Digital Aviation Services (DAS)

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A Little Bit About Me

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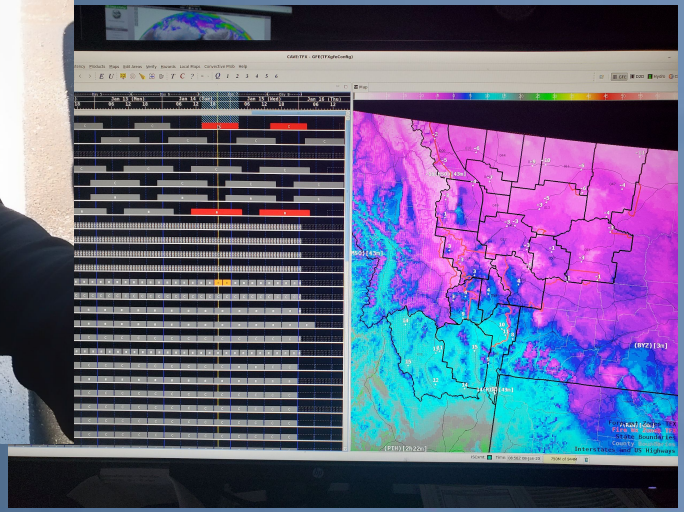
MISSISSIPPI STATE UNIVERSITY™

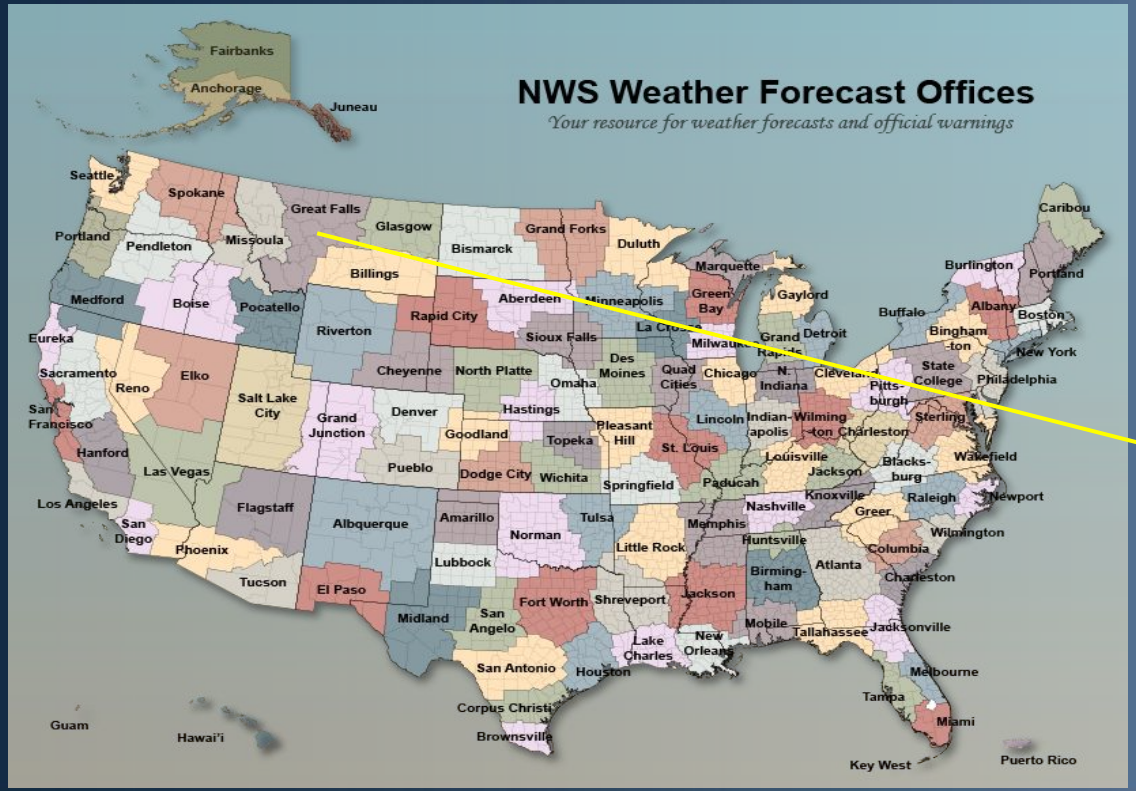


Objectives

- What is Digital Aviation Services (DAS)?
- Why is The National Weather Service (NWS) changing its Terminal Aerodrome Forecast (TAF) writing process?
- How are the new TAFs produced?
- Who monitors the NWS TAFs?
- What are the benefits to DAS?
- Where are TAFs, and other NWS aviation information, located?
- What is the future for Digital Aviation Services?

NWS County Warning Areas (CWA)

https://www.weather.gov/srh/nwsoffices



United States

122 Weather Forecast Offices (WFOs)

Montana

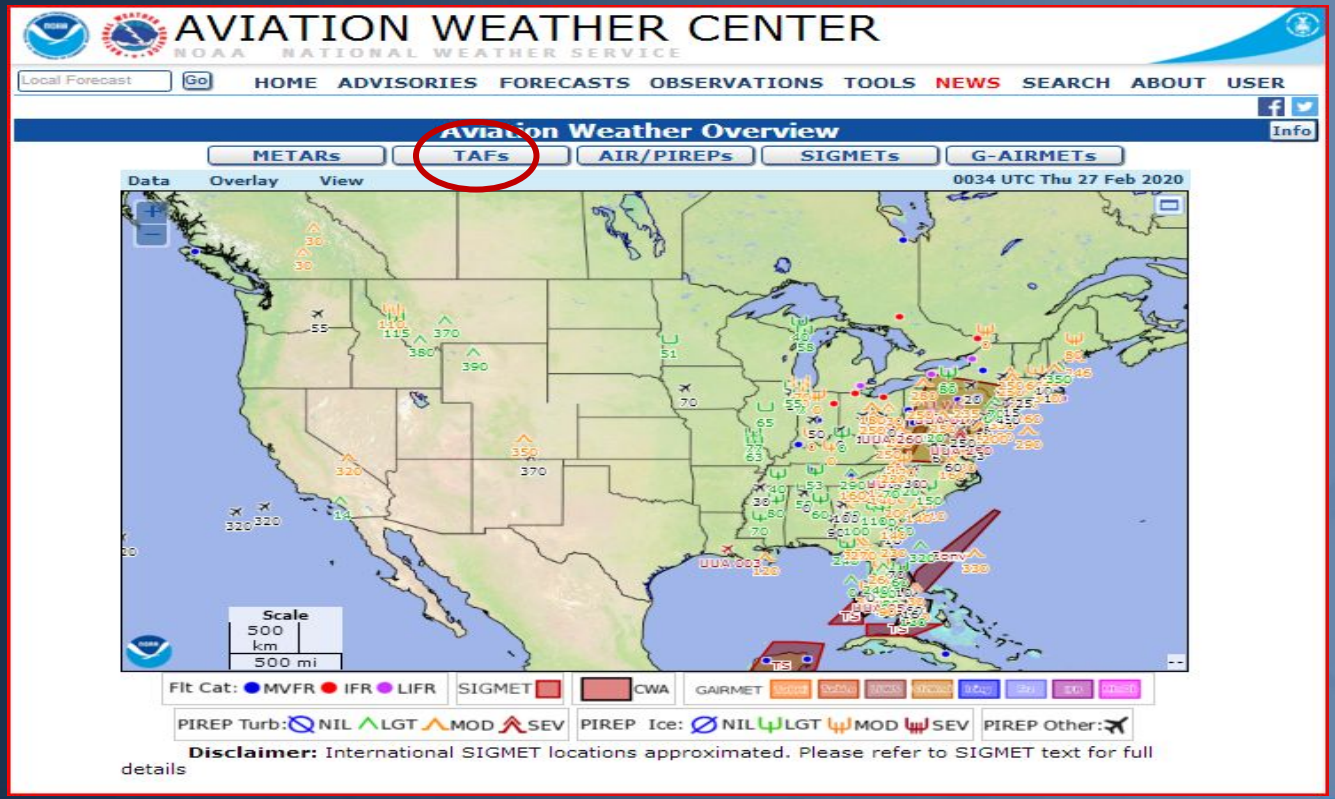
Weather Forecast Office Aviation

Terminal Aerodrome Forecast (TAF)

- 0-24 hr (sometimes 30 hr) forecast of aviation-critical weather elements specific to 5 NM radius from center of airfield
- Issued 4 times daily for most airfields (00Z, 06Z, 12Z and 18Z) - Some offices issue 3 hour TAFs
- Monitored continually 24/7/365
- Amended as necessary – In most cases using airfield ASOS reports, satellite and radar to amend for wind, visibility, weather and sky
- Produce text Aviation Forecast Discussion disseminated at the time of each new TAF period

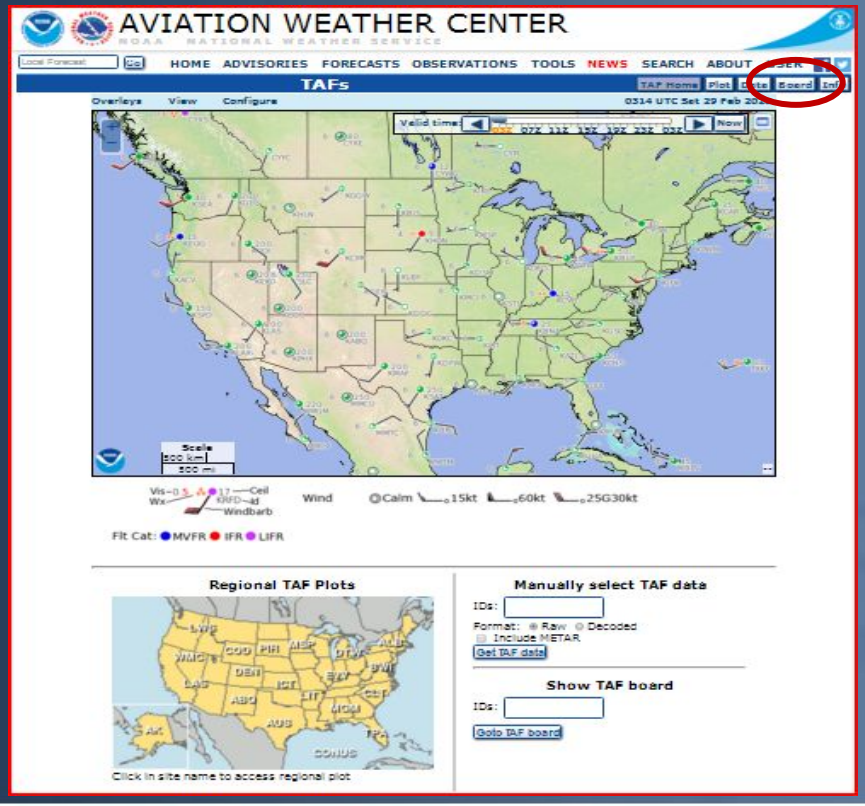
Useful TAF Products

www.aviationweather.gov



Useful TAF Products

www.aviationweather.gov/taf



Useful TAF Products

https://aviationweather.gov/taf/board

AVIATION WEATHER CENTER
NOAA NATIONAL WEATHER SERVICE

Local Forecast Go HOME ADVISORIES FORECASTS OBSERVATIONS TOOLS NEWS SEARCH ABOUT USER

Impacts TAF Board TAF Home Plot Data Board Info

FOR SITUATIONAL AWARENESS. NOT TO BE USED FOR FLIGHT PLANNING PURPOSES.

IDs: KGTF Submit

KGTF - Great Falls Intl, MT, US

Issued at 2345 UTC 26 Feb 2020
Updated at 0018 UTC 27 Feb 2020

Potential Impact None Slight Moderate High

Time	2353Z	27/01Z	27/02Z	27/03Z	27/04Z	27/05Z	27/06Z	27/07Z	27/08Z	27/09Z	27/10Z	27/11Z	27/12Z	27/13Z >>
Type	OBS	PRVL	PRVL	PRVL	PRVL	PRVL	PRVL	PRVL	PRVL	PRVL	PRVL	PRVL	PRVL	PRVL
VIS	10	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6
CIG	90	80	80	80	--	--	--	--	--	--	--	--	--	--
Cover	OVC	BKN	BKN	BKN	SCT	SCT	SCT	SCT	SCT	SCT	SCT	SCT	SCT	SCT
FltCat	VFR	VFR	VFR	VFR	VFR	VFR	VFR	VFR	VFR	VFR	VFR	VFR	VFR	VFR
WX	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WDir	240	260	260	260	250	250	250	250	250	250	250	250	250	250
WSpd	9	11	11	11	9	9	9	9	9	9	9	9	9	9
WGst	--	18	18	18	--	--	--	--	--	--	--	--	--	--

Raw TAF

```
KGTF 262345Z 2700/2724 26011G18KT P6SM SCT050 BKN080
  FM270400 25009KT P6SM FEW045 SCT080
  FM271500 23012G19KT P6SM SCT150
  FM271800 25020G29KT P6SM FEW180
```

Raw METAR

```
KGTF 262353Z 24009KT 10SM BKN090 OVC110 06/M04 A3009 RMK AO2 SLP218 T00561039 10089 20039 55004
KGTF 262253Z 25014KT 10SM CLR 07/M04 A3009 RMK AO2 PK WND 23026/2210 SLP216 T00721039
KGTF 262153Z 24016KT 10SM CLR 08/M04 A3009 RMK AO2 PK WND 25026/2135 SLP217 T00831039
```

METAR Board
Radar Display
Forecast Discussion

FOR SITUATIONAL AWARENESS. NOT TO BE USED FOR FLIGHT PLANNING PURPOSES.

AVIATION WEATHER CENTER
NOAA NATIONAL WEATHER SERVICE

Local Forecast Go HOME ADVISORIES FORECASTS OBSERVATIONS TOOLS NEWS SEARCH ABOUT USER

Aviation Forecast Discussions Data AFD Home Data Page Info

Select Site: KTFX - Great Falls MT

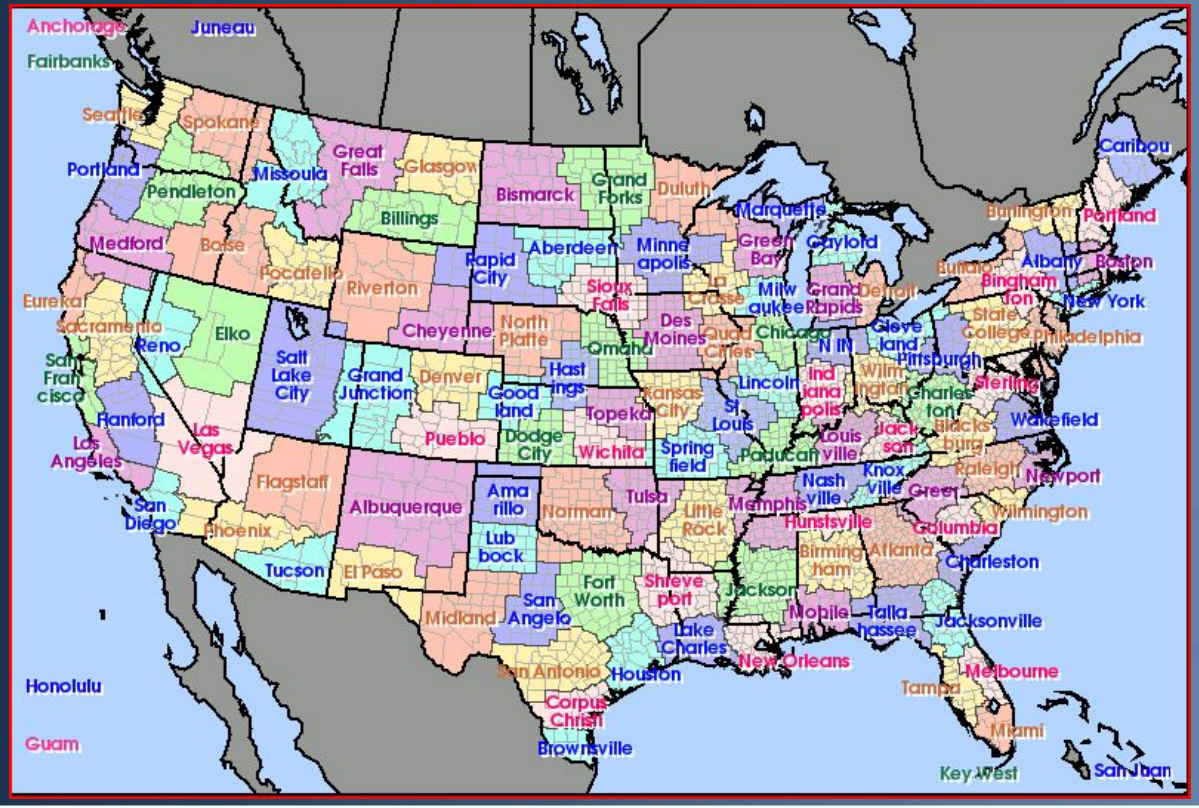
(EXTRACTED FROM FXUS65 KTFX 270007)

Updated 507 PM MST Wed Feb 26 2020 (27/00Z TAF Period)

Low VFR to brief MVFR conditions expected for the eastern part of the CWA as virga helps moisten the lower levels and drop ceilings, with a few rain/snow showers possible this evening from KWYS thru KHVR, including KBZN. Clearing skies spread east tonight, with VFR for all sites after 06z. Will need to watch for fog formation with clearing skies and light winds. Gusty west winds tmrw afternoon, but LLWS doesn't appear likely as of now. Can't rule out some mountain wave turbulence during the day/evening tomorrow. -Kredensor

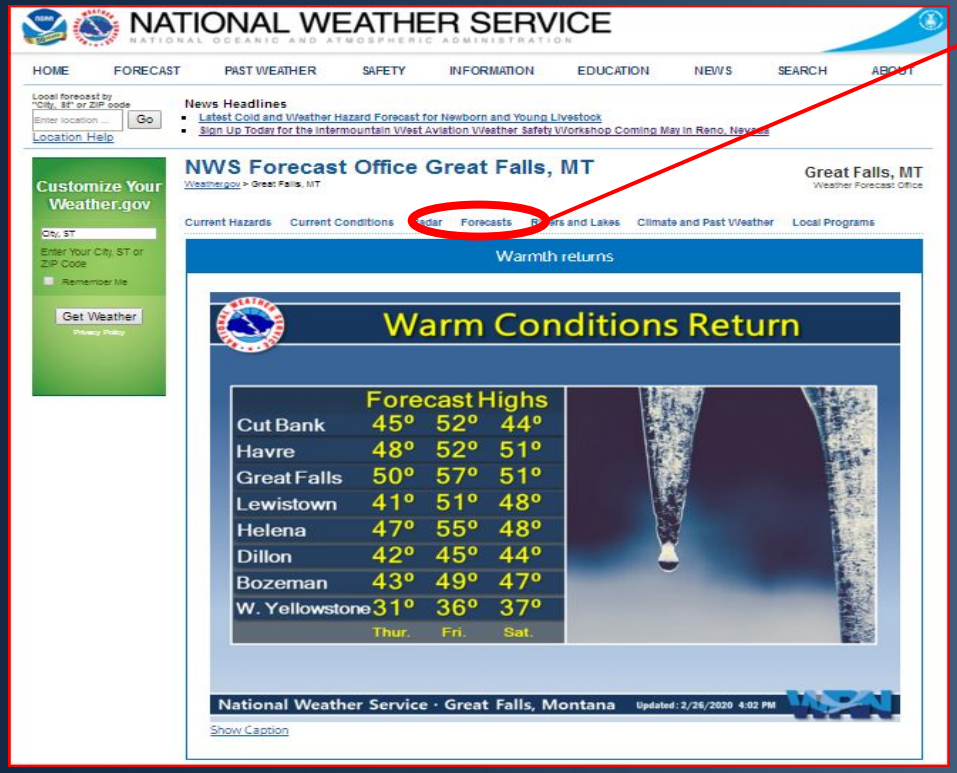
Aviation Forecast Discussions

https://www.aviationweather.gov/fcstdisc



Useful Non-TAF Products

https://www.weather.gov/greatfalls



Area Forecast Discussion

.DISCUSSION...

Shortwave disturbance in NW **flow** aloft located over BC this afternoon will continue SE into MT this evening, exiting the region late tonight. The **shortwave** itself is fairly weak but moistening and decreasing **stability** combined with favorable **upper level jet** positioning should lead to a fairly quick increase in the coverage of showers across the forecast areas around or shortly after 5 pm this evening. Greatest concentration of showers look to occur initially along the Rocky **Mtn** front, then spreading quickly east to the central MT **MTns** and extending south through Gallatin county before **precipitation** ends from west to east around midnight. Snow levels initially around 4000-4500 feet will **mean** a potential start as rain for most areas outside of the mountains, but cooling through the evening will promote a changeover to snow, particularly for Judith **Basin** and Fergus counties where accumulations of up to an inch are possible at lower elevations, while up to 3 inches of accumulation are possible across the mountains. Skies clear from west to east after midnight and this could lead to the development of some **patchy fog** in some SW MT valleys that see any evening **precipitation**.

An **upper level ridge** builds inland Thursday and Friday with warming and drying occurring through the period. By Friday afternoon many lower elevations locations should see temperatures well into the 50s, but moderate W to NW **flow** aloft and surface troughing east of the Rockies will promote breezy to locally windy conditions across the plains.

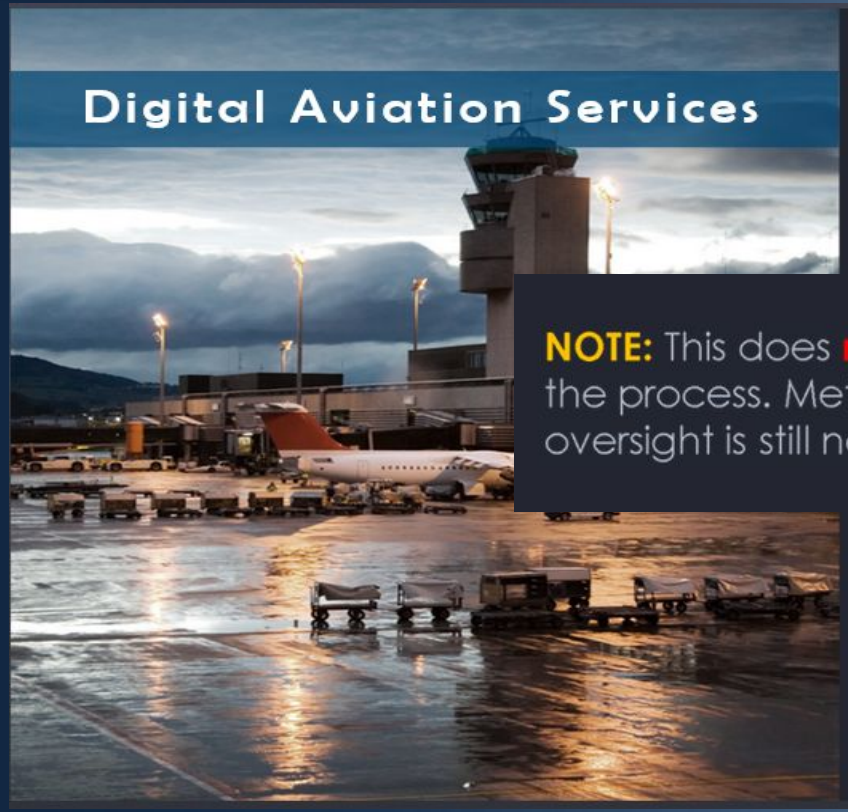
A more vigorous **upper level trough** moves into the NW US Saturday with its associated surface **cold front** likely to sweep E/SE across the region by late Saturday. A period of **precipitation** is likely Saturday over the mountains with showers at lower elevations in association with the frontal passage, followed by a period of gusty west winds following the **front** late Saturday into Saturday night.
Hoenisch

Digital Aviation Services (DAS)

A unified forecast process whereby TAFs are produced digitally

standard.net

Digital Aviation Services (DAS)



What is DAS?

For meteorologists...

...FE grids,
...a smart tool,
...rmatter

NOTE: This does **not** "automate" the process. Meteorologist oversight is still needed.

For aviation customers...

...a set of products & aviation forecast information ,beyond the traditional TAF sites for the entire forecast area

DAS Overview

Focus on Users

- Incorporate numerical forecast model solutions into TAF production
- Horizontal consistency between aviation forecast graphics and TAFs
- Horizontal consistency between aviation forecast graphics, TAFs and public forecast
- Horizontal consistency of TAFs from one Weather Forecast Office (WFO) County Warning Area (CWA) to another

DAS Overview

DAS Overview

Products for Customers

DAS offers a variety of current and potential benefits for different customers:

FAA

more detail than TAFs alone

General Aviation

forecasts at all airports

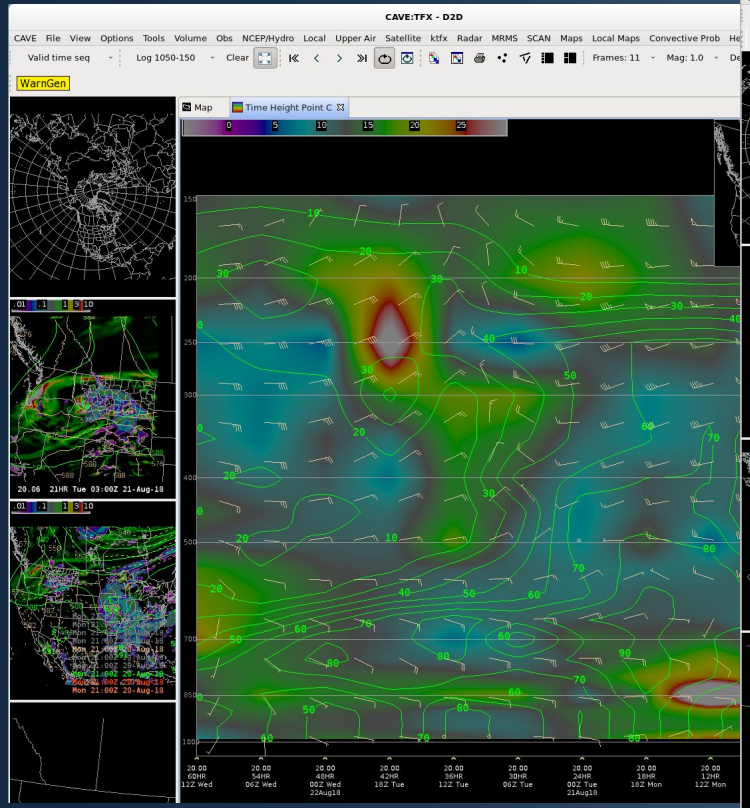
Emergency Services

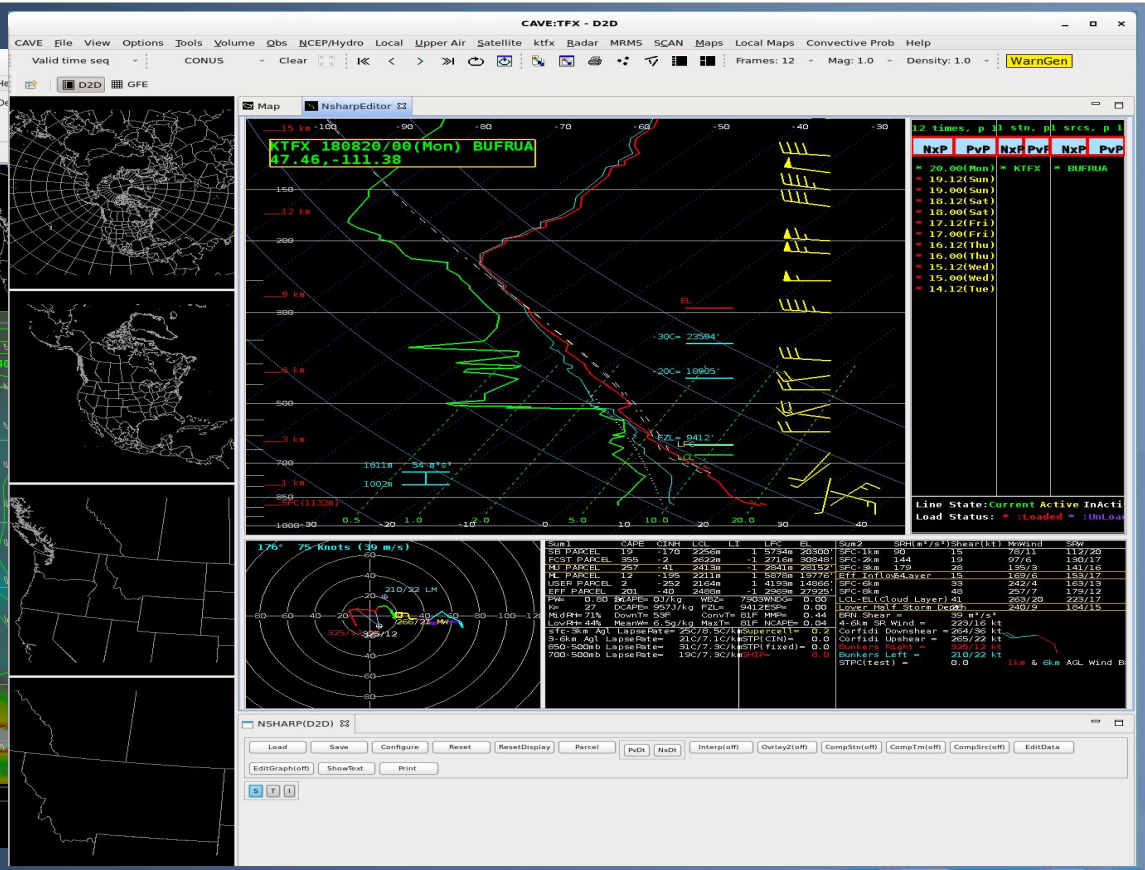
location-specific information

NTSB

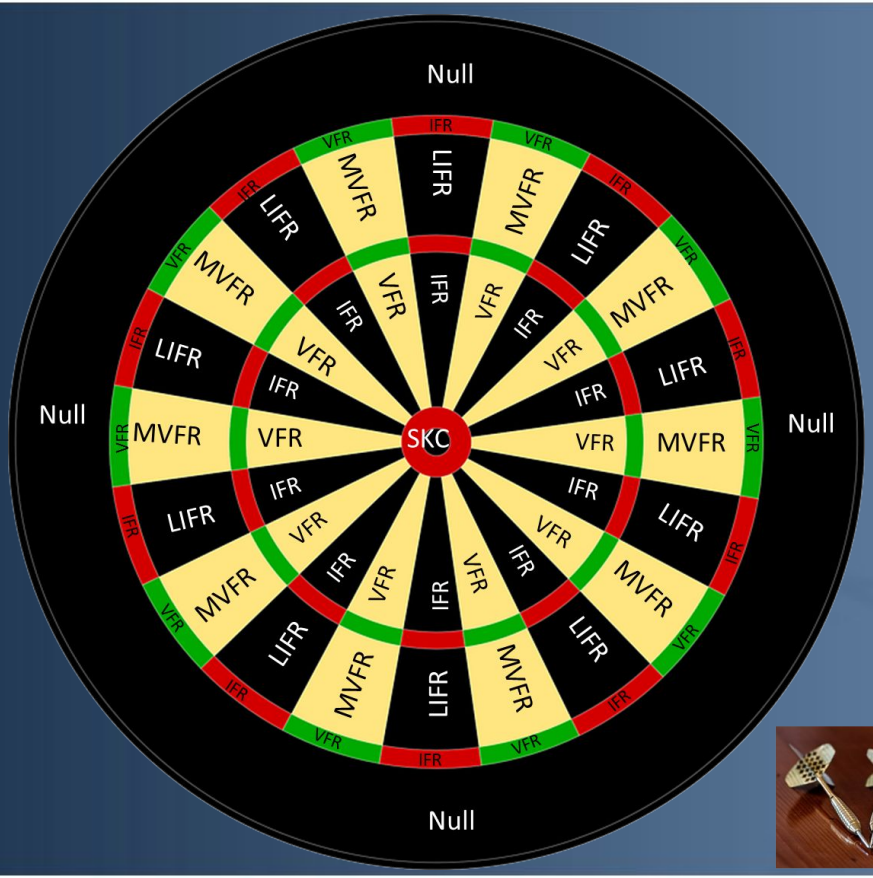
archived location-specific information

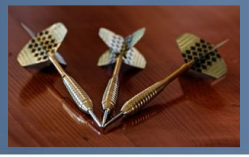
DAS TAF Process





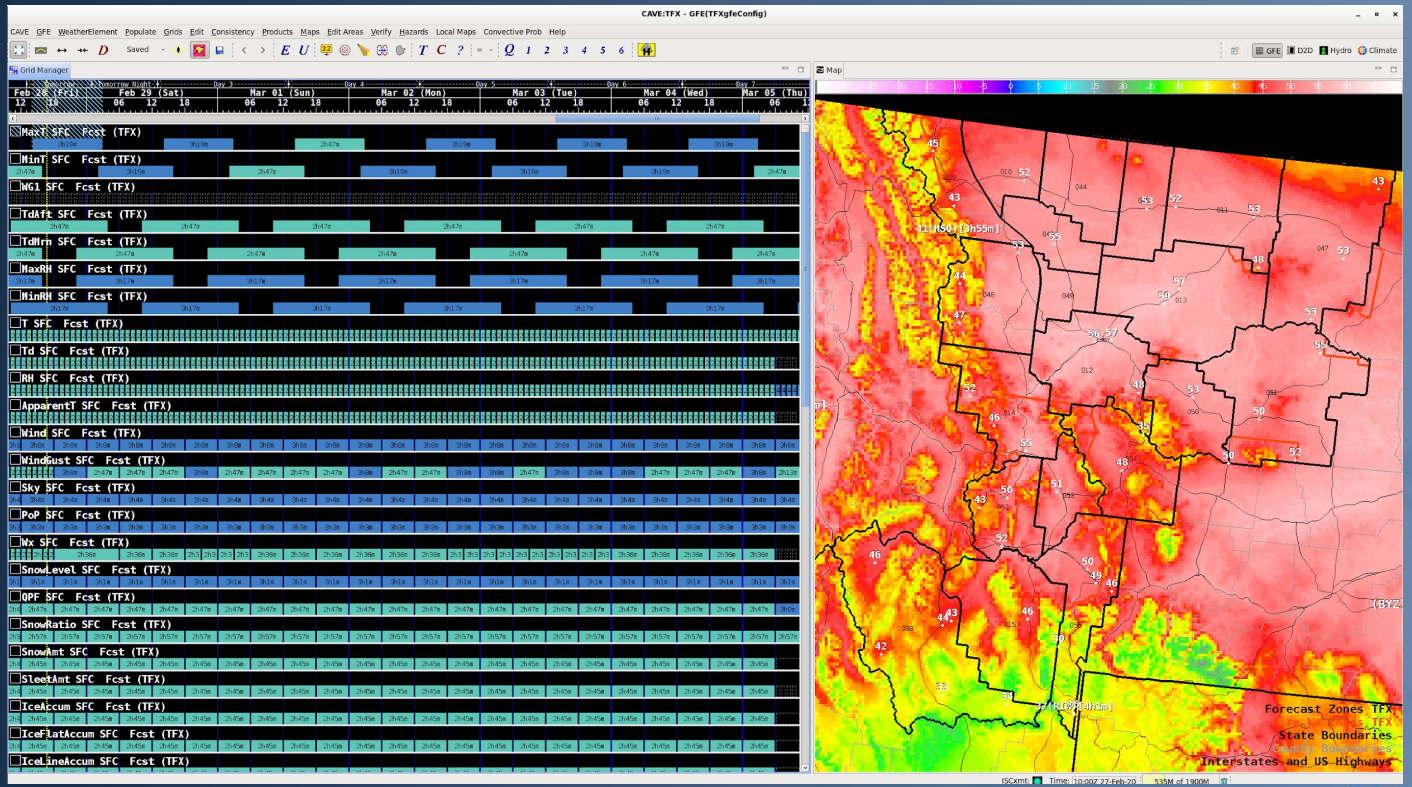
If All Else Fails….





DAS TAF Process

Public Grids



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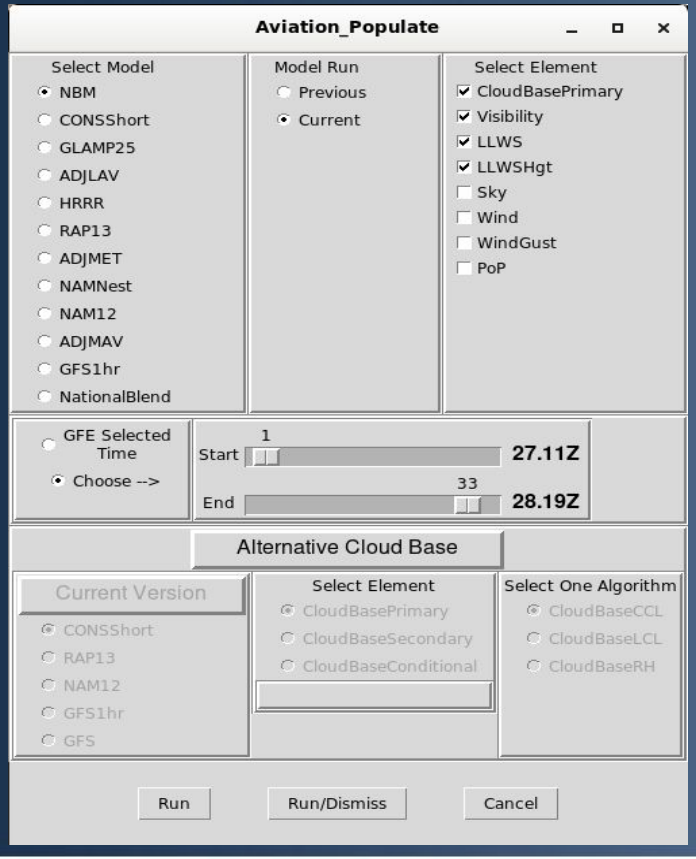
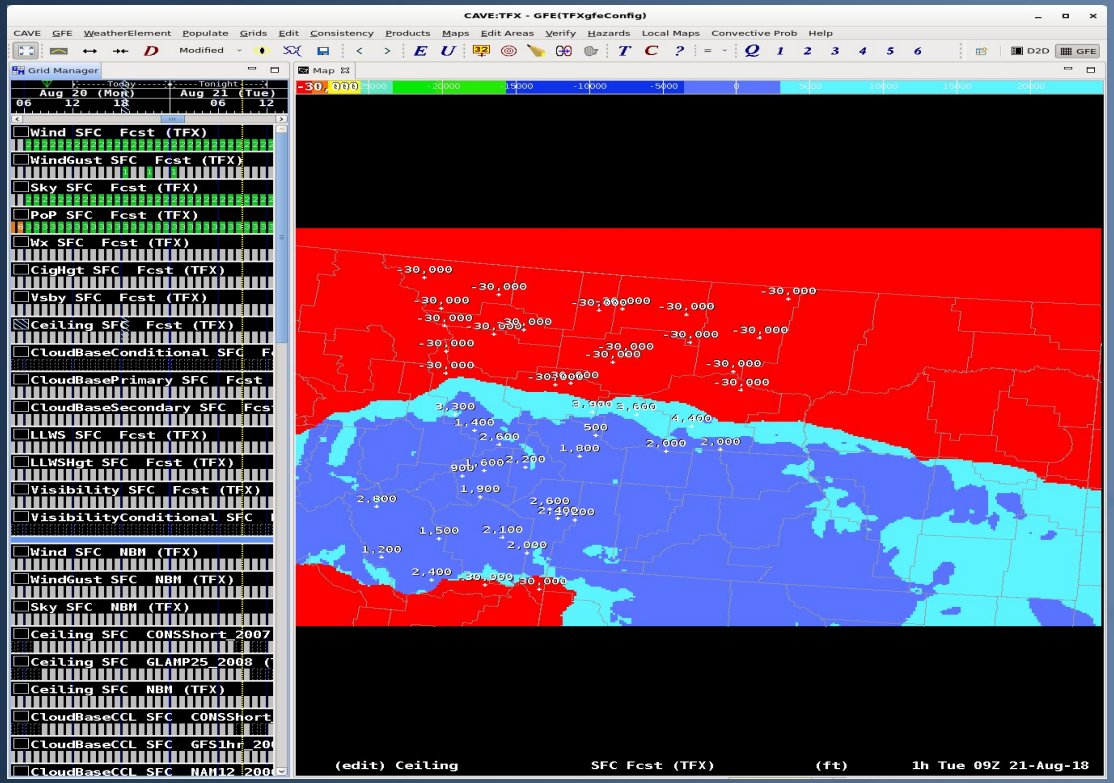
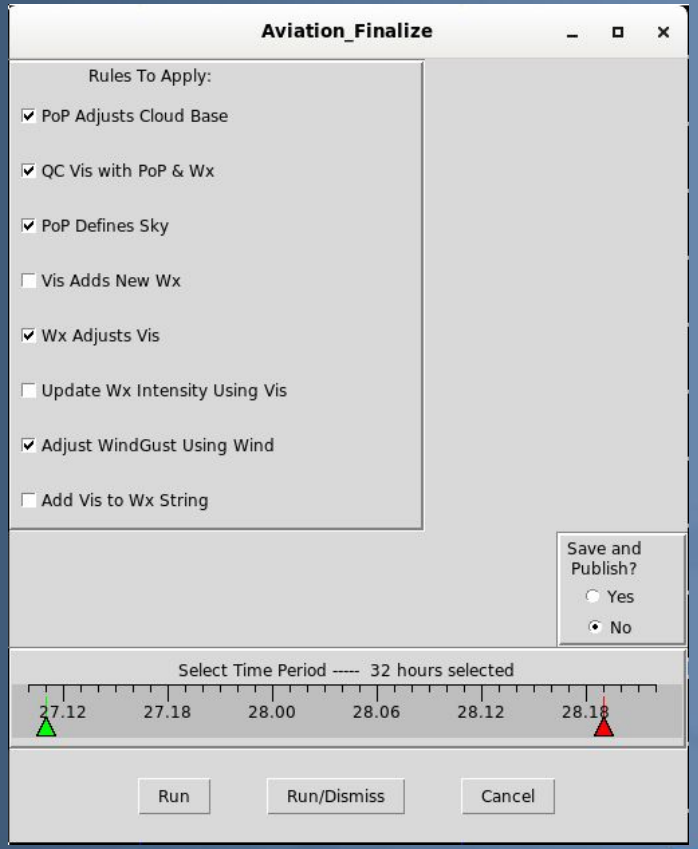


DAS TAF Process

Aviation Grids



DAS TAF Process

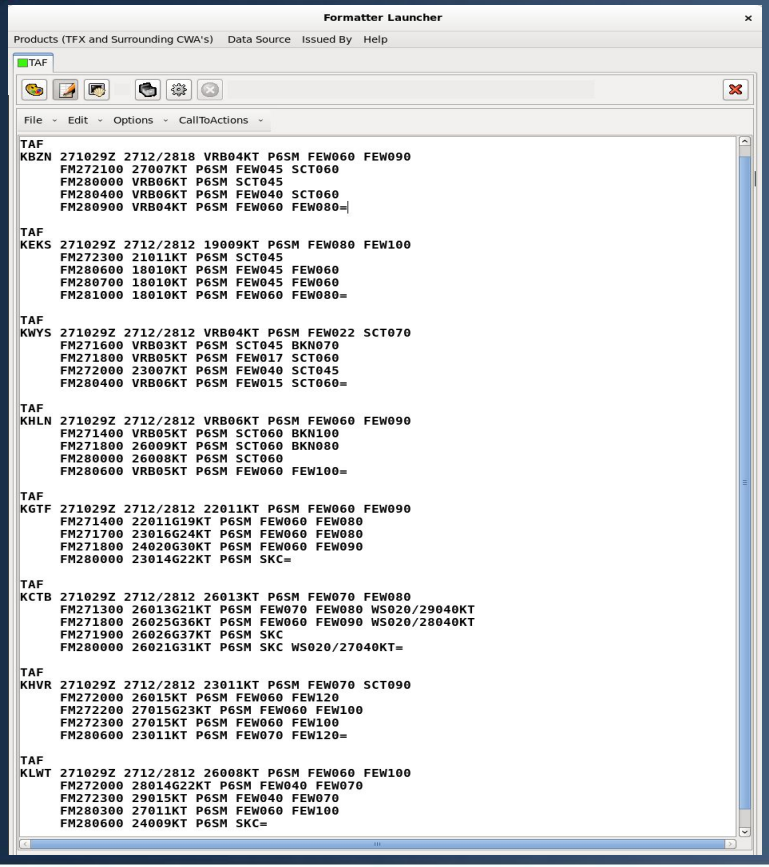


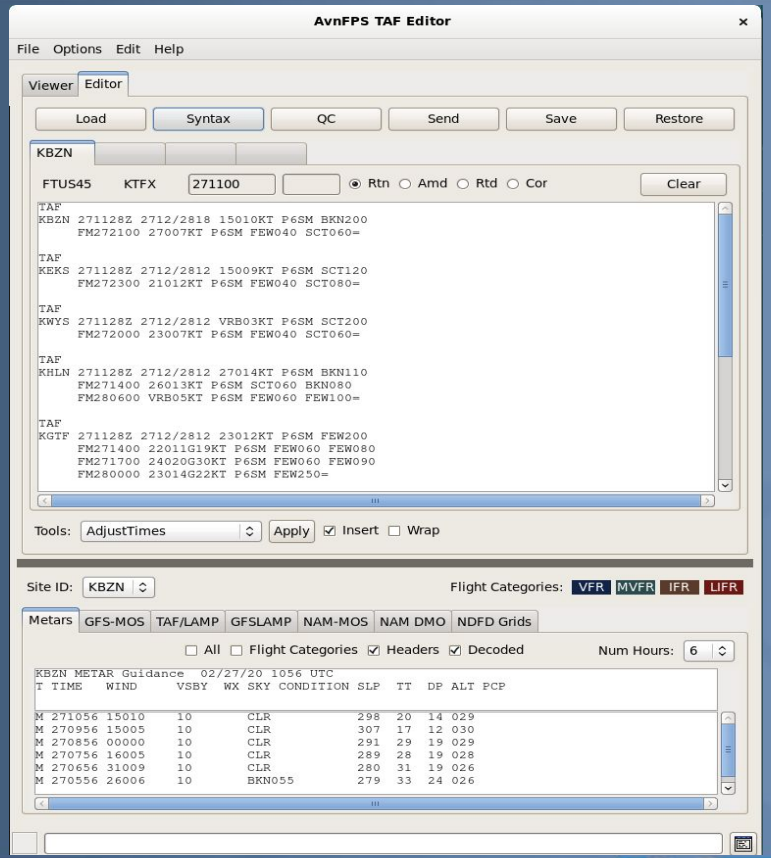
Goals

What are we expecting at this point?

- Formatter-generated TAFs that are reasonably workable
- Not a hands-off process
- Some manual editing of formatter-generated TAFs is expected, especially during rapidly-changing situations
- Continued meteorologist monitoring

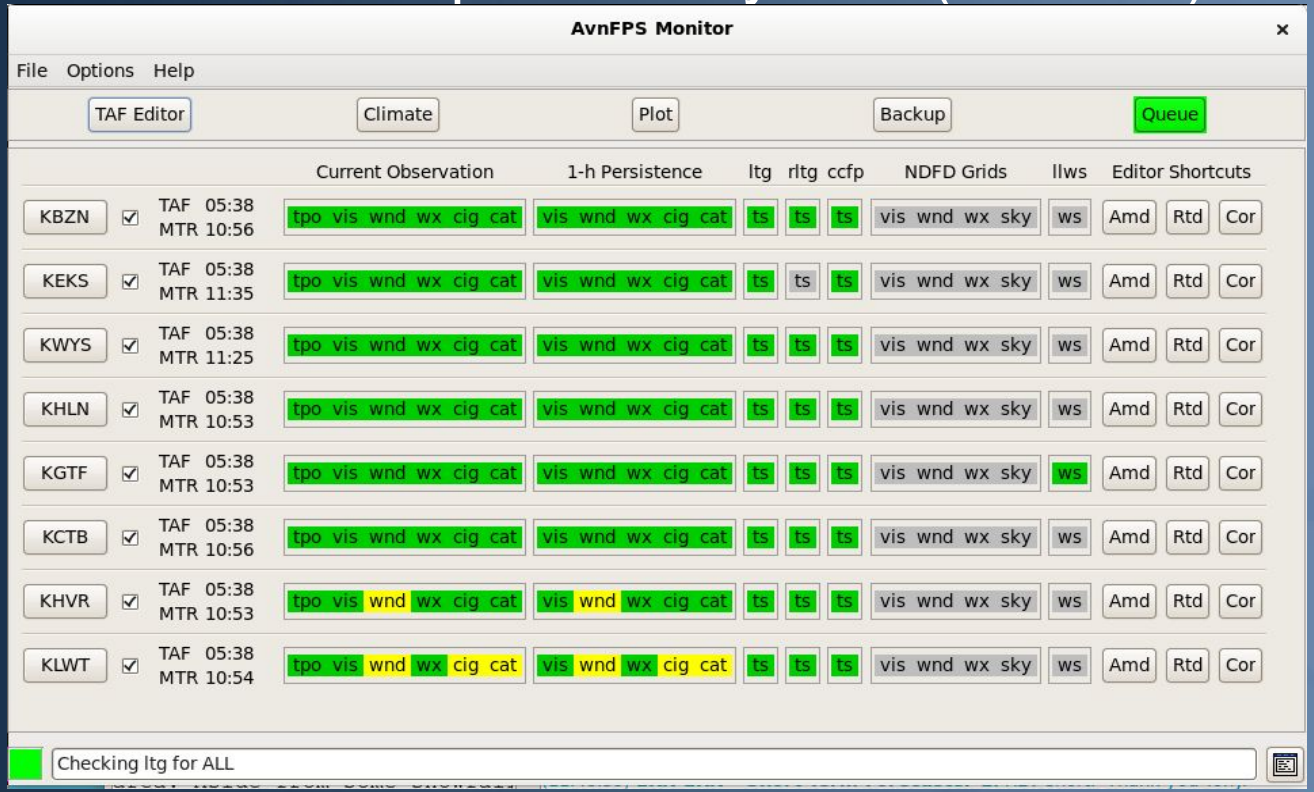
DAS TAF Process





TAF Manager

Aviation Preparation System (AvnFPS)



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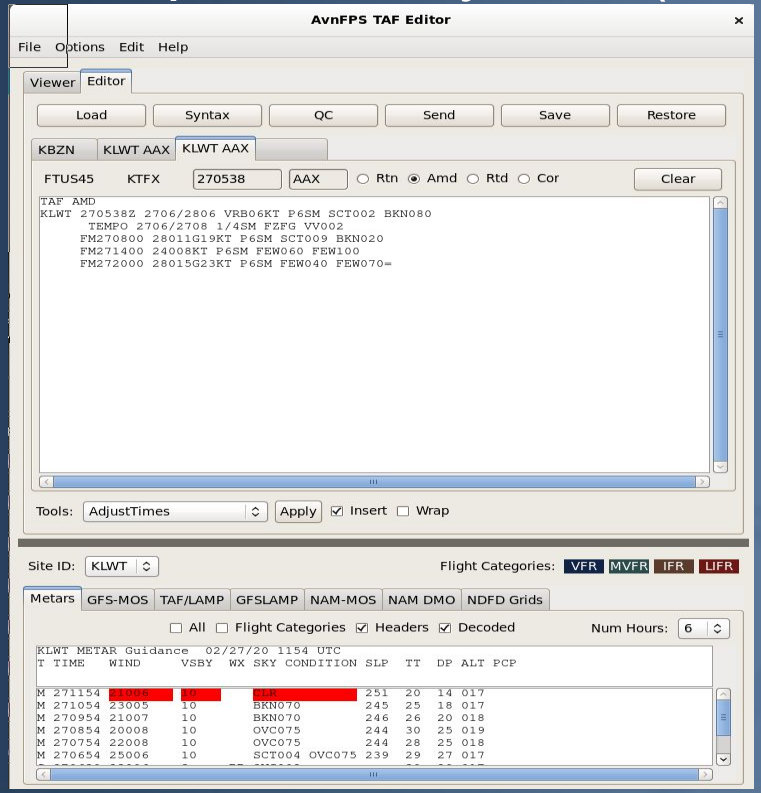

DAS Benefits

- Public forecast grids help produce TAFs
- Horizontal consistency all around
- KWYS TAF came online 16 Jul 2019 / 18Z TAF period with TAFs produced all year to service winter medivac
- More available time to work on additional aviation projects

Operational Goal

- Every NWS Weather Forecast Office will use Digital Aviation Services to create TAFs by the end of FY2021.

DAS Future

- Always a work in progress
- Formatter-generated TAF issues become less and less, and taper off
- Stability is reached as the process is perfected over time

Summary

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Questions?