NOUS41 KWBC 061415
PNSWSH

Public Information Statement 26-10
National Weather Service Headquarters Silver Spring MD
915 AM EST Fri Feb 6 2026

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From: Fanglin Yang
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Subject: Soliciting Comments on the Upgrade of the Nearshore Wave Prediction System (NWPS) to Version 1.5.0 through March 16, 2026

The Environmental Modeling Center (EMC) is proposing to upgradethe NWS operational Nearshore Wave Prediction System (NWPS) to v1.5.0. The upgrade will provide improved forecast guidance over the existing model domain.

The proposed NWPS upgrade includes the following:

1. Transition of 12 WFO domains to unstructured meshes

This upgrade will transition 12 WFO domains from nested regular grids to variable-resolution unstructured meshes. The WFOs in question are, for WR: LOX, MTR, EKA, MFR and PQR; for SR: BRO, LCH, and LIX; for AR: AJK, AER, and AFG; and for ER: LWX.

2. Addition of wave runup (erosion/overwash) guidance

In collaboration with the USGS, NWPSv1.4 currently features wave runup (erosion/overwash) guidance for ER and SR WFOs running on unstructured meshes. In NWPSv1.5, this wave runup will be extended to the WR and SR domains.

3. Addition of rip current guidance

In collaboration with NOS and MDL, NWPSv1.4 currently features rip current guidance for ER and SR WFOs running on unstructured meshes. NWPSv1.5, will extend this rip current guidance to WFOs in WR and SR.

4. Inclusion of high-resolution currents in Western Region inlets

EMC has collaborated with NOS/CSDL, which has included high-resolution depth-averaged currents for 11 inlets in Western Region (Grays Harbor, Willapa Bay, Columbia River Mouth, Tillamook Bay, Yaquina Bay, Siuslaw River Mouth, Umpqua River, Coos Bay, Coquille River Mouth, Chetco River

Mouth, Humboldt Bay Spit) in the Global STOFSv3.1. These depth-averaged currents are ingested in NWPS, to model wave-current interaction on the new high-resolution unstructured meshes for these domains.

This upgrade does not involve moving, renaming or removing any forecast products produced from the Nearshore Wave Prediction System (NWPS) on the National Centers for Environmental Prediction (NCEP) Operational Model Archive and Distribution System (NOMADS). The following products will be added for the rip current and runup products:

1.For WFO's in the Western Region (WR) specifically LOX, MTR, EKA, MFR, PQR, SEW and Southern Region BRO, CRP, LCH, LIX, the following additional wave runup and rip current products will be included on the CG1 (overall domain) grids grib2 file (${WFO}.nwps_CG1_${PDY}_${CC}.grib2:

Erosion Occurrence Probability (%) - EROSNP
Overwash Occurrence Probability (%) - OWASHP
Total Water Level Accounting for Tide, Wind and Waves (m) - TWLWAV
Total Water Level Increase due to Waves (m) - RUNUP
Mean Increase in Water Level due to Waves (m) - SETUP
Time-varying Increase in Water Level due to Waves (m) - SWASH
Total Water Level Above Dune Toe (m) - TWLDT
Total Water Level Above Dune Crest (m) - TWLDC
Rip current probability (%) - RIPCOP

2. For WFO EKA (WR), an additional nested grid (CG2) will be added to transmit high-resolution wave-current interaction results for the Humboldt Bay Spit. The following products will be included:

Significant Height of Combined Wind Waves and Swell (m)- HTSGW
Primary Wave Direction (m) - DIRPW
Primary Wave Mean Period (s) - PERPW
Significant Height of Swell Waves (m) - SWELL
Wind Direction (deg blowing from) - WDIR
Wind Speed (m/s) - WIND
Deviation of Sea Level from Mean (m) - DSLM
Current Direction (deg True) - DIRC
Current Speed (m/s) - SPC
The existing CG2 (wind-only grid) will be renamed to CG3),
following the naming convention used for Western Region.

Please submit comments, questions or requests on the proposed NWPSv1.5 implementation to:

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The NWS will evaluate all comments to determine whether toproceed with this upgrade. If approved, a Service Change Noticewill be issued giving a minimum of 30 days' notice of theimplementation date.

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