National Digital Forecast Database (NDFD) Alaska Experimental Elements Product Description Document

February 20, 2014

Part I - Mission Connection

a. Description of Product - Under statute, the National Oceanic and Atmospheric Administration (NOAA) National Weather Service (NWS) is charged to collect data on climate, water, and weather, provide forecasts and warnings of severe weather in order to protect life and property, and create and disseminate forecasts and other weather information for the benefit of a wide range of weather sensitive businesses and activities.

By capitalizing on rapid advances in science and technology and infusing these advances into its operations, the NWS has taken steps to proactively respond to ever changing and growing demands of its customers and partners. The 2003 Fair Weather report, produced by the National Research Council, recommended making NWS data and products available in an Internet accessible digital form. The specific recommendation is as follows: "*Information held in digital databases should be based on widely recognized standards, formats, and metadata descriptions to ensure that data from different observing platforms, databases, and models can be integrated and used by all interested parties in the weather and climate enterprise*."

Since the Internet is now a principal means of communicating NWS forecasts, the NWS provides Internet access to operational and experimental forecasts of base and derived weather elements (e.g., Maximum Temperature, Sky Cover, Relative Humidity) through the National Digital Forecast Database (NDFD). NDFD contains a seamless mosaic of digital forecasts from NWS field offices working in collaboration with the National Centers for Environmental Prediction (NCEP). Additionally, the NWS makes available graphic forecast displays (http://weather.gov/forecasts/graphical/sectors/index.php) that are web-based presentations of digital forecast data originating from local Weather Forecast Office (WFO) digital databases and the NDFD server.

The most recent experimental digital datasets (and associated graphic forecast displays) integrated into NDFD are the following elements for Alaska: **Maximum Temperature, Minimum Temperature, 12-hour Probability of Precipitation, Wind Speed, Wind Direction, Significant Wave Height, Hazards, Weather, Temperature, Dew Point, Wind Gust, Sky Cover, Apparent Temperature, Relative Humidity, Quantitative Precipitation Forecast (QPF) and Snow Amount.**

b. Purpose – In support of the mission described in the ***National Weather Service Strategic Plan for FY2003 - FY 2008***, the NDFD is a "...national information database and infrastructure which can be used by other governmental agencies, the private sector, the public, and the global community." The NDFD is the primary means by which digital information will be made available to customers and partners. As part of this digital database, experimental Alaska information has been made available in response to growing user needs for planning purposes and critical safety decisions. Future digital datasets will continue to be developed in accordance with growing user needs.

c. Intended Audience – The current audience for the NDFD Alaska experimental elements includes large volume users of forecast information, the transportation and trucking industry, utilities, emergency managers, government agencies, academia, and recreational users. It is also for anyone else who wishes to decode and explore various potential applications of the NWS digital data; or simply view, post, or distribute the graphic images.

d. Presentation Method – Currently there are no NDFD Alaska elements available on an Alaska sector as depicted at the following URL: http://www.weather.gov/ndfd/coverage.htm for the CONUS. However, the experimental base data presented in GRIB, Edition 2 format is available (ftp://tgftp.nws.noaa.gov/SL.us008001/ST.expr/DF.gr2/DC.ndfd/AR.alaska/) and can be readily decoded for those who wish to create derived products from the forecast parameters/values contained within the NDFD. A user defined GRIB2 access method is also available. This service allows the user to provide latitude/longitude points for two corners and a weather element. A resulting GRIB2 message is built "on-the-fly" and downloaded by the user. For more information about User Defined GRIB2 access, please refer to the Products/Service Description Document at the following URL:

http://products.weather.gov/PDD/User_Defined_Grib2.pdf

In addition Alaska forecasts are presented as web-based graphic images. These images follow a standard format prescribed by the NWS to best meet the needs of its customers and partners. The regional mosaic for Alaska (which covers 6 predefined and slightly overlapping geographic sectors) can be accessed via a mouse click on the national mosaic which is located at the following URL:

http://www.weather.gov/forecasts/graphical/sectors/

Each individual sector can then be accessed by a mouse click on the regional mosaic.

e. Feedback Mechanism - We are always seeking to improve our products based on user feedback. Please submit your comments on these experimental elements by completing our brief experimental product survey during the Alaska experimental element comment period specified in Table 1 below. Comments may also be submitted by clicking on the "Survey/Comments" links on the experimental product web pages. For general questions regarding the National Digital Forecast Database, please email: ***nws.ndfd@noaa.gov***

Table 1. NDFD Alaska Experimental Gridded Forecast Elements Comment Period

Graphic Element	Comment Open Date	Comment Close Date
Maximum Temperature	9/06/2006	September 30, 2014
Minimum Temperature	9/06/2006	September 30, 2014
12-hour Probability of Precipitation	9/06/2006	September 30, 2014
Wind Speed	9/06/2006	September 30, 2014
Wind Direction	9/06/2006	September 30, 2014
Significant Wave Height	9/06/2006	September 30, 2014
Hazards	7/08/2008	September 30, 2014
Weather	7/08/2009	September 30, 2014
Temperature	7/08/2009	September 30, 2014
Dew Point	7/08/2009	September 30, 2014
Wind Gust	7/08/2009	September 30, 2014
Sky Cover	7/08/2009	September 30, 2014
Apparent Temperature	7/08/2009	September 30, 2014
Relative Humidity	7/08/2009	September 30, 2014
Quantitative Precipitation Forecast	7/08/2009	September 30, 2014
Snow Amount	7/08/2009	September 30, 2014

Technical questions regarding the NDFD Alaska Experimental Gridded Forecast Elements may be addressed to:

National Weather Service Headquarters ATTN: David Ruth, W/OST21 1325 E-W Highway, SSMC2 Silver Spring, MD 20910

Part II - Technical Description

a. Format & Science Basis - The NDFD forecast element definitions and technical information (e.g. temporal and spatial resolution of the graphics, and geographic coverage) may be found on the NDFD technical page at the following URL:

http://www.nws.noaa.gov/ndfd/technical.htm

b. Product Availability – The latest NDFD Alaska forecast elements have been made continuously available via file transfer protocol (ftp) or web browser. To access the Wind Gust forecast data, or for further availability and technical information (e.g., temporal and spatial resolutions, forecast projections, and geographic coverage) please visit the following URL:

http://www.weather.gov/ndfd/technical.htm

Alaska images may also be accessed from the NWS homepage, www.weather.gov, and

clicking on the “Graphical Forecasts” tab, or directly at the following URL:

http://weather.gov/forecasts/graphical/sectors/index.php

c. Additional Information –

(1) For more information on the NDFD, please refer to the NDFD Information web site at the following URL: http://www.nws.noaa.gov/ndfd/index.htm

(2) Experimental gridded elements are differentiated from operational elements by their file access locations. Graphic elements are differentiated from NWS operational elements by the “experimental” label found on the individual graphics.

(3) Experimental elements are evaluated on both objective (e.g., statistical and technical aspects), and subjective (e.g., internal and external feedback) criteria.