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Service Change Notice 24-80 Updated
National Weather Service Headquarters Silver Spring MD
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From: Judy Ghirardelli
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Meteorological Development Laboratory

Subject: Updated: Changes and Additions to LAMP Station-based and Gridded Guidance: Effective on or about September 30, 2024

Updated to postpone the implementation date to on or about September 30, 2024, due to a Critical Weather Day (CWD) being declared.

In addition to the below changes, an additional bug discovered during NCEP stability testing will be fixed with this upgrade. Rapid Refresh (RAP) visibility forecasts used as a first guess in the GLMP visibility observational analysis for areas outside the CONUS had incorrect decimal scaling, causing slightly degraded analysis output over the affected areas of the grid. This fix restores the intended scaling of the RAP visibility data used as a first guess and thus will improve the visibility analysis output over areas outside the CONUS.

The original notice follows:

On or about September 26, 2024, beginning with the 1630 Coordinated Universal Time (UTC) model run, the NWS Meteorological Development Laboratory (MDL) will implement changes to the Localized Aviation Model Output Statistics Program (LAMP) station-based and Gridded LAMP (GLMP) guidance.
Comments/feedback on this upgrade were previously solicited publicly from February 23, 2024 through March 25, 2024 via this Public Information Statement:
https://www.weather.gov/media/notification/pdf_2023_24/pns24-11_lamp_glmp_v2.6.pdf

In the event that the implementation date is declared a Critical Weather Day (CWD), an Enhanced Caution Event (ECE), or other significant weather is occurring or is anticipated to occur, implementation of this change will take place at 1630 UTC on the next weekday not declared a CWD and when no significant weather is occurring.

LAMP/GLMP v2.6 will include the following enhancements/changes in support of the National Blend of Models (NBM) and other NWS initiatives:

1) Addition of station-based LAMP guidance for ceiling height and visibility valid for 15-minute periods out to six hours, updated every 15 minutes (96 cycles per day). This will include guidance for the lowest category ceiling height and lowest category visibility condition that is forecast to occur during each 15-minute period. The guidance will be produced in a text bulletin format that displays ceiling height and visibility categories valid for 15-minute periods out to six hours for 1818 contiguous U.S. (CONUS) stations. [Note that with this upgrade, there will be a new station bulletin for the 15-minute lowest ceiling and visibility LAMP guidance for the new station KSMB. Station "KSMB" in the 15-minute bulletin is a Federal Aviation Administration (FAA)-owned Automated Weather Observing System (AWOS) station located near the San Mateo Bridge near San Francisco, California. The use of this designator in the LAMP 15-minute bulletin is intended to be temporary until an official designator is approved by the FAA]. There are 19 CONUS LAMP stations for which a 15-minute bulletin will not be produced due to missing MOS predictor data for many projections. A list of the 19 LAMP stations that will not have a 15-minute bulletin can be viewed here:

https://vlab.noaa.gov/documents/6609493/7858387/Stations_without_a_15-min_text_bulletin_v2.6.pdf

Please note that this 15-minute LAMP guidance is in addition to the current hourly LAMP ceiling and visibility guidance which is valid at the top of the hour in the forecast period. The current hourly LAMP ceiling and visibility guidance valid at the top of the hour is not impacted by this.

2) Addition of GLMP guidance for ceiling height and visibility valid for 15-minute periods out to six hours, updated every 15 minutes (96 cycles per day). This will include probabilistic and deterministic guidance for the lowest ceiling height and lowest visibility condition that is forecast to occur during each 15-minute period. The guidance will be produced in gridded binary version two (GRIB2) format on the NBM CONUS domain for the following variables:

1. Deterministic ceiling height (m)
2. Probability of ceiling < 500 ft (%)
3. Probability of ceiling < 1,000 ft (%)
4. Probability of ceiling <= 3,000 ft (%)
5. Deterministic visibility (m)
6. Probability of visibility < 1 mi (%)
7. Probability of visibility < 3 mi (%)
8. Probability of visibility <= 5 mi (%)

Please note that the spatial extent of this new guidance will be limited to the part of the domain covered by the HRRR, and will contain missing values outside of this area. Also please note that this 15-minute GLMP guidance is in addition to the current hourly GLMP ceiling and visibility guidance which is valid at the top of the hour in the forecast period. The current hourly GLMP ceiling and visibility guidance valid at the top of the hour and which supports the NBM is not impacted by this.

3) Minor bug fixes to currently operational products that include: A) Addition of a post-processing check for GLMP wind gusts to prevent negative values from occurring on the grid, B) An adjustment to the LAMP advection model to prevent large visibility values from advecting over the station in rare cases of high winds for stations in Hawaii, and C) Removal of a problematic mesonet station (TRJHS - Troy, OH) from the GLMP temperature/dewpoint analysis.

4) The following issues were discovered during or after the 30-day user comment period and will be fixed with this implementation:

A) Correcting the metadata for a mis-located station (KGVW - Galveston, TX oil platform) that was being used in the LAMP advection model analysis. Due to the mis-location, this station was being tossed from the analysis most of the time and had little impact on the advection output. This change is expected to improve the advection output in the vicinity of the old location and in the vicinity of the correct location.

B) Correcting a setting in the analysis software that controls augmentation of LAMP station forecasts with observations and MOS, which was impacting the currently operational GLMP wind gust grids beyond 35 hours. The fix restores the original intended weighting of observations and MOS in the wind gust analysis for the 36-38 hour projections, resulting in increased magnitudes in areas where there are few or no LAMP stations.

C) Rapid Refresh (RAP) visibility forecasts used as a first guess in the GLMP visibility observational analysis for areas outside the CONUS had incorrect decimal scaling, causing slightly degraded analysis output over the affected areas of the grid. This fix restores the intended scaling of the RAP visibility data used as a first guess and thus will improve the visibility analysis output over areas outside the CONUS.

Expected benefits of this LAMP/GLMP v2.6 upgrade include:

1) The addition of station-based and gridded guidance for ceiling and visibility valid for 15-minute periods out to six hours, updating every 15 minutes (96 cycles per day), will provide higher temporal resolution guidance for ceiling height and visibility to aviation users.

2) Addressing the various bugs listed above will improve the quality of the currently operational station-based and gridded guidance for users, including the gridded guidance used by the NBM.

More details about LAMP/GLMP products and this implementationcan be found online at the LAMP Documentation web site:
https://vlab.noaa.gov/web/mdl/lamp-documentation

Changes to dissemination:

1) On the change date, the new text bulletins that display ceiling height and visibility categories valid for 15-minute periods out to six hours for 1818 CONUS stations, updating every 15 minutes (96 cycles per day), will be made available on NCEP Web Services at:

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

with file name "lmp.tHHMMz.subhbull.f0015-f0600.txt" (where HH is the LAMP cycle hour and MM is the LAMP cycle minute).

2) On the change date, new GRIB2 files containing probabilistic and deterministic guidance for the lowest ceiling height and lowest visibility condition that is forecast to occur during each 15-minute period out to six hours on the NBM CONUS domain will be made available on NCEP Web Services at:

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

with file names "glmp.tHHMMz.subh.fhhmm.co.grib2" (where HH is the nominal GLMP cycle hour, MM is the nominal GLMP cycle minute, hh is the forecast projection hour, and mm is the forecast projection minute).

3) On the change date, the following currently operational GLMP GRIB2 files for CONUS and Alaska NBM domains residing on NCEP Web Services will have a change in file name:

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

Old file names:
glmp.tHH30z.master.fPPP.ak.grib2
glmp.tHH30z.master.fPPP.co.grib2
New file names:
glmp.tHH30z.hourly.fPPP.ak.grib2
glmp.tHH30z.hourly.fPPP.co.grib2
(where HH is the GLMP cycle hour and PPP is the forecast projection 000-038).

There are no changes to LAMP or GLMP WMO headers or Satellite Broadcast Network routing with this implementation. Complete lists of LAMP and GLMP WMO headers can be found here:
https://vlab.noaa.gov/documents/6609493/7858387/lampheaders_2024_v2.6.docx.pdf
https://vlab.noaa.gov/documents/6609493/7858387/glmpheaders_2024_v2.6.docx.pdf

A consistent parallel feed of data will be available on the NCEP parallel NOMADS site beginning at least 30 days prior to implementation at the following locations:

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

https://ftpprd.ncep.noaa.gov/data/nccf/com/lmp/para
https://ftpprd.ncep.noaa.gov/data/nccf/com/glmp/para
ftp://ftpprd.ncep.noaa.gov/pub/data/nccf/com/lmp/para
ftp://ftpprd.ncep.noaa.gov/pub/data/nccf/com/glmp/para

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

NCEP encourages users to ensure their decoders are flexible andare able to adequately handle changes in content format (including format and order of variables) and any volume changes that may be forthcoming. These elements may change with future NCEP model implementations. NCEP will make every attempt to alert users to these changes prior to any implementations.

Questions, comments or requests regarding this change should bedirected to the contacts below.

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For questions relating to dataflow, please contact:

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

https://vlab.noaa.gov/web/mdl/lamp

NWS Service Change Notices are online at:

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

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