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PNSWSH

Technical Implementation Notice 15-34 Amended
National Weather Service Headquarters Washington DC
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To: Subscribers:
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From: Tim McClung, Chief Operating Officer
Office of Science and Technology Integration

Subject: Amended: Changes to GFS-based Model Output Statistics (MOS) Guidance: Effective October 19, 2015

Amended to change the implementation date from Thursday, October 1, 2015, to Monday October 19, 2015, and to postpone the expansion of the 2.5-km contiguous U.S. (CONUS) Gridded Model Output Statistics (MOS) domain. See Section 2 below for details concerning this northward expansion.

Users may find parallel data for download on NOAA's Operational Model Archive and Distribution System (NOMADS) at the following link (files will reside in gfsmos.YYYYMMDD):

http://para.nomads.ncep.noaa.gov/pub/data/nccf/com/gfs/para/

On or about Monday, October 19, 2015, beginning with the 1200 Coordinated Universal Time (UTC) model run, the NWS Meteorological Development Laboratory (MDL) will implement changes to the Global Forecast System (GFS)-based MOS guidance. The changes will include:

1. Add gridded MOS guidance for CONUS and Alaska for the Day 8-11 period. Guidance will be available for the following elements:

2-meter temperature (every six hours)
2-meter dew point temperature (every six hours)
Daytime maximum temperature
Nighttime minimum temperature
Relative humidity (every six hours)
Wind speed (every six hours)
Wind direction (every six hours)
12-hour probability of precipitation (every 12 hours)

These day 8-11 products will be produced on a 2.5-km Lambert Conformal grid over the CONUS and 3-km Polar Stereographic grid over Alaska. Guidance will be available for the 0000 and 1200 UTC model cycles for projections out to 11 days in advance. These Day 8-11 Gridded Model Output Statistics (MOS) products will be disseminated on the Satellite Broadcast Network (SBN), NOAAPort and the NWS FTP server in gridded binary

version two (GRIB2) format. Users can view Gridded MOS guidance for the expanded CONUS domain at the following link (this page is not operationally supported and guidance may not be current):

http://www.mdl.nws.noaa.gov/~mos/gmos/conus25_all/view_gmos.php

The day 8-11 products for the CONUS and Alaska will be available in GRIB2 format in the experimental area of the National Digital Guidance Database (NDGD) on the NWS file transfer protocol (ftp) server at:

ftp://tgftp.nws.noaa.gov/SL.us008001/ST.expr/DF.gr2/DC.ndgd/GT.mosgfs/AR.conus/

ftp://tgftp.nws.noaa.gov/SL.us008001/ST.expr/DF.gr2/DC.ndgd/GT.mosgfs/AR.alaska/

Each element-specific GRIB2 file will reside in the VP.008-450 directory and contain a World Meteorological Organization (WMO) super header and individual headers. A listing of the GRIB2 file names for each element is given in Table 1 below. Tables 2 and 3 list WMO super headers for CONUS and Alaska Day 8-11 gridded MOS elements.

A webpage outlining the gridded MOS guidance and the ftp server structure can be found at:

http://www.nws.noaa.gov/mdl/synop/gmos.php

2. Northward expansion of 2.5-km CONUS Gridded MOS guidance to include most of the Northwest River Forecast Center (NWRFC) basin and a buffer of 170 km elsewhere along the border with Canada. This expansion will include the following elements:

2-meter temperature
2-meter dew point temperature
Daytime maximum temperature
Nighttime minimum temperature
Wind speed, wind direction, wind gust
12-hour probability of precipitation (days 8-11 only)
Relative humidity
Total sky cover

Guidance for the NWRFC will contain a cut-off at the northern extent of the National Digital Forecast Database (NDFD) CONUS grid. The dimensions of the 2.5-km CONUS grid will be expanded northward in a future implementation after Advanced Weather Interactive Processing System (AWIPS) systems are configured to display the larger grid. Elements not listed above will not be affected by this change. WMO super headers for the 2.5-km CONUS Gridded MOS elements affected by this change are listed in Table 4 below. No changes are being made at this time to the operational 5-km CONUS Gridded MOS products.

3. NWS will add new stations to the GFS-based short-range and extended-range Cooperative Observer Program (COOP) maximum and minimum temperature messages, known by their AWIPS IDs MCG and MCX, respectively.

Communication identifiers for affected products are listed in Table 5 below. A list of the stations being added can be found at:

http://www.nws.noaa.gov/mdl/synop/gfsmos_changes/newsitesSept2015.php

NWS will remove stations from the GFS-based short-range and extended-range COOP maximum and minimum temperature messages, known by their AWIPS IDs MCG and MCX, respectively. These are stations that have closed, stopped reporting or do not contain sufficient cases to develop MOS equations. Communication identifiers for the affected products are listed in Table 5 below. A list of the stations being removed can be found at:

http://www.nws.noaa.gov/mdl/synop/gfsmos_changes/droppedsitesSept2015.php

4. NWS will remove stations from the GFS-based River Forecast Center maximum and minimum temperature Standard Hydromet Exchange Format (SHEF) message with AWIPS ID FTP. These are stations that have closed, stopped reporting, or do not contain sufficient cases to develop MOS equations. Communication identifiers for the affected products are listed in Table 6 below. Stations being removed can be found at:

http://www.nws.noaa.gov/mdl/synop/gfsmos_changes/droppedsitesSept2015.php

This change provides updated thunderstorm guidance for Alaska valid for the warm season, May through September. NWS has updated guidance for the probability of a thunderstorm in 3-, 6-, 12- and 24-hour periods over Alaska with more recent model data and lightning observations. This updated guidance will take effect at the beginning of the next warm season, May 1, 2016. Communication identifiers for the products affected by this update are listed in Tables 7 and 8 below.

Table 1: GRIB2 Filenames for the Day 8-11 GFS-based Gridded MOS Elements (These files will reside in the VP.008-450 directory on the ftp server.)

GRIB2 File Name	Element
ds.wdir.bin	Wind direction
ds.wspd.bin	Wind speed
ds.pop12.bin	12-hour probability of precipitation
ds.temp.bin	2-meter temperature
ds.td.bin	2-meter dew point temperature
ds.maxt.bin	Daytime maximum temperature
ds.mint.bin	Nighttime minimum temperature
ds.rhm.bin	Relative humidity

Table 2: WMO Super Headers for the Day 8-11 Gridded MOS Products over the CONUS

WMO Super Header	Element
YBUZ96 KWBQ	Wind direction
YCUZ96 KWBQ	Wind speed
YDUZ96 KWBQ	12-hour probability of precipitation
YEUZ96 KWBQ	2-meter temperature
YFUZ96 KWBQ	2-meter dew point temperature
YGUZ96 KWBQ	Daytime maximum temperature
YHUZ96 KWBQ	Nighttime minimum temperature
YRUZ96 KWBQ	Relative humidity

Table 3: WMO Super Headers for the Day 8-11 Gridded MOS Products Over Alaska

WMO Super Header	Element
LBRZ96 KWBQ	Wind direction
LCRZ96 KWBQ	Wind speed
LDRZ96 KWBQ	12-hour probability of precipitation
LERZ96 KWBQ	2-meter temperature
LFRZ96 KWBQ	2-meter dew point temperature
LGRZ96 KWBQ	Daytime maximum temperature
LHRZ96 KWBQ	Nighttime minimum temperature
LRRZ96 KWBQ	Relative humidity

Table 4: WMO Super Headers for Each 2.5-km CONUS Gridded MOS Element Affected by the Grid Expansion

Listed below are representations of the super headers where ii=98 for short-range guidance (days 1-3) and ii=97 for medium- range guidance (days 4-7). Elements indicated by (**) will include ii=96 for extra extended-range (days 8-11).

WMO Super Header	Element
YAUZii KWBQ	Total sky cover
YBUZii KWBQ**	Wind direction
YCUZii KWBQ**	Wind speed
YDUZii KWBQ**	12-hour probability of precipitation
YEUZii KWBQ**	2-meter temperature
YFUZii KWBQ**	2-meter dew point temperature
YGUZii KWBQ**	Daytime maximum temperature
YHUZii KWBQ**	Nighttime minimum temperature
YRUZii KWBQ**	Relative humidity
YWUZii KWBQ	Wind Gusts

Table 5: Communication Identifiers for the GFS-based COOP Maximum and Minimum Temperature Text Products Affected by the Changes

WMO Super Header	Element
FOUS10 KWNO	MCGUSA (Short-range)
FEUS10 KWNO	MCXUSA (Extended-range)

Table 6: Communication Identifiers for the GFS-based River Forecast Center SHEF Products Affected by the Changes

WMO Super Header	AWIPS ID
FOUS12 KWNO	FTPCIN
FOUS12 KWNO	FTPHFD
FOUS12 KWNO	FTPKRF
FOUS12 KWNO	FTPMSR
FOUS12 KWNO	FTPPTR
FOUS12 KWNO	FTPRHA
FOUS12 KWNO	FTPRSA
FOUS12 KWNO	FTPSLR
FOUS12 KWNO	FTPTUR
FOAK12 KWNO	FTPACR

Table 7: Communication Identifiers for the GFS-based MOS Text Products Affected by the Updated Alaska Thunderstorm Guidance

WMO Heading	AWIPS ID
FOAK37 KWNO	MAVAJK
FOAK38 KWNO	MAVAFC
FOAK39 KWNO	MAVAFG
FEAK37 KWNO	MEXAJK
FEAK38 KWN	MEXAFC
FEAK39 KWNO	MEXAFG

Table 8: Representations of WMO Headers for the Alaska Gridded MOS Products Affected by the Updated Thunderstorm Guidance, Where XXX Represents the Valid Day and Time

WMO Super Header	Element
LJRXXX KWBQ	3-hour Probability of a Thunderstorm
LYRXXX KWBQ	6-hour Probability of a Thunderstorm
LXRXXX KWBQ	12-hour Probability of a Thunderstorm

For questions regarding the above changes to the GFS-based MOS guidance, please contact:

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Links to MOS products and descriptions are online at:

http://www.nws.noaa.gov/mdl/synop

National Technical Implementation Notices are online at:

https://www.weather.gov/notification/archive

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