

1  **Weather on the Web**

Using aviation weather resources on the Internet to help in planning a near-future trip

Todd Fisher

CFI/I/SE/ME, AGI, ATP, LTA-HAB

9,000+ hours

2  **Presentation Objectives**

- Show/discuss web-based aviation weather resources useful in planning for flights with ETD up to a week away
- Demonstrate use of these resources in a mock flight planning session recorded over several days in early January
- 

3  **Web-based Av Wx resources**

- Forecast Weather <https://www.weather.gov/>
- Aviation Weather <https://aviationweather.gov/>
  - /progchart/sfc – analysis and forecast maps showing fronts, pressures, and weather types
  - /gfs – Graphical forecasts for aviation
  - /hems – composite tool for localized area (originally designed for EMS helicopter pilots)
  - /icing – near-term icing forecasts at selectable altitudes
  - /turbulence – near-term turbulence forecasts at sel. alt.
  - /fcstdisc – area discussions of wx for aviators
  - /cva – current and preceding ceilings and visibilities

4  **Web-based Av Wx resources (cont.)**

- 
- MOS products - Model Output Statistics (MOS) is a technique used to objectively interpret numerical model output and produce site-specific guidance.
  - Discontinuance of GFS MOS imagery

5  **GFS MOS Images (ForeFlight)**6  **Web-based Av Wx resources (cont.)**

- 
- Localized Aviation MOS Program (LAMP) [https://www.weather.gov/mdl/lamp\\_home](https://www.weather.gov/mdl/lamp_home)
- Gridded imagery products (GLMP) [https://www.weather.gov/mdl/lamp\\_gridded](https://www.weather.gov/mdl/lamp_gridded)
- Windy.com – comprehensive presentation of a variety of weather products on a selectable scale map <https://www.windy.com/?40.979,-81.536,5>
- 1800wxbrief.com – a portal for complete flight planning and briefing
  - New display format
  - New mobile interface
- rucsoundings.gov – vertical soundings of atmosphere <https://rucsoundings.noaa.gov/>
- Commercial Products used in this presentation
  - WeatherSpork – a time-line weather viewing product <https://weatherspork.com/>
    - AvWxWorkshops - parent of WeatherSpork that hosts numerous tools for studying weather phenomena and understanding the weather from a pilot's perspective and needs <https://avwxworkshops.com/index.php>

- ForeFlight – a highly sophisticated iPad/iPhone/web app for planning and in-flight use

7 **Presentation Premises**

- Planning a flight in a small GA aircraft
- Looking at both IFR and VFR options
- Altitude 12,500' MSL or below
- Flight origin in NE Ohio
- Flight destination within 5 hours
  - Fuel stop may be required
- Required attendance at a function at the destination
  - This creates the need to make a Go/No-go decision a day or more in advance of ETD
- 

8 **Forecast Models**

- 'Model' refers to the mathematic algorithms used to predict weather conditions
- NOAA's National Weather Service (NWS) utilizes a number of models to develop the products offered
- The models are processed using super computers
  - The models begin with reported conditions,
  - then calculate a near-term forecast,
  - then use that point to calculate another forecast.
  - The forecasters look at many different models, comparing those predictions and selectively combining or rejecting these predictions to arrive at the finished 'Product'
  - Most data sites do not allow selection of model(s)
    - Notable exceptions – rucsoundings.gov, windy.com
  - <https://mag.ncep.noaa.gov/model-guidance-model-area.php>

9 **Weather on the Web**

- weather.gov <https://www.weather.gov/>
- 
- 'Civilian' forecast – presents clickable map of country-wide current conditions
- Counties and states displayed
- A click on a spot displays new map of area containing that spot
  - Links to additional resources for and about the area chosen
- Entering a 'city, state', 'zip code', or 'airport code' will display a point-forecast map and detailed 7-day forecast for that area
- 

10 **Forecast Discussion**

- Forecasters' comments on what is being observed and what is being forecast for the area chosen
- 

11 **The trip – KPOV to KPIA****ETD Friday, Jan 10, mid-morning****Planning begins Monday, Jan 6 PM**

12  **Forecast Discussion**

- Format varies by WSO, but generally contains
  - Synopsis – systems affecting the area’s weather
  - Near Term – expectations within the next 24 hours or so
  - Short Term – between Near and Long terms, ~ 48 hours
  - Long Term – from end of Short Term through remaining 7 days
  - Aviation – generalization from present through next 4 days
- Gives opportunity to observe the thinking of forecaster(s)
- Often contains clues relating to reliability of the forecast
- Of particular interest in the hour or so prior to issuance of Terminal Aerodrome Forecast (5 miles around airport)

13  **Forecast Discussion - Synopsis**

Area Forecast Discussion  
National Weather Service Cleveland OH  
643 PM EST Mon Jan 6 2020

.SYNOPSIS...

High pressure over Ohio will drift east overnight as a clipper system moves into Ontario. This clipper will remain to our north as it reaches Quebec Tuesday night. A trailing cold front however will drop southeast across the Great Lakes bringing a brief shot of colder air to the region mid week. High pressure will build back in for late Wednesday and Wednesday night. A warm front will follow on Thursday.

Area Forecast Discussion  
National Weather Service Lincoln IL  
604 PM CST Mon Jan 6 2020

.SYNOPSIS...Issued at 121 PM CST Mon Jan 6 2020

High pressure over the central Mississippi Valley will bring dry conditions to the area through tonight. A dry cold front will move through the region on Tuesday before high pressure builds back into the Midwest for midweek. A series of storm system are expected to move across the area beginning Thursday potentially bringing heavy rain to southeast Illinois and an occasional wintry mix for central Illinois.

14  **Forecast Discussion - Synopsis**

Area Forecast Discussion  
National Weather Service Cleveland OH  
643 PM EST Mon Jan 6 2020

.SYNOPSIS...

High pressure over Ohio will drift east overnight as a clipper system moves into Ontario. This clipper will remain to our north as it reaches Quebec Tuesday night. A trailing cold front however will drop southeast across the Great Lakes bringing a brief shot of colder air to the region mid week. High pressure will build back in for late Wednesday and Wednesday night. A warm front will follow on Thursday.

Area Forecast Discussion  
National Weather Service Lincoln IL  
604 PM CST Mon Jan 6 2020

.SYNOPSIS...Issued at 121 PM CST Mon Jan 6 2020

High pressure over the central Mississippi Valley will bring dry conditions to the area through tonight. A dry cold front will move through the region on Tuesday before high pressure builds back into the Midwest for midweek. A series of storm system are expected to move across the area beginning Thursday potentially bringing heavy rain to southeast Illinois and an occasional wintry mix for central Illinois.

- 15  **Forecast Discussion 'Areas'**
- 16  **Surface Analysis 1/6/20 Monday 5 PM**
- 17  **Monday Prog for 7 AM Tuesday**
- 18  **Monday Prog for 7 AM Wednesday**
- 19  **Monday Prog for 7 AM Thursday**
- 20  **Monday forecast discussion for Friday**

.LONG TERM /FRIDAY THROUGH MONDAY CLE OH Issued Mon Jan 6 2020

The upper level trough expected to move toward the local area will become split as fast moving jet maximum aloft shears off the northern half of the trough leaving behind a shortwave trough to the southwest of the forecast area by Saturday evening. This shortwave will be rather potent forcing some fairly strong cyclogenesis to occur well southwest of the forecast area. The surface low will deepen as it moves northeast toward the area Saturday and Saturday night. Another round of copious amounts of moisture will move north into the local area and there appears to be a threat for significant rainfall that will occur from Friday into early Sunday morning. Expected rainfall amounts have the potential to cause some widespread flooding issues and will have to be closely monitored for timing and areal extent over the next few days. Once low pressure system moves northeast of the area, an upper level ridge will build east across the local area resulting in a ridge of high pressure at the surface of the region Sunday night. Drier air will also follow the low bringing an end to the precipitation threat. No real strong push of cold air will follow the low pressure system during this forecast period.

Lincoln IL.LONG TERM...(Tuesday night through Monday) ISSUED AT 200 PM CST Mon Jan 6 2020

Longwave trough is forecast to remain entrenched over western North America through early next week with periodic shortwaves rotating through. The strength of the resultant super-positioned waves are sufficient to tap Gulf moisture. Long-range models continue to focus a nearly-stationary axis of deep moisture on an axis near the Ohio River. A GFS Integrated vapor transport signature suggests that atmospheric river thresholds should be met. Seems reasonable to assume oscillations of the axis will occasionally bring periods of significant precipitation to portions of the forecast area with the best chances near and southeast of I-70. The initial wave ejecting from the longwave should begin bringing precipitation into Illinois during the day Thursday with the best chances for widespread rain expected Thursday Night into Friday morning. Thermal profiles suggest that the precipitation is likely to remain liquid through the initial event. After a lull between waves for much of Friday, the next wave begins to impact the region Friday Night. One uncertain issue is on how much cold air can be

tapped in the wake of the initial system. It is likely that 700mb-850mb warm advection will precede this second wave. If the boundary-layer dries in response to northeast flow enough Friday Night, there is some potential for a band of freezing rain/sleet to set up somewhere across central Illinois. The model envelope as indicated by GEFS has a much higher than normal uncertainty and to pinpoint where the threat would be the highest is not possible this far out. As cold advection develops on the backside of the wave, precip will likely change to snow before ending Saturday Night. Again, the range in possible scenarios precludes forecasting a reliable snowfall amount at this time. Heavy rainfall episodes are the biggest threat across southeast Illinois during the latter half of the week. Rapid increase in lift associated with the right entrance region of rapidly developing 190kt+ jet max over the Great lakes Friday Night. Current potential amounts range as high as several inches of rain between Thursday and Saturday Night.&&

21 

### **Monday forecast discussion for Friday**

.LONG TERM /FRIDAY THROUGH MONDAY CLE OH Issued Mon Jan 6 2020

The upper level trough expected to move toward the local area will become split as fast moving jet maximum aloft shears off the northern half of the trough leaving behind a shortwave trough to the southwest of the forecast area by Saturday evening. This shortwave will be rather potent forcing some fairly strong cyclogenesis to occur well southwest of the forecast area. The surface low will deepen as it moves northeast toward the area Saturday and Saturday night. Another round of copious amounts of moisture will move north into the local area and there appears to be a threat for significant rainfall that will occur from Friday into early Sunday morning. Expected rainfall amounts have the potential to cause some widespread flooding issues and will have to be closely monitored for timing and areal extent over the next few days. Once low pressure system moves northeast of the area, an upper level ridge will build east across the local area resulting in a ridge of high pressure at the surface of the region Sunday night. Drier air will also follow the low bringing an end to the precipitation threat. No real strong push of cold air will follow the low pressure system during this forecast period.

Lincoln IL.LONG TERM...(Tuesday night through Monday) ISSUED AT 200 PM CST Mon Jan 6 2020

Longwave trough is forecast to remain entrenched over western North America through early next week with periodic shortwaves rotating through. The strength of the resultant super-positioned waves are sufficient to tap Gulf moisture. Long-range models continue to focus a nearly-stationary axis of deep moisture on an axis near the Ohio River. A GFS Integrated vapor transport signature suggests that atmospheric river thresholds should be met. Seems reasonable to assume oscillations of the axis will occasionally bring periods of significant precipitation to portions of the forecast area with the best chances near and southeast of I-70. The initial wave ejecting from the longwave should begin bringing precipitation into Illinois during the day Thursday with the best chances for widespread rain expected Thursday Night into Friday morning. Thermal profiles suggest that the precipitation is likely to remain liquid through the initial event. After a lull between waves for much of Friday, the next wave begins to impact the region Friday Night. One uncertain issue is on how much cold air can be tapped in the wake of the initial system. It is likely that 700mb-850mb warm advection will precede this second wave. If the boundary-layer dries in response to northeast flow enough Friday Night, there is some potential for a band of freezing rain/sleet to set up somewhere across central Illinois. The model envelope as indicated by GEFS has a much higher than normal uncertainty and to pinpoint where the threat would be the highest is not possible this far out. As cold advection develops on the backside of the wave, precip will likely change to snow before ending Saturday Night. Again, the range in possible scenarios precludes forecasting a reliable snowfall amount at this time. Heavy rainfall episodes are the biggest

threat across southeast Illinois during the latter half of the week. Rapid increase in lift associated with the right entrance region of rapidly developing 190kt+ jet max over the Great lakes Friday Night. Current potential amounts range as high as several inches of rain between Thursday and Saturday Night.&&

22  **Monday Prog for 7 AM Friday**

23  **Monday Prog for 7 AM Saturday**

24  **WeatherSpork.com**

- A subscription tool (\$79/yr) of immense value to pilots
- Developed and maintained by NWS Forecaster
- Numerous tools to view weather products
- Ability to use sliding scale of ETD while viewing forecast weather along the route of intended flight
- A sub-site of AvWxWorkshops.com (access included)
  - Includes large number of video training sessions
- Make a point of investigating (and subscribing to) this site
- 

25  **WeatherSpork.com**

26  **Tuesday Discussion - OH**

Area Forecast Discussion National Weather Service Cleveland OH 348 PM EST Tue Jan 7 2020

.SYNOPSIS...A cold front will move southeast across the area this evening. Another reinforcing Arctic cold front will move southeast across the area late tonight and usher in much colder air. The Arctic front will move southeast of the area as high pressure quickly builds east across the region Wednesday afternoon and to the Delmarva coast by Thursday morning. A warm front will lift north across the area Thursday afternoon. A series of low pressure systems will move northeast across the area through the early part of the weekend.

.SHORT TERM /THURSDAY THROUGH FRIDAY NIGHT/...An upper level ridge in the weather pattern will be moving across the Great Lakes region down to the East Coast on Thursday. We will start out cold Thursday morning but with southerly winds returning Thursday afternoon, temperatures will moderate back to relatively milder readings with highs in the 40s. Thursday will start out with some sun but clouds will increase from west to east during the day as the next upper level wave and storm system develops across the Upper Midwest. An area of low pressure will develop in the Upper Midwest and track eastward across the upper Great Lakes Thursday night with a trailing cold front. Rain showers will become likely from west to east during the night. The front will stall out just northwest of our area as a stronger storm begins to take shape and develop across the Mid-Mississippi on Friday. This system will be the main weather story Friday night into Saturday. There is high confidence with the forecast through early Saturday with rain likely and unseasonable mild weather. Storm total rainfall for the end of the week will average 1 to 2 inches. The ground is relatively wet and there is an increasing flooding concerns for some of our rivers across the region.

27  **Tuesday Discussion - OH**

Area Forecast Discussion National Weather Service Cleveland OH 348 PM EST Tue Jan 7 2020

.SYNOPSIS...A cold front will move southeast across the area this evening. Another reinforcing Arctic cold front will move southeast across the area late tonight and usher in much colder air. The Arctic front will move southeast of the area as high pressure quickly builds east across the region Wednesday afternoon and to the Delmarva coast by Thursday morning. A warm front will lift north across the area Thursday afternoon. A series of low pressure systems will move northeast across the area through the early part of the weekend.

.SHORT TERM /THURSDAY THROUGH FRIDAY NIGHT/...An upper level ridge in the weather pattern will be moving across the Great Lakes region down to the East Coast on Thursday. We will start out cold Thursday morning but with southerly winds returning Thursday afternoon, temperatures will moderate back to relatively milder readings with highs in the 40s. Thursday will start out with some sun but clouds will increase from west to east during the day as the next upper level wave and storm system develops across the Upper Midwest. An area of low pressure will develop in the Upper Midwest and track eastward across the upper Great Lakes Thursday night with a trailing cold front. Rain showers will become likely from west to east during the night. The front will stall out just northwest of our area as a stronger storm begins to take shape and develop across the Mid-Mississippi on Friday. This system will be the main weather story Friday night into Saturday. There is high confidence with the forecast through early Saturday with rain likely and unseasonable mild weather. Storm total rainfall for the end of the week will average 1 to 2 inches. The ground is relatively wet and there is an increasing flooding concerns for some of our rivers across the region.

28  **Tuesday Discussion - IL**

Area Forecast Discussion National Weather Service Lincoln IL 346 PM CST Tue Jan 7 2020

.SYNOPSIS...Issued at 330 PM CST Tue Jan 7 2020 A weak cold front will move southeast through the region tonight before high pressure builds back into area during midday Wednesday. Dry weather is expected to continue across the area through early Thursday. A series of storm systems are then expected to eject northeast across the area from Thursday afternoon through Saturday evening, potentially bringing 2 to 5 inches of rain to central and southeast Illinois from Thursday night through Saturday. This will be followed by a wintry mix with some accumulating snowfall possible for parts of central and especially northwest IL overnight Friday night and Saturday. High pressure ridge exits east over the eastern Great Lakes and mid Atlantic States overnight Wed night with a warm front lifting northward over central IL. Evening lows Wed night in the upper 20s and lower 30s (coolest ne CWA) then slowing rising overnight Wed night with increasing southerly flow. Stronger south winds on Thu bring milder highs in the lower 50s, with some mid 50s over sw CWA and se IL. Most areas should stay dry Thu morning, then see a good chance of light rain showers developing during Thu afternoon in strong warm air advection pattern and cold front approaching nw IL by sunset Thu. 1st wave of widespread rain showers to occur Thu night into Friday as cold front slowly moves into heart of central IL by midday Fri. Mild lows Thu night in the mid to upper 40s, except upper 30s and lower 40s nw of the IL river behind cold front. Mild again on Fri with highs ranging from 45-50 nw of the IL river to the upper 50s/lower 60s in eastern/se IL.

29  **Tuesday Discussion - IL**

Area Forecast Discussion National Weather Service Lincoln IL 346 PM CST Tue Jan 7 2020

.SYNOPSIS...Issued at 330 PM CST Tue Jan 7 2020 A weak cold front will move southeast through the region tonight before high pressure builds back into area during midday Wednesday. Dry weather is expected to continue across the area through early Thursday. A series of storm systems are then expected to eject northeast across the area from Thursday afternoon through Saturday evening, potentially bringing 2 to 5 inches of rain to central and southeast Illinois from Thursday night through Saturday. This will be followed by a wintry mix with some accumulating snowfall possible for parts of central and especially northwest IL overnight Friday night and Saturday. High pressure ridge exits east over the eastern Great Lakes and mid Atlantic States overnight Wed night with a warm front lifting northward over central IL. Evening lows Wed night in the upper 20s and lower 30s (coolest ne CWA) then slowing rising overnight Wed night with increasing southerly flow. Stronger south winds on Thu bring milder highs in the lower 50s, with some mid 50s over sw CWA and se IL. Most areas should stay dry Thu morning, then see a good chance of light rain showers developing during Thu afternoon in strong warm air advection pattern and cold front approaching nw IL by sunset Thu. 1st wave of widespread rain showers to occur Thu night

into Friday as cold front slowly moves into heart of central IL by midday Fri. Mild lows Thu night in the mid to upper 40s, except upper 30s and lower 40s nw of the IL river behind cold front. Mild again on Fri with highs ranging from 45-50 nw of the IL river to the upper 50s/lower 60s in eastern/se IL.

30  **Tuesday Prog for Friday 7 AM**

31  **Monday Prog for 7 AM Friday**

32  **Localized Aviation MOS Program**

**LAMPS**

- Model Output Statistics (MOS) – computer generated non-human-modified forecasts that are the initial products used by forecasters
- The Localized Aviation MOS Program (LAMP) system provides aviation forecast guidance. LAMP is designed to frequently update the central Model Output Statistics (MOS) product suite primarily by incorporating the most recent observational data. The guidance is available at over 2000 stations in the CONUS, Alaska, Hawaii, and Puerto Rico. The guidance is also available for select weather elements in gridded format covering the NDFD CONUS grid. The products are updated hourly and valid over a 25-hour or 38-hour period.

33  **LAMPS – text based forecast**

- LAMP is a statistical system which provides forecast guidance for sensible weather elements. LAMP updates MOS on an hourly basis, is run on NOAA/NWS/NCEP Weather and Climate Operational Supercomputer Systems (WCOSS) computers and disseminated centrally from NCEP, and provides guidance for over 1600 stations as well as gridded observation and forecast guidance on the NDFD CONUS 2.5-km grid out to 25 hours.

LAMP provides station guidance for the following weather elements:

- 2-meter temperature
- 2-meter dewpoint
- 10-m Wind speed, direction, and gusts
- Probability of precipitation (on hr)
- Probability of measurable precipitation (6- and 12-h)
- Precipitation type
- Precipitation characteristics
- Lightning
- Convection
- Ceiling height
- Conditional ceiling height
- Opaque sky cover
- Visibility
- Conditional visibility
- Obstruction to vision
- LAMP station-based products can be found at the [LAMP Station-based Products](#) web page.

34  **Gridded LAMP – graphic based forecast**

- Gridded LAMP provides gridded analyses of observations and operational LAMP forecasts for aviation forecasting. The output grid aligns with the CONUS NDFD grid (#227) at 2.5km. The jobs run hourly in the NWS job stream. Gridded forecast

guidance and gridded observations are currently available for the following elements:

- Convection forecast guidance
- Lightning forecast guidance
- 2-meter temperature observations and the associated error estimations
- 2-meter dewpoint temperature observations and the associated error estimations
- Ceiling height observations
- Visibility observations
- 2-meter temperature forecast guidance
- 2-meter dewpoint temperature forecast guidance
- Ceiling height forecast guidance
- Visibility forecast guidance
- Opaque sky cover observations
- 10-meter wind speed observations
- 10-meter wind direction observations
- Opaque sky cover forecast guidance
- 10-meter wind speed forecast guidance
- 10-meter wind direction forecast guidance
- Gridded LAMP products can be found at the [Gridded LAMP](#) web page.

35  **Tuesday Visibility GLMP for Thursday**

36  **Tuesday Ceiling GLMP for Thursday**

37  **WeatherSpork on Wednesday**

38  **Wednesday Depiction**

39  **Wednesday Prog – Thursday mid-day**

40  **Wednesday Prog – Thursday evening**

41  **Wednesday Prog – Friday morning**

42  **Wednesday Prog – Friday evening**

43  **Wednesday Discussions - OH**

Area Forecast Discussion National Weather Service Cleveland OH 1231 PM EST Wed Jan 8 2020

.SYNOPSIS...

A cold front will move southeast across the area this morning. As the front departs the region, high pressure will settle in across the area by tonight. Ridging will increase from the southwest Thursday morning, lifting a warm front across the area by Thursday afternoon. A series of low pressure systems will trek across the region the end of the week through the weekend.

.SHORT TERM /THURSDAY NIGHT THROUGH SATURDAY NIGHT/...

Strong warm air advection will continue through Thursday night preventing the temperature from budging overnight. In fact, a few locations` lowest temperatures will occur early in the night as parts of northern Ohio actually increase in temperature overnight. The onset of a very wet weekend likely begins Thursday night with very strong isentropic uplift and moisture advection as high pressure over the mid-Atlantic and low pressure over northern Ontario work together to strengthen south

to southwesterly flow over much of the eastern CONUS. A very large area of 40+ knots at 850 mb and 700 mb will be efficient in advecting warm, moist air from the Gulf of Mexico.

Low pressure begins to develop over the southern/central Great Plains on Friday and begins working its way northeast on Friday night Saturday tracking its way across the Great Lakes region through the weekend. All models have another but much stronger low level jet extending from the southern Gulf States with some models, like the ECMWF and the NAM, exhibiting extreme 850 mb wind speeds as high as 80 knots! This will result in near record values of moisture occurring across the area, something long range models such as the NAEFS and ECMWF ENS have been showing and continuing to show, especially on Saturday.

The first round of rain is expected to move through late Thursday night, lasting most of the day Friday and well into Friday night. Depending on the low track there may be a brief lull in rain on Saturday before moderate to heavy rain associated with the cold front moves through late Saturday and into the overnight hours. Storm total QPF through Saturday night is expected to be around 1 to 3 inches across the entire forecast area with higher end amounts towards northwest Ohio. Confidence is high that everybody will receive at least 1 inch of rain and that somebody will receive 3 or more inches of rain. However, the exact axis of heaviest precipitation is still in question and is heavily dependent on the track of the low. There is still quite a bit of variance between models and model cycles, though the general consensus right now is for a low track that is a tad farther northwest and slower than previous runs, making its way across Indiana and lower Michigan on Saturday night and to southern Ontario by 12 UTC Sunday. Regardless, confidence is high that there will be heavy rain, and at least some flooding concerns, especially on area rivers and creeks.

In addition to a lot of rain, abnormally high temperatures are expected through this period, with highest temperatures expected on Saturday when high temperatures could break 60. Sites such as Mansfield, Canton-Akron, and Youngstown are at risk of breaking their daily high temperature record on Saturday. See the climate section for relevant record high temperature data.

#### 44 **Wednesday Discussions - OH**

Area Forecast Discussion National Weather Service Cleveland OH 1231 PM EST Wed Jan 8 2020

.SYNOPSIS...

A cold front will move southeast across the area this morning. As the front departs the region, high pressure will settle in across the area by tonight. Ridging will increase from the southwest Thursday morning, lifting a warm front across the area by Thursday afternoon. A series of low pressure systems will trek across the region the end of the week through the weekend.

.SHORT TERM /THURSDAY NIGHT THROUGH SATURDAY NIGHT/...

Strong warm air advection will continue through Thursday night preventing the temperature from budging overnight. In fact, a few locations` lowest temperatures will occur early in the night as parts of northern Ohio actually increase in temperature overnight. The onset of a very wet weekend likely begins Thursday night with very strong isentropic uplift and moisture advection as high pressure over the mid-Atlantic and low pressure over northern Ontario work together to strengthen south to southwesterly flow over much of the eastern CONUS. A very large area of 40+ knots at 850 mb and 700 mb will be

efficient in advecting warm, moist air from the Gulf of Mexico.

Low pressure begins to develop over the southern/central Great Plains on Friday and begins working its way northeast on Friday night Saturday tracking its way across the Great Lakes region through the weekend. All models have another but much stronger low level jet extending from the southern Gulf States with some models, like the ECMWF and the NAM, exhibiting extreme 850 mb wind speeds as high as 80 knots! This will result in near record values of moisture occurring across the area, something long range models such as the NAEFS and ECMWF ENS have been showing and continuing to show, especially on Saturday.

The first round of rain is expected to move through late Thursday night, lasting most of the day Friday and well into Friday night. Depending on the low track there may be a brief lull in rain on Saturday before moderate to heavy rain associated with the cold front moves through late Saturday and into the overnight hours. Storm total QPF through Saturday night is expected to be around 1 to 3 inches across the entire forecast area with higher end amounts towards northwest Ohio. Confidence is high that everybody will receive at least 1 inch of rain and that somebody will receive 3 or more inches of rain. However, the exact axis of heaviest precipitation is still in question and is heavily dependent on the track of the low. There is still quite a bit of variance between models and model cycles, though the general consensus right now is for a low track that is a tad farther northwest and slower than previous runs, making its way across Indiana and lower Michigan on Saturday night and to southern Ontario by 12 UTC Sunday. Regardless, confidence is high that there will be heavy rain, and at least some flooding concerns, especially on area rivers and creeks.

In addition to a lot of rain, abnormally high temperatures are expected through this period, with highest temperatures expected on Saturday when high temperatures could break 60. Sites such as Mansfield, Canton-Akron, and Youngstown are at risk of breaking their daily high temperature record on Saturday. See the climate section for relevant record high temperature data.

#### 45 **Wednesday Discussions - IL**

Area Forecast Discussion National Weather Service Lincoln IL 1159 AM CST Wed Jan 8 2020

.SYNOPSIS... Issued at 357 AM CST Wed Jan 8 2020

A brief period of high pressure will control the weather today with dry weather and should continue through early Thursday. A series of storm systems are then expected to eject northeast across the area from Thursday afternoon through Saturday evening, potentially bringing 2 to 4 inches of rain to central and southeast Illinois from Thursday night through Saturday. This will be followed by a wintry mix with some accumulating snowfall possible for parts of central and especially northwest IL overnight Friday night through Saturday.

.LONG TERM...(Thursday through Tuesday) ISSUED AT 357 AM CST Wed Jan 8 2020

The next weather system developing in the plains will begin to spread rain across the area by Thursday afternoon. The associated frontal boundary will be west of the state and all models are in fairly good agreement with placement of this boundary through Friday. The gulf will be wide open for this system so lots of moisture will spread into the area, so lots of

rain is expected across the area Thursday night through Friday as the boundary sits right over central IL, oriented northeast to southwest. Windy conditions are also expected with this system through the period, resulting in lots of shear. Even though instability...CAPE...will be low, still expecting thunderstorms to be embedded inside the rain from Thursday night through Friday night over all of central and southeast IL, even reaching into the northern parts of central IL as well...for a time. Temps will also be quite warm through this period with lots of warm air in the area...especially east and south of the front. Rainfall amounts through the period will range from 2 inches in the northwest to 3.5 to 4+ inches from I-55 to southeast IL. Currently the axis of heaviest rainfall appears to be setting up along a Taylorville to Decatur to Danville line. However, any changes in the location of the boundary could change the location of the heaviest rainfall. An ESF will remain in effect and has been expanded to include most of the CWA where rainfall amounts will be over 2.5 inches.

The frontal boundary will begin to slide east and this will allow cooler air to move into northwestern parts of the CWA beginning late Friday night. Models begin to differ here with the GFS quicker with the boundary and surface low pressure area moving northeast. However, GEFS and other models favor a slower progression of the system during the Friday night through the weekend. Model forecast soundings show some chances of sleet and/or freezing rain, mainly northwest of the IL river for late Friday night and early Saturday AM. The chance of sleet will move as the colder air moves in from the northwest, but should remain west of I-55 through Saturday afternoon. By Saturday evening, the deformation zone snowfall will setup over a good portion of the CWA. Accumulating snow appears likely across the western half of the CWA through Saturday evening, while little to no accumulation is expected in the east and southeast.

#### 46 **Wednesday Discussions - IL**

Area Forecast Discussion National Weather Service Lincoln IL 1159 AM CST Wed Jan 8 2020

.SYNOPSIS... Issued at 357 AM CST Wed Jan 8 2020

A brief period of high pressure will control the weather today with dry weather and should continue through early Thursday. A series of storm systems are then expected to eject northeast across the area from Thursday afternoon through Saturday evening, potentially bringing 2 to 4 inches of rain to central and southeast Illinois from Thursday night through Saturday. This will be followed by a wintry mix with some accumulating snowfall possible for parts of central and especially northwest IL overnight Friday night through Saturday.

.LONG TERM...(Thursday through Tuesday) ISSUED AT 357 AM CST Wed Jan 8 2020

The next weather system developing in the plains will begin to spread rain across the area by Thursday afternoon. The associated frontal boundary will be west of the state and all models are in fairly good agreement with placement of this boundary through Friday. The gulf will be wide open for this system so lots of moisture will spread into the area, so lots of rain is expected across the area Thursday night through Friday as the boundary sits right over central IL, oriented northeast to southwest. Windy conditions are also expected with this system through the period, resulting in lots of shear. Even though instability...CAPE...will be low, still expecting thunderstorms to be embedded inside the rain from Thursday night through Friday night over all of central and southeast IL, even reaching into the northern parts of central IL as well...for a time. Temps will also be quite warm through this period with lots of warm air in the area...especially east and south of the front. Rainfall amounts through the period will range from 2 inches in the northwest to 3.5 to 4+ inches from I-55 to southeast IL.

Currently the axis of heaviest rainfall appears to be setting up along a Taylorville to Decatur to Danville line. However, any changes in the location of the boundary could change the location of the heaviest rainfall. An ESF will remain in effect and has been expanded to include most of the CWA where rainfall amounts will be over 2.5 inches.

The frontal boundary will begin to slide east and this will allow cooler air to move into northwestern parts of the CWA beginning late Friday night. Models begin to differ here with the GFS quicker with the boundary and sfc low pressure area moving northeast. However, GEFS and other models favor a slower progression of the system during the Friday night through the weekend. Model forecast soundings show some chances of sleet and/or freezing rain, mainly northwest of the IL river for late Fri night and early Sat AM. The chance of sleet will move as the colder air moves in from the northwest, but should remain west of I-55 through Sat afternoon. By Sat evening, the deformation zone snowfall will setup over a good portion of the CWA. Accumulating snow appears likely across the western half of the CWA through Sat evening, while little to no accumulation is expected in the east and southeast.

- 47  **WeatherSpork on Wednesday**
- 48  **Windy.com on Wednesday**  
**Cloud Bases – Thursday 6 AM**
- 49  **Windy.com on Wednesday**  
**Cloud Bases – Thursday 3 PM**
- 50  **Windy.com on Wednesday**  
**Cloud Bases – Thursday 11 PM**
- 51  **Windy.com on Wednesday**  
**Cloud Bases – Friday 6 AM**
- 52  **Windy.com on Wednesday**  
**Cloud Bases – Friday 10 AM**
- 53  **Windy.com on Wednesday**  
**Cloud Bases – Friday 1 PM**
- 54  **Windy.com on Wednesday**  
**Cloud Bases – Friday 4 PM**
- 55  **Windy.com on Wednesday**  
**Cloud Bases – Saturday 7 AM**
- 56  **Windy.com on Wednesday**  
**Visibility – Thursday 7 AM**
- 57  **Windy.com on Wednesday**  
**Visibility – Thursday 4 PM**
- 58  **Windy.com on Wednesday**  
**Visibility – Thursday 10 PM**
- 59  **Windy.com on Wednesday**  
**Visibility – Friday 7 AM**
- 60  **Windy.com on Wednesday**  
**Visibility – Friday 10 AM**
- 61  **Windy.com on Wednesday**

**Visibility – Friday 1 PM**

62  **Windy.com on Wednesday**

**Visibility – Friday 4 PM**

63  **Windy.com on Wednesday**

**Visibility - Saturday 7 AM**

64  **Windy.com on Wednesday**

**Surface Wind – Saturday 2 PM**

65  **Windy.com on Wednesday**

**Low Level Wind – 330' on Saturday 2 PM**

66  **Thursday Forecast Discussions - OH**

Area Forecast Discussion National Weather Service Cleveland OH 1216 PM EST Thu Jan 9 2020

...18z Aviation Forecast Update...

.SYNOPSIS...

High pressure will move east of the area later this morning as low pressure reaches Iowa. A warm front will arrive into the area by this evening as the low reaches the Upper Great Lakes. Another low will develop Friday in the Southern Plains and will move northeast along a frontal boundary into the Ohio Valley by Friday night into Saturday.

.NEAR TERM /THROUGH FRIDAY/...

Refreshed temps and sky cover to reflect recent trends in satellite and ground observations. No major changes at this time.

Previous Discussion...

Light winds and clear skies across much of the area this morning ahead of several days of unsettled weather. South/Southeast winds ramp up this afternoon and evening as low pressure passes through the Upper Great Lakes. Widespread gusts of 25-30 mph are possible across much of the area this afternoon through much of the day Friday. The highest gusts will be found along the Erie, PA lakeshore where gusts up to 40-45 mph are possible with downsloping winds, especially this evening. Daytime highs on Thursday will be in the low to mid 40s across much of the area and will not vary much Thursday night as WAA overspreads much of the area. Highs on Friday will be in the low to mid 50s as warm air continues to funnel into the area.

Rain streams in from the southwest this evening as a warm front is lifted north across the area. Precipitation will slowly work west to east across the area this evening through early Friday afternoon. Atmospheric conditions are highly favorable for a soaking rain as a 70 knot LLJ pumps Gulf moisture up into the Ohio Valley. The atmospheric column looks highly saturated with precipitable water values expected to exceed 1 inch which is highly unusual for early January in NE OH and NW PA. A brief lull in rain is possible late Friday afternoon and evening, before a second round is expected Friday night onwards.

Several mesoscale models have been very bullish with QPF totals through 0Z Saturday, suggesting a widespread 1-1.5 inches of rain possible with locally 2 inches in west/northwest OH. However, this appears to be slightly overdone given upstream convection so have opted to go more conservative in this initial round of rain with a half inch to an inch of rain forecast.

67  **Thursday Forecast Discussions - IL**

Area Forecast Discussion National Weather Service Lincoln IL 1131 AM CST Thu Jan 9 2020

.SYNOPSIS...

Issued at 410 AM CST Thu Jan 9 2020

Warmer weather is on tap for today as high temperatures soar into the lower to middle 50s. South winds are also expected to become quite gusty with speeds as high as 40 to 45 mph possible late this morning through this afternoon. A few light showers may develop this afternoon...with better chances for widespread rain holding off until tonight. A series of storm systems are then expected to eject northeast across the area through Saturday evening, likely bringing 2 to 4 inches of rain to central and southeast Illinois. This will be followed by a wintry mix with accumulating snowfall across areas, mainly northwest of the Illinois river late Friday night through Saturday night.

.UPDATE...

Issued at 1045 AM CST Thu Jan 9 2020

Updated the forecast today to expand the wind advisory (from 10 am to 6 pm today) further south to include Schuyler, Cass, Menard, Scott, Morgan, Sangamon, Christian and Macon counties. Springfield airport had sustained winds of 25-28 mph and wind gusts of 40-44 mph since 9 am. Approaching wind advisory criteria of sustained winds 30 mph or higher and/or wind gusts of 45 mph or higher. Also increased chances of rain showers over parts of central IL, east of Peoria and Springfield to near I-57 into early afternoon.

Late morning surface map shows 1002 mb low pressure over nw Iowa with its warm front over southern WI and its cold front extending into se KS. 1040 mb high pressure was over the Atlantic States. Very tight pressure gradient over IL giving strong south winds 20-30 mph and gusts of 30-40 mph over much of central IL and a few cities getting gusts approaching 45 mph from I-72 north. Temps had risen into the mid 40s to lower 50s, warmest over sw CWA and in southeast IL. A broken band of rain showers was over central IL east of a Lacon to Springfield line and about as far east as I-57 and lifting NNE. Best chances of rain showers will shift into eastern IL during this afternoon while windy conditions continue, though rainfall amounts generally less than a tenth inch in some spots by sunset. South winds to increase a bit more from mid day into mid afternoon, with gusts of 40-50 mph possible by afternoon from I-72 north. Winds to start diminishing after sunset, so will continue wind advisory til 6 pm. Mild highs in the low to mid 50s look good, warmest over sw CWA and in southeast IL. These readings are nearly 20 degrees above normal for mid January.

68  **Thursday Forecast Discussions - IL**

.SHORT TERM...(Today and tonight)

ISSUED AT 410 AM CST Thu Jan 9 2020

A developing weather system will spread light precip across the area this afternoon and into tonight. As this occurs, gusty south winds are also expected to develop with gusts as high as 40-45 mph. Therefore have will be issuing a wind advisory for areas north of a Rushville to Paris line for late this morning through this afternoon. Winds will then subside this evening.

Strong warm air advection will occur and temps should quickly rise into the lower to middle 50s across most of the area. Clouds will also be on the increase as precip moves into the area, mainly this afternoon with some scattered showers. However, this evening, rain will become very widespread with isolated thunderstorms across the central and southern parts of the CWA.

.LONG TERM...(Friday through Wednesday)  
ISSUED AT 410 AM CST Thu Jan 9 2020

The first wave associated with the weather system will be leaving the area Friday, but the boundary will remain in place and be the setup/focus for the next wave moving up the boundary during the afternoon and Fri night. Lots of rain is expected with this second wave and will occur across the middle of the CWA. In addition, the chance of thunderstorms will increase across the southeastern parts with isolated storms spreading north across the remainder of the CWA. Rain and isolated storms will continue into Saturday as the third/final wave moves across the middle Miss Valley. Heavy rain will continue across the area through the period with total rainfall of 2-4 inches possible across most of the area. Therefore the Flood Watch will continue and has been expanded northward some and now extends through 3pm on Saturday. Late Sat night, colder air will begin to move into the area from the northwest as the final wave continues to lift to the north-northeast toward Mich. Due to the strong warm air getting wrapped around the system, some of the precip will become mixed with freezing rain and/or sleet in the transition area on the back side. This will occur mainly in the north and northwest parts of the CWA. As the air becomes sufficiently colder all the precip will be snow especially Sat afternoon and evening. Most of the accumulating snow will be along and northwest of I-55, with the highest totals...over 4 inches being along and northwest of the IL river.

A winter storm watch will likely be needed/issued for this snowfall event, but model agreement needs to continue for one more run for higher confidence on amounts and locations of heaviest snowfall, before issuance. Would not be surprised to see watch issued this afternoon or later tonight.

69  **12Z TAFs on Thursday**

Data at: 1128 UTC 09 Jan 2020

KCAK 090532Z 0906/1006 13003KT P6SM SKC  
FM091200 14010KT P6SM SCT250  
FM100000 17012G20KT P6SM BKN250

KMFD 090532Z 0906/1006 10005KT P6SM FEW250  
FM091200 14010KT P6SM SCT250  
FM091500 16012G20KT P6SM SCT250  
FM100000 19017G28KT P6SM BKN250

KFWA 090536Z 0906/1006 11010KT P6SM SCT250  
FM091200 13014KT P6SM SCT250 WS020/21055KT  
FM091600 18018G28KT P6SM SCT250 WS020/20055KT  
FM100500 20015KT P6SM OVC020

KLAF 091125Z 0912/1012 15012KT P6SM FEW250 WS020/20045KT  
 FM091700 18018G28KT P6SM SCT250 WS020/20050KT  
 FM092300 19017G26KT P6SM OVC045 WS020/20050KT  
 FM100300 20016G25KT 6SM -RA OVC029 WS020/21050KT  
 FM100600 20015G23KT 4SM RA OVC012 WS020/21045KT  
 FM100900 20011KT 3SM RA OVC009 WS020/21040KT AMD LTD TO CLD VIS AND WIND TIL 091400

KPIA 090936Z 0910/1006 15010G20KT P6SM BKN100 WS020/18050KT  
 FM091100 15013G23KT P6SM BKN100 WS020/20060KT  
 FM091700 18018G28KT P6SM OVC050 WS020/20060KT  
 FM092000 19018G28KT P6SM VCSH OVC025 WS020/20050KT  
 FM100200 19015G25KT 6SM -RA OVC015

70  **12Z TAFs on Thursday**

Data at: 1137 UTC 09 Jan 2020

KCAK 091133Z 0912/1012 13010KT P6SM FEW250  
 FM091600 16012G22KT P6SM SCT250  
 FM100600 19015G25KT P6SM VCSH BKN100  
 FM101000 19015G25KT 6SM -RA OVC040

KMFD 091133Z 0912/1012 14012KT P6SM FEW250  
 FM091600 16014G27KT P6SM SCT250  
 FM100500 19015G28KT 6SM -RA OVC050  
 FM100800 20014G22KT 5SM -RA OVC015

KFWA 090536Z 0906/1006 11010KT P6SM SCT250  
 FM091200 13014KT P6SM SCT250 WS020/21055KT  
 FM091600 18018G28KT P6SM SCT250 WS020/20055KT  
 FM100500 20015KT P6SM OVC020

KLAF 091125Z 0912/1012 15012KT P6SM FEW250 WS020/20045KT  
 FM091700 18018G28KT P6SM SCT250 WS020/20050KT  
 FM092300 19017G26KT P6SM OVC045 WS020/20050KT  
 FM100300 20016G25KT 6SM -RA OVC029 WS020/21050KT  
 FM100600 20015G23KT 4SM RA OVC012 WS020/21045KT  
 FM100900 20011KT 3SM RA OVC009 WS020/21040KT AMD LTD TO CLD VIS AND WIND TIL 091400

KPIA 090936Z 0910/1006 15010G20KT P6SM BKN100 WS020/18050KT  
 FM091100 15013G23KT P6SM BKN100 WS020/20060KT  
 FM091700 18018G28KT P6SM OVC050 WS020/20060KT

FM092000 19018G28KT P6SM VCSH OVC025 WS020/20050KT  
 FM100200 19015G25KT 6SM -RA OVC015

71  **12 Z TAFs on Thursday**

Data at: 1155 UTC 09 Jan 2020

KCAK 091133Z 0912/1012 13010KT P6SM FEW250  
 FM091600 16012G22KT P6SM SCT250  
 FM100600 19015G25KT P6SM VCSH BKN100  
 FM101000 19015G25KT 6SM -RA OVC040

KMFD 091133Z 0912/1012 14012KT P6SM FEW250  
 FM091600 16014G27KT P6SM SCT250  
 FM100500 19015G28KT 6SM -RA OVC050  
 FM100800 20014G22KT 5SM -RA OVC015

KFWA 091140Z 0912/1012 14015KT P6SM SCT100 BKN250 WS020/20045KT  
 FM091600 18018G28KT P6SM BKN250 WS020/20055KT  
 FM100500 20015KT P6SM OVC020 WS020/21050KT  
 FM100900 20012KT 3SM -RA BR OVC006

KLAF 091125Z 0912/1012 15012KT P6SM FEW250 WS020/20045KT  
 FM091700 18018G28KT P6SM SCT250 WS020/20050KT  
 FM092300 19017G26KT P6SM OVC045 WS020/20050KT  
 FM100300 20016G25KT 6SM -RA OVC029 WS020/21050KT  
 FM100600 20015G23KT 4SM RA OVC012 WS020/21045KT  
 FM100900 20011KT 3SM RA OVC009 WS020/21040KT AMD LTD TO CLD VIS AND WIND TIL 091400

KPIA 091154Z 0912/1012 16014G22KT P6SM OVC070 WS015/20055KT  
 FM091900 19018G36KT P6SM VCSH OVC030  
 FM100200 19015G24KT 6SM -RA OVC015  
 FM100600 19009KT 4SM RA OVC008

72  **18 Z TAFs on Thursday**

Data at: 1758 UTC 09 Jan 2020

KCAK 091720Z 0918/1018 17015G24KT P6SM BKN250  
 FM100600 20017KT P6SM VCSH OVC060  
 FM100900 20016KT 6SM -RA OVC040  
 FM101300 19015KT 5SM -RA BR OVC020  
 FM101500 20016KT 4SM -RA BR OVC007

KMFD 091720Z 0918/1018 17018G24KT P6SM BKN250  
 FM100500 19020G26KT P6SM OVC050  
 PROB30 1005/1008 P6SM -RA OVC100  
 FM100800 20018G24KT 5SM -RA OVC015  
 FM101200 19018G24KT 6SM -RA BR OVC015  
 FM101500 19017G23KT 4SM -RA BR OVC007

KFWA 091725Z 0918/1018 17017G30KT P6SM SCT250 WS020/20055KT  
 FM100300 20017G25KT P6SM VCSH OVC050 WS020/22055KT  
 FM100600 20014KT P6SM -RA OVC015 WS020/22050KT  
 FM101000 20011KT 3SM RA OVC009  
 FM101500 21010KT 2SM RA OVC006

KLAF 091721Z 0918/1018 19020G35KT P6SM BKN200 WS020/20050KT  
 FM092200 19018G32KT P6SM OVC060 WS020/20050KT  
 FM100100 19018G31KT 6SM BR VCSH OVC045 WS020/20050KT  
 FM100300 20015G25KT 6SM -RA BR OVC030 WS020/21050KT  
 FM100600 20015G23KT 5SM -RA BR OVC013 WS020/21045KT  
 FM101000 20010KT 3SM RA BR OVC008 WS020/21040KT

KPIA 091726Z 0918/1018 18019G28KT P6SM OVC060 WS015/20055KT  
 FM092200 19020G35KT P6SM VCSH OVC028  
 FM100300 19014G23KT P6SM -RA OVC018  
 FM100700 19006KT 3SM -RA BR OVC005  
 FM101600 02006KT 5SM -RA OVC006

- 73  **Thursday Depiction**
- 74  **Thursday Prog – Thursday afternoon**
- 75  **Thursday Prog – Thursday evening**
- 76  **Thursday Prog – Friday early morning**
- 77  **Thursday Prog – Friday morning**
- 78  **Thursday Prog – Friday evening**
- 79  **Monday Prog for 7 AM Friday**
- 80  **Thursday WeatherSpork**
- 81  **Friday Discussion**

CLE 707 AM EST Fri Jan 10 2020

.SYNOPSIS...

As low pressure in the Upper Great Lakes moves north towards Hudson Bay, it will drag a cold front southeast across the lower Great Lakes later today. This cold front will stall just west of the area as a stronger low pressure system develops in the Southern Plains tonight. This low will move northeastward along the frontal boundary, reaching the Ohio Valley by Saturday

night pulling a cold front east across east across the area. High pressure arrives by Saturday night into Monday.

.NEAR TERM /THROUGH SATURDAY/...

Cut QPF by about 2 tenths of an inch over the next 6 hours, especially for southwestern areas over the next several hours as the axis of heaviest rain has shifted south. Also refreshed PoP, temp, and dew point grids based on recent radar and satellite trends.

Previous Discussion...

Light to moderate rain has overspread the area overnight and continues across the area this morning with the highest totals up to a half inch so far near Findlay, OH. Hi-res models have been picking up on an axis of heavy rain extending from the Missouri Valley northeastwards towards NE OH. This axis of rain is evident via regional radar observations and water vapor channels/air mass RGB product which shows a narrow plume of moisture, likely associated with an atmospheric river originating from the Gulf of Mexico. PWATS surpassing 1 inch are already found in south-central Indiana, and this surge of moisture is expected to continue northeastwards into our area through today and tomorrow. Additional rainfall amounts of half an inch up to an inch are possible across the area through the afternoon. Rainfall today will saturate soils and some will run off with rises beginning on areas rivers. With that said, most areas are expected to be able to handle this first round of rain today with the Flood Watch still going into effect at 7 PM tonight.

This axis of rain is expected to lift northwards by the late afternoon/early evening as a stronger low develops in the Southern Plains tonight, with many areas experiencing a break in precipitation overnight. A second push of moisture and thus rain chances arrive across the area by late Saturday morning as the low moves northeastward along the stalled boundary. There is still some uncertainty between global and mesoscale models on the axis of heavy rain Saturday, but highest amounts are expected to be focused in the Flood Watch area where storm total rainfall of 2 to 3 inches is likely. Confidence continues to increase in many rivers in NW Ohio reaching flood stage, with several reaching Moderate Flood and can not rule out 1 or 2 approaching or surpassing Major Flood levels if the higher end rainfall occurs. In addition, overland flooding may develop, especially with higher rates on Saturday.

82  **Friday 3 hr of METARs with TAFs**

Data at: 1409 UTC 10 Jan 2020

KCAK 101351Z 20014KT 6SM -RA FEW035 OVC060 07/04 A3029 RMK AO2 SLP263 P0004 T00670039

KCAK 101251Z 19015KT 8SM -RA SCT037 OVC055 07/03 A3027 RMK AO2 SLP257 P0002 T00670033

KCAK 101151Z 19013G23KT 10SM -RA FEW039 BKN060 OVC075 07/03 A3027 RMK AO2 SLP257 P0004 60011 70011  
T00670028 10106 20067 53009 \$

KCAK 101141Z 1012/1112 20015KT 6SM -RA BKN040 WS020/22045KT

FM101900 20014G24KT 5SM -RA OVC015

FM110500 18015G28KT 6SM -RA OVC020

FM110900 18010KT P6SM VCSH OVC040 WS020/20045KT

KMFD 101352Z 17017G23KT 7SM -RA SCT050 BKN070 OVC085 07/06 A3023 RMK AO2 SLP241 P0008 T00720061

KMFD 101252Z 18013KT 9SM RA OVC070 07/06 A3023 RMK AO2 SLP241 P0004 T00720061  
 KMFD 101235Z 18018G23KT 10SM -RA FEW008 FEW055 OVC075 07/06 A3022 RMK AO2 P0003 T00720061  
 KMFD 101152Z 17014KT 7SM -RA FEW011 FEW030 OVC065 07/06 A3022 RMK AO2 SLP240 P0006 60018 70019 T00720061  
 10117 20072 53002

KMFD 101141Z 1012/1112 19016G28KT 6SM -RA BKN050 WS020/22050KT  
 FM101900 20012G22KT 5SM -RA OVC015  
 FM110400 19015G28KT 6SM -RA OVC015

83  **Friday 3 hr of METARs with TAFs**

Data at: 1409 UTC 10 Jan 2020

KFWA 101354Z 17007KT 3SM -RA BR FEW008 BKN018 OVC033 08/08 A3015 RMK AO2 SLP214 P0003 T00780078  
 KFWA 101345Z 18006KT 1 3/4SM -RA BR FEW007 BKN018 OVC033 08/07 A3015 RMK AO2 P0003 T00780072  
 KFWA 101318Z 19006KT 4SM -RA BR FEW007 BKN018 OVC024 08/08 A3015 RMK AO2 P0001 T00830078  
 KFWA 101254Z 19007KT 3SM -RA BR FEW007 BKN013 OVC018 08/08 A3014 RMK AO2 SLP211 P0004 T00830078  
 KFWA 101219Z 20006KT 5SM -RA BR FEW006 OVC011 08/07 A3015 RMK AO2 P0001 T00780072  
 KFWA 101154Z 21007KT 5SM -RA BR OVC011 08/07 A3014 RMK AO2 SLP211 P0003 60035 70050 T00780072 10078 20061  
 53006

KFWA 101130Z 1012/1112 21010KT 6SM -SHRA BR BKN010 OVC025  
 TEMPO 1012/1014 3SM -SHRA BR OVC008  
 FM101400 21010KT 4SM -SHRA BR OVC008  
 FM110200 18012KT 3SM RA BR OVC006

KLAF 101354Z 18003KT 5SM -RA BR OVC012 09/09 A3011 RMK AO2 SLP197 P0005 T00890089  
 KLAF 101331Z 00000KT 5SM -RA BR OVC010 09/08 A3011 RMK AO2 CIG 008V013 P0003 T00890083  
 KLAF 101311Z 00000KT 5SM -RA BR OVC009 09/08 A3010 RMK AO2 CIG 006V013 P0001 T00890083  
 KLAF 101254Z 00000KT 4SM -RA BR BKN010 OVC013 09/08 A3010 RMK AO2 CIG 006V013 SLP194 P0003 T00890083  
 KLAF 101154Z 17004KT 7SM -RA BKN009 OVC013 08/08 A3010 RMK AO2 CIG 006V012 SLP193 P0004 60030 70048  
 T00830083 10089 20067 55000  
 KLAF 101142Z 18005KT 5SM -RA BR BKN009 OVC013 09/08 A3010 RMK AO2 CIG 006V012 P0003 T00890083  
 KLAF 101113Z AUTO 21004KT 6SM -RA BR OVC012 09/08 A3010 RMK AO2 P0000 T00890083

KLAF 101405Z 1014/1112 19008KT 5SM -SHRA OVC009  
 FM101800 20009KT 5SM -SHRA OVC007  
 FM110000 16008KT 5SM SHRA OVC006  
 FM110200 17011G22KT 4SM SHRA OVC010 WS020/19045KT  
 FM111000 16012G28KT 4SM +SHRA OVC012  
 FM111100 09012G28KT 5SM +SHRA OVC009

84  **Friday 3 hr of METARs with TAFs**

Data at: 1409 UTC 10 Jan 2020

KPIA 101354Z 0000KT 3SM BR OVC003 10/09 A3005 RMK AO2 SLP179 T01000094  
 KPIA 101312Z 13003KT 4SM BR OVC003 09/08 A3003 RMK AO2 T00940083  
 KPIA 101302Z 0000KT 1 1/2SM BR OVC003 09/08 A3004 RMK AO2 T00940083  
 KPIA 101301Z 0000KT 1 3/4SM BR OVC004 09/08 A3003 RMK AO2 T00940083  
 KPIA 101254Z 0000KT 4SM BR OVC004 10/08 A3003 RMK AO2 SLP171 T01000083  
 KPIA 101154Z 19003KT 8SM OVC004 10/08 A3003 RMK AO2 SLP169 70001 T01000083 10106 20100 53006  
 KPIA 101152Z 18003KT 8SM OVC004 10/08 A3003 RMK AO2

KPIA 101139Z 1012/1112 VRB05KT P6SM OVC005  
 FM102100 06008KT 5SM -RA OVC005  
 FM110100 07010G18KT 1 1/2SM +RA OVC004 WS015/18045KT  
 FM110600 01015G24KT 1 1/2SM RA OVC005

#### 85 **Weather on the Web - Recap**

- Make a list of personal minima before you need them
  - Wind, Visibility, Ceiling, other items that give you anxiety
  - Set a decision date prior to needing to make decision
- Practice getting weather before you need to plan a trip
  - Make a couple of routes for practicing
  - Follow through on practice planning to see if you are making a good decision matrix
- Call the NWS office three days prior to departure
  - CLE (216) 265-2372
    - Ask for the number of the NWS servicing your destination