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Service Change Notice 19-61 Updated
National Weather Service Headquarters Silver Spring MD
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From: David Ruth
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 Meteorological Development Laboratory

Subject: Updated: Changes to LAMP Station-based and Gridded Guidance:
Effective on or about October 22, 2019

Updated to change the implementation date to on or about Tuesday, October
22, 2019

On or about Tuesday, October 22, 2019, beginning with the 1400
Coordinated Universal Time (UTC) model run, the NWS Meteorological
Development Laboratory (MDL) will implement changes to the Localized
Aviation Model Output Statistics (MOS) Program (LAMP) station-based and
Gridded LAMP (GLMP) guidance. Once the date is finalized, this notice
will be updated with that information.

Changes included with this upgrade are as follows:

1. Refresh of ceiling height (cig), visibility (vis) and obstruction to
vision (obv) guidance at stations using updated Global Forecast System
(GFS)-based MOS and updated High Resolution Rapid Refresh (HRRR) Version
3 data. In addition, guidance for the above elements has been extended
from 25 out to 38 hours once an hour (HH) at the nominal HH:30 runtimes.

2. Miscellaneous station changes:

- Additional guidance for precipitation type, sky cover, conditional
ceiling and conditional visibility will be available for 330 stations in
the LAMP text bulletin (LAVUSA) and Binary Universal Form for the
Representation of meteorological data (BUFR) message. Guidance for cig,
vis and obv has also been added for a small number of stations that did
not have this guidance previously.

- Station KSBD - San Bernardino, CA, is being added to the LAMP system.

- The station identifier for Heber City Municipal Airport, UT is changing
from K36U to KHCR.

- A summary of the station changes is available at:
https://www.weather.gov/mdl/lamp_newguidance_v2.2.0

3. Text bulletin changes: The header row of the text bulletin currently contains the hour of the cycle and 00 regardless of the actual minute runtime of the cycle, e.g., HH00 UTC. With this implementation, the minutes in the cycle time will reflect the nominal minutes of the runtime, e.g., HH00, HH15, HH30 or HH45.

4. New text bulletins:

- Addition of "extended" text bulletins containing guidance for cig, vis and obv for 26 through 38 hours.

- Addition of "full" text bulletins containing guidance for all elements through 25 hours, and for cig, vis and obv out to 38 hours. All elements without guidance past 25 hours will contain missing values as placeholders until that extended guidance is available. The full bulletins will not be disseminated due to exceeding line length limitations, and will only appear on the LAMP website.

5. Expansion of gridded LAMP (GLMP) cig and vis guidance to cover the full 2.5-km National Blend of Models (NBM) contiguous U.S. (CONUS) domain (2345 x 1597), and extension of forecast projections through 38 hours in support of the NBM. This includes the following GLMP elements:

- 1) Observations (0-hour) and forecasts (1-38 hours) of deterministic cig.
- 2) Observations (0-hour) and forecasts (1-38 hours) of deterministic vis.
- 3) Forecasts (1-38 hours) of probability of cig < 500 feet, < 1,000 feet, and <= 3,000 feet.
- 4) Forecasts (1-38 hours) of probability of vis < 1 mile, < 3 miles, and <= 5 miles.

Links to sample data for this upgrade can be found at the LAMP Experimental Products website:

https://www.weather.gov/mdl/lamp_experimental

Benefits of the system changes include:

- 1) Updated cig, vis and obv guidance by using updated GFS MOS and HRRR data.
- 2) Extension of cig and vis guidance to 38 hours will assist with Digital Aviation Services and production of 30-hour Terminal Aerodrome Forecasts (TAFs).
- 3) Expansion of GLMP cig and vis guidance to cover the full NBM contiguous U.S. (CONUS) domain and extension to 38 hours will support the short-term NBM.
- 4) Additional station inputs to GLMP will improve the analysis for cig and vis.
- 5) Additional elements added for 330 stations, addition of KSBD and change to the identifier for Heber City, UT will benefit users of LAMP guidance.

More details about LAMP/GLMP products and this implementation can be found online at the LAMP Documentation website:

http://www.weather.gov/mdl/lamp_docs

Changes to Dissemination:

1) New "extended" text bulletins (LEVUSA) for 26 through 38 hours will be disseminated over the Satellite Broadcast Network (SBN)/NOAAPort each hour under World Meteorological Organization (WMO) header FEUS11 KWNO and Advanced Weather Interactive Processing System (AWIPS) identifier LEVUSA, and will be made available on National Centers for Environmental Prediction (NCEP) Web Services at the following locations as of the effective date:

<https://ftp.ncep.noaa.gov/data/nccf/com/lmp/prod>
<https://nomads.ncep.noaa.gov/pub/data/nccf/com/lmp/prod>

with filenames: lmp_lavtxt_ext.tHH30z (where HH = 00, 01, ..., 23)

For user convenience, the currently operational 1-25 hour (LAVUSA) messages will also be available at this new location in addition to their current location with filenames:

lmp_lavtxt.tHHMMz (where HH = 00, 01, ..., 23; MM = 00, 15, 30, 45).

2) Due to SBN bandwidth limitations, the expanded GLMP cig and vis guidance on the 2.5km NBM CONUS grid for 1-38 hours will not be disseminated over SBN/NOAAPort at this time, but will be made available on NCEP Web Services in gridded binary version two (GRIB2) format at the following locations as of the effective date:

<https://ftp.ncep.noaa.gov/data/nccf/com/glmp/prod>
<https://nomads.ncep.noaa.gov/pub/data/nccf/com/glmp/prod>

With filenames: glmp.tHH30z.master.fPPP.grib2 (where HH = 00, 01, ..., 23; PPP = 000 indicates the observation analyses, PPP = 001, 002, ..., 038 indicates the forecast projection in hours from runtime HH).

Note that the GLMP cig and vis GRIB2 data on NCEP Web Services cover the full CONUS domain through 17 hours, and the coverage is clipped to the CONUS, Canada and nearshore waters beyond 17 hours due to a lack of skill in the Atlantic and Pacific Oceans and the Gulf of Mexico at those projections.

GLMP cig and vis guidance through 25 hours on the NDFD CONUS extent will continue to be disseminated over SBN/NOAAPort in GRIB2 format and will continue to be available on the NWS TGFTP server in National Digital Graphical Database (NDGD).

There are no other changes to the dissemination with this implementation. The LAMP and GLMP products will continue to be available in operational NDGD, SBN, NOAAPort and NWS ftp server.

Output on the NWS Web Servers will also be updated to contain the new model output but the core contents (variables, file size) will not change. Details for the locations of the LAMP and GLMP products on the NWS ftp server can be found here:

https://www.weather.gov/mdl/lamp_NWS_ftp_server

Complete lists of LAMP and GLMP WMO headers can be found here:

LAMP headers:

https://www.weather.gov/media/mdl/lampheaders_vert_structure_v2.2.0.pdf

GLMP headers:

http://www.weather.gov/media/mdl/glmphheaders_2016.pdf

The communication identifiers for the LAMP text and BUFR products are shown in Tables 1 and 2 below. WMO headers for GLMP cig and vis are shown in Table 3 below.

Table 1: Communication Identifiers for the GFS-based LAMP Products in American Standard Code for Information Interchange (ASCII) Format. Listed below are the WMO heading and the AWIPS identifier.

WMO heading	AWIPS ID	Description
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FOUS11 KWNO	LAVUSA	1-25 hour bulletin
FEUS11 KWNO	LEVUSA	Extended 26-38 hour bulletin (new)

Table 2: Communication Identifiers for the GFS-based LAMP Products in BUFR Format. Listed below are the WMO headings.

WMO heading	Region
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JSMF10 KWNO	LAMP BUFR Pacific Region
JSMF11 KWNO	LAMP BUFR Northeast Region
JSMF12 KWNO	LAMP BUFR Southeast Region
JSMF13 KWNO	LAMP BUFR North Central Region
JSMF14 KWNO	LAMP BUFR South Central Region
JSMF15 KWNO	LAMP BUFR Rocky Mountains Region
JSMF16 KWNO	LAMP BUFR West Coast Region
JSMF17 KWNO	LAMP BUFR Alaska Region

Table 3: WMO Headers and Super Headers for GLMP cig and vis Guidance in GRIB2 Format.

WMO heading	Element Name
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LCUAii KMDL	Ceiling height (0-hour), ii=00-23
LMUZ98 KMDL	Ceiling height (1-38 hours)
LMCZ98 KMDL	Ceiling height probability < 500 feet (1-38 hours)
LMDZ98 KMDL	Ceiling height probability < 1,000 feet (1-38 hours)
LMFZ98 KMDL	Ceiling height probability <= 3,000 feet (1-38 hours)
LDUAii KMDL	Visibility (0-hour), ii=00-23
LNUZ98 KMDL	Visibility (1-38 hours)

LNCZ98 KMDL Visibility prob < 1 mile (1-38 hours)
LNEZ98 KMDL Visibility prob < 3 miles (1-38 hours)
LNFZ98 KMDL Visibility prob <= 5 miles (1-38 hours)

A consistent parallel feed of data is available on the NCEP parallel NOAA Operational Model Archive and Distribution System (NOMADS) site. Sample data for the 1-25 hour text bulletins and 26-38 hour text bulletins can be found here:

<https://para.nomads.ncep.noaa.gov/pub/data/nccf/com/lmp/para>

Sample "master" GRIB2 files containing cig and vis through 38 hours on the expanded NBM domain can be found here:

<https://para.nomads.ncep.noaa.gov/pub/data/nccf/com/glmp/para>

Questions concerning parallel data should be directed to the NCEP Dataflow team at ncep.pmb.dataflow@noaa.gov.

Questions, comments or requests regarding this change should be directed to the contact below. We will review feedback and decide whether to proceed.

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Links to the LAMP products and descriptions can be found at:

http://www.weather.gov/mdl/lamp_home

National Service Change Notices are online at:

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

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