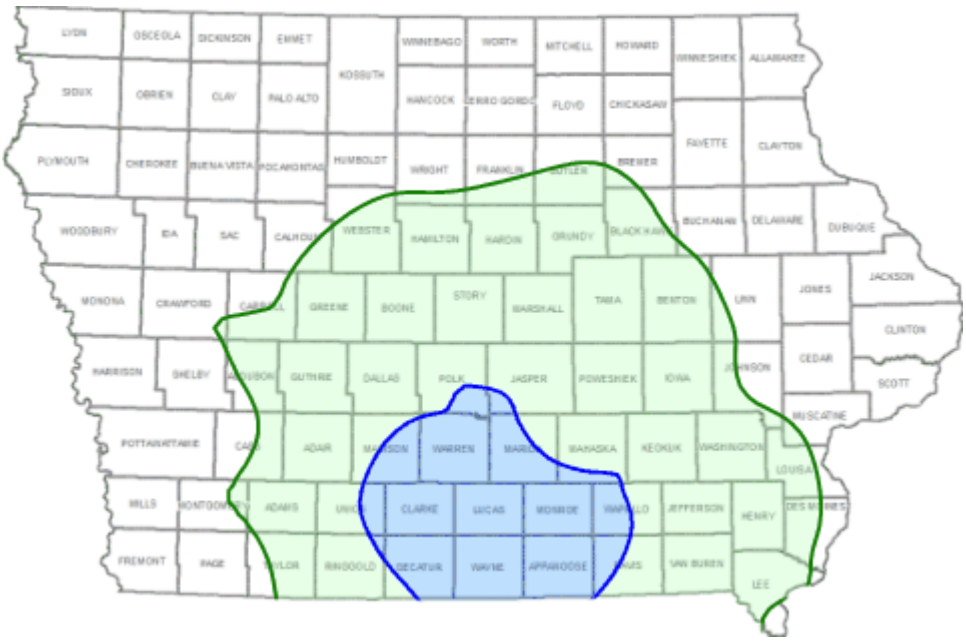
Station Info

WBAN:	NA
WMO:	725469
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	41.0184 N, 93.3608 W
UTM (NAD83, Z15):	469664.58, 4540862.33
Elevation:	317.3 m
Confidence:	Medium

Wind Correlation



Station	Correlation
KI75	0.955
KOXV	0.934
KTVK	0.929
KOOA	0.900
KOTM	0.899
KIKV	0.898
KLWD	0.896
KDSM	0.895
KTNU	0.895
KCSQ	0.885
KFFL	0.883
KPRO	0.864
KAWG	0.862
KGGI	0.856
KPEA	0.856
KMPZ	0.854
KMIW	0.845
KIRK	0.840
KBNW	0.840
KAMW	0.830

Terrain-Wind Index (Range = 0.000937036)

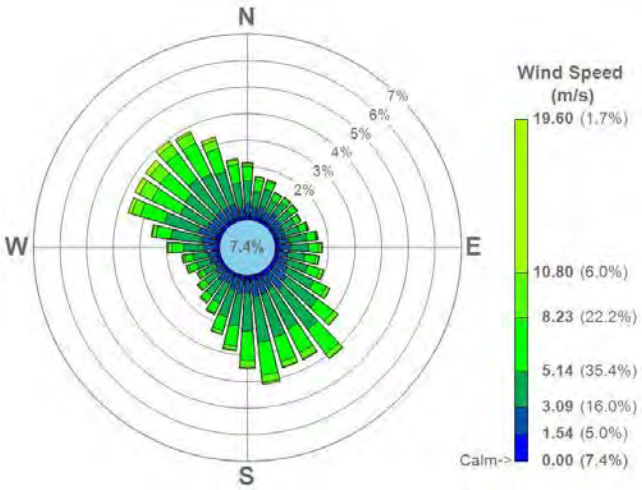
Chariton, IA
(KCNC)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	89.07%	89.07%	89.03%	89.07%	89.07%	89.07%	89.07%	10.23%
	Q2	92.40%	92.40%	92.40%	92.40%	92.40%	92.40%	92.40%	7.88%
	Q3	93.03%	93.03%	93.03%	92.89%	93.03%	93.03%	93.03%	12.00%
	Q4	98.10%	98.10%	98.05%	98.10%	98.10%	98.10%	98.10%	8.38%
2011	Q1	96.44%	96.44%	96.44%	96.39%	96.44%	96.44%	96.44%	5.23%
	Q2	97.34%	97.34%	97.25%	97.16%	97.30%	97.34%	97.34%	5.86%
	Q3	97.51%	97.51%	97.37%	96.74%	97.33%	97.42%	97.42%	16.62%
	Q4	99.32%	99.32%	99.32%	99.28%	99.32%	99.32%	99.32%	5.43%
2012	Q1	99.50%	99.50%	99.45%	99.50%	99.50%	99.50%	99.50%	6.09%
	Q2	99.82%	99.82%	99.77%	97.62%	99.82%	99.82%	99.82%	6.73%
	Q3	99.64%	99.64%	99.64%	99.59%	99.64%	99.64%	99.64%	12.36%
	Q4	99.68%	99.68%	99.64%	99.68%	99.68%	99.68%	99.68%	6.43%
2013	Q1	99.63%	99.63%	99.44%	99.63%	99.63%	71.99%	71.99%	3.56%
	Q2	65.38%	65.38%	65.38%	58.79%	65.34%	64.33%	65.34%	3.39%
	Q3	91.26%	91.26%	91.26%	90.49%	91.26%	89.45%	91.26%	8.06%
	Q4	98.14%	98.14%	98.14%	95.29%	98.14%	97.69%	98.10%	3.17%
2014	Q1	99.81%	99.81%	99.81%	99.40%	99.81%	99.17%	99.81%	2.45%
	Q2	88.87%	88.87%	88.87%	88.69%	88.87%	87.09%	88.87%	4.17%
	Q3	96.65%	96.65%	95.52%	95.11%	95.52%	93.25%	95.52%	9.69%
	Q4	98.91%	98.91%	98.91%	98.78%	98.91%	98.28%	98.73%	4.12%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Charles City, IA
(KCCY)



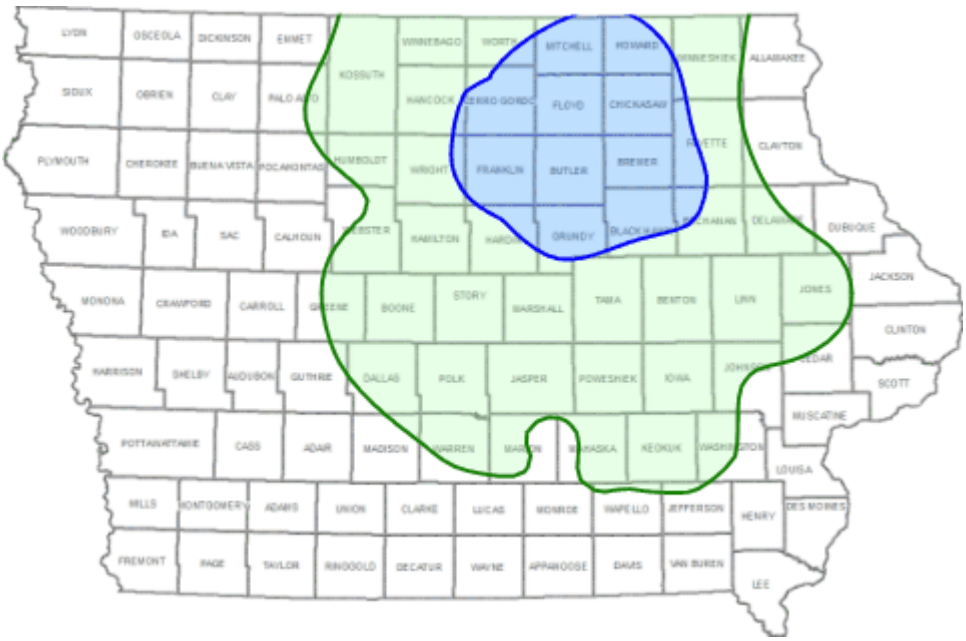
Station Info

WBAN:	14966
WMO:	725463
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	43.0730 N, 92.6132 W
UTM (NAD83, Z15):	531490.10, 4768993.97
Elevation:	341.1 m
Confidence:	Medium

Wind Correlation



Station	Correlation
KOLZ	0.927
KALO	**0.916**
KMCW	**0.901**
KIIB	0.899
KIFA	0.899
KFXY	0.894
KMIW	0.889
KCAV	0.888
KEBS	0.874
KVTI	0.867
KRST	0.865
KFKA	0.860
KAUM	0.858
KTNU	0.853
KBNW	0.846
KDEH	0.840
KIKV	0.834
KPRO	0.833
KMXO	0.833
KGGI	0.833

Terrain-Wind Index (Range = 0.00138595)

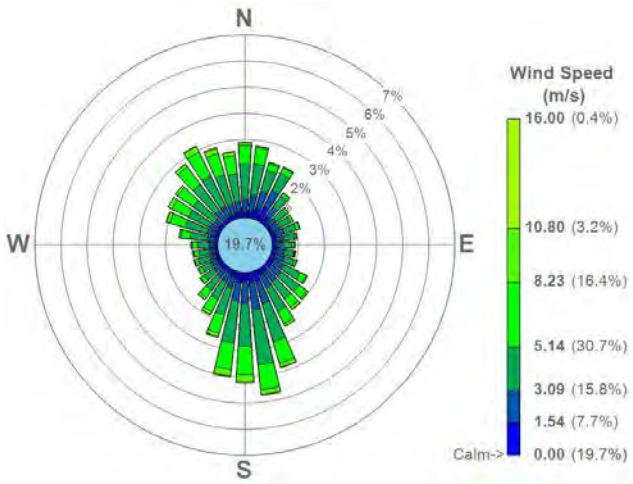
Charles City, IA
(KCCY)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	95.60%	95.60%	95.60%	94.31%	95.60%	95.60%	95.60%	10.65%
	Q2	93.22%	93.22%	93.13%	93.13%	93.22%	93.22%	93.22%	6.55%
	Q3	85.19%	85.19%	85.05%	84.87%	85.19%	85.19%	85.19%	11.05%
	Q4	93.89%	93.89%	93.89%	93.25%	93.89%	93.89%	93.89%	7.25%
2011	Q1	96.02%	96.02%	96.02%	94.91%	90.51%	90.51%	90.51%	6.62%
	Q2	93.54%	93.54%	93.41%	93.50%	93.54%	93.54%	93.54%	3.57%
	Q3	82.70%	82.70%	82.70%	81.52%	82.70%	82.70%	82.70%	14.54%
	Q4	99.82%	99.82%	99.82%	99.77%	99.82%	99.82%	99.82%	6.52%
2012	Q1	99.36%	99.36%	99.36%	99.27%	99.36%	99.36%	99.36%	6.64%
	Q2	99.68%	99.68%	99.59%	99.45%	98.86%	99.68%	99.68%	6.59%
	Q3	99.68%	99.68%	99.59%	99.14%	99.68%	99.68%	99.68%	17.26%
	Q4	52.58%	52.58%	52.58%	52.49%	52.58%	52.58%	52.58%	3.49%
2013	Q1	96.11%	96.11%	96.11%	95.97%	96.11%	95.69%	96.11%	4.03%
	Q2	99.59%	99.59%	99.59%	99.45%	99.59%	98.40%	99.54%	4.49%
	Q3	99.59%	99.59%	94.52%	94.11%	94.47%	92.62%	94.47%	9.01%
	Q4	96.29%	96.29%	96.29%	96.15%	96.29%	96.11%	96.29%	4.76%
2014	Q1	99.63%	99.63%	99.63%	99.49%	99.63%	99.44%	99.63%	3.80%
	Q2	100.00%	100.00%	100.00%	99.91%	100.00%	98.08%	100.00%	3.89%
	Q3	99.59%	99.59%	99.59%	99.55%	99.59%	96.38%	99.59%	11.73%
	Q4	99.82%	99.82%	99.82%	99.68%	99.82%	99.09%	99.82%	5.21%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Cherokee, IA
(KCKP)



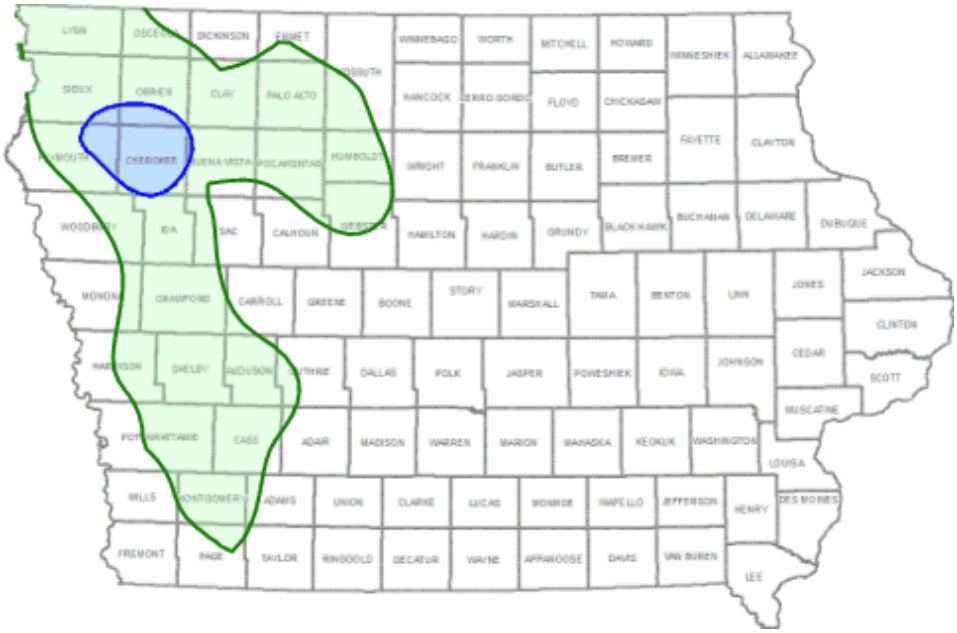
Station Info

WBAN:	54920
WMO:	720344
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	42.7304 N, 95.5538 W
UTM (NAD83, Z15):	290930.62, 4734039.57
Elevation:	370.9 m
Confidence:	Medium

Wind Correlation



Station	Correlation
KLRJ	0.892
KORC	0.891
KLYV	0.874
KDNS	0.850
KHNR	0.850
KADU	0.845
KFOD	0.837
KSHL	0.834
KRDK	0.825
KAIO	0.809
KAXA	0.807
KSPW	0.802
KICL	0.799
KEST	0.799
KSLB	0.793
KBTA	0.790
KCBF	0.783
KFSD	0.778
KEBS	0.776
KAFK	0.773

Terrain-Wind Index (Range = 0.002228864)

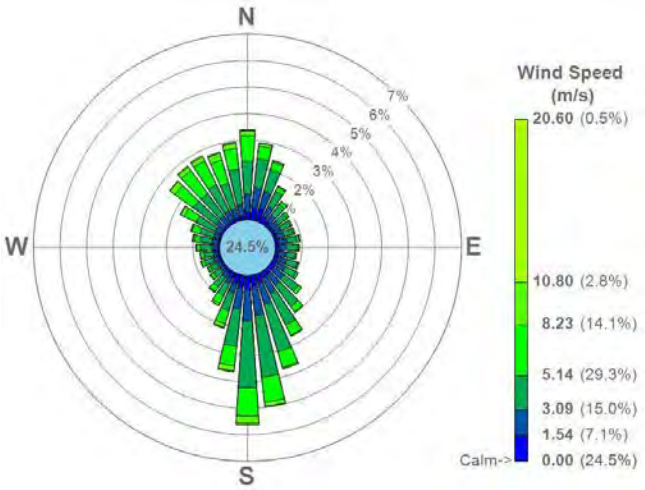
Cherokee, IA
(KCKP)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	76.67%	76.67%	76.67%	76.53%	76.67%	76.67%	76.67%	20.46%
	Q2	87.64%	87.64%	87.64%	87.00%	87.64%	87.64%	87.64%	19.18%
	Q3	84.15%	84.15%	84.15%	84.15%	84.15%	84.15%	84.15%	24.41%
	Q4	81.39%	81.39%	81.39%	81.39%	81.39%	81.39%	81.39%	19.34%
2011	Q1	65.32%	65.32%	65.32%	65.32%	65.32%	65.32%	65.32%	8.70%
	Q2	89.97%	89.97%	89.97%	89.97%	89.97%	89.97%	89.97%	12.00%
	Q3	98.19%	98.19%	98.19%	97.55%	98.19%	98.19%	98.19%	30.84%
	Q4	99.77%	99.77%	99.77%	99.77%	99.77%	99.77%	99.77%	23.69%
2012	Q1	99.36%	99.36%	99.36%	99.36%	99.36%	99.36%	99.36%	18.82%
	Q2	99.91%	99.91%	99.91%	99.82%	99.91%	99.91%	99.91%	15.93%
	Q3	99.41%	99.41%	99.41%	99.41%	99.41%	99.41%	99.41%	29.62%
	Q4	99.37%	99.37%	99.37%	99.32%	99.32%	99.37%	99.37%	19.47%
2013	Q1	99.58%	99.58%	99.58%	99.49%	99.58%	99.58%	99.58%	13.98%
	Q2	99.59%	99.59%	99.59%	99.54%	99.59%	99.59%	99.59%	14.70%
	Q3	99.46%	99.46%	99.46%	99.46%	99.46%	99.46%	99.46%	27.36%
	Q4	99.32%	99.32%	99.32%	99.18%	99.32%	99.32%	99.32%	18.75%
2014	Q1	99.91%	99.91%	99.91%	99.91%	99.91%	99.91%	99.91%	11.85%
	Q2	96.84%	96.84%	96.84%	96.79%	96.84%	96.84%	96.84%	17.58%
	Q3	97.01%	97.01%	97.01%	97.01%	96.97%	97.01%	97.01%	29.66%
	Q4	99.82%	99.82%	99.82%	99.82%	99.82%	99.82%	99.82%	15.94%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Clarinda, IA
(KICL)



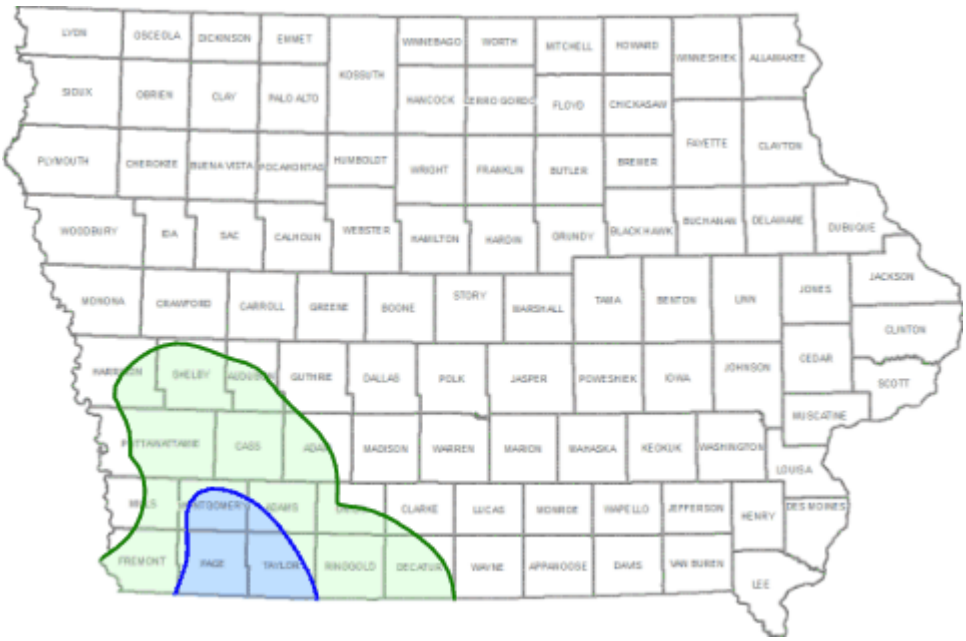
Station Info

WBAN:	NA
WMO:	725479
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	40.7244 N, 95.0259 W
UTM (NAD83, Z15):	328905.61, 4510137.49
Elevation:	301.8 m
Confidence:	Low

Wind Correlation



Station	Correlation
KRDK	0.920
KSDA	0.865
KHNR	0.861
KAFK	0.853
KLWD	0.851
KSTJ	0.844
KAIO	0.824
KADU	0.813
KCSQ	0.800
KCKP	0.799
KBTA	0.793
KCBF	0.791
KDSM	0.784
KI75	0.768
KDNS	0.766
KCNC	0.762
KIKV	0.758
KLRJ	0.748
KTQE	0.743
KPRO	0.739

Terrain-Wind Index (Range = 0.001701654)

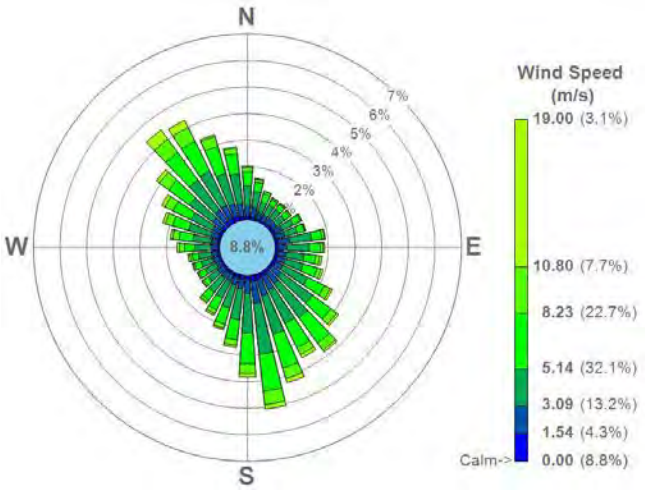
Clarinda, IA
(KICL)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	87.22%	87.22%	87.22%	86.20%	87.22%	87.22%	87.22%	21.25%
	Q2	94.37%	94.37%	94.37%	94.37%	94.37%	94.37%	94.37%	24.08%
	Q3	84.96%	84.96%	84.96%	84.96%	84.96%	84.96%	84.96%	29.30%
	Q4	97.92%	97.92%	97.92%	97.83%	97.92%	97.92%	97.92%	25.63%
2011	Q1	85.74%	85.74%	85.74%	85.74%	85.74%	85.74%	85.74%	15.05%
	Q2	82.83%	82.83%	82.83%	81.64%	82.83%	82.83%	82.83%	11.72%
	Q3	98.14%	98.14%	98.14%	91.67%	98.14%	98.14%	98.14%	41.35%
	Q4	98.19%	98.19%	98.19%	98.14%	98.19%	97.96%	97.96%	27.17%
2012	Q1	98.53%	98.53%	98.53%	98.49%	98.53%	98.53%	98.53%	25.00%
	Q2	99.45%	99.45%	99.40%	89.97%	99.45%	99.45%	99.45%	22.89%
	Q3	99.82%	99.82%	99.82%	98.46%	99.82%	99.82%	99.82%	47.69%
	Q4	99.46%	99.46%	99.41%	99.37%	99.46%	99.46%	99.46%	30.66%
2013	Q1	98.56%	98.56%	98.56%	98.43%	98.56%	98.56%	98.56%	19.58%
	Q2	99.50%	99.50%	99.36%	99.08%	99.31%	99.36%	99.36%	19.64%
	Q3	76.59%	76.59%	76.59%	76.59%	76.59%	76.59%	76.59%	34.92%
	Q4	75.18%	75.18%	75.18%	75.00%	75.18%	74.18%	75.18%	15.67%
2014	Q1	99.44%	99.44%	99.44%	99.35%	99.44%	97.82%	99.44%	11.94%
	Q2	96.84%	96.84%	96.84%	88.51%	88.64%	90.38%	93.91%	15.93%
	Q3	99.14%	99.14%	99.14%	98.78%	99.14%	91.08%	99.14%	32.34%
	Q4	98.73%	98.73%	98.73%	98.60%	98.73%	95.92%	98.69%	17.75%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Clarion, IA
(KCAV)



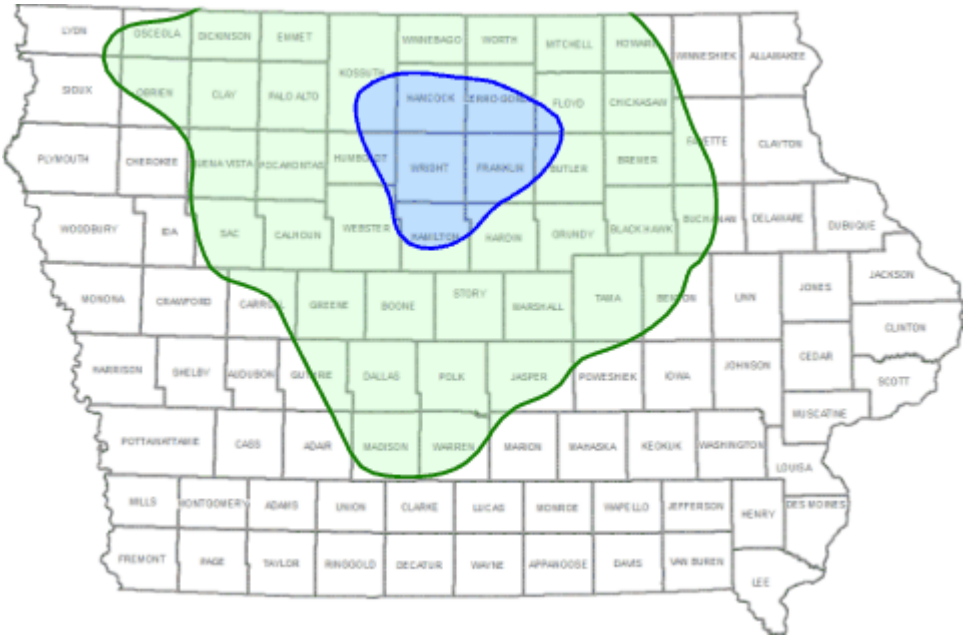
Station Info

WBAN:	NA
WMO:	725458
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	42.7430 N, 93.7592 W
UTM (NAD83, Z15):	437861.43, 4732555.45
Elevation:	352.3 m
Confidence:	Medium

Wind Correlation



Station	Correlation
KEBS	0.929
KMCW	0.900
KAXA	0.899
KCCY	0.888
KFXY	0.887
KIFA	0.882
KPRO	0.862
KMIW	0.855
KALO	0.852
KFRM	0.848
KBNW	0.847
KOLZ	0.845
KSPW	0.844
KDSM	0.838
KTNU	0.838
KAMW	0.837
KSHL	0.834
KFOD	0.830
KIKV	0.823
KIIB	0.823

Terrain-Wind Index (Range = 0.001742873)

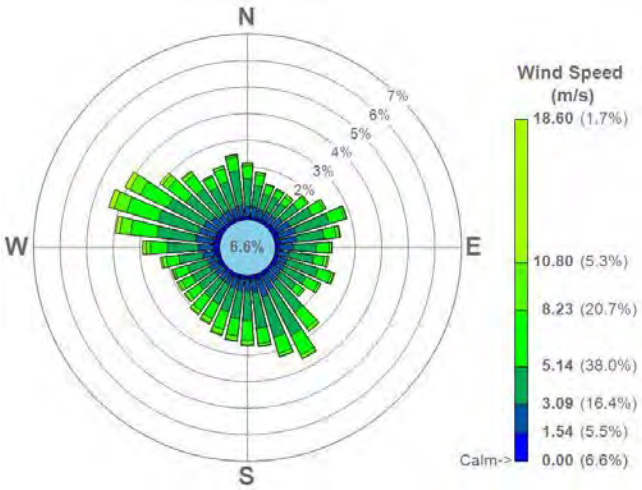
Clarion, IA
(KCAV)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	98.10%	98.10%	98.10%	97.87%	98.10%	98.10%	98.10%	13.47%
	Q2	94.18%	94.18%	94.18%	94.00%	94.18%	94.18%	94.18%	8.93%
	Q3	97.10%	97.10%	97.10%	96.97%	97.10%	97.10%	97.10%	19.34%
	Q4	84.78%	84.78%	84.74%	84.65%	84.74%	84.78%	84.78%	10.01%
2011	Q1	96.30%	96.30%	96.30%	96.20%	96.30%	96.30%	96.30%	6.11%
	Q2	63.87%	63.87%	63.74%	63.69%	63.83%	63.78%	63.78%	2.56%
	Q3	89.09%	89.09%	89.09%	87.59%	89.09%	89.09%	89.09%	19.20%
	Q4	99.55%	99.55%	99.55%	99.50%	99.55%	99.55%	99.55%	7.74%
2012	Q1	99.18%	99.18%	99.18%	99.08%	99.18%	99.18%	99.18%	7.37%
	Q2	99.95%	99.95%	99.95%	99.82%	99.95%	99.82%	99.82%	7.05%
	Q3	99.46%	99.46%	99.46%	99.46%	99.46%	99.46%	99.46%	20.83%
	Q4	60.37%	60.37%	60.24%	59.51%	57.16%	60.24%	60.24%	4.66%
2013	Q1	99.58%	99.58%	99.58%	99.49%	99.58%	99.12%	99.58%	3.75%
	Q2	99.08%	99.08%	99.08%	98.72%	99.08%	97.53%	99.08%	3.07%
	Q3	99.59%	99.59%	99.59%	99.46%	99.59%	96.06%	99.59%	12.00%
	Q4	83.83%	83.83%	82.88%	82.84%	82.88%	82.79%	82.88%	3.53%
2014	Q1	99.26%	99.26%	99.26%	99.12%	99.26%	98.98%	99.21%	4.12%
	Q2	99.68%	99.68%	99.68%	99.40%	99.68%	98.76%	99.68%	5.72%
	Q3	99.59%	99.59%	94.75%	79.21%	94.75%	91.44%	94.75%	13.00%
	Q4	99.73%	99.73%	99.73%	99.41%	99.73%	98.78%	99.73%	4.71%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Clinton, IA
(KCWI)



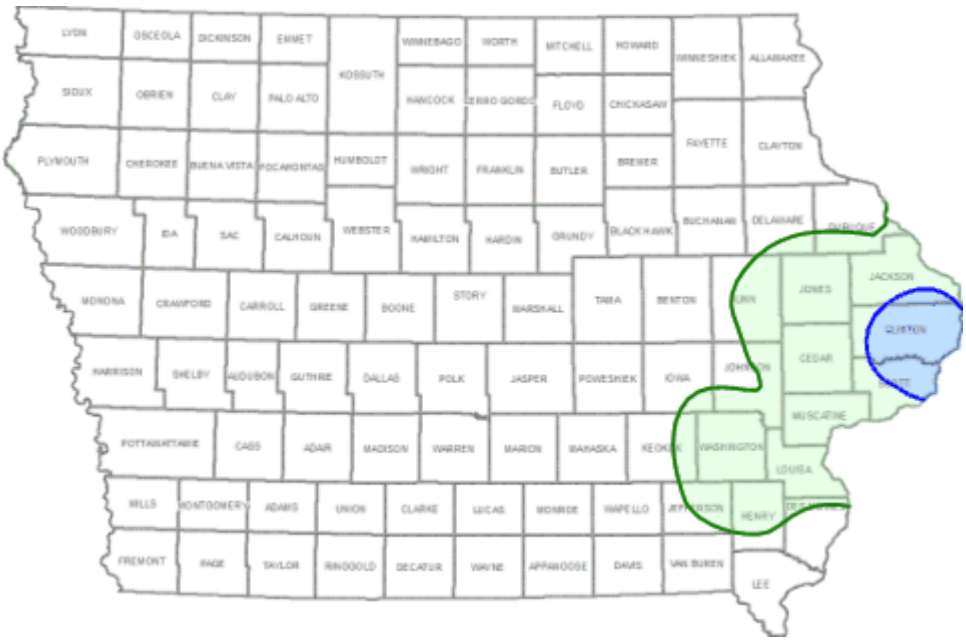
Station Info

WBAN:	94979
WMO:	725473
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	41.8295 N, 90.3328 W
UTM (NAD83, Z15):	721488.82, 4634285.57
Elevation:	211.2 m
Confidence:	Medium

Wind Correlation



Station	Correlation
KDVN	0.902
KMLI	0.878
KSFY	0.872
KMUT	0.849
KPVB	0.845
KMXO	0.843
KAWG	0.841
KMPZ	0.814
KGBG	0.809
KFFL	0.806
KMQB	0.805
KFEP	0.804
KIOW	0.796
KCID	0.795
KDBQ	0.792
KVTI	0.788
KGGI	0.784
KOLZ	0.782
KSQI	0.770
KOOA	0.768

Terrain-Wind Index (Range = 0.001491822)

Clinton, IA

(KCWI)

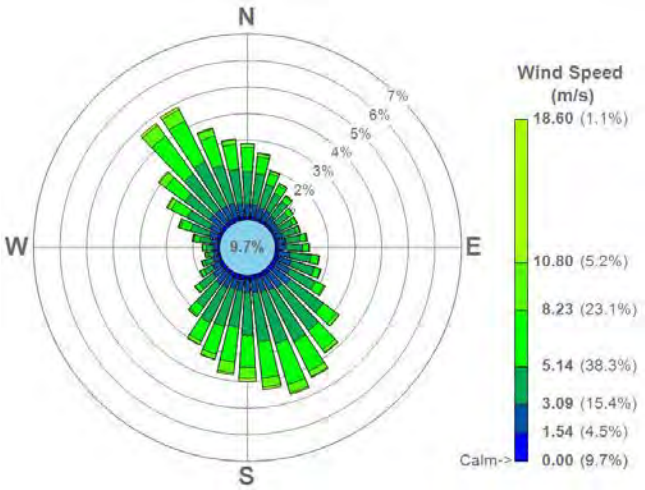
ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	85.37%	85.37%	85.37%	85.14%	85.37%	84.77%	84.81%	10.00%
	Q2	61.22%	61.22%	61.22%	60.85%	52.38%	61.22%	61.22%	3.48%
	Q3	99.32%	99.32%	99.32%	99.32%	91.26%	99.32%	99.32%	10.14%
	Q4	99.32%	99.32%	99.32%	99.28%	76.81%	99.32%	99.32%	7.34%
2011	Q1	93.66%	93.66%	93.66%	91.90%	88.47%	93.66%	93.66%	8.70%
	Q2	98.76%	98.76%	98.72%	95.65%	93.73%	98.72%	98.72%	3.16%
	Q3	85.69%	85.69%	85.69%	82.70%	85.64%	85.69%	85.69%	10.01%
	Q4	92.93%	92.93%	92.93%	92.93%	53.58%	92.93%	92.93%	5.34%
2012	Q1	99.82%	99.82%	99.82%	99.77%	99.82%	99.82%	99.82%	5.40%
	Q2	99.73%	99.73%	99.73%	99.73%	99.73%	99.73%	99.73%	4.35%
	Q3	96.42%	96.42%	96.42%	96.33%	92.44%	96.42%	96.42%	10.69%
	Q4	99.77%	99.77%	99.77%	99.73%	97.28%	99.77%	99.77%	4.53%
2013	Q1	99.49%	99.49%	99.49%	99.44%	99.49%	99.49%	99.49%	5.79%
	Q2	92.08%	92.08%	92.03%	92.08%	86.03%	92.08%	92.08%	4.08%
	Q3	97.60%	97.60%	97.28%	97.19%	97.24%	97.28%	97.28%	8.15%
	Q4	98.05%	98.05%	98.05%	98.01%	97.87%	95.11%	95.11%	6.43%
2014	Q1	99.49%	99.49%	99.44%	99.44%	99.44%	99.44%	99.44%	5.60%
	Q2	95.88%	95.88%	95.88%	93.73%	92.35%	95.88%	95.88%	2.61%
	Q3	89.45%	89.45%	89.45%	89.40%	89.45%	89.40%	89.40%	9.47%
	Q4	100.00%	100.00%	100.00%	99.95%	100.00%	100.00%	100.00%	6.16%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Council Bluffs, IA

(KCBF)



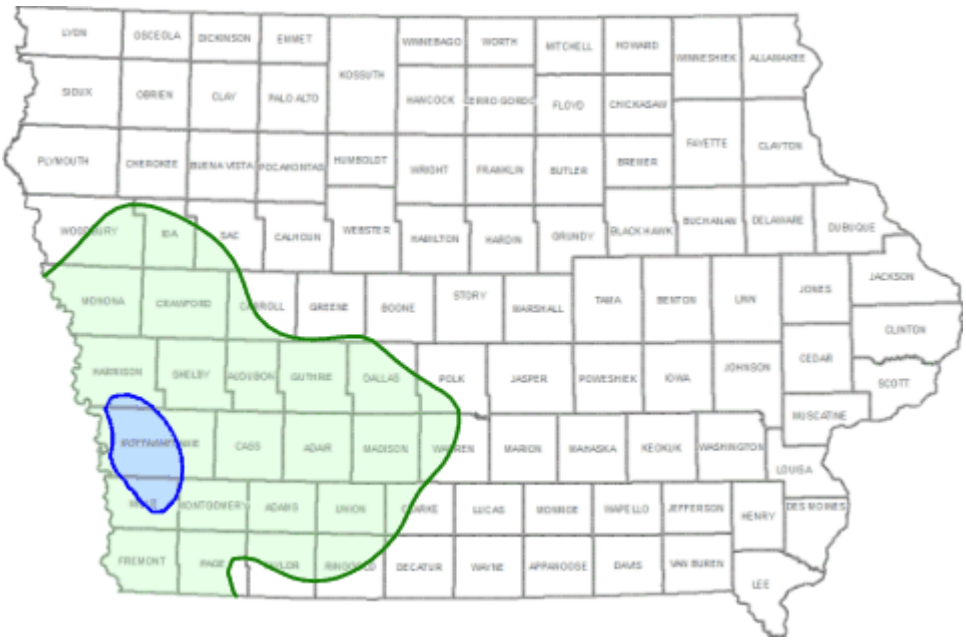
Station Info

WBAN:	NA
WMO:	725497
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	41.2557 N, 95.7598 W
UTM (NAD83, Z15):	268784.09, 4570816.36
Elevation:	373.7 m
Confidence:	High

Wind Correlation



Station	Correlation
KBTA	0.907
KSDA	0.891
KRDK	0.878
KDNS	0.871
KPMV	0.860
KTQE	0.859
KAFK	0.856
KHNR	0.845
KCSQ	0.844
KOMA	0.841
KADU	0.831
KDSM	0.818
KAIO	0.813
KPRO	0.807
KEBS	0.801
KSHL	0.794
KICL	0.791
KOFF	0.789
KLRJ	0.788
KI75	0.785

Terrain-Wind Index (Range = 0.001601547)

Council Bluffs, IA

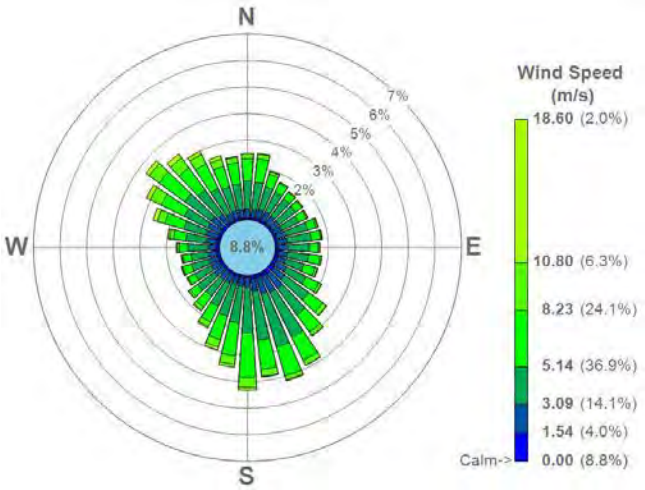
(KCBF)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	97.31%	97.31%	97.27%	97.22%	97.31%	97.31%	97.31%	10.65%
	Q2	98.12%	98.12%	98.12%	98.12%	98.12%	98.12%	98.12%	9.75%
	Q3	95.47%	95.47%	95.47%	95.38%	95.47%	95.47%	95.47%	13.68%
	Q4	91.26%	91.26%	91.21%	91.21%	90.63%	90.63%	90.63%	9.92%
2011	Q1	96.39%	96.39%	96.34%	96.20%	96.39%	96.39%	96.39%	5.93%
	Q2	99.77%	99.77%	99.77%	63.69%	99.77%	99.73%	99.73%	18.36%
	Q3	99.95%	99.95%	99.95%	90.35%	99.95%	99.95%	99.95%	55.30%
	Q4	92.35%	92.35%	83.33%	66.89%	83.33%	92.30%	92.35%	9.01%
2012	Q1	97.30%	97.30%	97.30%	97.30%	97.30%	95.83%	97.07%	4.49%
	Q2	99.77%	99.77%	97.53%	99.77%	97.53%	95.79%	97.48%	3.98%
	Q3	98.91%	98.91%	91.76%	98.91%	91.76%	86.68%	90.67%	6.75%
	Q4	98.55%	98.55%	98.51%	59.51%	98.51%	97.51%	98.41%	5.25%
2013	Q1	99.58%	99.58%	99.58%	97.41%	99.58%	99.03%	99.58%	3.15%
	Q2	99.31%	99.31%	99.27%	93.73%	99.27%	96.61%	98.40%	4.90%
	Q3	99.68%	99.68%	99.68%	94.29%	99.68%	96.56%	99.37%	7.56%
	Q4	99.55%	99.55%	99.55%	99.41%	99.55%	98.23%	99.55%	4.21%
2014	Q1	99.49%	99.49%	99.49%	99.21%	99.49%	98.38%	99.49%	3.75%
	Q2	99.91%	99.91%	99.91%	93.96%	99.91%	98.40%	99.91%	4.40%
	Q3	99.41%	99.41%	99.32%	86.41%	99.41%	95.20%	99.23%	8.97%
	Q4	99.77%	99.77%	99.77%	98.60%	99.77%	98.01%	99.68%	4.17%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Creston, IA
(KCSQ)



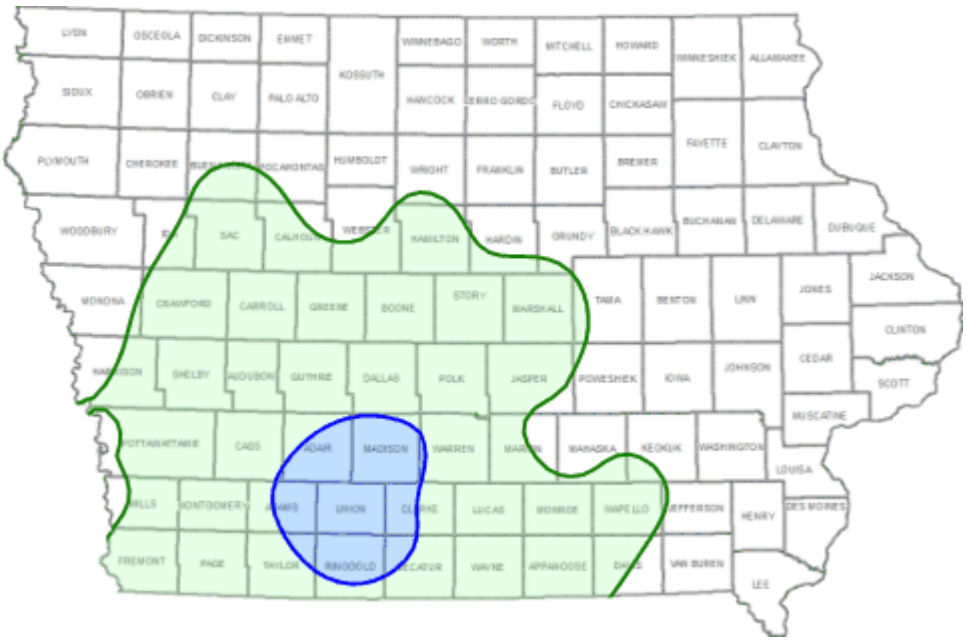
Station Info

WBAN:	NA
WMO:	725474
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	41.0188 N, 94.3608 W
UTM (NAD83, Z15):	385585.65, 4541735.86
Elevation:	393.8 m
Confidence:	Medium

Wind Correlation



Station	Correlation
KDSM	0.889
KCNC	0.885
KLWD	0.885
KI75	0.877
KDNS	0.862
KRDK	0.861
KSDA	0.858
KPRO	0.854
KTNU	0.850
KCBF	0.844
KTVK	0.844
KIKV	0.838
KHNR	0.829
KOXV	0.828
KEBS	0.825
KAIO	0.824
KAFK	0.823
KBTA	0.820
KOTM	0.820
KADU	0.817

Terrain-Wind Index (Range = 0.000762426)

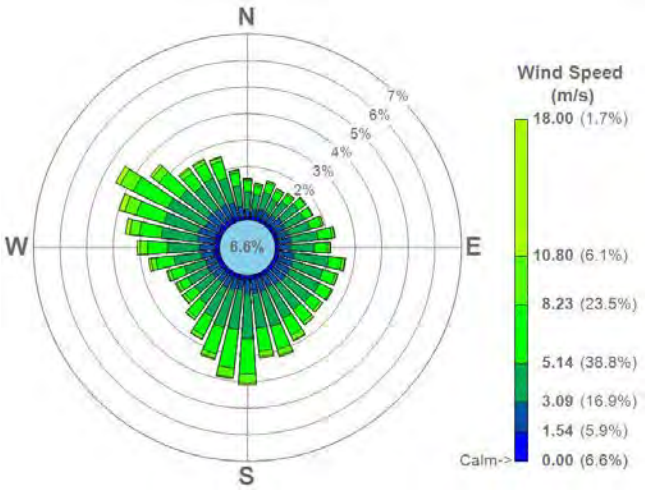
Creston, IA
(KCSQ)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	96.85%	96.85%	96.76%	96.44%	96.85%	96.85%	96.85%	9.95%
	Q2	88.28%	88.28%	88.28%	87.27%	88.28%	88.28%	88.28%	8.20%
	Q3	94.57%	94.57%	94.57%	94.52%	94.57%	94.57%	94.57%	9.92%
	Q4	98.64%	98.64%	98.46%	88.63%	98.64%	98.64%	98.64%	7.65%
2011	Q1	95.42%	95.42%	95.42%	94.35%	95.42%	95.42%	95.42%	7.31%
	Q2	83.79%	83.79%	83.79%	79.90%	83.79%	83.79%	83.79%	3.75%
	Q3	98.28%	98.28%	98.23%	98.10%	98.23%	98.23%	98.23%	13.09%
	Q4	99.68%	99.68%	99.59%	99.64%	99.64%	99.64%	99.64%	12.86%
2012	Q1	98.31%	98.31%	98.12%	98.12%	98.31%	98.31%	98.31%	10.44%
	Q2	99.13%	99.13%	99.13%	99.04%	99.13%	99.13%	99.13%	7.97%
	Q3	99.41%	99.41%	99.32%	99.32%	99.41%	99.41%	99.41%	19.84%
	Q4	99.55%	99.55%	99.50%	94.57%	99.55%	99.55%	99.55%	13.59%
2013	Q1	99.44%	99.44%	99.31%	99.07%	99.44%	99.44%	99.44%	14.72%
	Q2	76.37%	76.37%	76.37%	76.24%	76.37%	75.87%	76.37%	6.73%
	Q3	90.94%	90.94%	90.90%	90.67%	90.90%	89.04%	90.90%	7.25%
	Q4	98.96%	98.96%	98.96%	98.82%	98.96%	98.32%	98.96%	2.72%
2014	Q1	99.77%	99.77%	99.77%	99.72%	99.77%	99.17%	99.72%	2.41%
	Q2	99.59%	99.59%	99.59%	99.36%	99.59%	98.12%	99.59%	4.40%
	Q3	99.59%	99.59%	99.59%	99.09%	99.59%	96.83%	99.59%	8.74%
	Q4	98.82%	98.82%	98.82%	98.69%	98.82%	97.92%	98.82%	3.85%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Davenport, IA
(KDVN)



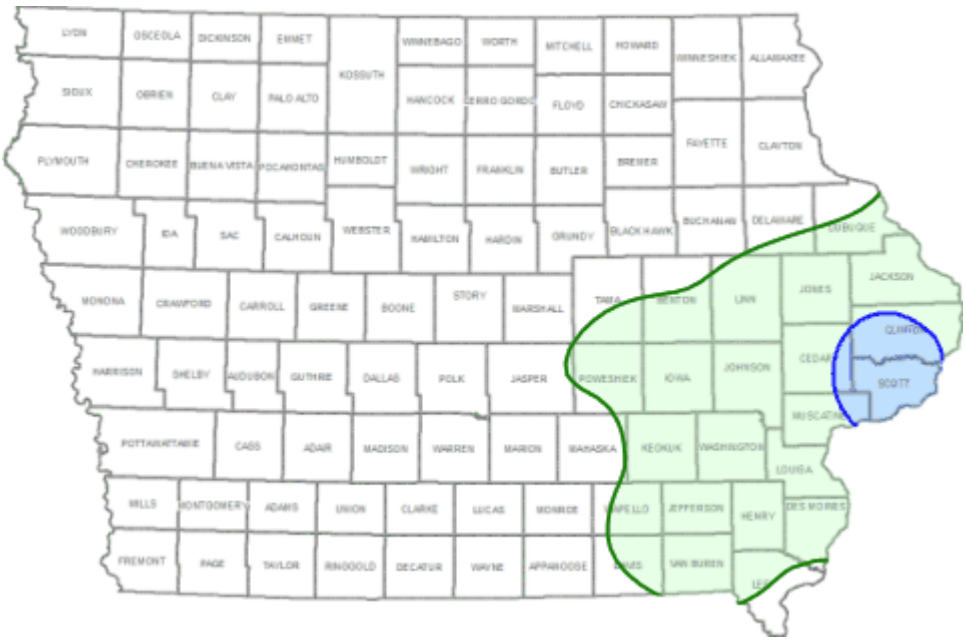
Station Info

WBAN:	94982
WMO:	725349
Anemometer Height:	10.0 m
1-Min Availability Date:	3/3/2005
IFW Installation Date:	10/20/2005

Location Info

Lat-Long:	41.6133 N, 90.5949 W
UTM (NAD83, Z15):	700393.10, 4609636.86
Elevation:	227.7 m
Confidence:	High

Wind Correlation



Station	Correlation
KMLI	**0.906**
KCWI	**0.902**
KAWG	0.878
KMUT	0.861
KFFL	0.853
KMPZ	0.852
KMXO	0.837
KPVB	0.835
KGBG	0.828
KMQB	0.826
KDBQ	0.826
KCID	0.824
KFEP	0.821
KGGI	0.818
KIOW	0.812
KOTM	0.807
KBRL	0.800
KSFY	0.795
KOOA	0.793
KVTI	0.791

Terrain-Wind Index (Range = 0.001005065)

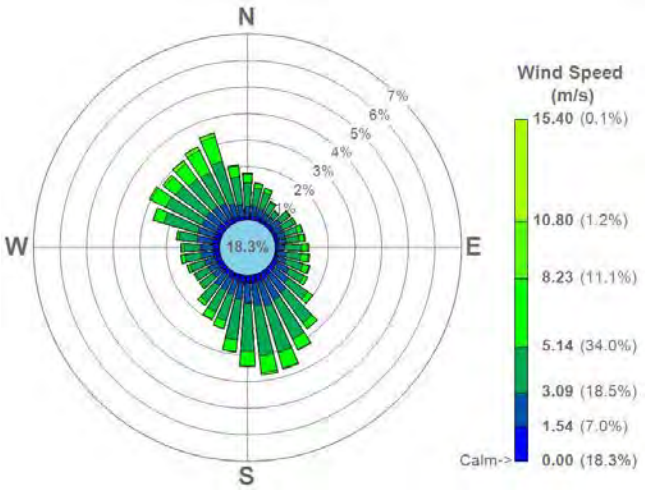
Davenport, IA
(KDVN)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	100.00%	100.00%	100.00%	99.95%	99.35%	98.61%	99.12%	5.32%
	Q2	100.00%	100.00%	100.00%	99.22%	98.99%	97.80%	99.63%	6.96%
	Q3	100.00%	100.00%	100.00%	99.91%	99.91%	98.46%	99.86%	12.00%
	Q4	99.86%	99.86%	99.86%	99.41%	99.82%	99.23%	99.82%	5.62%
2011	Q1	99.86%	99.86%	99.86%	99.54%	99.81%	99.31%	99.81%	3.43%
	Q2	100.00%	100.00%	100.00%	99.91%	100.00%	98.31%	99.27%	4.53%
	Q3	99.77%	99.77%	99.68%	99.00%	99.64%	97.24%	99.50%	13.13%
	Q4	98.60%	98.60%	98.60%	96.88%	98.60%	98.05%	98.46%	4.98%
2012	Q1	99.73%	99.73%	99.73%	97.07%	99.73%	99.27%	99.54%	4.76%
	Q2	99.95%	99.95%	99.95%	98.90%	99.95%	98.35%	99.95%	6.41%
	Q3	99.95%	99.95%	99.95%	98.51%	99.82%	97.83%	99.86%	13.99%
	Q4	100.00%	100.00%	100.00%	99.95%	100.00%	99.46%	99.95%	4.85%
2013	Q1	100.00%	100.00%	100.00%	99.95%	100.00%	99.44%	100.00%	4.77%
	Q2	99.73%	99.73%	99.68%	99.45%	99.68%	98.58%	99.63%	5.49%
	Q3	99.86%	99.86%	99.41%	98.46%	98.78%	96.15%	98.55%	11.55%
	Q4	100.00%	100.00%	100.00%	99.82%	99.91%	99.73%	99.91%	4.62%
2014	Q1	99.91%	99.91%	99.91%	99.77%	99.91%	99.63%	99.86%	3.94%
	Q2	99.95%	99.95%	99.95%	99.54%	98.99%	98.44%	99.45%	2.24%
	Q3	99.91%	99.91%	99.91%	98.01%	99.91%	97.74%	99.73%	8.70%
	Q4	99.95%	99.95%	99.95%	99.86%	99.46%	99.68%	99.91%	5.03%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Decorah, IA
(KDEH)



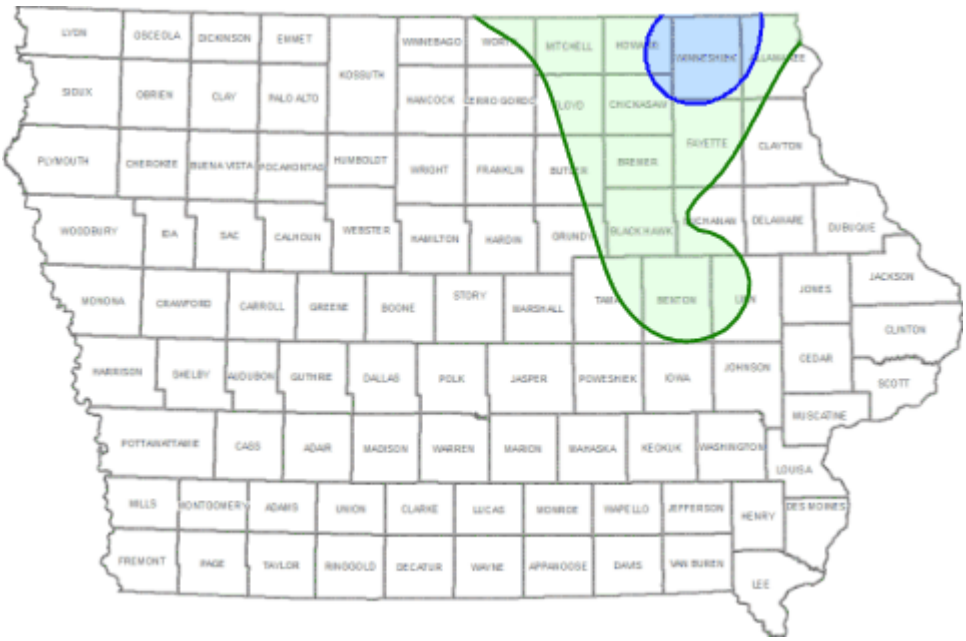
Station Info

WBAN:	NA
WMO:	725476
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	43.2755 N, 91.7433 W
UTM (NAD83, Z15):	601973.22, 4792176.02
Elevation:	348.7 m
Confidence:	Medium

Wind Correlation



Station	Correlation
KY51	0.879
KVTI	0.860
KFKA	0.860
KAUM	0.843
KCCY	0.840
KLSE	0.837
KAEL	0.835
KALO	0.825
KOLZ	0.815
KCID	0.794
KIIB	0.791
KIKV	0.780
KRST	0.778
KMPZ	0.772
KTNU	0.770
KMXO	0.770
KFOD	0.764
KFXY	0.763
KMIW	0.761
KOXV	0.761

Terrain-Wind Index (Range = 0.001277183)

Decorah, IA

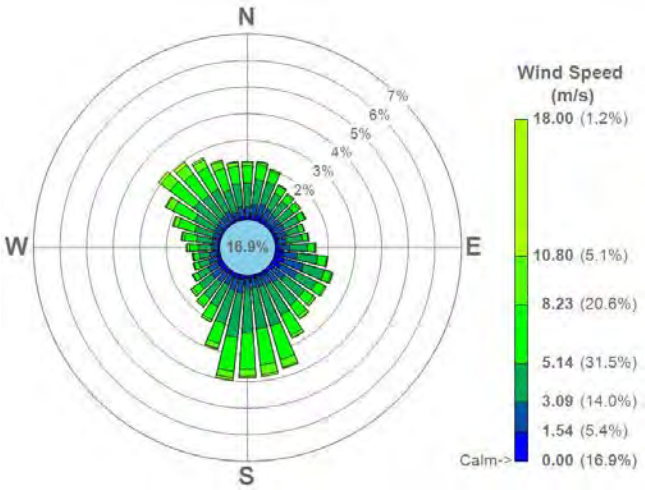
(KDEH)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	95.69%	95.69%	95.69%	94.95%	95.69%	95.69%	95.69%	25.37%
	Q2	93.18%	93.18%	93.18%	93.13%	93.18%	93.18%	93.18%	23.31%
	Q3	92.35%	92.35%	92.35%	92.35%	92.35%	92.35%	92.35%	34.96%
	Q4	91.80%	91.80%	91.71%	91.67%	91.80%	91.80%	91.80%	25.50%
2011	Q1	90.88%	90.88%	90.83%	90.60%	90.88%	90.88%	90.88%	19.58%
	Q2	97.57%	97.57%	97.53%	97.57%	97.57%	97.57%	97.57%	11.68%
	Q3	89.86%	89.86%	89.81%	89.76%	89.86%	89.86%	89.86%	28.71%
	Q4	99.82%	99.82%	99.82%	99.77%	99.82%	99.82%	99.82%	16.85%
2012	Q1	99.27%	99.27%	99.27%	99.27%	99.27%	99.27%	99.27%	14.19%
	Q2	60.21%	60.21%	57.23%	53.62%	57.23%	51.74%	57.23%	8.29%
	Q3	99.64%	99.64%	99.55%	97.46%	99.50%	86.59%	99.41%	27.36%
	Q4	98.41%	98.41%	98.32%	94.84%	98.32%	91.39%	98.28%	14.58%
2013	Q1	99.63%	99.63%	99.54%	98.24%	99.58%	92.87%	99.54%	11.81%
	Q2	79.58%	79.58%	64.42%	63.00%	64.33%	59.57%	64.42%	5.91%
	Q3	96.60%	96.60%	93.80%	92.84%	93.80%	79.98%	93.80%	22.64%
	Q4	98.96%	98.96%	98.96%	98.73%	98.96%	88.22%	98.96%	14.67%
2014	Q1	99.58%	99.58%	99.58%	99.58%	99.58%	91.11%	99.58%	8.98%
	Q2	97.66%	97.66%	94.46%	94.23%	94.46%	86.31%	94.46%	12.23%
	Q3	99.28%	99.28%	84.15%	83.79%	84.15%	71.20%	84.15%	24.09%
	Q4	99.82%	99.82%	99.82%	99.73%	99.82%	86.78%	99.82%	13.95%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Denison, IA
(KDNS)



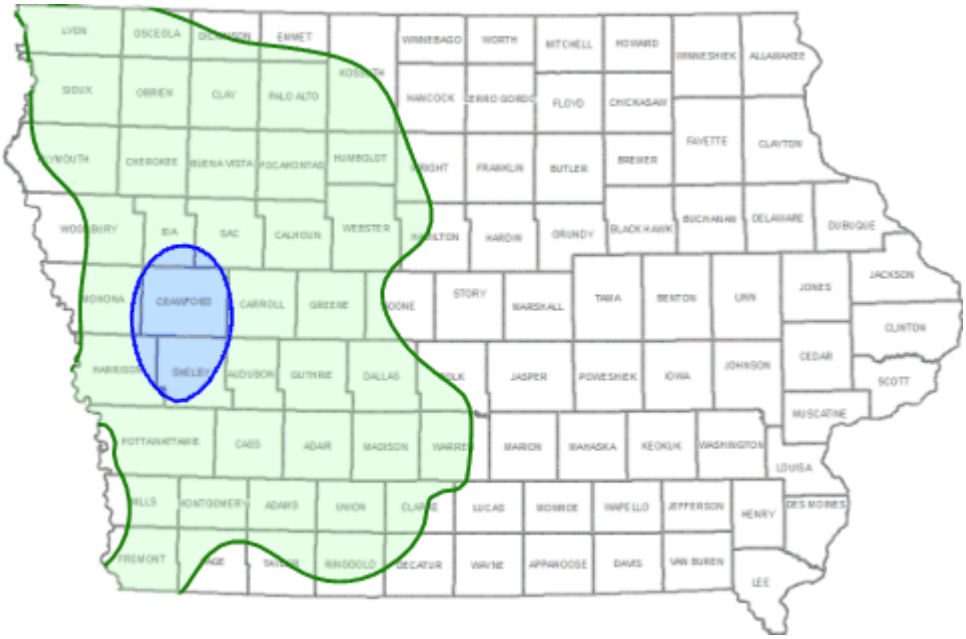
Station Info

WBAN:	NA
WMO:	725477
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	41.9842 N, 95.3800 W
UTM (NAD83, Z15):	302839.25, 4650762.00
Elevation:	380.7 m
Confidence:	Medium

Wind Correlation



Station	Correlation
KHNR	0.904
KCBF	0.871
KAIO	0.868
KCSQ	0.862
KBTA	0.860
KADU	0.857
KRDK	0.856
KLRJ	0.856
KSLB	0.852
KSHL	0.851
KCKP	0.850
KDSM	0.826
KSDA	0.826
KORC	0.823
KAXA	0.823
KPRO	0.820
KAFK	0.815
KCIN	0.814
KEBS	0.813
KFOD	0.812

Terrain-Wind Index (Range = 0.001283353)

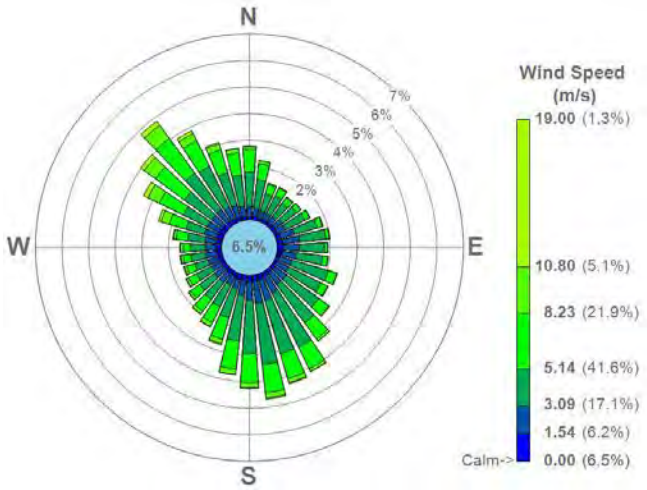
Denison, IA
(KDNS)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	94.63%	94.63%	94.63%	94.35%	89.21%	94.63%	94.63%	22.82%
	Q2	94.92%	94.92%	94.92%	94.69%	64.19%	94.92%	94.92%	18.27%
	Q3	89.63%	89.63%	89.63%	89.58%	89.63%	89.63%	89.63%	22.60%
	Q4	91.76%	91.76%	91.76%	91.71%	91.76%	91.76%	91.76%	18.16%
2011	Q1	95.14%	95.14%	95.14%	95.14%	95.14%	95.14%	95.14%	10.56%
	Q2	97.21%	97.21%	97.21%	93.50%	97.21%	97.21%	97.21%	10.67%
	Q3	96.11%	96.11%	96.11%	95.52%	96.11%	96.11%	96.11%	30.71%
	Q4	99.46%	99.46%	99.46%	99.46%	99.46%	99.46%	99.46%	21.69%
2012	Q1	99.36%	99.36%	99.36%	99.31%	99.36%	99.36%	99.36%	18.41%
	Q2	65.84%	65.84%	65.84%	65.66%	65.84%	64.38%	65.84%	9.57%
	Q3	97.60%	97.60%	97.51%	97.55%	97.60%	91.03%	97.60%	24.77%
	Q4	99.09%	99.09%	99.09%	99.00%	99.09%	97.74%	99.09%	16.03%
2013	Q1	97.92%	97.92%	97.92%	97.87%	97.92%	96.44%	97.92%	9.26%
	Q2	98.90%	98.90%	98.90%	98.72%	98.90%	96.06%	98.90%	10.49%
	Q3	81.16%	81.16%	81.16%	80.93%	81.16%	77.81%	81.16%	16.85%
	Q4	99.32%	99.32%	99.32%	99.23%	99.32%	97.51%	99.32%	13.22%
2014	Q1	99.86%	99.86%	99.86%	99.81%	99.86%	98.38%	99.86%	11.20%
	Q2	100.00%	100.00%	100.00%	99.63%	100.00%	97.12%	100.00%	14.88%
	Q3	99.64%	99.64%	99.64%	99.55%	99.64%	93.89%	99.55%	23.82%
	Q4	99.82%	99.82%	99.82%	99.77%	99.82%	97.51%	99.82%	12.91%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Des Moines, IA
(KDSM)



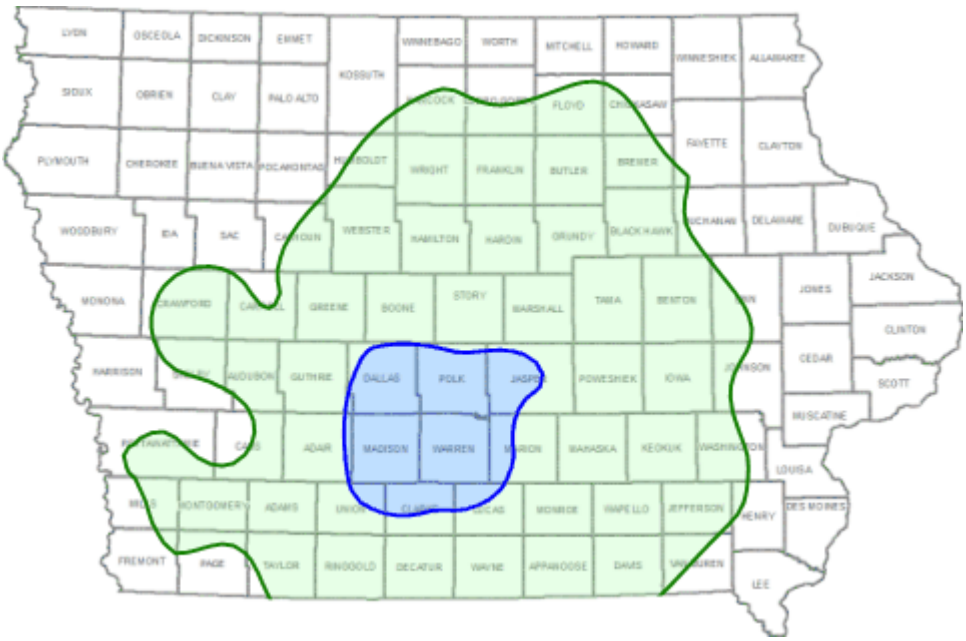
Station Info

WBAN:	14933
WMO:	725460
Anemometer Height:	10.0 m
1-Min Availability Date:	1/1/2000
IFW Installation Date:	4/18/2007

Location Info

Lat-Long:	41.5340 N, 93.6531 W
UTM (NAD83, Z15):	445518.84, 4598244.78
Elevation:	285.6 m
Confidence:	High

Wind Correlation



Station	Correlation
KIKV	0.915
KTNU	0.910
KI75	0.902
KPRO	0.899
KCNC	0.895
KOXV	0.892
KCSQ	0.889
KOOA	0.876
KAMW	0.874
KTVK	0.869
KMIW	0.867
KEBS	0.865
KLWD	0.863
KBNW	0.862
KOTM	0.860
KGGI	0.858
KCAV	0.838
KIFA	0.836
KPEA	0.833
KDNS	0.826

Terrain-Wind Index (Range = 0.000944476)

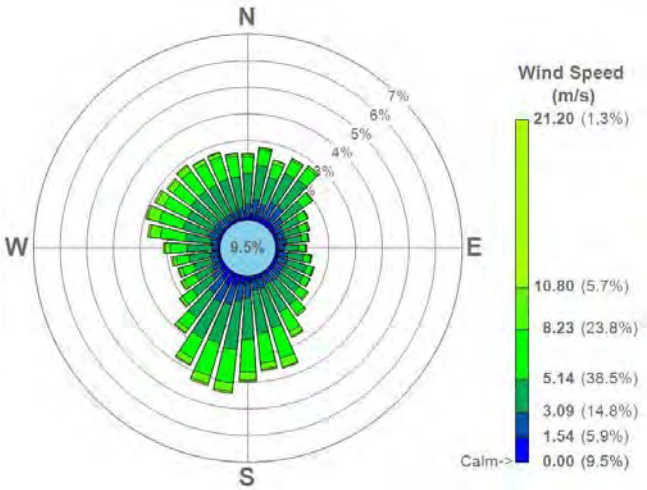
Des Moines, IA
(KDSM)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	100.00%	100.00%	100.00%	99.95%	100.00%	99.40%	100.00%	7.87%
	Q2	100.00%	100.00%	100.00%	100.00%	100.00%	97.85%	100.00%	8.84%
	Q3	100.00%	100.00%	100.00%	100.00%	100.00%	98.10%	100.00%	9.15%
	Q4	100.00%	100.00%	99.77%	100.00%	100.00%	99.59%	100.00%	7.65%
2011	Q1	100.00%	100.00%	100.00%	99.91%	100.00%	99.21%	100.00%	4.95%
	Q2	100.00%	100.00%	100.00%	100.00%	100.00%	98.49%	100.00%	5.45%
	Q3	100.00%	100.00%	100.00%	99.41%	100.00%	97.46%	100.00%	10.64%
	Q4	100.00%	100.00%	100.00%	100.00%	100.00%	99.23%	100.00%	6.16%
2012	Q1	100.00%	100.00%	100.00%	99.82%	100.00%	99.54%	100.00%	6.18%
	Q2	100.00%	100.00%	99.95%	100.00%	100.00%	98.81%	100.00%	5.27%
	Q3	100.00%	100.00%	100.00%	100.00%	100.00%	97.46%	100.00%	11.41%
	Q4	99.95%	99.95%	99.91%	99.91%	99.95%	99.18%	99.95%	7.07%
2013	Q1	100.00%	100.00%	100.00%	99.68%	100.00%	98.94%	99.95%	2.50%
	Q2	100.00%	100.00%	100.00%	100.00%	100.00%	98.40%	99.91%	4.08%
	Q3	99.86%	99.86%	99.73%	97.60%	99.86%	98.05%	99.86%	6.57%
	Q4	100.00%	100.00%	100.00%	96.15%	100.00%	99.59%	100.00%	4.12%
2014	Q1	100.00%	100.00%	100.00%	96.76%	100.00%	99.35%	100.00%	2.69%
	Q2	100.00%	100.00%	100.00%	98.81%	100.00%	97.53%	100.00%	4.49%
	Q3	100.00%	100.00%	100.00%	97.74%	100.00%	97.83%	100.00%	9.83%
	Q4	100.00%	100.00%	100.00%	98.05%	100.00%	99.28%	99.95%	4.35%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Dubuque, IA
(KDBQ)



Station Info

WBAN:	94908
WMO:	725470
Anemometer Height:	10.0 m
1-Min Availability Date:	1/1/2000
IFW Installation Date:	4/20/2007

Location Info

Lat-Long:	42.3983 N, 90.7091 W
UTM (NAD83, Z15):	688543.78, 4696542.87
Elevation:	317.0 m
Confidence:	High

Wind Correlation

Station	Correlation
KDVN	0.826
KAWG	0.806
KCWI	0.792
KFKA	0.792
KFEP	0.787
KFFL	0.776
KMPZ	0.772
KPVB	0.772
KBRL	0.771
KMUT	0.768
KOLZ	0.766
KVTI	0.763
KRST	0.761
KTNU	0.760
KOTM	0.757
KMXO	0.756
KCID	0.753
KIIB	0.749
KCCY	0.748
KY51	0.746

Terrain-Wind Index (Range = 0.001515859)

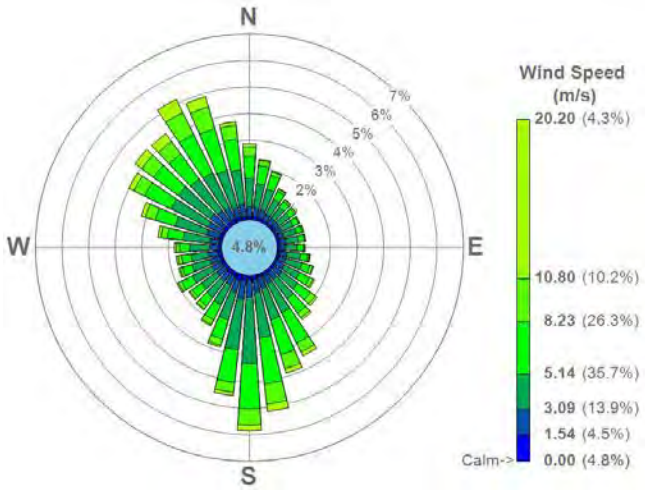
Dubuque, IA
(KDBQ)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	100.00%	100.00%	100.00%	99.91%	100.00%	99.49%	99.95%	11.62%
	Q2	99.91%	99.91%	99.13%	98.31%	99.91%	98.44%	99.91%	10.44%
	Q3	100.00%	100.00%	100.00%	99.95%	99.95%	98.87%	99.86%	13.99%
	Q4	100.00%	100.00%	99.77%	99.86%	100.00%	98.41%	100.00%	9.06%
2011	Q1	100.00%	100.00%	100.00%	99.95%	99.91%	97.50%	99.68%	4.58%
	Q2	99.82%	99.82%	99.82%	99.73%	99.82%	98.90%	99.82%	6.64%
	Q3	99.59%	99.59%	99.00%	98.23%	99.46%	97.83%	99.32%	19.34%
	Q4	100.00%	100.00%	100.00%	100.00%	100.00%	99.05%	99.91%	7.38%
2012	Q1	99.91%	99.91%	99.86%	99.68%	99.86%	99.54%	99.82%	7.10%
	Q2	99.91%	99.91%	99.31%	97.80%	97.71%	96.43%	97.71%	7.55%
	Q3	99.91%	99.91%	99.91%	99.91%	99.91%	97.74%	99.59%	17.89%
	Q4	100.00%	100.00%	99.09%	99.91%	100.00%	99.09%	99.77%	8.97%
2013	Q1	100.00%	100.00%	100.00%	99.91%	100.00%	99.40%	99.77%	6.39%
	Q2	99.82%	99.82%	99.04%	98.81%	98.81%	97.02%	98.76%	6.91%
	Q3	99.91%	99.91%	99.68%	92.21%	99.73%	97.78%	99.28%	14.40%
	Q4	99.95%	99.95%	99.91%	91.62%	99.95%	99.37%	99.73%	6.79%
2014	Q1	99.95%	99.95%	99.91%	91.34%	99.95%	99.54%	99.91%	4.49%
	Q2	99.95%	99.95%	99.86%	91.85%	99.91%	98.86%	99.82%	5.36%
	Q3	99.95%	99.95%	99.95%	91.44%	99.95%	98.01%	99.59%	13.59%
	Q4	100.00%	100.00%	100.00%	94.20%	100.00%	99.37%	99.59%	7.16%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Estherville, IA
(KEST)



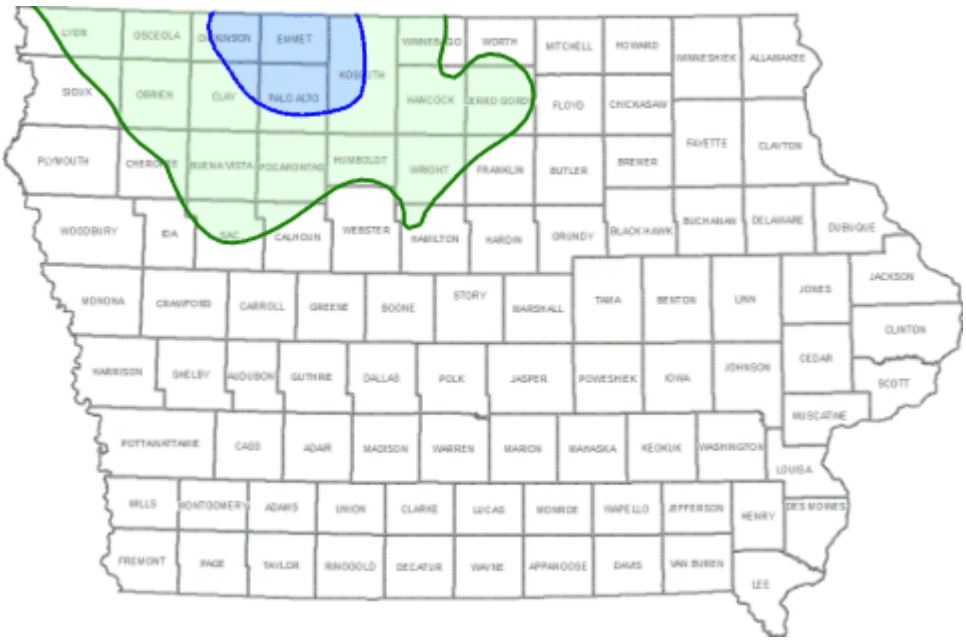
Station Info

WBAN:	94971
WMO:	726499
Anemometer Height:	10.0 m
1-Min Availability Date:	3/3/2005
IFW Installation Date:	5/2/2007

Location Info

Lat-Long:	43.4009 N, 94.7476 W
UTM (NAD83, Z15):	358484.33, 4806818.77
Elevation:	400.8 m
Confidence:	Medium

Wind Correlation



Station	Correlation
KAXA	0.909
KFRM	0.902
KMJQ	0.884
KOTG	0.883
KSPW	0.881
KSHL	0.862
KMCW	0.832
KSLB	0.824
KCAV	0.821
KLYV	0.814
KRST	0.808
KEBS	0.806
KFSD	0.801
KCKP	0.799
KDNS	0.792
KLRJ	0.788
KFXY	0.788
KHNR	0.785
KADU	0.769
KCIN	0.769

Terrain-Wind Index (Range = 0.001463294)

Estherville, IA

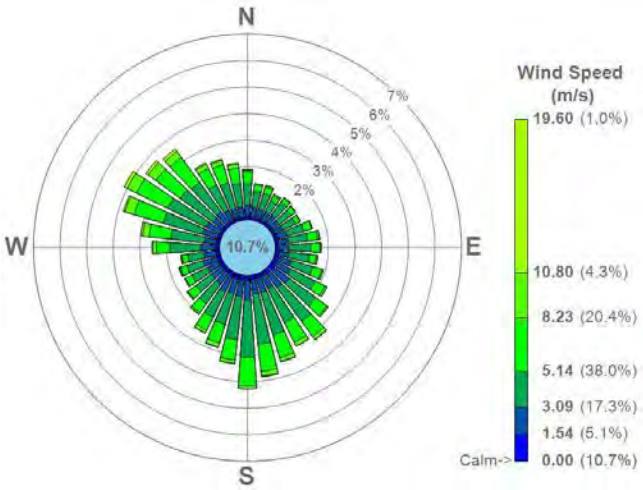
(KEST)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	100.00%	100.00%	100.00%	100.00%	99.91%	99.86%	99.91%	5.19%
	Q2	99.95%	99.95%	99.91%	99.73%	99.95%	98.12%	99.63%	5.63%
	Q3	100.00%	100.00%	100.00%	99.86%	100.00%	98.82%	99.91%	8.83%
	Q4	100.00%	100.00%	100.00%	98.60%	98.78%	99.28%	99.55%	3.67%
2011	Q1	99.86%	99.86%	99.54%	98.70%	99.03%	98.80%	98.89%	3.15%
	Q2	99.95%	99.95%	99.95%	97.34%	99.95%	98.76%	99.77%	2.61%
	Q3	100.00%	100.00%	100.00%	98.64%	100.00%	97.87%	99.77%	12.14%
	Q4	99.95%	99.95%	98.91%	97.51%	99.95%	99.68%	99.73%	3.31%
2012	Q1	100.00%	100.00%	100.00%	99.95%	100.00%	98.44%	98.90%	3.85%
	Q2	100.00%	100.00%	100.00%	100.00%	100.00%	98.31%	99.86%	3.11%
	Q3	100.00%	100.00%	100.00%	99.91%	100.00%	97.74%	99.91%	9.42%
	Q4	100.00%	100.00%	100.00%	99.95%	100.00%	99.68%	99.86%	3.94%
2013	Q1	100.00%	100.00%	100.00%	99.95%	100.00%	99.49%	99.95%	3.52%
	Q2	100.00%	100.00%	99.68%	100.00%	100.00%	99.31%	99.95%	3.30%
	Q3	99.95%	99.95%	99.77%	99.77%	99.95%	98.32%	99.95%	11.64%
	Q4	100.00%	100.00%	100.00%	99.86%	99.95%	99.77%	99.91%	3.08%
2014	Q1	100.00%	100.00%	100.00%	99.95%	100.00%	99.81%	100.00%	1.30%
	Q2	100.00%	100.00%	100.00%	99.86%	100.00%	98.40%	99.86%	1.65%
	Q3	99.95%	99.95%	99.95%	99.91%	99.95%	98.55%	99.59%	5.12%
	Q4	100.00%	100.00%	100.00%	99.95%	100.00%	99.55%	99.91%	2.04%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Fairfield, IA
(KFFL)



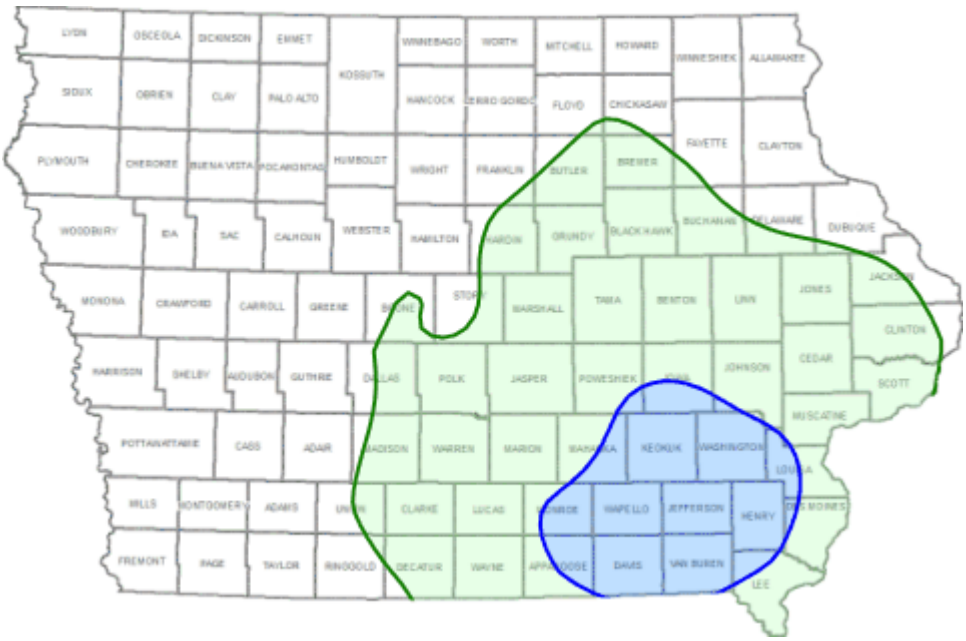
Station Info

WBAN:	NA
WMO:	726498
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	41.0521 N, 91.9834 W
UTM (NAD83, Z15):	585430.88, 4545038.46
Elevation:	239.6 m
Confidence:	Medium

Wind Correlation



Station	Correlation
KAWG	0.951
KOTM	0.945
KMPZ	0.934
KOOA	0.923
KTVK	0.897
KOXV	0.889
KGGI	0.883
KCNC	0.883
KTNU	0.879
KMUT	0.879
KFSW	0.877
KMQB	0.871
KCID	0.868
KI75	0.863
KIOW	0.861
KVTI	0.854
KDVN	0.853
KIKV	0.845
KUIN	0.843
KPEA	0.840

Terrain-Wind Index (Range = 0.00095042)

Fairfield, IA

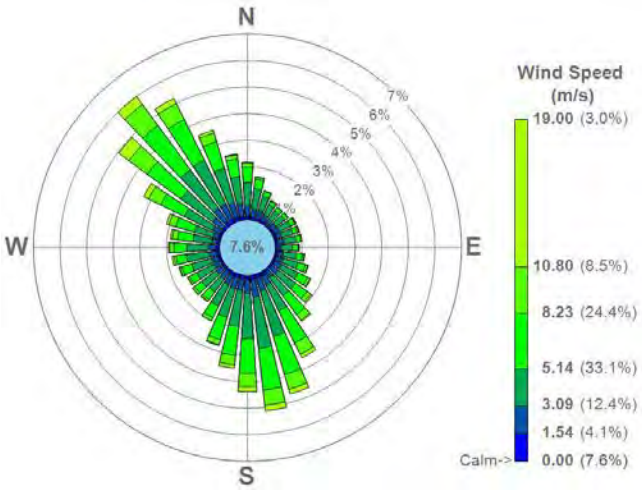
(KFFL)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	95.93%	95.93%	95.83%	95.93%	95.93%	95.93%	95.93%	10.46%
	Q2	95.28%	95.28%	95.15%	95.28%	92.95%	95.28%	95.28%	14.47%
	Q3	97.24%	97.24%	97.15%	97.19%	89.86%	97.24%	97.24%	27.49%
	Q4	83.74%	83.74%	83.56%	83.65%	83.74%	83.74%	83.74%	22.64%
2011	Q1	95.46%	95.46%	95.46%	95.42%	95.46%	95.46%	95.46%	17.36%
	Q2	98.35%	98.35%	98.31%	98.31%	98.35%	98.35%	98.35%	13.51%
	Q3	100.00%	100.00%	99.95%	98.55%	100.00%	100.00%	100.00%	13.63%
	Q4	99.55%	99.55%	99.55%	99.50%	99.55%	99.55%	99.55%	6.70%
2012	Q1	99.36%	99.36%	99.31%	99.27%	99.36%	99.36%	99.36%	6.23%
	Q2	99.86%	99.86%	99.73%	99.82%	99.86%	99.86%	99.86%	7.42%
	Q3	99.09%	99.09%	99.09%	98.64%	99.09%	99.09%	99.09%	15.67%
	Q4	99.41%	99.41%	99.37%	99.41%	99.41%	99.41%	99.41%	7.74%
2013	Q1	92.64%	92.64%	92.64%	92.36%	92.64%	92.64%	92.64%	5.14%
	Q2	80.91%	80.91%	80.91%	80.82%	80.91%	79.76%	80.82%	4.53%
	Q3	99.50%	99.50%	99.50%	99.28%	99.50%	96.24%	99.50%	8.70%
	Q4	99.59%	99.59%	99.59%	98.28%	99.59%	99.23%	99.59%	3.22%
2014	Q1	99.07%	99.07%	99.07%	97.31%	99.07%	98.70%	99.07%	2.59%
	Q2	99.95%	99.95%	99.95%	99.82%	99.95%	98.21%	99.95%	5.54%
	Q3	99.46%	99.46%	99.46%	99.28%	99.46%	95.79%	99.46%	14.76%
	Q4	99.77%	99.77%	99.77%	94.38%	99.73%	99.28%	99.73%	5.30%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Fairmont, MN
(KFRM)



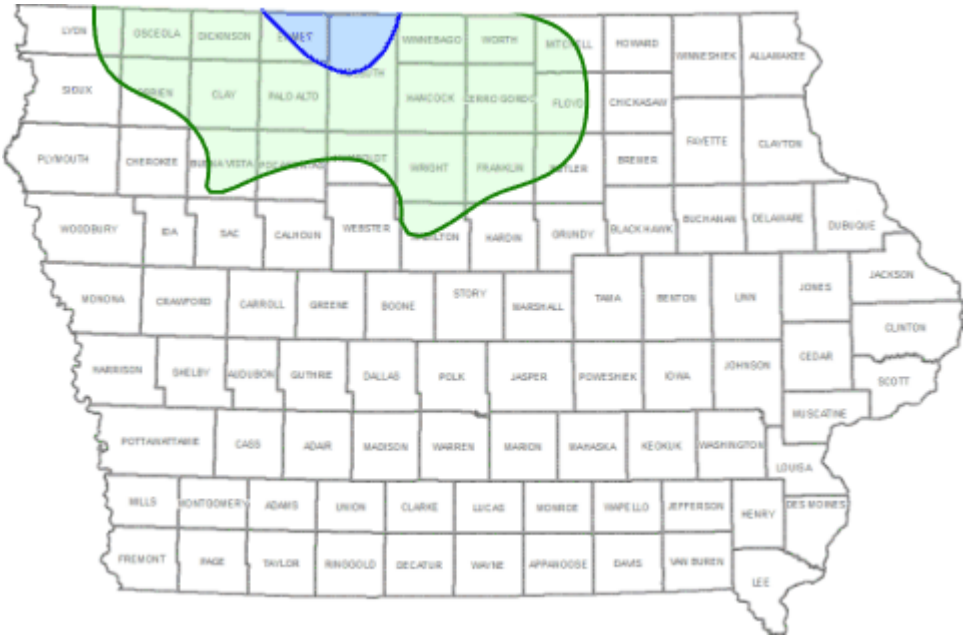
Station Info

WBAN:	94948
WMO:	726586
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	43.6455 N, 94.4168 W
UTM (NAD83, Z15):	385734.61, 4833475.72
Elevation:	352.3 m
Confidence:	High

Wind Correlation



Station	Correlation
KMJQ	0.902
KEST	0.902
KAXA	0.887
KMCW	0.881
KCAV	0.848
KFXY	0.846
KOTG	0.844
KSHL	0.831
KSPW	0.830
KRST	0.822
KEBS	0.817
KSLB	0.803
KCCY	0.793
KLYV	0.784
KAUM	0.778
KAEL	0.775
KIFA	0.773
KFKA	0.770
KALO	0.764
KFSD	0.763

Terrain-Wind Index (Range = 0.00101496)

Fairmont, MN

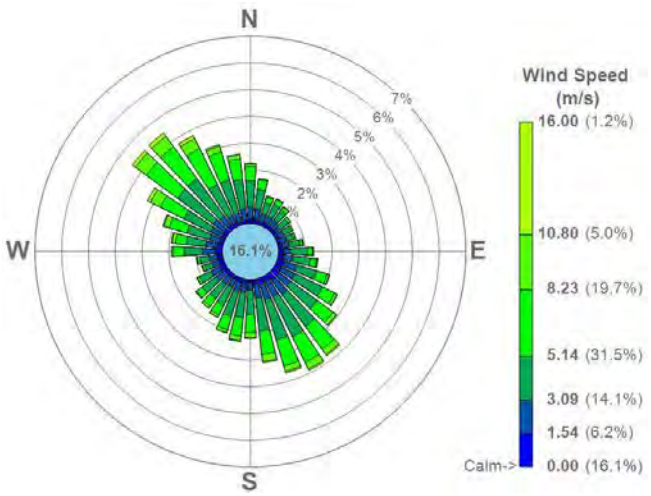
(KFRM)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	100.00%	100.00%	100.00%	100.00%	100.00%	99.95%	99.95%	6.57%
	Q2	95.51%	95.51%	94.87%	95.10%	94.83%	94.18%	94.18%	6.23%
	Q3	99.55%	99.55%	99.55%	99.41%	99.41%	97.55%	97.55%	8.11%
	Q4	99.86%	99.86%	99.86%	99.82%	97.42%	99.86%	99.86%	5.53%
2011	Q1	98.94%	98.94%	98.94%	98.56%	98.80%	98.89%	98.89%	6.53%
	Q2	96.43%	96.43%	96.43%	95.51%	96.38%	80.77%	80.77%	8.75%
	Q3	99.18%	99.18%	99.18%	98.05%	98.55%	99.18%	99.18%	21.65%
	Q4	99.59%	99.59%	99.55%	99.55%	85.05%	99.55%	99.55%	3.49%
2012	Q1	100.00%	100.00%	100.00%	99.95%	93.68%	100.00%	100.00%	4.76%
	Q2	99.91%	99.91%	99.91%	99.86%	97.21%	99.91%	99.91%	4.62%
	Q3	93.84%	93.84%	93.80%	93.80%	93.80%	93.84%	93.84%	23.55%
	Q4	92.12%	92.12%	92.12%	91.03%	91.98%	92.03%	92.03%	9.28%
2013	Q1	96.71%	96.71%	93.70%	96.71%	93.56%	53.84%	53.84%	2.59%
	Q2	99.04%	99.04%	80.91%	98.95%	80.49%	56.55%	56.55%	2.61%
	Q3	97.87%	97.87%	97.87%	97.87%	97.87%	97.87%	97.87%	12.86%
	Q4	100.00%	100.00%	100.00%	99.91%	99.73%	100.00%	100.00%	5.16%
2014	Q1	100.00%	100.00%	100.00%	100.00%	99.86%	100.00%	100.00%	3.29%
	Q2	100.00%	100.00%	100.00%	99.63%	99.95%	100.00%	100.00%	3.85%
	Q3	99.50%	99.50%	99.00%	99.41%	99.05%	95.06%	95.06%	8.88%
	Q4	100.00%	100.00%	100.00%	100.00%	100.00%	99.95%	99.95%	3.99%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Forest City, IA
(KFXY)



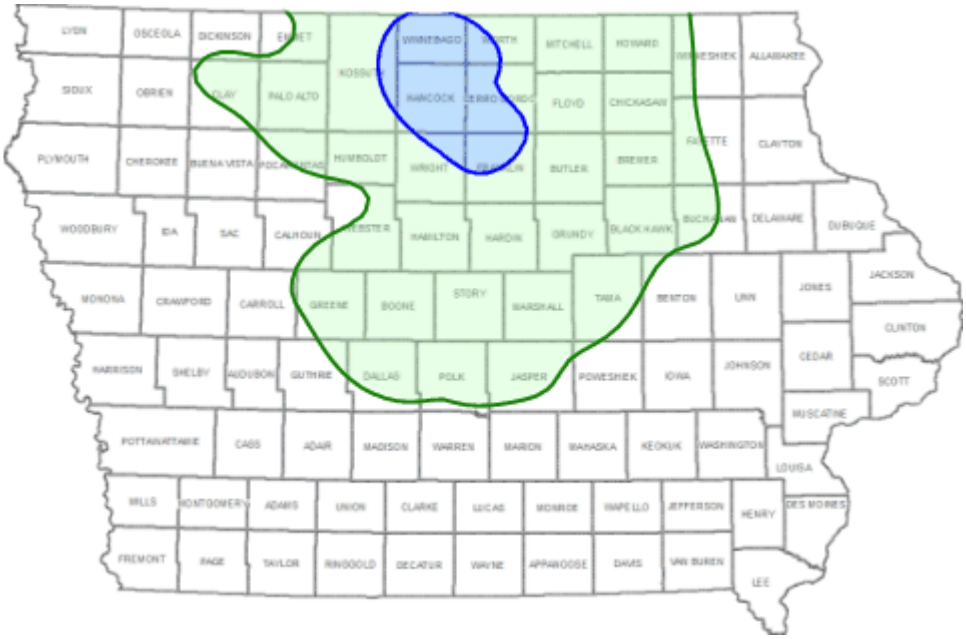
Station Info

WBAN:	NA
WMO:	720643
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	43.2323 N, 93.6237 W
UTM (NAD83, Z15):	449355.11, 4786800.65
Elevation:	365.8 m
Confidence:	Medium

Wind Correlation



Station	Correlation
KMCW	0.898
KCCY	0.894
KIFA	0.887
KCAV	0.887
KEBS	0.883
KAXA	0.866
KMIW	0.860
KALO	0.849
KBNW	0.848
KAMW	0.847
KFRM	0.846
KPRO	0.841
KOLZ	0.833
KIIB	0.828
KIKV	0.827
KAUM	0.823
KAEL	0.819
KFKA	0.818
KTNU	0.814
KSPW	0.811

Terrain-Wind Index (Range = 0.00124024)

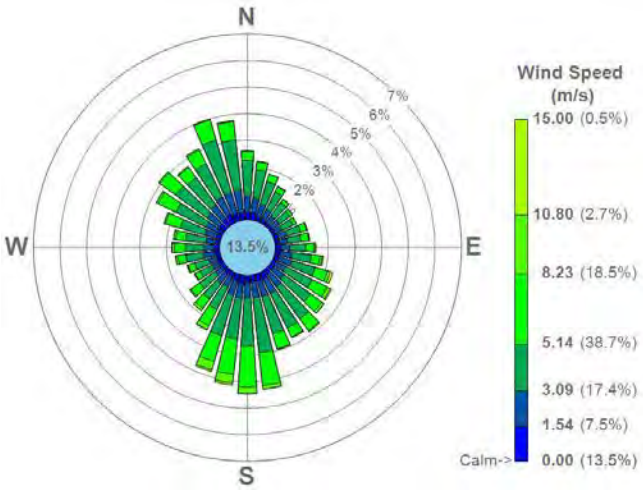
Forest City, IA
(KFXY)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	97.82%	97.82%	97.82%	92.96%	97.82%	97.82%	97.82%	16.99%
	Q2	97.80%	97.80%	97.76%	97.02%	97.71%	97.76%	97.76%	18.27%
	Q3	96.51%	96.51%	96.29%	94.57%	96.33%	96.38%	96.38%	21.56%
	Q4	98.73%	98.73%	98.73%	98.41%	98.73%	98.73%	98.73%	16.39%
2011	Q1	84.40%	84.40%	84.40%	83.98%	84.40%	84.40%	84.40%	9.72%
	Q2	99.13%	99.13%	99.13%	99.04%	99.13%	99.13%	99.13%	10.81%
	Q3	99.64%	99.64%	99.64%	98.60%	99.64%	99.64%	99.64%	28.49%
	Q4	99.77%	99.77%	99.77%	99.77%	99.64%	99.77%	99.77%	15.08%
2012	Q1	98.40%	98.40%	98.40%	98.40%	98.08%	98.40%	98.40%	13.42%
	Q2	95.70%	95.70%	95.70%	95.70%	95.24%	95.70%	95.70%	14.42%
	Q3	97.28%	97.28%	97.28%	97.24%	97.28%	97.28%	97.28%	29.35%
	Q4	99.14%	99.14%	99.14%	99.09%	96.29%	99.14%	99.14%	13.95%
2013	Q1	99.31%	99.31%	99.26%	99.17%	96.76%	99.26%	99.26%	11.76%
	Q2	99.50%	99.50%	99.50%	99.50%	99.50%	99.50%	99.50%	12.09%
	Q3	99.59%	99.59%	99.59%	99.55%	99.59%	99.59%	99.59%	27.13%
	Q4	99.59%	99.59%	99.59%	99.55%	99.59%	99.59%	99.59%	14.13%
2014	Q1	76.71%	76.71%	74.72%	76.39%	76.48%	76.20%	76.20%	5.79%
	Q2	47.39%	47.39%	37.96%	38.69%	38.05%	31.18%	31.18%	5.27%
	Q3	97.87%	97.87%	97.69%	97.60%	97.87%	97.74%	97.74%	24.32%
	Q4	99.18%	99.18%	99.18%	99.18%	99.18%	99.18%	99.18%	12.09%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Fort Dodge, IA
(KFOD)



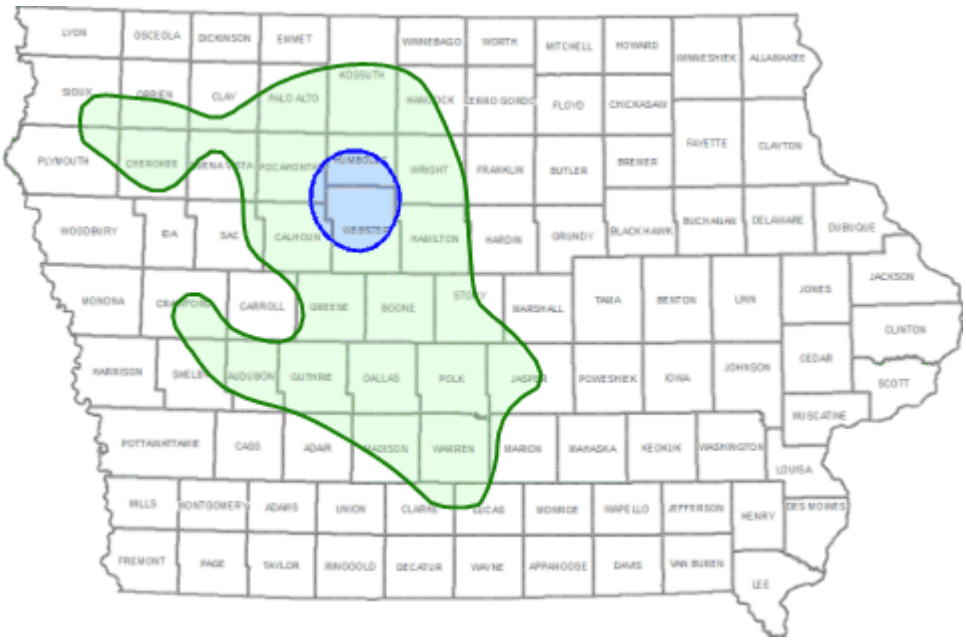
Station Info

WBAN:	94933
WMO:	725490
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	42.5496 N, 94.2033 W
UTM (NAD83, Z15):	401207.04, 4711502.19
Elevation:	331.6 m
Confidence:	High

Wind Correlation



Station	Correlation
KEBS	0.859
KCKP	0.837
KIKV	0.834
KAXA	0.833
KCAV	0.830
KBNW	0.827
KPRO	0.825
KADU	0.825
KDSM	0.813
KDNS	0.812
KORC	0.809
KTNU	0.809
KAMW	0.806
KI75	0.801
KCNC	0.799
KOXV	0.789
KCCY	0.789
KLRJ	0.789
KFKA	0.786
KHNR	0.785

Terrain-Wind Index (Range = 0.001118262)

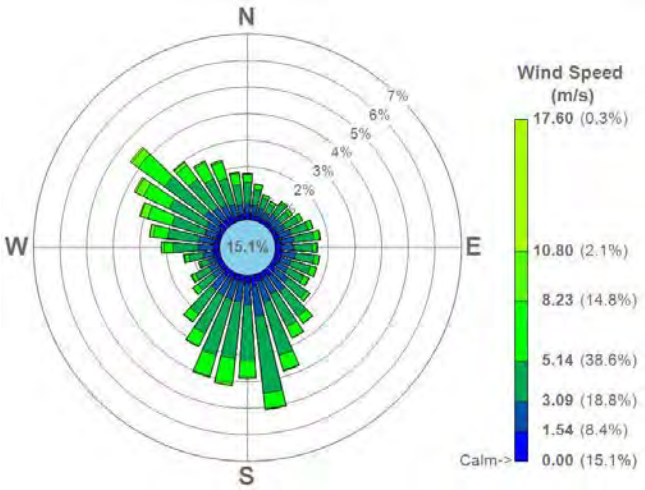
Fort Dodge, IA
(KFOD)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	99.54%	99.54%	99.49%	99.54%	99.54%	99.54%	99.54%	15.09%
	Q2	99.63%	99.63%	99.63%	99.59%	99.63%	99.63%	99.63%	15.06%
	Q3	99.55%	99.55%	99.55%	97.37%	99.50%	99.50%	99.50%	17.75%
	Q4	97.06%	97.06%	96.97%	96.97%	97.06%	97.06%	97.06%	13.18%
2011	Q1	99.86%	99.86%	99.81%	99.81%	99.86%	99.81%	99.81%	8.52%
	Q2	98.72%	98.72%	98.72%	94.92%	98.72%	98.72%	98.72%	8.84%
	Q3	96.06%	96.06%	96.06%	94.79%	96.01%	96.06%	96.06%	22.24%
	Q4	98.41%	98.41%	98.37%	98.41%	98.37%	98.41%	98.41%	14.09%
2012	Q1	100.00%	100.00%	99.86%	100.00%	99.86%	100.00%	100.00%	12.77%
	Q2	94.32%	94.32%	94.32%	94.05%	94.32%	94.32%	94.32%	10.21%
	Q3	97.60%	97.60%	97.42%	94.66%	97.28%	97.42%	97.42%	19.25%
	Q4	99.95%	99.95%	99.95%	99.86%	99.91%	99.95%	99.95%	11.64%
2013	Q1	99.95%	99.95%	99.91%	99.91%	99.95%	99.95%	99.95%	8.19%
	Q2	99.08%	99.08%	98.17%	61.68%	98.12%	98.12%	98.12%	8.75%
	Q3	99.68%	99.68%	98.51%	97.60%	98.41%	98.55%	98.55%	19.75%
	Q4	100.00%	100.00%	99.86%	99.00%	99.77%	99.91%	99.91%	11.28%
2014	Q1	100.00%	100.00%	98.38%	98.29%	98.33%	98.38%	98.38%	9.03%
	Q2	99.95%	99.95%	98.81%	99.95%	98.81%	98.72%	98.72%	11.36%
	Q3	99.95%	99.95%	99.77%	99.64%	99.09%	99.77%	99.77%	22.87%
	Q4	100.00%	100.00%	99.91%	100.00%	100.00%	100.00%	100.00%	10.33%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Fort Madison, IA
(KFSW)



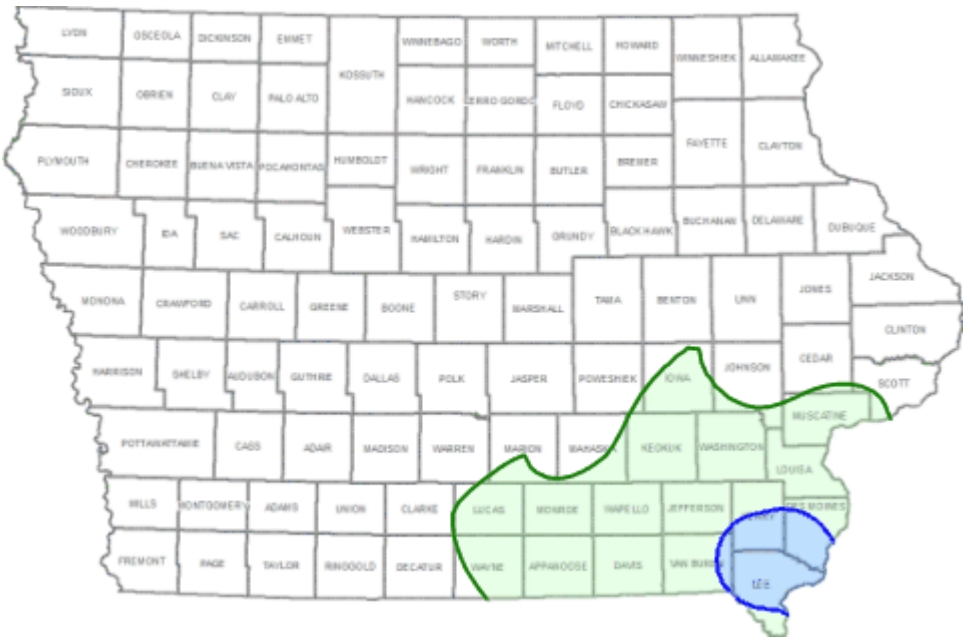
Station Info

WBAN:	NA
WMO:	725483
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

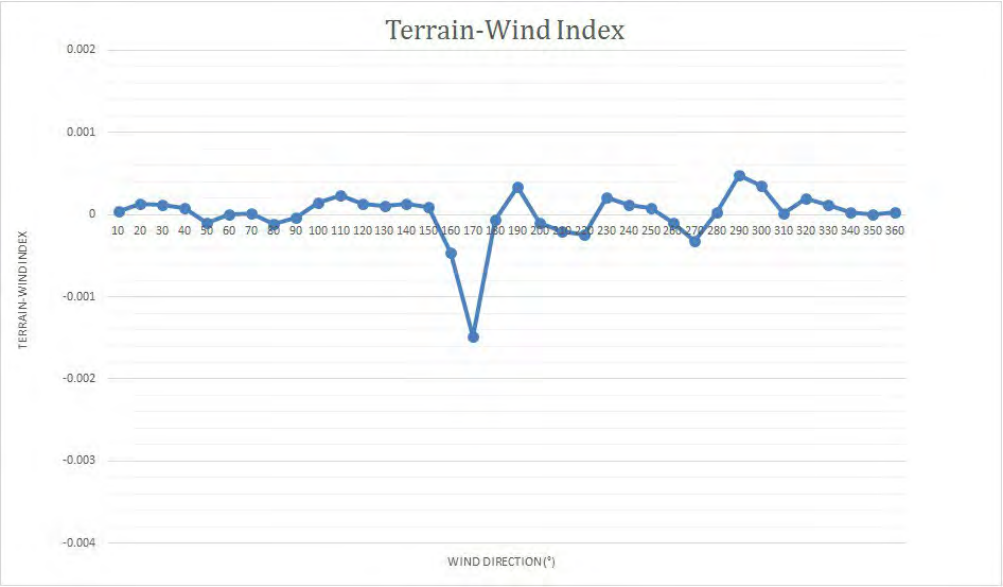
Lat-Long:	40.6615 N, 91.3267 W
UTM (NAD83, Z15):	641447.66, 4502527.50
Elevation:	220.4 m
Confidence:	Medium

Wind Correlation



Station	Correlation
KBRL	0.909
KMPZ	0.906
KMQB	0.892
KUIN	0.889
KFFL	0.877
KAWG	0.875
KEOK	0.874
KMUT	0.849
KOTM	0.848
KGBG	0.842
KIRK	0.826
KOOA	0.812
KTVK	0.812
KCNC	0.811
KOXV	0.801
KCID	0.798
KI75	0.793
KVTI	0.792
KDVN	0.790
KMLI	0.775

Terrain-Wind Index (Range = 0.001962934)



Fort Madison, IA

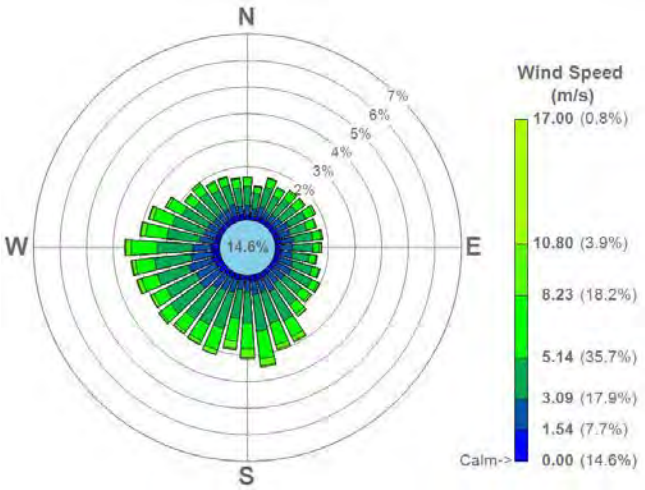
(KFSW)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	94.95%	94.95%	94.95%	93.94%	94.31%	94.31%	94.31%	12.59%
	Q2	94.60%	94.60%	94.55%	94.55%	94.60%	94.60%	94.60%	13.14%
	Q3	93.80%	93.80%	93.80%	93.70%	93.75%	93.80%	93.80%	22.78%
	Q4	95.83%	95.83%	95.83%	95.83%	95.83%	95.83%	95.83%	14.76%
2011	Q1	95.69%	95.69%	95.69%	95.60%	95.69%	95.69%	95.69%	9.17%
	Q2	99.04%	99.04%	98.99%	98.90%	99.04%	99.04%	99.04%	8.42%
	Q3	99.77%	99.77%	99.77%	99.05%	99.77%	99.77%	99.77%	26.22%
	Q4	99.73%	99.73%	99.73%	99.55%	99.73%	99.73%	99.73%	9.96%
2012	Q1	99.31%	99.31%	99.31%	99.31%	99.31%	99.31%	99.31%	9.84%
	Q2	89.84%	89.84%	89.79%	89.70%	89.79%	89.79%	89.79%	14.06%
	Q3	98.91%	98.91%	98.91%	98.73%	98.91%	98.91%	98.91%	27.85%
	Q4	99.18%	99.18%	99.18%	99.09%	99.18%	99.18%	99.18%	13.54%
2013	Q1	99.44%	99.44%	99.44%	99.40%	99.44%	99.44%	99.44%	9.95%
	Q2	99.31%	99.31%	99.31%	99.31%	99.31%	99.31%	99.31%	12.04%
	Q3	99.55%	99.55%	99.55%	99.55%	99.55%	99.55%	99.55%	24.64%
	Q4	99.55%	99.55%	99.55%	99.55%	99.55%	99.55%	99.55%	8.20%
2014	Q1	99.31%	99.31%	99.31%	99.26%	99.31%	99.31%	99.31%	7.96%
	Q2	99.91%	99.91%	99.86%	99.82%	99.91%	99.91%	99.91%	11.77%
	Q3	98.64%	98.64%	98.64%	97.19%	98.64%	98.64%	98.64%	30.30%
	Q4	99.77%	99.77%	99.73%	96.38%	99.73%	99.77%	99.77%	14.09%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Freeport, IL
(KFEP)



Station Info

WBAN:	04876
WMO:	722082
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	42.2475 N, 89.5810 W
UTM (NAD83, Z15):	782069.90, 4682918.30
Elevation:	254.5 m
Confidence:	Medium

Wind Correlation

Station	Correlation
KSFY	0.842
KPVB	0.827
KDVN	0.821
KCWI	0.804
KMLI	0.804
KDBQ	0.787
KY51	0.766
KMQB	0.752
KGBG	0.751
KSQI	0.741
KAWG	0.739
KMPZ	0.727
KMUT	0.720
KFFL	0.705
KMXO	0.696
KEOK	0.695
KBRL	0.685
KUIN	0.674
KGGI	0.672
KFSW	0.671

Terrain-Wind Index (Range = 0.001048859)

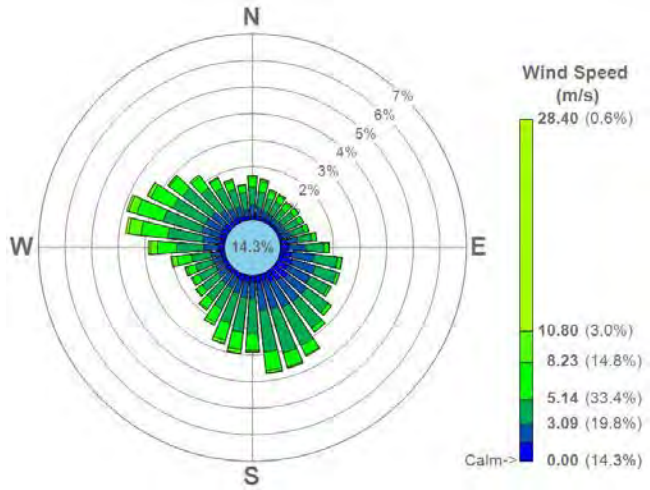
Freeport, IL
(KFEP)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	99.40%	99.40%	99.40%	99.40%	99.40%	99.40%	99.40%	19.63%
	Q2	99.73%	99.73%	99.68%	99.54%	99.73%	99.73%	99.73%	13.37%
	Q3	92.75%	92.75%	92.66%	92.21%	92.75%	92.75%	92.75%	17.84%
	Q4	98.69%	98.69%	98.64%	97.69%	98.64%	98.69%	98.69%	15.49%
2011	Q1	99.86%	99.86%	99.86%	99.86%	99.86%	99.86%	99.86%	11.53%
	Q2	98.76%	98.76%	98.67%	98.53%	98.76%	98.76%	98.76%	9.66%
	Q3	99.32%	99.32%	99.32%	99.23%	99.32%	99.32%	99.32%	27.08%
	Q4	98.28%	98.28%	98.28%	98.28%	98.28%	98.28%	98.28%	12.27%
2012	Q1	99.73%	99.73%	99.73%	99.68%	99.73%	99.73%	99.73%	9.20%
	Q2	99.04%	99.04%	98.95%	99.04%	99.04%	99.04%	99.04%	9.89%
	Q3	96.47%	96.47%	96.42%	96.38%	96.47%	96.47%	96.47%	21.83%
	Q4	99.37%	99.37%	99.37%	99.14%	99.37%	99.37%	99.37%	12.45%
2013	Q1	99.17%	99.17%	99.17%	99.03%	99.17%	99.17%	99.17%	12.73%
	Q2	99.54%	99.54%	99.54%	98.63%	99.54%	99.54%	99.54%	11.49%
	Q3	94.66%	94.66%	94.61%	92.75%	94.66%	94.66%	94.66%	18.52%
	Q4	99.64%	99.64%	99.55%	99.32%	99.64%	99.64%	99.64%	12.91%
2014	Q1	99.72%	99.72%	99.68%	94.72%	99.72%	99.72%	99.72%	12.31%
	Q2	100.00%	100.00%	100.00%	99.86%	100.00%	100.00%	100.00%	8.15%
	Q3	96.42%	96.42%	96.38%	96.33%	96.42%	96.42%	96.42%	23.23%
	Q4	99.73%	99.73%	99.73%	99.68%	99.73%	99.73%	99.73%	12.23%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Galesburg, IL
(KGBG)



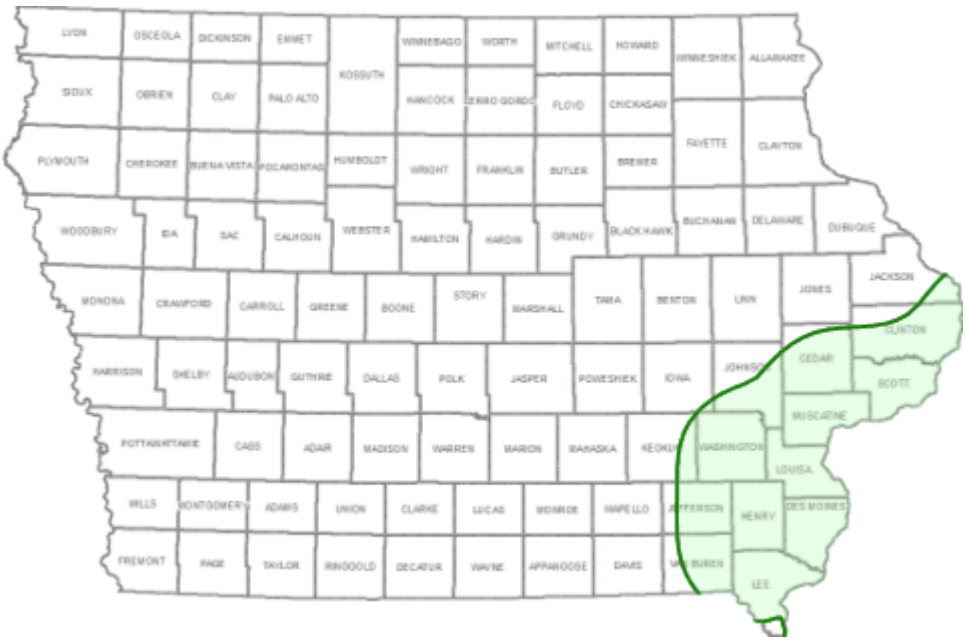
Station Info

WBAN:	94959
WMO:	722089
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	40.9328 N, 90.4335 W
UTM (NAD83, Z15):	716076.02, 4534469.09
Elevation:	229.5 m
Confidence:	Medium

Wind Correlation



Station	Correlation
KMQB	0.880
KMUT	0.878
KMPZ	0.875
KMLI	0.845
KFSW	0.842
KAWG	0.836
KSFY	0.832
KDVN	0.828
KFFL	0.815
KUIN	0.813
KCWI	0.809
KBRL	0.804
KIOW	0.803
KEOK	0.798
KCID	0.778
KOOA	0.776
KMXO	0.771
KPVB	0.769
KVTI	0.766
KTVK	0.764

Terrain-Wind Index (Range = 0.001394195)

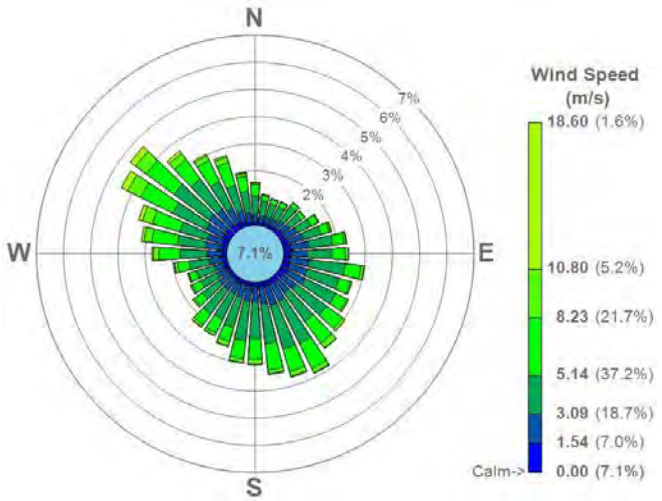
Galesburg, IL
(KGBG)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	99.26%	99.26%	99.26%	99.26%	99.21%	99.26%	99.26%	18.19%
	Q2	97.85%	97.85%	97.85%	97.71%	97.85%	97.80%	97.80%	15.89%
	Q3	94.20%	94.20%	94.20%	94.11%	94.16%	94.16%	94.16%	22.46%
	Q4	99.50%	99.50%	99.50%	98.41%	98.46%	98.32%	98.32%	17.93%
2011	Q1	98.47%	98.47%	98.47%	98.43%	98.47%	83.75%	83.75%	13.43%
	Q2	81.73%	81.73%	81.27%	79.40%	79.58%	37.55%	37.55%	4.67%
	Q3	98.41%	98.41%	98.41%	97.51%	98.41%	98.41%	98.41%	20.38%
	Q4	97.87%	97.87%	97.87%	97.87%	97.87%	97.87%	97.87%	8.29%
2012	Q1	99.77%	99.77%	99.77%	99.77%	99.77%	99.77%	99.77%	8.52%
	Q2	99.82%	99.82%	99.82%	99.77%	99.82%	99.82%	99.82%	12.45%
	Q3	99.00%	99.00%	98.91%	98.91%	98.91%	98.96%	98.96%	27.13%
	Q4	99.50%	99.50%	99.50%	99.46%	99.46%	95.11%	95.11%	8.92%
2013	Q1	99.44%	99.44%	99.44%	99.35%	98.61%	99.44%	99.44%	7.50%
	Q2	98.95%	98.95%	98.95%	98.90%	98.95%	98.95%	98.95%	12.04%
	Q3	99.09%	99.09%	99.09%	99.00%	99.09%	99.09%	99.09%	22.69%
	Q4	99.82%	99.82%	99.82%	99.82%	99.82%	99.82%	99.82%	9.92%
2014	Q1	99.81%	99.81%	99.54%	99.44%	99.54%	99.54%	99.54%	7.69%
	Q2	94.51%	94.51%	90.48%	90.38%	90.48%	90.52%	90.52%	8.38%
	Q3	99.55%	99.55%	99.41%	99.23%	95.34%	99.41%	99.41%	25.59%
	Q4	99.77%	99.77%	99.77%	99.77%	99.77%	99.77%	99.77%	12.64%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Grinnell, IA
(KGGI)



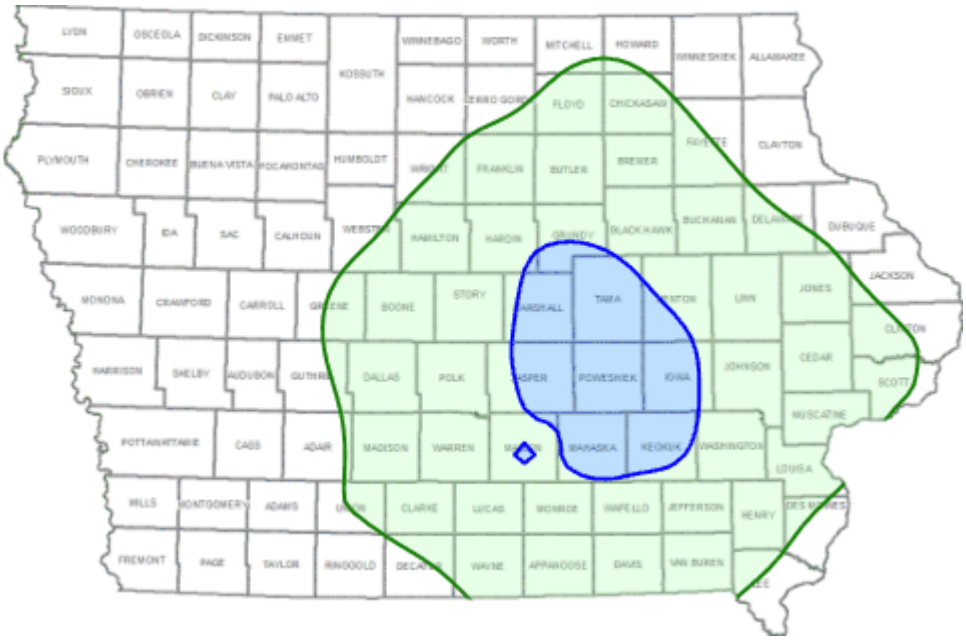
Station Info

WBAN:	NA
WMO:	725292
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	41.7097 N, 92.7333 W
UTM (NAD83, Z15):	522187.57, 4617579.72
Elevation:	304.5 m
Confidence:	Medium

Wind Correlation



Station	Correlation
KMIW	0.923
KOOA	0.917
KTNU	0.915
KOXV	0.906
KPEA	0.888
KIFA	0.883
KFFL	0.883
KCID	0.878
KAWG	0.874
KOTM	0.873
KTVK	0.873
KI75	0.871
KIKV	0.871
KALO	0.868
KBNW	0.866
KIIB	0.862
KVTI	0.861
KDSM	0.858
KPRO	0.856
KCNC	0.856

Terrain-Wind Index (Range = 0.000896151)

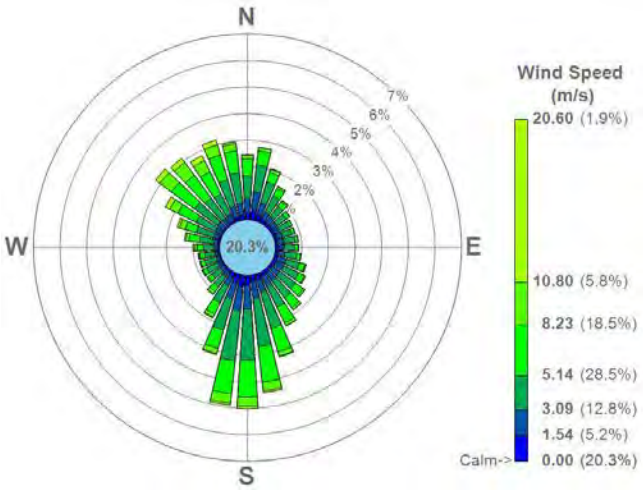
Grinnell, IA
(KGGI)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	97.04%	97.04%	97.04%	97.04%	97.04%	97.04%	97.04%	10.88%
	Q2	94.00%	94.00%	93.96%	93.96%	94.00%	94.00%	94.00%	7.42%
	Q3	95.56%	95.56%	95.52%	95.47%	95.56%	95.56%	95.56%	13.41%
	Q4	98.69%	98.69%	98.69%	98.51%	98.69%	98.69%	98.69%	6.93%
2011	Q1	90.60%	90.60%	90.60%	90.28%	90.60%	90.60%	90.60%	4.26%
	Q2	99.91%	99.91%	99.91%	99.82%	99.91%	99.91%	99.91%	4.53%
	Q3	99.91%	99.91%	99.91%	99.91%	99.91%	99.91%	99.91%	13.41%
	Q4	99.55%	99.55%	99.55%	99.55%	99.55%	99.55%	99.55%	5.07%
2012	Q1	98.99%	98.99%	98.99%	98.99%	98.99%	98.99%	98.99%	5.27%
	Q2	99.77%	99.77%	99.77%	99.59%	99.77%	99.77%	99.77%	5.36%
	Q3	98.28%	98.28%	98.28%	98.14%	98.28%	98.28%	98.28%	12.14%
	Q4	99.09%	99.09%	99.09%	98.51%	99.09%	99.09%	99.09%	5.89%
2013	Q1	99.68%	99.68%	99.63%	99.54%	99.63%	99.63%	99.63%	4.49%
	Q2	99.31%	99.31%	99.31%	99.22%	99.31%	99.31%	99.31%	3.62%
	Q3	96.38%	96.38%	96.33%	96.33%	96.38%	96.38%	96.38%	9.65%
	Q4	99.59%	99.59%	99.59%	99.59%	99.59%	99.59%	99.59%	3.13%
2014	Q1	99.58%	99.58%	99.58%	99.17%	99.58%	99.58%	99.58%	2.45%
	Q2	99.86%	99.86%	99.86%	99.68%	99.86%	99.86%	99.86%	6.32%
	Q3	99.50%	99.50%	99.50%	99.46%	99.50%	99.50%	99.50%	13.32%
	Q4	99.77%	99.77%	99.77%	99.77%	99.77%	99.77%	99.77%	5.21%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Harlan, IA
(KHNR)



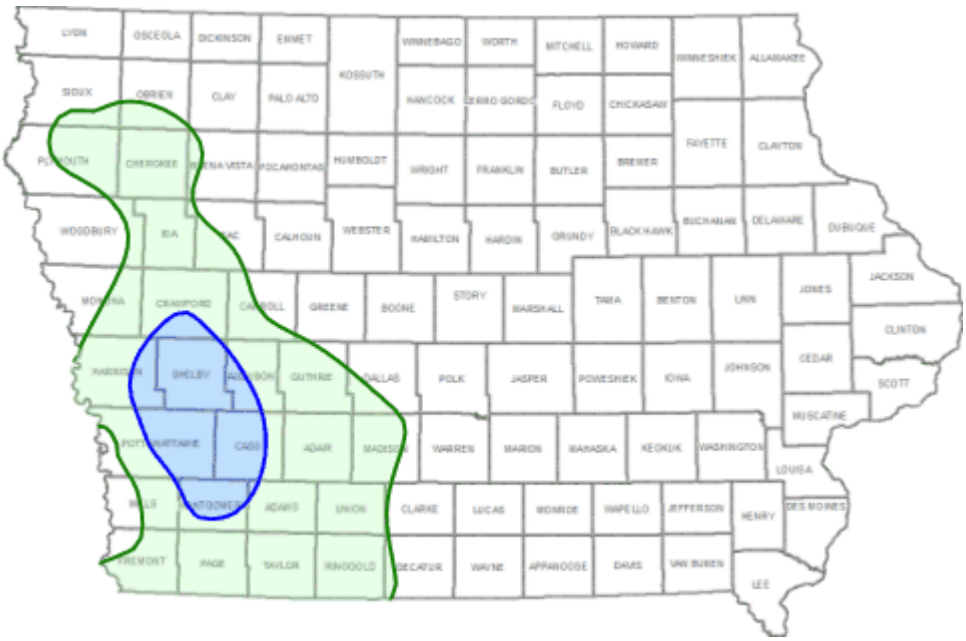
Station Info

WBAN:	NA
WMO:	722097
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	41.5834 N, 95.3354 W
UTM (NAD83, Z15):	305324.81, 4606157.35
Elevation:	365.2 m
Confidence:	Medium

Wind Correlation



Station	Correlation
KAIO	0.934
KRDK	0.917
KDNS	0.904
KADU	0.884
KICL	0.861
KLRJ	0.860
KAFK	0.858
KCKP	0.850
KBTA	0.847
KCBF	0.845
KCSQ	0.829
KSDA	0.809
KSTJ	0.808
KLWD	0.797
KORC	0.793
KDSM	0.793
KAXA	0.786
KFOD	0.785
KEST	0.785
KSLB	0.778

Terrain-Wind Index (Range = 0.00204535)

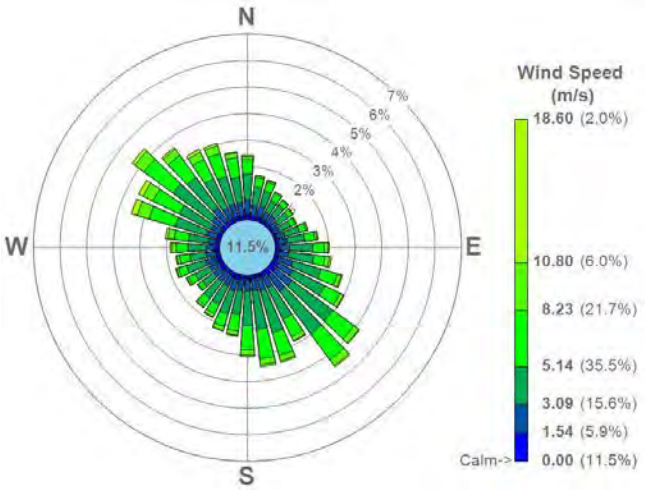
Harlan, IA
(KHNR)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	95.00%	95.00%	94.95%	94.63%	95.00%	95.00%	95.00%	23.38%
	Q2	96.20%	96.20%	96.15%	96.20%	96.20%	96.20%	96.20%	19.37%
	Q3	85.19%	85.19%	85.14%	85.01%	85.19%	85.19%	85.19%	23.96%
	Q4	97.87%	97.87%	97.83%	97.83%	97.87%	97.87%	97.87%	24.05%
2011	Q1	44.17%	44.17%	44.12%	42.78%	44.17%	44.17%	44.17%	6.81%
	Q2	67.26%	67.26%	67.17%	67.22%	67.26%	67.26%	67.26%	8.15%
	Q3	98.19%	98.19%	98.19%	98.01%	98.19%	98.19%	98.19%	37.45%
	Q4	92.35%	92.35%	92.35%	91.80%	92.35%	92.35%	92.35%	23.51%
2012	Q1	99.40%	99.40%	99.36%	97.12%	99.40%	99.40%	99.40%	21.89%
	Q2	99.63%	99.63%	99.63%	99.59%	99.63%	99.63%	99.63%	17.40%
	Q3	98.10%	98.10%	98.05%	98.01%	98.10%	98.10%	98.10%	39.58%
	Q4	98.87%	98.87%	98.87%	98.55%	98.87%	98.87%	98.87%	22.74%
2013	Q1	99.31%	99.31%	99.26%	97.50%	99.21%	99.31%	99.31%	13.47%
	Q2	89.24%	89.24%	89.24%	89.06%	89.24%	88.42%	89.24%	12.68%
	Q3	99.68%	99.68%	99.64%	98.96%	99.64%	97.74%	99.41%	27.81%
	Q4	99.32%	99.32%	99.32%	99.32%	99.32%	98.55%	99.32%	15.35%
2014	Q1	99.17%	99.17%	99.17%	99.12%	99.17%	98.29%	99.12%	10.79%
	Q2	99.91%	99.91%	99.91%	99.82%	99.91%	98.31%	99.91%	14.47%
	Q3	99.09%	99.09%	99.05%	98.41%	99.05%	95.20%	98.96%	27.90%
	Q4	99.77%	99.77%	99.77%	99.50%	99.73%	98.46%	99.73%	13.45%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Independence, IA
(KIIB)



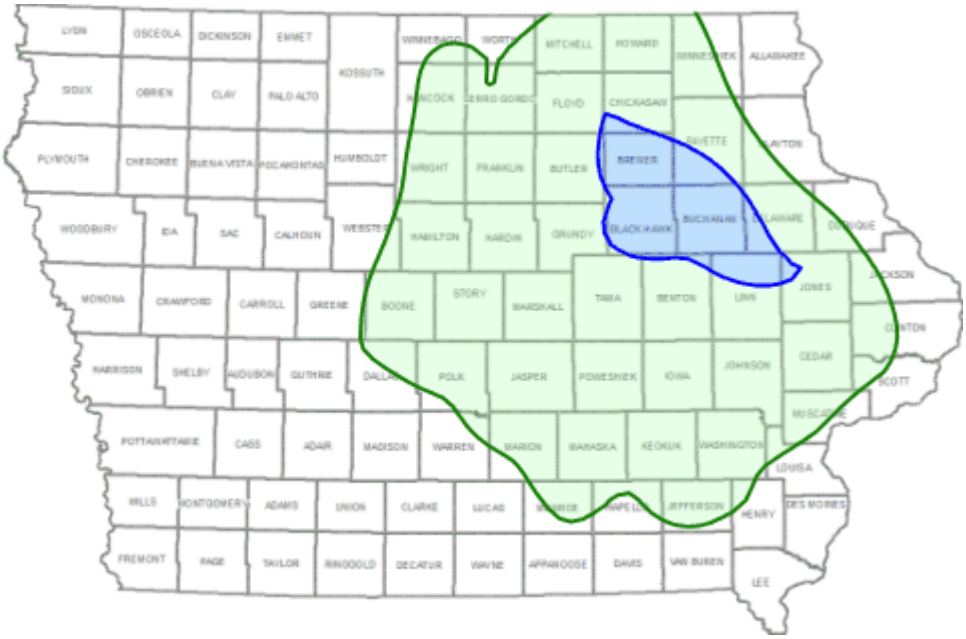
Station Info

WBAN:	NA
WMO:	720293
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	42.4545 N, 91.9506 W
UTM (NAD83, Z15):	586288.06, 4700774.27
Elevation:	295.0 m
Confidence:	Medium

Wind Correlation



Station	Correlation
KOLZ	0.933
KALO	0.902
KCCY	0.899
KMXO	0.898
KMIW	0.890
KIFA	0.878
KVTI	0.874
KCID	0.869
KGGI	0.862
KOOA	0.861
KIOW	0.859
KTNU	0.855
KBNW	0.838
KFXY	0.828
KEBS	0.826
KIKV	0.826
KFFL	0.825
KCAV	0.823
KPEA	0.822
KAMW	0.813

Terrain-Wind Index (Range = 0.001782709)

Independence, IA

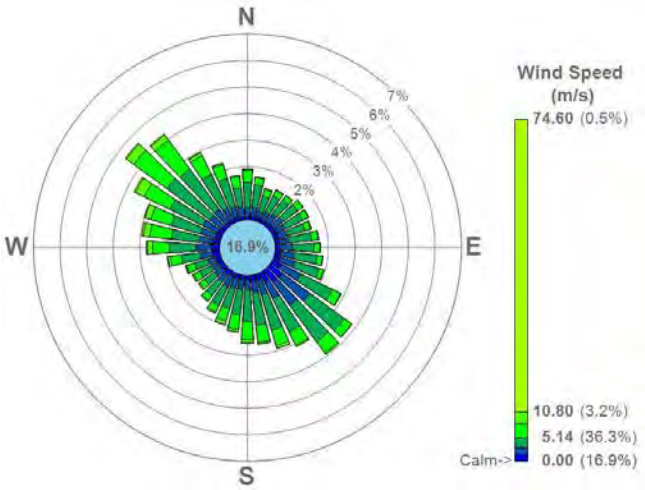
(KIIB)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	98.89%	98.89%	96.39%	98.80%	96.81%	98.89%	98.89%	12.87%
	Q2	97.66%	97.66%	97.66%	97.66%	97.66%	97.66%	97.66%	8.56%
	Q3	92.30%	92.30%	92.21%	90.08%	90.13%	90.13%	90.13%	18.34%
	Q4	98.96%	98.96%	98.96%	98.73%	98.64%	98.96%	98.96%	15.26%
2011	Q1	96.90%	96.90%	96.90%	96.62%	96.90%	96.90%	96.90%	4.44%
	Q2	99.04%	99.04%	99.04%	98.95%	98.95%	99.04%	99.04%	4.58%
	Q3	99.95%	99.95%	99.95%	98.87%	99.95%	99.95%	99.95%	15.13%
	Q4	99.82%	99.82%	99.82%	99.77%	99.82%	99.82%	99.82%	6.97%
2012	Q1	99.31%	99.31%	99.31%	98.86%	99.31%	99.31%	99.31%	5.63%
	Q2	99.73%	99.73%	99.73%	99.63%	99.73%	99.73%	99.73%	5.31%
	Q3	98.64%	98.64%	98.64%	98.64%	98.64%	98.64%	98.64%	14.36%
	Q4	99.00%	99.00%	99.00%	98.23%	99.00%	99.00%	99.00%	6.30%
2013	Q1	99.44%	99.44%	99.44%	98.56%	99.44%	99.44%	99.44%	6.02%
	Q2	97.57%	97.57%	97.57%	95.19%	97.57%	97.57%	97.57%	6.14%
	Q3	87.68%	87.68%	87.64%	86.91%	87.64%	87.64%	87.64%	41.26%
	Q4	99.32%	99.32%	99.32%	11.64%	99.32%	99.32%	99.32%	24.86%
2014	Q1	99.58%	99.58%	99.58%	65.42%	99.58%	99.58%	99.58%	4.58%
	Q2	99.68%	99.68%	96.75%	17.40%	99.68%	99.68%	99.68%	5.68%
	Q3	98.46%	98.46%	83.79%	83.70%	98.46%	98.46%	98.46%	16.49%
	Q4	99.77%	99.77%	99.77%	99.41%	99.77%	99.77%	99.77%	7.38%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Iowa City, IA
(KIOW)



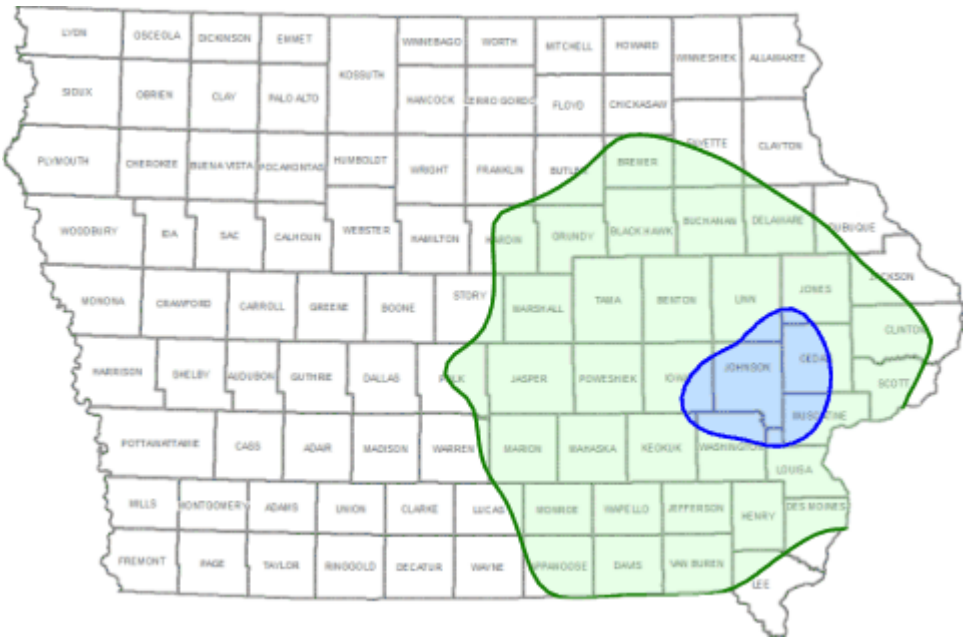
Station Info

WBAN:	14937
WMO:	725462
Anemometer Height:	10.0 m
1-Min Availability Date:	3/3/2005
IFW Installation Date:	10/20/2005

Location Info

Lat-Long:	41.6394 N, 91.5445 W
UTM (NAD83, Z15):	621220.75, 4610763.64
Elevation:	198.4 m
Confidence:	High

Wind Correlation



Station	Correlation
KMUT	0.889
KCID	0.880
KMXO	0.879
KOOA	0.878
KAWG	0.868
KFFL	0.861
KPEA	0.860
KIIB	0.859
KMPZ	0.857
KGGI	0.849
KOXV	0.828
KVTI	0.823
KOTM	0.822
KTNU	0.821
KMIW	0.819
KTVK	0.818
KOLZ	0.816
KALO	0.815
KDVN	0.812
KIKV	0.810

Terrain-Wind Index (Range = 0.001684191)

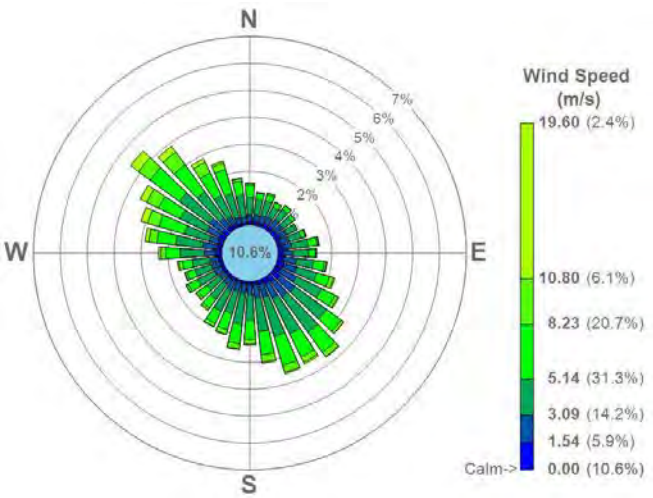
Iowa City, IA
(KIOW)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	99.91%	99.91%	99.86%	99.07%	99.17%	98.47%	99.03%	10.83%
	Q2	99.77%	99.77%	99.77%	99.59%	99.77%	96.11%	97.76%	18.68%
	Q3	100.00%	100.00%	100.00%	99.86%	100.00%	97.37%	99.14%	21.24%
	Q4	99.91%	99.91%	99.91%	99.41%	99.91%	99.00%	99.77%	19.52%
2011	Q1	99.95%	99.95%	99.95%	99.95%	99.95%	98.61%	99.49%	11.39%
	Q2	99.91%	99.91%	99.86%	99.77%	99.91%	97.94%	99.63%	12.18%
	Q3	100.00%	100.00%	100.00%	99.82%	100.00%	96.88%	99.46%	22.51%
	Q4	99.95%	99.95%	99.95%	99.86%	99.95%	99.28%	99.91%	19.88%
2012	Q1	99.91%	99.91%	99.91%	99.91%	99.91%	99.54%	99.86%	15.84%
	Q2	99.95%	99.95%	99.95%	99.91%	99.95%	96.75%	98.44%	13.00%
	Q3	99.86%	99.86%	99.86%	99.77%	99.86%	96.20%	99.28%	30.75%
	Q4	100.00%	100.00%	100.00%	99.95%	99.95%	98.96%	99.95%	18.30%
2013	Q1	99.95%	99.95%	99.95%	99.86%	99.95%	99.44%	99.86%	12.82%
	Q2	99.95%	99.95%	99.50%	99.86%	99.91%	98.26%	99.63%	12.91%
	Q3	100.00%	100.00%	99.37%	100.00%	100.00%	97.01%	100.00%	21.78%
	Q4	100.00%	100.00%	100.00%	100.00%	100.00%	99.55%	99.95%	18.66%
2014	Q1	99.86%	99.86%	99.86%	99.72%	99.86%	99.31%	99.68%	9.86%
	Q2	99.91%	99.91%	99.82%	99.77%	99.91%	97.89%	99.63%	11.58%
	Q3	99.82%	99.82%	99.82%	98.14%	99.82%	97.37%	99.64%	22.24%
	Q4	100.00%	100.00%	100.00%	99.86%	100.00%	99.28%	99.95%	12.82%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Iowa Falls, IA
(KIFA)



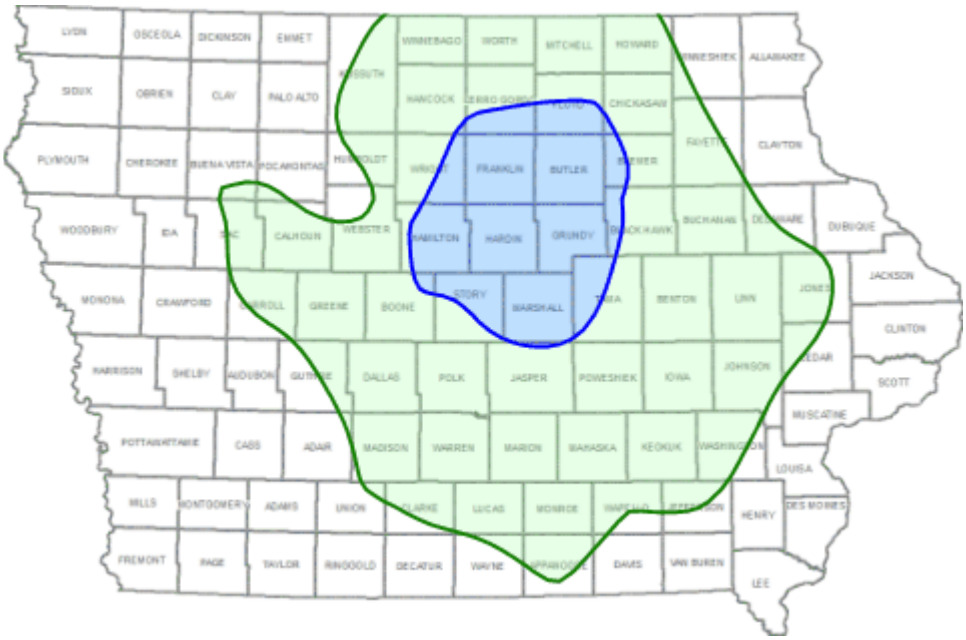
Station Info

WBAN:	NA
WMO:	722331
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

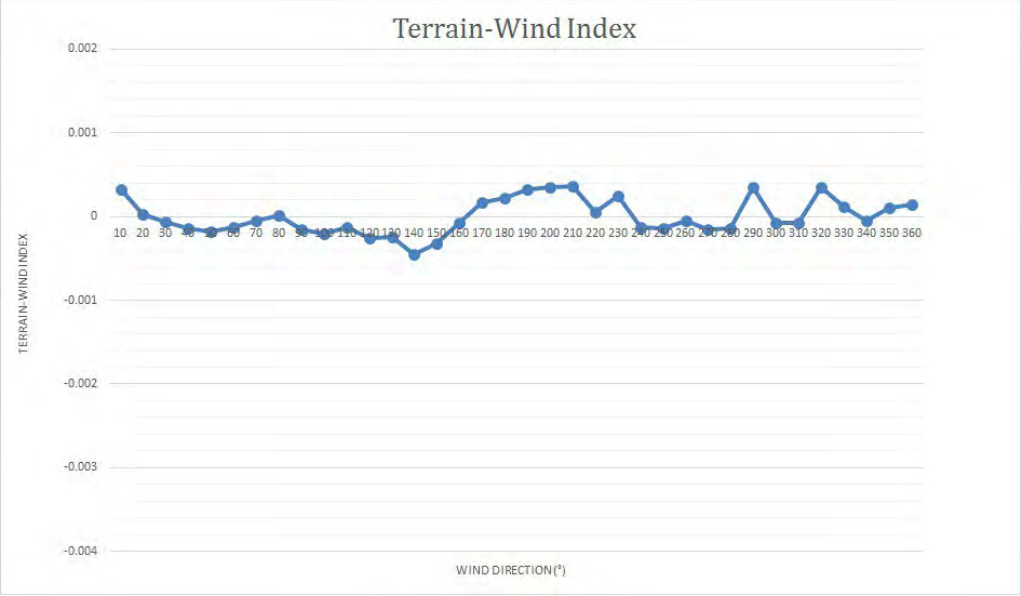
Lat-Long:	42.4691 N, 93.2651 W
UTM (NAD83, Z15):	478207.03, 4701896.04
Elevation:	344.4 m
Confidence:	Medium

Wind Correlation



Station	Correlation
KMIW	0.937
KEBS	0.905
KCCY	0.899
KBNW	0.896
KALO	0.895
KFXY	0.887
KGGI	0.883
KCAV	0.882
KAMW	0.880
KTNU	0.879
KOLZ	0.879
KPRO	0.878
KIIB	0.878
KMCW	0.874
KIKV	0.872
KOOA	0.857
KOXV	0.842
KDSM	0.836
KPEA	0.833
KCIN	0.832

Terrain-Wind Index (Range = 0.000807499)



Iowa Falls, IA

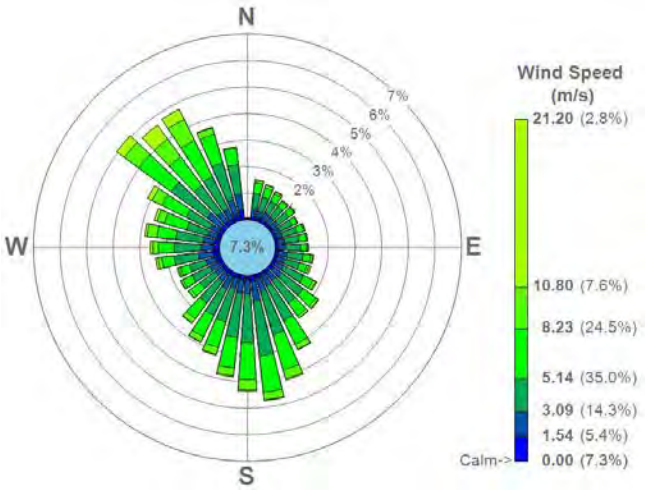
(KIFA)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	93.84%	93.84%	93.84%	87.59%	93.84%	93.84%	93.84%	12.04%
	Q2	84.48%	84.48%	84.48%	83.10%	84.34%	84.48%	84.48%	8.01%
	Q3	75.77%	75.77%	75.77%	74.91%	75.77%	75.77%	75.77%	11.96%
	Q4	83.65%	83.65%	83.65%	83.47%	83.65%	83.65%	83.65%	7.20%
2011	Q1	92.69%	92.69%	92.69%	92.55%	92.69%	92.69%	92.69%	5.37%
	Q2	83.75%	83.75%	83.65%	83.65%	83.70%	83.75%	83.75%	5.82%
	Q3	95.92%	95.92%	95.92%	95.43%	95.92%	95.92%	95.92%	27.49%
	Q4	99.86%	99.86%	99.86%	99.82%	99.86%	99.86%	99.86%	8.74%
2012	Q1	99.13%	99.13%	99.13%	99.04%	99.13%	99.13%	99.13%	6.64%
	Q2	99.95%	99.95%	99.95%	93.82%	99.95%	99.95%	99.95%	7.46%
	Q3	99.28%	99.28%	99.23%	73.01%	99.23%	99.28%	99.28%	19.16%
	Q4	99.46%	99.46%	99.46%	99.00%	99.46%	99.46%	99.46%	8.33%
2013	Q1	99.49%	99.49%	99.49%	99.35%	99.49%	99.49%	99.49%	6.67%
	Q2	99.54%	99.54%	99.54%	99.36%	99.54%	99.54%	99.54%	5.59%
	Q3	99.28%	99.28%	99.28%	99.18%	99.28%	99.28%	99.28%	23.19%
	Q4	99.37%	99.37%	99.37%	99.28%	99.37%	99.37%	99.37%	7.47%
2014	Q1	84.72%	84.72%	84.72%	84.72%	84.72%	84.72%	84.72%	3.89%
	Q2	46.15%	46.15%	46.15%	46.06%	46.15%	46.15%	46.15%	12.41%
	Q3	98.05%	98.05%	98.05%	98.01%	98.05%	98.05%	98.05%	18.21%
	Q4	84.60%	84.60%	84.60%	84.60%	84.60%	84.60%	84.60%	5.66%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement

Jackson, MN
(KMJQ)



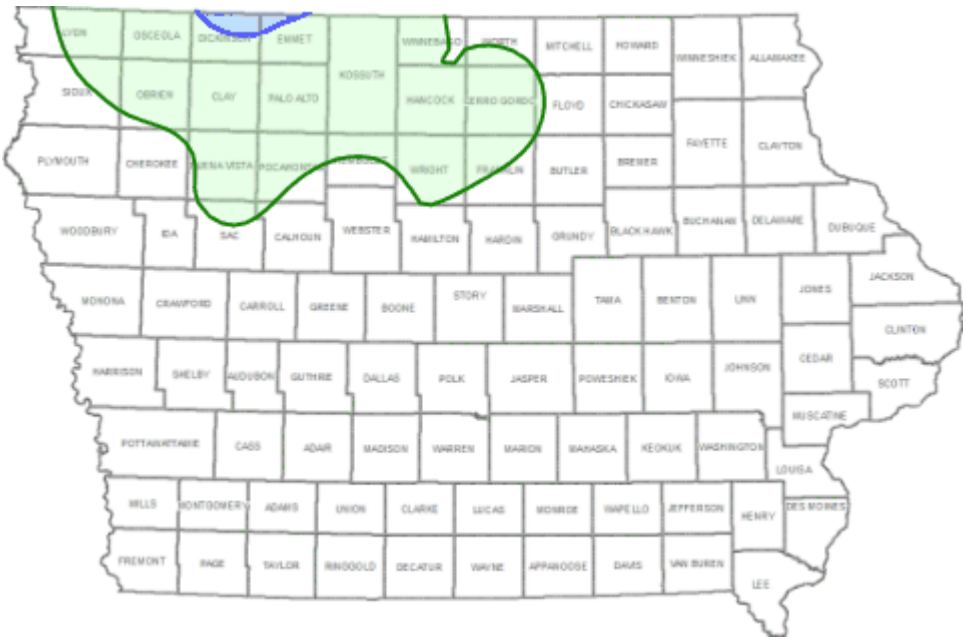
Station Info

WBAN:	04946
WMO:	726593
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	43.6496 N, 94.9885 W
UTM (NAD83, Z15):	339636.95, 4834877.08
Elevation:	438.6 m
Confidence:	Medium

Wind Correlation



Station	Correlation
KFRM	0.902
KEST	0.884
KOTG	0.868
KSHL	0.856
KSPW	0.847
KAXA	0.839
KMCW	0.835
KSLB	0.815
KCAV	0.814
KLYV	0.807
KEBS	0.799
KRST	0.798
KFXY	0.797
KFSD	0.789
KORC	0.779
KDNS	0.775
KIFA	0.774
KCIN	0.772
KCCY	0.768
KCKP	0.767

Terrain-Wind Index (Range = 0.001460984)

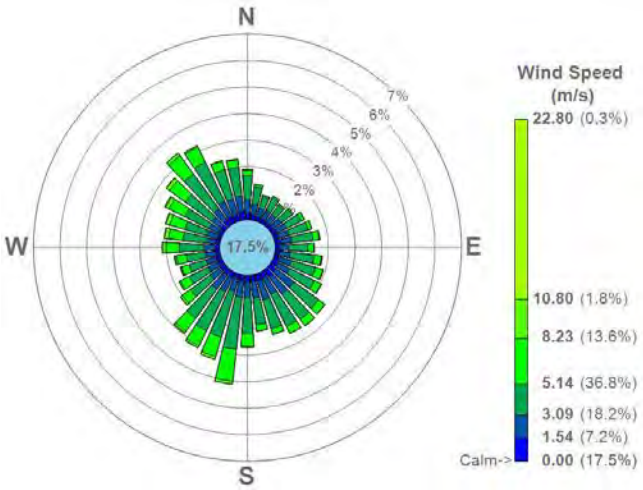
Jackson, MN
(KMJQ)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	99.95%	99.95%	99.95%	97.08%	99.95%	98.47%	99.95%	8.33%
	Q2	98.90%	98.90%	98.76%	98.72%	98.90%	97.12%	98.90%	7.88%
	Q3	99.00%	99.00%	98.96%	98.82%	99.00%	97.87%	99.00%	12.23%
	Q4	99.50%	99.50%	99.46%	98.91%	99.50%	97.74%	99.50%	5.93%
2011	Q1	100.00%	100.00%	99.86%	97.87%	100.00%	98.10%	100.00%	3.80%
	Q2	99.63%	99.63%	99.59%	99.31%	99.63%	97.71%	99.63%	4.62%
	Q3	99.91%	99.91%	99.91%	97.83%	99.91%	97.37%	99.91%	14.54%
	Q4	100.00%	100.00%	99.82%	99.95%	100.00%	98.37%	100.00%	4.89%
2012	Q1	95.28%	95.28%	95.10%	94.55%	95.28%	94.28%	95.28%	5.04%
	Q2	98.03%	98.03%	97.89%	86.03%	98.03%	96.29%	98.03%	5.27%
	Q3	99.95%	99.95%	99.95%	99.91%	99.91%	97.69%	99.95%	14.76%
	Q4	100.00%	100.00%	99.86%	99.91%	100.00%	97.64%	100.00%	5.43%
2013	Q1	99.81%	99.81%	99.72%	99.17%	99.81%	95.00%	96.53%	5.23%
	Q2	94.46%	94.46%	94.23%	94.14%	94.37%	90.61%	94.46%	6.46%
	Q3	99.95%	99.95%	99.95%	99.82%	99.95%	97.78%	99.14%	12.95%
	Q4	99.37%	99.37%	99.32%	99.37%	99.37%	97.92%	99.37%	5.03%
2014	Q1	96.62%	96.62%	96.57%	96.44%	96.62%	95.14%	96.62%	2.82%
	Q2	99.68%	99.68%	99.59%	99.45%	99.63%	96.47%	99.68%	4.35%
	Q3	99.14%	99.14%	99.14%	99.14%	99.14%	97.92%	99.14%	11.78%
	Q4	99.91%	99.91%	99.86%	99.91%	99.91%	97.15%	99.91%	4.94%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Keokuk, IA
(KEOK)



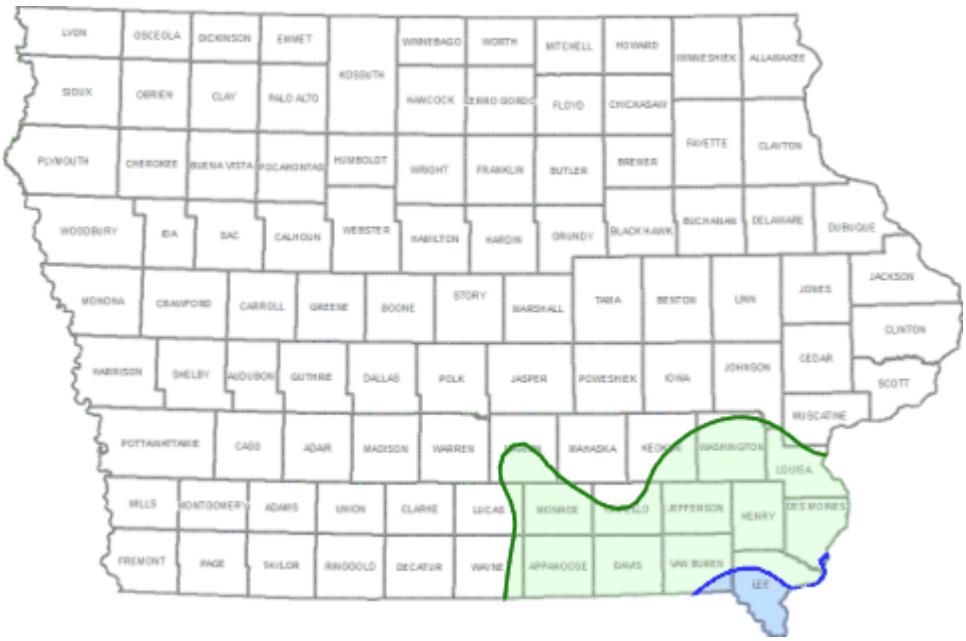
Station Info

WBAN:	NA
WMO:	725456
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	40.4615 N, 91.4275 W
UTM (NAD83, Z15):	633322.81, 4480168.67
Elevation:	204.2 m
Confidence:	Medium

Wind Correlation



Station	Correlation
KBRL	**0.907**
KUIN	0.883
KIRK	0.879
KFSW	0.874
KMPZ	0.872
KMQB	0.846
KAWG	0.837
KFFL	0.826
KTVK	0.823
KOXV	0.819
KGBG	0.798
KOOA	0.797
KDVN	0.789
KOTM	0.788
KCNC	0.784
KMUT	0.782
KIOW	0.777
KI75	0.775
KMLI	0.767
KPEA	0.766

Terrain-Wind Index (Range = 0.000923855)

Keokuk, IA

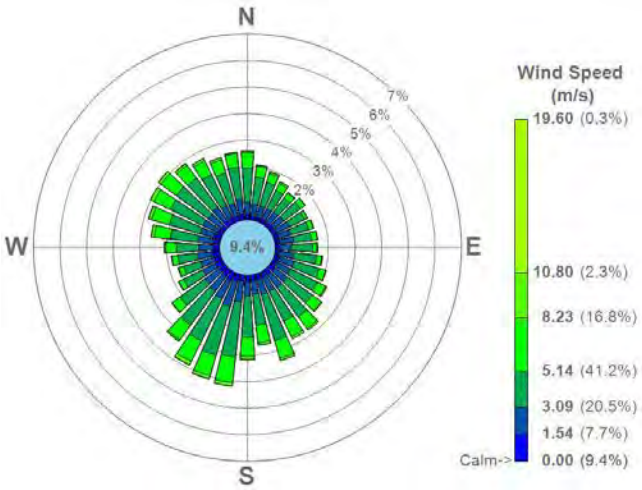
(KEOK)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	97.04%	97.04%	97.04%	96.81%	97.04%	97.04%	97.04%	21.30%
	Q2	91.80%	91.80%	91.76%	91.67%	91.80%	91.80%	91.80%	26.79%
	Q3	91.94%	91.94%	91.89%	91.94%	91.94%	91.94%	91.94%	31.34%
	Q4	98.91%	98.91%	98.78%	98.87%	98.91%	98.91%	98.91%	21.42%
2011	Q1	96.16%	96.16%	96.11%	96.16%	96.16%	96.16%	96.16%	13.24%
	Q2	98.03%	98.03%	97.94%	95.24%	98.03%	98.03%	98.03%	12.96%
	Q3	99.86%	99.86%	99.82%	99.18%	99.86%	99.86%	99.86%	31.61%
	Q4	99.55%	99.55%	99.50%	99.50%	99.55%	99.55%	99.55%	16.12%
2012	Q1	99.54%	99.54%	99.50%	99.54%	97.76%	99.54%	99.54%	14.97%
	Q2	92.54%	92.54%	92.49%	92.49%	92.54%	92.54%	92.54%	15.98%
	Q3	99.05%	99.05%	99.00%	98.96%	99.05%	99.05%	99.05%	31.48%
	Q4	99.37%	99.37%	99.37%	99.32%	99.37%	99.37%	99.37%	17.12%
2013	Q1	99.58%	99.58%	99.58%	99.54%	99.58%	99.58%	99.58%	13.01%
	Q2	99.27%	99.27%	99.22%	99.18%	98.58%	99.27%	99.27%	15.02%
	Q3	46.29%	46.29%	46.24%	46.29%	45.38%	46.29%	46.29%	11.78%
	Q4	99.64%	99.64%	99.64%	99.64%	99.64%	98.23%	99.64%	6.84%
2014	Q1	99.35%	99.35%	99.35%	98.98%	99.35%	98.24%	99.31%	6.71%
	Q2	99.95%	99.95%	99.95%	98.67%	99.95%	97.12%	99.91%	9.52%
	Q3	99.41%	99.41%	99.41%	99.00%	99.41%	95.61%	99.41%	22.28%
	Q4	99.77%	99.77%	99.77%	99.64%	99.77%	98.19%	99.77%	10.51%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Kirksville, MO
(KIRK)



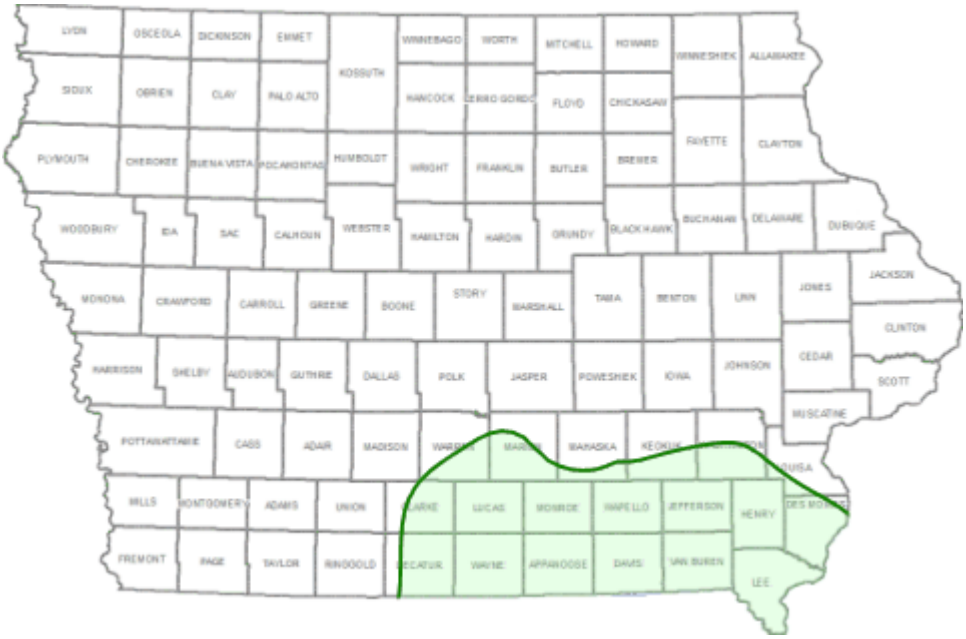
Station Info

WBAN:	14938
WMO:	724455
Anemometer Height:	10.0 m
1-Min Availability Date:	3/3/2005
IFW Installation Date:	10/7/2005

Location Info

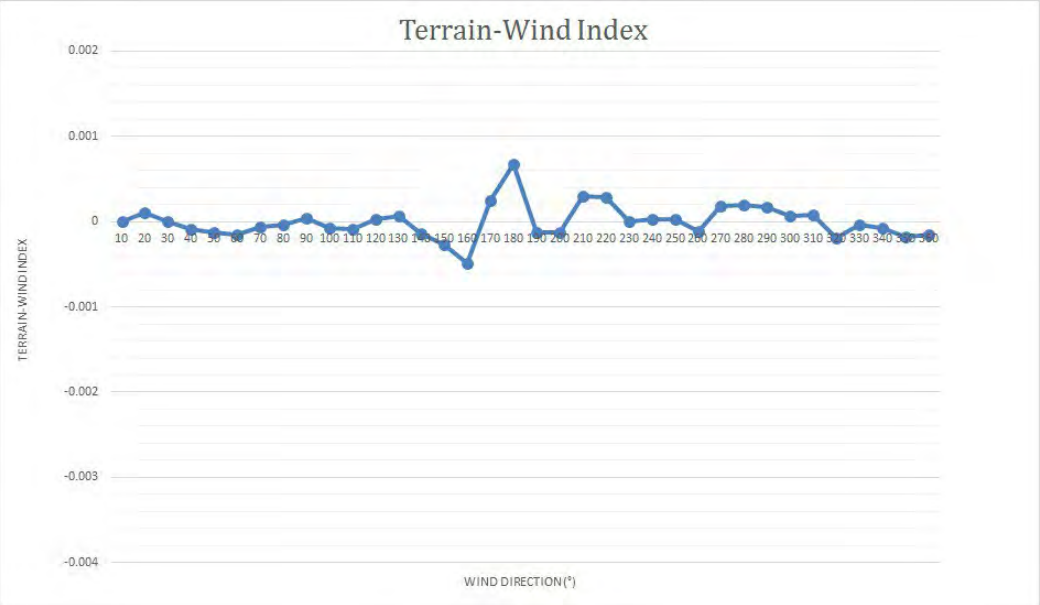
Lat-Long:	40.0872 N, 92.5458 W
UTM (NAD83, Z15):	538721.08, 4437534.47
Elevation:	292.6 m
Confidence:	Medium

Wind Correlation



Station	Correlation
KEOK	0.879
KUIN	0.866
KTVK	0.863
KBRL	0.849
KMPZ	0.844
KCNC	0.840
KFFL	0.833
KOXV	0.827
KFSW	0.826
KI75	0.824
KAWG	0.815
KOTM	0.807
KOOA	0.803
KLWD	0.802
KMQB	0.797
KTNU	0.784
KGGI	0.773
KIKV	0.758
KDSM	0.753
KPEA	0.752

Terrain-Wind Index (Range = 0.00116297)



Kirksville, MO

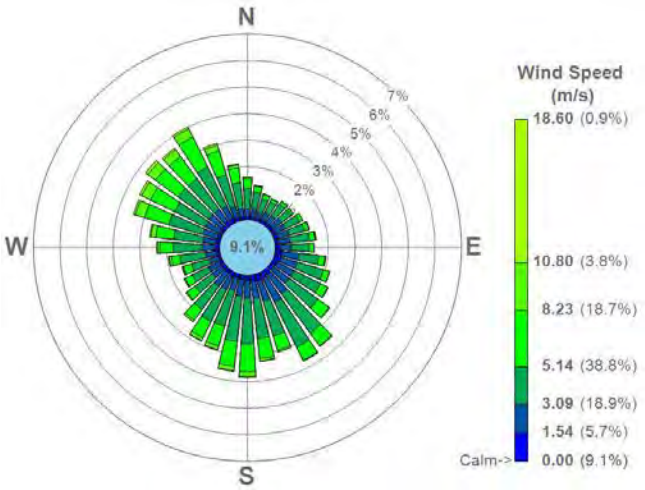
(KIRK)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	100.00%	100.00%	99.95%	99.91%	100.00%	99.03%	99.95%	8.06%
	Q2	99.91%	99.91%	99.54%	99.77%	99.82%	98.12%	99.82%	13.64%
	Q3	100.00%	100.00%	99.68%	99.73%	99.95%	98.23%	99.91%	17.44%
	Q4	99.82%	99.82%	99.73%	99.55%	99.82%	98.60%	99.68%	8.83%
2011	Q1	99.68%	99.68%	99.44%	99.31%	99.68%	98.84%	99.54%	5.83%
	Q2	99.91%	99.91%	99.86%	99.36%	99.91%	98.58%	99.86%	5.08%
	Q3	99.91%	99.91%	99.82%	99.68%	99.86%	97.87%	99.59%	15.58%
	Q4	100.00%	100.00%	99.82%	99.91%	99.95%	98.82%	99.91%	8.06%
2012	Q1	99.73%	99.73%	99.68%	99.50%	99.59%	98.49%	99.63%	6.59%
	Q2	100.00%	100.00%	99.95%	99.91%	100.00%	98.17%	99.91%	8.65%
	Q3	100.00%	100.00%	99.86%	100.00%	100.00%	95.61%	100.00%	15.53%
	Q4	100.00%	100.00%	99.95%	99.91%	100.00%	99.09%	99.91%	7.29%
2013	Q1	100.00%	100.00%	99.86%	99.95%	99.95%	99.12%	99.77%	5.93%
	Q2	100.00%	100.00%	99.45%	99.45%	99.95%	98.17%	99.95%	9.07%
	Q3	99.64%	99.64%	99.41%	99.59%	98.60%	96.38%	99.46%	15.99%
	Q4	99.86%	99.86%	99.82%	99.77%	99.73%	99.00%	99.73%	4.80%
2014	Q1	99.91%	99.91%	99.91%	99.81%	98.56%	98.89%	99.77%	4.17%
	Q2	100.00%	100.00%	100.00%	99.82%	100.00%	97.07%	99.36%	6.36%
	Q3	99.73%	99.73%	99.73%	99.59%	99.73%	96.24%	99.00%	15.40%
	Q4	100.00%	100.00%	100.00%	99.91%	100.00%	99.18%	99.95%	4.76%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Knoxville, IA
(KOXV)



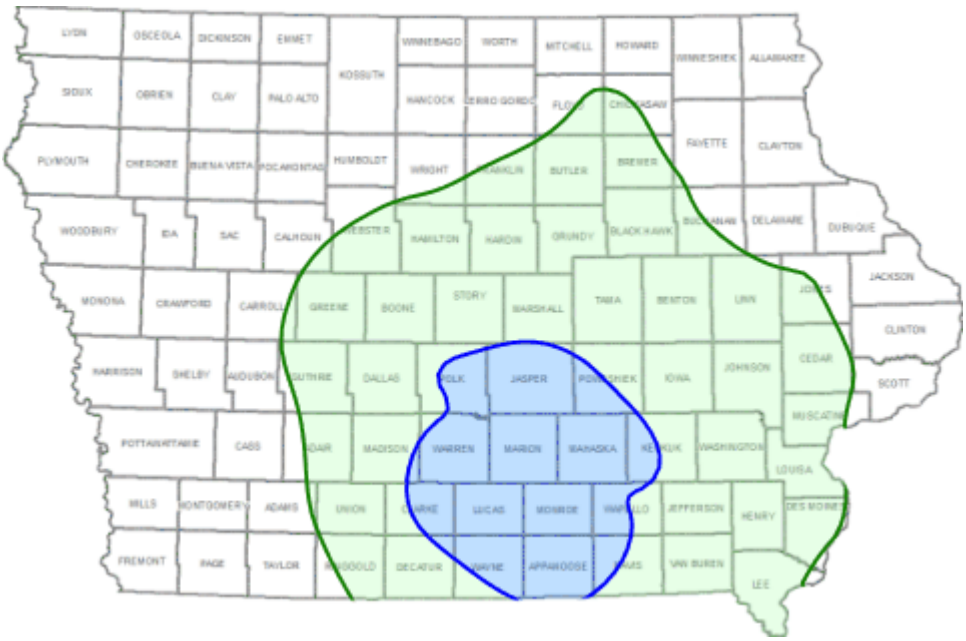
Station Info

WBAN:	NA
WMO:	725493
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	41.2984 N, 93.1114 W
UTM (NAD83, Z15):	490673.47, 4571889.14
Elevation:	283.2 m
Confidence:	Medium

Wind Correlation



Station	Correlation
KCNC	0.934
KI75	0.930
KTVK	0.925
KOOA	0.924
KTNU	0.922
KPEA	0.920
KIKV	0.914
KGGI	0.906
KOTM	0.899
KDSM	0.892
KFFL	0.889
KBNW	0.881
KAWG	0.880
KPRO	0.874
KMIW	0.872
KMPZ	0.869
KAMW	0.862
KLWD	0.844
KIFA	0.842
KCID	0.832

Terrain-Wind Index (Range = 0.000667122)

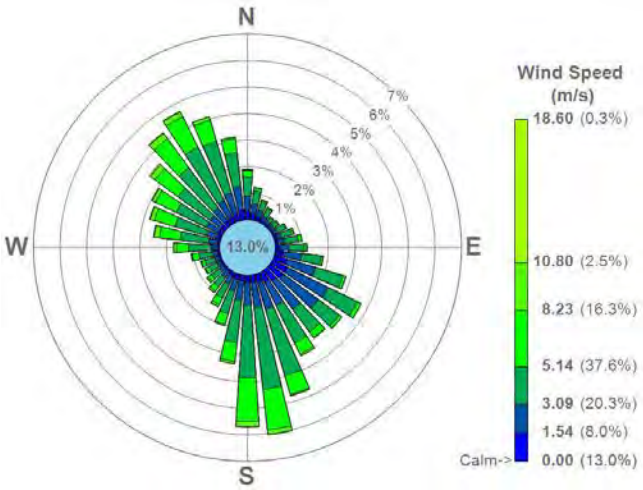
Knoxville, IA
(KOXV)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	91.71%	91.71%	91.71%	91.71%	91.71%	91.71%	91.71%	13.29%
	Q2	96.43%	96.43%	96.43%	96.38%	96.43%	96.43%	96.43%	11.31%
	Q3	96.01%	96.01%	96.01%	96.01%	96.01%	96.01%	96.01%	16.71%
	Q4	86.01%	86.01%	86.01%	86.01%	86.01%	86.01%	86.01%	8.20%
2011	Q1	96.16%	96.16%	96.16%	96.11%	96.16%	96.16%	96.16%	7.04%
	Q2	98.95%	98.95%	98.90%	98.81%	98.95%	98.95%	98.95%	8.75%
	Q3	97.64%	97.64%	97.64%	96.60%	97.64%	97.64%	97.64%	21.38%
	Q4	97.33%	97.33%	97.33%	97.33%	97.33%	97.33%	97.33%	6.84%
2012	Q1	99.63%	99.63%	99.63%	99.59%	99.63%	99.63%	99.63%	8.29%
	Q2	99.54%	99.54%	99.54%	99.45%	99.54%	99.54%	99.54%	8.47%
	Q3	98.73%	98.73%	98.73%	98.69%	98.73%	98.73%	98.73%	16.49%
	Q4	98.87%	98.87%	98.87%	98.82%	98.87%	98.87%	98.87%	10.96%
2013	Q1	99.58%	99.58%	99.58%	99.17%	94.21%	99.58%	99.58%	5.65%
	Q2	81.18%	81.18%	81.04%	80.91%	81.09%	79.26%	81.04%	2.98%
	Q3	99.32%	99.32%	99.32%	99.18%	99.32%	95.70%	99.32%	8.97%
	Q4	99.28%	99.28%	99.28%	99.14%	99.28%	98.87%	99.28%	3.26%
2014	Q1	99.31%	99.31%	99.31%	99.12%	99.31%	98.52%	99.31%	2.64%
	Q2	99.91%	99.91%	97.80%	97.71%	97.80%	95.01%	97.80%	5.22%
	Q3	99.41%	99.41%	99.41%	99.23%	99.41%	96.38%	99.41%	11.32%
	Q4	99.77%	99.77%	99.77%	99.73%	99.77%	98.55%	99.77%	4.76%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

La Crosse, WI
(KLSE)



Station Info

WBAN:	14920
WMO:	726430
Anemometer Height:	10.0 m
1-Min Availability Date:	10/6/2000
IFW Installation Date:	9/20/2006

Location Info

Lat-Long:	43.8792 N, 91.2530 W
UTM (NAD83, Z15):	640348.93, 4859939.33
Elevation:	198.7 m
Confidence:	High

Wind Correlation

Station	Correlation
KDEH	0.837
KAUM	0.804
KFKA	0.796
KY51	0.789
KVTI	0.783
KCCY	0.763
KRST	0.757
KCID	0.756
KALO	0.748
KAEL	0.734
KOLZ	0.727
KIIB	0.713
KMCW	0.706
KMXO	0.702
KFXY	0.700
KCAV	0.689
KMUT	0.689
KIOW	0.687
KIKV	0.687
KMPZ	0.682

Terrain-Wind Index (Range = 0.003769682)

La Crosse, WI

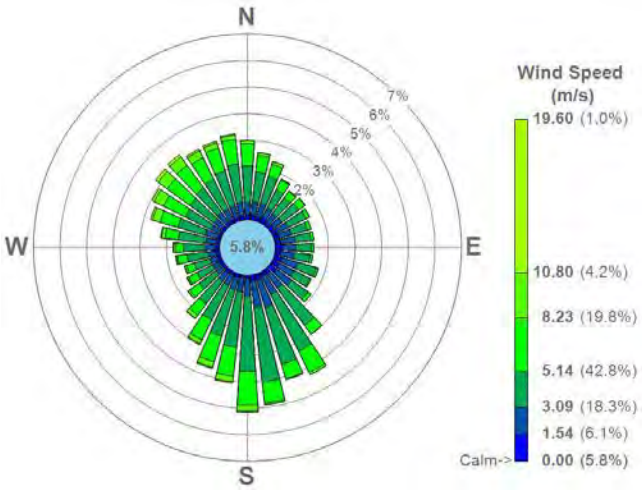
(KLSE)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	99.95%	99.95%	99.86%	99.77%	99.95%	98.89%	99.91%	23.47%
	Q2	99.95%	99.95%	99.91%	99.95%	99.77%	96.84%	99.95%	13.78%
	Q3	100.00%	100.00%	100.00%	99.82%	99.95%	97.24%	99.95%	16.08%
	Q4	100.00%	100.00%	99.68%	100.00%	100.00%	99.14%	99.95%	15.58%
2011	Q1	100.00%	100.00%	100.00%	99.95%	100.00%	99.35%	100.00%	14.58%
	Q2	100.00%	100.00%	100.00%	99.95%	99.95%	97.80%	99.91%	9.43%
	Q3	99.73%	99.73%	99.68%	98.19%	99.50%	96.38%	99.73%	14.76%
	Q4	100.00%	100.00%	99.95%	100.00%	99.95%	98.73%	99.95%	11.68%
2012	Q1	99.86%	99.86%	99.86%	99.86%	99.86%	99.22%	99.82%	11.36%
	Q2	100.00%	100.00%	99.95%	99.95%	100.00%	97.44%	100.00%	10.26%
	Q3	100.00%	100.00%	100.00%	100.00%	99.95%	97.24%	99.91%	17.44%
	Q4	100.00%	100.00%	100.00%	99.95%	100.00%	99.32%	100.00%	16.12%
2013	Q1	100.00%	100.00%	100.00%	99.91%	100.00%	99.68%	100.00%	14.81%
	Q2	99.95%	99.95%	99.91%	99.91%	99.68%	97.89%	99.91%	12.27%
	Q3	100.00%	100.00%	99.73%	100.00%	100.00%	96.42%	99.95%	13.45%
	Q4	99.95%	99.95%	99.95%	99.95%	99.95%	98.91%	99.95%	10.37%
2014	Q1	99.95%	99.95%	99.95%	99.86%	99.86%	99.44%	99.86%	8.98%
	Q2	100.00%	100.00%	99.95%	99.63%	99.77%	96.29%	99.59%	7.46%
	Q3	99.91%	99.91%	99.86%	99.82%	99.86%	96.92%	99.73%	9.28%
	Q4	100.00%	100.00%	100.00%	99.77%	100.00%	99.23%	100.00%	8.51%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Lamoni, IA
(KLWD)



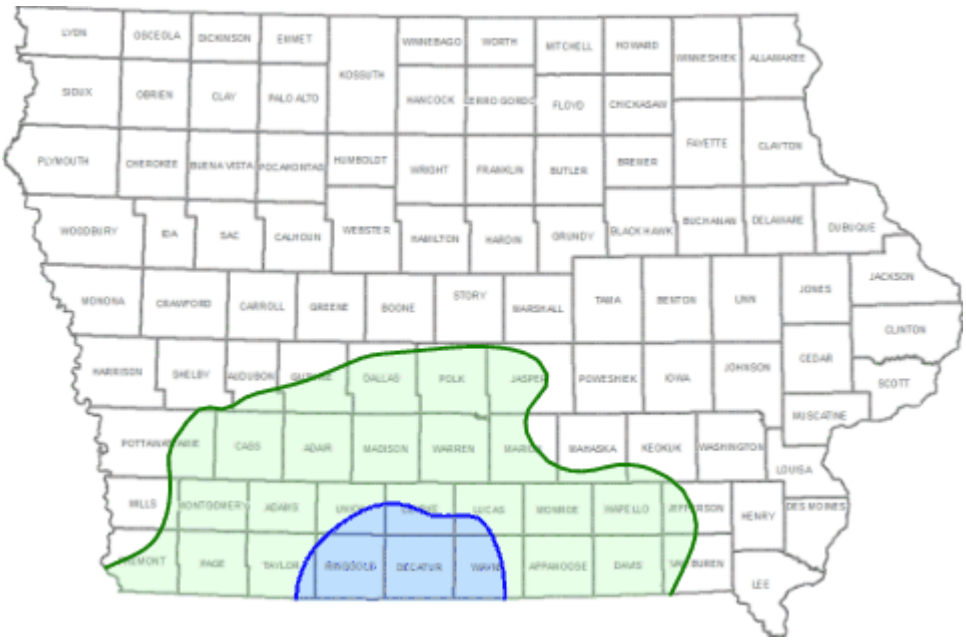
Station Info

WBAN:	94991
WMO:	725499
Anemometer Height:	10.0 m
1-Min Availability Date:	3/3/2005
IFW Installation Date:	5/29/2007

Location Info

Lat-Long:	40.6303 N, 93.9005 W
UTM (NAD83, Z15):	423844.85, 4498141.19
Elevation:	345.9 m
Confidence:	Medium

Wind Correlation



Station	Correlation
KCNC	0.896
KI75	0.886
KCSQ	0.885
KDSM	0.863
KTVK	0.857
KICL	0.851
KOXV	0.844
KIKV	0.828
KOTM	0.827
KRDK	0.827
KAFK	0.827
KTNU	0.821
KSDA	0.818
KSTJ	0.810
KOOA	0.804
KIRK	0.802
KAIO	0.801
KFFL	0.798
KHNR	0.797
KPRO	0.794

Terrain-Wind Index (Range = 0.001209788)

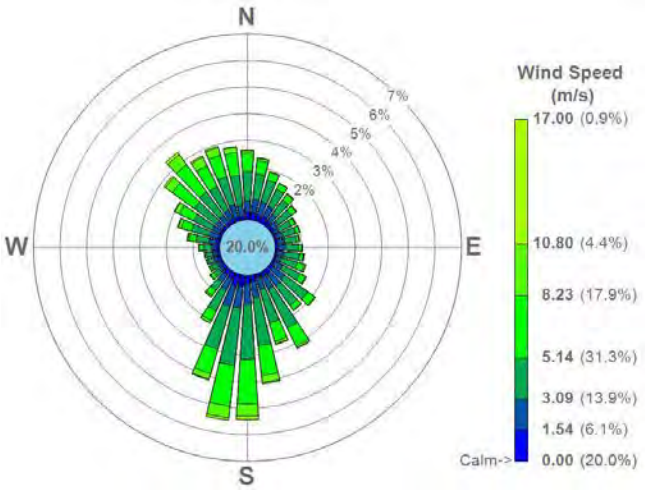
Lamoni, IA
(KLWD)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	99.95%	99.95%	99.95%	99.81%	99.95%	99.68%	99.95%	7.18%
	Q2	100.00%	100.00%	100.00%	99.59%	99.77%	97.66%	99.95%	7.97%
	Q3	99.86%	99.86%	98.91%	98.32%	98.78%	96.11%	98.73%	9.87%
	Q4	99.95%	99.95%	99.95%	99.68%	99.95%	99.14%	99.86%	4.26%
2011	Q1	100.00%	100.00%	100.00%	99.72%	100.00%	99.07%	100.00%	4.31%
	Q2	99.77%	99.77%	99.77%	99.18%	99.73%	97.66%	99.73%	4.58%
	Q3	99.77%	99.77%	99.68%	98.55%	99.68%	95.74%	99.68%	13.36%
	Q4	100.00%	100.00%	99.95%	99.86%	100.00%	99.05%	99.91%	3.67%
2012	Q1	100.00%	100.00%	100.00%	99.86%	100.00%	99.50%	100.00%	4.12%
	Q2	99.95%	99.95%	99.95%	98.21%	99.95%	98.26%	99.86%	4.81%
	Q3	99.23%	99.23%	99.18%	94.25%	99.09%	94.93%	98.32%	9.28%
	Q4	100.00%	100.00%	100.00%	99.82%	100.00%	99.50%	100.00%	5.80%
2013	Q1	99.95%	99.95%	99.95%	99.81%	99.95%	99.49%	99.91%	2.69%
	Q2	100.00%	100.00%	99.63%	99.40%	99.86%	98.72%	100.00%	5.17%
	Q3	99.95%	99.95%	99.73%	99.55%	99.91%	96.60%	99.86%	8.74%
	Q4	99.86%	99.86%	99.86%	99.73%	99.86%	98.78%	99.77%	2.45%
2014	Q1	99.95%	99.95%	99.95%	99.91%	99.95%	98.94%	99.86%	1.62%
	Q2	99.86%	99.86%	99.86%	99.22%	99.86%	96.66%	99.54%	4.21%
	Q3	100.00%	100.00%	99.95%	99.28%	100.00%	96.33%	99.41%	8.51%
	Q4	99.86%	99.86%	99.86%	99.41%	99.86%	98.91%	99.86%	3.58%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Le Mars, IA
(KLRJ)



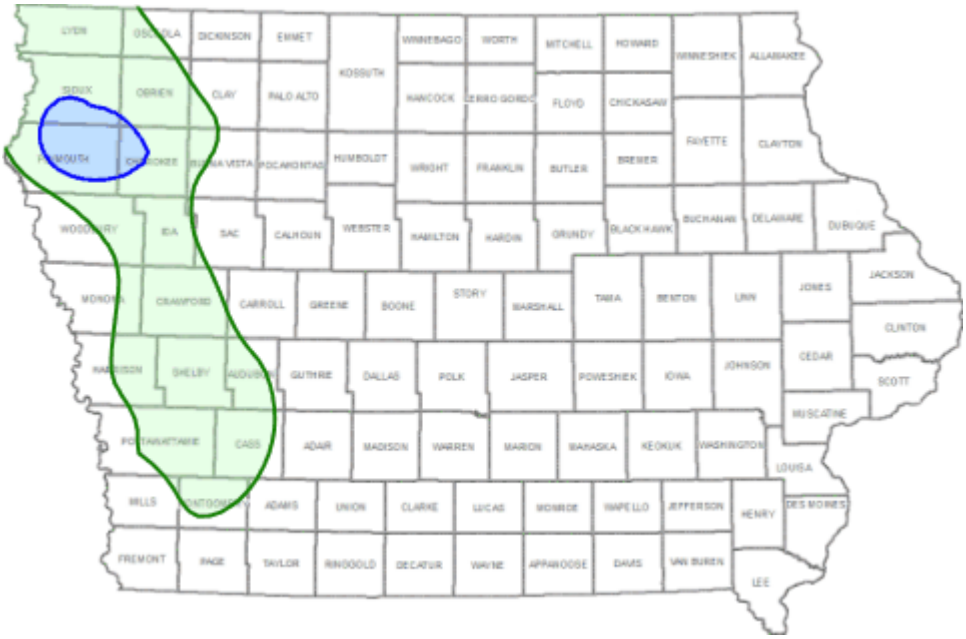
Station Info

WBAN:	NA
WMO:	725484
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	42.7754 N, 96.1922 W
UTM (NAD83, Z15):	238852.70, 4740817.00
Elevation:	365.2 m
Confidence:	Medium

Wind Correlation



Station	Correlation
KORC	0.899
KCKP	0.892
KHNR	0.860
KDNS	0.856
KLYV	0.848
KFSD	0.846
KSHL	0.841
KAIO	0.831
KRDK	0.816
KADU	0.815
KAXA	0.790
KFOD	0.789
KCBF	0.788
KEST	0.788
KBTA	0.780
KAFK	0.771
KSPW	0.770
KSLB	0.766
KMJQ	0.762
KOTG	0.756

Terrain-Wind Index (Range = 0.001675281)

Le Mars, IA

(KLRJ)

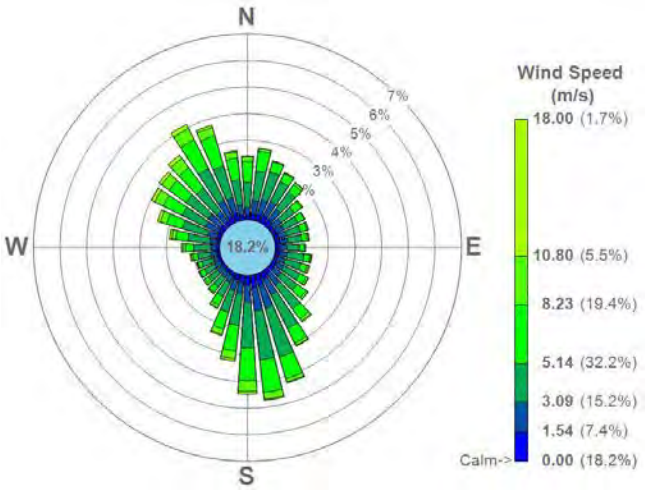
ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	81.94%	81.94%	81.90%	81.67%	65.46%	65.46%	65.46%	19.58%
	Q2	98.12%	98.12%	98.12%	98.12%	98.12%	98.12%	98.12%	19.92%
	Q3	96.74%	96.74%	96.74%	96.74%	96.74%	96.74%	96.74%	26.90%
	Q4	98.01%	98.01%	98.01%	97.96%	98.01%	98.01%	98.01%	24.86%
2011	Q1	95.51%	95.51%	95.51%	95.46%	95.51%	95.51%	95.51%	12.64%
	Q2	89.97%	89.97%	89.88%	89.88%	89.97%	89.97%	89.97%	12.91%
	Q3	95.06%	95.06%	95.06%	94.11%	95.06%	95.06%	95.06%	30.07%
	Q4	99.46%	99.46%	99.46%	98.46%	99.46%	99.46%	99.46%	25.86%
2012	Q1	99.36%	99.36%	99.31%	99.36%	99.36%	99.36%	99.36%	21.70%
	Q2	99.54%	99.54%	99.54%	98.17%	99.54%	99.54%	99.54%	16.90%
	Q3	98.60%	98.60%	98.60%	94.34%	98.60%	98.60%	98.60%	28.53%
	Q4	99.18%	99.18%	99.14%	99.14%	99.18%	99.18%	99.18%	23.41%
2013	Q1	99.63%	99.63%	99.63%	99.31%	99.63%	99.63%	99.63%	13.61%
	Q2	98.21%	98.21%	98.21%	98.21%	98.21%	98.21%	98.21%	14.42%
	Q3	99.50%	99.50%	99.50%	52.94%	99.50%	99.50%	99.50%	31.39%
	Q4	74.82%	74.82%	74.82%	54.08%	74.82%	73.51%	74.82%	12.41%
2014	Q1	99.35%	99.35%	99.35%	88.70%	99.35%	97.36%	99.35%	11.20%
	Q2	99.95%	99.95%	99.95%	75.60%	99.95%	96.61%	99.77%	13.74%
	Q3	99.41%	99.41%	99.41%	85.55%	99.41%	92.44%	99.37%	24.18%
	Q4	99.77%	99.77%	99.77%	98.05%	99.77%	97.37%	99.68%	14.27%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Luverne, MN

(KLYV)



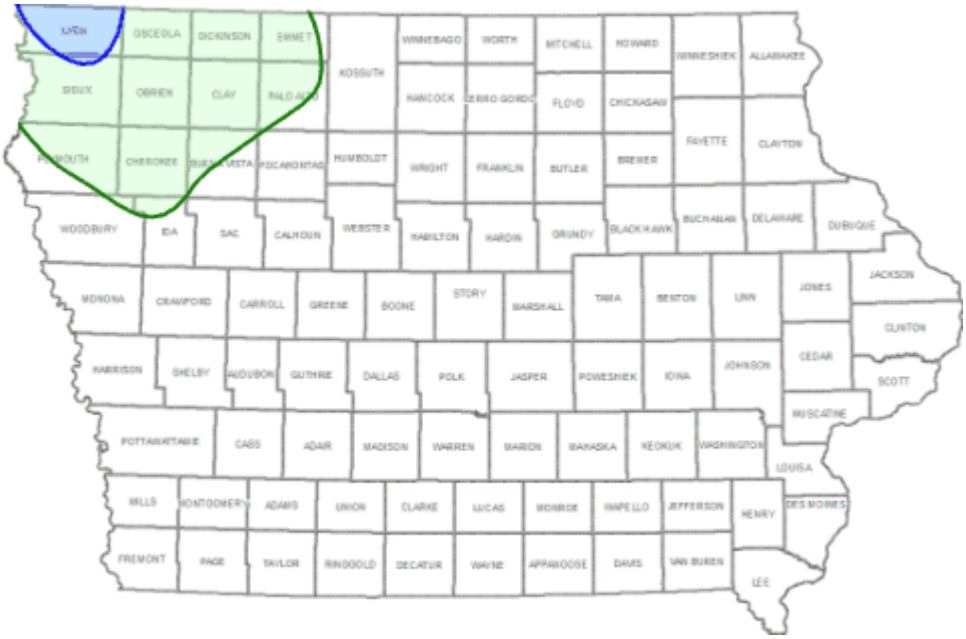
Station Info

WBAN:	54926
WMO:	722006
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	43.6170 N, 96.2170 W
UTM (NAD83, Z15):	240419.80, 4834365.10
Elevation:	435.0 m
Confidence:	Low

Wind Correlation



Station	Correlation
KSHL	0.885
KORC	0.882
KCKP	0.874
KFSD	0.872
KLRJ	0.848
KSPW	0.826
KOTG	0.814
KEST	0.814
KMJQ	0.807
KAXA	0.792
KDNS	0.787
KFRM	0.784
KSLB	0.774
KHNR	0.768
KBTA	0.767
KFOD	0.762
KCAV	0.753
KADU	0.752
KEBS	0.752
KRDK	0.748

Terrain-Wind Index (Range = 0.001382523)

Luverne, MN

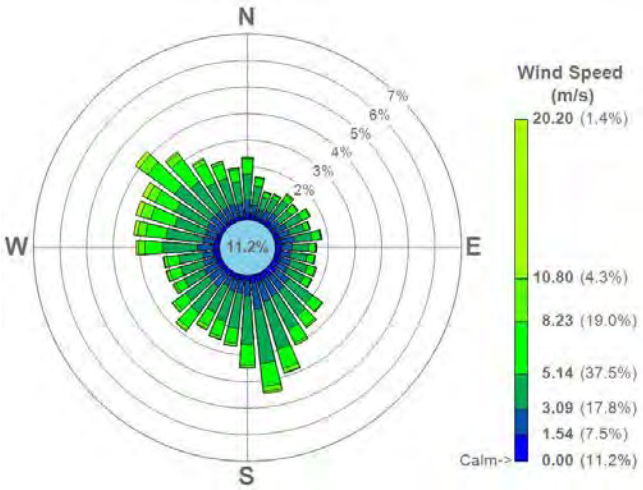
(KLYV)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	99.81%	99.81%	99.81%	99.31%	99.81%	99.81%	99.81%	21.76%
	Q2	99.04%	99.04%	99.04%	99.04%	99.04%	99.04%	99.04%	16.39%
	Q3	98.69%	98.69%	98.69%	98.69%	98.69%	98.69%	98.69%	23.87%
	Q4	99.59%	99.59%	99.59%	99.41%	99.59%	99.59%	99.59%	21.88%
2011	Q1	99.44%	99.44%	99.44%	99.07%	99.44%	99.44%	99.44%	11.81%
	Q2	99.63%	99.63%	99.63%	99.50%	99.63%	99.63%	99.63%	11.77%
	Q3	99.82%	99.82%	99.82%	98.96%	99.82%	99.82%	99.82%	29.98%
	Q4	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	19.43%
2012	Q1	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	17.54%
	Q2	100.00%	100.00%	100.00%	99.95%	99.95%	100.00%	100.00%	12.73%
	Q3	99.95%	99.95%	99.95%	99.95%	99.95%	99.95%	99.95%	29.80%
	Q4	99.82%	99.82%	99.82%	99.68%	99.82%	99.82%	99.82%	16.53%
2013	Q1	99.77%	99.77%	99.77%	99.68%	99.77%	99.77%	99.77%	11.48%
	Q2	99.59%	99.59%	99.59%	99.13%	99.59%	99.59%	99.59%	11.08%
	Q3	99.91%	99.91%	99.91%	99.91%	99.91%	99.91%	99.91%	29.89%
	Q4	99.37%	99.37%	99.37%	99.09%	99.37%	99.37%	99.37%	15.90%
2014	Q1	99.35%	99.35%	99.35%	98.84%	99.35%	98.38%	99.35%	11.30%
	Q2	99.86%	99.86%	99.86%	99.77%	99.86%	99.86%	99.86%	14.38%
	Q3	99.86%	99.86%	99.86%	99.82%	99.86%	99.86%	99.86%	23.91%
	Q4	99.91%	99.91%	99.91%	99.64%	99.91%	99.91%	99.91%	12.27%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Macomb, IL
(KMQB)



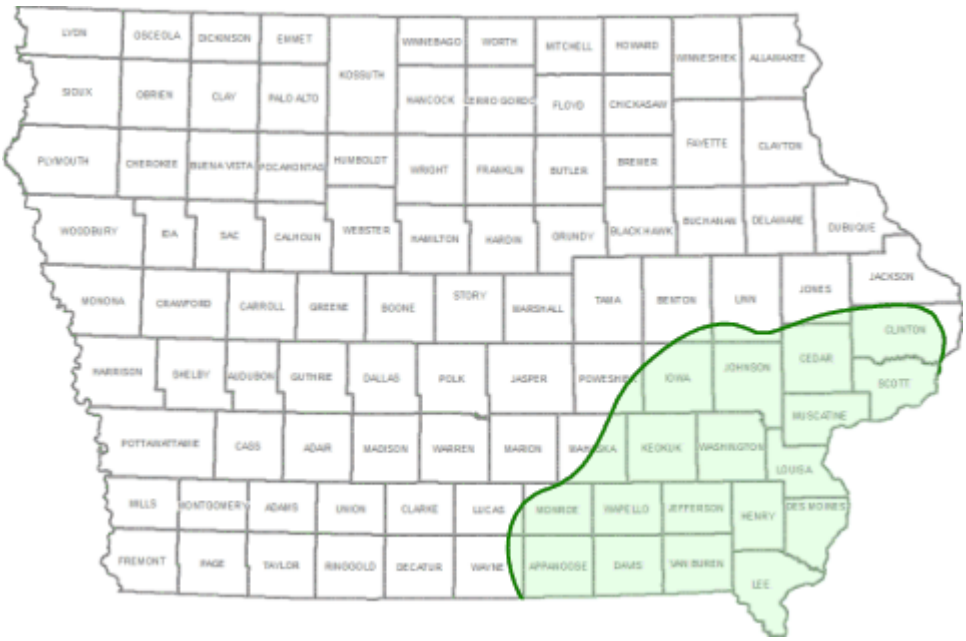
Station Info

WBAN:	04949
WMO:	722157
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	40.5176 N, -90.6481 W
UTM (NAD83, Z15):	699242.30, 4487865.88
Elevation:	207.0 m
Confidence:	High

Wind Correlation



Station	Correlation
KFSW	0.892
KMPZ	0.892
KUIN	0.884
KGBG	0.880
KAWG	0.878
KMUT	0.875
KFFL	0.871
KBRL	0.855
KEOK	0.846
KOTM	0.829
KOOA	0.827
KDVN	0.826
KTVK	0.823
KMLI	0.816
KCID	0.805
KCWI	0.805
KIOW	0.801
KIRK	0.797
KCNC	0.789
KOXV	0.789

Terrain-Wind Index (Range = 0.000775646)

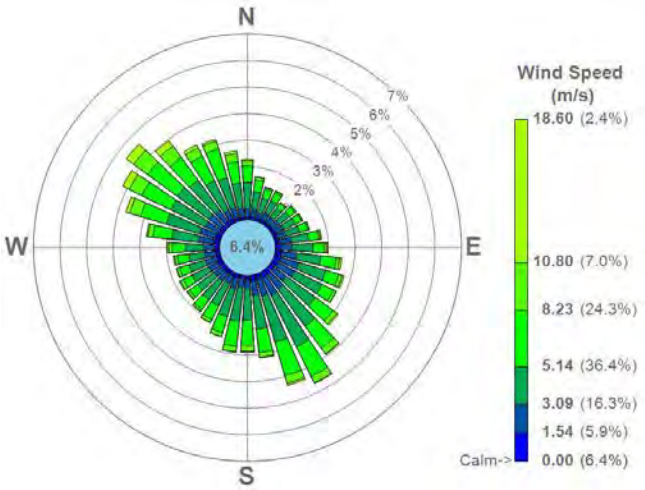
Macomb, IL
(KMQB)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	99.03%	99.03%	99.03%	99.03%	99.03%	99.03%	99.03%	9.03%
	Q2	98.99%	98.99%	98.86%	98.67%	98.81%	98.86%	98.86%	10.49%
	Q3	99.41%	99.41%	99.41%	99.32%	99.41%	99.41%	99.41%	18.48%
	Q4	98.01%	98.01%	98.01%	97.87%	98.01%	98.01%	98.01%	9.47%
2011	Q1	97.31%	97.31%	97.31%	97.27%	97.27%	97.31%	97.31%	5.32%
	Q2	97.34%	97.34%	97.34%	97.21%	97.34%	97.34%	97.34%	5.17%
	Q3	97.24%	97.24%	96.51%	95.79%	96.83%	96.51%	96.51%	24.28%
	Q4	98.69%	98.69%	98.69%	98.64%	98.69%	98.69%	98.69%	7.43%
2012	Q1	99.82%	99.82%	99.82%	99.77%	99.68%	99.82%	99.82%	7.37%
	Q2	99.91%	99.91%	99.27%	99.13%	99.45%	99.31%	99.31%	8.79%
	Q3	99.46%	99.46%	95.47%	95.34%	95.65%	95.56%	95.56%	21.60%
	Q4	99.82%	99.82%	99.82%	98.73%	99.82%	99.82%	99.82%	8.56%
2013	Q1	99.68%	99.68%	99.68%	99.68%	99.68%	99.68%	99.68%	6.62%
	Q2	98.49%	98.49%	98.49%	98.49%	98.49%	98.49%	98.49%	5.72%
	Q3	99.59%	99.59%	99.59%	99.55%	99.59%	99.59%	99.59%	22.01%
	Q4	99.41%	99.41%	99.41%	98.55%	99.41%	99.41%	99.41%	7.34%
2014	Q1	99.63%	99.63%	99.63%	97.04%	99.63%	99.63%	99.63%	5.83%
	Q2	99.77%	99.77%	99.77%	98.81%	99.77%	99.77%	99.77%	7.10%
	Q3	99.46%	99.46%	99.46%	97.78%	99.46%	99.46%	99.46%	22.19%
	Q4	99.77%	99.77%	99.77%	99.77%	99.77%	99.77%	99.77%	10.51%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Marshalltown, IA
(KMIW)



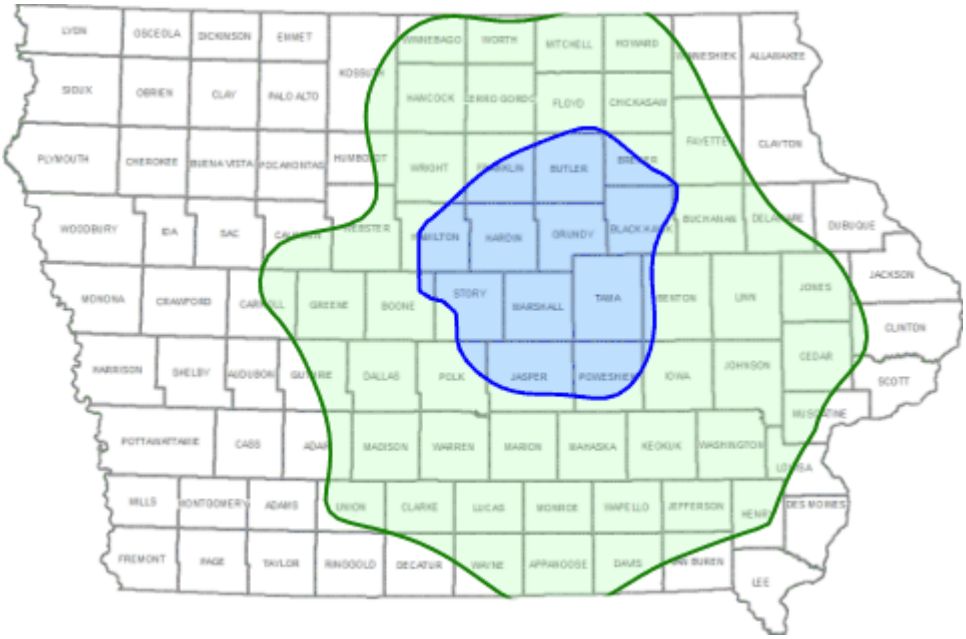
Station Info

WBAN:	94988
WMO:	725461
Anemometer Height:	10.0 m
1-Min Availability Date:	3/3/2005
IFW Installation Date:	10/20/2005

Location Info

Lat-Long:	42.1106 N, 92.9163 W
UTM (NAD83, Z15):	506919.82, 4662059.52
Elevation:	293.8 m
Confidence:	Medium

Wind Correlation



Station	Correlation
KIFA	0.937
KGGI	0.923
KTNU	0.918
KALO	0.908
KBNW	0.899
KOLZ	0.895
KEBS	0.894
KAMW	0.892
KIKV	0.891
KIIB	0.890
KCCY	0.889
KPRO	0.887
KOOA	0.884
KOXV	0.872
KDSM	0.867
KVTI	0.862
KFXY	0.860
KCID	0.857
KCAV	0.855
KPEA	0.851

Terrain-Wind Index (Range = 0.001602928)

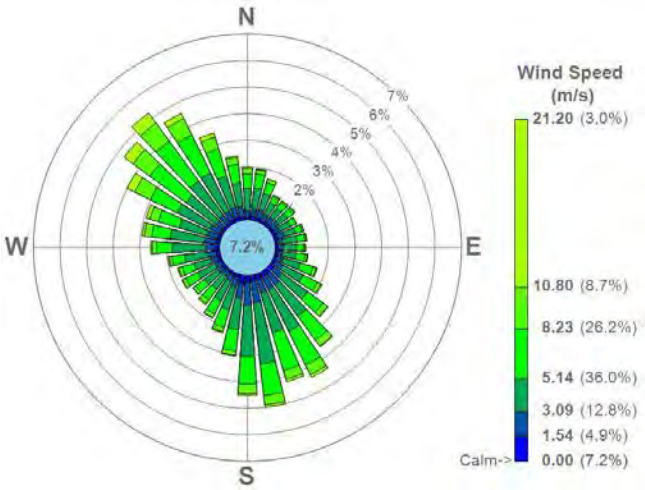
Marshalltown, IA
(KMIW)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	100.00%	100.00%	100.00%	99.91%	99.95%	99.72%	99.95%	5.88%
	Q2	100.00%	100.00%	99.86%	99.77%	99.91%	98.76%	100.00%	6.41%
	Q3	99.95%	99.95%	99.95%	99.77%	99.95%	98.87%	99.86%	11.78%
	Q4	100.00%	100.00%	100.00%	99.59%	98.82%	99.32%	99.95%	6.07%
2011	Q1	99.91%	99.91%	99.91%	99.81%	99.91%	99.44%	99.86%	5.32%
	Q2	99.95%	99.95%	99.95%	99.63%	99.95%	98.95%	99.68%	4.40%
	Q3	96.11%	96.11%	96.11%	94.52%	96.06%	94.02%	95.88%	11.55%
	Q4	100.00%	100.00%	100.00%	99.86%	100.00%	99.37%	99.82%	5.71%
2012	Q1	99.86%	99.86%	99.86%	99.54%	99.82%	99.31%	99.82%	5.91%
	Q2	100.00%	100.00%	100.00%	99.54%	100.00%	97.44%	98.72%	4.72%
	Q3	99.68%	99.68%	99.68%	97.28%	99.59%	97.96%	99.37%	14.13%
	Q4	99.64%	99.64%	99.64%	97.64%	99.64%	98.87%	99.50%	5.80%
2013	Q1	99.86%	99.86%	99.86%	99.86%	99.86%	99.44%	99.86%	4.72%
	Q2	99.86%	99.86%	99.54%	98.86%	99.82%	98.58%	99.86%	4.17%
	Q3	100.00%	100.00%	99.77%	99.14%	100.00%	98.60%	99.95%	10.60%
	Q4	99.95%	99.95%	99.95%	99.91%	99.82%	99.59%	99.91%	3.85%
2014	Q1	100.00%	100.00%	100.00%	99.91%	100.00%	99.63%	99.95%	2.41%
	Q2	99.95%	99.95%	99.95%	99.86%	99.31%	97.99%	99.77%	3.53%
	Q3	100.00%	100.00%	100.00%	99.46%	100.00%	98.05%	99.73%	7.93%
	Q4	100.00%	100.00%	100.00%	99.73%	100.00%	99.64%	99.86%	3.62%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Mason City, IA
(KMCW)



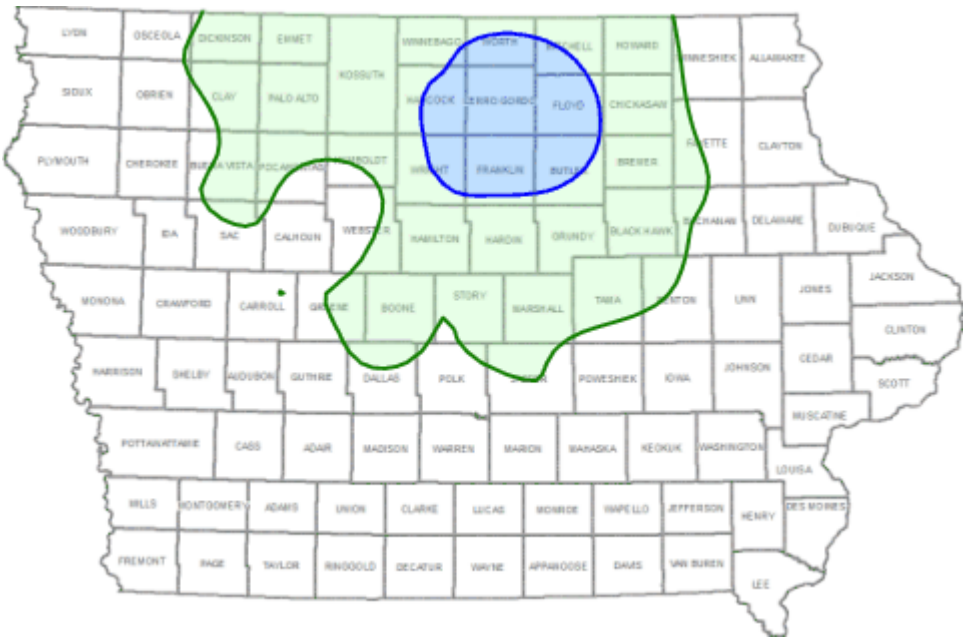
Station Info

WBAN:	14940
WMO:	725485
Anemometer Height:	10.0
1-Min Availability Date:	3/9/2005
IFW Installation Date:	5/17/2007

Location Info

Lat-Long:	43.1543 N, 93.3262 W
UTM (NAD83, Z15):	473478.59, 4778001.42
Elevation:	362.4 m
Confidence:	High

Wind Correlation



Station	Correlation
KCCY	0.901
KCAV	0.900
KFXY	0.898
KFRM	0.881
KEBS	0.875
KIFA	0.874
KRST	0.866
KALO	0.865
KAXA	0.859
KOLZ	0.837
KMIW	0.836
KMJQ	0.835
KEST	0.832
KAUM	0.831
KSLB	0.816
KSPW	0.813
KPRO	0.813
KBNW	0.811
KAEL	0.810
KTNU	0.805

Terrain-Wind Index (Range = 0.000966538)

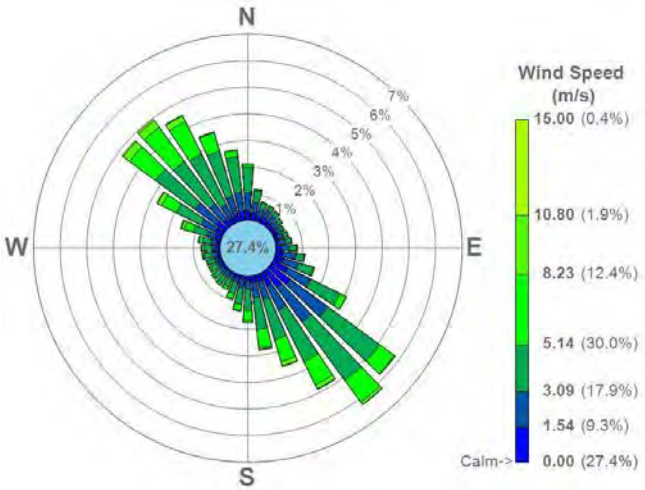
Mason City, IA
(KMCW)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	99.95%	99.95%	99.91%	99.40%	99.91%	98.15%	98.15%	7.78%
	Q2	100.00%	100.00%	100.00%	99.95%	99.95%	98.63%	99.91%	7.23%
	Q3	100.00%	100.00%	100.00%	99.91%	100.00%	98.82%	99.91%	9.51%
	Q4	99.95%	99.95%	99.73%	99.82%	99.95%	98.55%	99.05%	7.07%
2011	Q1	99.95%	99.95%	99.95%	99.86%	99.95%	99.49%	99.95%	4.54%
	Q2	100.00%	100.00%	100.00%	99.86%	100.00%	99.22%	99.95%	5.17%
	Q3	99.95%	99.95%	99.95%	98.55%	99.95%	98.14%	99.95%	15.04%
	Q4	100.00%	100.00%	99.95%	99.82%	99.95%	99.32%	99.68%	5.93%
2012	Q1	100.00%	100.00%	100.00%	99.91%	99.95%	99.50%	99.95%	5.95%
	Q2	100.00%	100.00%	100.00%	99.82%	99.95%	98.90%	99.86%	6.09%
	Q3	100.00%	100.00%	100.00%	99.86%	100.00%	97.46%	99.91%	14.54%
	Q4	100.00%	100.00%	100.00%	99.95%	100.00%	99.68%	99.91%	5.71%
2013	Q1	100.00%	100.00%	100.00%	99.95%	100.00%	99.72%	99.95%	6.48%
	Q2	100.00%	100.00%	99.68%	99.73%	100.00%	98.86%	99.95%	5.45%
	Q3	100.00%	100.00%	99.68%	99.82%	99.95%	98.82%	99.86%	12.59%
	Q4	100.00%	100.00%	100.00%	99.77%	100.00%	99.68%	99.95%	5.03%
2014	Q1	99.44%	99.44%	98.98%	96.90%	99.31%	99.12%	99.26%	2.50%
	Q2	99.95%	99.95%	99.95%	99.50%	99.95%	98.49%	99.54%	3.98%
	Q3	100.00%	100.00%	100.00%	99.86%	100.00%	98.05%	99.86%	9.69%
	Q4	99.95%	99.95%	99.91%	99.37%	99.95%	99.28%	99.73%	4.30%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Millard, NE
(KMLE)



Station Info

WBAN:	04992
WMO:	720308
Anemometer Height:	Unknown

1-Min Availability Date: NA

IFW Installation Date: NA

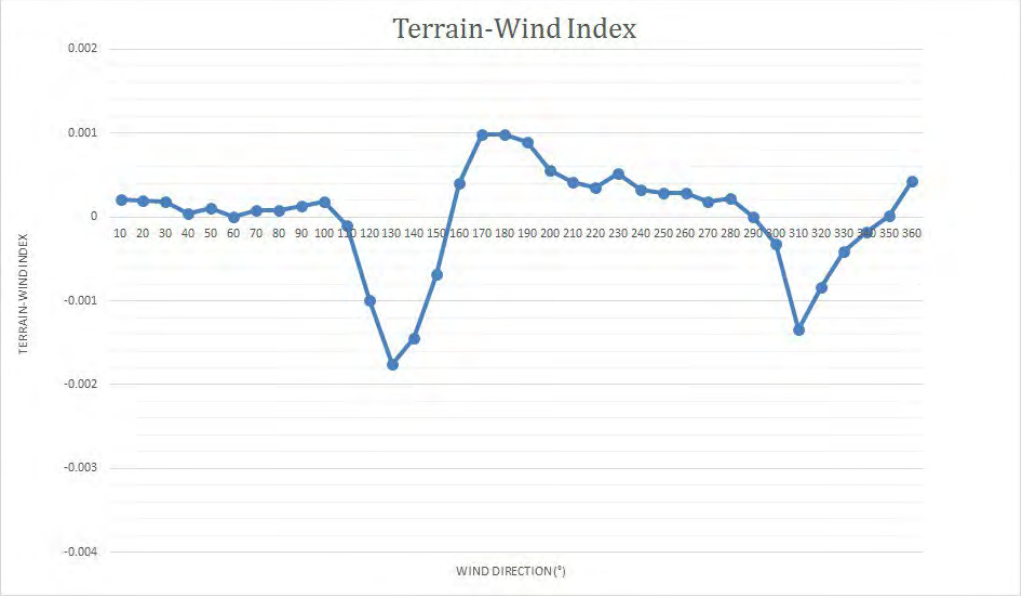
Location Info

Lat-Long:	41.1981 N, 96.1130 W
UTM (NAD83, Z15):	238960.20, 4565421.80
Elevation:	317.6 m
Confidence:	High

Wind Correlation

Station	Correlation
KPMV	0.855
KOFF	0.801
KTQE	0.792
KCBF	0.775
KSUX	0.755
KOMA	0.737
KBTA	0.729
KAMW	0.707
KPEA	0.700
KPRO	0.700
KSDA	0.691
KIKV	0.683
KEBS	0.670
KFXY	0.670
KI75	0.661
KBNW	0.657
KDSM	0.651
KRDK	0.651
KIFA	0.645
KOOA	0.643

Terrain-Wind Index (Range = 0.002744322)



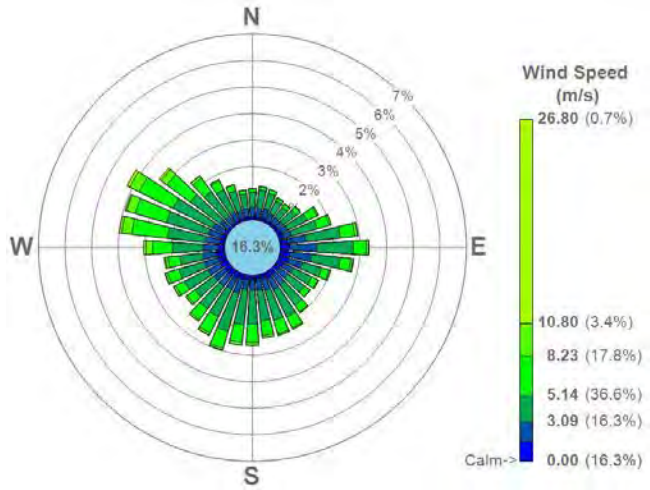
Millard, NE
(KMLE)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	99.49%	99.49%	99.49%	99.49%	99.49%	99.49%	99.49%	25.32%
	Q2	99.91%	99.91%	99.91%	99.91%	99.91%	99.91%	99.91%	28.02%
	Q3	99.82%	99.82%	99.82%	99.82%	99.82%	99.82%	99.82%	29.21%
	Q4	99.86%	99.86%	99.86%	99.82%	99.86%	99.86%	99.86%	30.75%
2011	Q1	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	23.61%
	Q2	99.04%	99.04%	99.04%	99.04%	99.04%	99.04%	99.04%	18.27%
	Q3	99.05%	99.05%	99.00%	99.00%	98.19%	99.00%	99.00%	36.46%
	Q4	99.64%	99.64%	99.64%	99.64%	99.05%	99.64%	99.64%	31.97%
2012	Q1	99.59%	99.59%	99.59%	99.54%	98.81%	99.59%	99.59%	27.38%
	Q2	100.00%	100.00%	100.00%	100.00%	99.77%	100.00%	100.00%	23.31%
	Q3	98.96%	98.96%	98.96%	98.87%	98.96%	98.96%	98.96%	35.14%
	Q4	99.00%	99.00%	99.00%	99.00%	99.00%	99.00%	99.00%	29.21%
2013	Q1	99.31%	99.31%	98.29%	98.29%	96.85%	98.29%	98.29%	21.48%
	Q2	98.67%	98.67%	98.67%	98.67%	98.63%	98.67%	98.67%	22.25%
	Q3	99.73%	99.73%	99.73%	99.50%	98.96%	99.73%	99.73%	29.39%
	Q4	99.64%	99.64%	99.64%	99.64%	99.09%	99.64%	99.64%	28.35%
2014	Q1	99.58%	99.58%	99.58%	99.58%	99.58%	99.54%	99.54%	26.62%
	Q2	99.95%	99.95%	99.59%	99.68%	99.82%	99.73%	99.73%	27.66%
	Q3	97.19%	97.19%	97.19%	97.19%	97.19%	97.19%	97.19%	29.71%
	Q4	99.68%	99.68%	99.68%	99.68%	99.68%	99.68%	99.68%	23.46%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Moline, IL
(KMLI)



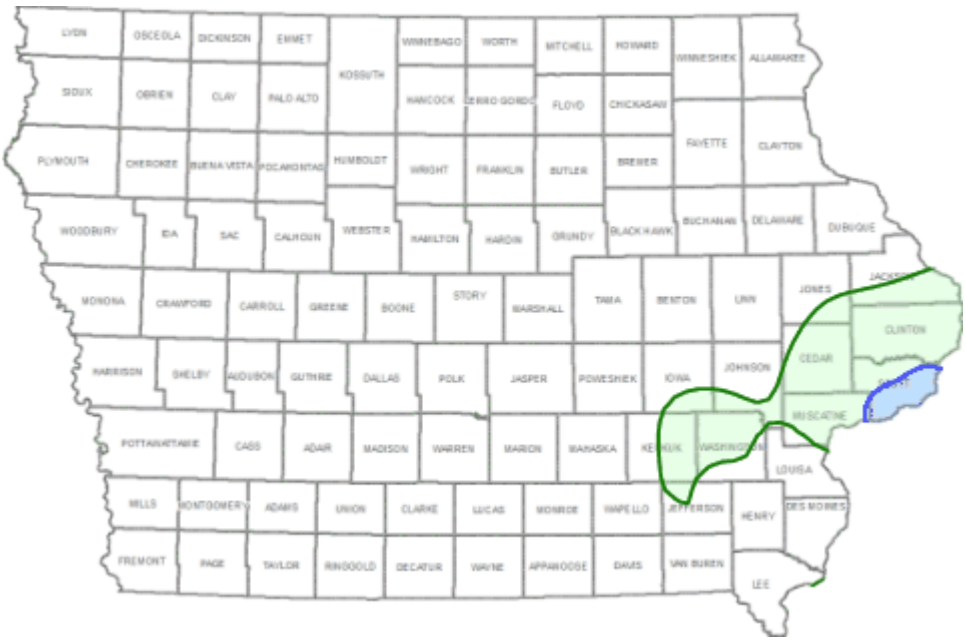
Station Info

WBAN:	14923
WMO:	725440
Anemometer Height:	10.0 m
1-Min Availability Date:	1/1/2000
IFW Installation Date:	4/16/2007

Location Info

Lat-Long:	41.4514 N, 90.5147 W
UTM (NAD83, Z15):	707593.19, 4591850.20
Elevation:	179.8 m
Confidence:	High

Wind Correlation



Station	Correlation
KDVN	0.906
KCWI	0.878
KGBG	0.845
KMUT	0.836
KAWG	0.829
KMQB	0.816
KPVB	0.809
KSFY	0.808
KFFL	0.804
KFEP	0.804
KIOW	0.781
KMXO	0.778
KSQI	0.776
KFSW	0.775
KGGI	0.770
KEOK	0.767
KCID	0.755
KBRL	0.753
KOTM	0.753
KDBQ	0.735

Terrain-Wind Index (Range = 0.002567901)

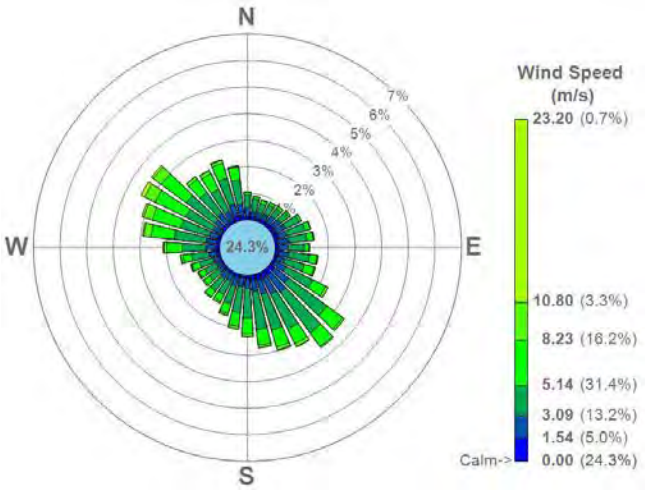
Moline, IL
(KMLI)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	99.77%	99.77%	99.12%	98.33%	98.33%	97.96%	98.38%	10.69%
	Q2	100.00%	100.00%	100.00%	99.95%	100.00%	97.44%	99.91%	17.40%
	Q3	99.91%	99.91%	99.23%	99.46%	99.68%	97.83%	99.64%	23.10%
	Q4	99.95%	99.95%	99.50%	99.86%	99.91%	98.41%	99.37%	19.47%
2011	Q1	100.00%	100.00%	99.68%	99.21%	99.49%	98.52%	99.12%	9.35%
	Q2	100.00%	100.00%	99.86%	99.91%	100.00%	98.81%	100.00%	11.58%
	Q3	100.00%	100.00%	99.73%	98.23%	100.00%	97.10%	99.95%	26.13%
	Q4	100.00%	100.00%	100.00%	99.91%	100.00%	98.87%	100.00%	15.72%
2012	Q1	100.00%	100.00%	99.91%	99.91%	100.00%	99.36%	100.00%	13.23%
	Q2	99.95%	99.95%	99.73%	99.86%	99.95%	97.71%	99.91%	14.06%
	Q3	99.95%	99.95%	99.55%	99.77%	99.91%	96.60%	99.91%	29.76%
	Q4	99.95%	99.95%	98.96%	99.91%	99.95%	99.23%	99.91%	16.44%
2013	Q1	100.00%	100.00%	99.95%	99.86%	99.95%	98.94%	99.95%	12.36%
	Q2	100.00%	100.00%	100.00%	99.77%	99.95%	97.85%	100.00%	12.77%
	Q3	99.95%	99.95%	99.77%	92.16%	99.95%	97.06%	99.95%	23.37%
	Q4	99.95%	99.95%	99.55%	90.76%	99.55%	98.23%	99.14%	12.82%
2014	Q1	100.00%	100.00%	99.72%	91.06%	100.00%	99.35%	100.00%	10.19%
	Q2	100.00%	100.00%	99.36%	90.57%	99.73%	97.57%	99.68%	12.00%
	Q3	99.82%	99.82%	99.82%	99.59%	99.82%	97.74%	99.77%	22.42%
	Q4	99.91%	99.91%	99.32%	92.35%	99.86%	98.91%	99.82%	12.95%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Monticello, IA
(KMXO)



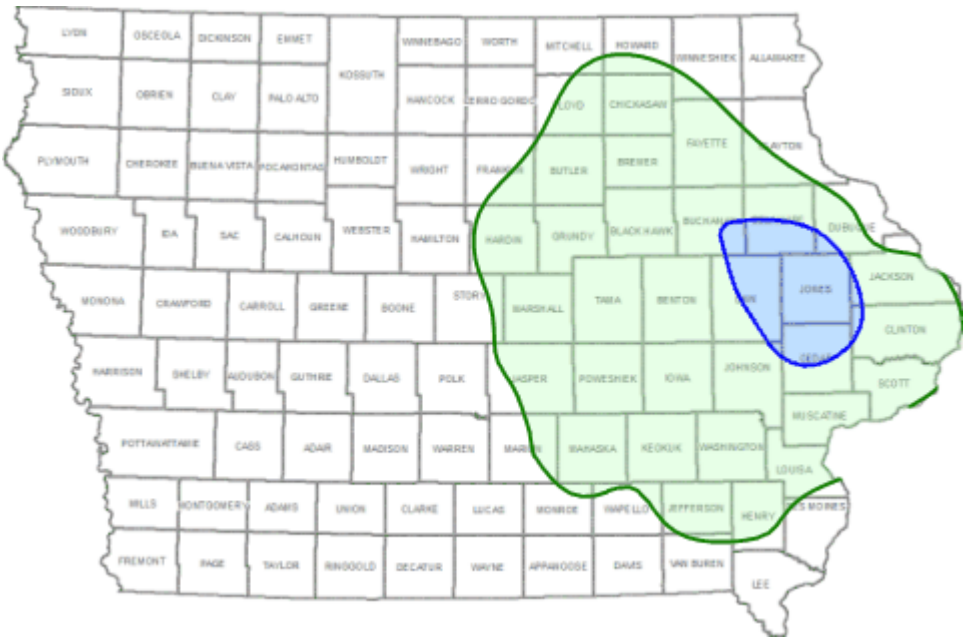
Station Info

WBAN:	NA
WMO:	725475
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	42.2204 N, 91.1605 W
UTM (NAD83, Z15):	651818.76, 4675885.44
Elevation:	253.9 m
Confidence:	Medium

Wind Correlation



Station	Correlation
KIIB	0.898
KIOW	0.879
KOLZ	0.877
KCID	0.863
KMUT	0.856
KVTI	0.852
KOOA	0.850
KCWI	0.843
KGGI	0.842
KAWG	0.837
KDVN	0.837
KCCY	0.833
KFFL	0.832
KALO	0.831
KMIW	0.830
KIFA	0.823
KPVB	0.818
KMPZ	0.818
KTNU	0.810
KPEA	0.806

Terrain-Wind Index (Range = 0.002094486)

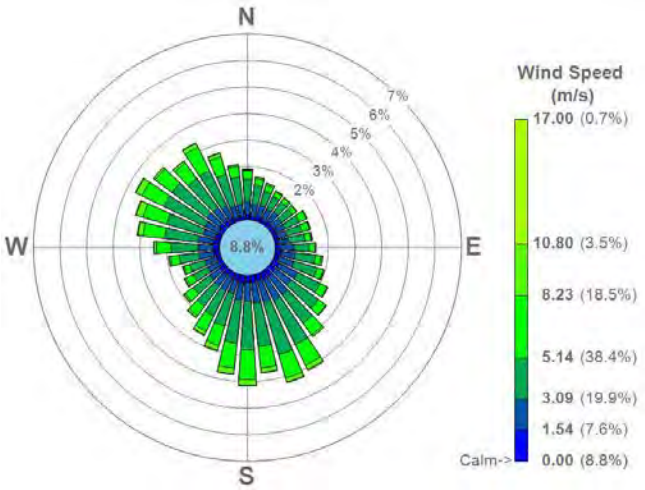
Monticello, IA
(KMXO)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	97.31%	97.31%	97.31%	97.18%	97.31%	97.31%	97.31%	26.81%
	Q2	96.66%	96.66%	96.66%	96.57%	96.61%	96.66%	96.66%	20.88%
	Q3	94.29%	94.29%	94.29%	94.25%	94.25%	94.25%	94.25%	31.48%
	Q4	97.87%	97.87%	97.87%	97.78%	97.83%	97.87%	97.87%	31.43%
2011	Q1	93.24%	93.24%	93.24%	93.10%	93.19%	93.24%	93.24%	21.06%
	Q2	98.03%	98.03%	97.99%	97.99%	98.03%	98.03%	98.03%	15.48%
	Q3	74.23%	74.23%	74.18%	72.78%	72.33%	74.18%	74.18%	30.62%
	Q4	98.96%	98.96%	98.96%	95.65%	98.96%	98.96%	98.96%	35.64%
2012	Q1	99.08%	99.08%	99.04%	82.10%	99.08%	99.08%	99.08%	25.32%
	Q2	100.00%	100.00%	100.00%	88.28%	100.00%	100.00%	100.00%	19.83%
	Q3	99.46%	99.46%	99.41%	99.37%	99.46%	99.46%	99.46%	42.48%
	Q4	99.41%	99.41%	99.41%	99.14%	99.41%	99.41%	99.41%	34.24%
2013	Q1	99.26%	99.26%	99.26%	99.21%	99.26%	99.26%	99.26%	17.04%
	Q2	72.39%	72.39%	72.39%	72.16%	72.39%	70.74%	72.39%	7.78%
	Q3	99.68%	99.68%	87.86%	86.37%	82.43%	83.92%	87.23%	25.45%
	Q4	99.18%	99.18%	97.10%	91.53%	96.88%	95.88%	96.69%	19.16%
2014	Q1	99.81%	99.81%	97.18%	95.37%	96.99%	96.48%	96.99%	14.44%
	Q2	99.82%	99.82%	99.82%	99.73%	99.82%	96.61%	99.82%	14.42%
	Q3	98.82%	98.82%	98.82%	98.10%	98.82%	92.80%	98.01%	34.42%
	Q4	99.82%	99.82%	99.82%	99.68%	99.82%	98.14%	99.37%	17.16%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Mount Pleasant, IA
(KMPZ)



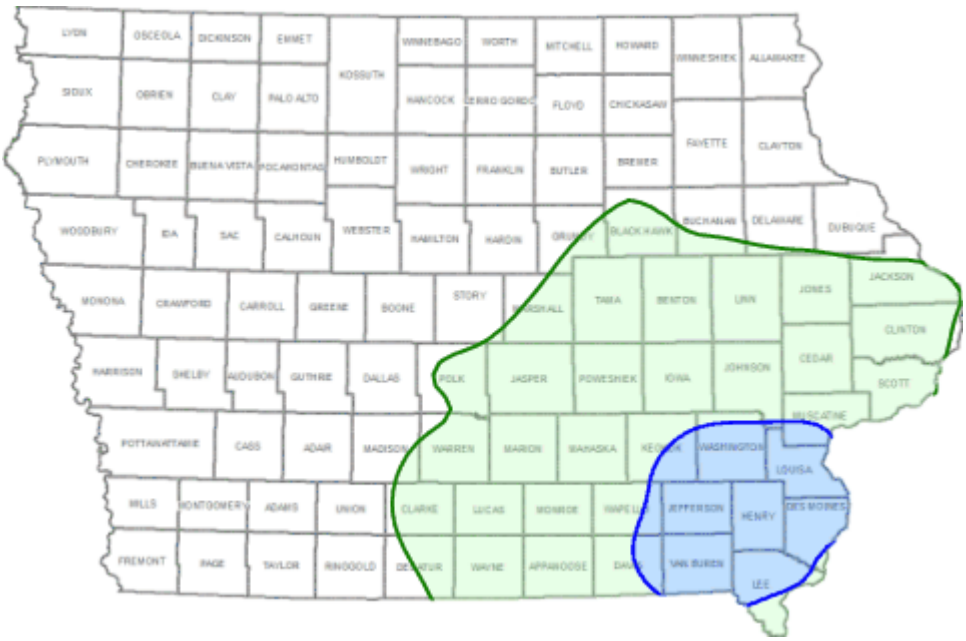
Station Info

WBAN:	NA
WMO:	720309
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	40.9452 N, 91.5122 W
UTM (NAD83, Z15):	625231.85, 4533739.44
Elevation:	221.3 m
Confidence:	Medium

Wind Correlation



Station	Correlation
KAWG	0.936
KFFL	0.934
KMUT	0.910
KFSW	0.906
KMQB	0.892
KBRL	0.891
KOOA	0.887
KOTM	0.883
KTVK	0.883
KGBG	0.875
KEOK	0.872
KUIN	0.871
KOXV	0.869
KIOW	0.857
KCID	0.855
KCNC	0.854
KDVN	0.852
KVTI	0.849
KGGI	0.847
KI75	0.846

Terrain-Wind Index (Range = 0.00110364)

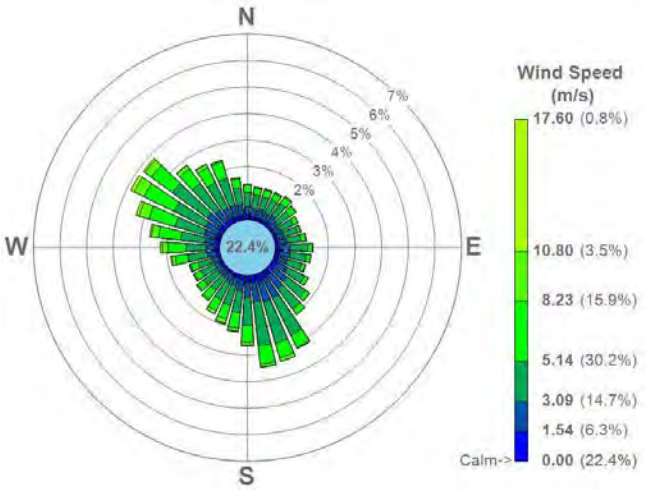
Mount Pleasant, IA
(KMPZ)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	96.76%	96.76%	96.76%	96.67%	96.76%	96.76%	96.76%	9.21%
	Q2	81.73%	81.73%	81.73%	81.68%	81.73%	81.73%	81.73%	6.14%
	Q3	94.47%	94.47%	94.47%	94.47%	94.47%	94.47%	94.47%	14.45%
	Q4	98.96%	98.96%	98.96%	98.78%	98.96%	98.96%	98.96%	11.78%
2011	Q1	96.30%	96.30%	96.30%	96.16%	96.30%	96.30%	96.30%	6.99%
	Q2	95.19%	95.19%	95.19%	73.35%	95.19%	86.45%	86.45%	4.72%
	Q3	99.32%	99.32%	99.32%	99.28%	99.32%	99.32%	99.32%	13.81%
	Q4	99.86%	99.86%	99.86%	99.86%	99.86%	99.86%	99.86%	5.16%
2012	Q1	99.68%	99.68%	99.68%	99.63%	99.68%	99.68%	99.68%	5.49%
	Q2	99.91%	99.91%	99.91%	99.86%	99.91%	99.91%	99.91%	8.47%
	Q3	99.64%	99.64%	99.64%	99.64%	99.64%	99.64%	99.64%	16.35%
	Q4	99.41%	99.41%	99.41%	99.41%	99.41%	99.41%	99.41%	6.34%
2013	Q1	99.21%	99.21%	99.21%	99.21%	99.21%	99.21%	99.21%	5.32%
	Q2	99.63%	99.63%	99.59%	99.54%	99.63%	99.63%	99.63%	8.42%
	Q3	99.50%	99.50%	99.50%	99.50%	99.50%	99.50%	99.50%	11.59%
	Q4	99.55%	99.55%	99.55%	99.50%	99.55%	99.55%	99.55%	4.35%
2014	Q1	97.64%	97.64%	97.36%	97.27%	97.36%	97.36%	97.36%	4.26%
	Q2	99.91%	99.91%	99.91%	99.91%	99.86%	99.91%	99.91%	6.14%
	Q3	99.23%	99.23%	99.23%	99.14%	99.18%	99.23%	99.23%	17.07%
	Q4	99.77%	99.77%	99.77%	99.77%	99.77%	99.77%	99.77%	8.97%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Muscatine, IA
(KMUT)



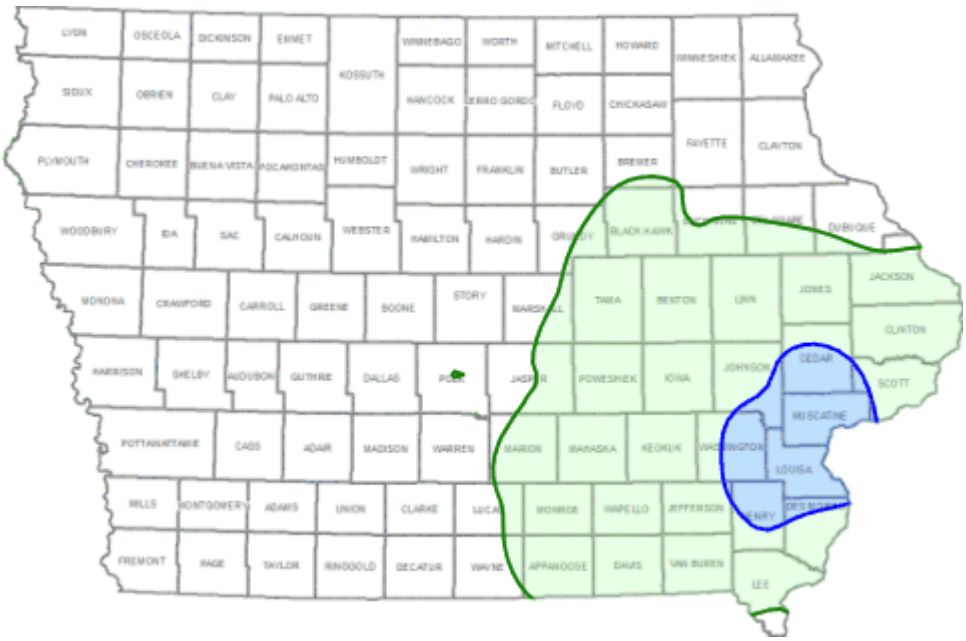
Station Info

WBAN:	NA
WMO:	725487
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	41.3670 N, 91.1406 W
UTM (NAD83, Z15):	655511.28, 4581166.81
Elevation:	165.2 m
Confidence:	Medium

Wind Correlation



Station	Correlation
KMPZ	0.910
KAWG	0.909
KCID	0.890
KIOW	0.889
KFFL	0.879
KGBG	0.878
KMQB	0.875
KOOA	0.863
KDVN	0.861
KVTI	0.860
KMXO	0.856
KCWI	0.849
KFSW	0.849
KGGI	0.836
KMLI	0.836
KOTM	0.831
KTVK	0.829
KSFY	0.826
KBRL	0.818
KOXV	0.816

Terrain-Wind Index (Range = 0.001295115)

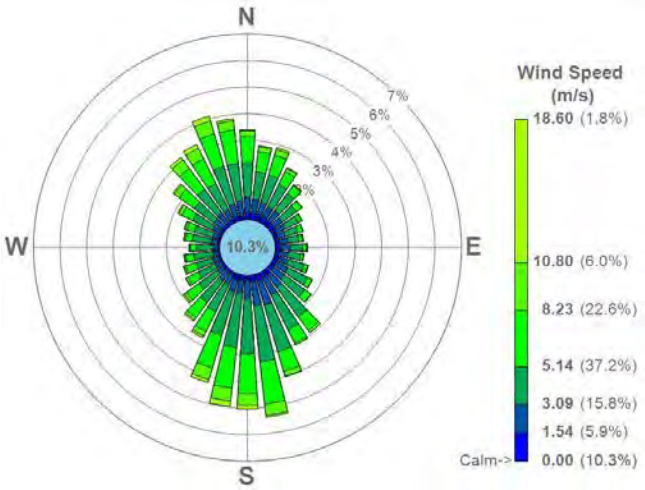
Muscatine, IA
(KMUT)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	95.23%	95.23%	95.23%	95.05%	95.23%	95.23%	95.23%	17.36%
	Q2	88.28%	88.28%	88.23%	88.23%	88.28%	88.28%	88.28%	19.69%
	Q3	86.73%	86.73%	86.73%	86.68%	86.73%	86.73%	86.73%	30.30%
	Q4	97.24%	97.24%	97.24%	97.19%	97.24%	97.24%	97.24%	24.59%
2011	Q1	92.82%	92.82%	92.82%	92.82%	92.82%	92.82%	92.82%	13.52%
	Q2	98.95%	98.95%	98.95%	98.90%	96.34%	96.34%	96.34%	18.45%
	Q3	99.91%	99.91%	99.91%	98.73%	99.91%	99.91%	99.91%	36.10%
	Q4	99.37%	99.37%	99.37%	99.32%	99.37%	99.28%	99.28%	25.00%
2012	Q1	99.50%	99.50%	99.50%	99.45%	99.50%	97.25%	97.25%	17.86%
	Q2	99.86%	99.86%	99.86%	99.86%	99.86%	95.60%	95.60%	22.39%
	Q3	98.69%	98.69%	98.69%	98.69%	98.69%	98.69%	98.69%	45.47%
	Q4	99.59%	99.59%	99.59%	95.43%	99.59%	99.59%	99.59%	27.04%
2013	Q1	99.58%	99.58%	99.58%	99.49%	99.58%	99.58%	99.58%	17.96%
	Q2	99.50%	99.50%	99.50%	94.00%	99.50%	99.50%	99.50%	17.26%
	Q3	53.99%	53.99%	53.99%	0.59%	53.99%	53.99%	53.99%	23.91%
	Q4	95.56%	95.56%	95.56%	95.29%	95.56%	94.75%	95.56%	14.90%
2014	Q1	99.63%	99.63%	99.63%	99.49%	99.63%	98.84%	99.63%	12.31%
	Q2	99.31%	99.31%	99.31%	98.99%	99.31%	96.89%	99.31%	15.57%
	Q3	99.41%	99.41%	90.22%	89.63%	90.22%	87.32%	90.13%	29.71%
	Q4	99.77%	99.77%	99.77%	99.59%	99.77%	98.82%	99.73%	18.30%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Nebraska City, NE
(KAFK)



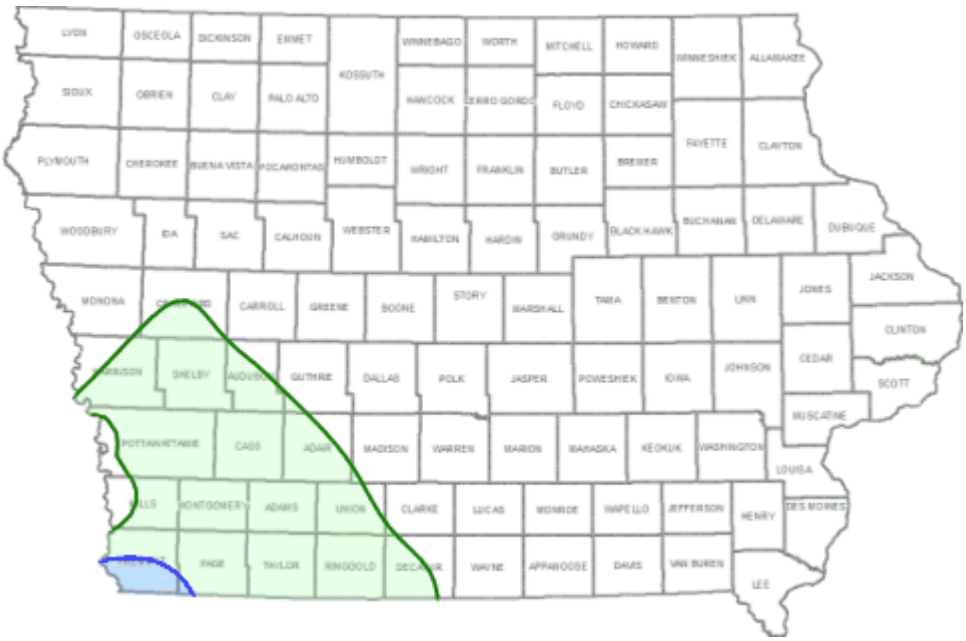
Station Info

WBAN:	04993
WMO:	725541
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	40.6065 N, 95.8635 W
UTM (NAD83, Z15):	257733.12, 4499018.38
Elevation:	352.3 m
Confidence:	Medium

Wind Correlation



Station	Correlation
KSDA	0.889
KRDK	0.887
KSTJ	0.862
KHNR	0.858
KCBF	0.856
KAIO	0.853
KICL	0.853
KLWD	0.827
KCSQ	0.823
KBTA	0.821
KDNS	0.815
KADU	0.810
KCKP	0.773
KLRJ	0.771
KCNC	0.767
KDSM	0.756
KI75	0.754
KTQE	0.746
KFOD	0.740
KORC	0.729

Terrain-Wind Index (Range = 0.000985206)

Nebraska City, NE

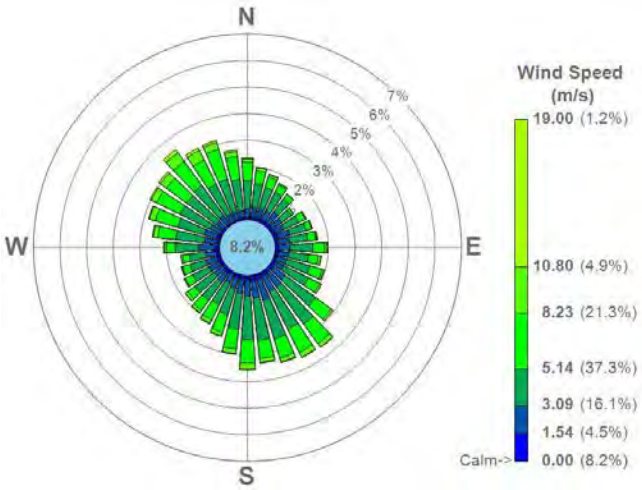
(KAFK)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	99.35%	99.35%	99.35%	99.07%	96.30%	99.35%	99.35%	7.27%
	Q2	99.91%	99.91%	99.91%	99.86%	99.91%	99.91%	99.91%	6.82%
	Q3	99.68%	99.68%	99.68%	99.68%	99.68%	99.68%	99.68%	9.96%
	Q4	99.86%	99.86%	99.86%	99.82%	98.87%	99.86%	99.86%	5.62%
2011	Q1	99.91%	99.91%	99.91%	99.91%	99.91%	99.91%	99.91%	3.33%
	Q2	98.35%	98.35%	98.35%	98.26%	98.35%	98.35%	98.35%	3.75%
	Q3	99.86%	99.86%	99.86%	99.41%	99.86%	99.86%	99.86%	12.86%
	Q4	99.59%	99.59%	99.59%	99.59%	99.59%	99.59%	99.59%	5.12%
2012	Q1	99.18%	99.18%	99.18%	99.08%	99.13%	99.18%	99.18%	6.23%
	Q2	99.91%	99.91%	99.91%	99.77%	99.91%	99.91%	99.91%	4.35%
	Q3	99.05%	99.05%	99.05%	99.05%	99.05%	99.05%	99.05%	16.98%
	Q4	99.32%	99.32%	98.19%	98.14%	98.23%	98.23%	98.23%	31.79%
2013	Q1	99.44%	99.44%	99.44%	99.31%	99.44%	99.44%	99.44%	38.01%
	Q2	98.95%	98.95%	98.95%	98.90%	98.95%	98.95%	98.95%	7.05%
	Q3	99.41%	99.41%	99.41%	99.14%	99.41%	99.41%	99.41%	12.55%
	Q4	99.41%	99.41%	99.41%	99.37%	99.41%	99.41%	99.41%	6.02%
2014	Q1	98.61%	98.61%	98.61%	98.56%	98.61%	98.61%	98.61%	5.46%
	Q2	99.91%	99.91%	99.91%	99.91%	99.91%	99.91%	99.91%	6.32%
	Q3	99.50%	99.50%	99.50%	95.20%	99.50%	99.50%	99.50%	11.46%
	Q4	99.82%	99.82%	99.82%	99.59%	99.77%	99.82%	99.82%	5.62%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Newton, IA
(KTNU)



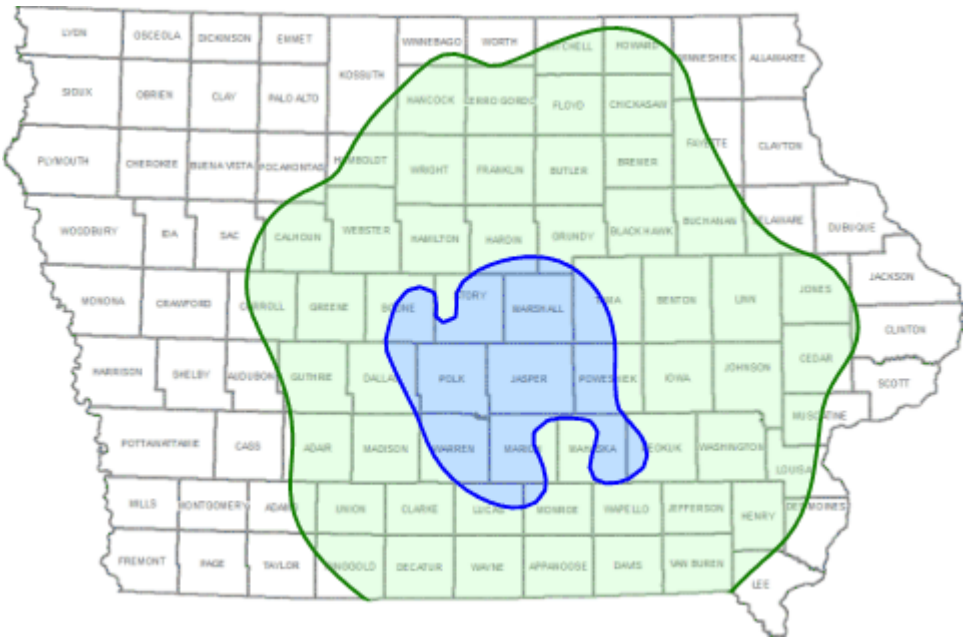
Station Info

WBAN:	NA
WMO:	725464
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	41.6701 N, 93.0191 W
UTM (NAD83, Z15):	498410.04, 4613149.04
Elevation:	286.8 m
Confidence:	Medium

Wind Correlation



Station	Correlation
KIKV	0.928
KOXV	0.922
KMIW	0.918
KGGI	0.915
KOOA	0.915
KDSM	0.910
KBNW	0.910
KCNC	0.895
KAMW	0.894
KPRO	0.893
KOTM	0.885
KI75	0.884
KTVK	0.881
KFFL	0.879
KIFA	0.879
KEBS	0.873
KAWG	0.869
KPEA	0.867
KALO	0.858
KIIB	0.855

Terrain-Wind Index (Range = 0.001171711)

Newton, IA

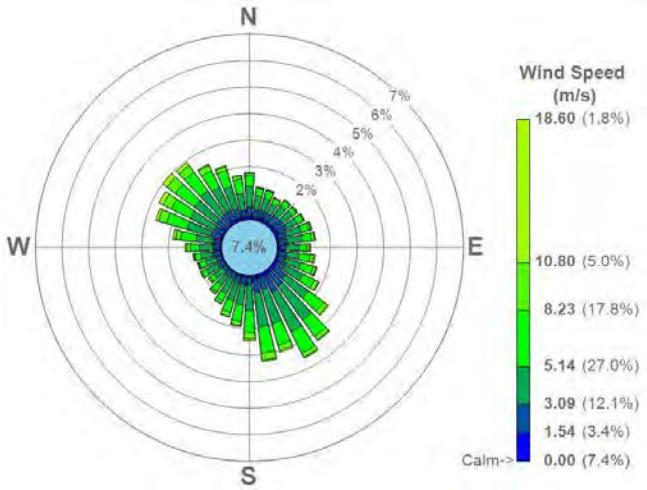
(KTNU)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	73.43%	73.43%	73.43%	73.43%	73.43%	73.43%	73.43%	6.11%
	Q2	92.99%	92.99%	92.99%	92.99%	92.99%	92.99%	92.99%	8.42%
	Q3	97.28%	97.28%	97.28%	97.24%	97.28%	97.28%	97.28%	15.53%
	Q4	98.73%	98.73%	98.73%	98.69%	94.84%	98.73%	98.73%	10.37%
2011	Q1	96.20%	96.20%	96.20%	96.16%	96.20%	96.20%	96.20%	5.65%
	Q2	92.99%	92.99%	92.99%	92.95%	92.99%	92.95%	92.95%	5.45%
	Q3	99.73%	99.73%	99.73%	99.68%	99.73%	99.73%	99.73%	14.99%
	Q4	95.29%	95.29%	95.29%	95.29%	95.29%	95.29%	95.29%	13.41%
2012	Q1	96.93%	96.93%	96.93%	96.93%	96.93%	96.93%	96.93%	22.34%
	Q2	68.18%	68.18%	68.09%	67.99%	68.09%	66.90%	68.09%	4.58%
	Q3	96.65%	96.65%	96.65%	96.20%	96.65%	92.16%	96.65%	10.42%
	Q4	91.12%	91.12%	91.08%	90.99%	91.08%	90.04%	90.99%	4.35%
2013	Q1	99.44%	99.44%	99.44%	99.07%	99.44%	98.80%	99.44%	4.12%
	Q2	98.63%	98.63%	98.63%	98.40%	98.63%	96.98%	98.44%	4.12%
	Q3	99.68%	99.68%	99.68%	99.41%	99.68%	96.60%	99.68%	8.29%
	Q4	99.59%	99.59%	99.59%	99.55%	99.59%	99.18%	99.59%	2.81%
2014	Q1	96.57%	96.57%	96.57%	91.81%	96.57%	95.83%	96.57%	2.31%
	Q2	99.91%	99.91%	99.91%	99.50%	99.86%	97.85%	99.86%	5.59%
	Q3	99.41%	99.41%	99.41%	99.05%	86.28%	95.11%	99.41%	12.14%
	Q4	99.77%	99.77%	99.77%	99.64%	99.77%	99.28%	99.77%	3.49%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Oelwein, IA
(KOLZ)



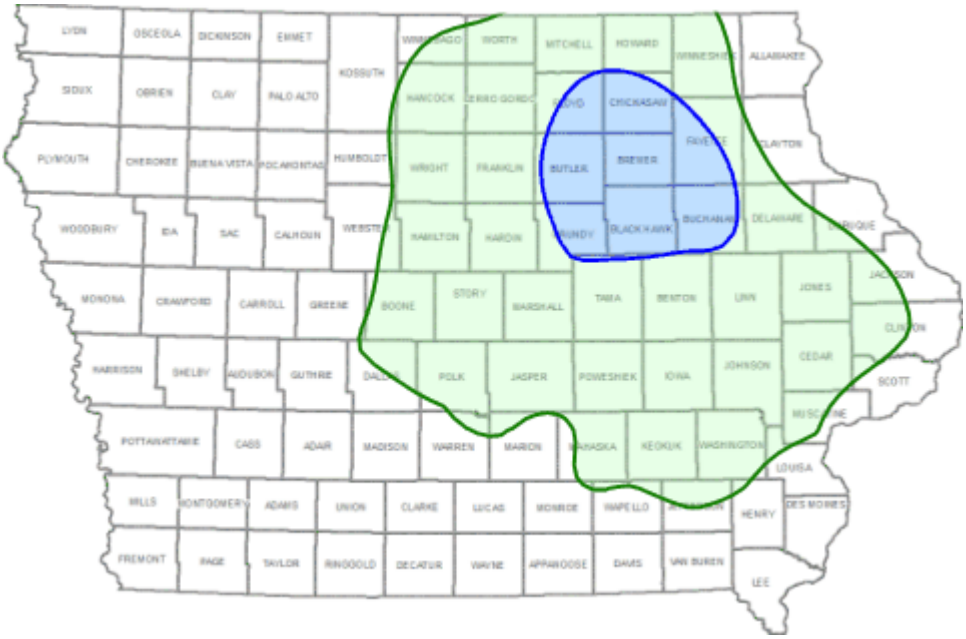
Station Info

WBAN:	NA
WMO:	725488
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	42.6832 N, 91.9762 W
UTM (NAD83, Z15):	583876.05, 4726143.74
Elevation:	328.6 m
Confidence:	Medium

Wind Correlation



Station	Correlation
KIIB	0.933
KCCY	0.927
KALO	0.917
KMIW	0.895
KVTI	0.882
KIFA	0.879
KMXO	0.877
KCID	0.854
KTNU	0.849
KCAV	0.845
KEBS	0.845
KOOA	0.839
KGGI	0.839
KMCW	0.837
KFXY	0.833
KRST	0.818
KBNW	0.817
KIKV	0.817
KIOW	0.816
KAMW	0.816

Terrain-Wind Index (Range = 0.002070941)

Oelwein, IA

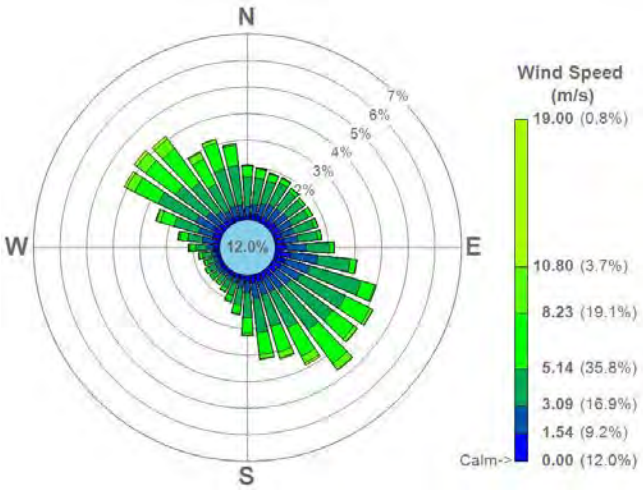
(KOLZ)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	99.31%	99.31%	99.07%	98.75%	99.31%	99.31%	99.31%	12.13%
	Q2	85.39%	85.39%	85.39%	85.35%	85.39%	85.39%	85.39%	7.46%
	Q3	0.14%	0.14%	0.14%	0.14%	0.14%	0.14%	0.14%	0.00%
	Q4	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2011	Q1	70.97%	70.97%	70.97%	51.06%	70.97%	70.97%	70.97%	3.06%
	Q2	99.63%	99.63%	99.63%	93.04%	99.63%	99.63%	99.63%	5.45%
	Q3	54.26%	54.26%	54.26%	53.17%	54.26%	54.26%	54.26%	14.13%
	Q4	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2012	Q1	31.41%	31.41%	31.41%	31.27%	31.41%	31.41%	31.41%	1.79%
	Q2	93.91%	93.91%	93.91%	88.64%	93.91%	93.91%	93.91%	6.91%
	Q3	98.23%	98.23%	98.23%	84.01%	98.23%	98.23%	98.23%	21.29%
	Q4	99.32%	99.32%	99.32%	98.55%	99.32%	99.32%	99.32%	6.48%
2013	Q1	99.68%	99.68%	99.68%	99.49%	99.68%	99.68%	99.68%	23.94%
	Q2	79.95%	79.95%	79.95%	43.82%	79.95%	79.62%	79.95%	10.58%
	Q3	99.64%	99.64%	93.12%	92.84%	93.12%	89.67%	93.12%	9.96%
	Q4	99.18%	99.18%	99.18%	99.05%	99.18%	98.46%	99.18%	4.08%
2014	Q1	99.77%	99.77%	99.77%	99.54%	99.77%	99.63%	99.77%	3.61%
	Q2	99.91%	99.91%	99.91%	99.59%	80.04%	98.03%	99.91%	3.11%
	Q3	99.50%	99.50%	99.50%	99.23%	99.50%	97.51%	99.50%	9.92%
	Q4	99.82%	99.82%	99.82%	99.82%	99.82%	99.37%	99.82%	4.35%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Offutt, NE
(KOFF)



Station Info

WBAN:	14949
WMO:	725540
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	41.1149 N, 95.8985 W
UTM (NAD83, Z15):	256641.31, 4555561.76
Elevation:	294.1 m
Confidence:	High

Wind Correlation

Station	Correlation
KPMV	0.829
KMLE	0.801
KSUX	0.796
KBTA	0.796
KCBF	0.789
KSDA	0.752
KTQE	0.750
KPRO	0.749
KDSM	0.723
KRDK	0.722
KYKN	0.717
KDNS	0.707
KIKV	0.707
KAMW	0.706
KOMA	0.706
KBNW	0.704
KCSQ	0.695
KPEA	0.694
KTNU	0.692
KFXY	0.691

Terrain-Wind Index (Range = 0.002157131)

Offutt, NE

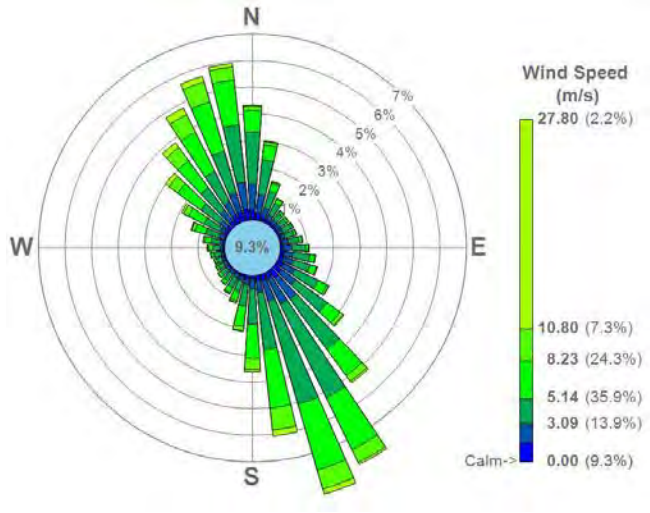
(KOFF)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	99.58%	99.58%	98.52%	99.54%	99.54%	99.03%	99.58%	13.61%
	Q2	99.68%	99.68%	98.58%	99.59%	99.68%	97.25%	99.40%	14.06%
	Q3	99.55%	99.55%	95.15%	99.50%	99.55%	96.56%	99.46%	14.81%
	Q4	99.41%	99.41%	98.14%	99.37%	99.41%	97.83%	99.28%	14.81%
2011	Q1	99.91%	99.91%	94.21%	99.86%	99.86%	98.84%	99.86%	10.56%
	Q2	99.91%	99.91%	98.86%	99.91%	99.91%	98.72%	99.91%	7.65%
	Q3	99.95%	95.88%	97.87%	99.23%	99.91%	96.29%	99.91%	17.21%
	Q4	99.77%	99.77%	98.37%	99.77%	99.73%	98.64%	99.77%	18.16%
2012	Q1	99.68%	99.68%	96.61%	99.63%	99.68%	98.44%	99.59%	18.32%
	Q2	99.73%	99.73%	98.53%	99.73%	99.73%	97.39%	99.73%	11.58%
	Q3	99.82%	99.82%	98.69%	99.77%	99.82%	95.65%	99.82%	21.51%
	Q4	99.64%	99.64%	97.69%	99.64%	99.64%	98.41%	99.64%	16.35%
2013	Q1	99.86%	99.86%	98.80%	99.86%	99.86%	98.80%	99.86%	10.74%
	Q2	99.68%	99.68%	93.86%	99.63%	99.63%	96.20%	99.63%	4.90%
	Q3	99.55%	99.55%	91.89%	99.55%	99.55%	95.43%	99.46%	6.93%
	Q4	99.23%	99.23%	96.69%	99.18%	99.14%	96.97%	99.23%	7.52%
2014	Q1	99.86%	99.86%	98.10%	99.86%	99.86%	98.19%	99.86%	6.39%
	Q2	99.82%	99.82%	97.66%	99.82%	99.82%	96.79%	99.82%	9.02%
	Q3	99.09%	99.09%	91.80%	99.09%	99.09%	94.70%	99.09%	8.24%
	Q4	100.00%	100.00%	97.96%	100.00%	100.00%	97.78%	100.00%	4.30%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Omaha, NE
(KOMA)



Station Info

WBAN:	14942
WMO:	725500
Anemometer Height:	10.0 m
1-Min Availability Date:	1/1/2000
IFW Installation Date:	9/13/2006

Location Info

Lat-Long:	41.3119 N, 95.9018 W
UTM (NAD83, Z15):	257094.73, 4577444.41
Elevation:	298.7 m
Confidence:	High

Wind Correlation

Station	Correlation
KBTA	0.892
KTQE	0.876
KPMV	0.868
KCBF	0.841
KSDA	0.821
KRDK	0.744
KMLE	0.737
KEBS	0.725
KDNS	0.718
KCSQ	0.714
KPRO	0.711
KHNR	0.710
KAFK	0.708
KOFF	0.706
KICL	0.704
KSUX	0.701
KSHL	0.698
KAMW	0.697
KCAV	0.693
KSPW	0.688

Terrain-Wind Index (Range = 0.004326513)

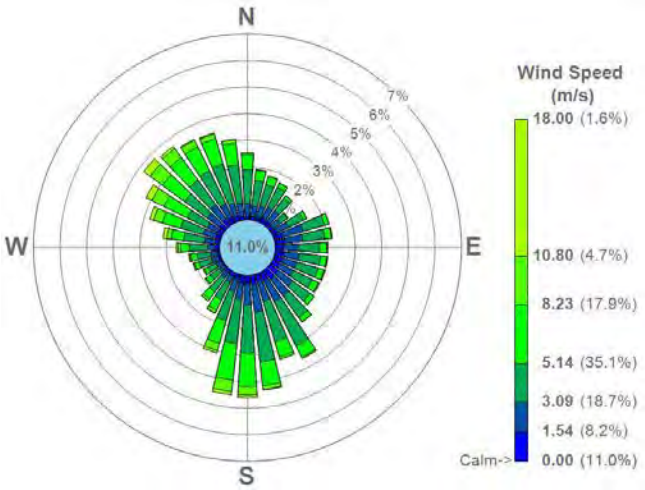
Omaha, NE
(KOMA)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	100.00%	100.00%	99.68%	100.00%	100.00%	99.81%	100.00%	8.52%
	Q2	100.00%	100.00%	100.00%	100.00%	100.00%	98.21%	100.00%	11.31%
	Q3	100.00%	100.00%	100.00%	100.00%	100.00%	98.78%	100.00%	11.87%
	Q4	100.00%	100.00%	99.64%	100.00%	100.00%	99.28%	100.00%	12.00%
2011	Q1	100.00%	100.00%	99.72%	99.63%	100.00%	99.03%	100.00%	6.90%
	Q2	100.00%	100.00%	100.00%	100.00%	100.00%	98.90%	100.00%	7.05%
	Q3	100.00%	100.00%	100.00%	99.68%	100.00%	96.11%	100.00%	12.09%
	Q4	100.00%	100.00%	100.00%	100.00%	100.00%	99.64%	100.00%	10.05%
2012	Q1	100.00%	100.00%	100.00%	100.00%	100.00%	99.36%	100.00%	11.13%
	Q2	100.00%	100.00%	100.00%	100.00%	100.00%	98.44%	100.00%	8.52%
	Q3	100.00%	100.00%	100.00%	100.00%	100.00%	98.01%	100.00%	12.14%
	Q4	100.00%	100.00%	100.00%	100.00%	100.00%	99.55%	100.00%	12.27%
2013	Q1	100.00%	100.00%	100.00%	99.81%	100.00%	99.44%	100.00%	6.94%
	Q2	100.00%	100.00%	100.00%	100.00%	100.00%	98.40%	100.00%	8.97%
	Q3	100.00%	100.00%	99.77%	98.19%	100.00%	97.83%	100.00%	9.47%
	Q4	100.00%	100.00%	99.91%	96.29%	99.95%	99.05%	99.95%	9.15%
2014	Q1	100.00%	100.00%	100.00%	97.22%	100.00%	98.94%	100.00%	5.69%
	Q2	100.00%	100.00%	99.91%	98.63%	100.00%	98.08%	99.95%	6.14%
	Q3	100.00%	100.00%	99.95%	97.87%	100.00%	98.19%	99.95%	9.15%
	Q4	100.00%	100.00%	100.00%	97.24%	100.00%	99.14%	100.00%	5.89%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Orange City, IA
(KORC)



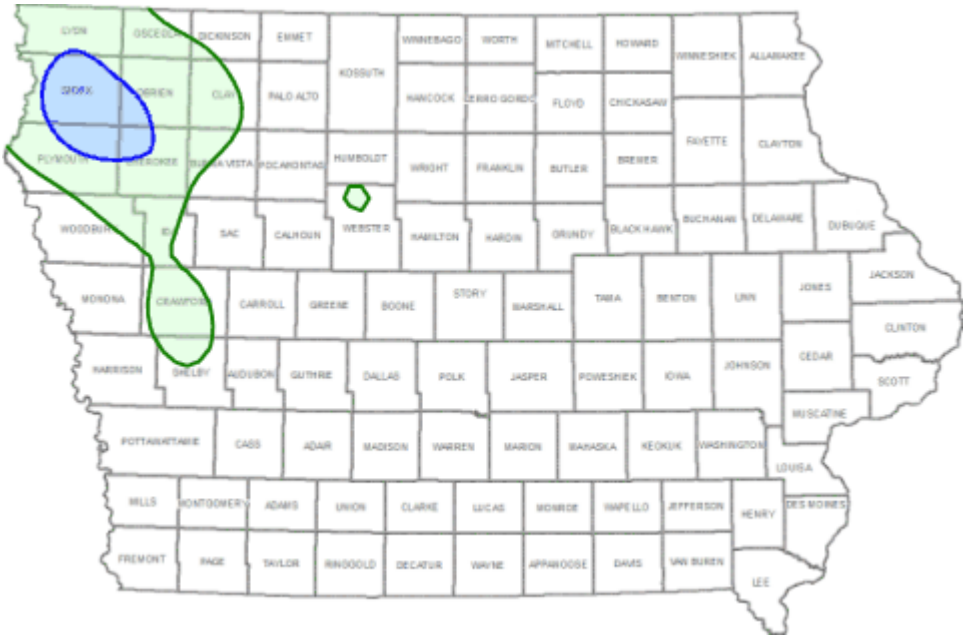
Station Info

WBAN:	NA
WMO:	725489
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	42.9895 N, 96.0606 W
UTM (NAD83, Z15):	250484.60, 4764195.20
Elevation:	432.8 m
Confidence:	Medium

Wind Correlation



Station	Correlation
KLRJ	0.899
KCKP	0.891
KLYV	0.882
KSHL	0.856
KDNS	0.823
KFOD	0.809
KSPW	0.807
KFSD	0.798
KHNR	0.793
KADU	0.788
KMJQ	0.779
KRDK	0.773
KPRO	0.769
KAXA	0.769
KBTA	0.767
KEST	0.766
KDSM	0.763
KSLB	0.762
KCBF	0.758
KEBS	0.749

Terrain-Wind Index (Range = 0.001185597)

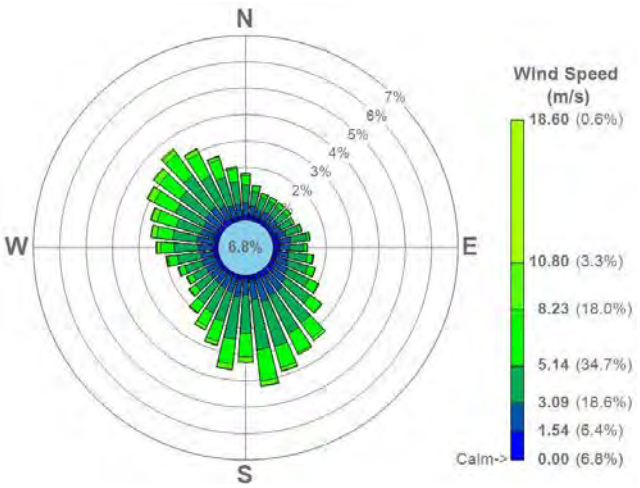
Orange City, IA
(KORC)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	89.86%	89.86%	89.72%	87.50%	89.86%	89.86%	89.86%	11.81%
	Q2	87.09%	87.09%	87.00%	87.09%	87.09%	87.09%	87.09%	9.84%
	Q3	90.35%	90.35%	90.35%	89.81%	90.35%	90.35%	90.35%	14.81%
	Q4	98.87%	98.87%	98.78%	98.87%	98.87%	98.87%	98.87%	10.91%
2011	Q1	96.25%	96.25%	96.25%	95.79%	96.25%	96.25%	96.25%	6.16%
	Q2	99.77%	99.77%	99.73%	99.68%	99.77%	99.77%	99.77%	6.32%
	Q3	89.72%	89.72%	89.72%	89.63%	89.72%	89.72%	89.72%	15.85%
	Q4	99.46%	99.46%	99.37%	99.37%	99.46%	99.46%	99.46%	9.83%
2012	Q1	99.22%	99.22%	99.13%	99.13%	99.22%	99.22%	99.22%	10.26%
	Q2	99.82%	99.82%	99.77%	99.73%	99.82%	99.82%	99.82%	9.20%
	Q3	99.41%	99.41%	99.41%	99.32%	99.41%	99.41%	99.41%	16.58%
	Q4	99.18%	99.18%	99.00%	99.05%	99.18%	99.18%	99.18%	10.10%
2013	Q1	99.63%	99.63%	99.58%	99.54%	99.58%	99.63%	99.63%	7.78%
	Q2	98.67%	98.67%	98.58%	98.67%	98.67%	98.67%	98.67%	9.43%
	Q3	99.14%	99.14%	99.14%	99.09%	99.14%	99.14%	99.14%	17.26%
	Q4	99.55%	99.55%	99.46%	99.55%	99.55%	99.55%	99.55%	9.92%
2014	Q1	99.21%	99.21%	99.07%	99.17%	99.17%	99.21%	99.21%	6.76%
	Q2	99.95%	99.95%	99.91%	99.91%	99.95%	99.95%	99.95%	8.65%
	Q3	99.37%	99.37%	99.37%	99.32%	99.37%	99.37%	99.37%	18.61%
	Q4	99.77%	99.77%	99.59%	99.77%	99.77%	99.77%	99.77%	9.74%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Osceola, IA
(KI75)



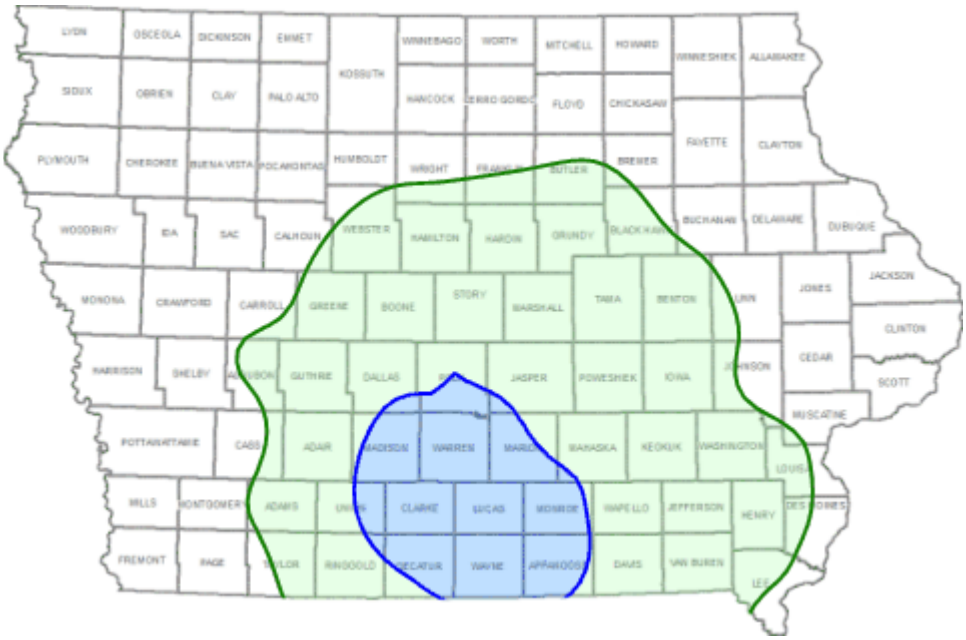
Station Info

WBAN:	NA
WMO:	720701
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	41.0472 N, 93.6876 W
UTM (NAD83, Z15):	442212.87, 4544224.44
Elevation:	339.2 m
Confidence:	Medium

Wind Correlation



Station	Correlation
KCNC	0.955
KOXV	0.930
KTVK	0.918
KIKV	0.902
KDSM	0.902
KOOA	0.894
KLWD	0.886
KTNU	0.884
KPRO	0.882
KCSQ	0.877
KOTM	0.873
KGGI	0.871
KPEA	0.871
KFFL	0.863
KBNW	0.852
KMPZ	0.846
KAWG	0.842
KMIW	0.840
KEBS	0.838
KAMW	0.832

Terrain-Wind Index (Range = 0.000830611)

Osceola, IA

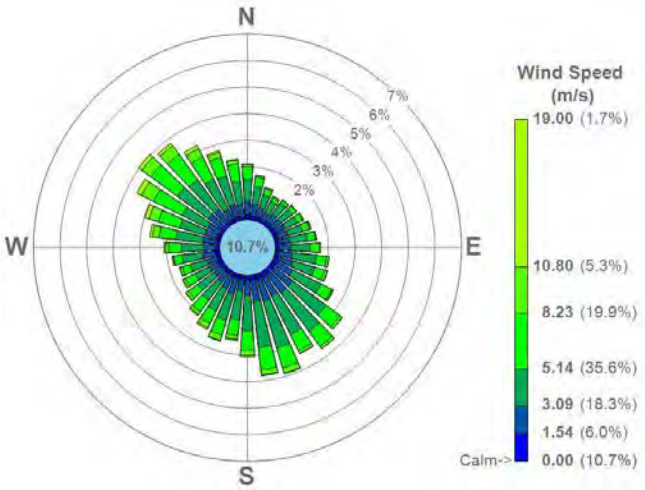
(KI75)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	42.78%	42.78%	42.69%	41.67%	42.45%	42.69%	42.69%	2.78%
	Q2	91.16%	91.16%	91.16%	90.84%	91.16%	91.16%	91.16%	7.14%
	Q3	96.69%	96.69%	96.69%	96.15%	96.69%	96.69%	96.69%	13.18%
	Q4	94.29%	94.29%	94.29%	93.80%	93.16%	94.29%	94.29%	5.93%
2011	Q1	96.67%	96.67%	96.67%	96.62%	95.42%	96.67%	96.67%	4.81%
	Q2	99.18%	99.18%	99.13%	92.58%	99.18%	99.18%	99.18%	4.81%
	Q3	96.24%	96.24%	96.24%	83.65%	96.24%	96.24%	96.24%	15.99%
	Q4	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	4.57%
2012	Q1	98.67%	98.67%	98.67%	98.67%	97.89%	98.67%	98.67%	5.22%
	Q2	99.95%	99.95%	99.95%	99.95%	99.08%	99.95%	99.95%	5.95%
	Q3	74.59%	74.59%	74.59%	74.37%	74.50%	74.59%	74.59%	8.56%
	Q4	99.64%	99.64%	99.64%	99.50%	99.64%	99.64%	99.64%	8.92%
2013	Q1	99.63%	99.63%	99.63%	99.58%	99.63%	99.63%	99.63%	4.12%
	Q2	99.59%	99.59%	99.59%	99.27%	99.59%	99.59%	99.59%	5.54%
	Q3	99.59%	99.59%	99.59%	99.46%	99.59%	99.59%	99.59%	12.23%
	Q4	99.59%	99.59%	99.59%	99.59%	99.59%	99.59%	99.59%	3.76%
2014	Q1	85.23%	85.23%	85.23%	85.23%	85.23%	85.23%	85.23%	2.45%
	Q2	74.50%	74.50%	74.50%	74.50%	74.50%	74.50%	74.50%	4.76%
	Q3	31.52%	31.52%	31.52%	31.48%	31.52%	31.52%	31.52%	4.53%
	Q4	80.57%	80.57%	80.57%	79.48%	80.57%	80.57%	80.57%	10.87%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Oskaloosa, IA
(KOOA)



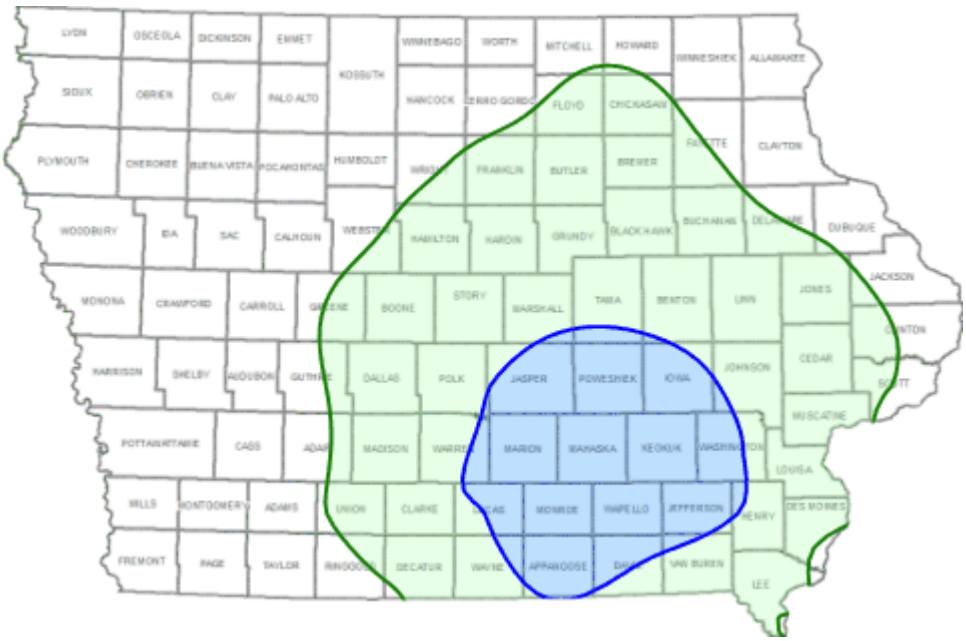
Station Info

WBAN:	54919
WMO:	720351
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	41.2273 N, 92.4919 W
UTM (NAD83, Z15):	542584.92, 456114.46
Elevation:	255.7 m
Confidence:	Medium

Wind Correlation



Station	Correlation
KTVK	0.925
KOTM	0.924
KOXV	0.924
KFFL	0.923
KGGI	0.917
KTNU	0.915
KPEA	0.912
KAWG	0.902
KCNC	0.900
KI75	0.894
KIKV	0.891
KMPZ	0.887
KMIW	0.884
KCID	0.881
KIOW	0.878
KDSM	0.876
KMUT	0.863
KIIB	0.861
KIFA	0.857
KVTI	0.857

Terrain-Wind Index (Range = 0.001045721)

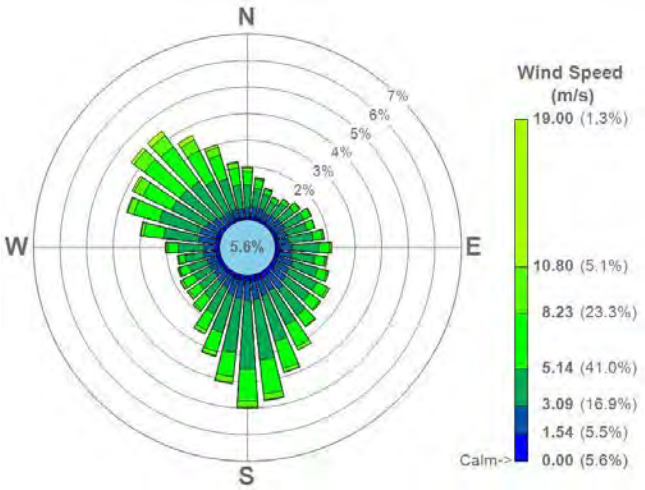
Oskaloosa, IA
(KOOA)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	92.73%	92.73%	92.73%	40.79%	92.73%	92.73%	92.73%	11.11%
	Q2	93.82%	93.82%	93.82%	93.77%	93.82%	93.82%	93.82%	9.29%
	Q3	94.07%	94.07%	94.07%	93.75%	94.07%	94.07%	94.07%	16.71%
	Q4	89.04%	89.04%	89.04%	89.04%	89.04%	89.04%	89.04%	8.61%
2011	Q1	93.80%	93.80%	93.80%	93.56%	93.80%	93.80%	93.80%	7.36%
	Q2	98.44%	98.44%	98.44%	98.44%	98.44%	98.44%	98.44%	8.33%
	Q3	99.59%	99.59%	99.59%	98.51%	99.59%	99.59%	99.59%	24.41%
	Q4	99.64%	99.64%	99.64%	99.59%	99.64%	99.64%	99.64%	13.86%
2012	Q1	99.40%	99.40%	99.40%	99.31%	99.40%	99.40%	99.40%	8.15%
	Q2	98.53%	98.53%	98.53%	98.26%	98.53%	98.53%	98.53%	7.92%
	Q3	98.69%	98.69%	98.69%	98.69%	98.69%	98.69%	98.69%	21.74%
	Q4	96.83%	96.83%	96.83%	96.83%	96.83%	96.83%	96.83%	6.48%
2013	Q1	99.26%	99.26%	99.26%	99.03%	99.26%	99.26%	99.26%	4.21%
	Q2	99.22%	99.22%	99.22%	99.18%	99.22%	99.22%	99.22%	9.80%
	Q3	99.09%	99.09%	99.09%	99.00%	99.09%	99.09%	99.09%	14.63%
	Q4	99.68%	99.68%	99.68%	99.64%	99.68%	99.68%	99.68%	9.78%
2014	Q1	99.58%	99.58%	99.58%	99.44%	99.58%	99.58%	99.58%	7.82%
	Q2	98.40%	98.40%	98.40%	98.35%	97.89%	98.40%	98.40%	5.27%
	Q3	99.46%	99.46%	99.46%	99.46%	99.46%	99.46%	99.46%	13.22%
	Q4	99.77%	99.77%	99.77%	99.77%	99.77%	99.77%	99.77%	5.16%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Ottumwa, IA
(KOTM)



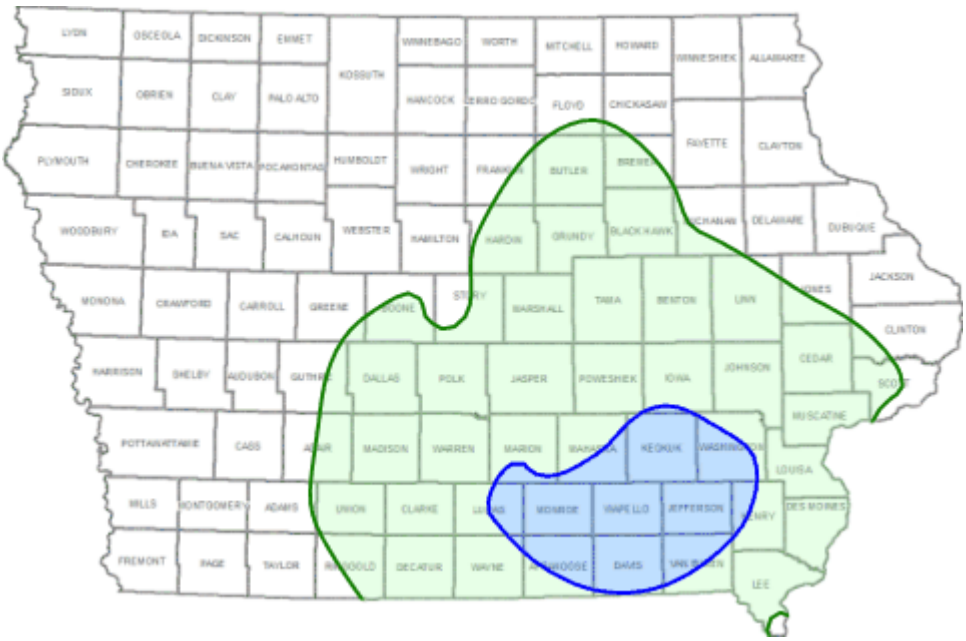
Station Info

WBAN:	14950
WMO:	725465
Anemometer Height:	10.0 m
1-Min Availability Date:	3/9/2005
IFW Installation Date:	6/13/2007

Location Info

Lat-Long:	41.1008 N, 92.4445 W
UTM (NAD83, Z15):	546647.25, 4550095.57
Elevation:	254.8 m
Confidence:	Medium

Wind Correlation



Station	Correlation
KFFL	0.945
KOOA	0.924
KAWG	0.918
KCNC	0.899
KOXV	0.899
KTVK	0.898
KTNU	0.885
KMPZ	0.883
KGGI	0.873
KI75	0.873
KCID	0.867
KDSM	0.860
KIKV	0.857
KFSW	0.848
KVTI	0.846
KMIW	0.837
KPEA	0.833
KALO	0.832
KMUT	0.831
KMQB	0.829

Terrain-Wind Index (Range = 0.001183092)

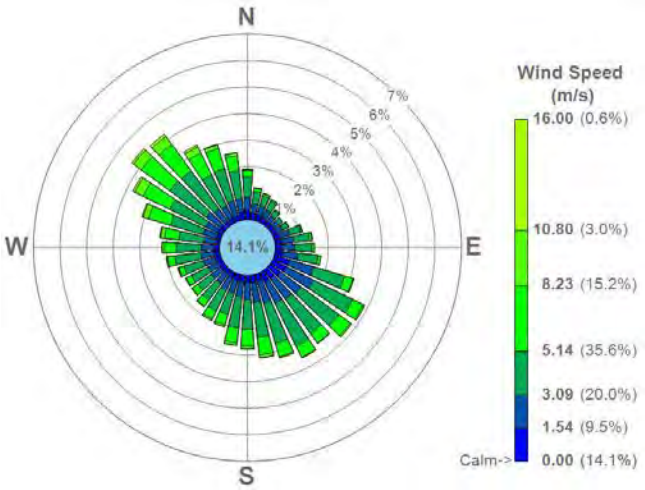
Ottumwa, IA
(KOTM)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	99.68%	99.68%	99.68%	98.94%	99.68%	99.17%	99.35%	4.54%
	Q2	99.95%	99.95%	99.95%	99.86%	99.91%	98.49%	99.91%	6.78%
	Q3	99.95%	99.95%	99.82%	99.86%	99.91%	98.51%	99.91%	9.42%
	Q4	100.00%	100.00%	99.77%	99.86%	100.00%	99.37%	99.91%	4.89%
2011	Q1	100.00%	100.00%	100.00%	98.89%	100.00%	99.54%	99.95%	3.15%
	Q2	100.00%	100.00%	100.00%	99.54%	99.54%	99.13%	99.82%	4.81%
	Q3	99.95%	99.95%	99.91%	96.51%	99.95%	98.10%	99.91%	9.83%
	Q4	100.00%	100.00%	99.95%	99.91%	100.00%	99.46%	99.77%	4.85%
2012	Q1	100.00%	100.00%	100.00%	99.95%	100.00%	99.36%	99.91%	4.53%
	Q2	100.00%	100.00%	100.00%	99.91%	100.00%	98.44%	99.54%	5.86%
	Q3	100.00%	100.00%	100.00%	99.91%	100.00%	96.38%	99.95%	10.51%
	Q4	100.00%	100.00%	100.00%	99.91%	100.00%	99.09%	99.91%	4.98%
2013	Q1	100.00%	100.00%	100.00%	99.95%	100.00%	99.26%	99.95%	3.29%
	Q2	100.00%	100.00%	99.68%	99.95%	100.00%	98.81%	99.91%	4.99%
	Q3	100.00%	100.00%	99.82%	99.95%	99.95%	97.64%	99.91%	9.51%
	Q4	100.00%	100.00%	100.00%	99.86%	100.00%	99.77%	99.95%	3.40%
2014	Q1	100.00%	100.00%	100.00%	99.91%	99.21%	99.21%	99.54%	1.62%
	Q2	99.86%	99.86%	99.82%	99.73%	99.86%	98.17%	99.82%	3.21%
	Q3	99.95%	99.95%	99.95%	99.82%	99.95%	96.83%	99.64%	8.47%
	Q4	99.95%	99.95%	99.95%	99.86%	99.95%	99.46%	99.77%	2.72%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Pella, IA
(KPEA)



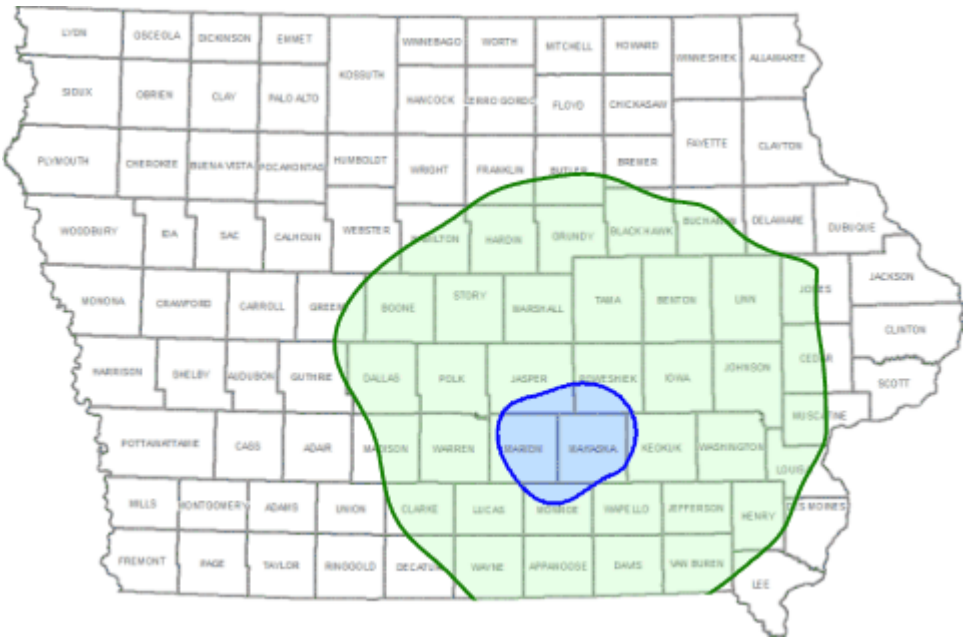
Station Info

WBAN:	NA
WMO:	720312
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	41.3989 N, 92.9431 W
UTM (NAD83, Z15):	504756.41, 4583041.85
Elevation:	264.9 m
Confidence:	Medium

Wind Correlation



Station	Correlation
KOXV	0.920
KOOA	0.912
KGGI	0.888
KIKV	0.886
KTVK	0.875
KI75	0.871
KTNU	0.867
KIOW	0.860
KCNC	0.856
KMIW	0.851
KPRO	0.849
KAMW	0.846
KBNW	0.845
KFFL	0.840
KIFA	0.833
KDSM	0.833
KOTM	0.833
KMPZ	0.831
KCID	0.822
KIIB	0.822

Terrain-Wind Index (Range = 0.00125669)

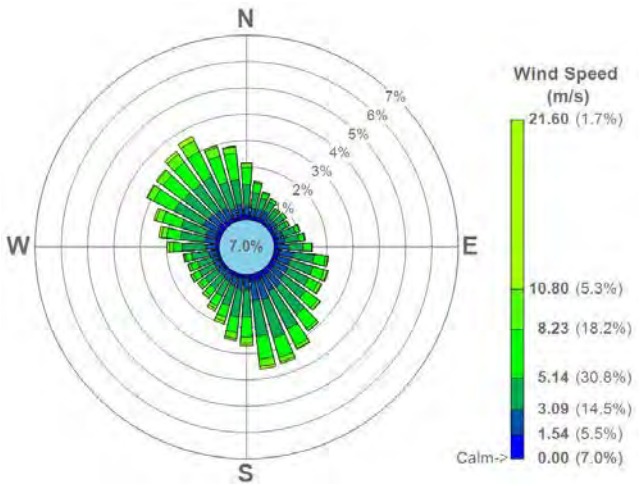
Pella, IA
(KPEA)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	96.53%	96.53%	96.53%	96.11%	96.53%	96.53%	96.53%	10.19%
	Q2	98.08%	98.08%	98.08%	97.94%	98.08%	98.08%	98.08%	14.70%
	Q3	90.40%	90.40%	90.35%	89.99%	81.61%	81.61%	81.61%	16.03%
	Q4	98.64%	98.64%	98.64%	98.60%	98.64%	98.64%	98.64%	11.28%
2011	Q1	96.20%	96.20%	96.20%	95.60%	96.20%	96.20%	96.20%	7.41%
	Q2	99.22%	99.22%	99.22%	98.90%	99.22%	99.22%	99.22%	8.97%
	Q3	98.46%	98.46%	98.46%	96.51%	98.46%	98.46%	98.46%	24.14%
	Q4	98.69%	98.69%	98.69%	98.32%	98.69%	98.69%	98.69%	8.97%
2012	Q1	99.73%	99.73%	99.73%	98.90%	99.73%	99.73%	99.73%	9.25%
	Q2	100.00%	100.00%	100.00%	99.73%	100.00%	100.00%	100.00%	10.71%
	Q3	98.14%	98.14%	98.14%	97.83%	98.14%	98.14%	98.14%	24.32%
	Q4	99.50%	99.50%	99.50%	99.32%	99.41%	99.50%	99.50%	10.46%
2013	Q1	99.63%	99.63%	99.63%	99.17%	99.63%	99.63%	99.63%	6.94%
	Q2	99.73%	99.73%	99.68%	99.45%	99.68%	99.73%	99.73%	9.07%
	Q3	99.59%	99.59%	99.59%	99.50%	99.55%	99.59%	99.59%	27.49%
	Q4	99.55%	99.55%	99.55%	99.41%	99.55%	98.96%	98.96%	15.85%
2014	Q1	99.63%	99.63%	99.63%	99.54%	99.63%	99.63%	99.63%	22.31%
	Q2	99.95%	99.95%	99.95%	99.68%	99.95%	99.95%	99.95%	11.17%
	Q3	99.37%	99.37%	99.37%	98.60%	99.37%	99.37%	99.37%	23.51%
	Q4	99.77%	99.77%	99.77%	99.37%	99.77%	99.77%	99.77%	9.56%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Perry, IA
(KPRO)



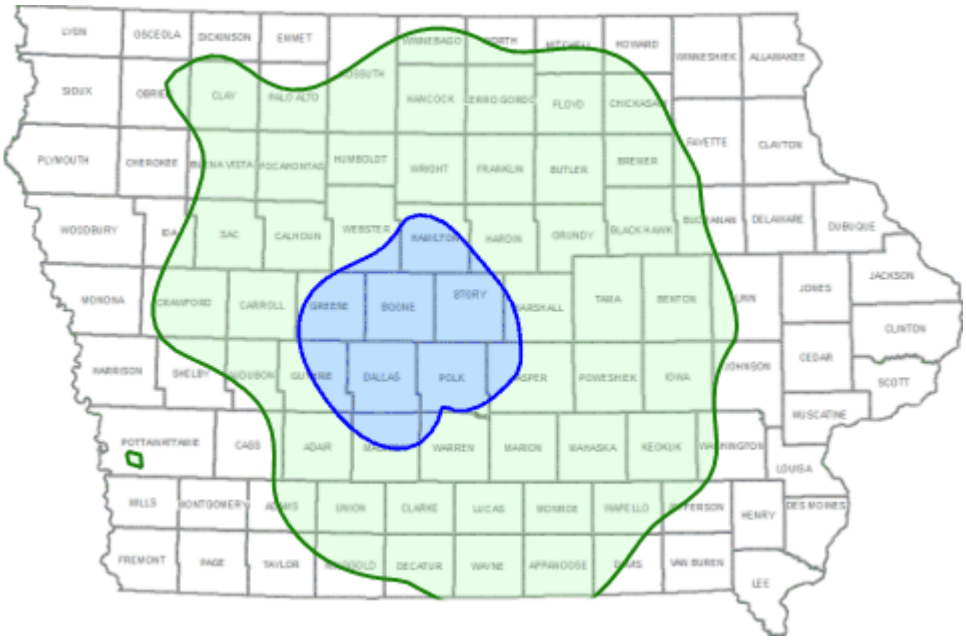
Station Info

WBAN:	NA
WMO:	720412
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	41.8289 N, 94.1604 W
UTM (NAD83, Z15):	403640.68, 4631430.27
Elevation:	308.2 m
Confidence:	Medium

Wind Correlation



Station	Correlation
KBNW	0.928
KIKV	0.928
KAMW	0.916
KEBS	0.912
KDSM	0.899
KTNU	0.893
KMIW	0.887
KI75	0.882
KIFA	0.878
KOXV	0.874
KCIN	0.872
KCNC	0.864
KCAV	0.862
KOOA	0.857
KGGI	0.856
KCSQ	0.854
KPEA	0.849
KALO	0.845
KTVK	0.844
KFXY	0.841

Terrain-Wind Index (Range = 0.001264654)

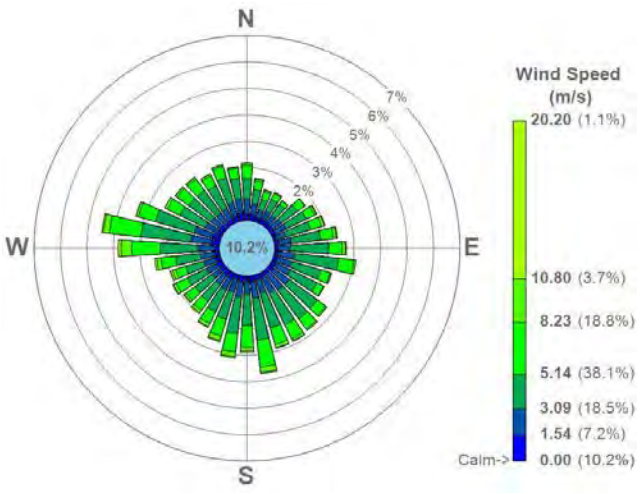
Perry, IA
(KPRO)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	92.92%	92.92%	92.92%	88.15%	92.87%	92.92%	92.92%	10.23%
	Q2	65.61%	65.61%	65.61%	65.25%	65.61%	65.61%	65.61%	3.66%
	Q3	45.11%	45.11%	45.11%	39.40%	45.11%	45.11%	45.11%	5.57%
	Q4	83.97%	83.97%	83.97%	65.90%	83.97%	83.97%	83.97%	11.23%
2011	Q1	91.62%	91.62%	91.62%	73.84%	91.62%	91.62%	91.62%	11.44%
	Q2	97.66%	97.66%	97.66%	97.62%	97.66%	94.41%	94.41%	5.36%
	Q3	89.36%	89.36%	89.36%	88.50%	89.36%	89.36%	89.36%	16.21%
	Q4	100.00%	100.00%	100.00%	99.86%	100.00%	100.00%	100.00%	5.57%
2012	Q1	98.35%	98.35%	98.35%	98.26%	98.35%	98.35%	98.35%	5.95%
	Q2	99.59%	99.59%	99.59%	97.53%	99.59%	99.59%	99.59%	5.59%
	Q3	96.97%	96.97%	96.97%	64.76%	96.97%	96.97%	96.97%	15.99%
	Q4	90.67%	90.67%	90.67%	90.53%	90.67%	90.67%	90.67%	7.70%
2013	Q1	99.58%	99.58%	99.58%	99.44%	99.54%	99.58%	99.58%	4.21%
	Q2	99.45%	99.45%	99.45%	99.45%	99.45%	99.45%	99.45%	3.53%
	Q3	99.18%	99.18%	99.18%	99.18%	99.18%	99.18%	99.18%	13.68%
	Q4	99.50%	99.50%	99.50%	99.50%	99.50%	99.50%	99.50%	4.76%
2014	Q1	91.11%	91.11%	91.11%	91.11%	91.11%	91.11%	91.11%	3.29%
	Q2	73.81%	73.81%	73.81%	73.81%	73.81%	73.81%	73.81%	3.57%
	Q3	0.05%	0.05%	0.05%	0.05%	0.05%	0.05%	0.05%	0.00%
	Q4	48.96%	48.96%	48.96%	48.96%	48.96%	48.96%	48.96%	2.17%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Platteville, WI
(KPVB)



Station Info

WBAN:	NA
WMO:	720586
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	42.683 N, 90.450 W
UTM (NAD83, Z15):	709354.59, 4729490.92
Elevation:	312.1 m
Confidence:	Medium

Wind Correlation

Station	Correlation
KCWI	0.845
KDVN	0.835
KY51	0.835
KSFY	0.831
KFEP	0.827
KMXO	0.818
KMLI	0.809
KAWG	0.772
KDBQ	0.772
KGBG	0.769
KVTI	0.766
KMUT	0.759
KIOW	0.758
KCID	0.757
KGGI	0.753
KMPZ	0.752
KIIB	0.747
KFFL	0.747
KOLZ	0.743
KDEH	0.738

Terrain-Wind Index (Range = 0.001816046)

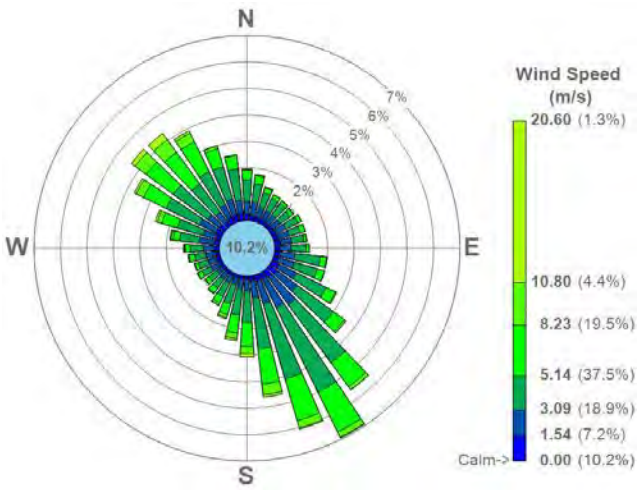
Platteville, WI
(KPVB)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	99.40%	99.40%	99.40%	99.40%	94.44%	99.40%	99.40%	10.97%
	Q2	99.91%	99.91%	99.91%	98.67%	99.91%	99.86%	99.86%	9.02%
	Q3	99.91%	99.91%	99.91%	99.68%	99.91%	99.91%	99.91%	14.09%
	Q4	99.59%	99.59%	99.59%	99.50%	98.82%	99.59%	99.59%	7.70%
2011	Q1	99.63%	99.63%	99.63%	99.44%	99.49%	99.63%	99.63%	6.85%
	Q2	99.50%	99.50%	99.50%	99.50%	99.50%	99.50%	99.50%	5.22%
	Q3	99.32%	99.32%	99.32%	98.14%	99.32%	99.32%	99.32%	18.89%
	Q4	98.55%	98.55%	98.55%	98.55%	98.19%	98.55%	98.55%	6.07%
2012	Q1	97.16%	97.16%	97.16%	97.12%	95.38%	97.16%	97.16%	5.13%
	Q2	99.18%	99.18%	99.18%	99.04%	99.18%	99.18%	99.18%	6.55%
	Q3	96.69%	96.69%	96.69%	96.51%	96.69%	96.69%	96.69%	13.59%
	Q4	95.52%	95.52%	95.52%	90.31%	95.52%	95.52%	95.52%	6.39%
2013	Q1	97.55%	97.55%	97.55%	96.62%	97.55%	97.55%	97.55%	6.02%
	Q2	99.18%	99.18%	99.18%	99.08%	99.18%	99.18%	99.18%	5.04%
	Q3	99.50%	99.50%	99.50%	99.46%	99.50%	99.50%	99.50%	12.32%
	Q4	99.00%	99.00%	99.00%	98.96%	99.00%	99.00%	99.00%	7.84%
2014	Q1	99.49%	99.49%	99.49%	99.49%	99.49%	99.49%	99.49%	6.62%
	Q2	99.68%	99.68%	99.68%	99.59%	99.68%	99.68%	99.68%	5.72%
	Q3	88.50%	88.50%	88.50%	88.50%	88.50%	88.50%	88.50%	23.05%
	Q4	85.55%	85.55%	85.55%	85.28%	85.55%	85.46%	85.46%	26.90%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Plattsmouth, NE
(KPMV)



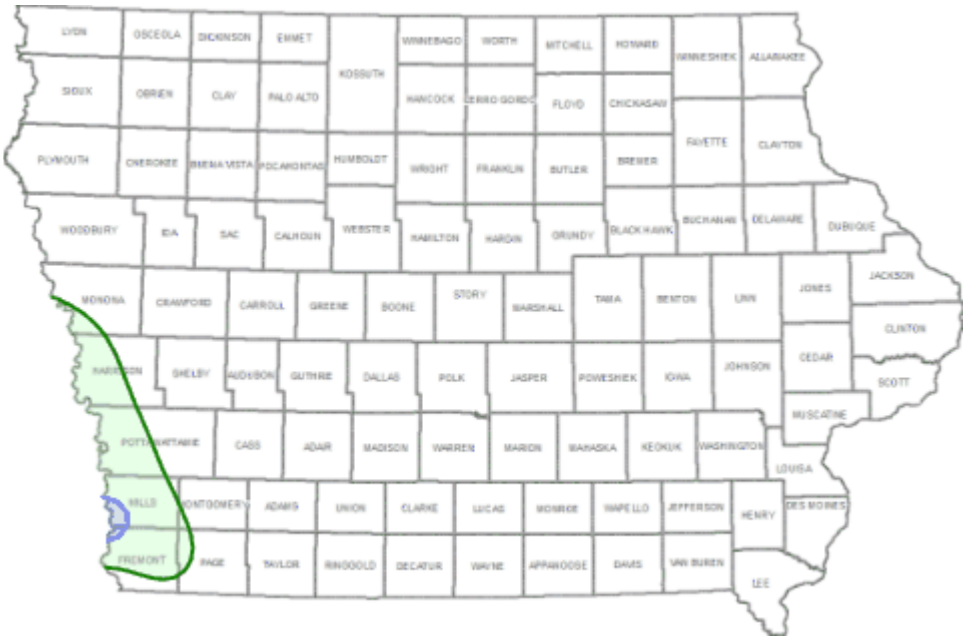
Station Info

WBAN:	NA
WMO:	722291
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	40.948 N, 95.917 W
UTM (NAD83, Z15):	254435.79, 4537128.24
Elevation:	367.3 m
Confidence:	Medium

Wind Correlation



Station	Correlation
KOMA	0.868
KBTA	0.866
KCBF	0.860
KMLE	0.855
KSDA	0.842
KTQE	0.834
KOFF	0.829
KPRO	0.784
KCSQ	0.773
KRDK	0.768
KSUX	0.763
KI75	0.761
KDSM	0.761
KEBS	0.755
KAMW	0.751
KDNS	0.747
KIKV	0.745
KCNC	0.730
KMIW	0.728
KAFK	0.727

Terrain-Wind Index (Range = 0.001432996)

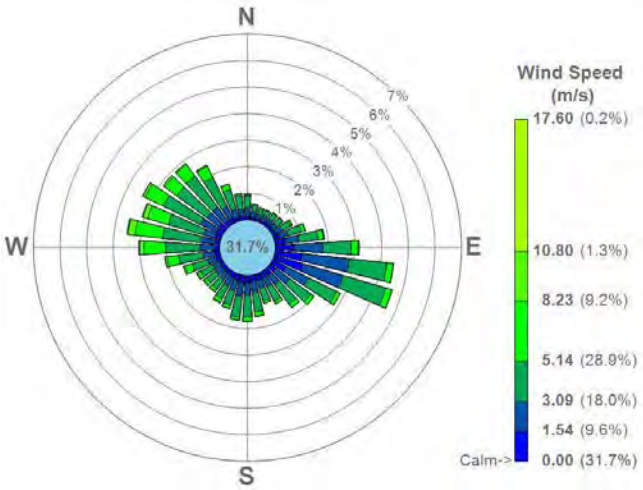
Plattsmouth, NE
(KPMV)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	99.35%	99.35%	99.35%	99.17%	97.82%	99.35%	99.35%	9.17%
	Q2	98.35%	98.35%	98.35%	98.12%	98.35%	98.35%	98.35%	8.20%
	Q3	99.77%	99.77%	99.77%	99.55%	99.73%	99.77%	99.77%	12.82%
	Q4	99.68%	99.68%	99.68%	99.64%	99.68%	99.68%	99.68%	6.20%
2011	Q1	99.17%	99.17%	99.17%	99.03%	99.17%	99.17%	99.17%	4.12%
	Q2	98.21%	98.21%	98.21%	96.57%	98.21%	98.21%	98.21%	3.89%
	Q3	99.32%	99.32%	99.32%	99.14%	99.32%	99.32%	99.32%	16.53%
	Q4	99.55%	99.55%	99.55%	99.50%	99.55%	99.55%	99.55%	17.66%
2012	Q1	97.71%	97.71%	97.71%	97.57%	97.71%	97.71%	97.71%	9.57%
	Q2	99.77%	99.77%	99.77%	99.77%	99.77%	99.77%	99.77%	9.62%
	Q3	98.91%	98.91%	98.91%	98.87%	98.91%	98.91%	98.91%	18.70%
	Q4	98.41%	98.41%	98.41%	98.28%	98.41%	98.41%	98.41%	9.87%
2013	Q1	99.54%	99.54%	99.54%	99.54%	99.54%	99.54%	99.54%	5.88%
	Q2	99.04%	99.04%	99.04%	98.81%	99.04%	99.04%	99.04%	9.02%
	Q3	99.32%	99.32%	99.32%	99.32%	99.32%	99.32%	99.32%	16.53%
	Q4	98.91%	98.91%	98.91%	98.82%	98.87%	98.91%	98.91%	7.97%
2014	Q1	99.72%	99.72%	99.72%	99.68%	99.72%	99.72%	99.72%	5.56%
	Q2	99.73%	99.73%	99.73%	99.68%	99.73%	99.73%	99.73%	8.38%
	Q3	97.24%	97.24%	97.24%	96.42%	97.24%	97.24%	97.24%	16.85%
	Q4	99.68%	99.68%	99.68%	97.78%	99.68%	99.68%	99.68%	6.48%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Prairie Du Chien, WI
(KPDC)



Station Info

WBAN:	04963
WMO:	726444
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	43.0193 N, 91.1211 W
UTM (NAD83, Z15):	653100.05, 4764670.99
Elevation:	201.2 m
Confidence:	Medium

Wind Correlation

Station	Correlation
KPVB	0.731
KY51	0.712
KMLI	0.689
KIOW	0.675
KMXO	0.661
KGBG	0.656
KPEA	0.654
KSQI	0.652
KGGI	0.647
KCID	0.629
KCWI	0.625
KDVN	0.625
KIIB	0.617
KDEH	0.611
KMUT	0.611
KSFY	0.607
KLSE	0.606
KVTI	0.605
KALO	0.598
KAWG	0.592

Terrain-Wind Index (Range = 0.004099795)

Prairie Du Chien, WI

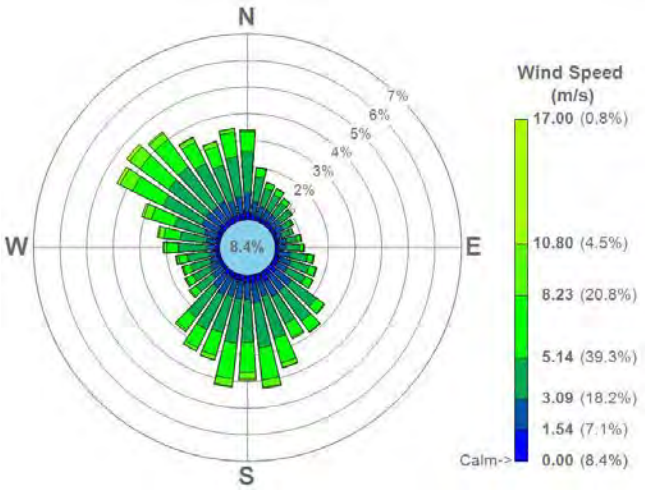
(KPDC)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	99.49%	99.49%	99.49%	99.49%	99.49%	99.49%	99.49%	51.53%
	Q2	99.95%	99.95%	99.95%	99.95%	99.95%	99.95%	99.95%	34.07%
	Q3	99.77%	99.77%	99.77%	99.77%	99.77%	99.77%	99.77%	33.97%
	Q4	99.86%	99.86%	99.86%	99.86%	99.86%	99.86%	99.86%	36.50%
2011	Q1	98.43%	98.43%	98.43%	98.33%	98.38%	98.43%	98.43%	31.48%
	Q2	99.45%	99.45%	99.45%	99.40%	99.40%	99.45%	99.45%	21.70%
	Q3	99.14%	99.14%	99.14%	99.14%	99.09%	99.14%	99.14%	41.44%
	Q4	99.59%	99.59%	99.59%	99.46%	99.41%	99.59%	99.59%	33.74%
2012	Q1	99.31%	99.31%	99.31%	99.27%	99.31%	99.31%	99.31%	36.58%
	Q2	97.30%	97.30%	97.30%	97.25%	97.30%	97.30%	97.30%	20.60%
	Q3	97.55%	97.55%	97.55%	97.28%	97.55%	97.55%	97.55%	38.50%
	Q4	99.14%	99.14%	99.14%	99.14%	99.14%	91.53%	91.53%	31.25%
2013	Q1	99.26%	99.26%	99.26%	99.26%	99.26%	99.21%	99.21%	26.90%
	Q2	99.08%	99.08%	99.08%	99.08%	99.08%	99.08%	99.08%	22.02%
	Q3	99.77%	99.77%	99.77%	99.73%	99.77%	99.77%	99.77%	32.65%
	Q4	99.46%	99.46%	99.46%	99.46%	99.46%	99.46%	99.46%	30.62%
2014	Q1	99.72%	99.72%	99.72%	99.72%	99.72%	99.72%	99.72%	24.17%
	Q2	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	22.57%
	Q3	99.41%	99.41%	99.41%	99.37%	99.32%	99.41%	99.41%	35.14%
	Q4	99.82%	99.82%	99.82%	99.77%	99.82%	99.82%	99.82%	29.35%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Preston, MN
(KFKA)



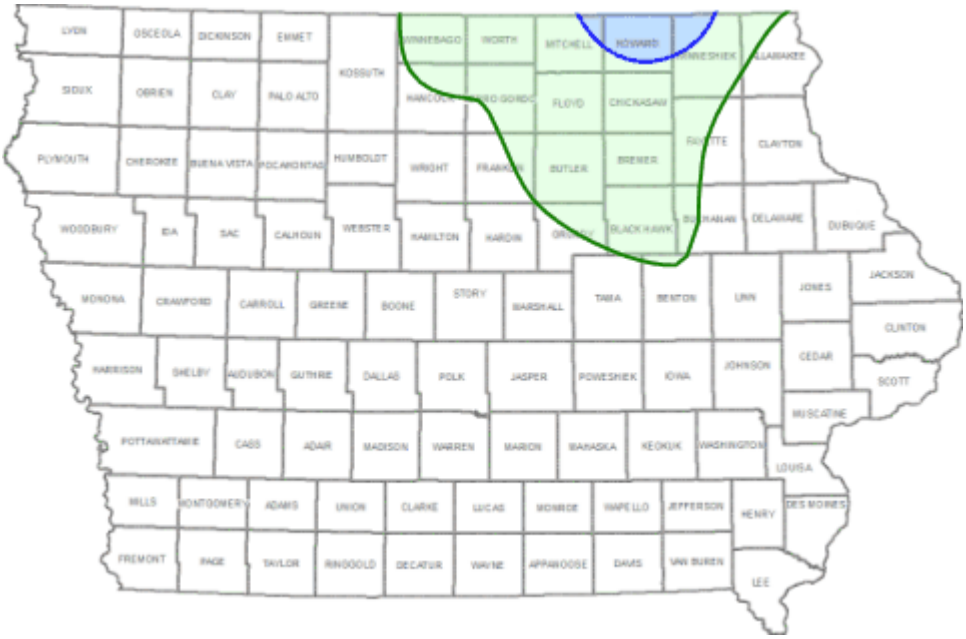
Station Info

WBAN:	04927
WMO:	720283
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	43.6770 N, 92.1743 W
UTM (NAD83, Z15):	566557.95, 4836330.17
Elevation:	388.6 m
Confidence:	High

Wind Correlation



Station	Correlation
KRST	0.899
KAUM	0.886
KCCY	0.860
KDEH	0.860
KAEL	0.835
KY51	0.829
KALO	0.819
KFXY	0.818
KOLZ	0.808
KMCW	0.804
KIIB	0.802
KVTI	0.799
KLSE	0.796
KDBQ	0.792
KIFA	0.789
KFOD	0.786
KEBS	0.785
KAXA	0.782
KIKV	0.779
KMIW	0.776

Terrain-Wind Index (Range = 0.000957968)

Preston, MN

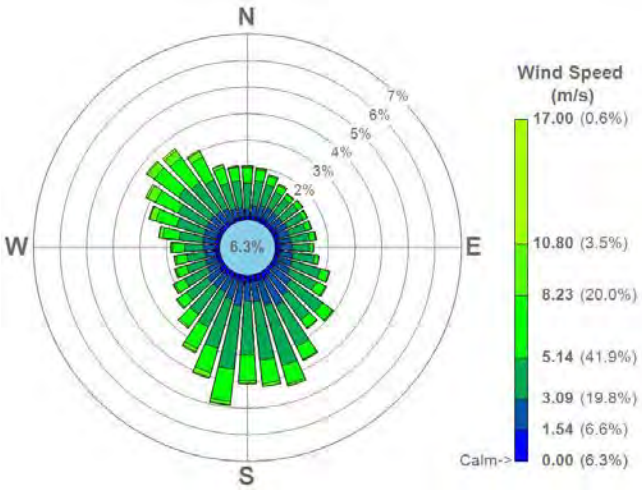
(KFKA)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	99.81%	99.81%	99.81%	99.54%	99.81%	99.81%	99.81%	8.70%
	Q2	97.76%	97.76%	97.76%	97.66%	97.76%	97.76%	97.76%	9.25%
	Q3	97.10%	97.10%	97.10%	96.97%	97.10%	97.10%	97.10%	11.37%
	Q4	99.55%	99.55%	99.55%	99.37%	99.55%	99.55%	99.55%	7.61%
2011	Q1	98.61%	98.61%	98.61%	98.29%	98.61%	98.61%	98.61%	6.06%
	Q2	99.50%	99.50%	99.50%	99.31%	99.50%	99.50%	99.50%	5.82%
	Q3	96.65%	96.65%	96.65%	96.60%	96.65%	96.65%	96.65%	15.49%
	Q4	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	6.16%
2012	Q1	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	5.95%
	Q2	96.66%	96.66%	96.66%	96.61%	96.66%	96.66%	96.66%	5.27%
	Q3	97.24%	97.24%	97.24%	97.24%	97.24%	97.24%	97.24%	14.09%
	Q4	99.91%	99.91%	99.91%	99.64%	99.91%	99.91%	99.91%	7.25%
2013	Q1	99.72%	99.72%	99.72%	99.17%	99.72%	99.72%	99.72%	5.56%
	Q2	99.77%	99.77%	99.77%	99.73%	99.77%	99.77%	99.77%	6.46%
	Q3	99.91%	99.91%	99.91%	99.91%	99.91%	99.91%	99.91%	10.37%
	Q4	98.91%	98.91%	98.91%	98.46%	98.78%	98.91%	98.91%	4.89%
2014	Q1	99.77%	99.77%	99.77%	99.54%	99.77%	99.77%	99.77%	2.73%
	Q2	99.82%	99.82%	99.82%	99.77%	99.82%	99.82%	99.82%	5.95%
	Q3	99.82%	99.82%	99.82%	99.68%	99.82%	99.82%	99.82%	19.25%
	Q4	99.91%	99.91%	99.91%	99.64%	99.91%	99.91%	99.91%	8.74%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Quincy, IL
(KUIN)



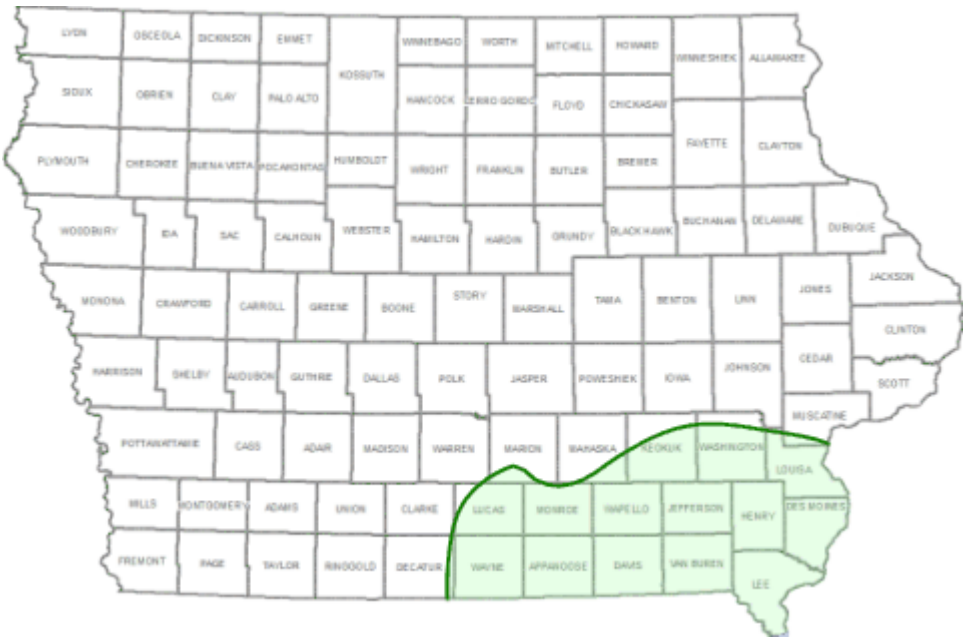
Station Info

WBAN:	93989
WMO:	724396
Anemometer Height:	7.9 m
1-Min Availability Date:	3/9/2005
IFW Installation Date:	9/20/2006

Location Info

Lat-Long:	39.9387 N, 91.1980 W
UTM (NAD83, Z15):	653960.15, 4422508.10
Elevation:	231.0 m
Confidence:	Medium

Wind Correlation



Station	Correlation
KFSW	0.889
KMQB	0.884
KEOK	0.883
KBRL	0.875
KMPZ	0.871
KIRK	0.866
KFFL	0.843
KAWG	0.840
KTVK	0.832
KOTM	0.827
KGBG	0.813
KCNC	0.810
KOOA	0.809
KMUT	0.798
KOXV	0.797
KI75	0.789
KLWD	0.779
KDVN	0.775
KTNU	0.760
KCID	0.758

Terrain-Wind Index (Range = 0.00135397)

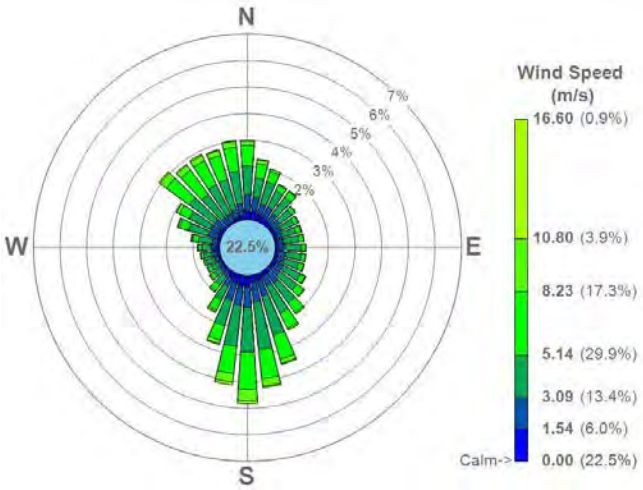
Quincy, IL
(KUIN)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	100.00%	100.00%	100.00%	100.00%	99.54%	99.44%	99.91%	6.90%
	Q2	100.00%	100.00%	99.91%	99.63%	100.00%	98.76%	99.91%	8.01%
	Q3	100.00%	100.00%	100.00%	100.00%	100.00%	98.55%	99.95%	11.91%
	Q4	100.00%	100.00%	99.77%	99.86%	100.00%	99.28%	99.86%	6.52%
2011	Q1	99.95%	99.95%	99.95%	99.81%	99.95%	99.49%	99.86%	4.49%
	Q2	99.82%	99.82%	99.77%	99.59%	99.77%	98.90%	99.82%	3.66%
	Q3	100.00%	100.00%	99.95%	99.86%	99.95%	97.83%	99.95%	10.64%
	Q4	100.00%	100.00%	99.95%	100.00%	100.00%	99.37%	99.95%	5.16%
2012	Q1	100.00%	100.00%	100.00%	100.00%	100.00%	99.54%	99.95%	4.44%
	Q2	100.00%	100.00%	100.00%	100.00%	100.00%	98.17%	100.00%	4.40%
	Q3	100.00%	100.00%	100.00%	99.95%	100.00%	96.88%	99.59%	9.69%
	Q4	100.00%	100.00%	100.00%	99.86%	99.86%	99.50%	99.86%	4.44%
2013	Q1	100.00%	100.00%	100.00%	99.86%	99.91%	99.44%	99.86%	5.51%
	Q2	100.00%	100.00%	99.95%	99.77%	99.91%	97.80%	99.36%	4.90%
	Q3	99.86%	99.86%	99.68%	99.77%	99.86%	97.24%	99.68%	9.10%
	Q4	99.91%	99.91%	99.91%	99.91%	99.91%	99.41%	99.86%	3.44%
2014	Q1	100.00%	100.00%	100.00%	100.00%	98.80%	99.54%	99.91%	3.70%
	Q2	100.00%	100.00%	100.00%	100.00%	99.95%	98.35%	99.73%	4.44%
	Q3	98.87%	98.87%	98.87%	98.87%	98.87%	96.88%	98.60%	9.47%
	Q4	100.00%	100.00%	100.00%	99.91%	100.00%	99.41%	99.86%	4.26%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Red Oak, IA
(KRDK)



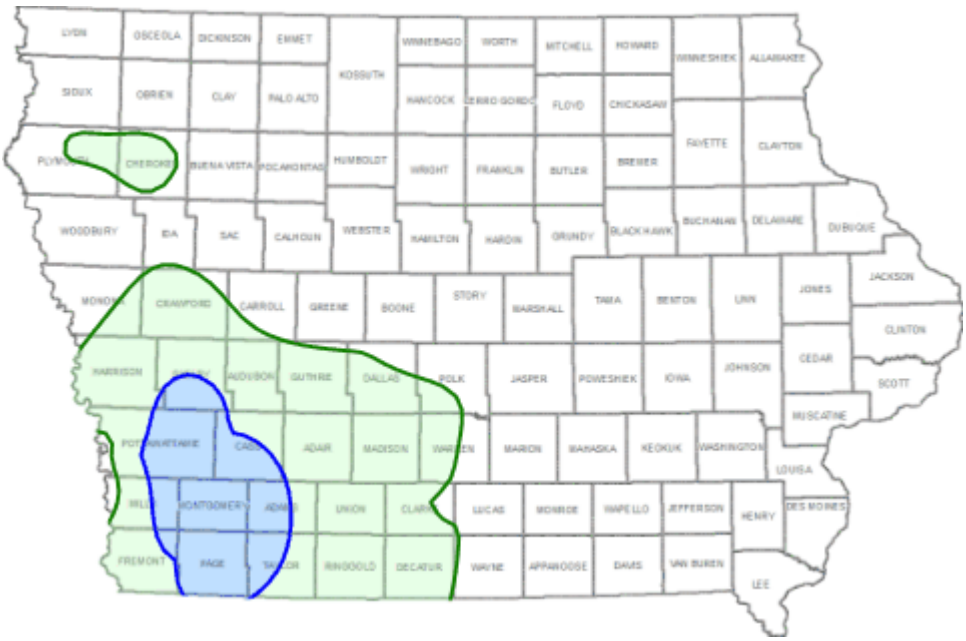
Station Info

WBAN:	NA
WMO:	725494
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	41.0107 N, 95.2626 W
UTM (NAD83, Z15):	309735.69, 4542410.74
Elevation:	317.3 m
Confidence:	Medium

Wind Correlation



Station	Correlation
KICL	0.920
KHNR	0.917
KSDA	0.898
KAIO	0.897
KAFK	0.887
KCBF	0.878
KADU	0.873
KBTA	0.870
KCSQ	0.861
KDNS	0.856
KSTJ	0.847
KLWD	0.827
KCKP	0.825
KDSM	0.819
KLRJ	0.816
KCNC	0.800
KPRO	0.796
KI75	0.796
KIKV	0.786
KTQE	0.784

Terrain-Wind Index (Range = 0.001127508)

Red Oak, IA

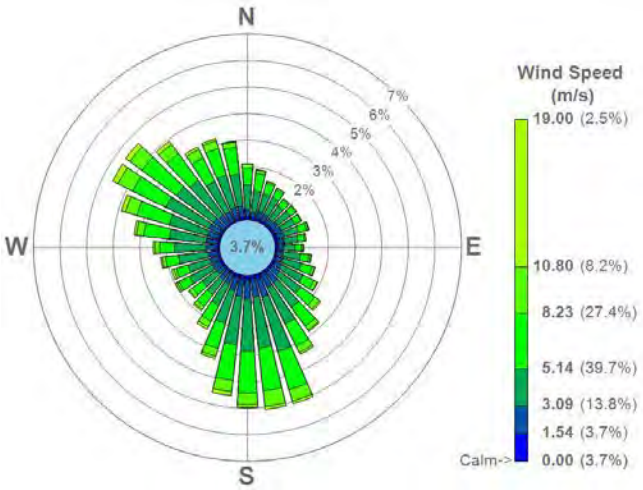
(KRDK)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	97.41%	97.41%	97.41%	95.93%	97.41%	97.41%	97.41%	23.15%
	Q2	95.56%	95.56%	95.51%	91.67%	95.56%	95.56%	95.56%	22.07%
	Q3	93.52%	93.52%	93.43%	76.36%	93.52%	93.52%	93.52%	28.17%
	Q4	95.65%	95.65%	95.65%	92.71%	92.26%	92.30%	92.30%	24.05%
2011	Q1	93.75%	93.75%	93.75%	88.70%	93.75%	93.75%	93.75%	17.22%
	Q2	91.16%	91.16%	91.07%	91.12%	91.16%	91.16%	91.16%	7.37%
	Q3	93.07%	93.07%	93.03%	92.71%	93.07%	93.07%	93.07%	33.51%
	Q4	99.14%	99.14%	99.14%	98.64%	99.14%	99.14%	99.14%	27.76%
2012	Q1	98.08%	98.08%	98.03%	98.08%	98.08%	98.08%	98.08%	26.74%
	Q2	98.99%	98.99%	98.95%	98.95%	98.99%	98.99%	98.99%	18.13%
	Q3	99.55%	99.55%	99.50%	92.75%	99.55%	99.55%	99.55%	43.66%
	Q4	99.64%	99.64%	99.64%	98.82%	99.64%	99.64%	99.64%	26.09%
2013	Q1	99.58%	99.58%	99.58%	99.54%	99.58%	99.58%	99.58%	18.98%
	Q2	99.68%	99.68%	99.54%	97.02%	99.68%	99.68%	99.68%	19.14%
	Q3	91.85%	91.85%	91.85%	91.85%	91.85%	91.85%	91.85%	37.00%
	Q4	72.83%	72.83%	72.83%	66.17%	72.83%	71.92%	72.83%	13.81%
2014	Q1	90.32%	90.32%	90.32%	88.24%	90.32%	89.12%	90.32%	10.19%
	Q2	99.27%	99.27%	99.27%	99.13%	99.27%	97.34%	99.27%	15.71%
	Q3	83.20%	83.20%	83.20%	83.06%	83.20%	79.39%	83.15%	22.33%
	Q4	98.14%	98.14%	98.14%	97.92%	98.14%	97.01%	98.14%	14.45%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Rochester, MN
(KRST)



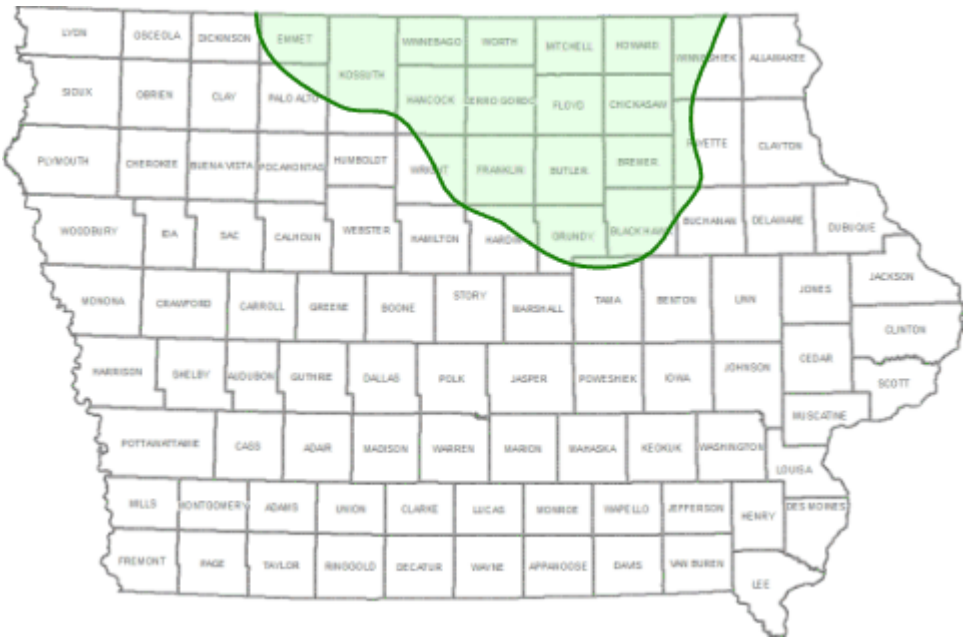
Station Info

WBAN:	14925
WMO:	726440
Anemometer Height:	10.0 m
1-Min Availability Date:	1/1/2000
IFW Installation Date:	5/30/2007

Location Info

Lat-Long:	43.9040 N, 92.4921 W
UTM (NAD83, Z15):	540786.06, 4861335.78
Elevation:	396.5 m
Confidence:	High

Wind Correlation



Station	Correlation
KFKA	0.899
KAUM	0.884
KMCW	0.866
KCCY	0.865
KAEL	0.839
KALO	0.835
KFRM	0.822
KOLZ	0.818
KEST	0.808
KAXA	0.807
KFXY	0.807
KIFA	0.801
KMJQ	0.798
KCAV	0.797
KEBS	0.790
KMIW	0.785
KVTI	0.783
KSPW	0.782
KIIB	0.779
KDEH	0.778

Terrain-Wind Index (Range = 0.001576079)

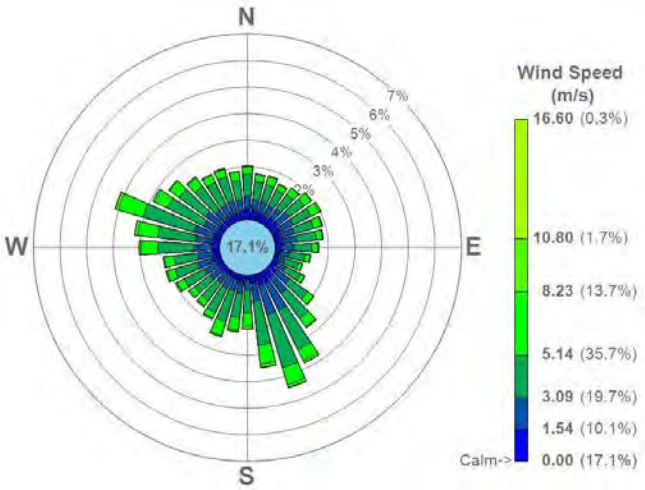
Rochester, MN
(KRST)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	100.00%	100.00%	99.44%	99.95%	100.00%	99.40%	99.54%	5.09%
	Q2	100.00%	100.00%	99.27%	100.00%	100.00%	98.31%	99.82%	5.08%
	Q3	100.00%	100.00%	99.46%	99.73%	100.00%	98.55%	99.95%	6.30%
	Q4	100.00%	100.00%	99.77%	98.82%	99.73%	98.91%	99.64%	3.26%
2011	Q1	100.00%	100.00%	99.77%	99.81%	99.95%	99.68%	99.91%	2.78%
	Q2	100.00%	100.00%	99.50%	99.86%	100.00%	99.13%	99.86%	2.38%
	Q3	99.91%	99.91%	99.77%	98.69%	99.91%	98.82%	99.68%	8.42%
	Q4	100.00%	100.00%	99.95%	99.86%	100.00%	99.46%	99.91%	2.99%
2012	Q1	100.00%	100.00%	100.00%	99.95%	100.00%	99.54%	99.95%	3.34%
	Q2	100.00%	100.00%	99.91%	100.00%	100.00%	98.67%	99.82%	2.84%
	Q3	100.00%	100.00%	100.00%	100.00%	100.00%	97.83%	99.95%	7.34%
	Q4	99.95%	99.95%	99.95%	99.77%	99.95%	99.59%	99.95%	3.13%
2013	Q1	100.00%	100.00%	100.00%	99.72%	100.00%	99.77%	99.86%	2.96%
	Q2	100.00%	100.00%	99.59%	99.95%	100.00%	98.86%	99.77%	3.34%
	Q3	100.00%	100.00%	99.82%	92.98%	100.00%	98.19%	99.82%	3.49%
	Q4	100.00%	100.00%	99.37%	92.44%	99.86%	99.09%	99.50%	2.13%
2014	Q1	100.00%	100.00%	99.91%	91.20%	99.95%	99.49%	99.68%	0.79%
	Q2	100.00%	100.00%	100.00%	92.95%	100.00%	98.72%	99.68%	2.01%
	Q3	100.00%	100.00%	100.00%	92.84%	100.00%	97.51%	99.59%	3.13%
	Q4	100.00%	100.00%	100.00%	93.39%	100.00%	99.50%	99.91%	2.45%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Savanna, IL
(KSFY)



Station Info

WBAN:	04996
WMO:	722204
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	42.0455 N, 90.1101 W
UTM (NAD83, Z15):	739174.68, 4658869.48
Elevation:	187.1 m
Confidence:	Low

Wind Correlation

Station	Correlation
KCWI	0.872
KFEP	0.842
KGBG	0.832
KPVB	0.831
KMUT	0.826
KMLI	0.808
KMPZ	0.796
KDVN	0.795
KMQB	0.786
KAWG	0.784
KMXO	0.784
KY51	0.780
KVTI	0.773
KSQI	0.763
KDEH	0.755
KIOW	0.754
KFFL	0.745
KFSW	0.743
KDBQ	0.741
KCID	0.734

Terrain-Wind Index (Range = 0.003396962)

Savanna, IL

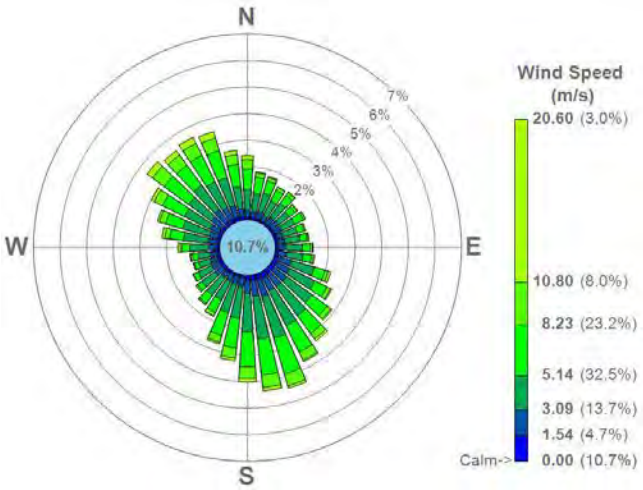
(KSFY)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	99.17%	99.17%	99.17%	99.17%	99.17%	99.17%	99.17%	20.74%
	Q2	99.82%	99.82%	99.27%	99.13%	99.40%	99.77%	99.77%	15.66%
	Q3	79.48%	79.48%	79.44%	79.44%	79.48%	79.48%	79.48%	19.16%
	Q4	99.77%	99.77%	99.77%	99.77%	99.77%	99.77%	99.77%	22.01%
2011	Q1	99.95%	99.95%	99.95%	99.86%	99.95%	99.95%	99.95%	11.67%
	Q2	99.08%	99.08%	99.08%	99.08%	99.08%	99.08%	99.08%	11.68%
	Q3	95.92%	95.92%	95.92%	94.93%	95.92%	95.92%	95.92%	25.18%
	Q4	99.77%	99.77%	99.77%	98.60%	99.77%	99.77%	99.77%	16.49%
2012	Q1	99.82%	99.82%	99.82%	99.82%	99.82%	99.82%	99.82%	12.87%
	Q2	99.68%	99.68%	99.68%	99.13%	99.68%	99.68%	99.68%	14.65%
	Q3	98.55%	98.55%	98.55%	98.51%	98.55%	98.55%	98.55%	27.72%
	Q4	99.37%	99.37%	99.37%	99.37%	99.37%	99.37%	99.37%	15.35%
2013	Q1	99.68%	99.68%	99.68%	99.68%	99.68%	99.68%	99.68%	11.76%
	Q2	97.57%	97.57%	97.57%	97.57%	97.57%	97.57%	97.57%	12.13%
	Q3	99.50%	99.50%	99.50%	99.46%	99.50%	99.50%	99.50%	21.20%
	Q4	99.77%	99.77%	99.77%	99.77%	99.77%	99.77%	99.77%	14.99%
2014	Q1	99.86%	99.86%	99.86%	99.77%	99.86%	99.86%	99.86%	13.29%
	Q2	98.21%	98.21%	97.76%	98.21%	98.17%	98.21%	98.21%	11.17%
	Q3	99.41%	99.41%	98.64%	99.32%	99.37%	99.41%	99.41%	26.86%
	Q4	99.73%	99.73%	99.46%	99.73%	99.73%	99.73%	99.73%	16.58%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Sheldon, IA
(KSHL)



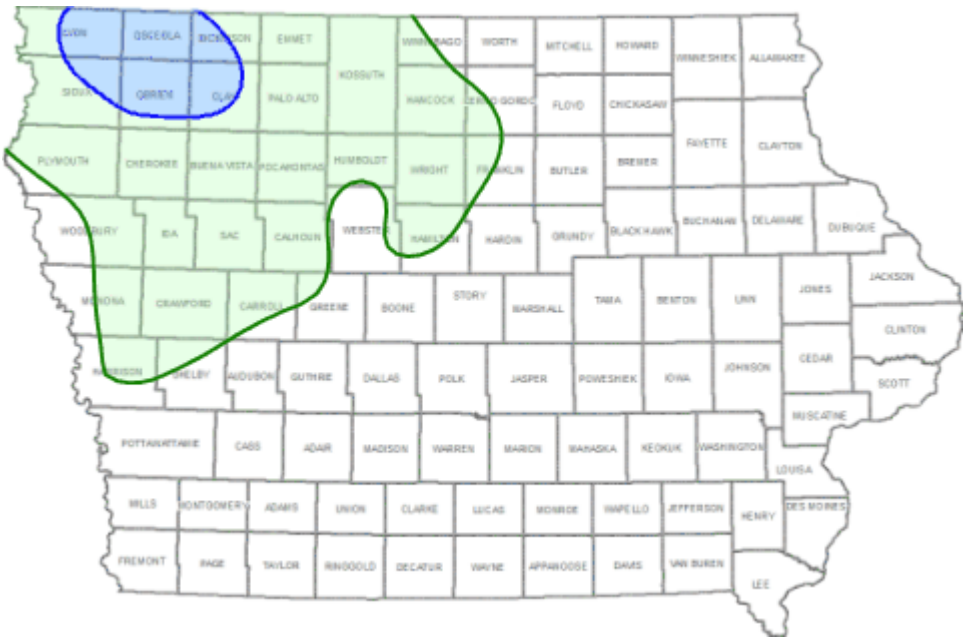
Station Info

WBAN:	NA
WMO:	725495
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	43.2080 N, 95.8352 W
UTM (NAD83, Z15):	269682.54, 4787816.37
Elevation:	429.8 m
Confidence:	Medium

Wind Correlation



Station	Correlation
KSPW	**0.919**
KLYV	0.885
KSLB	0.881
KFSD	0.880
KOTG	0.878
KAXA	0.866
KEST	0.862
KORC	0.856
KMJQ	0.856
KDNS	0.851
KLRJ	0.841
KCAV	0.834
KCKP	0.834
KFRM	0.831
KEBS	0.826
KCIN	0.806
KBTA	0.806
KFXY	0.801
KPRO	0.797
KCBF	0.794

Terrain-Wind Index (Range = 0.001215105)

Sheldon, IA

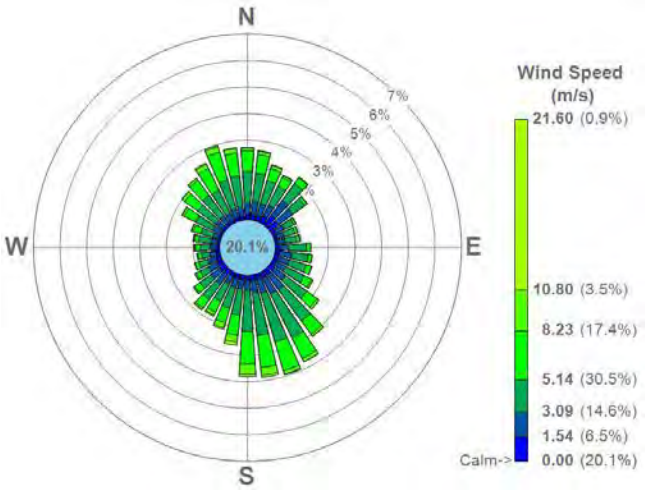
(KSHL)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	91.90%	91.90%	91.76%	85.79%	91.90%	91.90%	91.90%	15.56%
	Q2	93.36%	93.36%	93.22%	93.22%	93.36%	93.36%	93.36%	10.99%
	Q3	94.66%	94.66%	94.66%	94.47%	94.66%	94.66%	94.66%	20.11%
	Q4	94.61%	94.61%	94.47%	93.52%	94.61%	94.61%	94.61%	12.45%
2011	Q1	96.06%	96.06%	95.88%	95.83%	94.86%	96.06%	96.06%	6.48%
	Q2	96.66%	96.66%	96.29%	96.66%	96.66%	96.66%	96.66%	6.68%
	Q3	88.68%	88.68%	88.68%	87.68%	88.68%	88.68%	88.68%	22.74%
	Q4	99.64%	99.64%	99.41%	99.50%	99.64%	99.64%	99.64%	13.41%
2012	Q1	98.72%	98.72%	98.63%	97.16%	98.72%	98.72%	98.72%	12.59%
	Q2	91.39%	91.39%	91.30%	81.27%	91.39%	90.75%	91.39%	7.60%
	Q3	95.79%	95.79%	95.79%	95.47%	95.79%	91.71%	95.79%	12.86%
	Q4	97.19%	97.19%	97.19%	90.81%	97.19%	96.97%	97.19%	6.61%
2013	Q1	99.58%	99.58%	99.58%	99.40%	99.58%	99.21%	99.58%	5.28%
	Q2	99.50%	99.50%	99.50%	94.60%	99.50%	98.03%	99.50%	6.36%
	Q3	99.73%	99.73%	99.73%	96.65%	99.73%	95.47%	99.68%	15.17%
	Q4	98.73%	98.73%	98.73%	98.51%	98.73%	97.74%	98.73%	7.02%
2014	Q1	99.81%	99.81%	99.81%	99.54%	99.81%	99.26%	99.77%	4.54%
	Q2	99.91%	99.91%	99.91%	95.51%	99.91%	98.03%	99.91%	6.14%
	Q3	99.46%	99.46%	99.46%	99.18%	99.46%	95.83%	99.46%	16.30%
	Q4	99.77%	99.77%	99.77%	99.68%	99.77%	98.51%	99.77%	5.16%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Shenandoah, IA
(KSDA)



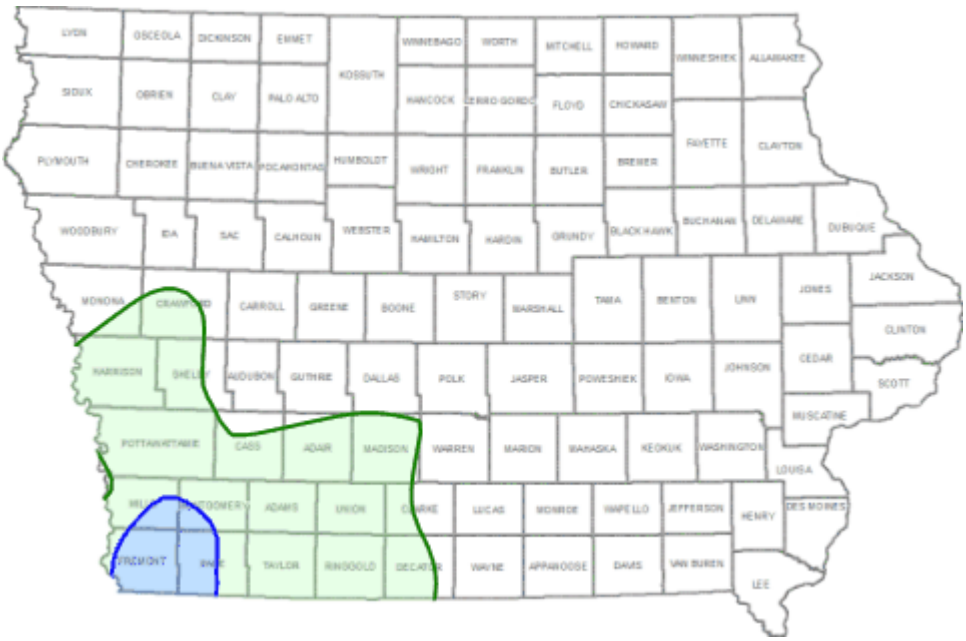
Station Info

WBAN:	NA
WMO:	725467
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	40.7533 N, 95.4112 W
UTM (NAD83, Z15):	296451.18, 4514168.47
Elevation:	293.2 m
Confidence:	Medium

Wind Correlation



Station	Correlation
KRDK	0.898
KCBF	0.891
KAFK	0.889
KBTA	0.871
KICL	0.865
KCSQ	0.858
KPMV	0.842
KDNS	0.826
KOMA	0.821
KLWD	0.818
KSTJ	0.814
KHNR	0.809
KDSM	0.799
KTQE	0.798
KAIO	0.793
KI75	0.779
KCNC	0.778
KPRO	0.772
KADU	0.769
KCKP	0.763

Terrain-Wind Index (Range = 0.001762889)

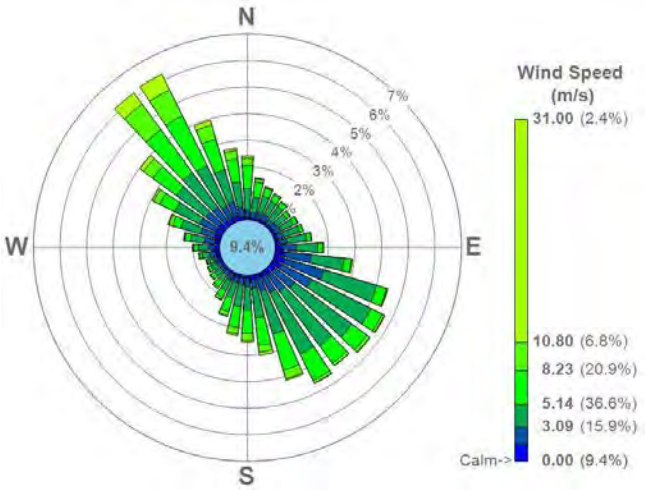
Shenandoah, IA
(KSDA)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	99.21%	99.21%	99.17%	97.04%	99.17%	99.21%	99.21%	21.30%
	Q2	91.44%	91.44%	91.44%	91.25%	91.44%	91.44%	91.44%	17.81%
	Q3	96.38%	96.38%	96.38%	93.21%	96.33%	96.38%	96.38%	27.76%
	Q4	93.34%	93.34%	93.34%	93.21%	93.34%	93.34%	93.34%	22.46%
2011	Q1	79.44%	79.44%	79.44%	78.47%	79.44%	79.44%	79.44%	11.81%
	Q2	79.08%	79.08%	78.94%	69.69%	79.03%	79.08%	79.08%	10.90%
	Q3	97.74%	97.74%	97.74%	93.48%	97.74%	97.74%	97.74%	37.91%
	Q4	98.73%	98.73%	98.73%	98.60%	98.73%	98.73%	98.73%	23.96%
2012	Q1	99.08%	99.08%	99.04%	99.04%	99.08%	99.08%	99.08%	21.29%
	Q2	97.02%	97.02%	97.02%	97.02%	97.02%	97.02%	97.02%	17.12%
	Q3	99.64%	99.64%	99.64%	99.55%	99.64%	99.64%	99.64%	37.23%
	Q4	99.59%	99.59%	99.55%	99.37%	99.50%	99.59%	99.59%	22.55%
2013	Q1	99.54%	99.54%	99.54%	99.49%	99.54%	99.54%	99.54%	14.03%
	Q2	99.77%	99.77%	99.77%	99.59%	99.77%	99.77%	99.77%	15.29%
	Q3	83.92%	83.92%	83.92%	83.74%	83.92%	83.92%	83.92%	28.31%
	Q4	75.59%	75.59%	75.59%	75.50%	75.59%	74.59%	75.59%	12.77%
2014	Q1	99.86%	99.86%	99.86%	99.72%	99.86%	98.75%	99.86%	11.48%
	Q2	94.73%	94.73%	94.73%	94.73%	94.73%	92.67%	94.73%	11.68%
	Q3	99.46%	99.46%	99.46%	92.39%	99.46%	96.15%	99.46%	23.51%
	Q4	98.60%	98.60%	98.60%	95.83%	98.60%	97.28%	98.60%	12.50%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Sioux City, IA
(KSUX)



Station Info

WBAN:	14943
WMO:	725570
Anemometer Height:	10.0 m
1-Min Availability Date:	1/1/2000
IFW Installation Date:	4/30/2009

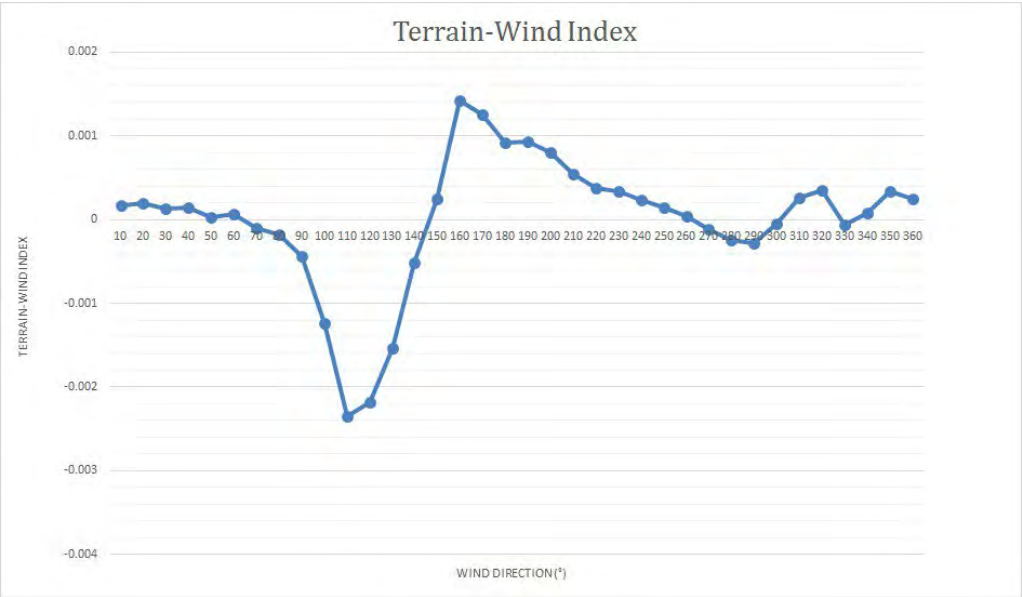
Location Info

Lat-Long:	42.3917 N, 96.3795 W
UTM (NAD83, Z15):	221825.90, 4698802.10
Elevation:	333.5 m
Confidence:	High

Wind Correlation

Station	Correlation
KOFF	0.796
KTQE	0.789
KYKN	0.777
KCBF	0.764
KPMV	0.763
KSHL	0.761
KMLE	0.755
KBTA	0.743
KPRO	0.726
KFXY	0.715
KDNS	0.710
KCAV	0.703
KOMA	0.701
KAMW	0.696
KEBS	0.694
KSPW	0.691
KORC	0.690
KDSM	0.690
KIFA	0.683
KCIN	0.680

Terrain-Wind Index (Range = 0.003768419)



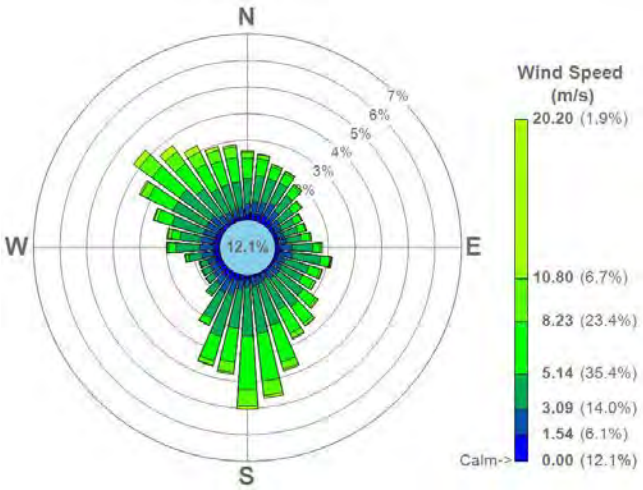
Sioux City, IA
(KSUX)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	100.00%	100.00%	95.00%	99.91%	99.95%	99.68%	99.86%	9.17%
	Q2	100.00%	100.00%	100.00%	99.91%	99.91%	97.44%	99.18%	10.62%
	Q3	100.00%	100.00%	99.77%	99.91%	100.00%	97.10%	100.00%	12.59%
	Q4	100.00%	100.00%	99.59%	100.00%	100.00%	99.14%	99.95%	11.78%
2011	Q1	100.00%	100.00%	99.07%	99.72%	99.91%	98.84%	99.72%	7.27%
	Q2	100.00%	100.00%	99.36%	99.95%	100.00%	98.86%	100.00%	6.32%
	Q3	99.95%	99.95%	99.41%	99.82%	99.95%	97.64%	99.91%	14.54%
	Q4	100.00%	100.00%	99.77%	99.95%	100.00%	99.64%	100.00%	10.42%
2012	Q1	100.00%	100.00%	100.00%	99.86%	100.00%	99.27%	99.95%	9.75%
	Q2	100.00%	100.00%	99.59%	99.68%	99.77%	98.44%	99.77%	8.52%
	Q3	100.00%	100.00%	100.00%	99.95%	100.00%	96.33%	100.00%	14.58%
	Q4	100.00%	100.00%	99.95%	99.95%	99.77%	99.41%	99.95%	10.05%
2013	Q1	100.00%	100.00%	99.95%	98.84%	98.94%	98.61%	98.98%	6.44%
	Q2	100.00%	100.00%	100.00%	99.95%	100.00%	98.40%	100.00%	7.46%
	Q3	100.00%	100.00%	99.91%	92.12%	99.77%	97.87%	99.73%	12.64%
	Q4	99.95%	99.95%	99.91%	98.78%	98.96%	98.23%	98.82%	7.56%
2014	Q1	99.91%	99.91%	99.72%	98.66%	98.75%	97.50%	98.52%	4.54%
	Q2	99.95%	99.95%	99.95%	95.83%	99.63%	96.93%	98.58%	6.50%
	Q3	99.82%	99.82%	99.50%	98.60%	99.82%	96.33%	99.68%	10.87%
	Q4	100.00%	100.00%	100.00%	91.58%	100.00%	98.78%	99.82%	5.48%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Sioux Falls, SD
(KFSD)



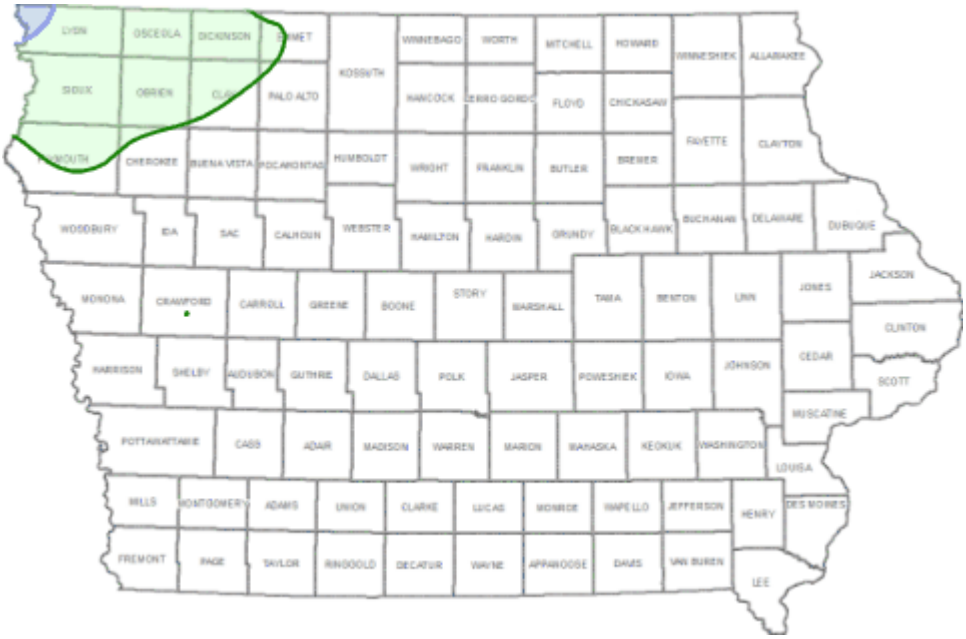
Station Info

WBAN:	14944
WMO:	726510
Anemometer Height:	10.0 m
1-Min Availability Date:	1/1/2000
IFW Installation Date:	6/7/2006

Location Info

Lat-Long:	43.5775 N, 96.7539 W
UTM (NAD83, Z15):	196895.90, 4831798.20
Elevation:	433.1 m
Confidence:	High

Wind Correlation



Station	Correlation
KSHL	0.880
KLYV	0.872
KLRJ	0.846
KOTG	0.819
KSPW	0.810
KDNS	0.805
KEST	0.801
KORC	0.798
KMJQ	0.789
KAXA	0.782
KCKP	0.778
KSLB	0.774
KFRM	0.763
KBTA	0.754
KHNR	0.748
KYKN	0.740
KCAV	0.726
KCBF	0.724
KFOD	0.716
KRDK	0.714

Terrain-Wind Index (Range = 0.001142554)

Sioux Falls, SD

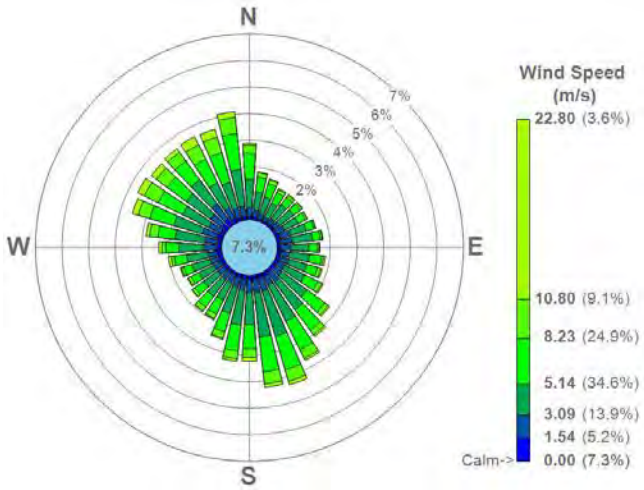
(KFSD)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	100.00%	100.00%	93.15%	99.77%	99.91%	99.54%	100.00%	14.35%
	Q2	100.00%	100.00%	100.00%	100.00%	100.00%	98.08%	100.00%	12.18%
	Q3	100.00%	100.00%	100.00%	100.00%	100.00%	98.19%	100.00%	13.54%
	Q4	100.00%	100.00%	99.82%	99.95%	100.00%	99.28%	100.00%	15.67%
2011	Q1	100.00%	100.00%	99.77%	100.00%	100.00%	99.31%	100.00%	8.98%
	Q2	100.00%	100.00%	99.77%	100.00%	100.00%	98.76%	100.00%	8.24%
	Q3	100.00%	100.00%	99.95%	100.00%	100.00%	97.01%	100.00%	17.48%
	Q4	100.00%	100.00%	99.73%	100.00%	100.00%	99.32%	100.00%	13.77%
2012	Q1	100.00%	100.00%	98.40%	99.95%	100.00%	98.99%	100.00%	15.57%
	Q2	100.00%	100.00%	99.73%	100.00%	100.00%	97.53%	100.00%	11.26%
	Q3	100.00%	100.00%	99.64%	100.00%	100.00%	96.74%	100.00%	16.89%
	Q4	100.00%	100.00%	98.96%	100.00%	100.00%	99.37%	100.00%	13.59%
2013	Q1	100.00%	100.00%	98.43%	99.86%	99.95%	99.07%	99.86%	9.17%
	Q2	100.00%	100.00%	99.77%	99.77%	99.82%	98.58%	99.77%	9.34%
	Q3	100.00%	100.00%	99.68%	96.97%	100.00%	98.51%	100.00%	15.53%
	Q4	100.00%	100.00%	99.95%	96.47%	99.82%	98.91%	99.95%	10.64%
2014	Q1	100.00%	100.00%	100.00%	96.39%	100.00%	99.21%	99.77%	6.57%
	Q2	100.00%	100.00%	100.00%	97.21%	100.00%	97.99%	99.82%	9.34%
	Q3	100.00%	100.00%	100.00%	95.97%	100.00%	97.64%	100.00%	12.09%
	Q4	100.00%	100.00%	100.00%	96.42%	100.00%	99.18%	100.00%	7.97%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Spencer, IA
(KSPW)



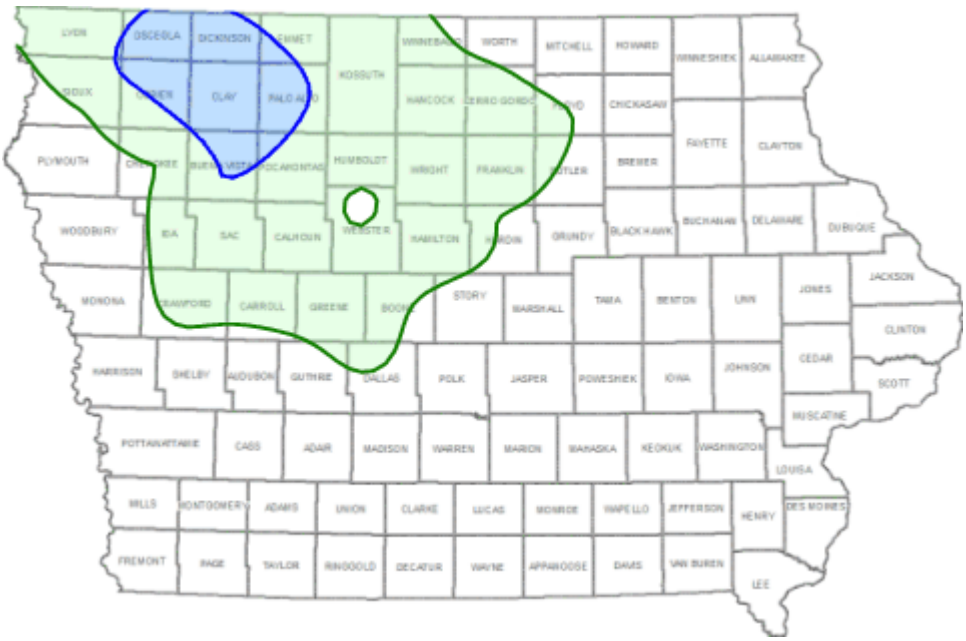
Station Info

WBAN:	14972
WMO:	726500
Anemometer Height:	10.0 m
1-Min Availability Date:	3/3/2005
IFW Installation Date:	11/7/2005

Location Info

Lat-Long:	43.1682 N, 95.2101 W
UTM (NAD83, Z15):	320347.62, 4781864.50
Elevation:	407.2 m
Confidence:	Medium

Wind Correlation



Station	Correlation
KSHL	0.919
KSLB	0.897
KAXA	0.882
KOTG	0.881
KEST	0.881
KEBS	0.851
KMJQ	0.847
KCAV	0.844
KFRM	0.830
KCIN	0.828
KLYV	0.826
KPRO	0.819
KMCW	0.813
KDNS	0.812
KFXY	0.811
KFSD	0.810
KORC	0.807
KCKP	0.802
KBNW	0.800
KIFA	0.797

Terrain-Wind Index (Range = 0.001135152)

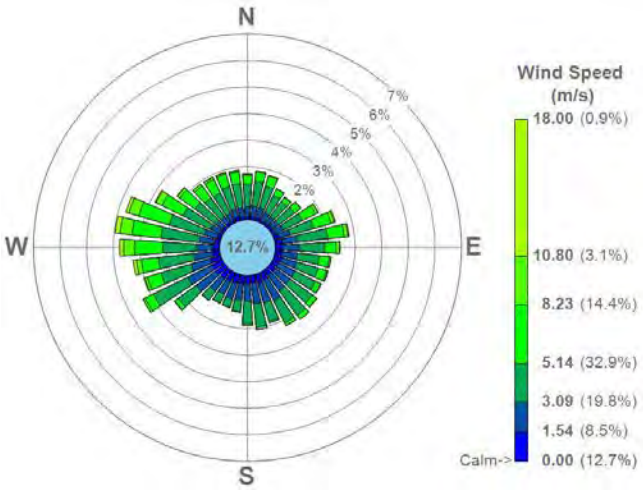
Spencer, IA
(KSPW)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	99.86%	99.86%	99.86%	99.21%	98.84%	98.47%	98.47%	9.86%
	Q2	100.00%	100.00%	100.00%	99.86%	100.00%	98.44%	99.91%	7.78%
	Q3	100.00%	100.00%	100.00%	100.00%	100.00%	99.05%	100.00%	11.37%
	Q4	100.00%	100.00%	100.00%	99.91%	100.00%	97.87%	98.19%	6.84%
2011	Q1	100.00%	100.00%	100.00%	99.86%	100.00%	99.81%	100.00%	3.80%
	Q2	100.00%	100.00%	97.21%	99.95%	100.00%	98.40%	99.18%	4.62%
	Q3	99.82%	99.82%	99.82%	98.60%	99.82%	97.78%	99.73%	13.59%
	Q4	100.00%	100.00%	100.00%	99.91%	100.00%	99.68%	99.91%	6.97%
2012	Q1	100.00%	100.00%	100.00%	99.95%	100.00%	99.63%	99.95%	7.92%
	Q2	100.00%	100.00%	100.00%	99.86%	100.00%	98.86%	99.63%	6.00%
	Q3	99.95%	99.95%	99.95%	99.73%	99.95%	97.87%	99.95%	13.18%
	Q4	100.00%	100.00%	100.00%	99.95%	100.00%	99.82%	100.00%	6.48%
2013	Q1	100.00%	100.00%	100.00%	100.00%	100.00%	99.54%	100.00%	4.58%
	Q2	100.00%	100.00%	99.68%	100.00%	100.00%	99.18%	100.00%	5.13%
	Q3	100.00%	100.00%	99.68%	99.91%	100.00%	98.73%	99.91%	13.36%
	Q4	100.00%	100.00%	100.00%	99.95%	99.95%	99.82%	100.00%	4.57%
2014	Q1	99.95%	99.95%	99.95%	99.91%	99.95%	99.68%	99.95%	3.70%
	Q2	94.23%	94.23%	94.23%	94.14%	94.23%	92.81%	94.09%	3.71%
	Q3	100.00%	100.00%	100.00%	99.86%	100.00%	98.73%	99.86%	9.87%
	Q4	100.00%	100.00%	100.00%	99.95%	99.68%	99.32%	99.91%	3.35%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Sterling, IL
(KSQI)



Station Info

WBAN:	04894
WMO:	725326
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	41.7432 N, 89.6654 W
UTM (NAD83, Z15):	777289.20, 4626640.20
Elevation:	195.7 m
Confidence:	Medium

Wind Correlation

Station	Correlation
KMLI	0.776
KCWI	0.770
KSFY	0.763
KFEP	0.741
KPVB	0.736
KGBG	0.720
KDVN	0.683
KMUT	0.681
KIOW	0.678
KMXO	0.676
KMQB	0.670
KPDC	0.652
KY51	0.647
KAWG	0.642
KMPZ	0.629
KFFL	0.616
KOOA	0.598
KGGI	0.597
KCID	0.594
KEOK	0.593

Terrain-Wind Index (Range = 0.001547071)

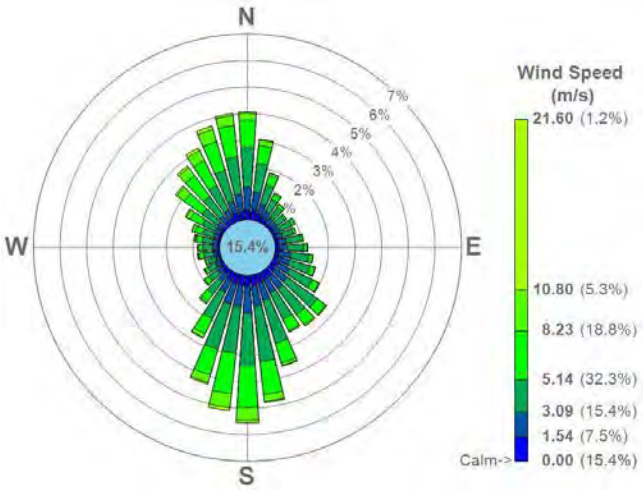
Sterling, IL
(KSQI)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	99.44%	99.44%	99.40%	99.21%	99.40%	99.44%	99.44%	11.85%
	Q2	98.81%	98.81%	98.76%	98.81%	98.81%	98.81%	98.81%	11.58%
	Q3	91.80%	91.80%	89.31%	91.76%	91.67%	91.80%	91.80%	16.71%
	Q4	93.43%	93.43%	93.43%	93.39%	93.07%	93.43%	93.43%	15.40%
2011	Q1	93.24%	93.24%	93.24%	93.24%	93.10%	92.08%	92.08%	9.49%
	Q2	92.35%	92.35%	92.26%	92.03%	92.17%	92.17%	92.17%	7.05%
	Q3	66.30%	66.30%	61.28%	65.13%	66.26%	66.30%	66.30%	12.14%
	Q4	97.96%	97.96%	97.51%	97.83%	97.92%	97.96%	97.96%	11.78%
2012	Q1	70.83%	70.83%	66.90%	70.28%	70.65%	70.70%	70.70%	5.95%
	Q2	89.88%	89.88%	89.88%	89.74%	89.84%	89.88%	89.88%	9.98%
	Q3	86.14%	86.14%	86.14%	85.78%	86.10%	86.14%	86.14%	21.56%
	Q4	94.88%	94.88%	94.84%	94.20%	94.66%	94.84%	94.84%	11.14%
2013	Q1	99.58%	99.58%	99.58%	98.33%	97.69%	99.58%	99.58%	11.02%
	Q2	96.84%	96.84%	96.79%	96.70%	96.66%	96.79%	96.79%	10.35%
	Q3	97.96%	97.96%	97.92%	97.87%	97.96%	97.96%	97.96%	20.47%
	Q4	99.91%	99.91%	99.91%	90.04%	85.37%	98.51%	98.51%	14.99%
2014	Q1	97.96%	97.96%	97.96%	97.96%	97.04%	97.96%	97.96%	10.23%
	Q2	99.54%	99.54%	99.54%	99.45%	99.45%	99.54%	99.54%	9.34%
	Q3	95.02%	95.02%	94.97%	95.02%	95.02%	95.02%	95.02%	20.52%
	Q4	86.82%	86.82%	86.68%	86.68%	86.05%	86.68%	86.68%	11.91%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

St. Joseph, MO
(KSTJ)



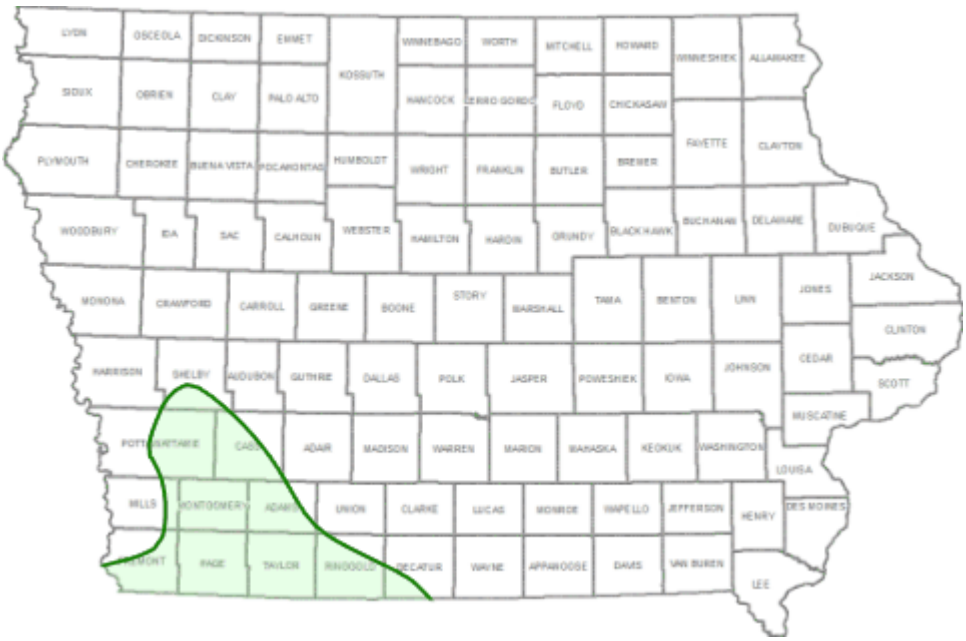
Station Info

WBAN:	13993
WMO:	724490
Anemometer Height:	10.0 m
1-Min Availability Date:	3/3/2005
IFW Installation Date:	3/5/2007

Location Info

Lat-Long:	39.7683 N, 94.9095 W
UTM (NAD83, Z15):	336450.53, 4403785.00
Elevation:	245.7 m
Confidence:	High

Wind Correlation



Station	Correlation
KAFK	0.862
KRDK	0.847
KICL	0.844
KSDA	0.814
KLWD	0.810
KAIO	0.809
KHNR	0.808
KCBF	0.781
KCSQ	0.777
KCNC	0.758
KADU	0.752
KDNS	0.744
KDSM	0.739
KBTA	0.738
KI75	0.733
KLRJ	0.716
KTVK	0.715
KCKP	0.706
KIRK	0.694
KFOD	0.693

Terrain-Wind Index (Range = 0.001466221)

St. Joseph, MO

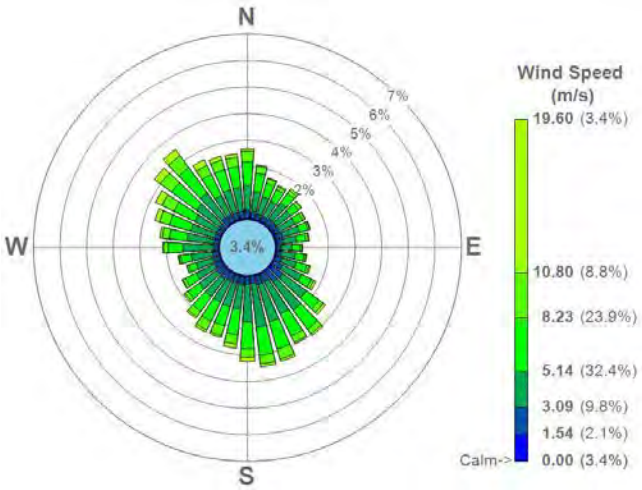
(KSTJ)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	100.00%	100.00%	99.91%	99.86%	100.00%	99.35%	99.95%	16.48%
	Q2	99.82%	99.82%	99.77%	99.77%	99.77%	98.08%	99.73%	15.71%
	Q3	100.00%	100.00%	98.73%	99.82%	99.95%	97.78%	99.86%	18.89%
	Q4	100.00%	100.00%	99.82%	99.91%	100.00%	98.46%	99.86%	19.97%
2011	Q1	100.00%	100.00%	99.95%	98.98%	100.00%	99.17%	99.81%	11.90%
	Q2	100.00%	100.00%	98.76%	97.99%	97.66%	96.25%	97.99%	9.11%
	Q3	99.86%	99.86%	49.28%	49.32%	49.14%	48.73%	49.14%	9.01%
	Q4	99.77%	99.77%	99.41%	99.55%	99.77%	99.00%	99.68%	17.62%
2012	Q1	100.00%	100.00%	99.22%	99.95%	99.95%	99.18%	99.82%	15.25%
	Q2	99.95%	99.95%	99.95%	99.86%	99.95%	97.89%	99.95%	12.96%
	Q3	99.82%	99.82%	99.82%	99.82%	99.82%	96.88%	99.82%	27.04%
	Q4	99.95%	99.95%	99.95%	98.55%	99.95%	99.09%	99.91%	20.65%
2013	Q1	99.95%	99.95%	99.95%	99.91%	99.95%	98.84%	99.95%	13.43%
	Q2	100.00%	100.00%	100.00%	99.82%	100.00%	98.63%	100.00%	12.91%
	Q3	99.95%	99.95%	99.73%	99.91%	99.95%	97.83%	99.95%	22.92%
	Q4	99.91%	99.91%	99.82%	99.64%	99.86%	99.14%	99.77%	16.03%
2014	Q1	99.95%	99.95%	99.95%	99.91%	99.95%	98.66%	99.77%	8.10%
	Q2	100.00%	100.00%	99.91%	99.91%	100.00%	97.48%	99.86%	9.80%
	Q3	99.95%	99.95%	99.68%	99.18%	99.86%	97.55%	99.86%	18.52%
	Q4	100.00%	100.00%	100.00%	99.77%	99.95%	99.09%	99.86%	11.64%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Storm Lake, IA
(KSLB)



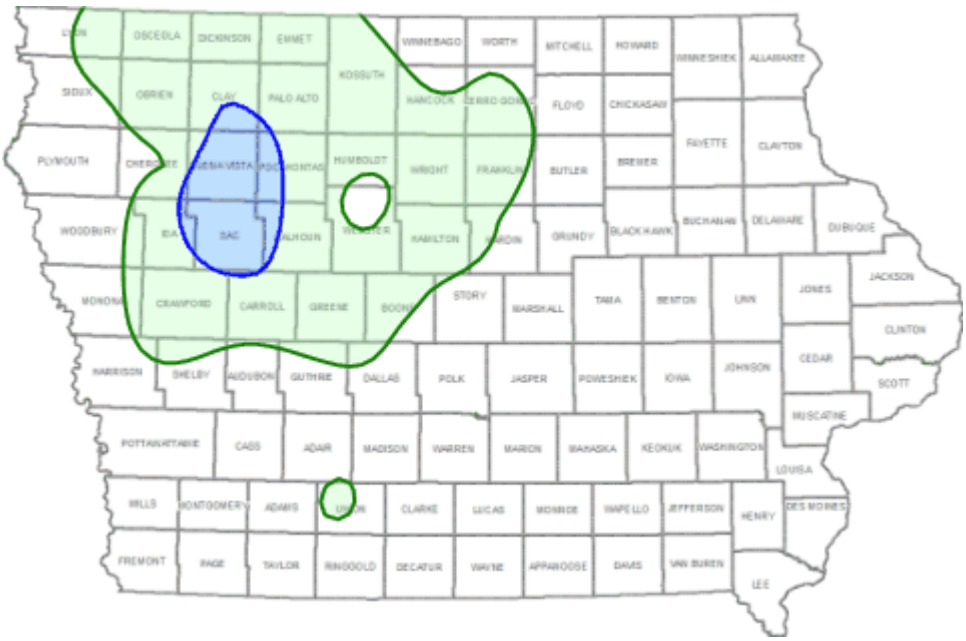
Station Info

WBAN:	NA
WMO:	725496
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	42.5972 N, 95.2399 W
UTM (NAD83, Z15):	316237.40, 4718517.96
Elevation:	449.0 m
Confidence:	Medium

Wind Correlation



Station	Correlation
KSPW	0.897
KCIN	0.882
KSHL	0.881
KAXA	0.855
KDNS	0.852
KOTG	0.849
KEBS	0.845
KEST	0.824
KCAV	0.820
KCSQ	0.817
KMCW	0.816
KMJQ	0.815
KPRO	0.806
KBNW	0.804
KFRM	0.803
KIFA	0.799
KCKP	0.793
KCBF	0.778
KHNR	0.778
KTNU	0.778

Terrain-Wind Index (Range = 0.001168358)

Storm Lake, IA

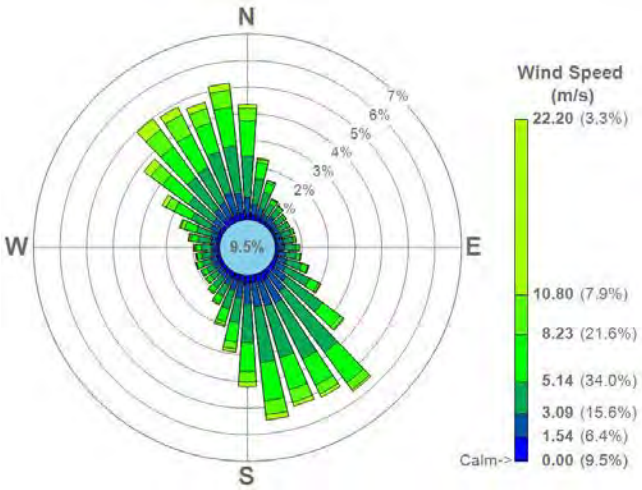
(KSLB)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	95.28%	95.28%	95.28%	95.09%	95.28%	95.28%	95.28%	11.67%
	Q2	78.34%	78.34%	78.30%	78.30%	78.34%	78.34%	78.34%	4.17%
	Q3	0.09%	0.09%	0.09%	7.70%	0.09%	0.09%	0.09%	0.00%
	Q4	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2011	Q1	68.98%	68.98%	68.98%	68.52%	68.98%	68.98%	68.98%	1.62%
	Q2	99.36%	99.36%	99.36%	99.22%	99.31%	99.36%	99.36%	2.52%
	Q3	89.72%	89.72%	89.72%	89.09%	89.67%	89.72%	89.72%	7.84%
	Q4	99.68%	99.68%	99.68%	99.68%	99.68%	99.68%	99.68%	2.81%
2012	Q1	99.68%	99.68%	99.68%	99.54%	99.68%	99.68%	99.68%	2.84%
	Q2	83.47%	83.47%	83.47%	83.38%	83.47%	82.83%	83.47%	1.83%
	Q3	99.82%	99.82%	99.82%	98.14%	99.82%	95.02%	99.82%	5.48%
	Q4	99.14%	99.14%	99.14%	98.69%	99.14%	98.28%	98.91%	2.08%
2013	Q1	95.65%	95.65%	95.65%	95.32%	95.65%	94.21%	94.40%	2.04%
	Q2	99.68%	99.68%	99.63%	99.36%	99.68%	97.85%	99.18%	2.84%
	Q3	97.60%	97.60%	97.60%	97.37%	97.60%	95.38%	97.60%	4.89%
	Q4	99.23%	99.23%	99.23%	99.18%	99.23%	94.43%	94.93%	1.77%
2014	Q1	99.81%	99.81%	99.72%	99.58%	99.81%	98.84%	99.31%	2.04%
	Q2	100.00%	100.00%	100.00%	99.82%	100.00%	98.90%	100.00%	2.47%
	Q3	94.70%	94.70%	94.70%	94.47%	94.70%	91.94%	94.70%	6.79%
	Q4	99.82%	99.82%	99.82%	99.68%	99.82%	98.41%	99.82%	2.04%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Tekamah, NE
(KTQE)



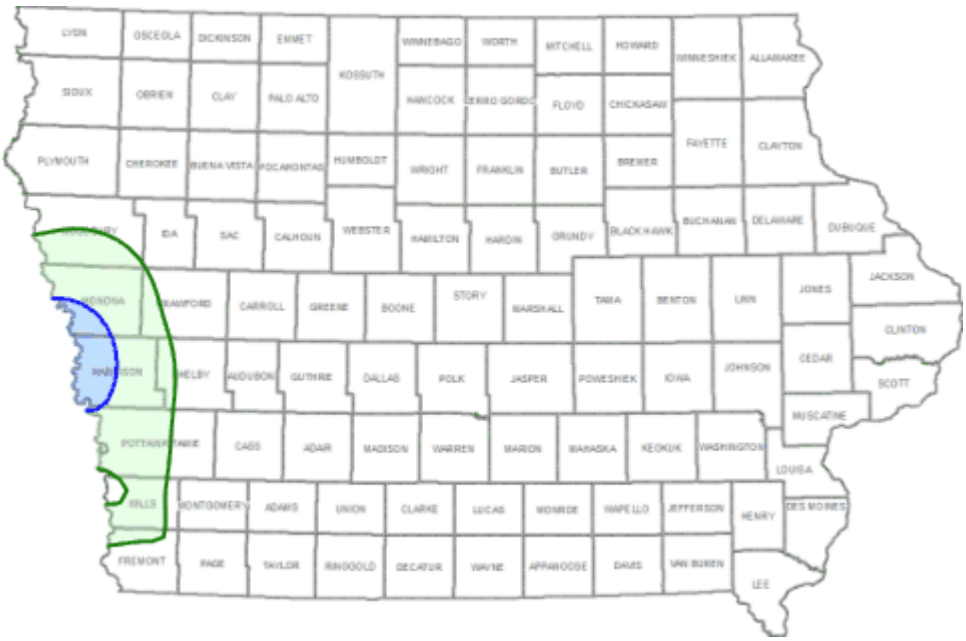
Station Info

WBAN:	94978
WMO:	725527
Anemometer Height:	10.0 m
1-Min Availability Date:	3/3/2005
IFW Installation Date:	10/20/2005

Location Info

Lat-Long:	41.7631 N, 96.1798 W
UTM (NAD83, Z15):	235666.50, 4628362.20
Elevation:	312.1 m
Confidence:	Medium

Wind Correlation



Station	Correlation
KBTA	0.877
KOMA	0.876
KCBF	0.859
KPMV	0.834
KSDA	0.798
KMLE	0.792
KSUX	0.789
KRDK	0.784
KSHL	0.776
KHNR	0.776
KPRO	0.771
KEBS	0.769
KCAV	0.764
KDNS	0.764
KAMW	0.760
KSPW	0.753
KOFF	0.750
KCKP	0.748
KAXA	0.746
KAFK	0.746

Terrain-Wind Index (Range = 0.001825581)

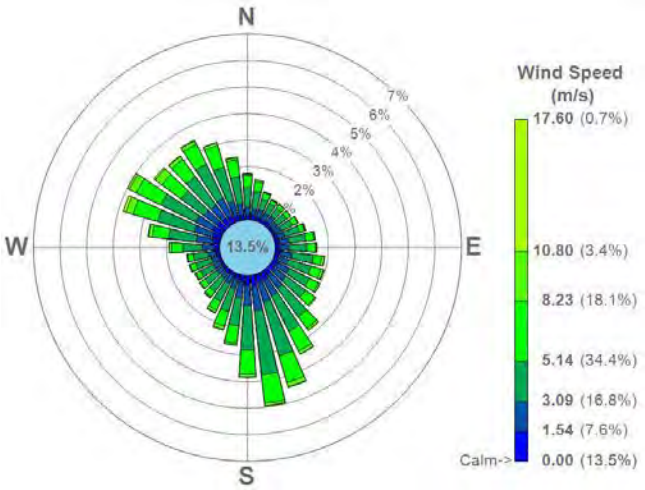
Tekamah, NE
(KTQE)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	99.77%	99.77%	99.77%	98.19%	98.75%	98.66%	98.70%	11.30%
	Q2	99.82%	99.82%	99.82%	98.21%	98.95%	97.30%	98.90%	10.53%
	Q3	100.00%	100.00%	100.00%	99.86%	100.00%	98.41%	99.95%	13.59%
	Q4	100.00%	100.00%	100.00%	99.73%	99.86%	99.23%	99.86%	10.51%
2011	Q1	100.00%	100.00%	100.00%	99.86%	100.00%	99.26%	99.95%	5.88%
	Q2	99.77%	99.77%	99.77%	98.26%	98.63%	97.85%	98.40%	5.54%
	Q3	99.91%	99.91%	99.91%	98.73%	99.91%	96.92%	99.91%	17.89%
	Q4	99.91%	99.91%	99.86%	97.83%	97.87%	97.33%	97.83%	8.92%
2012	Q1	100.00%	100.00%	100.00%	100.00%	100.00%	99.13%	99.77%	9.84%
	Q2	99.95%	99.95%	99.95%	99.50%	99.59%	98.12%	99.45%	6.04%
	Q3	99.86%	99.86%	99.86%	99.77%	99.86%	96.74%	99.86%	16.44%
	Q4	100.00%	100.00%	100.00%	99.86%	100.00%	99.09%	99.82%	9.60%
2013	Q1	100.00%	100.00%	100.00%	99.95%	100.00%	99.54%	99.95%	6.76%
	Q2	100.00%	100.00%	99.82%	99.95%	100.00%	98.44%	99.54%	6.04%
	Q3	99.82%	99.82%	99.55%	99.77%	99.77%	98.01%	99.82%	16.49%
	Q4	99.73%	99.73%	99.73%	99.73%	99.73%	99.14%	99.64%	7.16%
2014	Q1	100.00%	100.00%	100.00%	100.00%	100.00%	98.94%	99.91%	4.63%
	Q2	99.36%	99.36%	99.36%	99.22%	99.31%	97.66%	99.04%	6.04%
	Q3	99.95%	99.95%	99.95%	99.91%	99.95%	97.83%	99.77%	12.82%
	Q4	100.00%	100.00%	100.00%	100.00%	100.00%	99.18%	99.95%	4.17%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Vinton, IA
(KVTI)



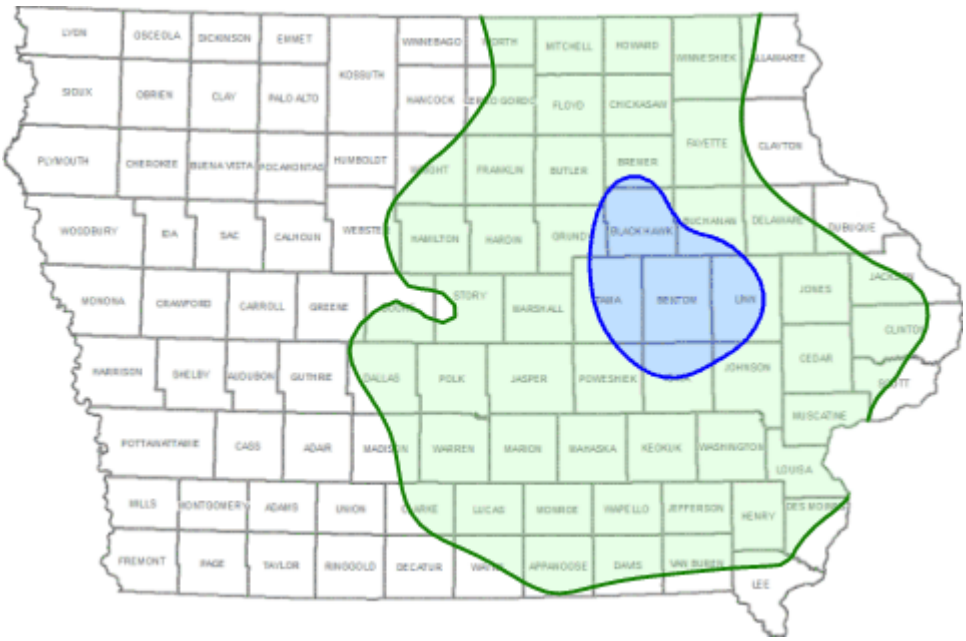
Station Info

WBAN:	NA
WMO:	720326
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	42.2176 N, 92.0248 W
UTM (NAD83, Z15):	580488.39, 4674396.85
Elevation:	254.2 m
Confidence:	High

Wind Correlation



Station	Correlation
KCID	**0.924**
KALO	**0.914**
KOLZ	0.882
KIIB	0.874
KCCY	0.867
KAWG	0.866
KMIW	0.862
KGGI	0.861
KDEH	0.860
KMUT	0.860
KOOA	0.857
KFFL	0.854
KMXO	0.852
KTNU	0.851
KIKV	0.850
KMPZ	0.849
KOTM	0.846
KOXV	0.828
KAUM	0.825
KIFA	0.824

Terrain-Wind Index (Range = 0.001749239)

Vinton, IA

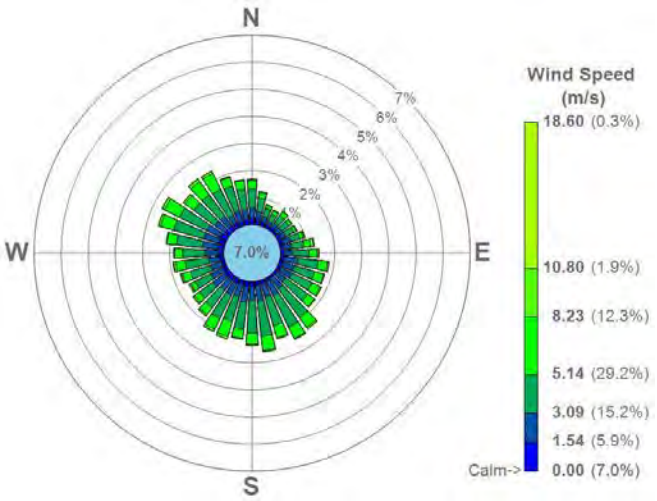
(KVTI)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	96.85%	96.85%	96.85%	96.81%	95.00%	96.85%	96.85%	12.41%
	Q2	87.41%	87.41%	87.41%	87.32%	87.41%	87.41%	87.41%	11.95%
	Q3	94.34%	94.34%	94.34%	94.25%	91.44%	94.34%	94.34%	20.15%
	Q4	92.16%	92.16%	92.16%	92.16%	91.85%	92.16%	92.16%	13.63%
2011	Q1	96.81%	96.81%	96.81%	96.81%	96.81%	96.81%	96.81%	7.96%
	Q2	99.04%	99.04%	99.04%	99.04%	99.04%	99.04%	99.04%	9.02%
	Q3	94.97%	94.97%	94.97%	94.88%	94.97%	94.97%	94.97%	21.20%
	Q4	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	11.10%
2012	Q1	99.50%	99.50%	99.50%	96.15%	99.45%	99.50%	99.50%	8.56%
	Q2	95.56%	95.56%	95.56%	95.19%	95.56%	95.56%	95.56%	9.66%
	Q3	95.83%	95.83%	95.83%	95.24%	95.83%	95.83%	95.83%	21.88%
	Q4	99.50%	99.50%	99.50%	99.05%	99.50%	99.50%	99.50%	10.46%
2013	Q1	98.19%	98.19%	98.15%	97.96%	97.73%	98.19%	98.19%	7.73%
	Q2	98.03%	98.03%	98.03%	97.66%	98.03%	98.03%	98.03%	9.43%
	Q3	86.96%	86.96%	86.96%	86.32%	86.91%	86.96%	86.96%	16.80%
	Q4	96.38%	96.38%	96.38%	96.38%	96.38%	96.38%	96.38%	9.69%
2014	Q1	99.91%	99.91%	99.91%	99.72%	99.91%	99.91%	99.91%	6.85%
	Q2	98.99%	98.99%	98.99%	98.81%	98.99%	98.99%	98.99%	9.16%
	Q3	61.87%	61.87%	61.87%	61.10%	61.87%	61.87%	61.87%	21.24%
	Q4	97.60%	97.60%	97.60%	97.51%	97.60%	97.60%	97.60%	31.39%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Viroqua, WI
(KY51)



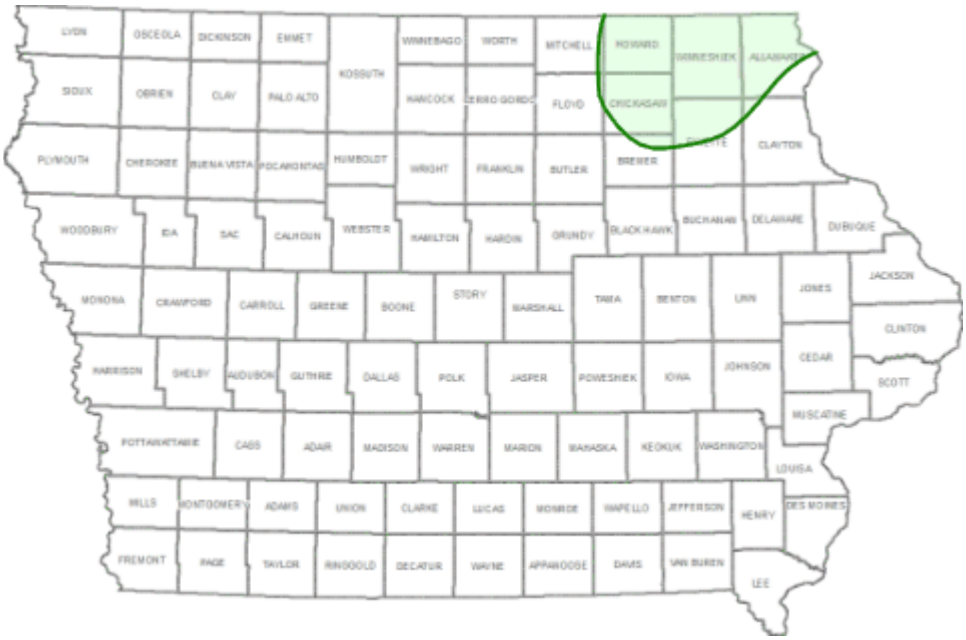
Station Info

WBAN:	NA
WMO:	720663
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	43.579 N, 90.913 W
UTM (NAD83, Z15):	669834.99, 4827309.08
Elevation:	393.8 m
Confidence:	Medium

Wind Correlation



Station	Correlation
KDEH	0.879
KPVB	0.835
KFKA	0.829
KVTI	0.801
KCCY	0.799
KMXO	0.791
KLSE	0.789
KALO	0.789
KIIB	0.784
KOLZ	0.782
KSFY	0.780
KAEL	0.771
KFEP	0.766
KCWI	0.766
KAUM	0.766
KRST	0.758
KAWG	0.757
KDVN	0.756
KCID	0.753
KGGI	0.748

Terrain-Wind Index (Range = 0.001418965)

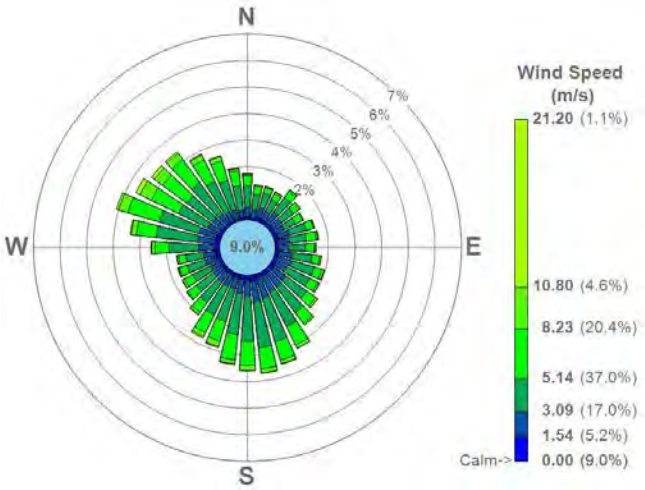
Viroqua, WI
(KY51)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	99.35%	99.35%	99.35%	99.26%	99.35%	99.35%	99.35%	11.39%
	Q2	98.49%	98.49%	98.49%	98.44%	98.49%	98.49%	98.49%	7.92%
	Q3	93.07%	93.07%	93.07%	92.98%	93.03%	93.07%	93.07%	11.82%
	Q4	99.41%	99.41%	99.41%	99.41%	99.41%	99.41%	99.41%	9.06%
2011	Q1	98.61%	98.61%	98.61%	98.56%	98.61%	98.61%	98.61%	7.82%
	Q2	95.51%	95.51%	95.51%	95.51%	95.51%	95.51%	95.51%	4.81%
	Q3	93.25%	93.25%	93.25%	93.16%	93.03%	93.25%	93.25%	16.58%
	Q4	99.09%	99.09%	99.09%	99.05%	99.05%	99.09%	99.09%	6.30%
2012	Q1	94.28%	94.28%	94.28%	93.18%	94.28%	94.28%	94.28%	5.45%
	Q2	91.53%	91.53%	91.53%	91.39%	91.53%	91.53%	91.53%	6.59%
	Q3	83.20%	83.20%	83.20%	83.20%	83.20%	83.20%	83.20%	14.54%
	Q4	99.09%	99.09%	99.09%	99.09%	99.09%	99.09%	99.09%	7.74%
2013	Q1	99.58%	99.58%	99.58%	99.58%	99.58%	99.58%	99.58%	7.69%
	Q2	32.74%	32.74%	32.74%	32.74%	32.74%	32.74%	32.74%	1.42%
	Q3	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Q4	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2014	Q1	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Q2	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Q3	60.55%	60.55%	60.55%	60.46%	60.55%	60.55%	60.55%	10.24%
	Q4	98.37%	98.37%	98.37%	98.37%	98.10%	98.37%	98.37%	10.01%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Washington, IA
(KAWG)



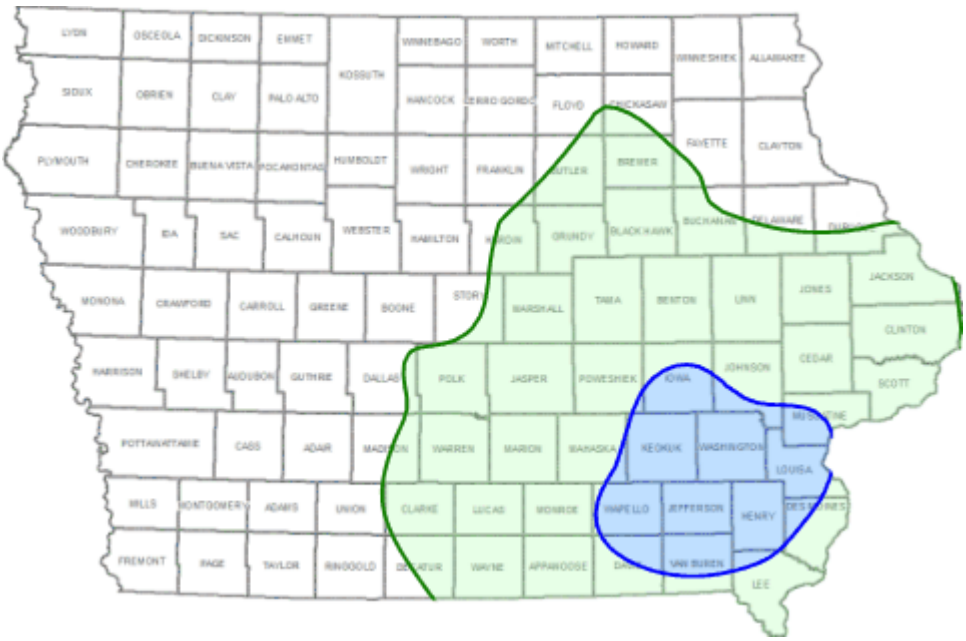
Station Info

WBAN:	NA
WMO:	725454
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	41.2752 N, 91.6750 W
UTM (NAD83, Z15):	610971.05, 4570154.14
Elevation:	228.9 m
Confidence:	Medium

Wind Correlation



Station	Correlation
KFFL	0.951
KMPZ	0.936
KOTM	0.918
KMUT	0.909
KOOA	0.902
KCID	0.886
KOXV	0.880
KMQB	0.878
KDVN	0.878
KTVK	0.875
KFSW	0.875
KGGI	0.874
KTNU	0.869
KIOW	0.868
KVTI	0.866
KCNC	0.862
KBRL	0.849
KI75	0.842
KCWI	0.841
KUIN	0.840

Terrain-Wind Index (Range = 0.000733303)

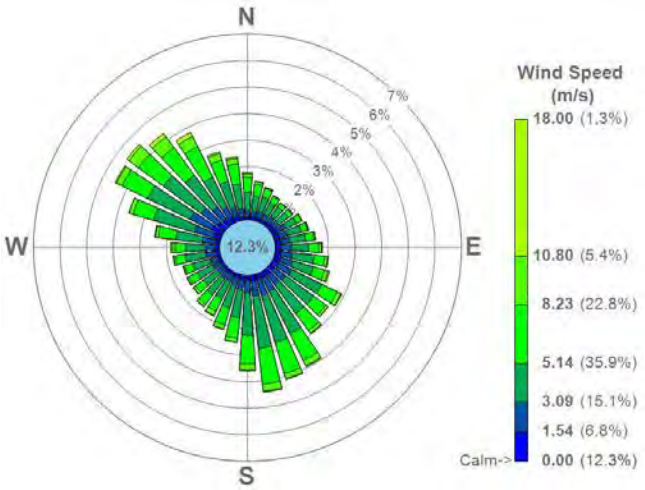
Washington, IA
(KAWG)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	89.40%	89.40%	89.40%	89.35%	89.40%	89.40%	89.40%	8.94%
	Q2	93.32%	93.32%	93.13%	83.65%	93.32%	93.32%	93.32%	8.52%
	Q3	79.12%	79.12%	79.08%	55.30%	79.12%	79.12%	79.12%	11.46%
	Q4	89.31%	89.31%	89.22%	74.32%	89.31%	89.31%	89.31%	7.29%
2011	Q1	81.20%	81.20%	81.20%	79.86%	81.20%	81.20%	81.20%	9.26%
	Q2	97.85%	97.85%	97.80%	95.24%	97.85%	97.85%	97.85%	7.83%
	Q3	98.32%	98.32%	98.32%	94.66%	98.32%	98.32%	98.32%	17.71%
	Q4	99.32%	99.32%	99.32%	99.32%	99.32%	99.32%	99.32%	7.79%
2012	Q1	99.54%	99.54%	99.54%	99.54%	99.54%	99.54%	99.54%	7.01%
	Q2	99.68%	99.68%	99.68%	99.50%	99.68%	99.68%	99.68%	9.07%
	Q3	99.05%	99.05%	99.05%	99.00%	99.05%	99.05%	99.05%	20.65%
	Q4	99.28%	99.28%	99.28%	98.37%	99.28%	99.28%	99.28%	8.06%
2013	Q1	99.54%	99.54%	99.54%	99.54%	99.54%	99.54%	99.54%	6.62%
	Q2	99.27%	99.27%	99.27%	99.22%	99.27%	99.27%	99.27%	8.29%
	Q3	61.46%	61.46%	61.46%	61.23%	61.46%	61.46%	61.46%	12.59%
	Q4	99.55%	99.55%	99.55%	99.50%	99.55%	98.23%	99.55%	2.76%
2014	Q1	99.68%	99.68%	99.68%	99.49%	99.68%	99.07%	99.68%	2.50%
	Q2	99.86%	99.86%	99.86%	99.59%	99.86%	98.21%	99.86%	3.89%
	Q3	99.41%	99.41%	99.41%	98.91%	99.41%	96.74%	99.41%	12.82%
	Q4	99.77%	99.77%	99.77%	99.59%	99.77%	99.09%	99.77%	5.89%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Waterloo, IA
(KALO)



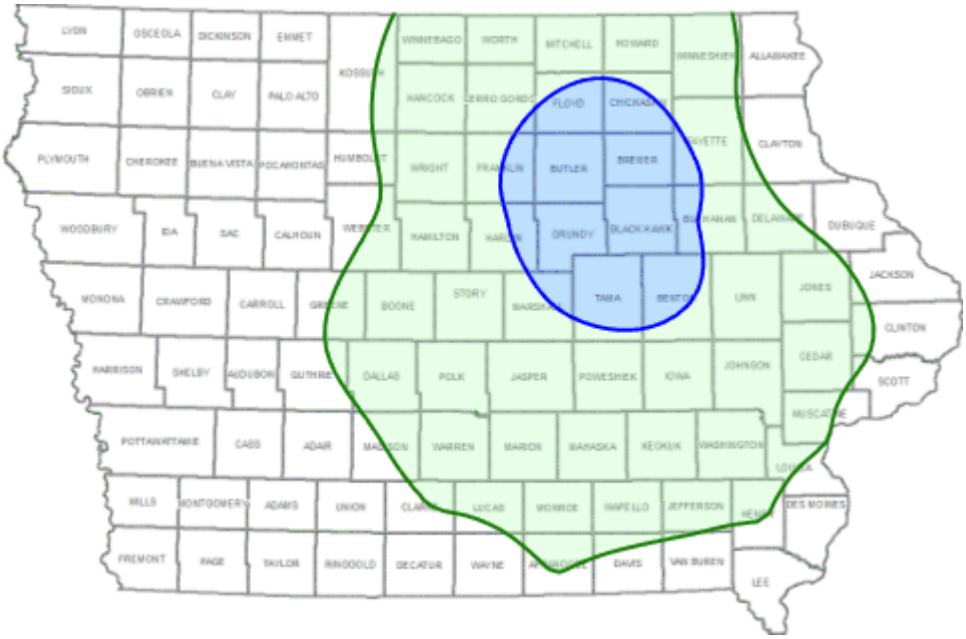
Station Info

WBAN:	94910
WMO:	725480
Anemometer Height:	10.0 m
1-Min Availability Date:	1/1/2000
IFW Installation Date:	6/25/2007

Location Info

Lat-Long:	42.5544 N, 92.4013 W
UTM (NAD83, Z15):	549150.28, 4711507.28
Elevation:	265.2 m
Confidence:	High

Wind Correlation



Station	Correlation
KOLZ	0.917
KCCY	0.915
KVTI	0.914
KMIW	0.908
KIIB	0.902
KIFA	0.894
KCID	0.874
KGGI	0.869
KMCW	0.864
KEBS	0.863
KTNU	0.859
KCAV	0.851
KFXY	0.848
KIKV	0.847
KPRO	0.845
KOOA	0.842
KRST	0.834
KOTM	0.833
KBNW	0.832
KMXO	0.832

Terrain-Wind Index (Range = 0.001231264)

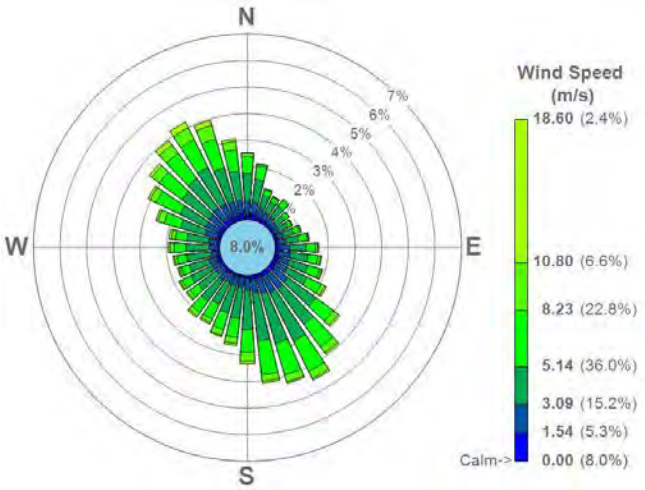
Waterloo, IA
(KALO)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	100.00%	100.00%	98.47%	99.72%	100.00%	99.35%	99.68%	11.20%
	Q2	99.50%	99.50%	99.40%	99.18%	99.31%	98.35%	99.27%	12.73%
	Q3	100.00%	100.00%	100.00%	99.91%	100.00%	98.46%	99.91%	17.44%
	Q4	99.82%	99.82%	99.50%	99.32%	99.59%	98.87%	99.68%	14.63%
2011	Q1	99.95%	99.95%	99.95%	99.86%	99.95%	99.31%	99.77%	8.24%
	Q2	99.95%	99.95%	99.95%	99.86%	99.91%	98.90%	99.91%	8.84%
	Q3	99.86%	99.86%	99.86%	98.51%	99.86%	97.69%	99.73%	21.29%
	Q4	99.95%	99.95%	99.95%	99.86%	99.95%	99.59%	99.91%	13.41%
2012	Q1	99.91%	99.91%	99.91%	99.40%	99.91%	99.36%	99.86%	10.44%
	Q2	100.00%	100.00%	100.00%	99.95%	100.00%	98.86%	99.82%	9.84%
	Q3	100.00%	100.00%	100.00%	99.82%	100.00%	97.10%	99.91%	20.38%
	Q4	100.00%	100.00%	100.00%	99.91%	100.00%	99.50%	99.95%	11.82%
2013	Q1	100.00%	100.00%	100.00%	99.91%	100.00%	99.54%	99.95%	9.81%
	Q2	100.00%	100.00%	99.91%	99.86%	99.95%	98.90%	99.86%	7.97%
	Q3	99.95%	99.95%	99.68%	92.48%	99.95%	97.33%	99.59%	18.25%
	Q4	100.00%	100.00%	99.95%	91.71%	99.95%	99.68%	99.86%	11.64%
2014	Q1	100.00%	100.00%	100.00%	90.93%	100.00%	99.77%	100.00%	5.42%
	Q2	100.00%	100.00%	98.95%	92.12%	100.00%	97.21%	98.95%	8.01%
	Q3	100.00%	100.00%	99.37%	91.76%	100.00%	97.60%	99.91%	15.31%
	Q4	99.59%	99.59%	99.50%	91.98%	99.50%	98.69%	99.32%	7.93%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Webster City, IA
(KEBS)



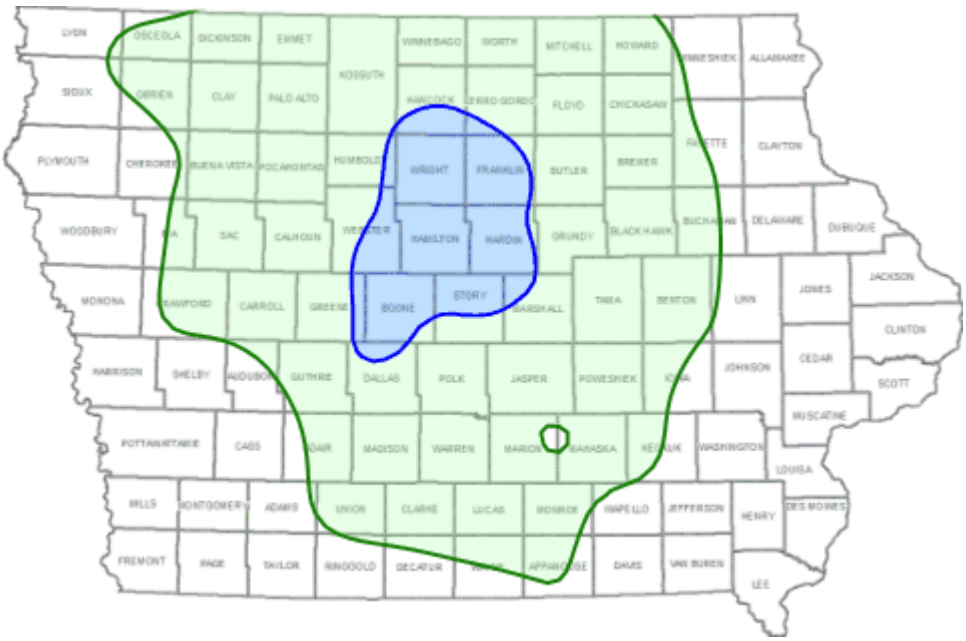
Station Info

WBAN:	NA
WMO:	725478
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	42.4392 N, 93.8691 W
UTM (NAD83, Z15):	428520.02, 4698907.82
Elevation:	338.9 m
Confidence:	High

Wind Correlation



Station	Correlation
KCAV	0.929
KPRO	0.912
KBNW	0.906
KIFA	0.905
KAMW	0.898
KMIW	0.894
KAXA	0.884
KFXY	0.883
KIKV	0.878
KMCW	0.875
KCCY	0.874
KTNU	0.873
KDSM	0.865
KALO	0.864
KFOD	0.859
KSPW	0.851
KSLB	0.845
KOLZ	0.845
KCIN	0.843
KI75	0.838

Terrain-Wind Index (Range = 0.001333062)

Webster City, IA

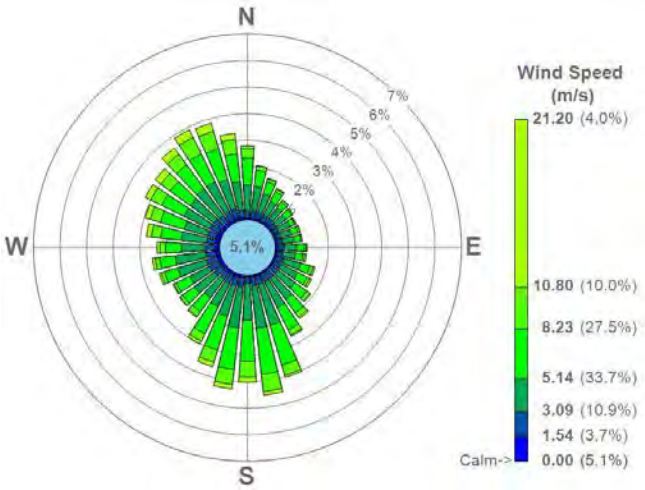
(KEBS)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	93.70%	93.70%	93.70%	93.70%	93.70%	93.70%	93.70%	13.61%
	Q2	97.12%	97.12%	97.07%	97.12%	97.12%	97.12%	97.12%	9.07%
	Q3	91.30%	91.30%	91.30%	91.21%	91.30%	91.30%	91.30%	14.40%
	Q4	99.86%	99.86%	99.82%	99.41%	99.86%	99.86%	99.86%	8.06%
2011	Q1	99.21%	99.21%	99.17%	98.84%	99.03%	99.21%	99.21%	6.16%
	Q2	99.82%	99.82%	99.82%	99.82%	99.82%	99.82%	99.82%	4.62%
	Q3	98.96%	98.96%	98.96%	97.92%	98.96%	98.96%	98.96%	20.06%
	Q4	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	4.89%
2012	Q1	99.82%	99.82%	99.82%	99.40%	99.82%	99.82%	99.82%	5.86%
	Q2	100.00%	100.00%	100.00%	99.95%	100.00%	100.00%	100.00%	5.36%
	Q3	78.35%	78.35%	78.35%	77.76%	78.35%	78.35%	78.35%	11.96%
	Q4	95.56%	95.56%	95.56%	95.34%	93.80%	95.56%	95.56%	5.25%
2013	Q1	99.54%	99.54%	99.54%	99.49%	99.49%	99.54%	99.54%	5.74%
	Q2	99.31%	99.31%	99.31%	93.59%	99.31%	99.31%	99.31%	5.27%
	Q3	99.77%	99.77%	99.77%	99.77%	99.77%	99.77%	99.77%	15.17%
	Q4	80.53%	80.53%	80.53%	71.60%	79.39%	80.43%	80.53%	3.44%
2014	Q1	96.81%	96.81%	96.81%	87.96%	82.73%	96.48%	96.76%	2.41%
	Q2	99.86%	99.86%	99.86%	99.68%	99.86%	97.85%	99.86%	3.43%
	Q3	94.25%	94.25%	94.25%	93.93%	94.25%	91.98%	94.20%	10.82%
	Q4	98.91%	98.91%	98.91%	98.78%	98.91%	98.60%	98.91%	3.58%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Worthington, MN
(KOTG)



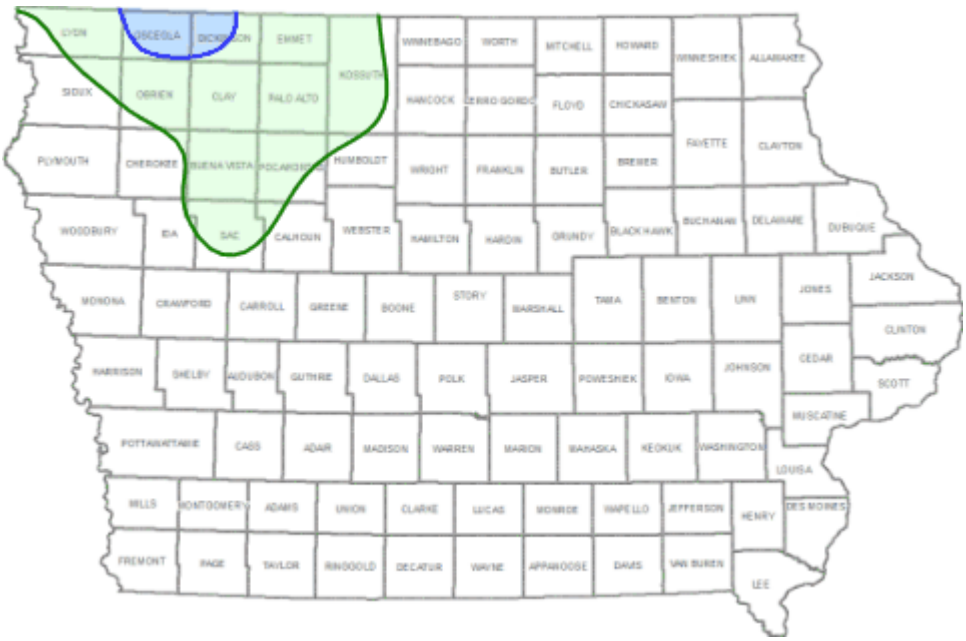
Station Info

WBAN:	94927
WMO:	726587
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	43.6525 N, 95.5758 W
UTM (NAD83, Z15):	292282.63, 4836502.07
Elevation:	477.3 m
Confidence:	Medium

Wind Correlation



Station	Correlation
KEST	0.883
KSPW	0.881
KSHL	0.878
KMJQ	0.868
KSLB	0.849
KAXA	0.846
KFRM	0.844
KFSD	0.819
KLYV	0.814
KDNS	0.773
KCIN	0.771
KRST	0.769
KEBS	0.763
KMCW	0.758
KCKP	0.756
KLRJ	0.756
KCAV	0.753
KORC	0.748
KHNR	0.725
KFXY	0.717

Terrain-Wind Index (Range = 0.000952872)

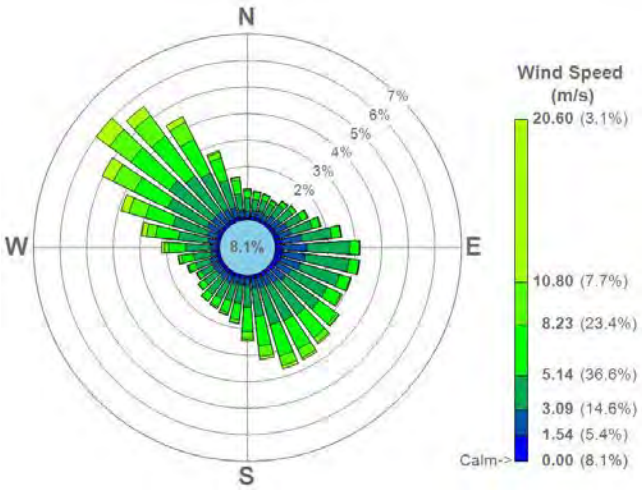
Worthington, MN
(KOTG)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	100.00%	100.00%	99.26%	99.21%	98.19%	99.03%	99.03%	7.27%
	Q2	99.95%	99.95%	99.54%	99.95%	99.91%	99.91%	99.91%	5.36%
	Q3	99.64%	99.64%	98.64%	99.55%	99.64%	99.64%	99.64%	5.80%
	Q4	99.82%	99.82%	97.64%	98.23%	98.91%	99.64%	99.64%	3.99%
2011	Q1	91.06%	91.06%	89.35%	91.02%	90.00%	89.49%	89.49%	5.28%
	Q2	99.95%	99.95%	98.76%	99.82%	99.54%	99.86%	99.86%	2.47%
	Q3	100.00%	100.00%	89.31%	99.00%	99.55%	99.95%	99.95%	7.65%
	Q4	99.59%	99.59%	98.87%	99.59%	96.51%	99.59%	99.59%	2.81%
2012	Q1	99.91%	99.91%	96.98%	99.13%	95.92%	96.29%	96.29%	5.36%
	Q2	99.91%	99.91%	99.86%	99.86%	99.45%	99.91%	99.91%	3.25%
	Q3	98.78%	98.78%	93.98%	98.73%	93.93%	89.76%	89.76%	10.82%
	Q4	100.00%	100.00%	95.70%	96.78%	99.00%	100.00%	100.00%	5.48%
2013	Q1	44.63%	44.63%	44.63%	44.58%	44.49%	44.63%	44.63%	2.41%
	Q2	89.79%	89.79%	87.82%	87.87%	87.09%	85.76%	85.76%	8.61%
	Q3	97.24%	97.24%	97.24%	97.24%	97.24%	96.60%	96.60%	7.79%
	Q4	100.00%	100.00%	100.00%	100.00%	99.41%	100.00%	100.00%	2.67%
2014	Q1	100.00%	100.00%	100.00%	99.77%	97.50%	100.00%	100.00%	3.29%
	Q2	100.00%	100.00%	97.89%	97.89%	97.34%	97.89%	97.89%	2.79%
	Q3	99.64%	99.64%	99.64%	96.38%	99.64%	99.64%	99.64%	5.93%
	Q4	99.82%	99.82%	99.82%	99.82%	99.82%	99.82%	99.82%	3.08%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Yankton, SD
(KYKN)



Station Info

WBAN:	94911
WMO:	726525
Anemometer Height:	Unknown
1-Min Availability Date:	NA
IFW Installation Date:	NA

Location Info

Lat-Long:	42.9142 N, 97.3805 W
UTM (NAD83, Z15):	142430.50, 4760603.50
Elevation:	387.4 m
Confidence:	High

Wind Correlation

Station	Correlation
KSUX	0.777
KSHL	0.754
KFSD	0.740
KOFF	0.717
KSPW	0.712
KSLB	0.694
KFXY	0.689
KIFA	0.687
KORC	0.686
KPRO	0.685
KMJQ	0.684
KCIN	0.682
KDNS	0.674
KFRM	0.671
KCAV	0.670
KBTA	0.667
KLYV	0.667
KBNW	0.665
KPMV	0.661
KMIW	0.658

Terrain-Wind Index (Range = 0.001746726)

Yankton, SD

(KYKN)

ISH Data Inventory

Year	Period	OBS	PRCP	PRES	CCVR	TMPD	WDIR*	WSPD*	Calms
2010	Q1	100.00%	100.00%	100.00%	100.00%	98.70%	100.00%	100.00%	10.05%
	Q2	97.94%	97.94%	97.94%	97.85%	97.76%	97.94%	97.94%	6.41%
	Q3	95.20%	95.20%	95.15%	94.79%	95.15%	95.15%	95.15%	9.56%
	Q4	99.86%	99.86%	99.86%	99.55%	96.88%	99.86%	99.86%	9.69%
2011	Q1	98.98%	98.98%	98.98%	98.98%	97.96%	98.29%	98.29%	8.24%
	Q2	99.73%	99.73%	99.73%	99.08%	99.08%	99.73%	99.73%	4.49%
	Q3	100.00%	100.00%	99.91%	98.78%	99.77%	99.91%	99.91%	11.64%
	Q4	99.68%	99.68%	99.68%	99.68%	98.14%	99.68%	99.68%	8.56%
2012	Q1	100.00%	100.00%	99.95%	99.95%	96.29%	100.00%	100.00%	10.30%
	Q2	99.27%	99.27%	99.22%	96.06%	96.93%	99.27%	99.27%	4.99%
	Q3	96.88%	96.88%	96.69%	94.66%	89.36%	96.69%	96.69%	7.88%
	Q4	99.00%	99.00%	99.00%	99.00%	98.51%	99.00%	99.00%	9.38%
2013	Q1	99.91%	99.91%	99.91%	99.81%	99.86%	99.91%	99.91%	7.04%
	Q2	99.40%	99.40%	99.40%	99.40%	99.40%	98.40%	98.40%	7.55%
	Q3	99.82%	99.82%	98.01%	98.87%	97.83%	98.01%	98.01%	9.65%
	Q4	100.00%	100.00%	100.00%	99.95%	99.73%	100.00%	100.00%	9.33%
2014	Q1	100.00%	100.00%	99.95%	99.95%	98.89%	99.95%	99.95%	5.69%
	Q2	99.95%	99.95%	99.91%	94.09%	99.77%	99.91%	99.91%	5.72%
	Q3	99.86%	99.86%	99.28%	98.46%	99.14%	99.14%	99.14%	9.69%
	Q4	98.05%	98.05%	98.05%	98.01%	95.15%	98.05%	98.05%	6.16%

* If available, 1-minute wind data may be used to supplement the ISH data to fulfill the 90% completeness requirement.

Appendix B – Comparison of Model Results by Location

This appendix contains an analysis comparing model results using the previous 2005 – 2009 AERMOD meteorological data to the new 2010 – 2014 AERMOD meteorological data. The results are represented in terms of the average ratio of new model results to old (values greater than one indicating an average increase in model concentration due to the change in meteorological data, and values less than one indicated an average decrease). In each chart, solid lines represent the average change for the various source types (listed in the key at the bottom of each page). In certain areas of the state, the meteorological station may have also changed. In these cases, a series of dashed lines are also shown. The dashed lines indicate what the average change in model result would have been had the representative meteorological station not changed.

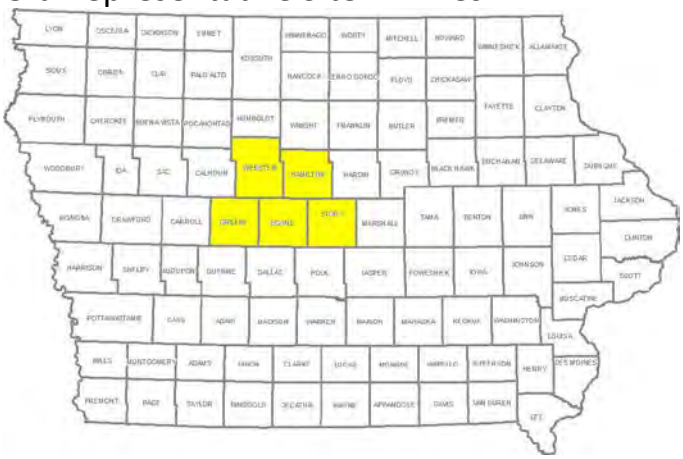
Unlike the comparison of model results presented in the main body of this document, all combinations of source type, release height and averaging period are shown. Therefore, some of the data presented herein may not be realistic for real-world applications

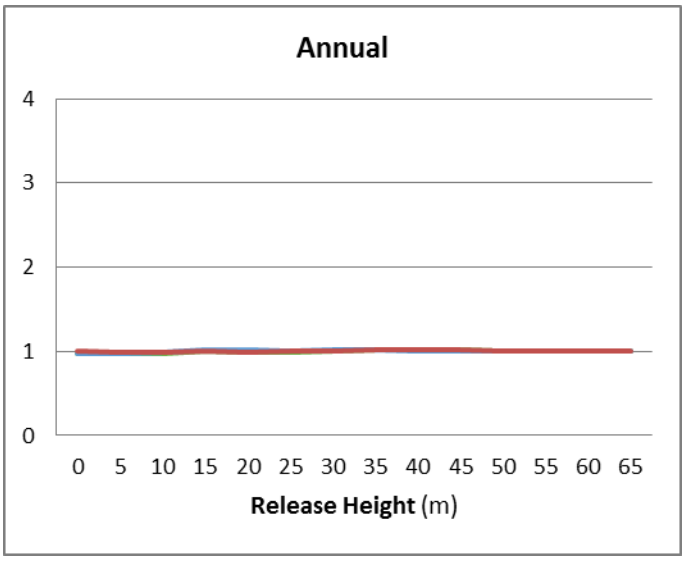
Index

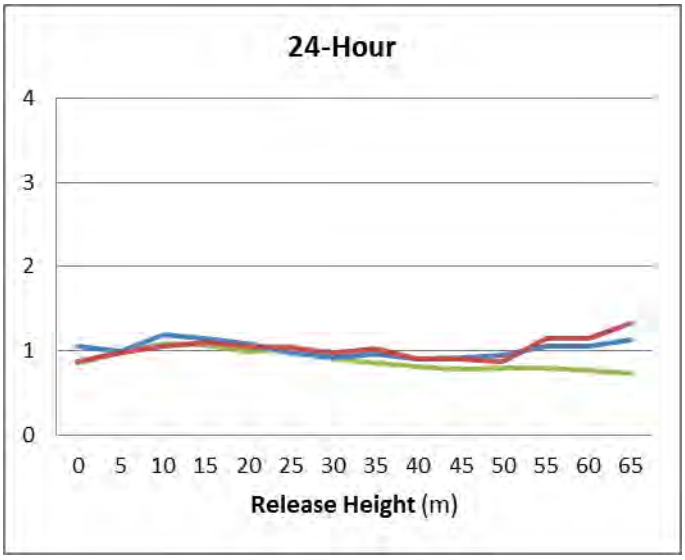
County	Sub-Area (if applicable)	Page
Adair		17
Adams		15
Allamakee	Mississippi River Valley	14
	Remainder of County	7
Appanoose		23
Audubon		17
Benton		6
Black Hawk		28
Boone		1
Bremer		28
Buchanan		28
Buena Vista		26
Butler		28
Calhoun		26
Carroll		2
Cass		15
Cedar		13
Cerro Gordo		20
Cherokee		26
Chickasaw		28
Clarke		15
Clay		26
Clayton	Mississippi River Valley	14
	Remainder of County	8
Clinton	Mississippi River Valley	21
	Remainder of County	9
Crawford		27
Dallas		10
Davis		23
Decatur		15
Delaware		8
Des Moines		3
Dickinson		26
Dubuque	Mississippi River Valley	14
	Remainder of County	11
Emmet		12
Fayette		28
Floyd		20
Franklin		20
Fremont	Missouri River Valley	22
	Remainder of County	15
Greene		1
Grundy		18
Guthrie		10
Hamilton		1
Hancock		20
Hardin		18
Harrison	Missouri River Valley	22
	Remainder of County	26
Henry		5
Howard		28
Humboldt		12
Ida		26
Iowa		6
Jackson	Mississippi River Valley	14
	Remainder of County	11

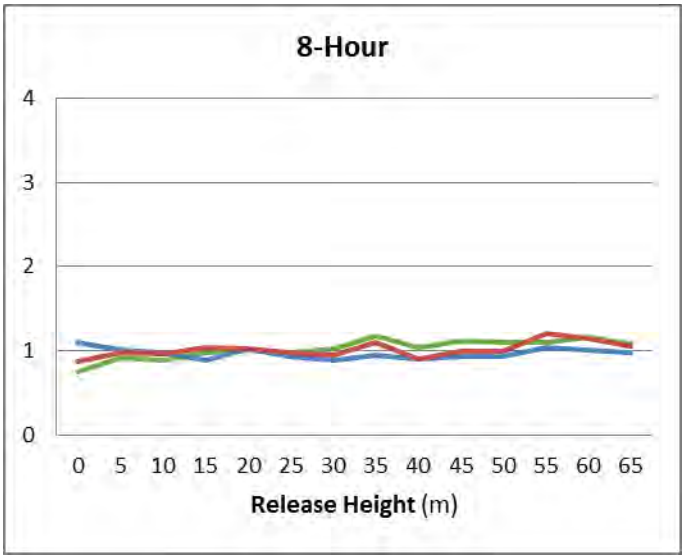
County	Sub-Area (if applicable)	Page
Jasper		19
Jefferson		23
Johnson		13
Jones		13
Keokuk		23
Kossuth		12
Lee		3
Linn		6
Louisa		4
Lucas		16
Lyon		25
Madison		10
Mahaska		23
Marion		10
Marshall		18
Mills	Missouri River Valley	22
	Remainder of County	17
Mitchell		20
Monona	Missouri River Valley	24
	Remainder of County	26
Monroe		23
Montgomery		15
Muscatine		9
O'Brien		26
Osceola		26
Page		15
Palo Alto		12
Plymouth		25
Pocahontas		26
Polk		10
Pottawattamie	Missouri River Valley	22
	Remainder of County	17
Poweshiek		18
Ringgold		15
Sac		26
Scott	Mississippi River Valley	21
	Remainder of County	9
Shelby		17
Sioux		25
Story		1
Tama		18
Taylor		15
Union		15
Van Buren		23
Wapello		23
Warren		10
Washington		23
Wayne		15
Webster		1
Winnebago		20
Winneshiek		7
Woodbury	Missouri River Valley	24
	Remainder of County	26
Worth		20
Wright		20

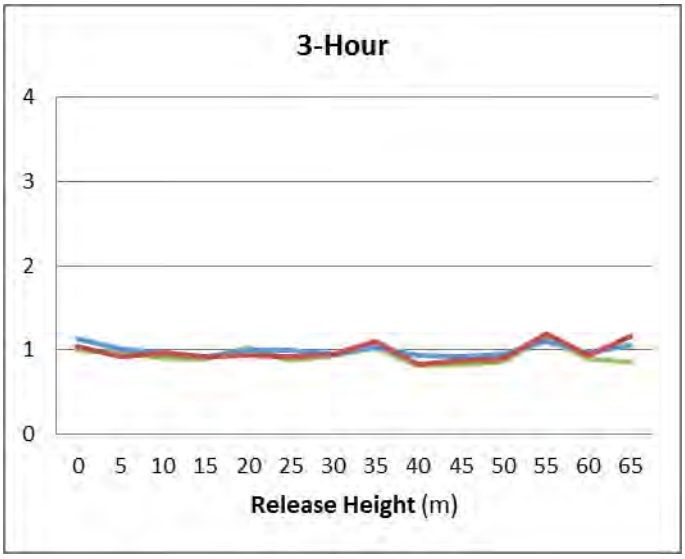
New Representative Site: Ames
Old Representative Site: Ames

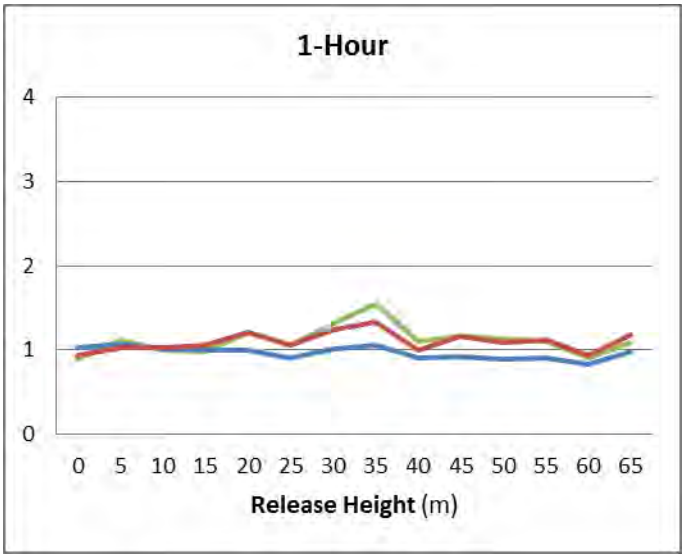








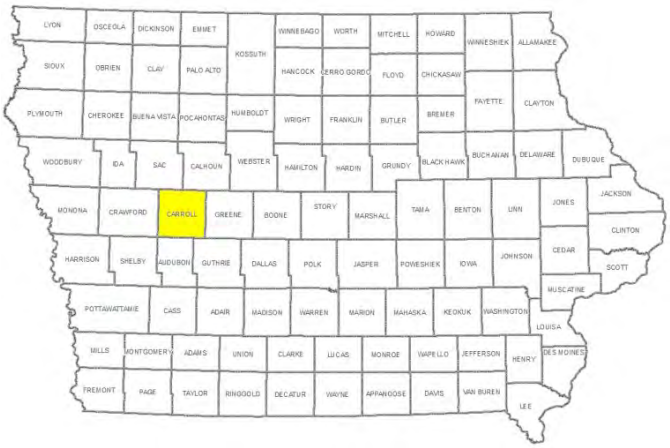


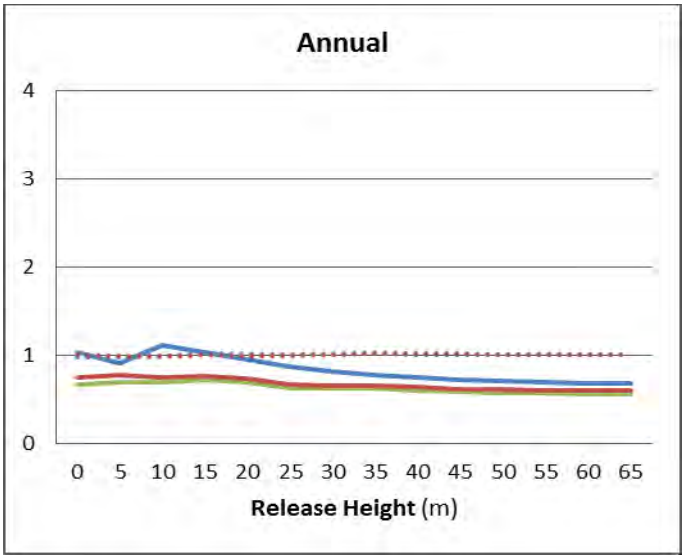


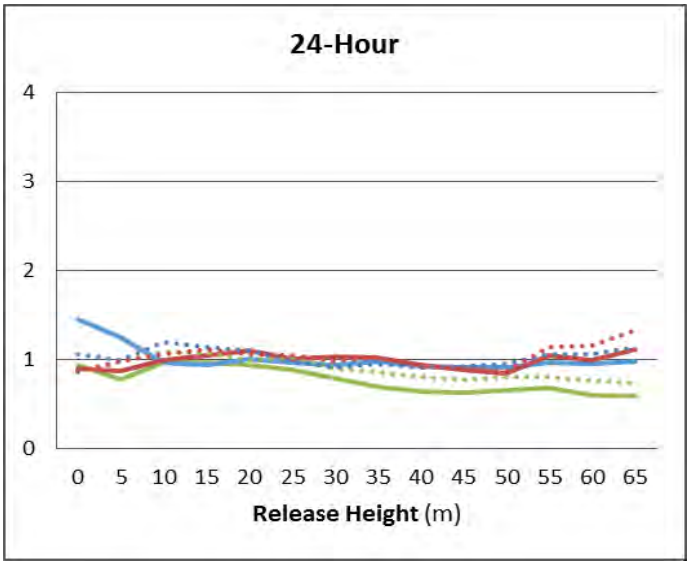
Source Type

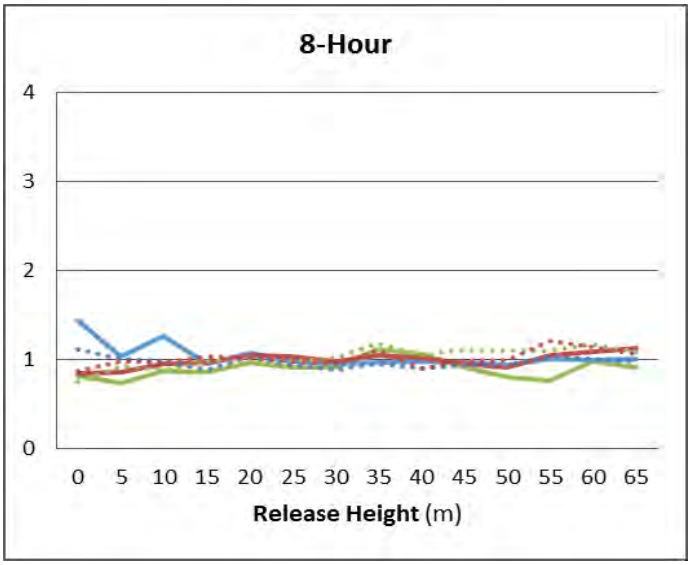
Point Volume Area

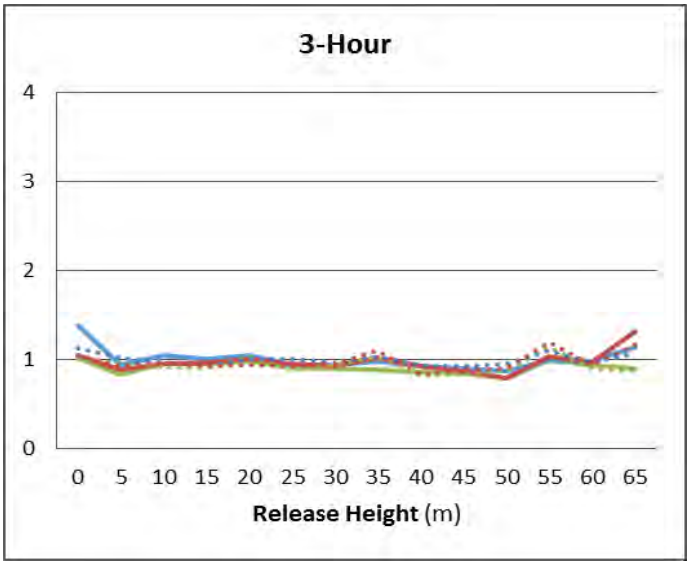
New Representative Site: Spencer
Old Representative Site: Ames

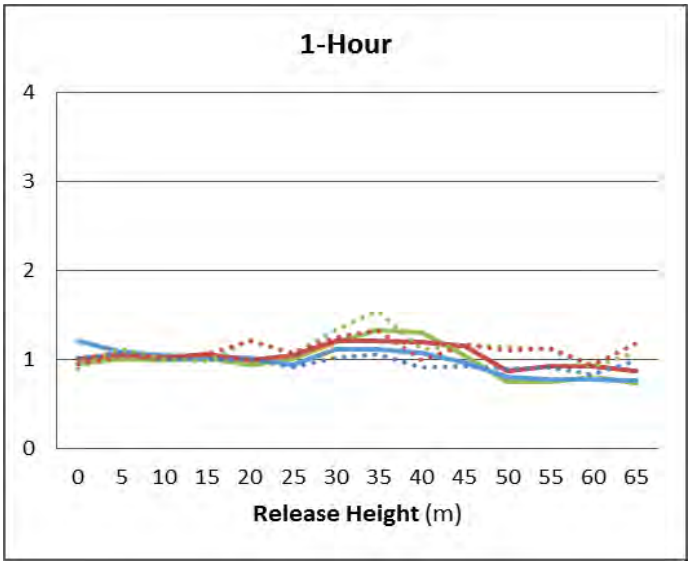








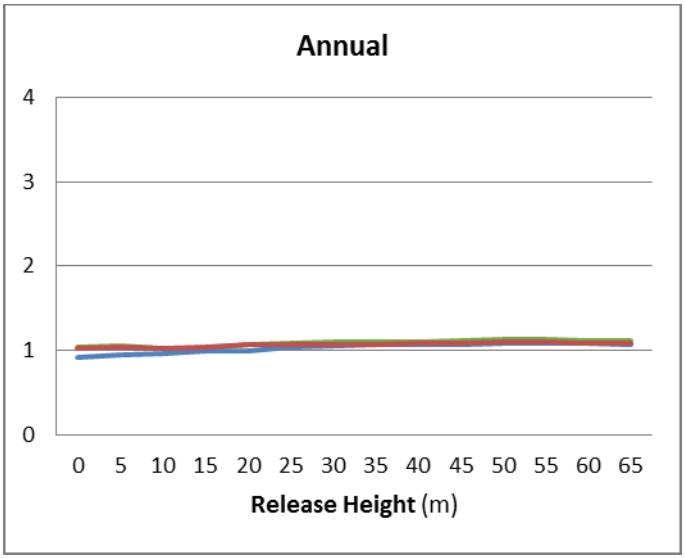


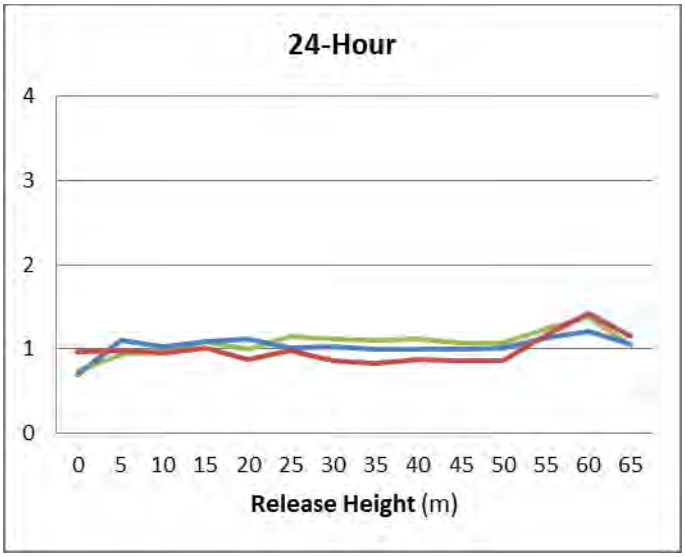


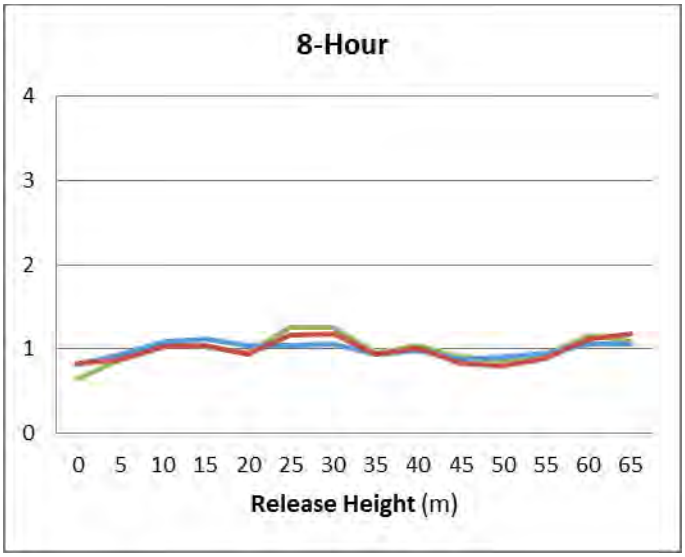
Source Type

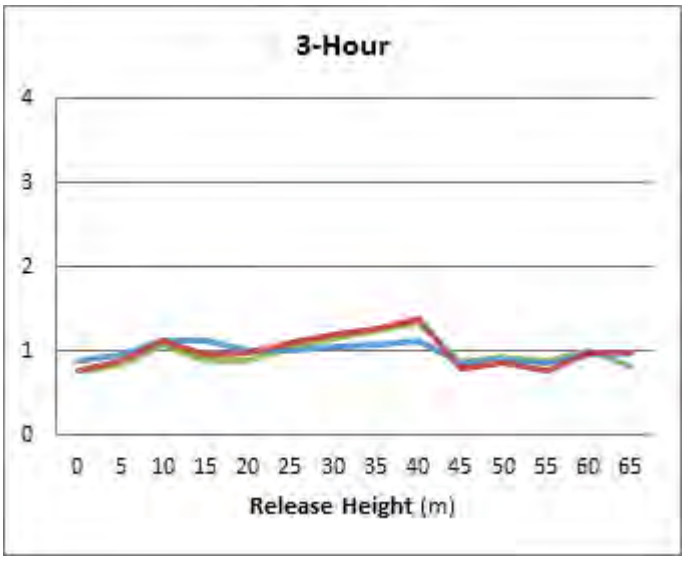
Point Volume Area

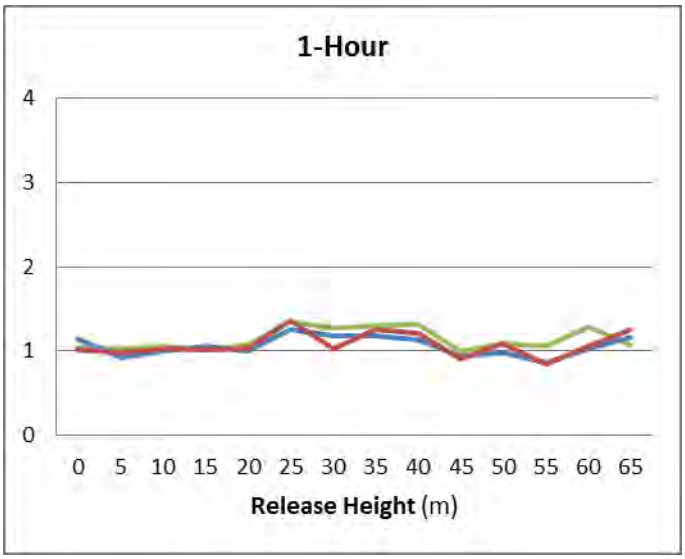
New Representative Site: Burlington
Old Representative Site: Burlington







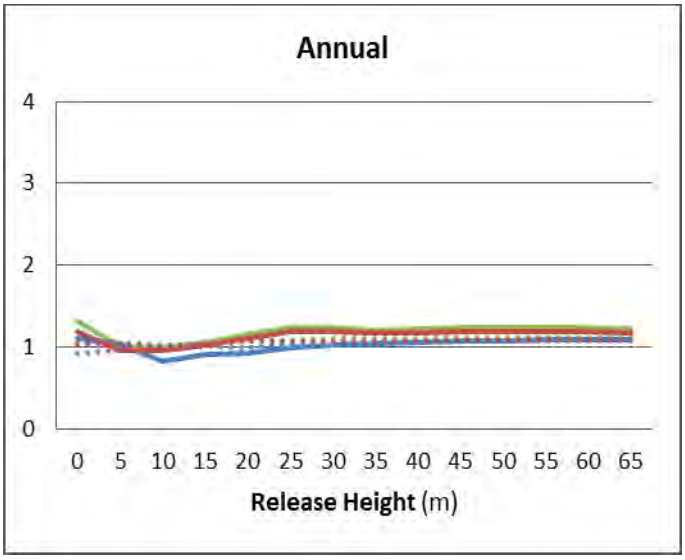


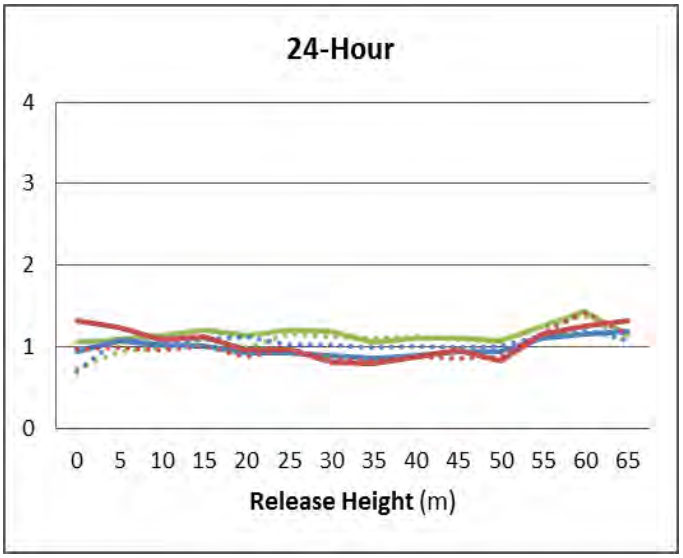


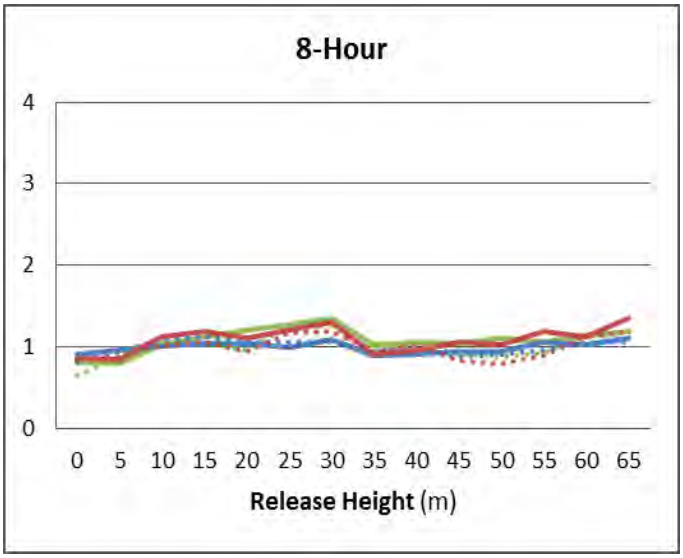
Source Type

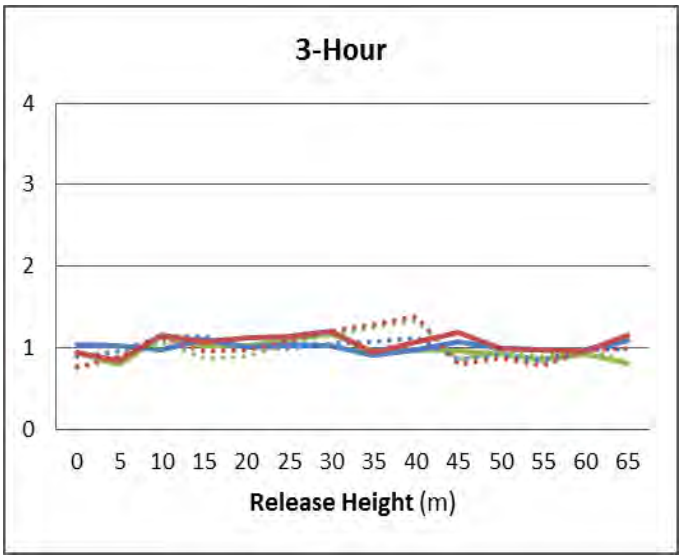
Point Volume Area

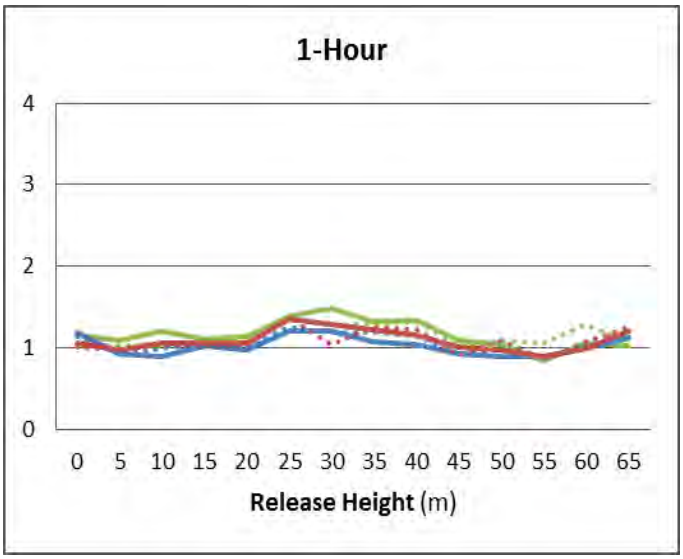
New Representative Site: Iowa City
Old Representative Site: Burlington







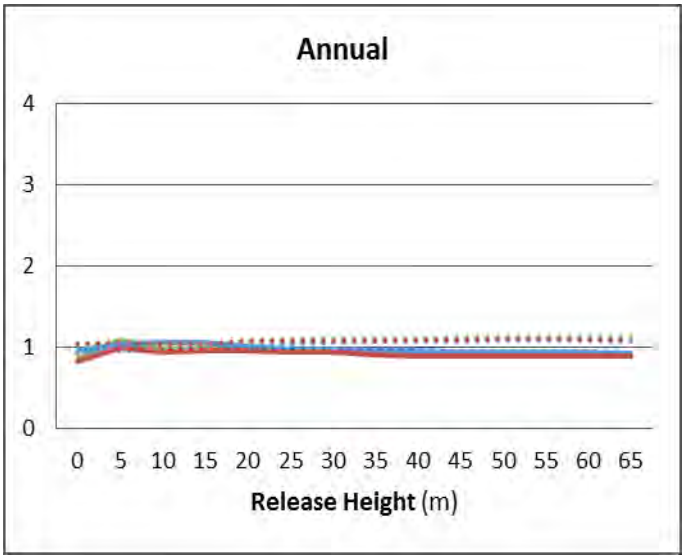


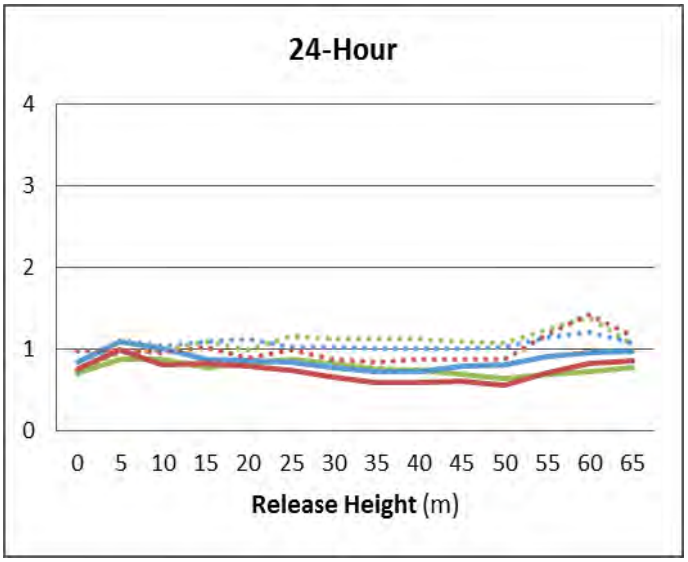


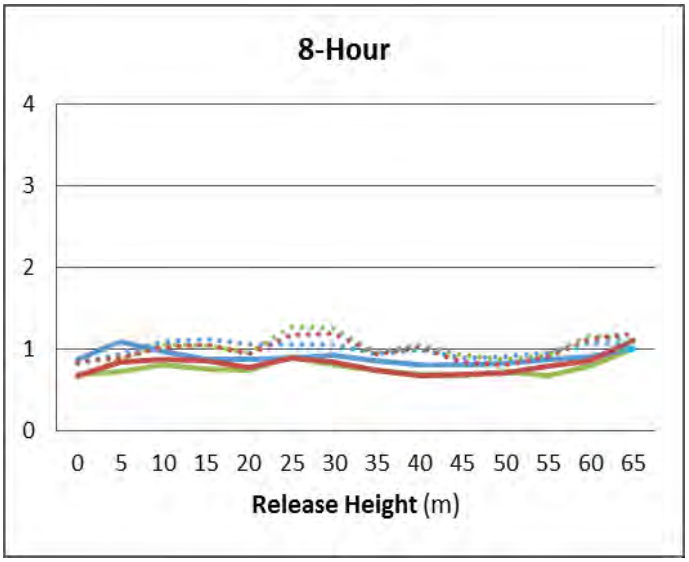
Source Type

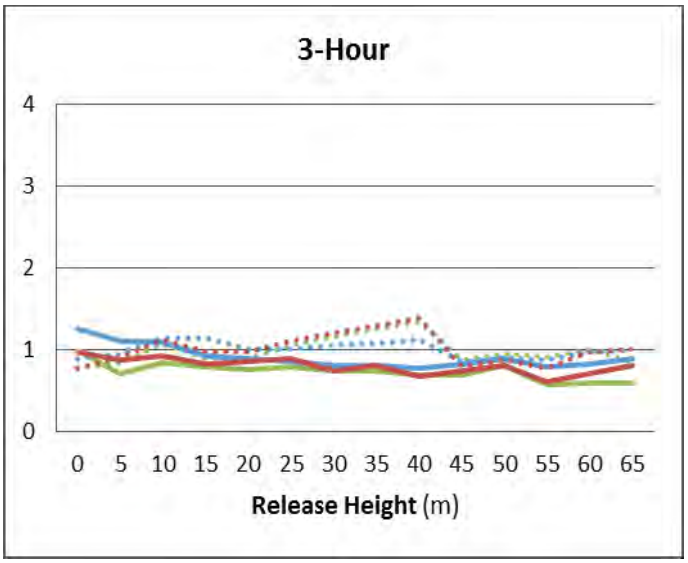
Point Volume Area

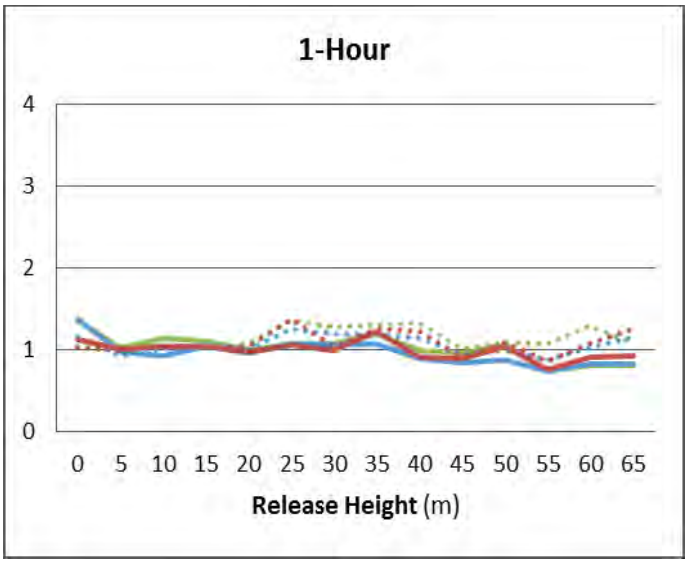
New Representative Site: Ottumwa
Old Representative Site: Burlington







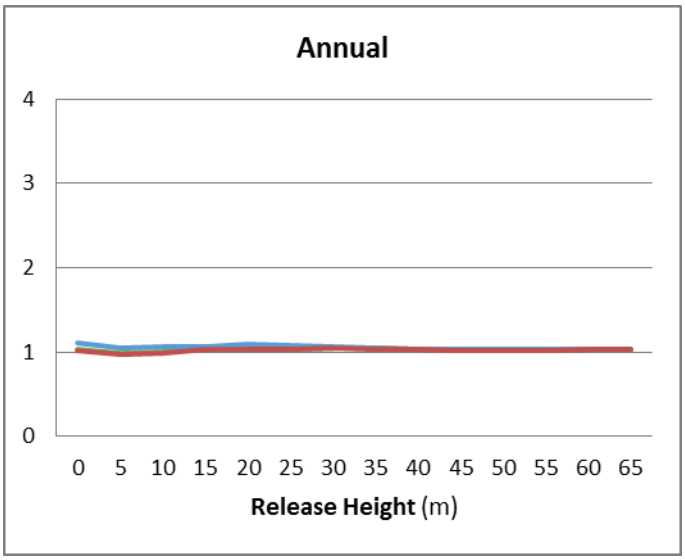


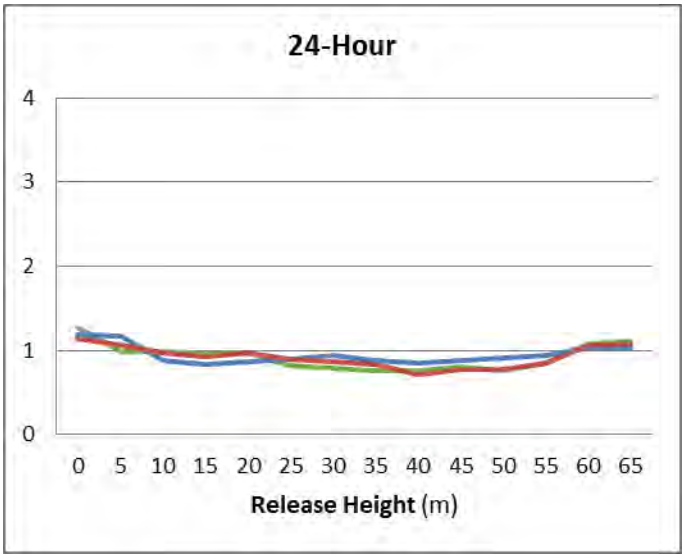


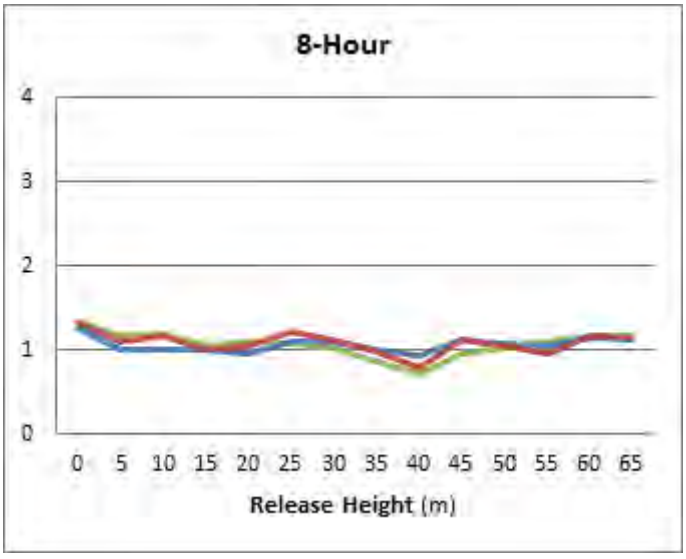
Source Type

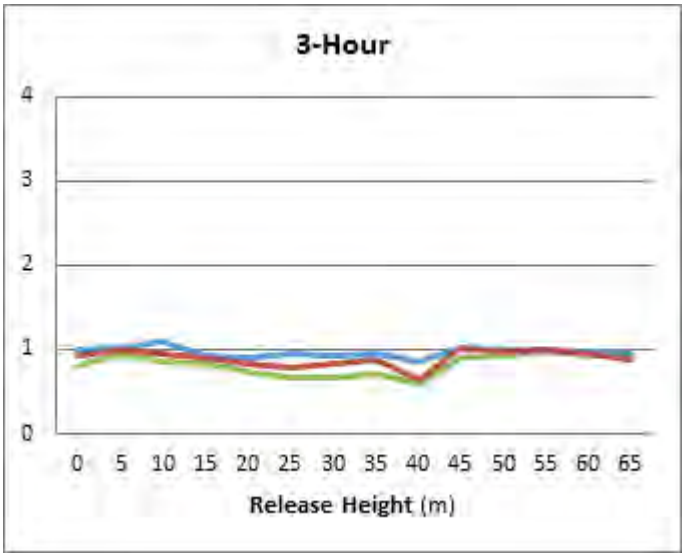
Point Volume Area

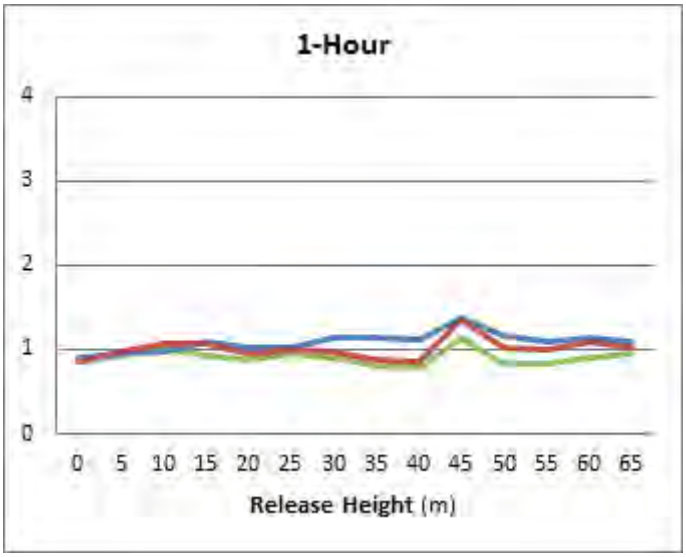
New Representative Site: Cedar Rapids
Old Representative Site: Cedar Rapids







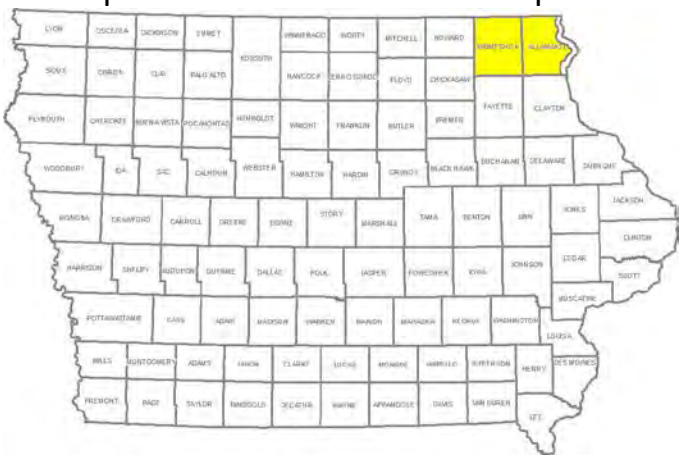


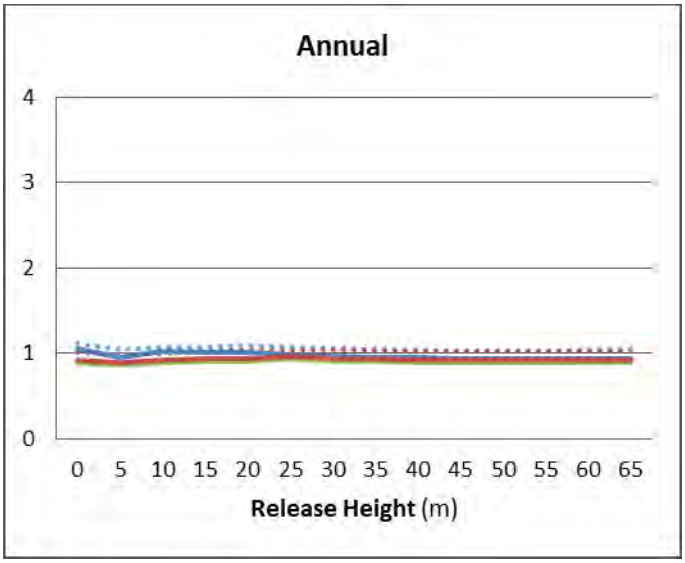


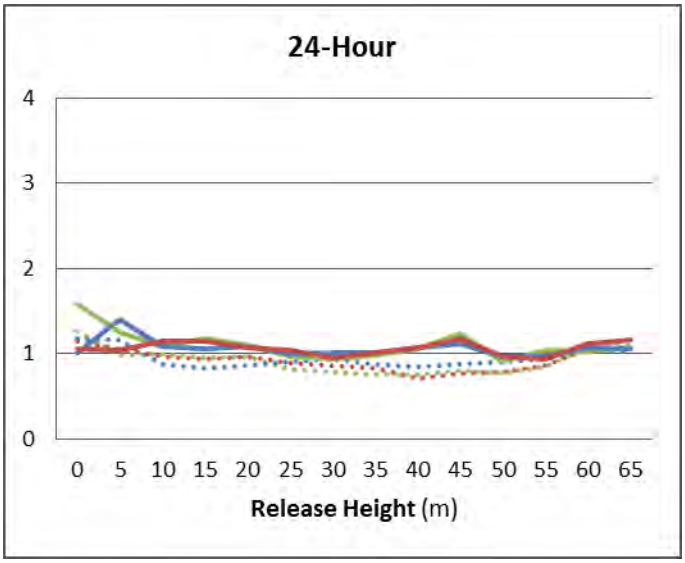
Source Type

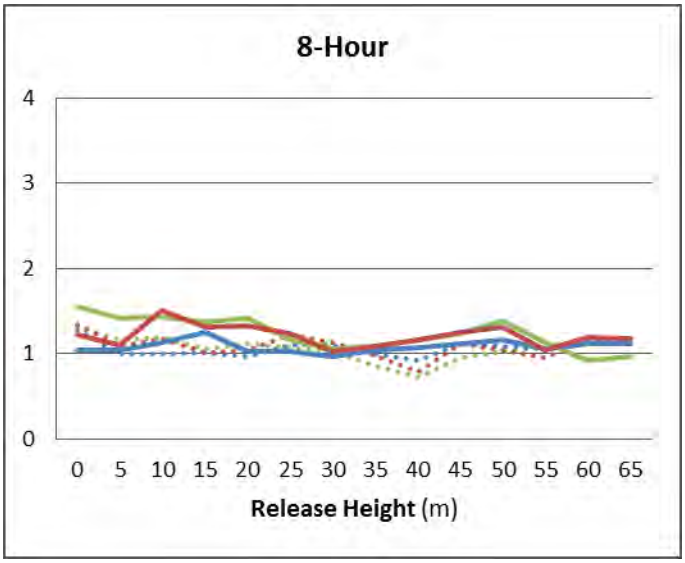
Point Volume Area

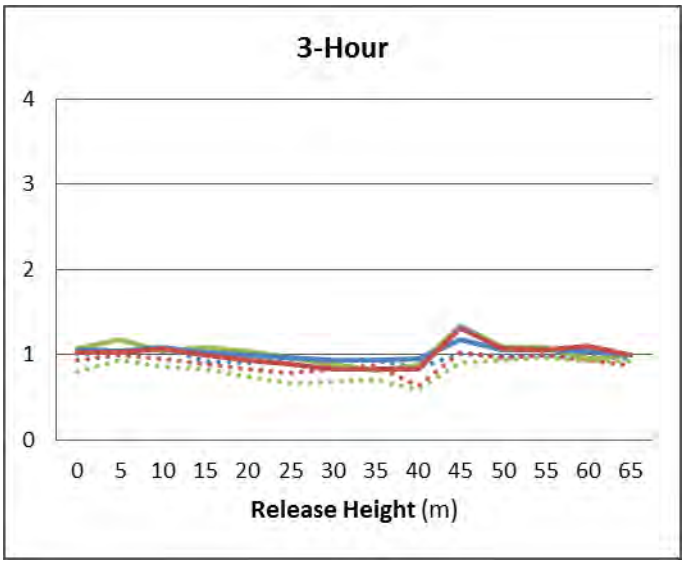
New Representative Site: Waterloo
Old Representative Site: Cedar Rapids

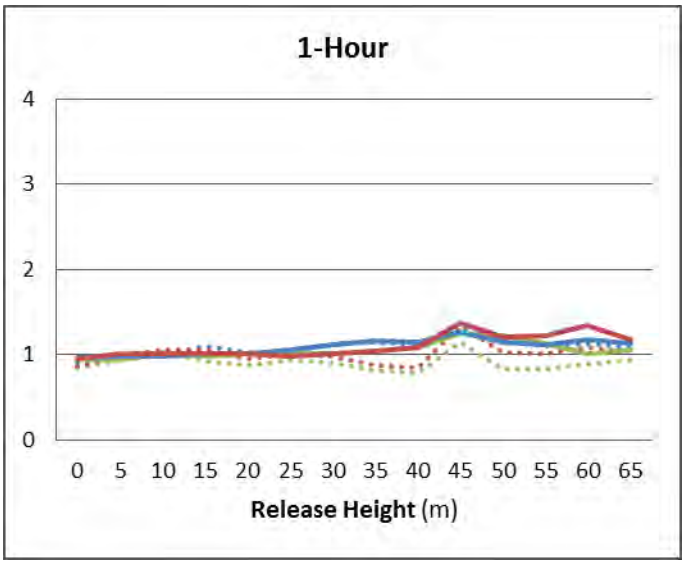








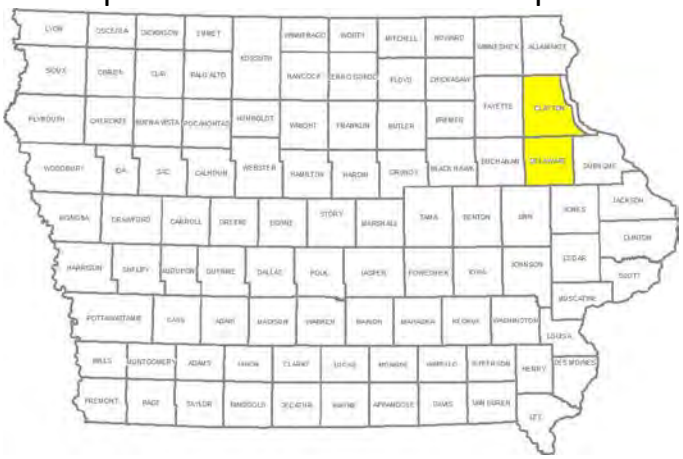


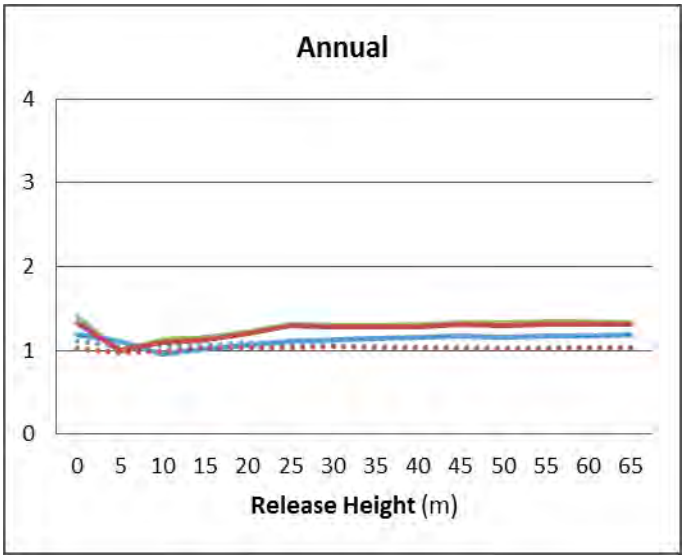


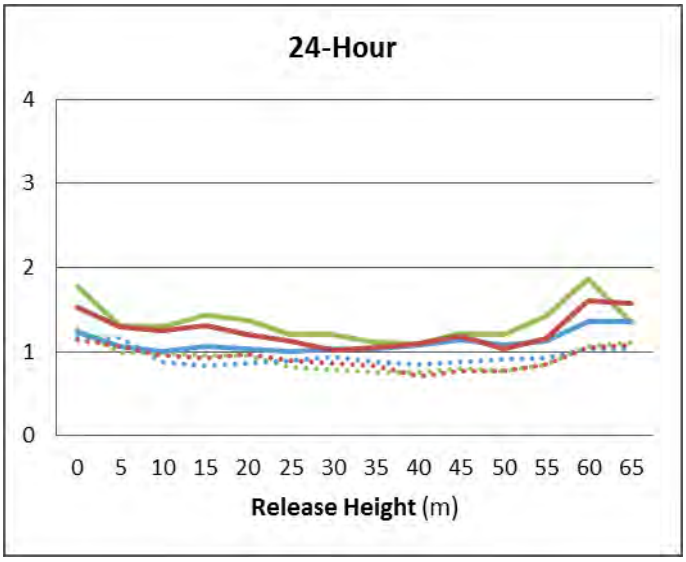
Source Type

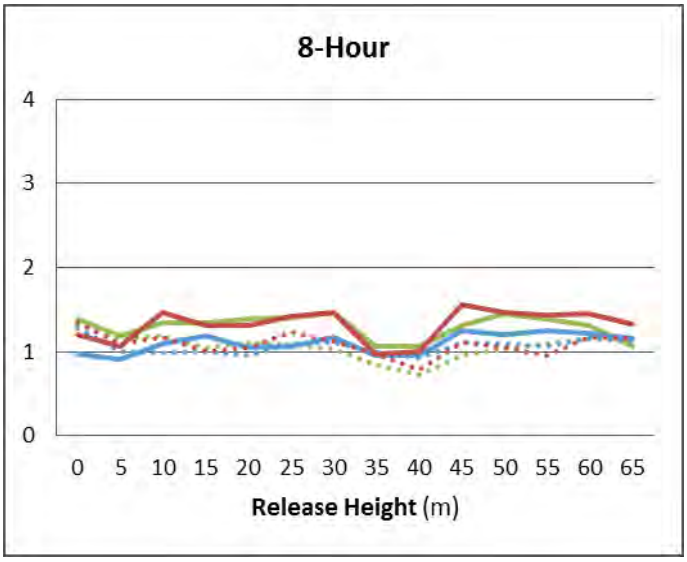
Point Volume Area

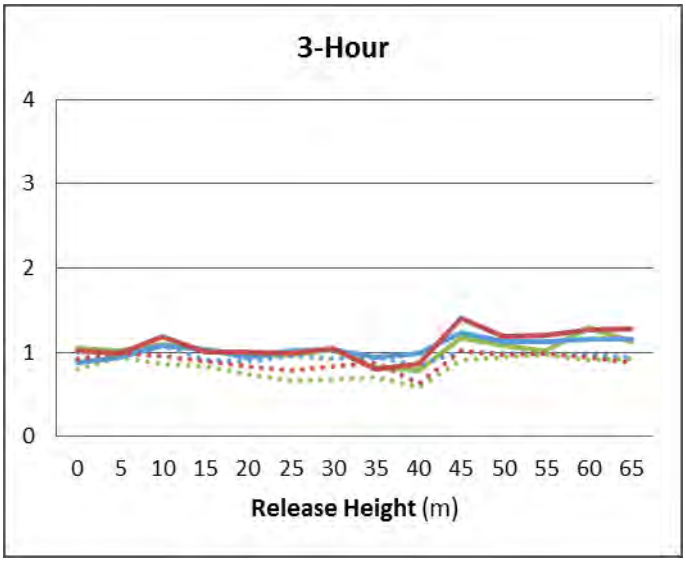
New Representative Site: Iowa City
Old Representative Site: Cedar Rapids

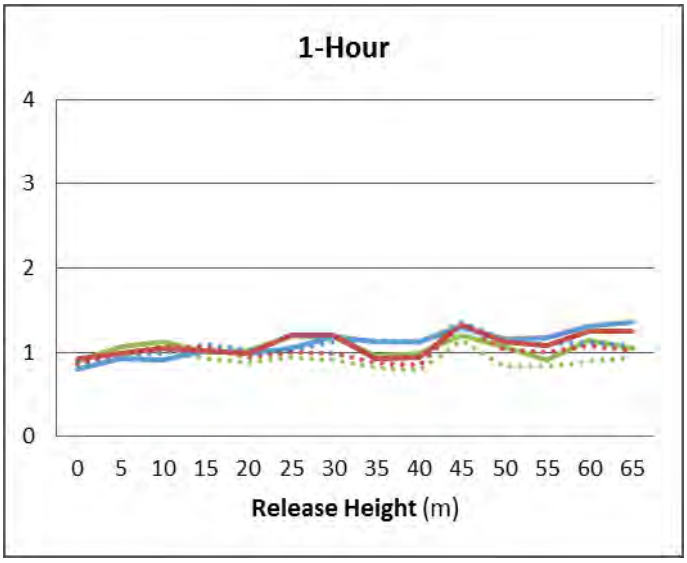








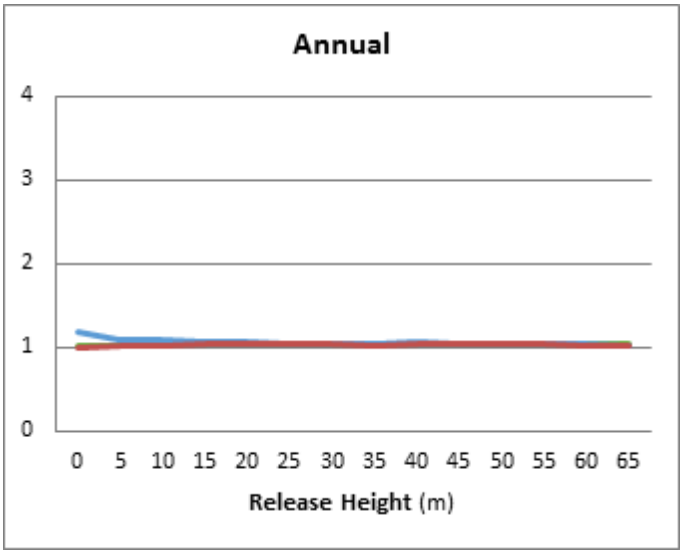


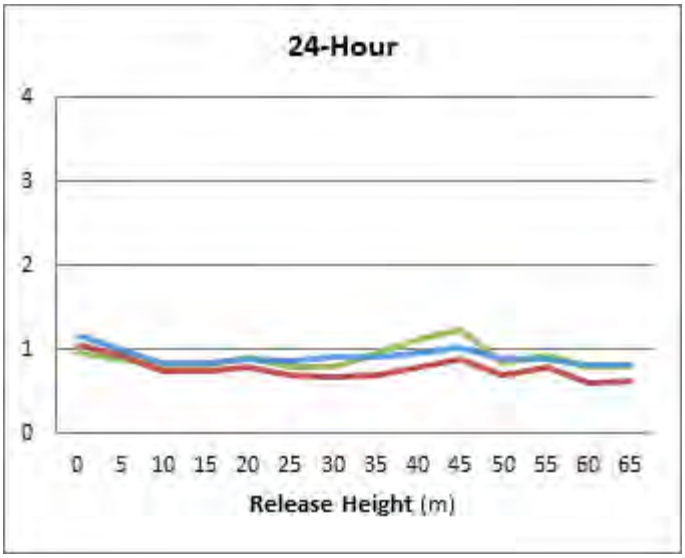


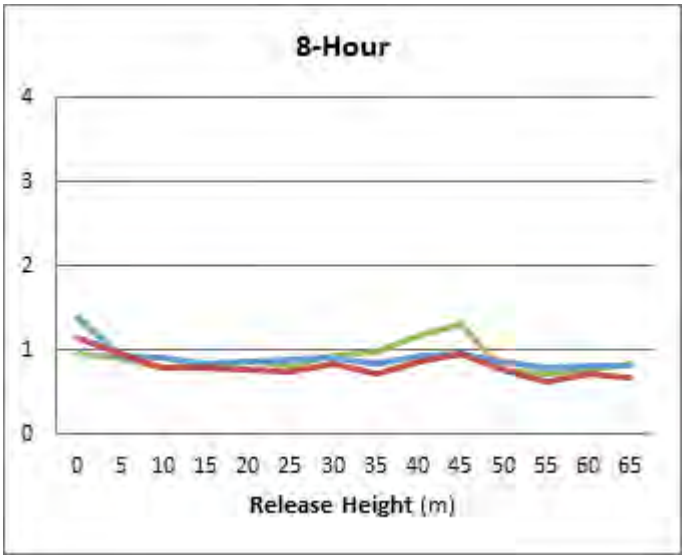
Source Type

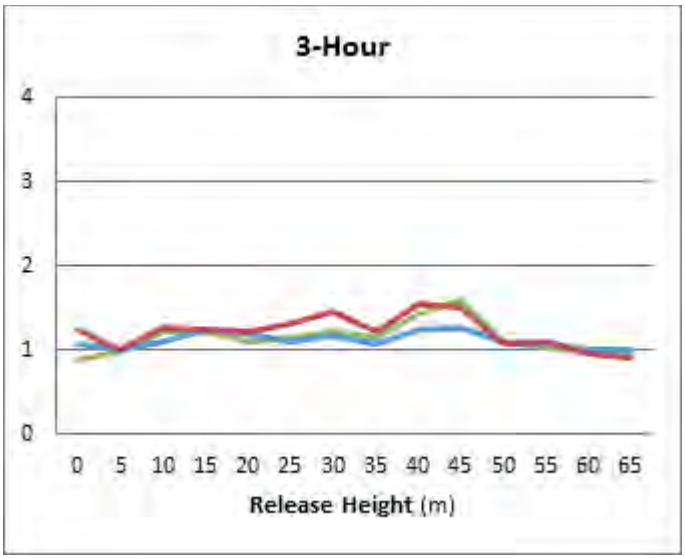
Point Volume Area

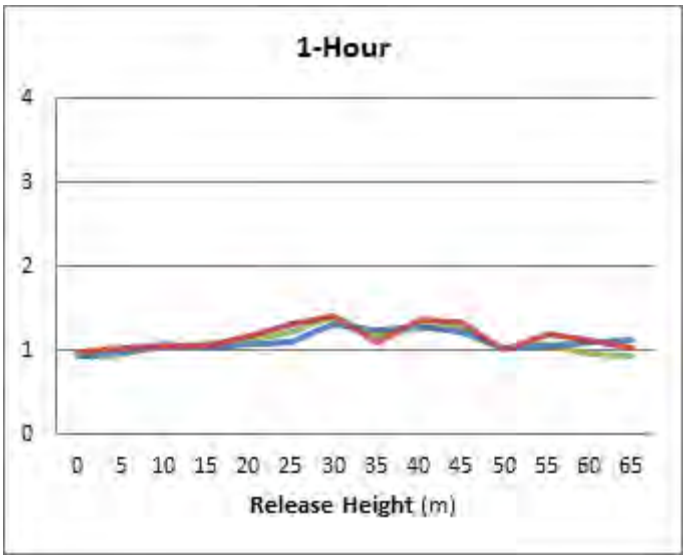
New Representative Site: Davenport
Old Representative Site: Davenport







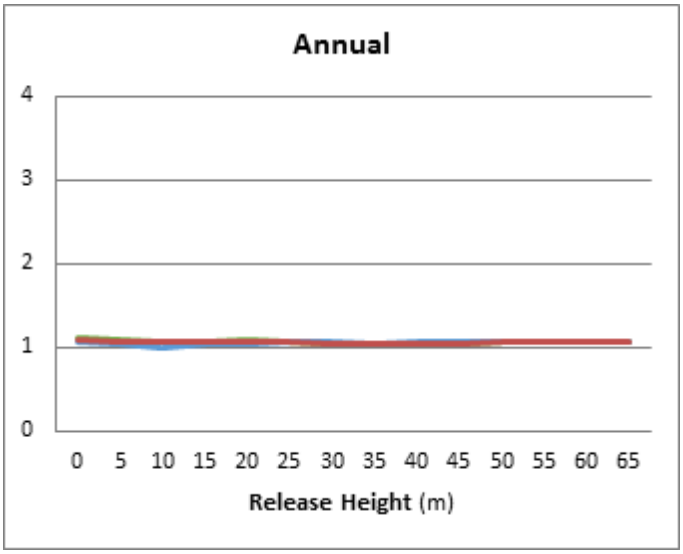


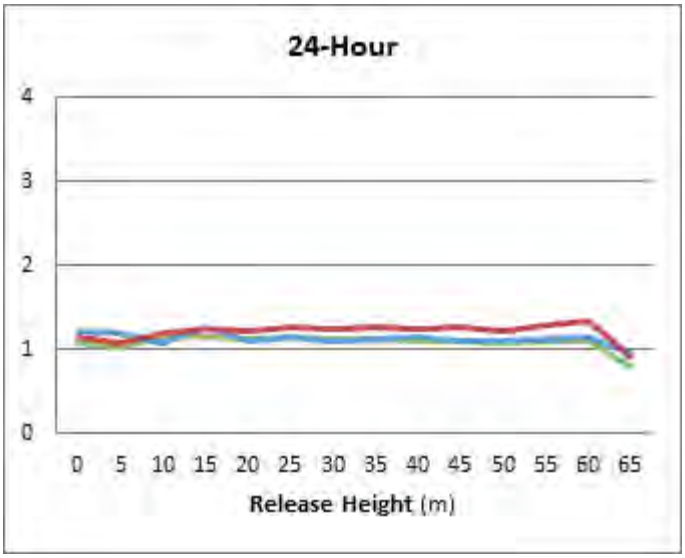


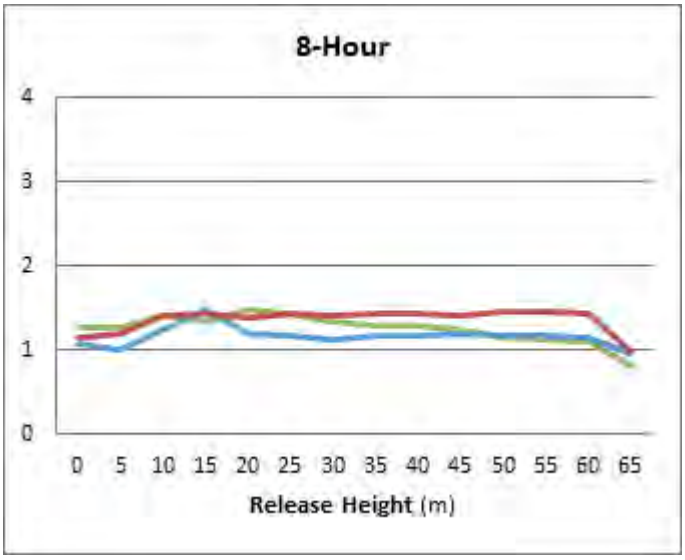
Source Type

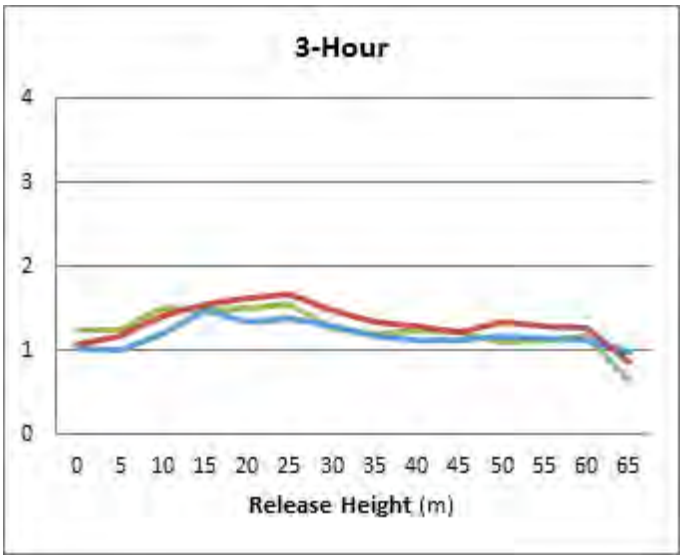
Point Volume Area

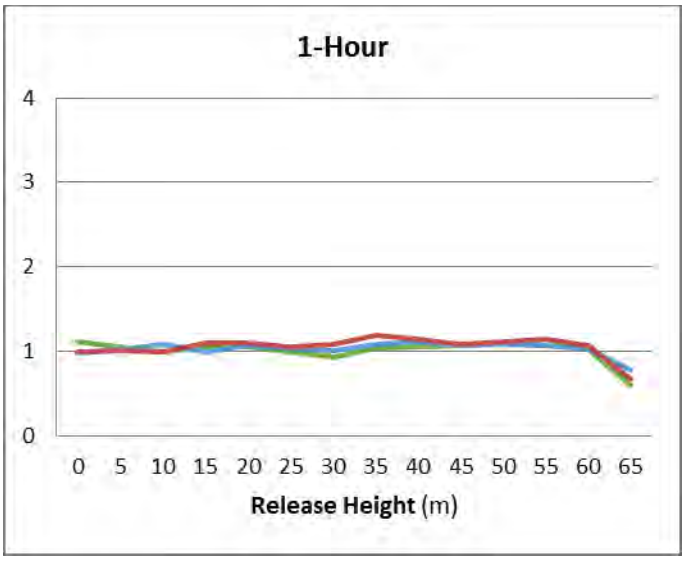
New Representative Site: Des Moines
Old Representative Site: Des Moines







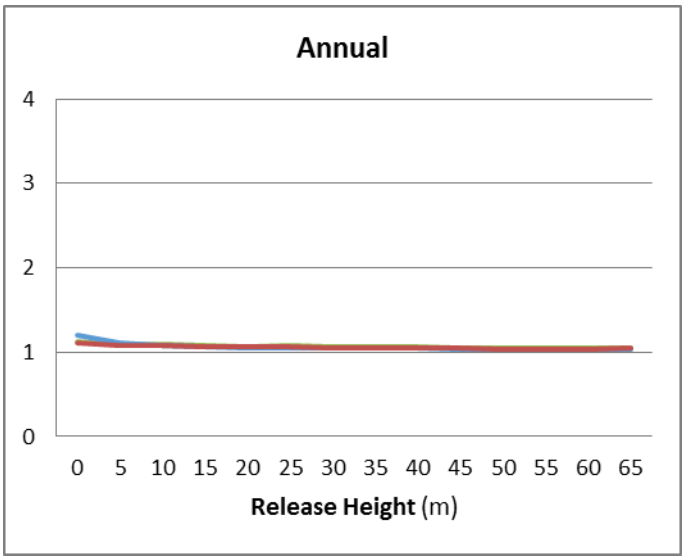


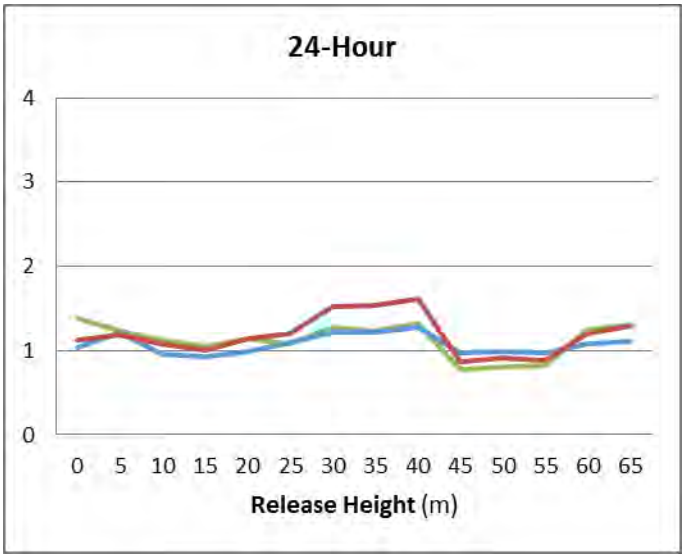


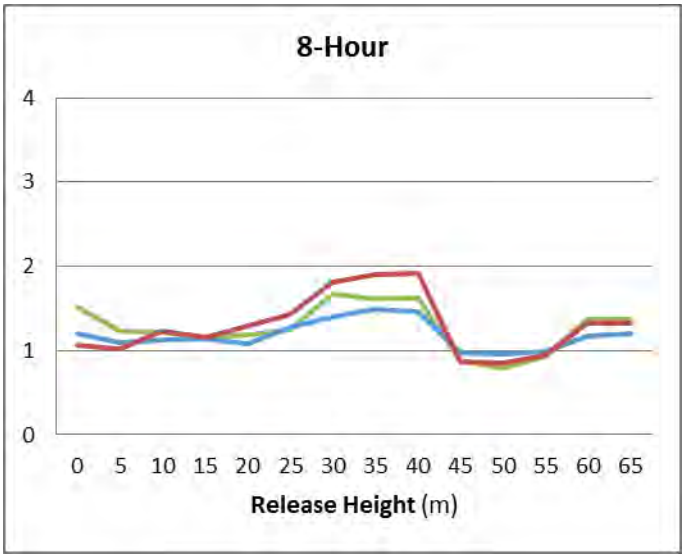
Source Type

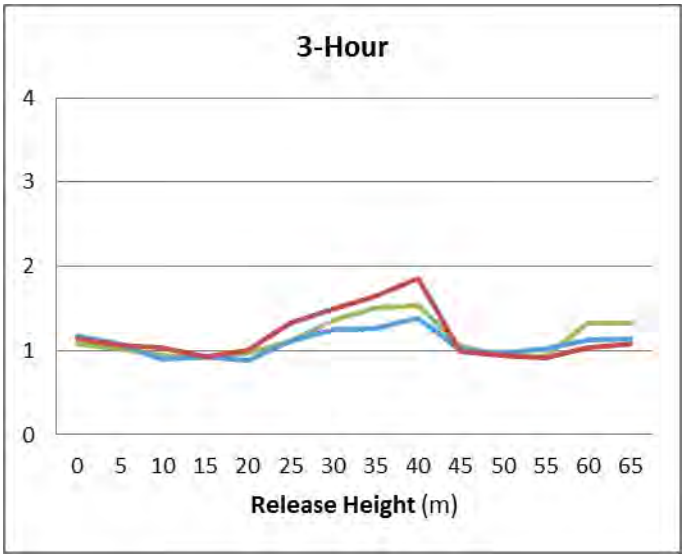
Point Volume Area

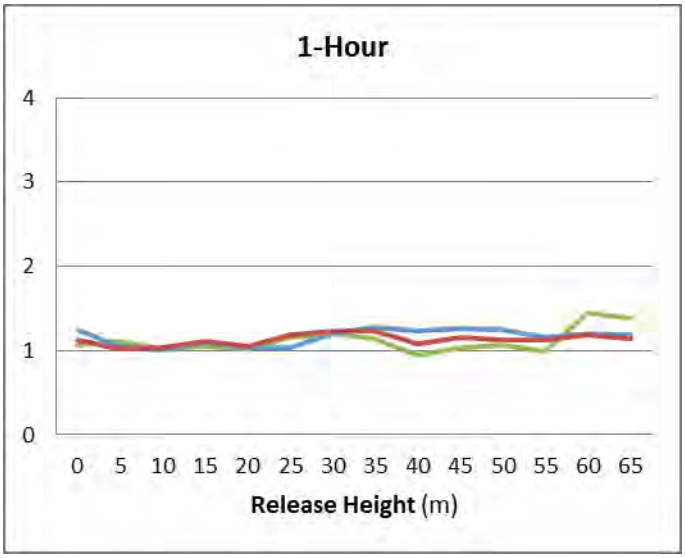
New Representative Site: Dubuque
Old Representative Site: Dubuque







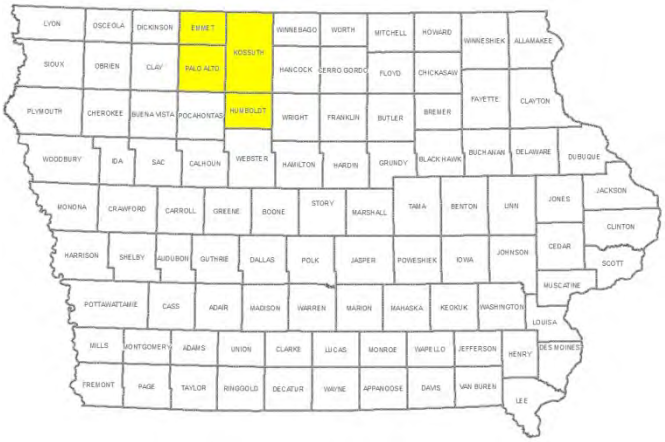


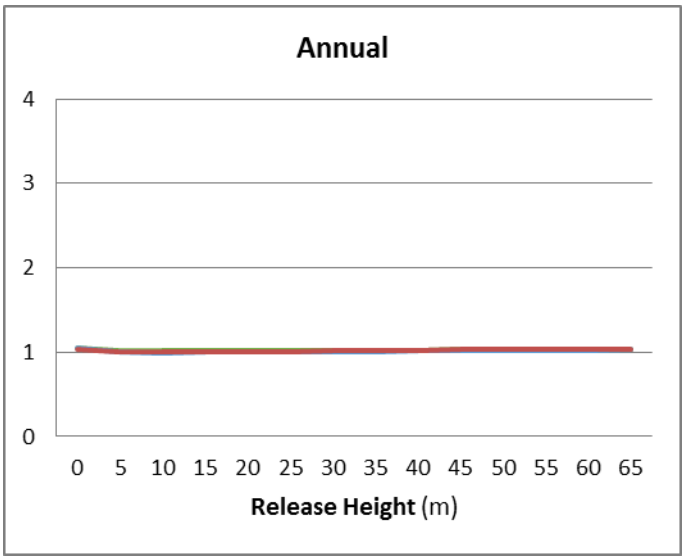


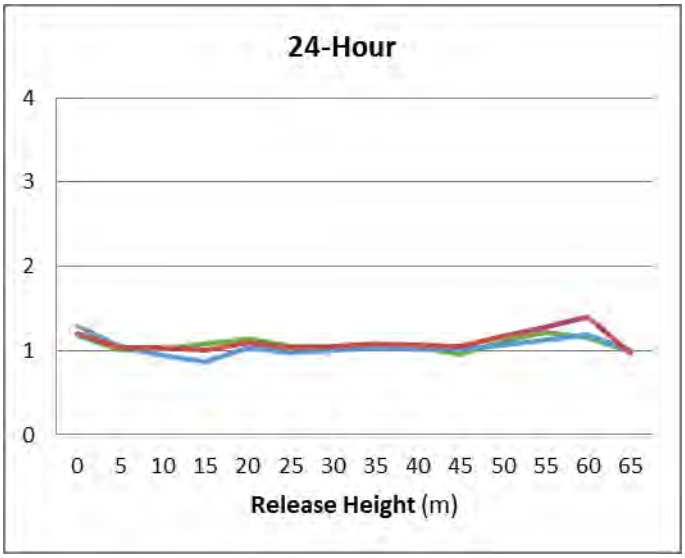
Source Type

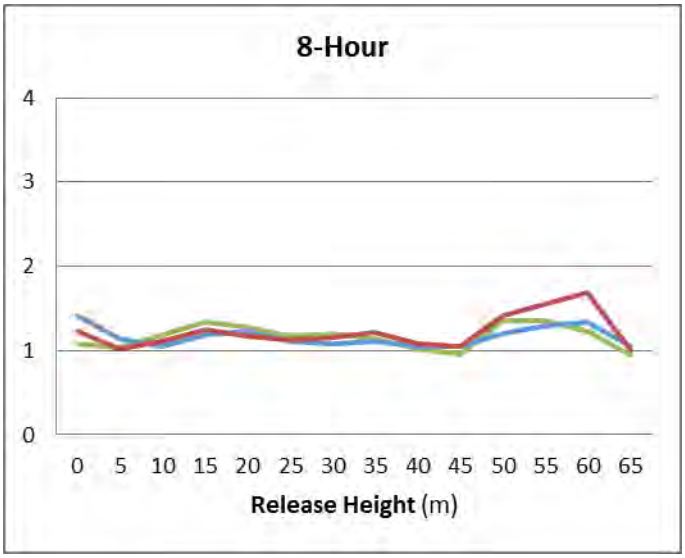
Point Volume Area

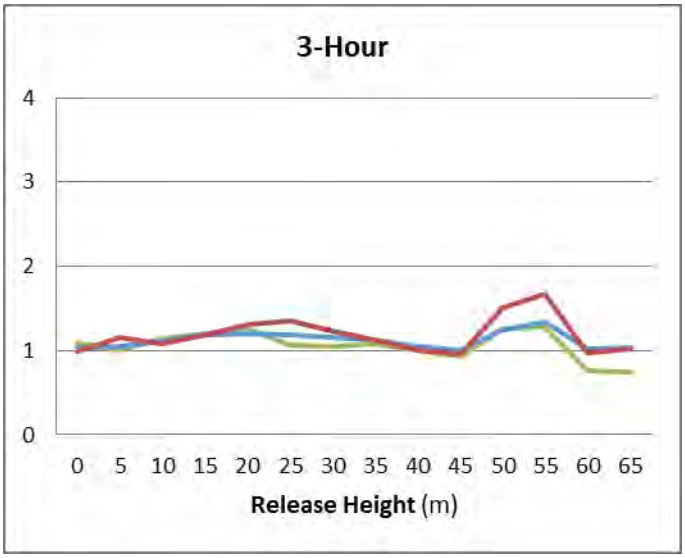
New Representative Site: Estherville
Old Representative Site: Estherville

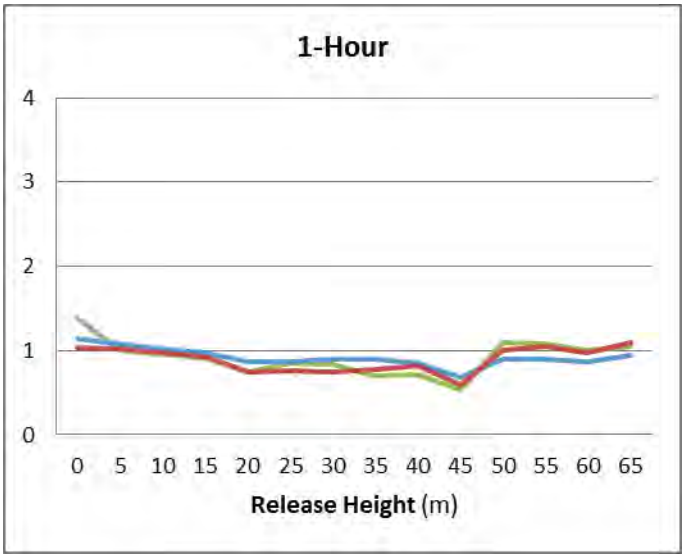








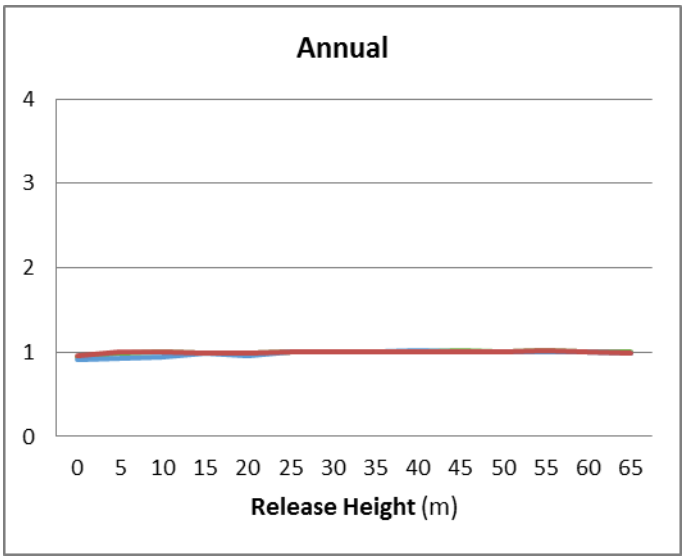


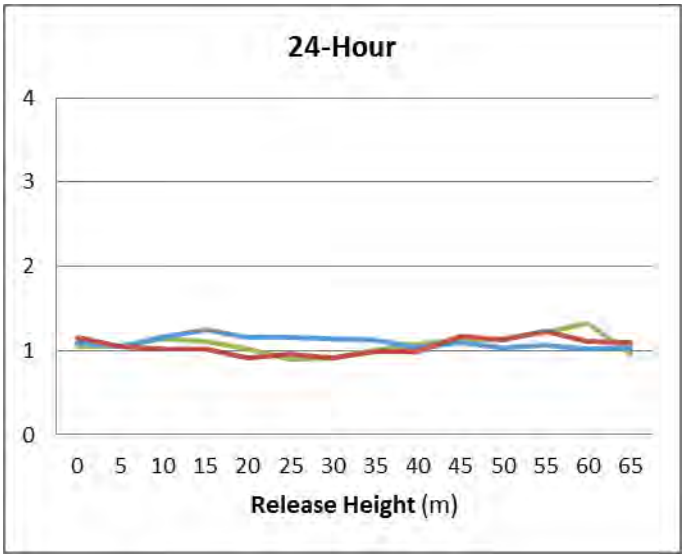


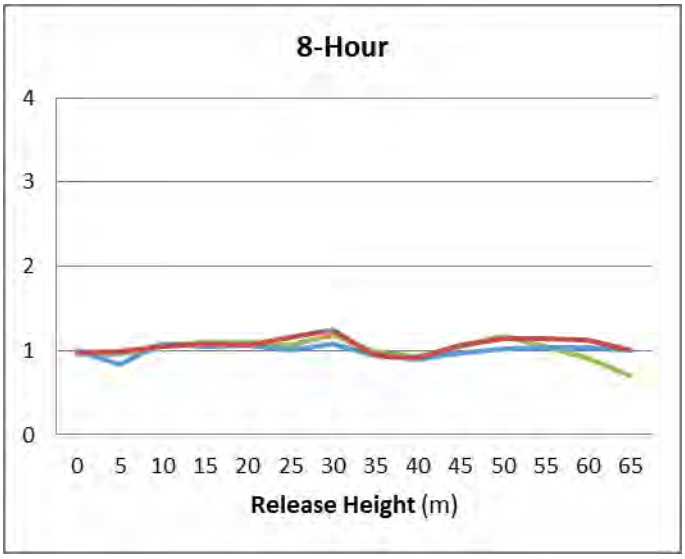
Source Type

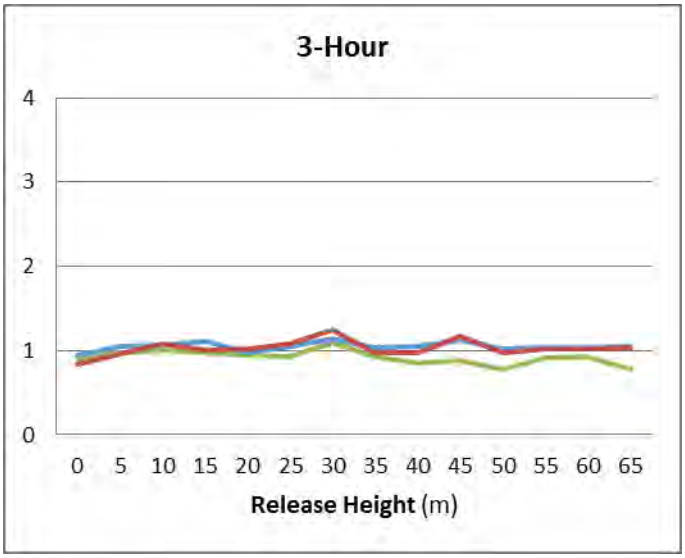
Point Volume Area

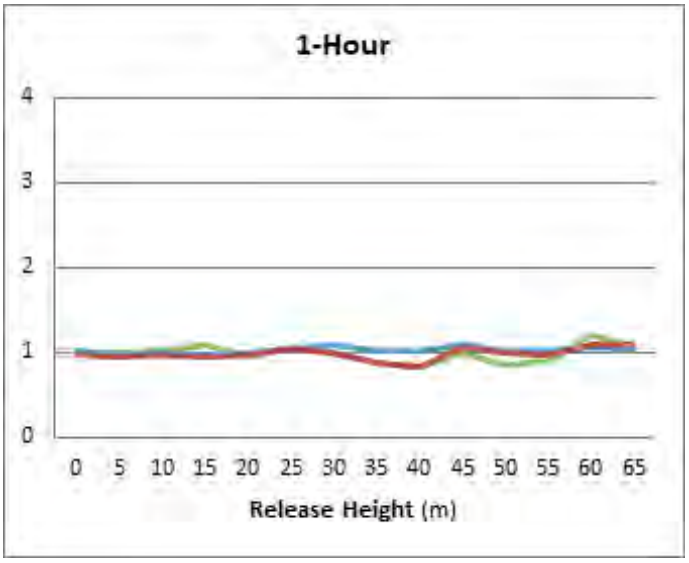
New Representative Site: Iowa City
Old Representative Site: Iowa City







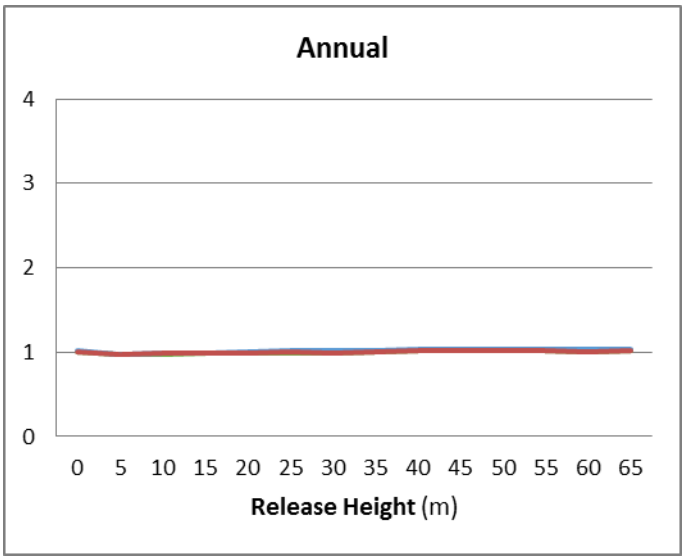


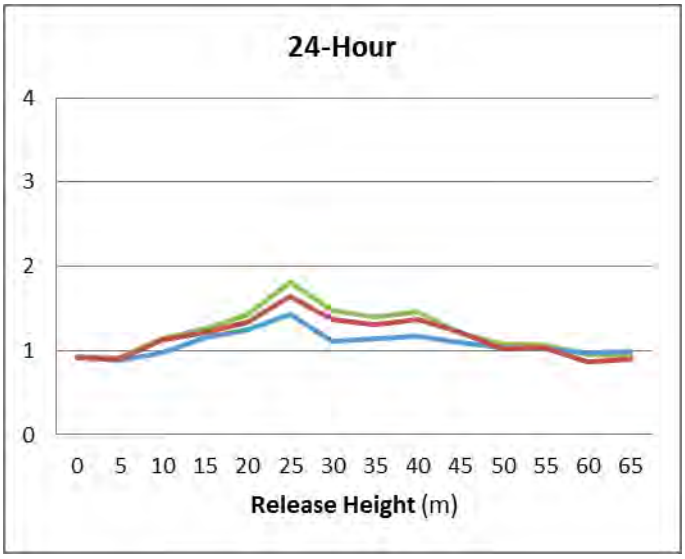


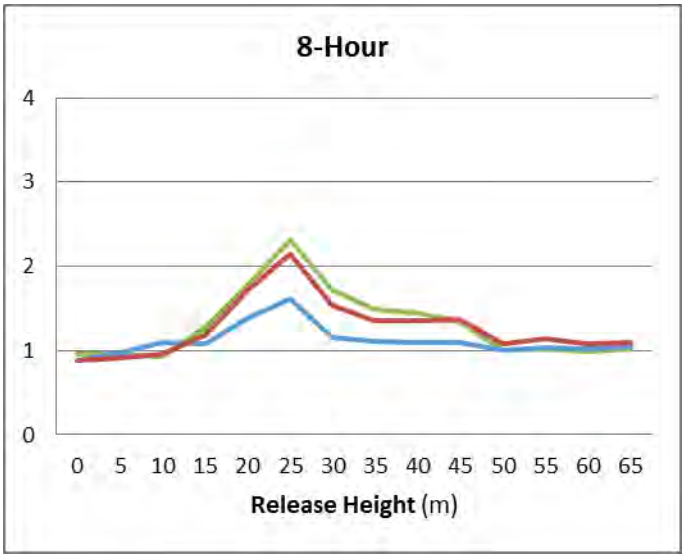
Source Type

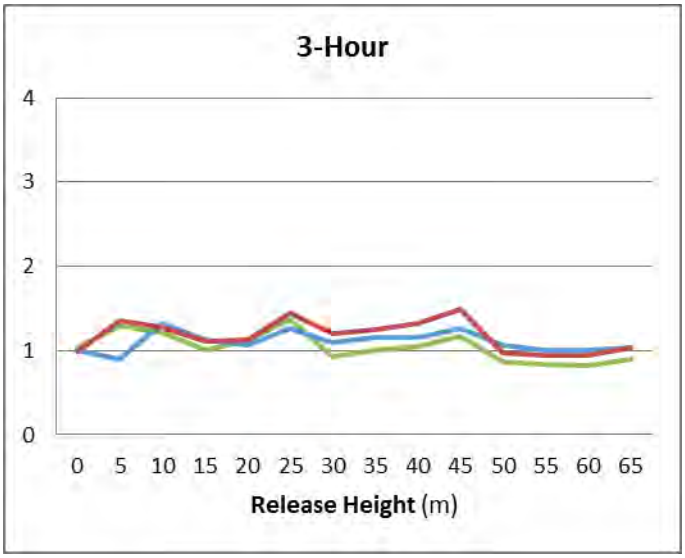
Point Volume Area

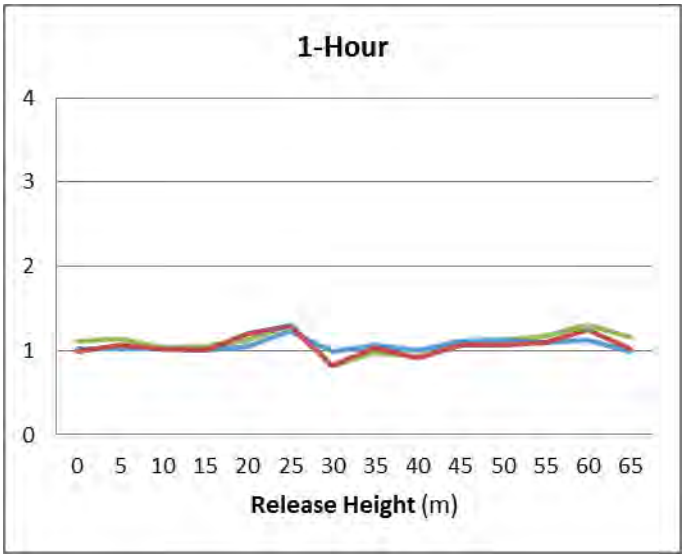
New Representative Site: La Crosse
Old Representative Site: La Crosse







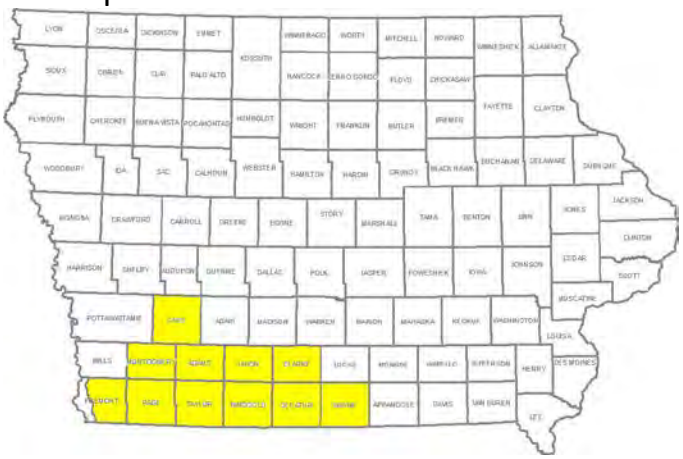


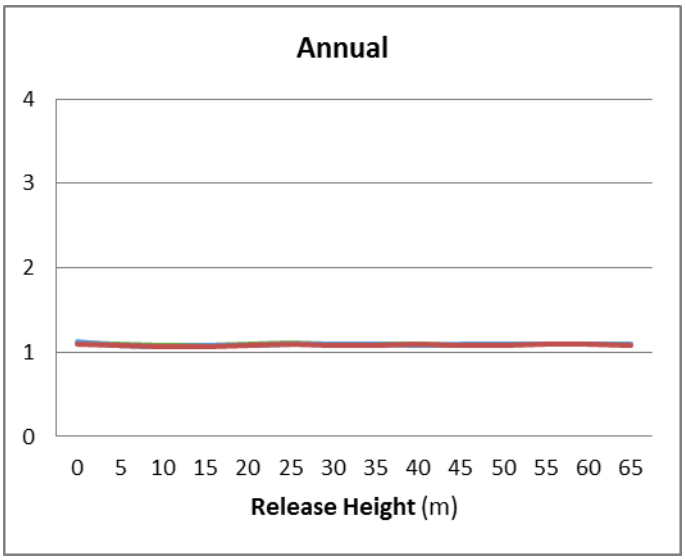


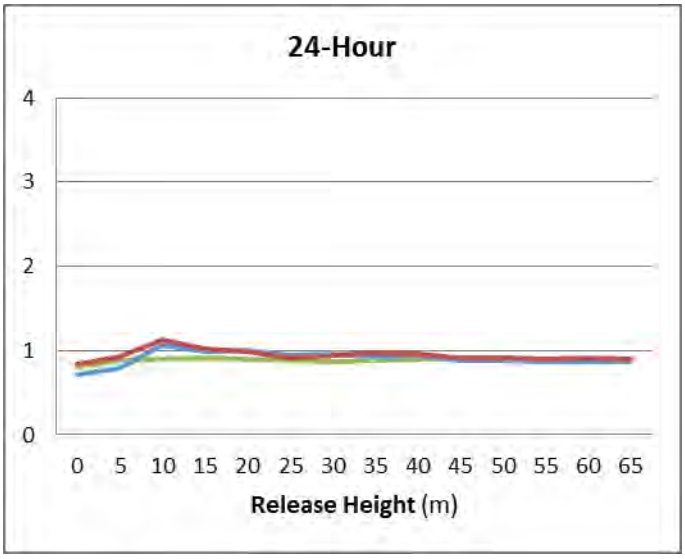
Source Type

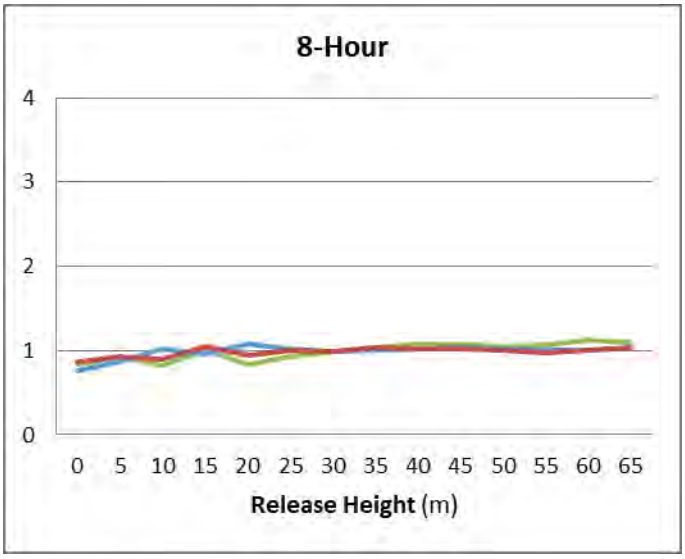
Point Volume Area

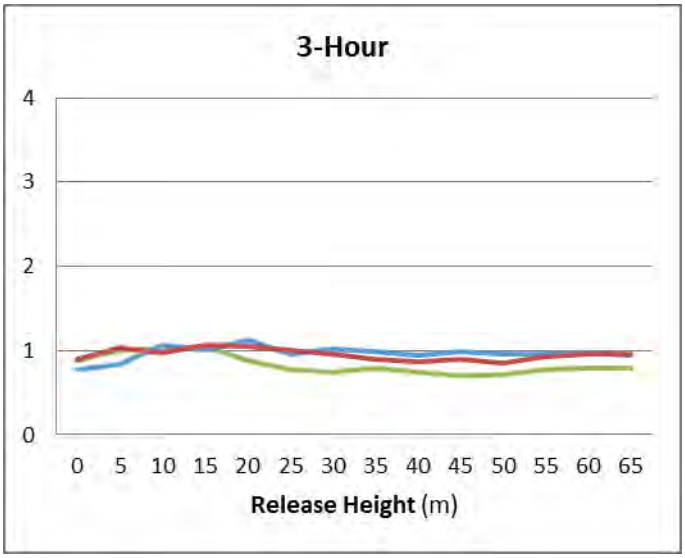
New Representative Site: Lamoni
Old Representative Site: Lamoni

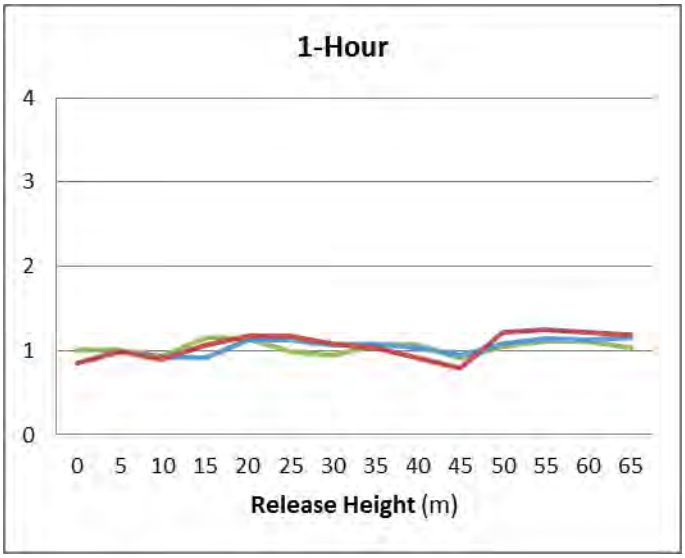








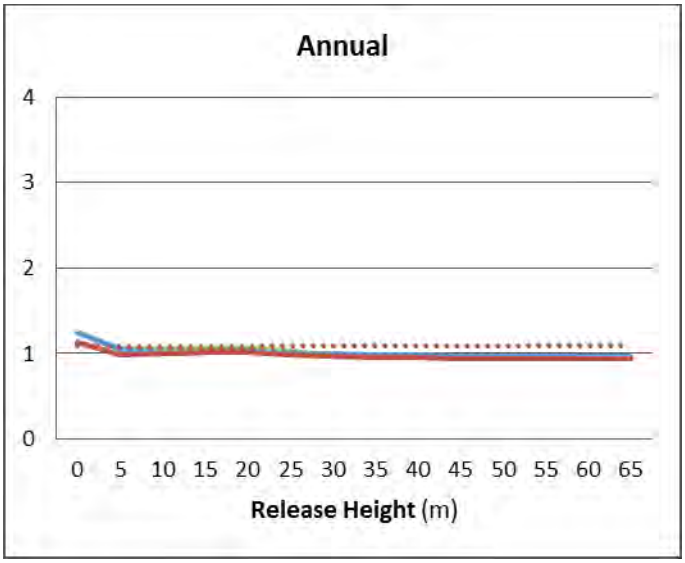


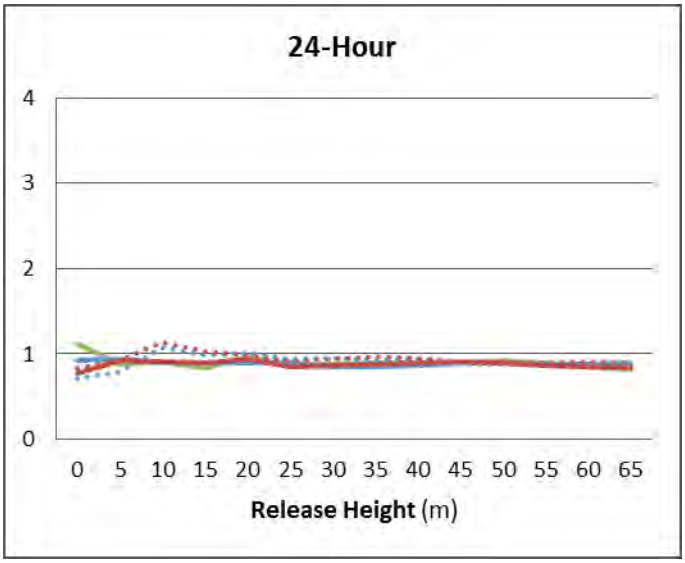


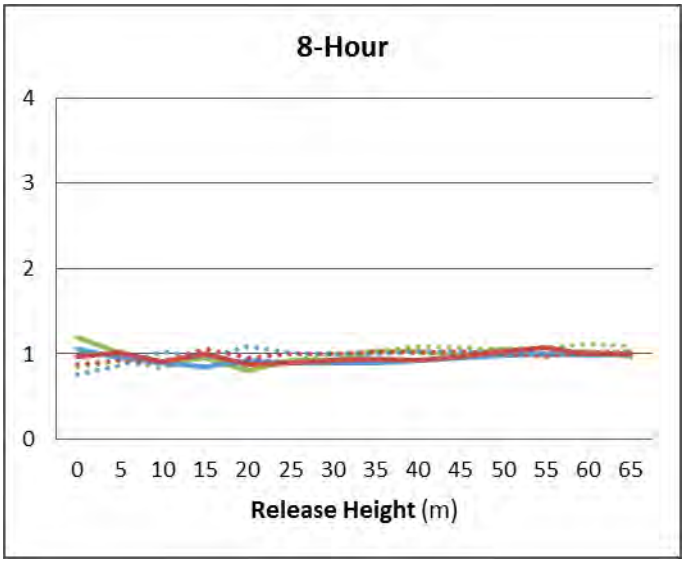
Source Type

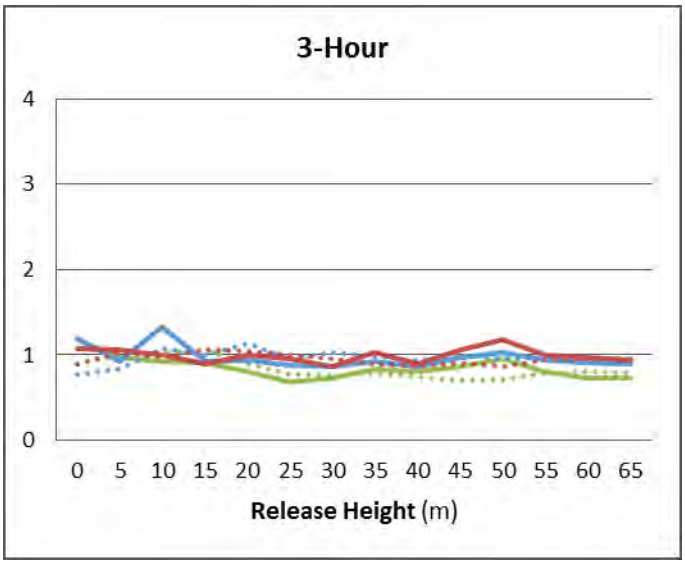
Point Volume Area

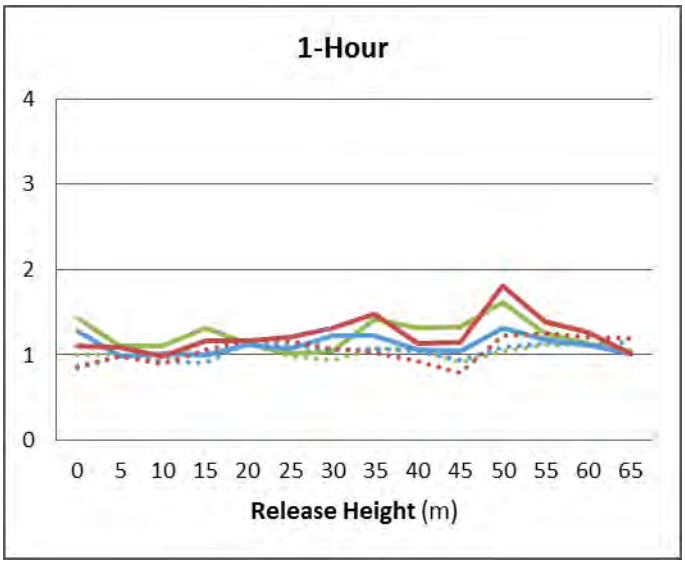
New Representative Site: Ottumwa
Old Representative Site: Lamoni







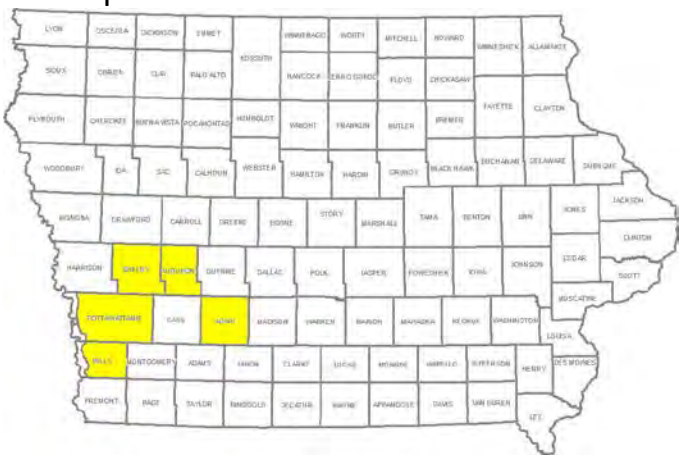


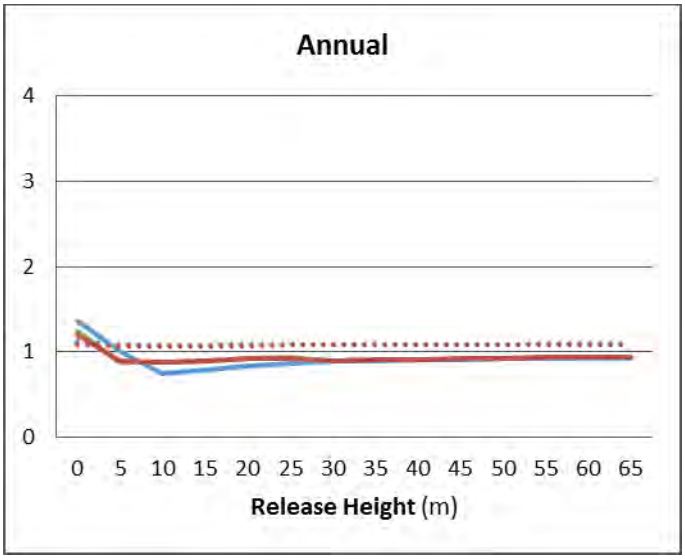


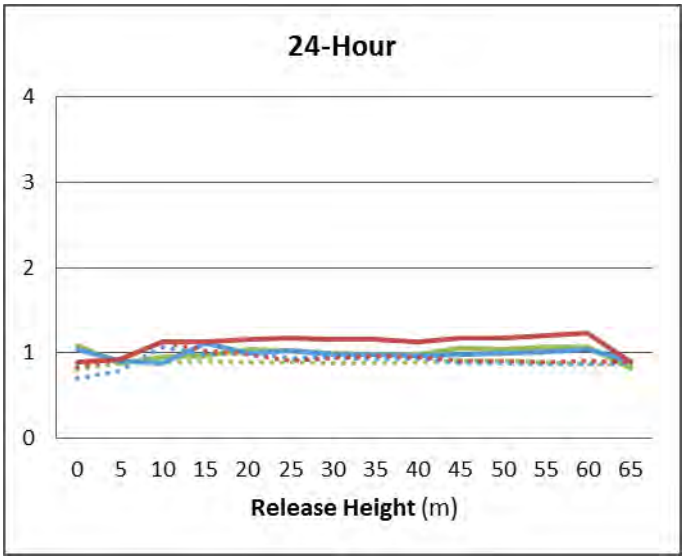
Source Type

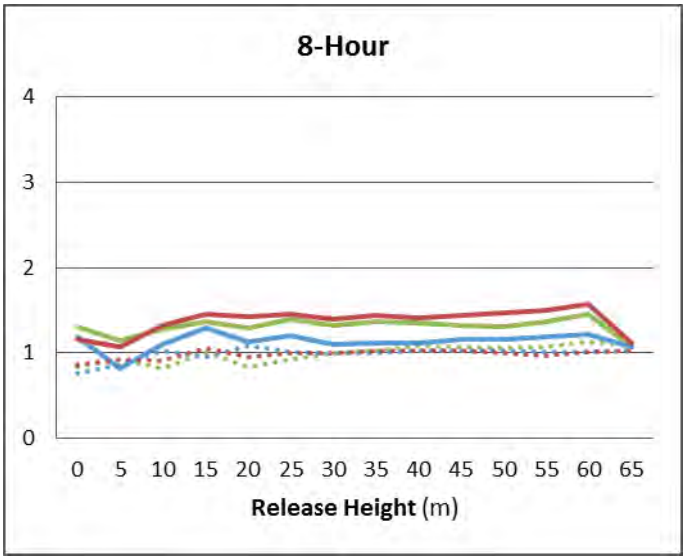
Point Volume Area

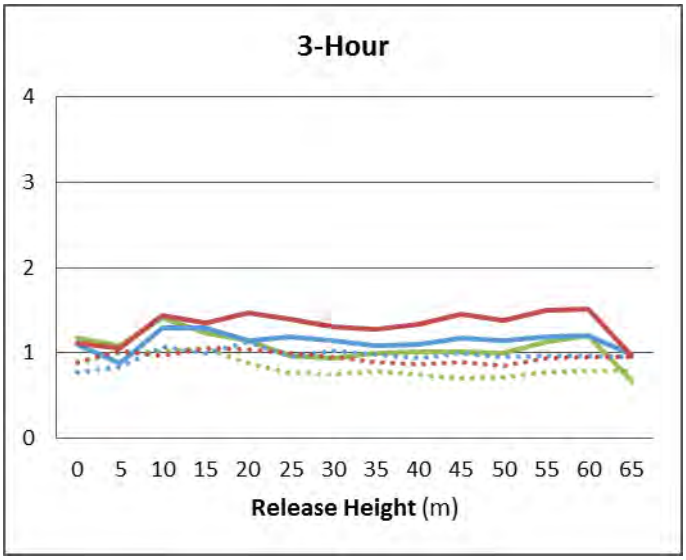
New Representative Site: Des Moines
Old Representative Site: Lamoni

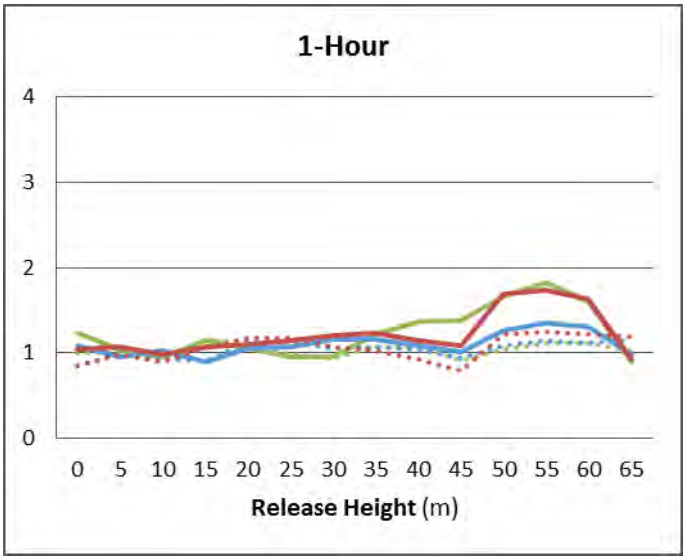








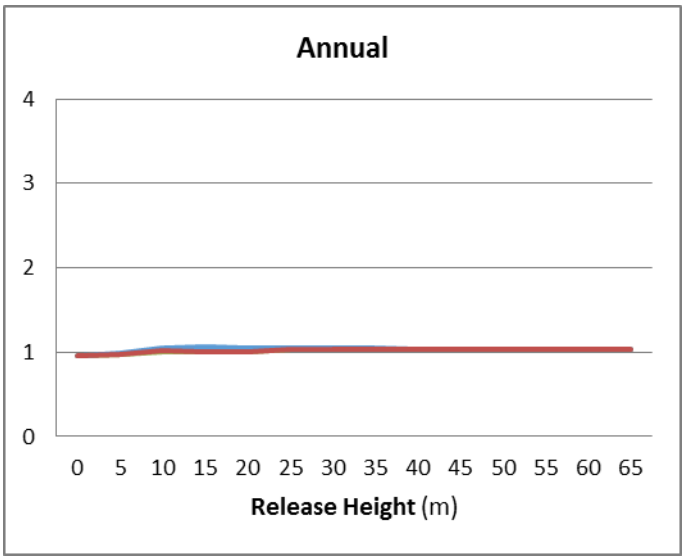


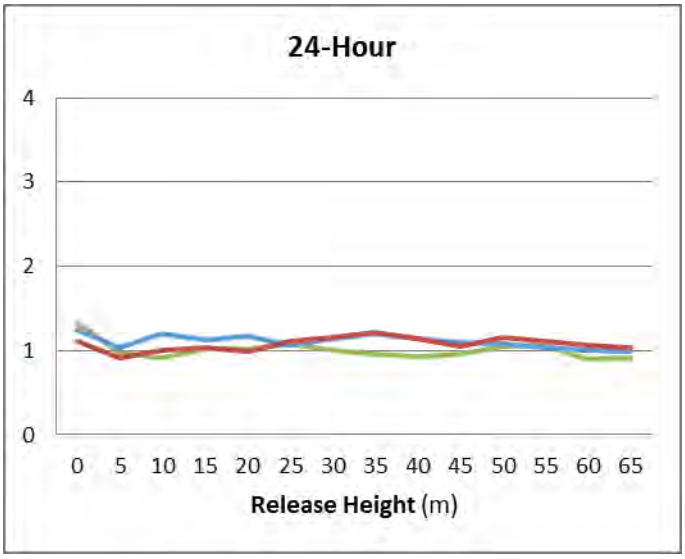


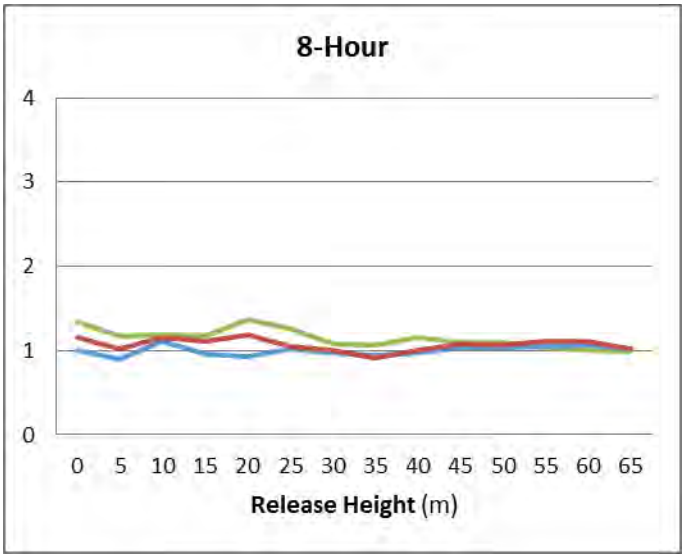
Source Type

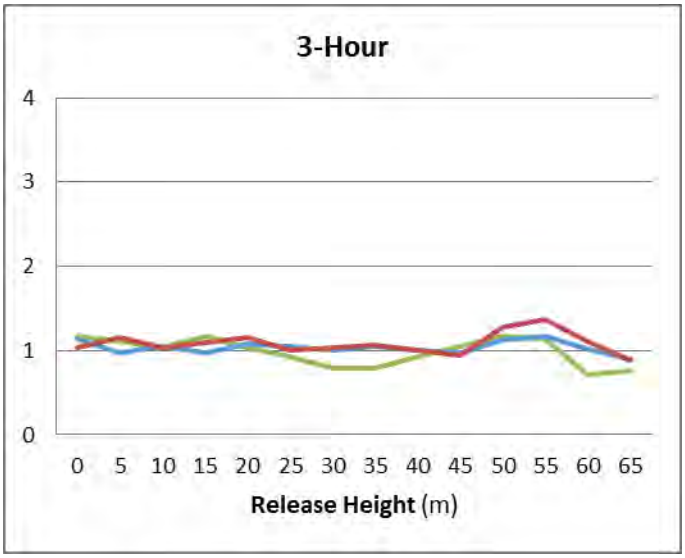
Point Volume Area

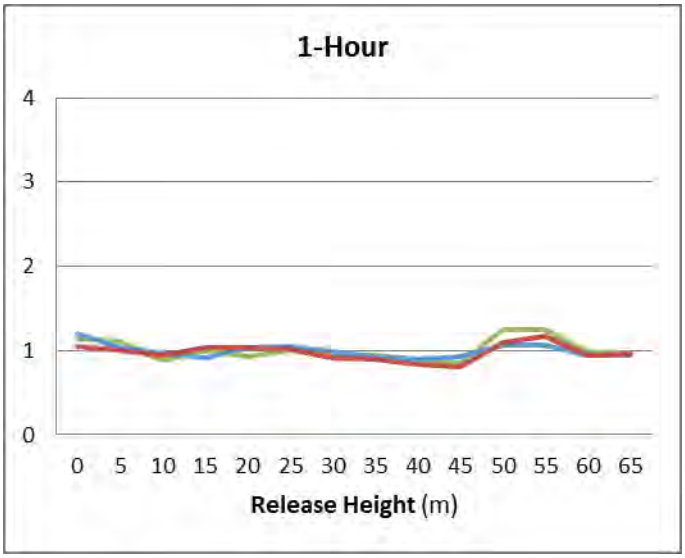
New Representative Site: Marshalltown
Old Representative Site: Marshalltown







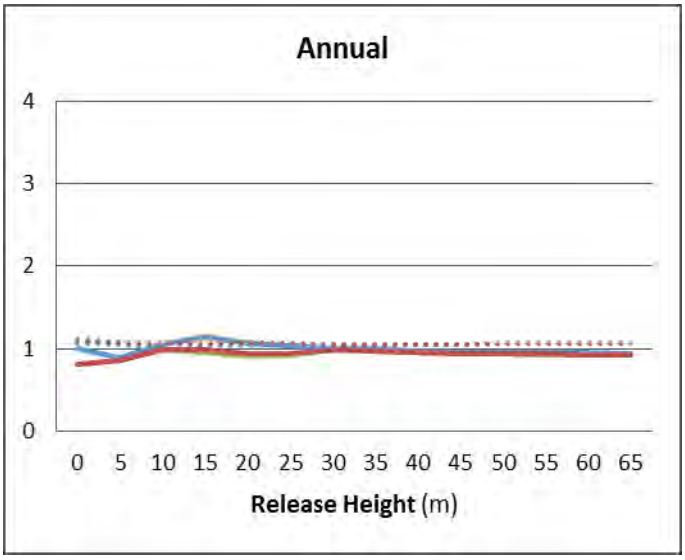


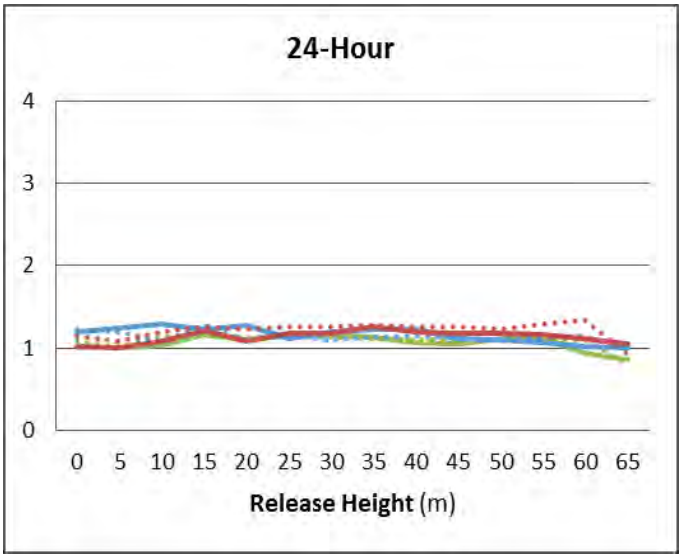


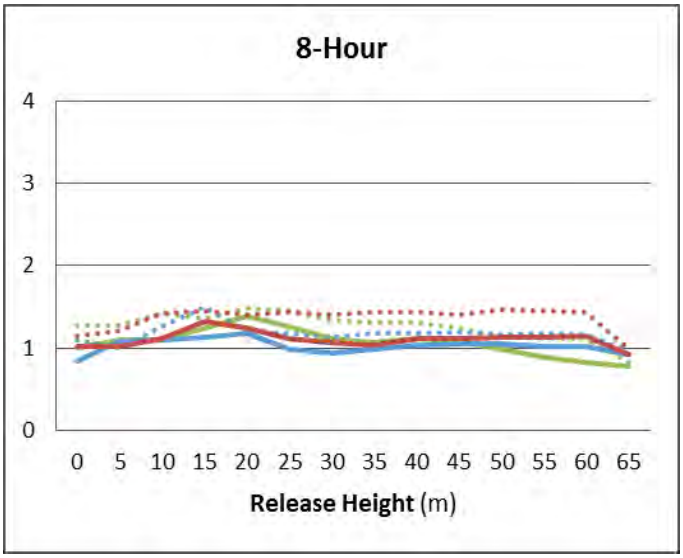
Source Type

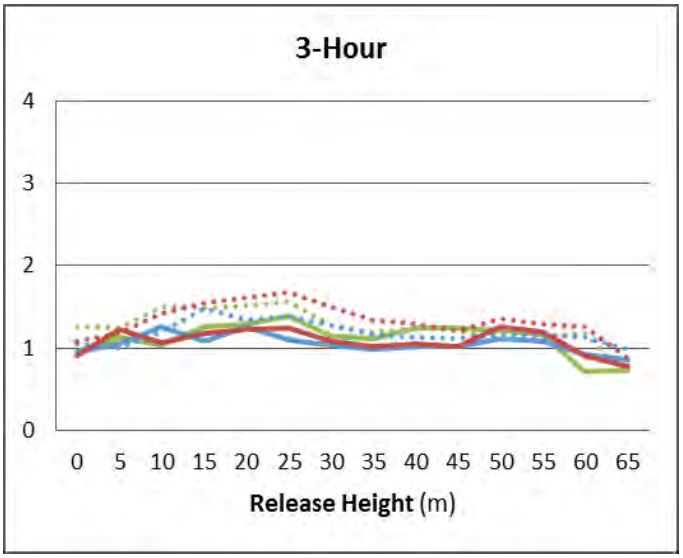
Point Volume Area

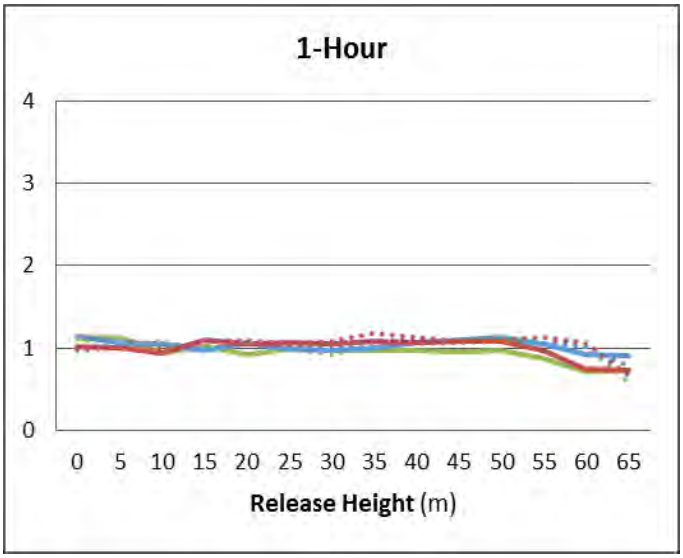
New Representative Site: Marshalltown
Old Representative Site: Des Moines







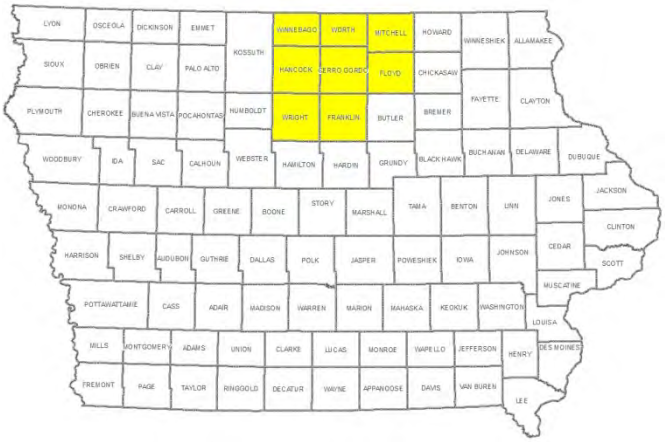


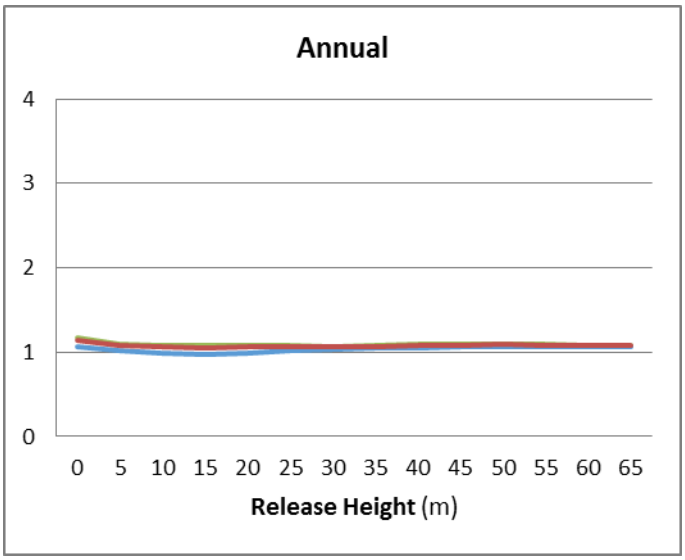


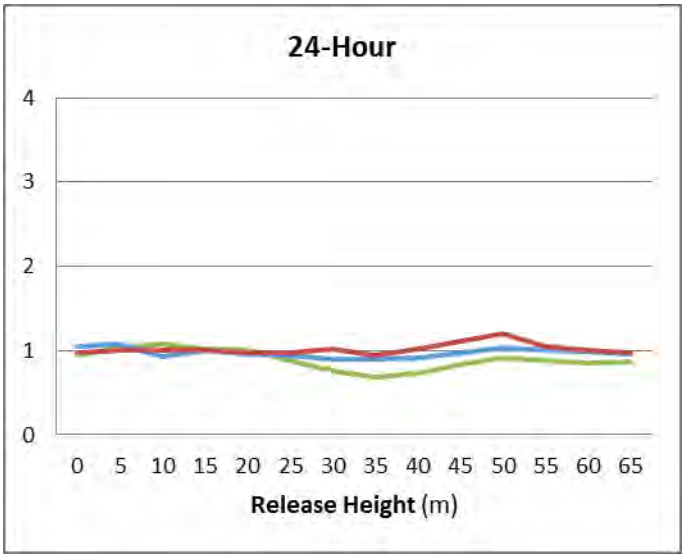
Source Type

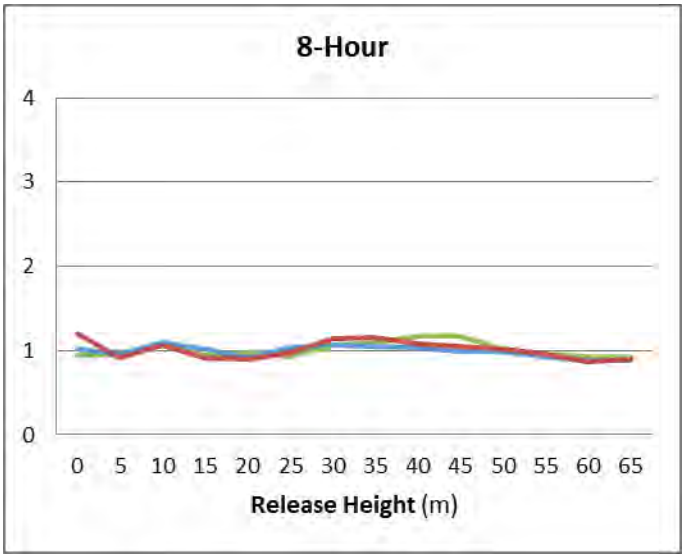
Point Volume Area

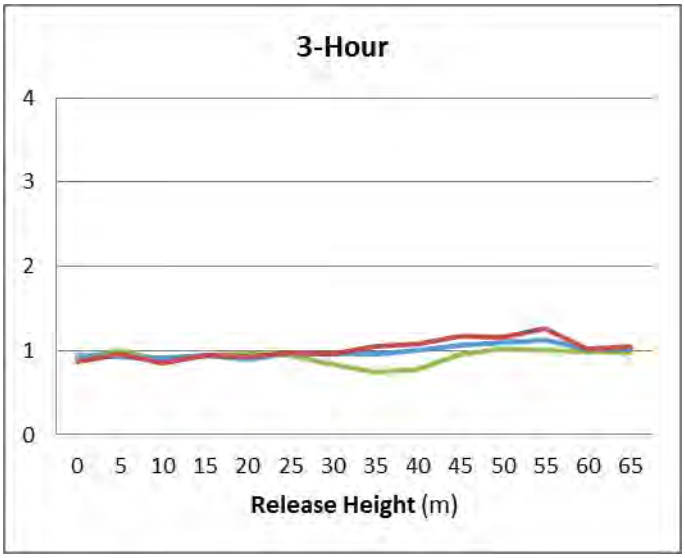
New Representative Site: Mason City
Old Representative Site: Mason City

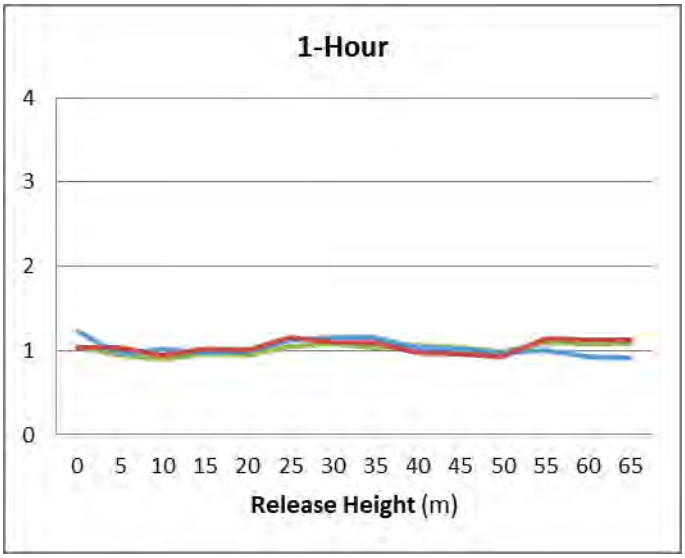








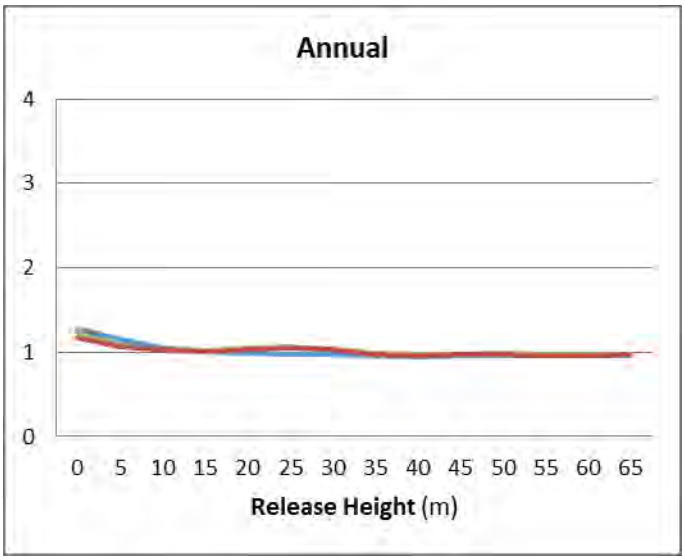


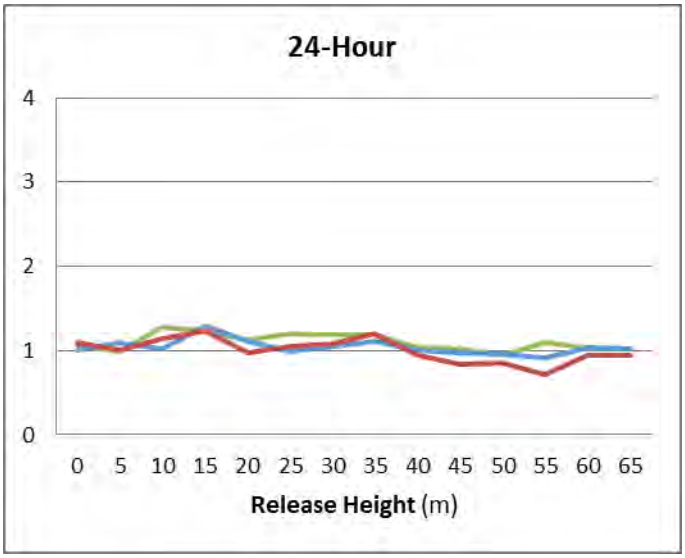


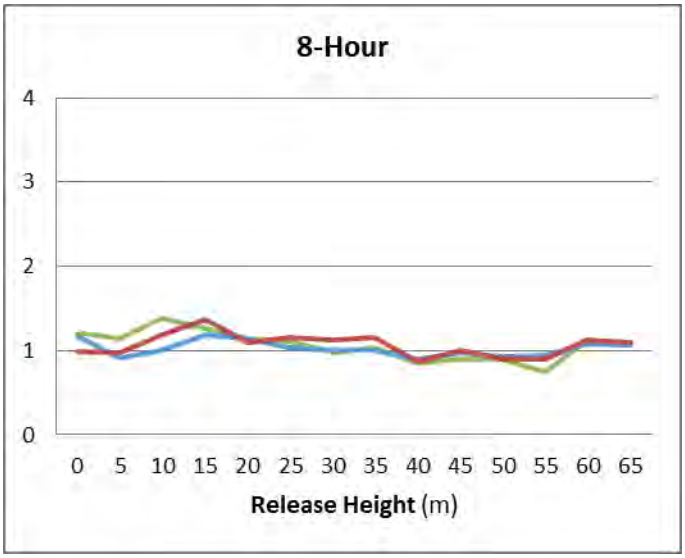
Source Type

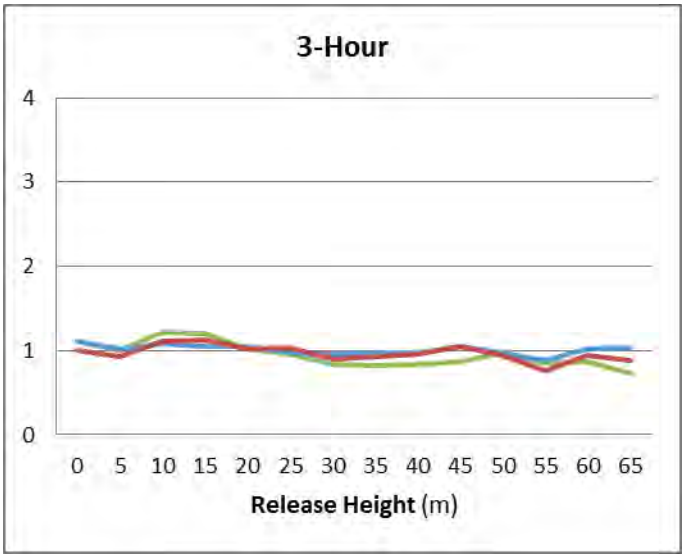
Point Volume Area

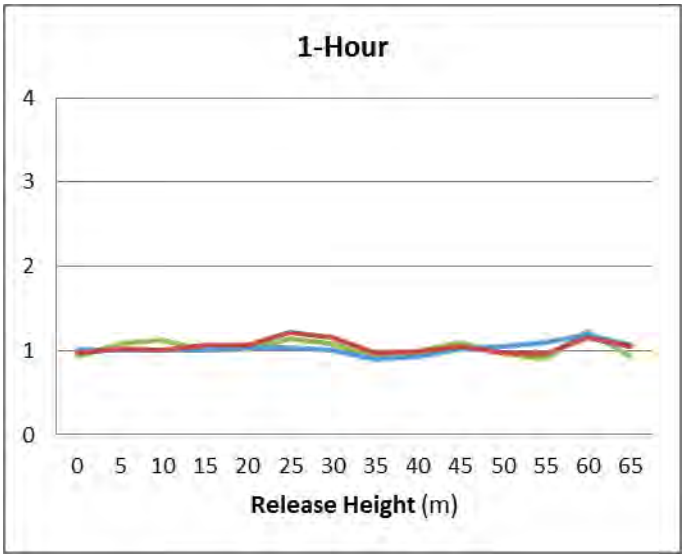
New Representative Site: Moline
Old Representative Site: Moline







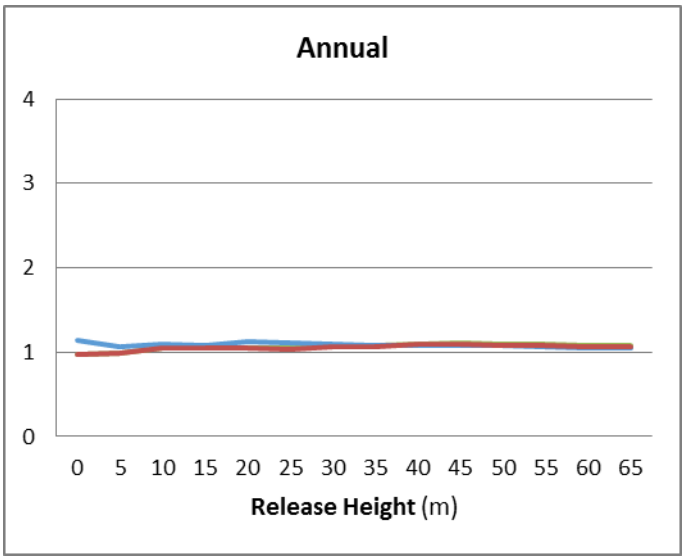


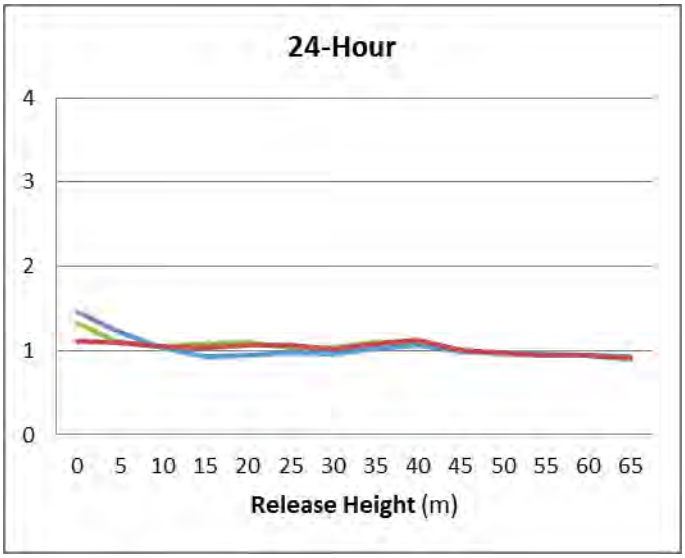


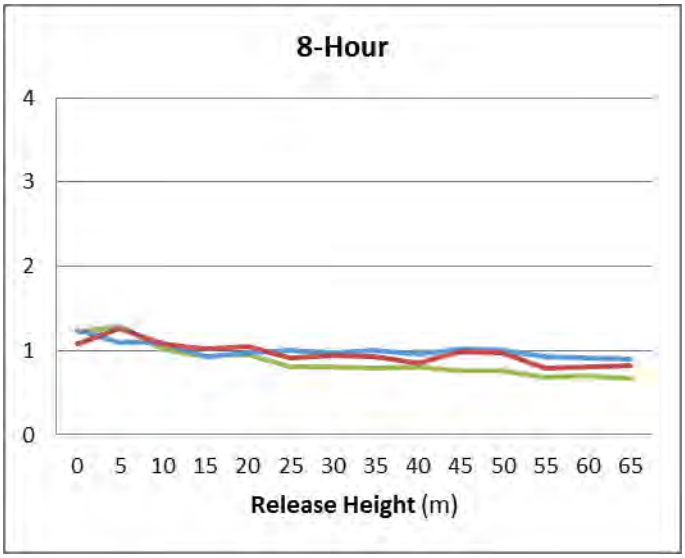
Source Type

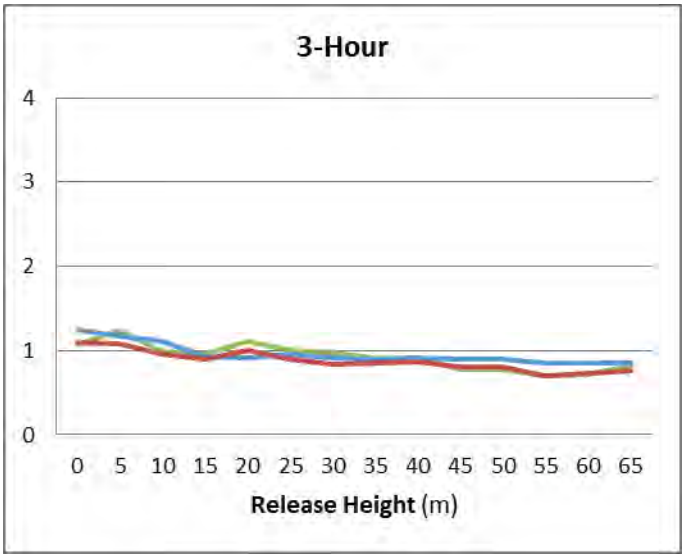
Point Volume Area

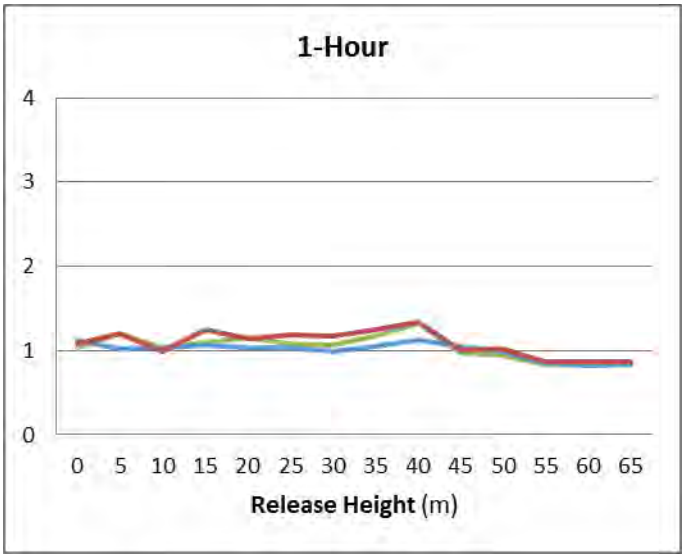
New Representative Site: Omaha
Old Representative Site: Omaha







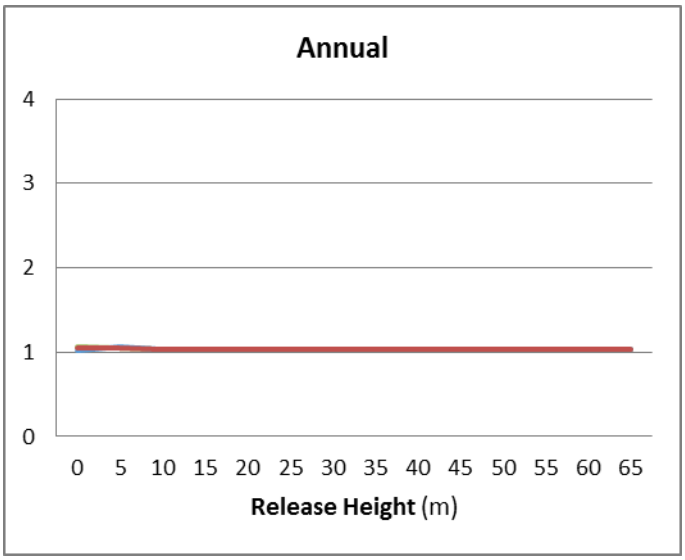


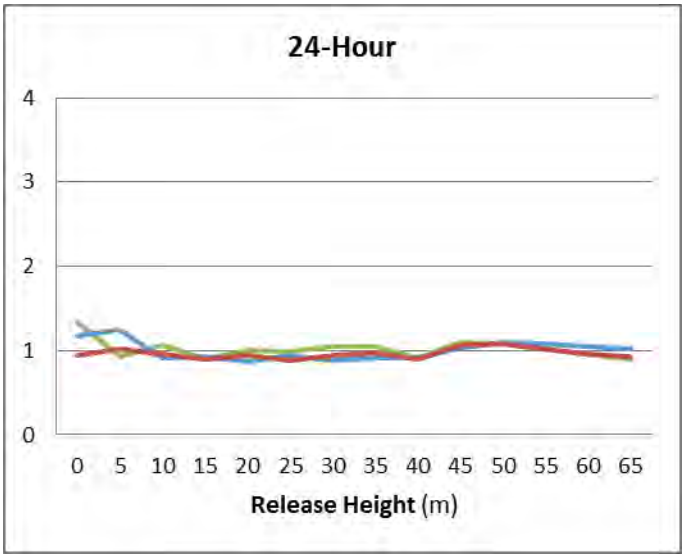


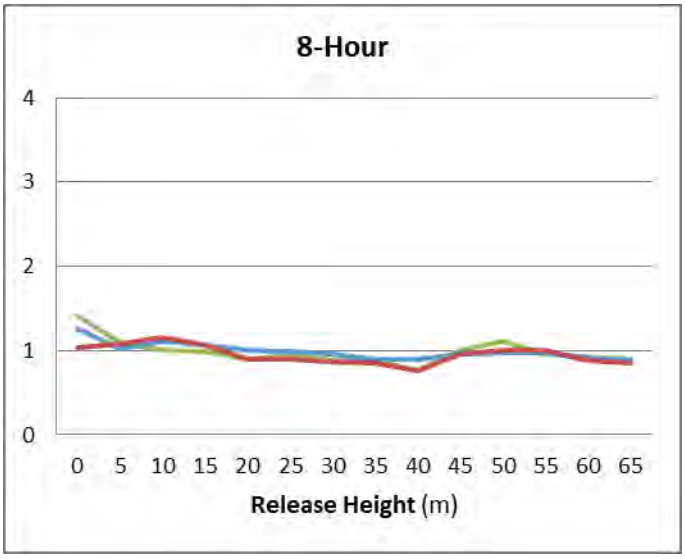
Source Type

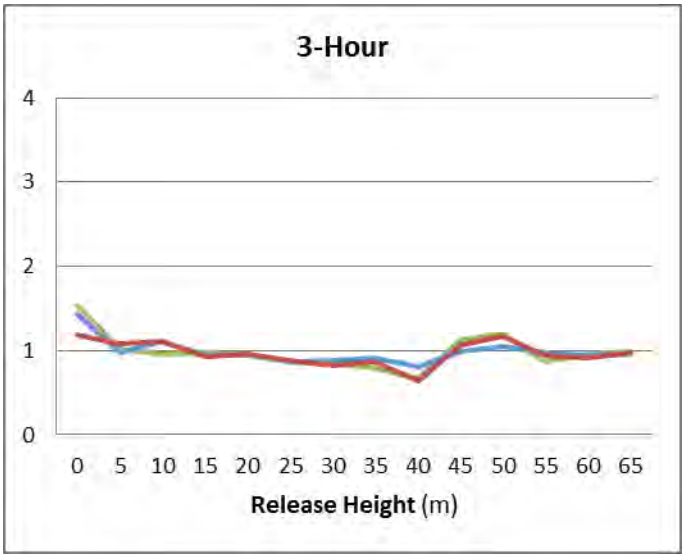
Point Volume Area

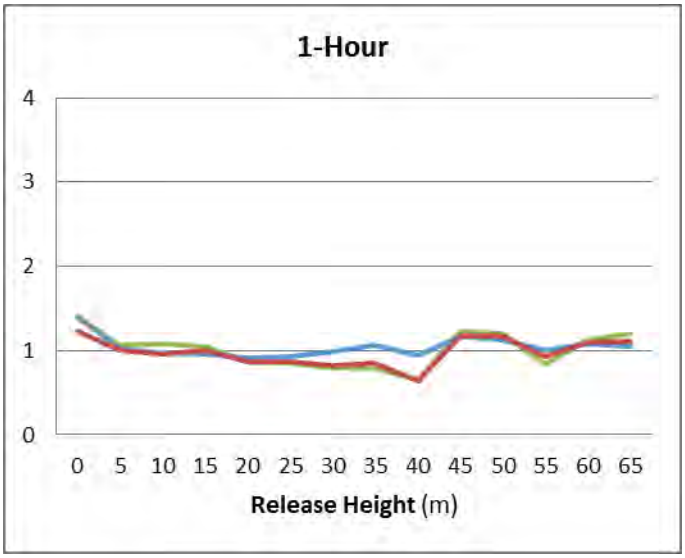
New Representative Site: Ottumwa
Old Representative Site: Ottumwa







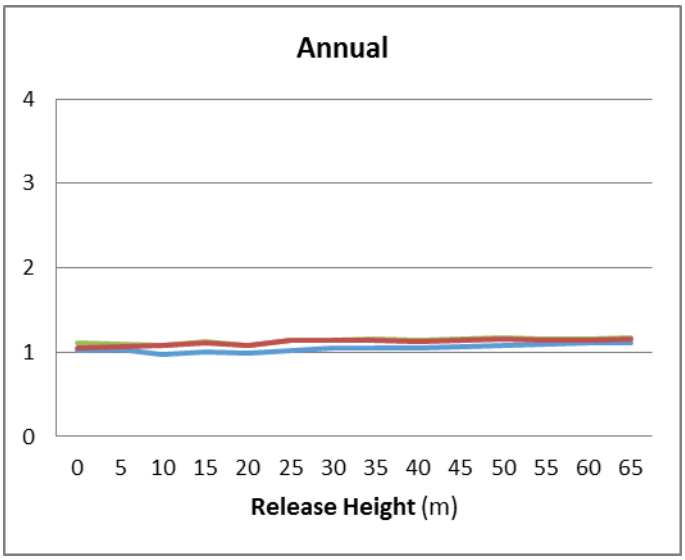


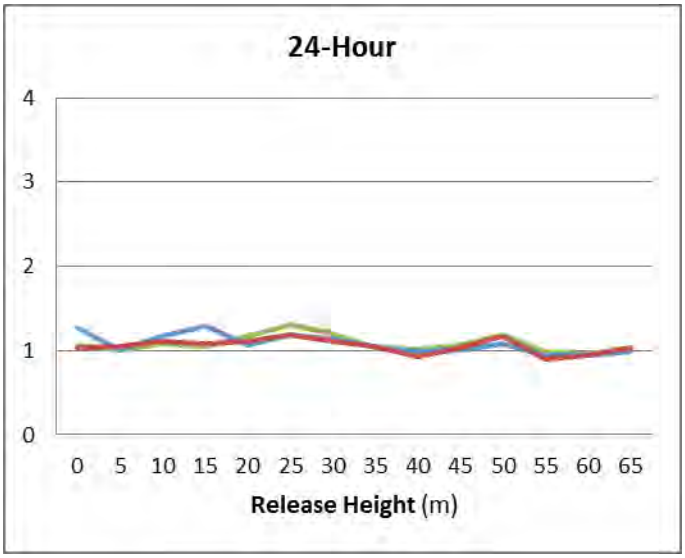


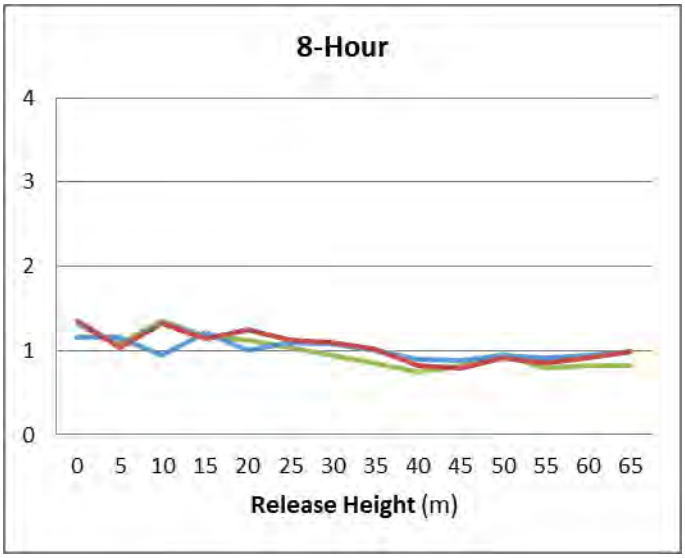
Source Type

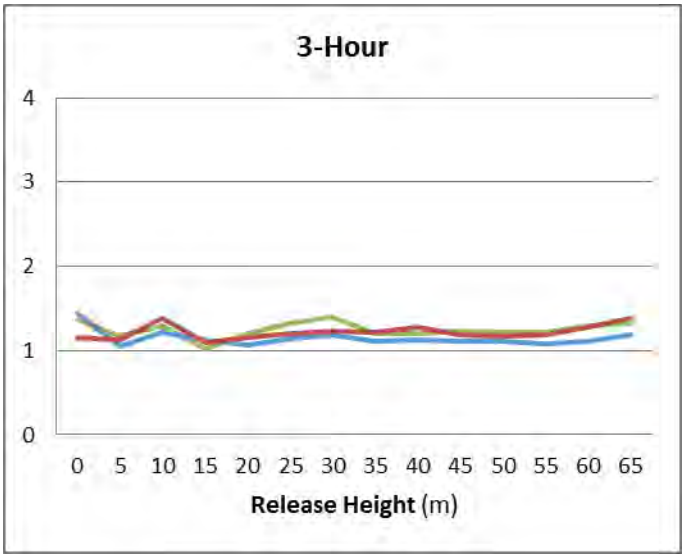
Point Volume Area

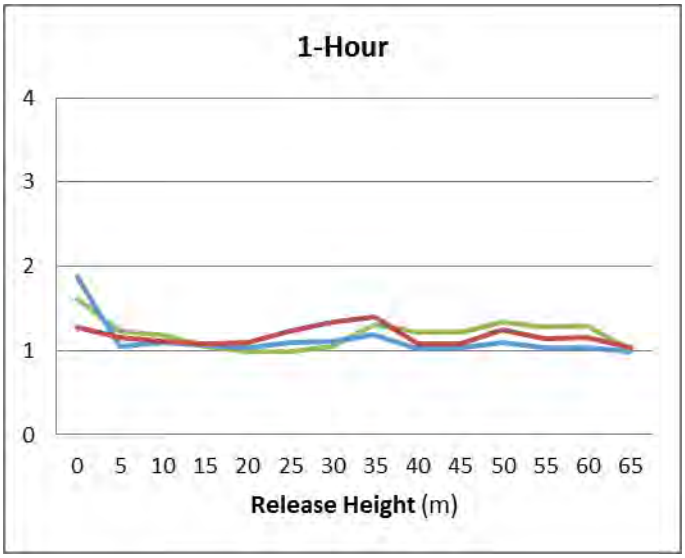
New Representative Site: Sioux City
Old Representative Site: Sioux City







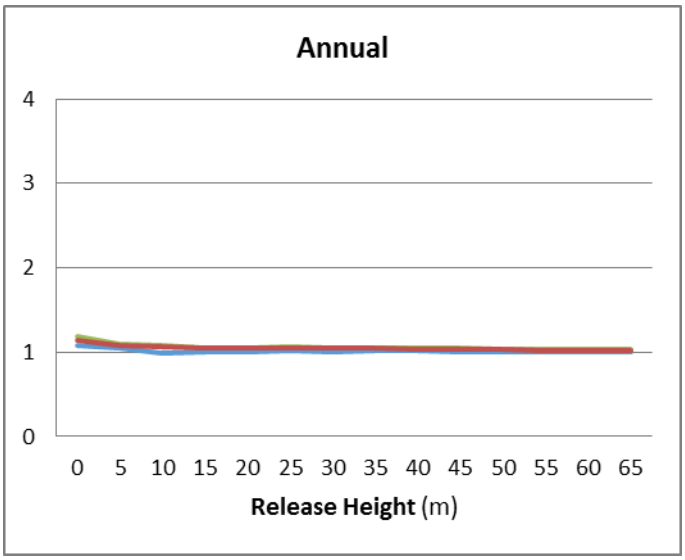


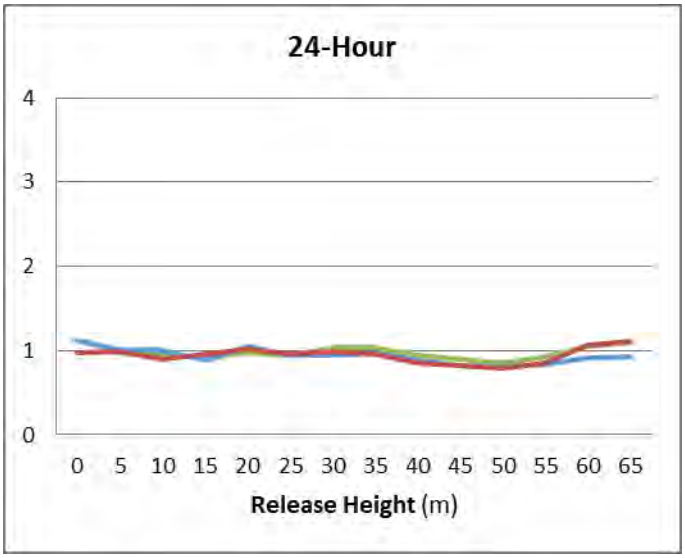


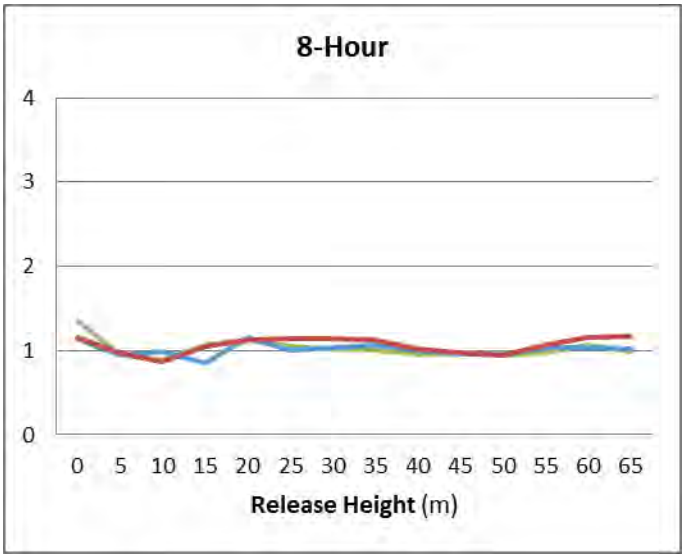
Source Type

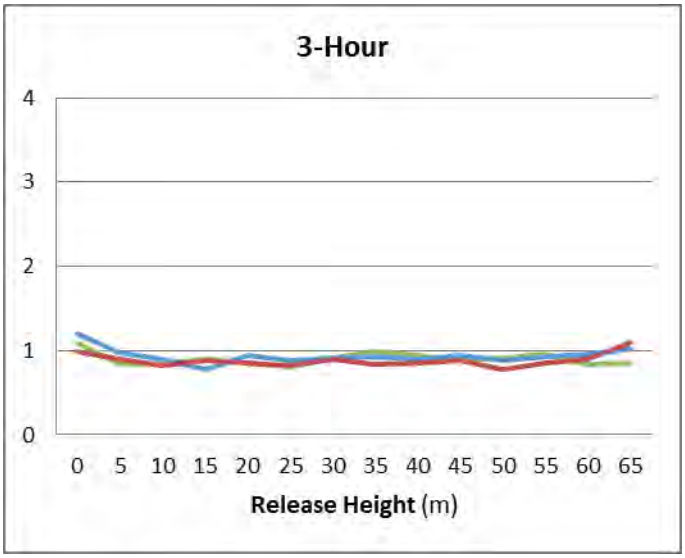
Point Volume Area

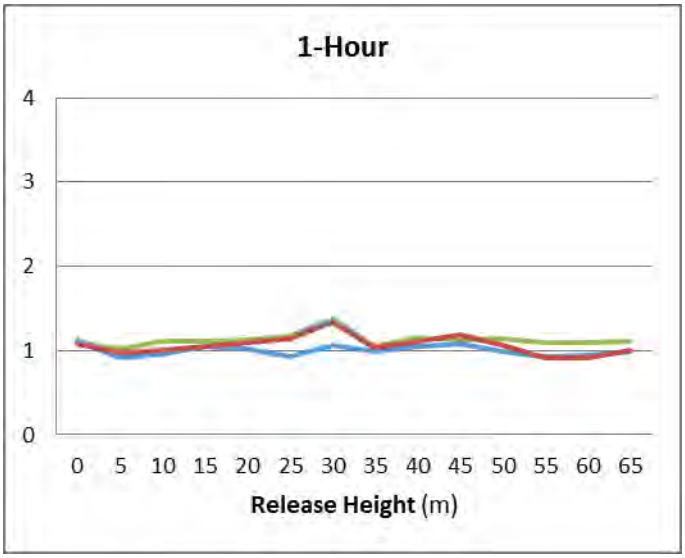
New Representative Site: Sioux Falls
Old Representative Site: Sioux Falls







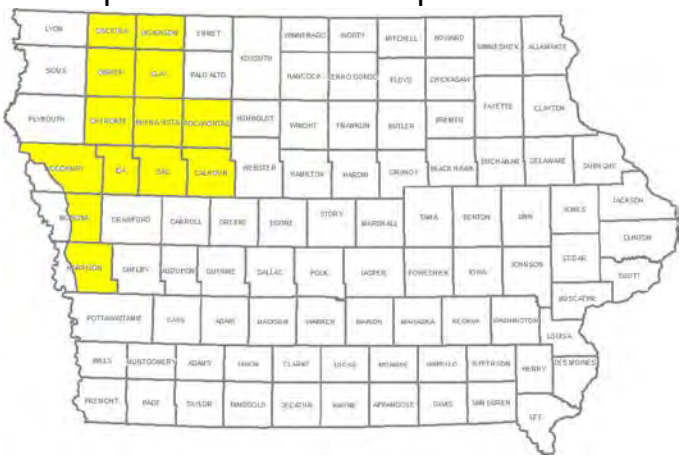


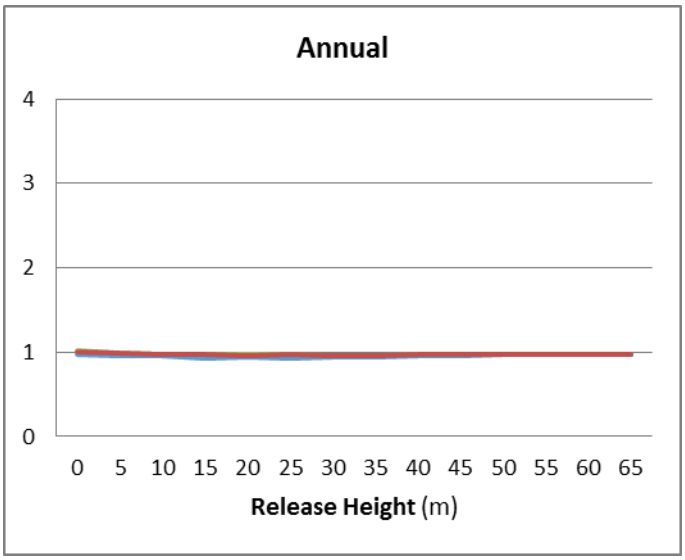


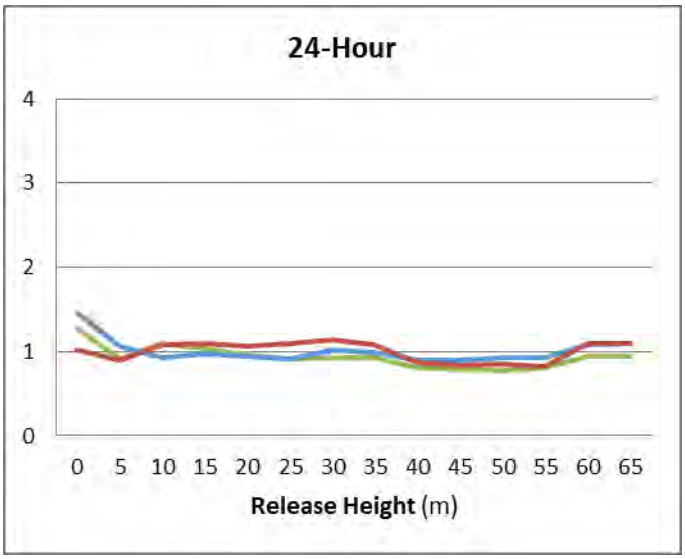
Source Type

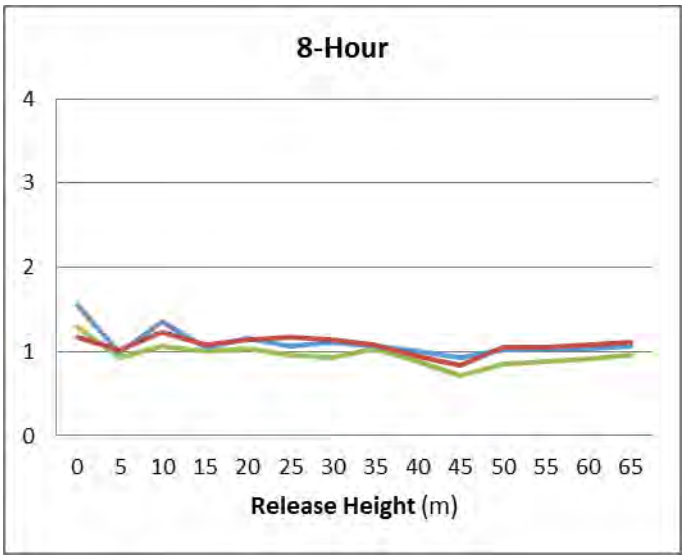
Point Volume Area

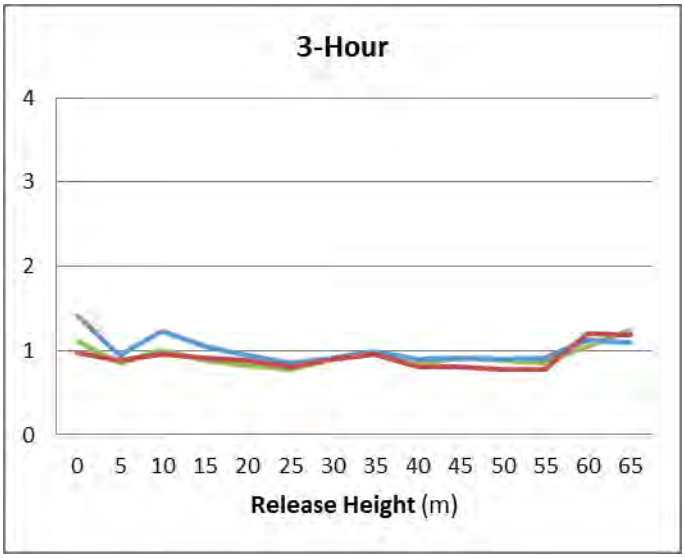
New Representative Site: Spencer
Old Representative Site: Spencer

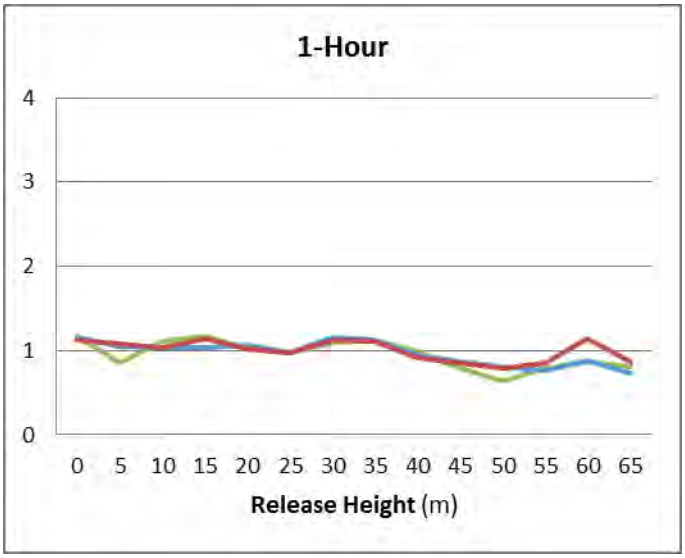








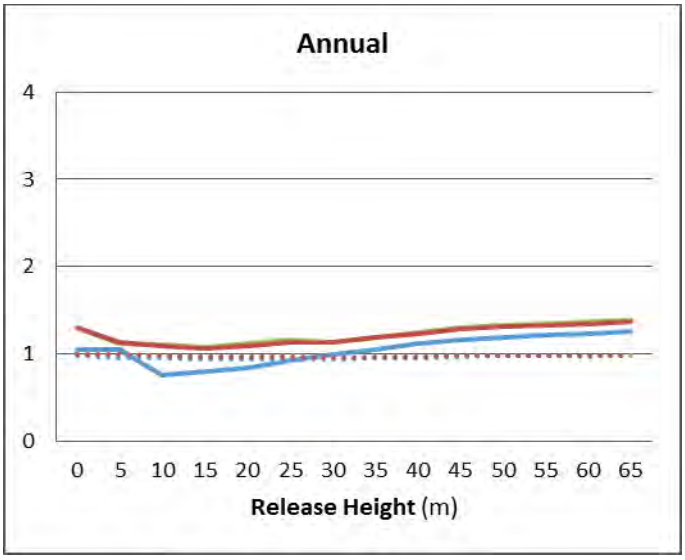


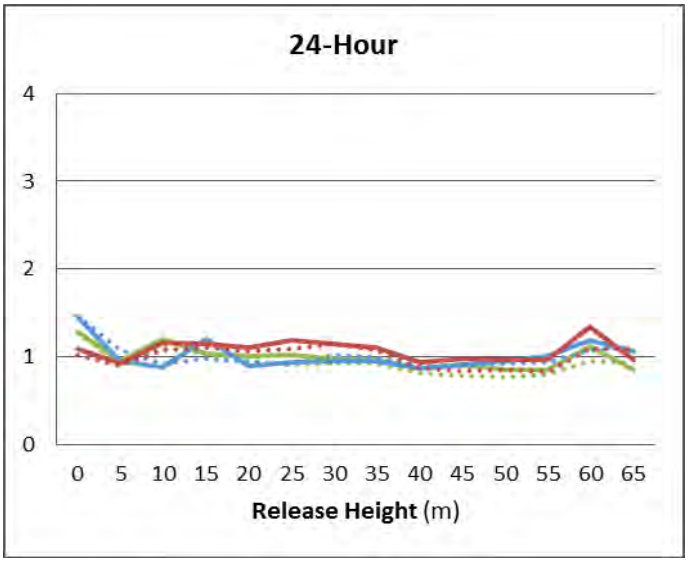


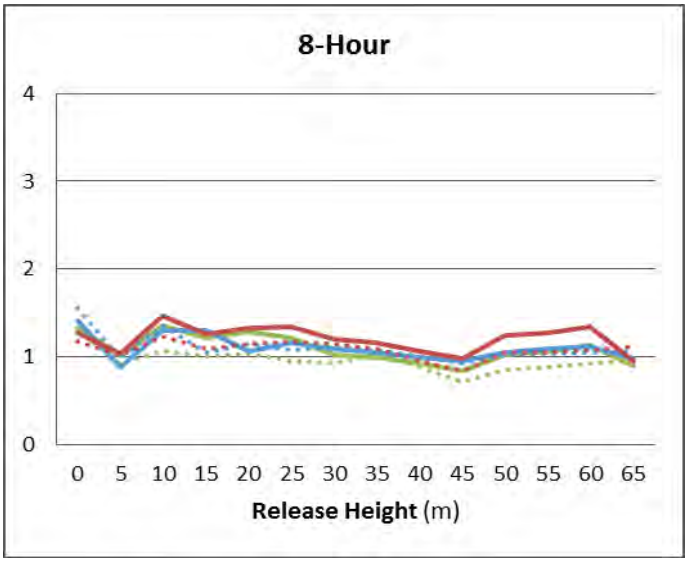
Source Type

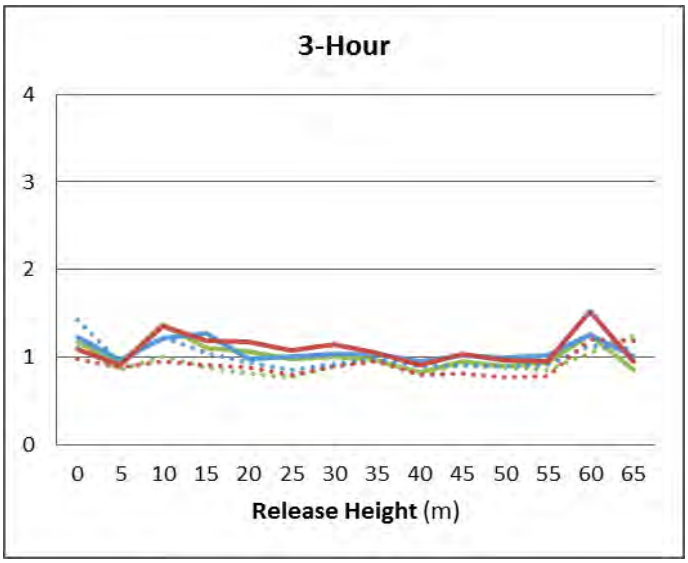
Point Volume Area

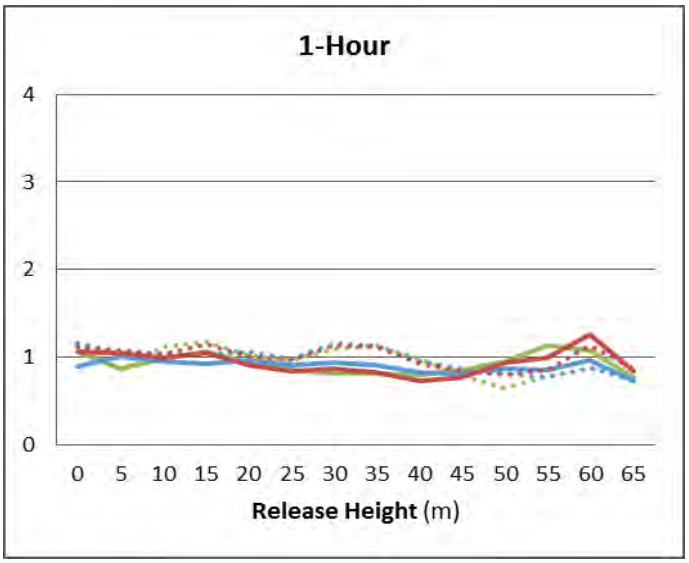
New Representative Site: Des Moines
Old Representative Site: Spencer







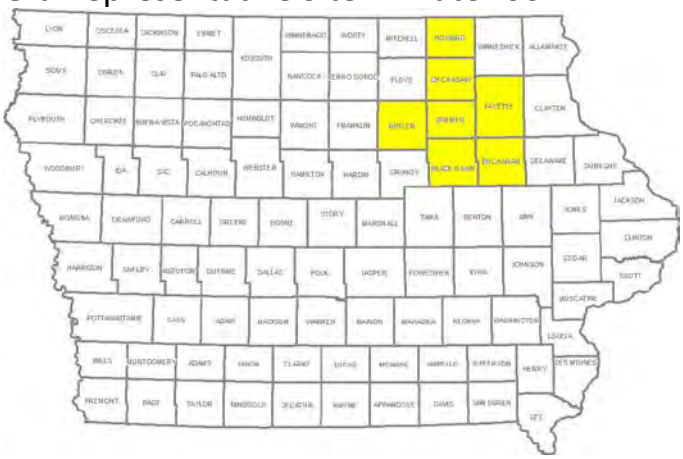


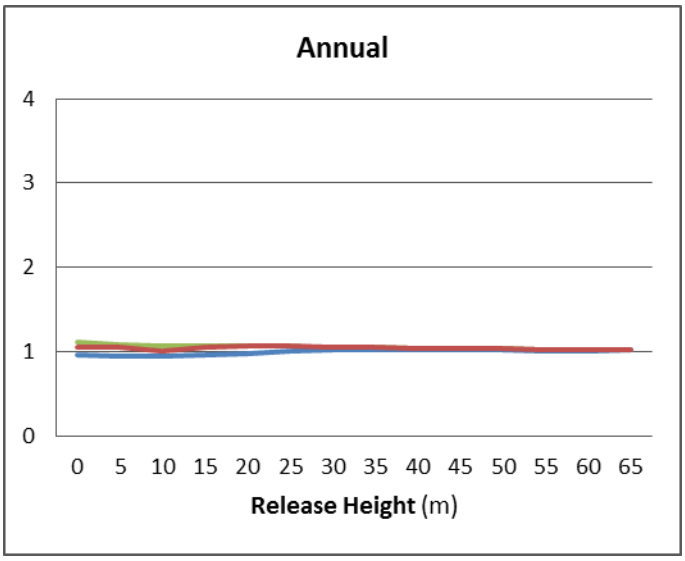


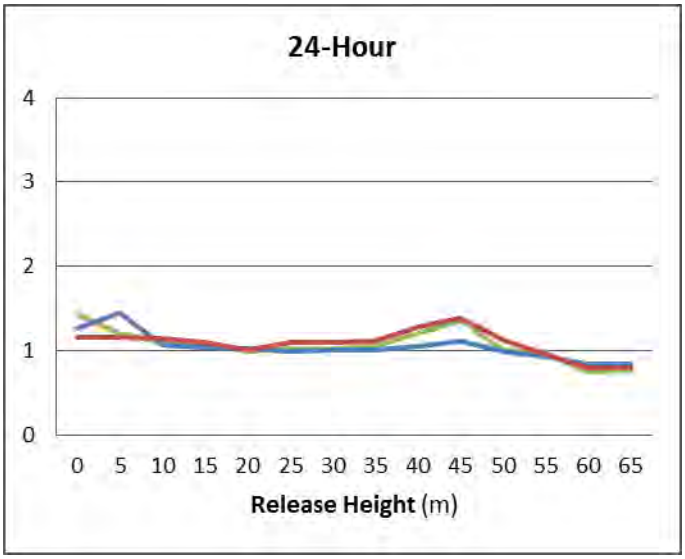
Source Type

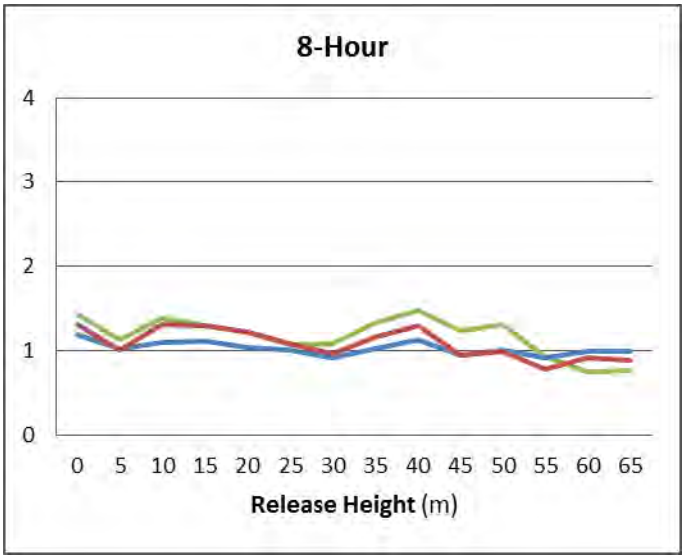
Point Volume Area

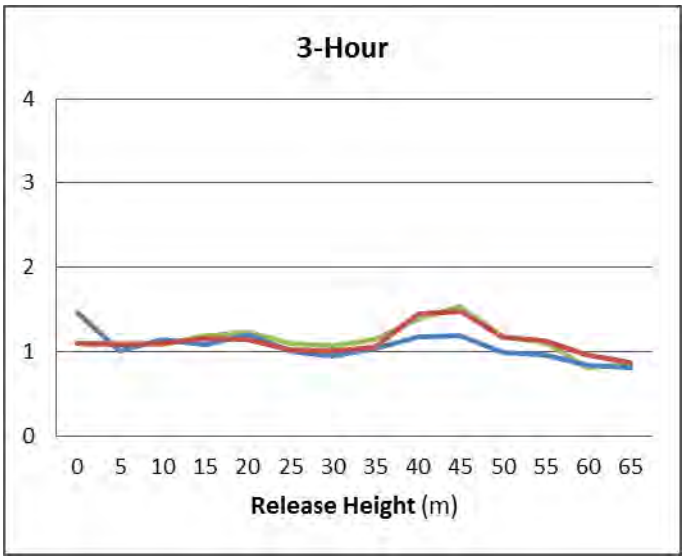
New Representative Site: Waterloo
Old Representative Site: Waterloo

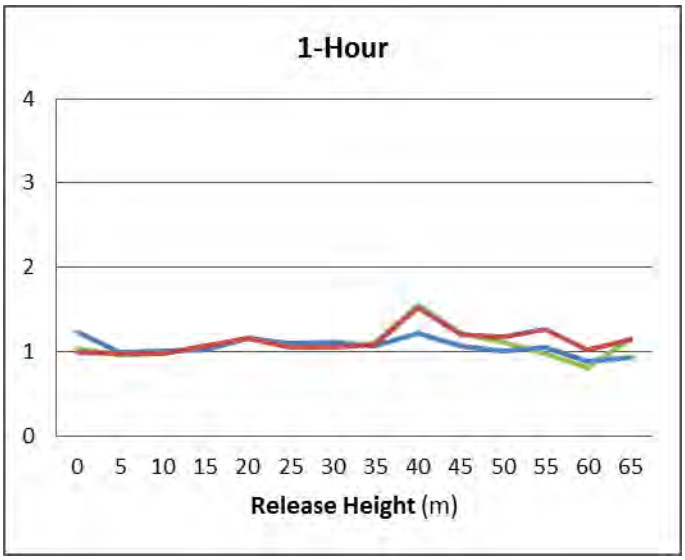












Source Type

Point Volume Area