

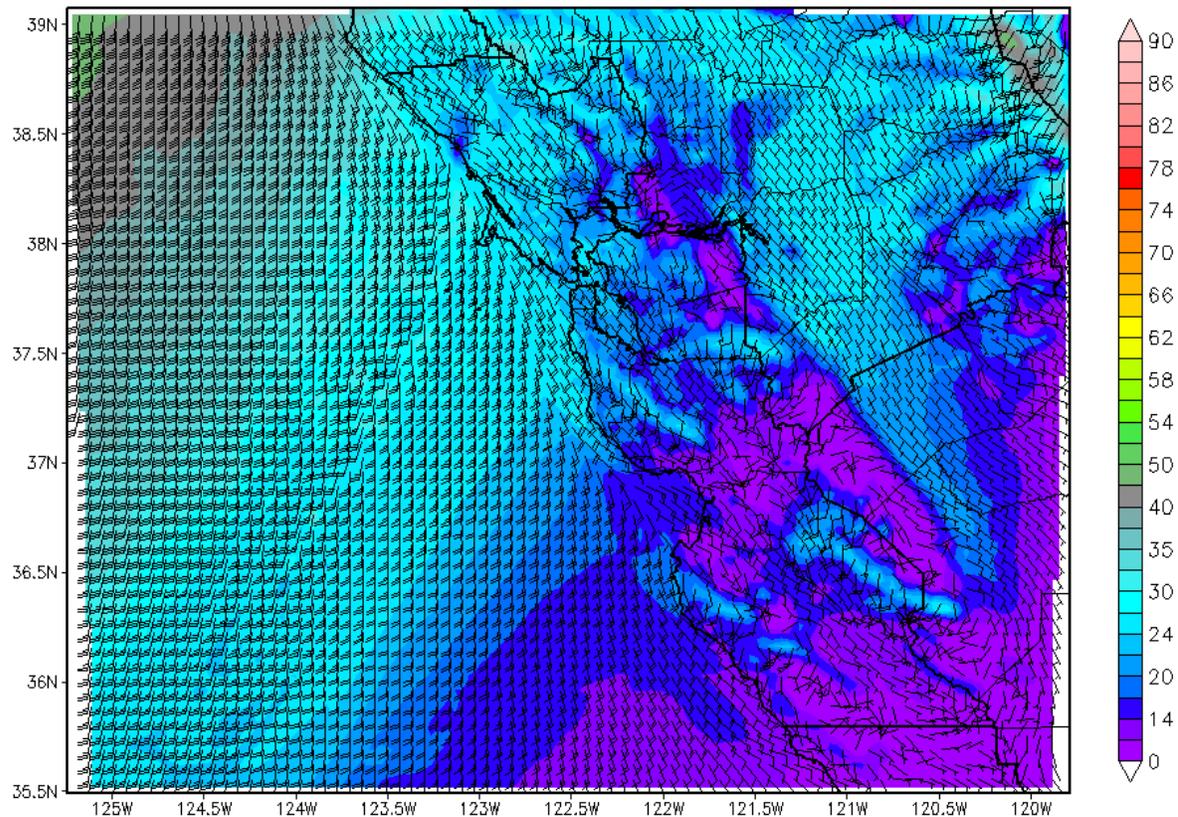
**WFO WRF NMM Model Output
Regional Optional
Product Description Document (PDD)**

Part I – Mission Connection

- a. Product Description – The WFO WRF NMM is run locally at a WFO. The model generates hourly to 3-hourly output from 24 to 120 hours, depending on element. The high resolution model is used for operational forecasting and research at the local WFO. Model output graphics, generated by software such as GEMPAK, are posted for hourly or 3-hourly forecast time steps on a WFO web page. Some of the fields include: geopotential heights, vorticity, temperature, dew point, relative humidity, wind, vertical velocity, freezing level, precipitation amount and type, sea level pressure, thickness, clouds, precipitable water, convective available potential energy (CAPE) and convective inhibition (CIN).
- b. Purpose – The high resolution model output will be used for operational forecasting and research. WFOs will use the model qualitatively to help refine phenomena related to terrain such as temperature, winds and orographically forced precipitation. This model will give some clues about how complex terrain can affect local weather. The web page is a convenient way for local customers to view the same meteorological forecast data as the local forecaster.
- c. Audience – The main audience is the NWS Offices and other government agencies, such as EPA, Local Air Resource Boards and the US Forest Service. Other users may include local media, the general public and private weather forecasting companies and researchers.
- d. Presentation Format – The WFO WRF NMM model output is displayable on a web page with static images in hourly or 3-hourly forecast time steps out to 24-120 hours, depending on element. The output is available from the following offices:

Monterey - <http://www.wrh.noaa.gov/mtr/mtrwrf.php>
Phoenix - <http://wrh.noaa.gov/psr/wrf>
Pocatello - <http://www.wrh.noaa.gov/pih/wrf/>
Sacramento - <http://www.wrh.noaa.gov/sto/sacwrf.php>
Salt Lake City - <http://www.wrh.noaa.gov/slc/projects/wrf/wrf.html>
San Diego - <http://www.wrh.noaa.gov/sgx/wrf>
- e. Example –

Surface Wind (barbs) & Gusts (image) (knots) valid 12Z19DEC2012



Part II – Technical Description

- a. Format and Science Basis – The WFO WRF NMM is controlled and run locally with WRF EMS software at the WFO. The model has configurations that can be modified to the local WFO CWA. An example configuration can be found in <http://www.wrh.noaa.gov/mtr/mtrwrfdoc.pdf>. The technical limitations of this product are inherent in the parameterizations of the mesoscale model. GEMPAK is used to create readily accessible, useable, and understandable GIF images from the model output to display on the webpage. Currently any Internet browser that opens gif images is all that is required. Java will be required to view the model data loops.
- b. Availability – The model is run four times a day. The latest web graphics are usually posted to the web page around 02Z, 08Z, 14Z, and 20Z.