

NOUS41 KWBC 071835 AAA  
PNSWSH

Technical Implementation Notice 16-22 Amended  
National Weather Service Headquarters Washington DC  
235 PM EST Wed Dec 7 2016

To: Subscribers:  
-NOAA Weather Wire Service  
-Emergency Managers Weather Information Network  
-NOAAPORT  
Other NWS Partners and NWS Employees

From: David Myrick  
Office of Science and Technology Integration

Subject: Amended: The Nearshore Wave Prediction System (NWPS)  
data will be provided over the Satellite Broadcast  
Network (SBN) and NOAAPORT on or about November 17,  
2016, for Western, Pacific and Alaska Region WFOs

Amended to reflect GRIB2 file packing modifications and update  
parallel data availability.

Effective on or about Thursday, November 17, 2016, additional  
NWPS data will be added to the SBN and NOAAPORT. The NWPS is run  
2-4 times per day, on-demand, depending on the coastal Weather  
Forecast Office (WFO). On November 17, 2016, data for 13  
additional coastal WFO domains (Western, Pacific and Alaska  
Regions) was made available. This addition appends the data from  
the 23 Eastern and Southern Region WFOs implemented in February  
2016, bringing the total to 36 coastal WFO domains. The 3-hourly  
grids will be disseminated in GRIB2 format. Grid resolutions  
will be dependent upon individual coastal WFO. This upgrade also  
features minor modifications to the GRIB2 file encoding and the  
output directory structure of all 36 domains.

The parameters associated with the messages at these resolutions  
are:

Q - Wind Speed  
R - Wind Direction  
Z - Current speed  
Z - Current direction  
Z - Water level  
C - Wave Height  
D - Water Depth  
J - Peak Frequency/Period  
K - Peak Direction  
Z - Wave Length  
O - Wave height of swell waves  
O - Partitioned swell wave height  
Y - Partitioned swell peak period

## P - Partitioned swell mean direction

Data volume will vary, depending on coastal WFO. The average total data volume is approximately 65 MB per cycle, 2 times per day, for each of the remaining 13 coastal WFO domains.

CG grids are described as follows:

CG0 grid: partition output on overall computational domain (low- resolution) for a given WFO

CG1 grid: integral output on overall computational grid for a given WFO

CG2 grid: integral output on first nested grid where applicable

CG3 grid: integral output on second nested grid where applicable

CG4 grid: integral output on third nested grid where applicable

CG5 grid: integral output on fourth nested grid where applicable

Each WFO may produce up to 5 grids. Not all WFOs are producing all 5 grids for their County Warning Area (CWA).

CG0 grid messages are approximately 8 MB per WFO. The total volume (13 coastal WFOs) is 104 MB per cycle, 2 times per day.

CG1 grid messages are approximately 29 MB per WFO. The total volume is 377 MB per cycle, 2 times per day.

CG2 grid messages are approximately 7 MB per WFO. The total volume is 91 MB per cycle, 2 times per day.

CG3 grid messages are approximately 7 MB per WFO. The total volume is 91 MB per cycle, 2 times per day.

CG4 grid messages are approximately 7 MB per WFO. The total volume is 91 MB per cycle, 2 times per day.

CG5 grid messages are 7 MB per WFO. The total volume is 91 MB per cycle, 2 times per day.

The total volume (13 coastal WFOs) for all resolution files is approximately 845 MB per cycle, 2 times per day.

The following summarizes the generic WMO Headers for the NWPS data: T1T2A1A2iCCCC, where:

T1 = E

T2 specifies the parameters (stated above)

A1 = A for CG0 grid; B for CG1 grid; C for CG2 grid; D for CG3 grid; E for CG4 grid, and F for CG5 grid

A2 specifies forecast hours: A=00, B=03, C=06, D=09, E=12, F=15, G=18, H=21, I=24 and 27, J=30 and 33, K=36 and 39, L=42 and 45, M=48 and 51, X=54 and 57, N=60 and 63, Y=66 and 69, O=72, 75, 78 and 81, P=84, 87, 90 and 93, Q=96, 99, 102

ii = 88 (specifies surface)

For CONUS offices, CCCC corresponds to K, appended by the 3-letter AWIPS code for the generating the 7 coastal WFO domains:

SEW - Seattle, Washington  
PQR - Portland, Oregon  
MFR - Medford, Oregon  
EKA - Eureka, California  
MTR - Monterey, California  
LOX - Los Angeles, California  
SGX - San Diego, California

For OCONUS offices, CCCC corresponds to P, appended by the 3-letter AWIPS code for generating the six coastal WFO domains:

HFO - Honolulu, Hawaii  
GUM - Tiyan, Guam  
AJK - Juneau, Alaska  
AER - Anchorage, Alaska  
ALU - Anchorage (Aleutian Islands), Alaska  
AFG - Fairbanks, Alaska

## OUTPUT DATA:

In addition to NOAAPORT, data will be available through the NCEP ftp/http services:

<http://nomads.ncep.noaa.gov>  
<ftp://ftp.ncep.noaa.gov>

On Implementation Day the data for the new domains was made available at:

`/pub/data/nccf/com/nwps/prod`

The modified file format is the following:

For each of the 2-character regional codes (sr, er, wr, pr, ar) the GRIB2 files are listed under date (YYYYMMDD), 3-character WFO code (listed above, in lower case), run cycle (CC) and model domain (CG = CG1, CG2, CG3, CG4, CG5; or CG0). The run cycle always corresponds to the analysis time of the run (HH). All output variables pertaining to the run domain are stored in a

single GRIB2 file. Note that since the runs are on demand, not all CC cycles will be produced during a given YYYYMMDD.

REGION.YYYYMMDD/WFO/CC/CG/WFO\_nwps\_CG\_YYYYMMDD\_HH00.grib2

REGION.YYYYMMDD/WFO/CC/CG0/WFO\_nwps\_CG0\_Trkng\_YYYYMMDD\_HH00.grib2

#### GRIB2 ENCODING CHANGES:

The encoding of exception values has been changed from various codes (-9.0, -99.0, -999.0) to a consistent value of 9.999e+20, covering the full domain, which is interpreted as "NO DATA" values by the AWIPS2 Grib2Decoder. For the CG0 GRIB2 files, this results in a switch from the use of "NO BIT-MAP" to "with BIT-MAP 0" in the encoding (see GRIB2 - Section 6). Furthermore, the decimal precision at which the CG0 GRIB2 files are packed have been increased.

The NWPS website is located at:

<http://polar.ncep.noaa.gov/nwps/>

For additional information regarding GRIB2 files, visit:

<http://www.nco.ncep.noaa.gov/pmb/docs/grib2/>

For questions pertaining to NWPS data, please contact:

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National Technical Implementation Notices are online at:

<http://www.weather.gov/os/notif.htm>

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