PRODUCT DESCRIPTION DOCUMENT

Probabilistic Tropical Cyclone Storm Surge Exceedance Products

Approved: //SIGNED// **Date: 3/25/2011**
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Probabilistic Tropical Cyclone Storm Surge Exceedance Products

Part I - Mission Connection

a. Product Description - The Probabilistic Tropical Cyclone Storm Surge Exceedance products consist of a series of exceedance probability graphics for the Gulf of Mexico and Atlantic coastal areas. The graphics indicate the probabilities of storm surge heights being exceeded. The suite of graphics range from 10 to 90 percent, at 10 percent intervals. The storm surge graphics are based upon an ensemble of Sea, Lake, and Overland Surge from Hurricanes (SLOSH) model runs using the National Hurricane Center (NHC) official advisory and accounts for track, size, and intensity errors based on historical errors. Additional information on the SLOSH model can be found at: http://www.nhc.noaa.gov/ssurge/ssurge_slosh.shtml.

b. Purpose – The product is intended to provide users with information which enhances their ability to make preparedness decisions specific to their own situations. Users have requested additional tropical cyclone probabilistic information, and the National Research Council's Fair Weather Report encourages the development of probabilistic products.

c. Audience – The emergency management community is the primary target audience. However, this product will also be widely used by other federal, state, and local government agencies; the media; maritime interests; and the general public.

d. Presentation Format – Graphics will be displayed on the internet as .png files at: http://www.weather.gov/mdl/psurge. GRIB2 and ESRI shape files can also be downloaded from the website.

Data will be provided on NOAAPORT in GRIB2 format.

Data will be provided to the National Digital Guidance Database in GRIB2 format.

e. Feedback Method

Technical questions may be addressed to:

National Weather Service
Attn: Arthur Taylor
W/OST25
Meteorological Development Laboratory
1325 East West Highway
Silver Spring, MD 20910
or e-mail to: arthur.taylor@noaa.gov

Policy questions may be addressed to:

National Weather Service
Attn: John F. Kuhn

W/OS21
Marine and Coastal Services Branch
1325 East West Highway
Silver Spring, MD 20910

or e-mail to: john.f.kuhn@noaa.gov

Part II - Technical Description

a. Format & Science Basis - The Probabilistic Tropical Cyclone Storm Surge Exceedance products are a statistical output from of an ensemble of SLOSH model runs. All ensemble members are based on the current NHC's tropical cyclone advisory. Ensemble members take into account historical error characteristics by varying input parameters such as forward speed, cross track location, radius of maximum wind, and hurricane intensity. For example, the 10 percent exceedance height is the storm surge height, above normal tide levels, such that there is a 10 percent chance of exceeding it.

b. Product Availability - The product is available whenever a hurricane watch or hurricane warning is in effect for any portion of the Gulf or Atlantic coasts of the continental United States. Updates to the product are produced one hour after the issuance of routine NHC tropical cyclone advisories (03, 09, 15, and 21 Coordinated Universal Time – UTC).

Static example of the product is available at: http://www.weather.gov/mdl/psurge.

c. Additional Information
A full description of other NWS Tropical Cyclone Weather Services Program Products is provided in NWSI 10-601, which is available on the Internet at:
http://www.nws.noaa.gov/directives/010/010.htm