



# **Friends and Partners of Aviation Weather**

## **Retiring Legacy CONUS Area Forecasts (FAs), to Utilize Improved NWS Aviation Weather Products and Services**

**July 13, 2017**

**Kevin Johnston FAA; Kevin Stone NOAA/NWS**



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**NOAA**

# Content

- Overview of the Change
- Aviation Weather Modernization
- Why the Area Forecast (FA)?
- Implementation Milestones
- Elements of the FA and Alternatives
- Graphical Forecasts for Aviation (GFA) Tool
- Contacts for Questions or Comments



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# Overview of the Change

- On **10 July 2017**, a transition period of three (3) months, aimed at ensuring a smooth transition for aviation end-users, will begin. During this time, users will have continued access to legacy FAs while being encouraged to consult the improved aviation weather products and services
- On **10 October 2017**, the National Weather Service will cease production of six (6) legacy Areas Forecasts (FAs) covering the contiguous United States (CONUS)

*FAs for Hawaii, Alaska, the Caribbean, and the Gulf of Mexico remain unaffected at this time. Any potential changes to FAs outside the CONUS will be communicated separately.*



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# Aviation Weather Modernization

- Many NWS aviation weather products are decades old, with little change in format
- To address this issue, FAA and NWS have undertaken a joint review of weather information produced by NWS for aviation purposes
- Primary goals of the review, include:
  - ✦ Improving NWS products in-support of aviation weather;
  - ✦ Increasing emphasis on digital products and identifying opportunities to digitize legacy NWS products and services;
  - ✦ Identifying and removing products and services with duplicative information;
  - ✦ Identifying and removing products and services of limited utility to aviators; and
  - ✦ Focusing the activities of NWS forecasters, in order to maximize operational benefit(s).



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# Why the Area Forecast?

- The joint-agency working group recommended the FA be retired in favor of existing, more-modern digital and graphical forecast products that provide improved weather information to pilots
- Limitations of the FA identified by the working group include:
  - ✦ Unwieldy geographical coverage
  - ✦ Strict character limitation (legacy teletype requirement)
  - ✦ Prohibition on describing IFR conditions (reserved for SIGMETs and AIRMETs)
  - ✦ Update rates significantly less than other, more-modern products and services
- While the FA met aviation weather information needs for many years, NWS today provides equivalent (or better) information through a number of alternative products
- Retiring the FA allows the effort of NWS forecasters to be focused on maximizing operational benefit(s) to aviators and other end-users
- Transitioning to more-modern digital and graphical forecasts will provide improved weather information to decision-makers



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# Implementation Milestones

- ✓ The joint-agency working group completed an extensive analysis, mapping underlying weather information elements in the FA to more-modern NWS aviation weather products and services
  - ✦ With few exceptions, the individual weather information elements are available elsewhere in better temporal and/or spatial resolution
- ✓ Improved NWS aviation weather information was compiled into a Graphical Forecasts for Aviation (GFA) Tool, and made available to aviation end-users and Flight Service briefers
- ✓ Multiple Safety Risk Assessments addressing the change were completed
- A transition period of three (3) months, aimed at ensuring a smooth transition for aviation end-users, will commence 10 July 2017
- ***On 10 October 2017, the National Weather Service will cease production of the six (6) legacy FAs covering the CONUS***



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# Elements of the FA & Alternatives

## Elements of the FA

Weather Synopsis →

Cloud Amount (1000ft ≤ Z ≤ FL180)  
Cloud Bases & Tops (1000ft ≤ Z ≤ FL180) }

Areas of Precipitation →

Visibility (including obstruction) →

Areas of Sustained Surface Winds }

Flight Category\* (including obstruction) →

## Alternative Sources of Information

WPC+HFO Surface Analyses + Progs  
(including Short-Range Public Forecast Discussion)

Graphical Forecasts for Aviation – Clouds  
Low-Level SIGWX Chart + PIREPs

National Digital Forecast Database (PoP Grid)  
Low-Level SIGWX Chart

AIRMET Sierra

Graphical Forecasts for Aviation – Winds  
AIRMET Tango

Low-Level SIGWX Charts + Nearest TAF(s)



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*\*6hr outlook (hrs 12-18)*

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# Weather Synopsis

## WPC Surface Analyses & Progs

FAUS42 KNCI 261745

FA2W

MIAC FA 261745

SYNOPSIS AND VFR CLDS/WX

SYNOPSIS VALID UNTIL 271200

CLDS/WX VALID UNTIL 270600...OTLK VALID 270600-271200

NC SC GA FL AND CSTL WTRS E OF 85W

SEE AIRMET SIERRA FOR IFR CONDS AND MTN OBSCN.

TS IMPLY SEV OR GTR TURB SEV ICE LLWS AND IFR CONDS.

NON MSL HGTS DENOTED BY AGL OR CIG.

SYNOPSIS...RDG HI PRES EXTDS FM NW PA TO NC SC AND  
ERN GA. RDG WL MOV SLOLY EWD.

NC

MTNS...SKC OR SCT CI. 03Z BKN CI. OTLK...VFR.

PIEDMONT...SKC. 04Z SCT-BKN CI. OTLK...VFR.

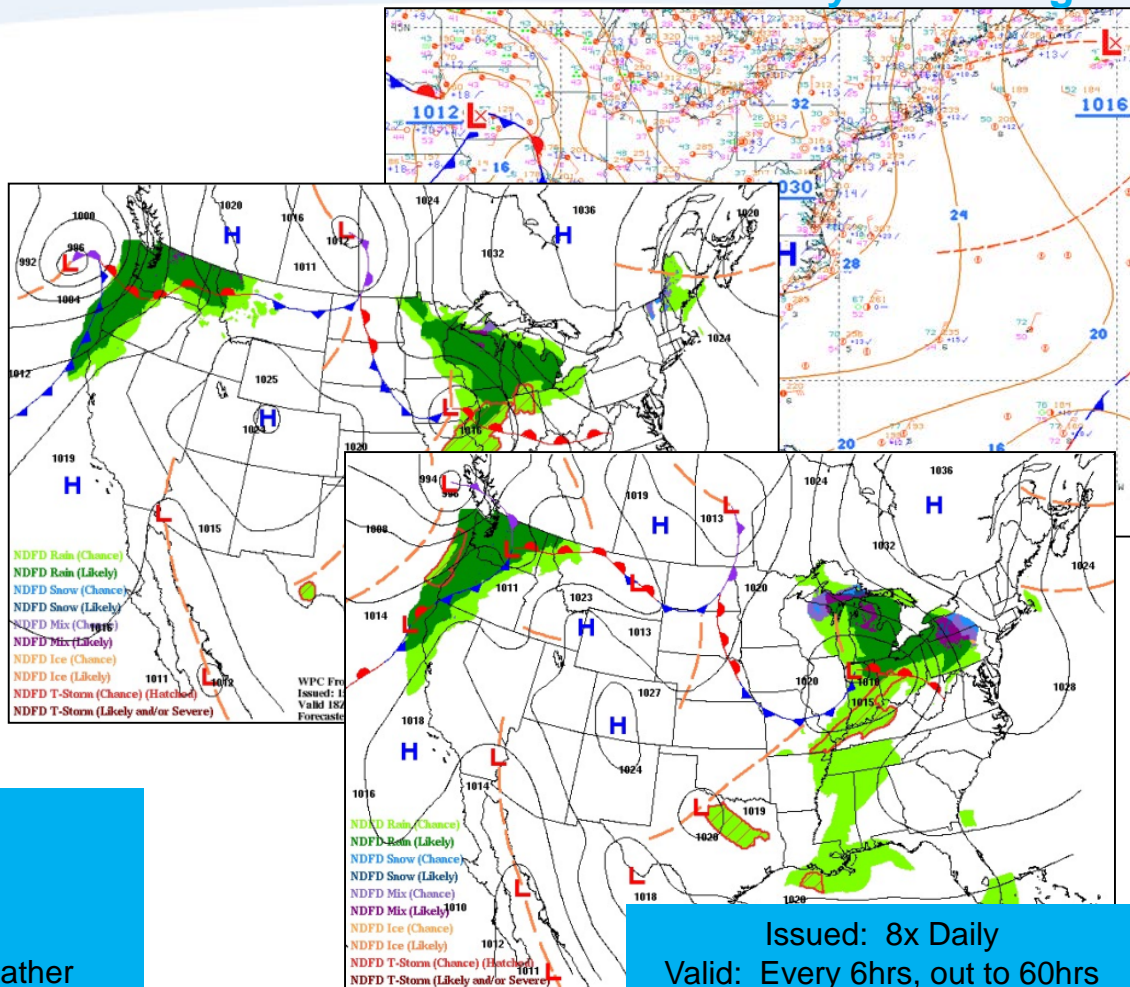
CSTL PLAIN...SKC OR SCT CI. OTLK...VFR.

SC

MTNS-PIEDMONT...SKC OR SCT CI. OTLK...VFR.

CSTL PLAIN...SKC. 04Z SCT030-040. OTLK...VFR.

GA



Issued: 3x Daily  
Valid: Current through 18hrs  
Spatial Resolution: Several States

Provides brief summary of major synoptic weather features, **when not trumped by character limitation.**

Issued: 8x Daily  
Valid: Every 6hrs, out to 60hrs  
Spatial Resolution: 2.5km



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# Cloud Amount

## (1000ft ≤ Z ≤ FL180)

## NDFD SkyCover Grid(s)

FAUS42 KNCI 261745

FA2W

MIAC FA 261745

SYNOPSIS AND VFR CLDS/WX

SYNOPSIS VALID UNTIL 271200

**CLDS/WX VALID UNTIL 270600...OTLK VALID 270600-271200**

NC SC GA FL AND CSTL WTRS E OF 85W

SEE AIRMET SIERRA FOR IFR CONDS AND MTN OBSCN.

TS IMPLY SEV OR GTR TURB SEV ICE LLWS AND IFR CONDS.

NON MSL HGTS DENOTED BY AGL OR CIG.

SYNOPSIS...RDG HI PRES EXTDS FM NW PA TO NC SC AND  
ERN GA. RDG WL MOV SLOLY EWD.

NC

MTNS...SKC OR SCT CI. 03Z BKN CI. OTLK...VFR.

PIEDMONT...SKC. 04Z SCT-BKN CI. OTLK...VFR.

CSTL PLAIN...SKC OR SCT CI. OTLK...VFR.

SC

MTNS-PIEDMONT...**SKC OR SCT CI.** OTLK...VFR.

CSTL PLAIN...**SKC. 04Z SCT030-040.** OTLK...VFR.

GA

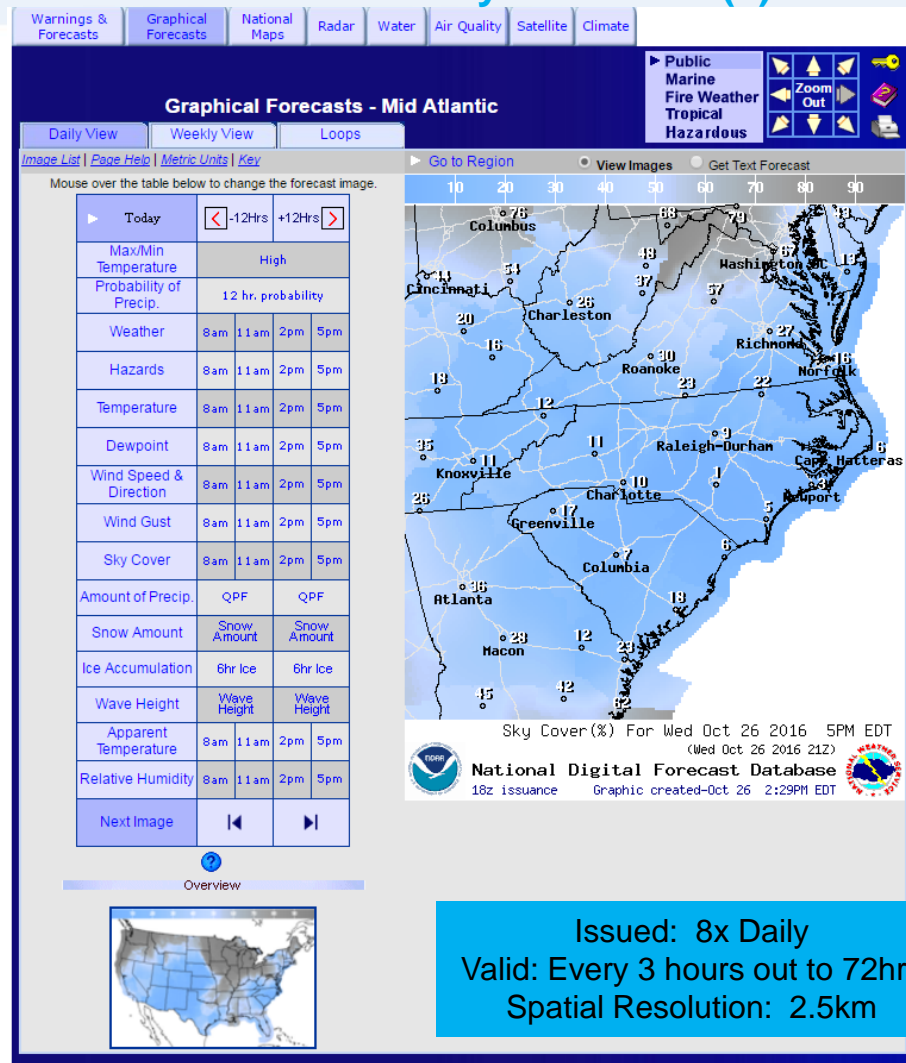
NRN...SCT CI. 02Z BKN CI. OTLK...VFR.

Issued: 3x Daily

Valid: Current through 18hrs

Spatial Resolution: Several States

Provides 12hr forecast, in broad terms,  
of cloud amount (CLR, SCT, BKN, OVC)



Issued: 8x Daily  
Valid: Every 3 hours out to 72hrs  
Spatial Resolution: 2.5km



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# Cloud Bases & Tops

## (1000ft ≤ Z ≤ FL180)

### PIREPs

FAUS42 KNCI 261745

FA2W

MIAC FA 261745

SYNOPSIS AND VFR CLDS/WX

SYNOPSIS VALID UNTIL 271200

**CLDS/WX VALID UNTIL 270600...OTLK VALID 270600-271**

NC SC GA FL AND CSTL WTRS E OF 85W

SEE AIRMET SIERRA FOR IFR CONDS AND MTN OBSCN  
TS IMPLY SEV OR GTR TURB SEV ICE LLWS AND IFR C  
NON MSL HGTS DENOTED BY AGL OR CIG.

SYNOPSIS...RDG HI PRES EXTDS FM NW PA TO NC SC  
ERN GA. RDG WL MOV SLOLY EWD.

NC

MTNS...SKC OR SCT CI. 03Z BKN CI. OTLK...VFR.

PIEDMONT...SKC. 04Z SCT-BKN CI. OTLK...VFR.

CSTL PLAIN...SKC OR SCT CI. OTLK...VFR.

SC

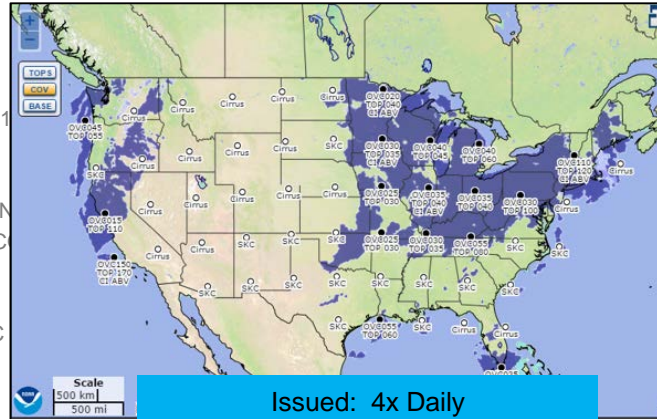
MTNS-PIEDMONT...SKC OR SCT CI. OTLK...VFR.

CSTL PLAIN...SKC. 04Z SCT030-040. OTLK...VFR.

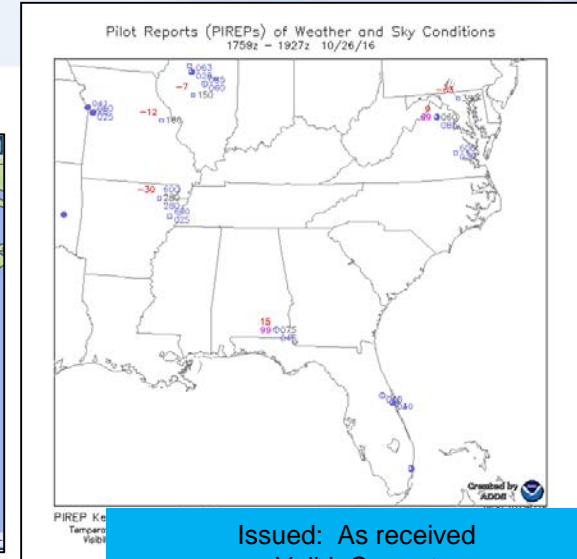
GA

NRN...SCT CI. 02Z BKN CI. OTLK...VFR.

### Graphical Forecasts for Aviation - Clouds

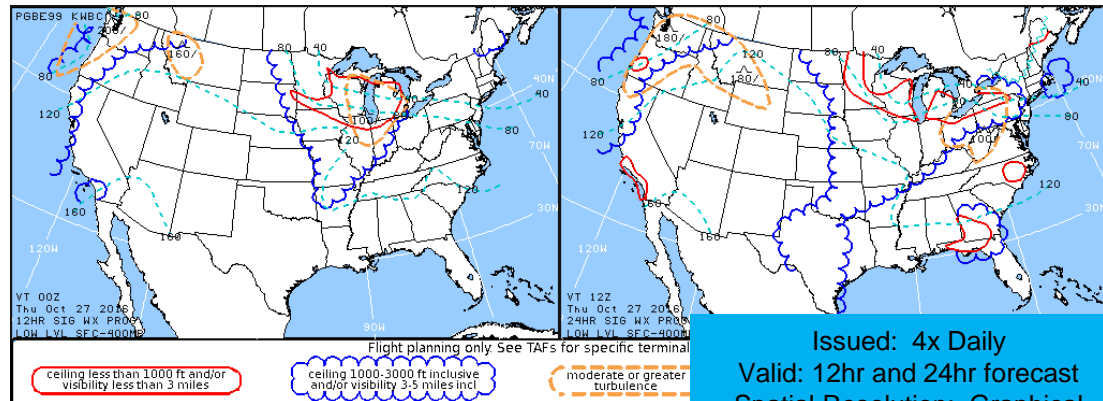


Issued: 4x Daily  
Valid: Every 3hrs through 84hrs  
Spatial Resolution: 12km



Issued: As received  
Valid: Current  
Spatial Resolution: Lat/Long, as reported

### LL SIGWX Charts



Provides 12hr forecast, in broad terms,  
of cloud amount (CLR, SCT, BKN, OVC)

Issued: 4x Daily  
Valid: 12hr and 24hr forecast  
Spatial Resolution: Graphical



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# Areas of Precipitation

NDFD PoP Grid(s)

FAUS43 KKC1 021845

FA3W

CHIC FA 021845

SYNOPSIS AND VFR CLDS/WX

SYNOPSIS VALID UNTIL 031300

CLDS/WX VALID UNTIL 030700...OTLK VALID 030700-031300

ND SD NE KS MN IA MO WI LM LS MI LH IL IN KY

SEE AIRMET SIERRA FOR IFR CONDS AND MTN OBSCN.

TS IMPLY SEV OR GTR TURB SEV ICE LLWS AND IFR CONDS.

NON MSL HGTS DENOTED BY AGL OR CIG.

SYNOPSIS...19Z CDFNT FROM SRN MI-SRN LM-NRN IL-SERN IA-NW MO-NERN OT SW KS MOVG SW AND EXTDG FROM CNTRL IN-SRN IL-SRN MO BY 13Z. A SECOND CDFNT FROM NW MN-SRN ND AT 19Z MOVG EWD AND EXTDG FROM ERN UP MI-NRN WI-NRN MN-NERN ND BY 13Z. HI PRES ELSW.

[...]

IL

N HLF...BKN020 TOP FL240. **SCT -SHRA. WDLY SCT -TSRA.** CB TOP FL450. 00Z **SCT -TSRA.** OTLK...IFR CIG BR...TIL 10Z ERN PTNS SHRA.

S 1/4...SCT090. OTLK...VFR...11Z MVFR CIG TSRA.

ELSW...SCT050 SCT-BKN100 TOP 150. **WDLY SCT -SHRA.** BECMG 0104 SCT015 BKN035. **SCT -TSRA.** CB TOP FL450. OTLK...MVFR CIG TSRA. **SCT -TSRA** CB TOP FL450. OTLK...MVFR CIG TSRA.

Issued: 3x Daily

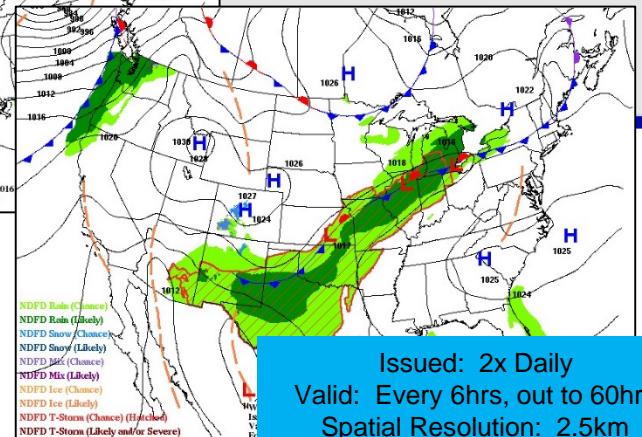
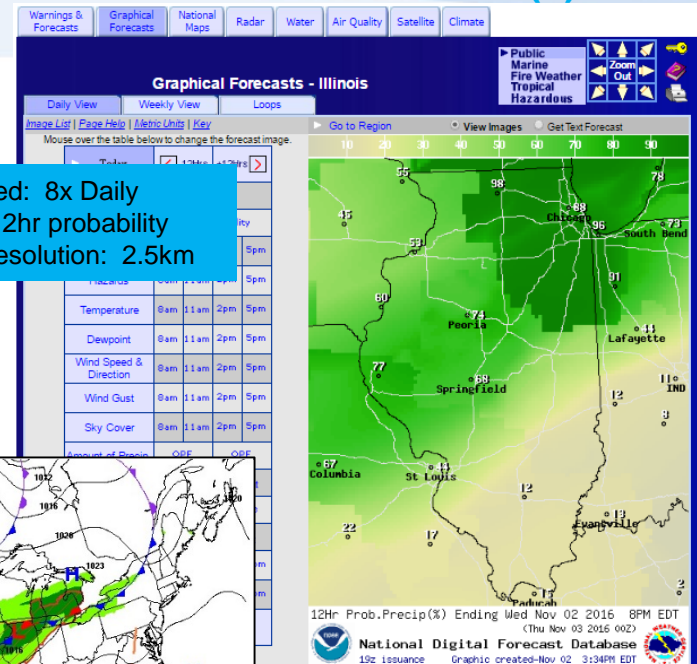
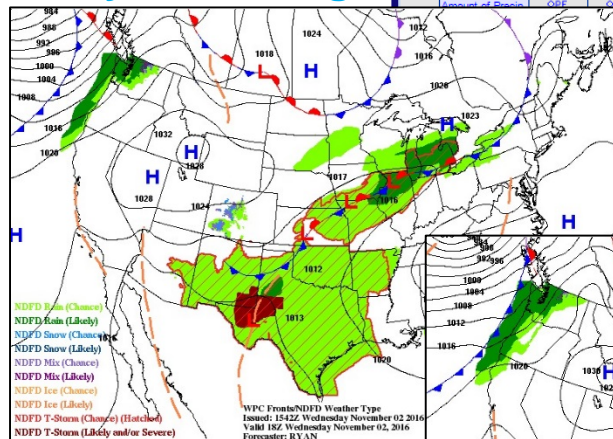
Valid: Current through 18hrs

Spatial Resolution: Several States

Provides 12hr forecast of type, intensity and location of precipitation

Issued: 8x Daily  
Valid: 12hr probability  
Spatial Resolution: 2.5km

## WPC Surface Analyses & Progs



Issued: 2x Daily  
Valid: Every 6hrs, out to 60hrs  
Spatial Resolution: 2.5km



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# Visibility (including obstruction)

FAUS43 KKC 261845

FA3W

CHIC FA 261845

SYNOPSIS AND VFR CLDS/WX

SYNOPSIS VALID UNTIL 271300

CLDS/WX VALID UNTIL 270700...OTLK VALID 270700-271300

ND SD NE KS MN IA MO WI LM LS MI LH IL IN KY

**SEE AIRMET SIERRA FOR IFR CONDS AND MTN OBSCN.**

TS IMPLY SEV OR GTR TURB SEV ICE LLWS AND IFR CONDS.  
NON MSL HGTS DENOTED BY AGL OR CIG.

SYNOPSIS...LOW PRES SW IA. STNR FNT SE IA-SW IL-WRN KY. CDFNT  
NERN KS-S CNTRL KS. 13Z LOW PRES NRN IN. CDFNT E CNTRL IL-  
SW IL-E CNTRL MO-NW MO-SE NEB. WRMFNT NERN NEB-ERN SD-SE  
ND. CDFNT SW ND. SFC TROF CNTRL SD-CNTRL NEB.

MN

NW 1/4...OVC020 TOP FL220. ISOL -SHRA. 21Z OVC030. 04Z OVC020.

OTLK...IFR CIG BR.

SW 1/4...OVC020 TOP 050. **VIS 3-5SM BR.** 21Z OVC030. 02Z BKN020.

06Z SCT030. OTLK...VFR.

NERN 1/4...OVC040 TOP FL220. WDLY SCT -SHRA. 02Z OVC020 TOP 040.

OTLK...MVFR CIG.

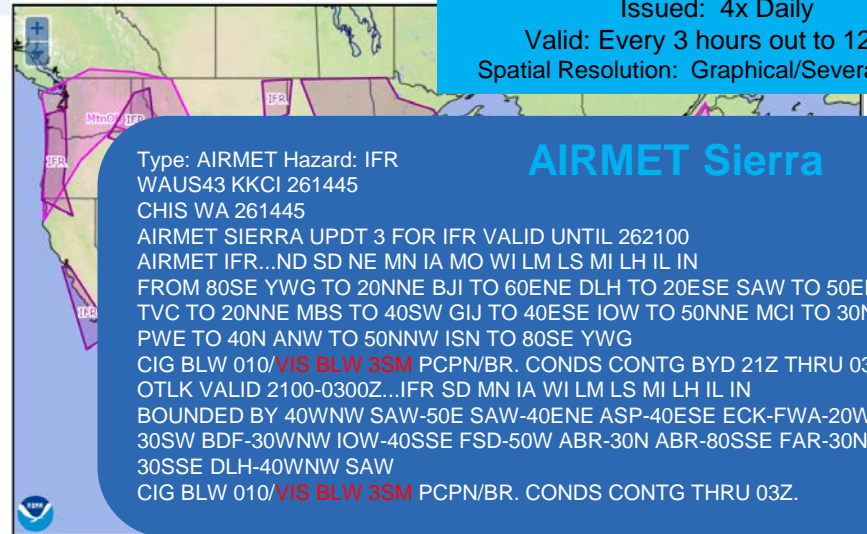
SE 1/4...OVC020 TOP LYRD FL220. **VIS 3-5SM BR.** 21Z OVC030. 02Z

BKN020. 06Z SCT030. OTLK...IFR CIG BR.

**Issued: 3x Daily**  
**Valid: Current through 18hrs**  
**Spatial Resolution: Several States**

**Provides 12hr forecast of visibility,  
in SM, including obstruction.**

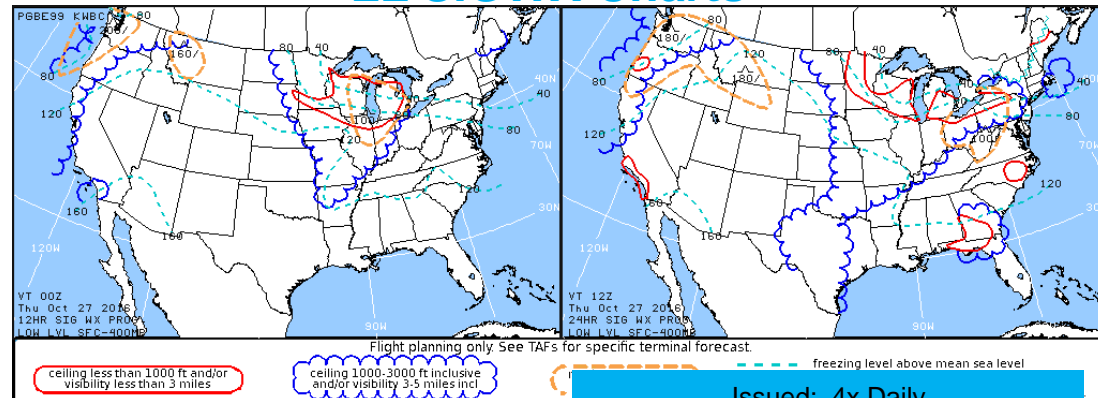
G-AIRMETS valid 2100 UTC 26 Oct 2016



**Issued: 4x Daily**

**Valid: Every 3 hours out to 12hrs**  
**Spatial Resolution: Graphical/Several States**

## LL SIGWX Charts



**Issued: 4x Daily**  
**Valid: 12hrs and 24hrs forecast**  
**Spatial Resolution: Graphical**



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# Surface Winds

## NDFD Surface Winds Grid(s)

FAUS46 KPCI 261945

FA6W

SFOC FA 261945

SYNOPSIS AND VFR CLDS/WX

SYNOPSIS VALID UNTIL 271400

CLDS/WX VALID UNTIL 270800...OTLK VALID 270800-271400

WA OR CA AND CSTL WTRS

SEE AIRMET SIERRA FOR IFR CONDS AND MTN OBSCN.

TS IMPLY SEV OR GTR TURB SEV ICE LLWS AND IFR CONDS.

NON MSL HGTS DENOTED BY AGL OR CIG.

SYNOPSIS...LARGE UPR LVL TROF WAS OVR ERN PAC AND AN

RIDGE WAS OVR THE ROCKIES. MOIST SWLY FLOW EXTDS FR

ACRS WA-OR-NRN CA INTO NRN ROCKIES. WX PAT EXPCD TO C

FCST PD.

WA CASDCS WWD

CSTL SXNS

CSTLN-INLAND...BKN015-025 OVC035-050 LYRD FL220. OCNL -RA BR

LWRG VIS 3-5SM. BECMG 2302 WDLY SCT -SHRA. **WINDS SE 20G30KT.**

OTLK...MVFR CIGS SHRA WIND.

PUGET SOUND-INTR VLY...BKN015-025 OVC035-050 LYRD FL220. OCNL

-RA BR LWRG VIS 3-5SM. BECMG 2302 WDLY SCT -SHRA.

OTLK...MVFR CIGS SHRA.

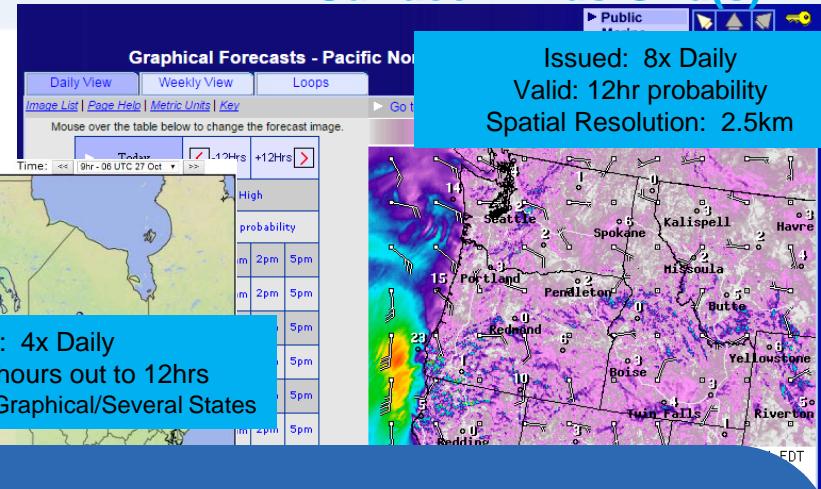
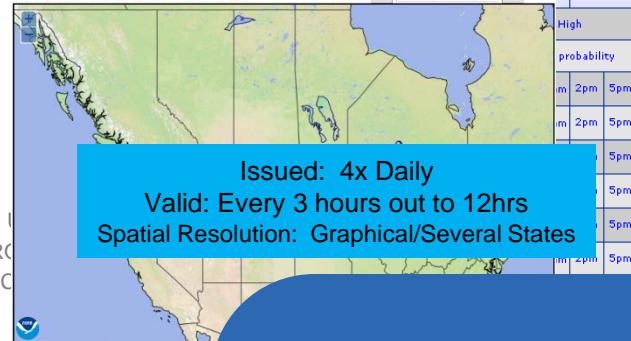
CASDCS...BKN-OVC040-060 LYRD FL220. OCNL -RA BR/WDLY SCT -SHRA

LWRG VIS 3-5SM. OTLK...MVFR CIGS SHRA BR

**Issued: 3x Daily**  
**Valid: Current through 18hrs**  
**Spatial Resolution: Several States**

Provides 12hr forecast of wind  
direction and speed

9hr G-AIRMETS valid 0600 UTC 27 Oct 2016



## AIRMET Tango

WAUS46 KPCI 261445

SFOT WA 261445

AIRMET TANGO UPDT 2 FOR TURB STG WINDS AND LLWS VALID UNTIL 262100

AIRMET STG SFC WINDS...WA OR CA AND CSTL WTRS

FROM 40SW TOU TO HQM TO 20SSE ONP TO 50SW FOT TO 140WNW FOT TO 160WSW HQM TO 40SW TOU

**SUSTAINED SURFACE WINDS GTR THAN 30KT EXP.** CONDS CONTG BYD 21Z THRU 03Z.

LLWS POTENTIAL...WA OR CA AND CSTL WTRS

BOUNDED BY 20ENE HUH-YKM-70ESE DSD-70S LKV-RBL-100W OED-TOU-20ENE HUH

LLWS EXP. CONDS CONTG BYD 21Z THRU 03Z.

OTLK VALID 2100-0300Z

AREA 1...TURB CA NV UT AZ NM AND CSTL WTRS

BOUNDED BY 50WNW OAL-80WSW RSK-50W ABQ-ELP-50S TUS-20N BZA-LAX-170SW RZS-140SW SNS-50WNW OAL

MOD TURB BTN FL310 AND FL410. CONDS CONTG THRU 03Z.

AREA 2...**STG SFC WINDS** WA OR AND CSTL WTRS

BOUNDED BY 50N TOU-HQM-ONP-160WSW ONP-140W TOU-50N TOU

**SUSTAINED SURFACE WINDS GTR THAN 30KT EXP.** CONDS CONTG THRU 03Z.



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# Flight Category (including obstruction)

FAUS42 KKC 261745

FA2W

MIAC FA 261745

SYNOPSIS AND VFR CLDS/WX

SYNOPSIS VALID UNTIL 271200

**CLDS/WX VALID UNTIL 270600...OTLK VALID 270600-271200**

NC SC GA FL AND CSTL WTRS E OF 85W

SEE AIRMET SIERRA FOR IFR CONDS AND MTN OBSCN.

TS IMPLY SEV OR GTR TURB SEV ICE LLWS AND IFR CONDS.

NON MSL HGTS DENOTED BY AGL OR CIG.

SYNOPSIS...RDG HI PRES EXTDS FM NW PA TO NC SC AND  
ERN GA. RDG WL MOV SLOLY EWD.

NC

MTNS...SKC OR SCT CI. 03Z BKN CI. **OTLK...VFR.**

PIEDMONT...SKC. 04Z SCT-BKN CI. **OTLK...VFR.**

CSTL PLAIN...SKC OR SCT CI. **OTLK...VFR.**

SC

MTNS-PIEDMONT...SKC OR SCT CI. **OTLK...VFR.**

CSTL PLAIN...SKC. 04Z SCT030-040. **OTLK...VFR.**

GA

NRN...SCT CI. 02Z BKN CI. **OTLK...VFR.**

SRN...SCT-BKN040-050 TOPS 070. 00Z SCT050. **OTLK...IFR CIG  
BR WRN SXNS..MVFR CIG ERN SXNS.**

**Issued: 3x Daily**

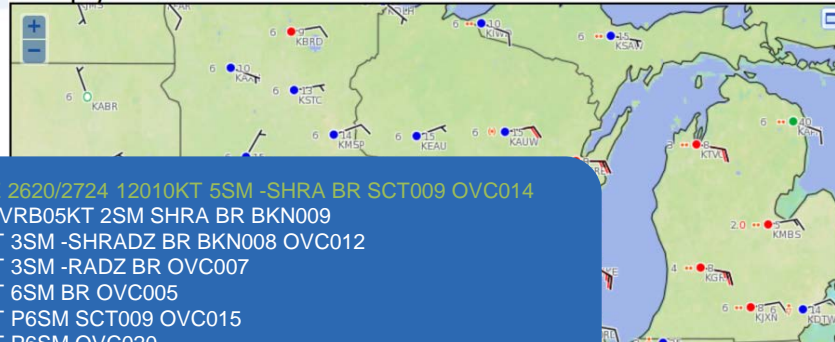
**Valid: Current through 18hrs**

**Spatial Resolution: Several States**

**Provides 6hr flight category outlook,  
beyond the 12hr forecast**

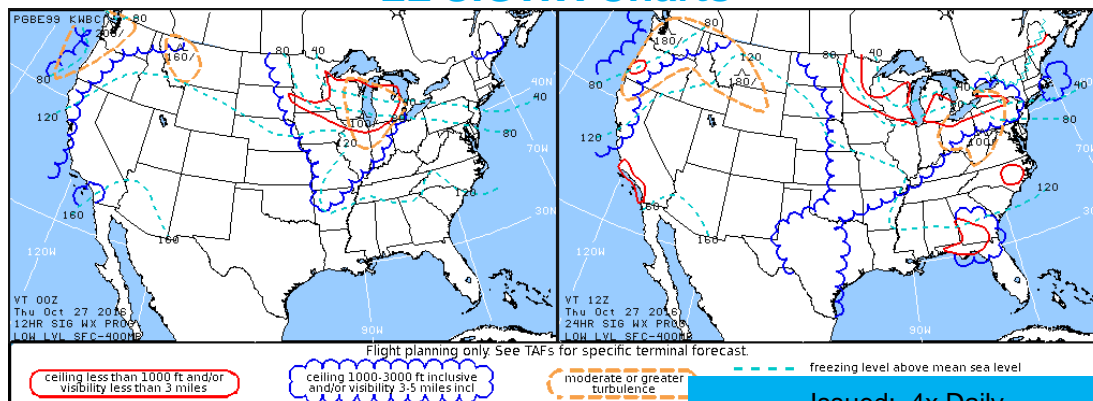
## Nearest TAF

TAF Display at +4hr 0051 UTC 27 Oct 2016



**Issued: 4-6x Daily**  
**Valid: Out to 24-30 hrs**  
**Spatial Resolution: Terminal w/ 5SM**

## LL SIGWX Charts



**Issued: 4x Daily**  
**Valid: 12hr and 24hr forecast**  
**Spatial Resolution: CONUS**



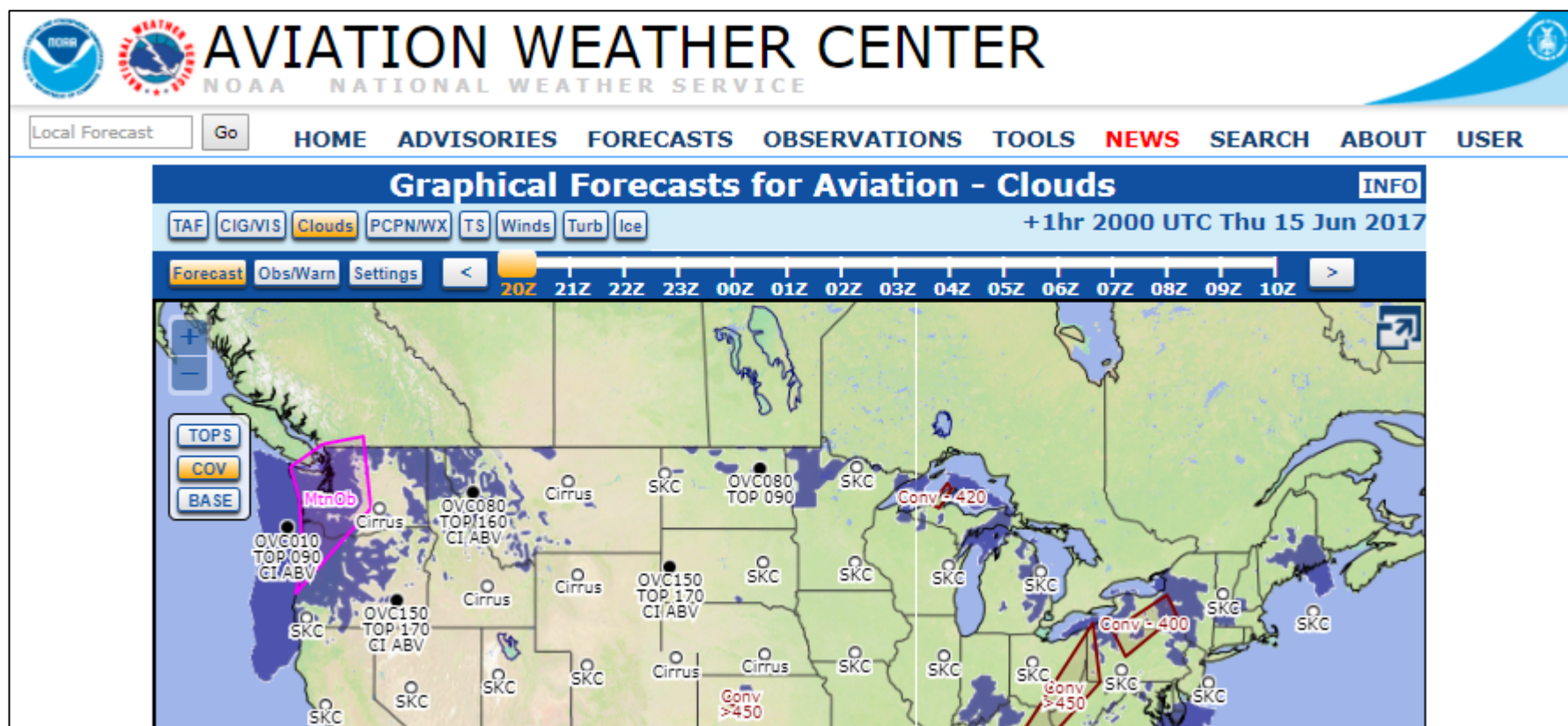
**FAA**



**NOAA**

# Graphical Forecasts for Aviation Tool

- The Graphical Forecasts for Aviation (GFA) Tool can be accessed via the following URL: <https://www.aviationweather.gov/gfa>



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# Questions or Comments?

## FAA Contact

### Michael 'Pat' Murphy

Policy & Requirements Branch  
NextGen Aviation Weather Division  
Federal Aviation Administration  
(202) 267-2788  
[michael.murphy@faa.gov](mailto:michael.murphy@faa.gov)

## NWS Contact

### Kevin Stone

Aviation and Space Weather Services Branch  
Analyze, Forecast and Support Office  
National Weather Service  
(301) 427-9363  
[kevin.stone@noaa.gov](mailto:kevin.stone@noaa.gov)



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