

Experimental Enhanced Hazardous Weather Outlook Product Description Document (PDD)

Part 1 – Mission Connection

1. Product / Service Description:

The NWS core mission is to provide accurate and timely hazardous weather information for the protection of life and property. Although the textual Hazardous Weather Outlook (HWO) plays a significant role in supporting the NWS mission, effectively conveying hazardous weather information in a textual or narrative format can prove challenging to an increasingly diverse customer base.

The EHWO is a decision support service that supports preparedness and response efforts prior to and during hazardous weather. In conjunction with the textual HWO, the clear and concise Internet-based EHWO graphics provides decision makers with convenient access to potential weather hazard information by graphically depicting the risk of multiple weather hazards out to seven days in the future.

The Advanced Weather Interactive Processing System (AWIPS) Graphical Forecast Editor (GFE) produced EHWO packages multi-level color coded hazard graphics and text within a comprehensive web page suite. Further, weather hazards and thresholds are easily customized based on external customer needs for a particular office. Ultimately, workload is conserved through the use of existing local and national guidance GFE grids such as the Storm Prediction Center and the Hydrometeorological Prediction Centers, supporting a seamless office to office presentation.

2. Purpose/Intended Use:

The EHWO is designed to provide decision makers with convenient access to the expected type, severity and coverage of hazardous weather events. The EHWO and its integrated product suite can be utilized as a decision support tool that aids preparedness and response efforts both before and during hazardous weather events. The graphical approach to the EHWO in conjunction with the textual HWO product will provide end users with a much clearer picture of current and expected hazards.

3. Audience:

This service is intended to provide critical weather information to a wide range of decision makers including emergency managers, media, and the general public. Any person with Internet access will have the ability to utilize this service.

The EWHO also serves internal NWS operations by enhancing situational awareness and ensuring service consistency. The integration of GFE generated forecast grids, national guidance, as well as local warning and advisory criteria results in a system that readily alerts forecasters when critical thresholds are being approached or exceeded. The inclusion of national guidance and local criteria into the generation of the EHWO graphics also promotes product integrity and continuity of services.

4. Presentation Format:

EHWO graphics are generated within GFE. The plan view maps (one for each valid hazard) are uploaded to the WFO web site and automatically ingested into a comprehensive web page consisting of integrated graphics, text, and links to supporting products including threat level definitions, safety information,

packaged self-brief services, etc. Offices may choose to depict threat levels for particular hazards and time periods in an all-encompassing situational awareness web display. For example, a single web page may display “buttons” depicting the maximum CWA threat levels for each hazard out to seven days. Offices may link to the EHWO graphics in a variety of ways. This may include the use of news story headlines. WFOs may then choose to customize the format (compliant with 10-517 and supplements) and terminology of the textual HWO to match the risk levels and criteria depicted in the EHWO.

5. Feedback Method:

Continuous feedback is available via a web page e-mail link to the developers. User feedback from emergency managers, other government agencies, local media, and the public provide valuable suggestions that have been integrated into the product suite. Continued feedback from users will be vital in ensuring that the EHWO presentation provides decision makers with the information they desire.

The extended comment period will run from April 30, 2015 through September 30, 2015.

At the end of the comment period, if feedback is favorable, the product will be evaluated for national availability.

Technical or general comments for the EHWO product may be addressed to:

National Weather Service

Attn: Jason Schaumann and Andy Foster

5805 W. HWY EE Springfield, MO 65802

or e-mail comments to: Jason.Schaumann@noaa.gov, Andy.Foster@noaa.gov

Part 2 – Technical

1. Format and Science Basis:

The EHWO is comprised of a series of plan view maps depicting risk levels for multiple hazards out to seven days in the future. Offices may also choose to include additional maps to aid in decision support, such as a spotter outlook graphic. Offices may also utilize alternative platforms such as GIS to integrate additional overlays such as topography, highways and lakes, to better define potential threat areas.

EHWO elements will be initialized automatically utilizing model, NCEP gridded output and existing office GFE grids thus promoting a consistent message. Little to no additional workload is then required through the activation of a single procedure containing several smart tools that further refines each grid-based graphic. Offices may elect to manually edit EHWO graphics that cannot be realistically initialized from other GFE elements, such as a Spotter Outlook. Offices may also elect to manually alter those grids initialized from national agencies if they feel local value may be added. This initialization approach will drastically reduce the amount of time necessary to produce the array of hazard graphics.

Risk levels for each hazard should be defined based on factors such as likelihood of occurrence, frequency of occurrence (climatology), magnitude, and the overall threat to life, property, and economic interests. Offices should align their definitions of specific risk levels to regional and locally defined advisory and warning criteria, as well as guidance from national agencies. Doing so will promote integrity amongst products and services, ranging from the EHWO to long-fused products as well as consistency of services between neighboring offices.

2. Availability:

This service will be available 24 hours a day and 7 days a week.

Real-time access is available for the following Central Region offices:

- WFO Springfield, MO (SGF) - <http://www.weather.gov/sgf/ehwo>
- WFO Marquette, MI (MQT) - <http://www.weather.gov/mqt/ehwo>
- WFO Hastings, NE (GID) - <http://www.weather.gov/gid/ehwo>
- WFO Pleasant Hill, MO (EAX) – <http://www.weather.gov/eax/ehwo>
- WFO Sioux Falls SD (FSD) – <http://www.weather.gov/fsd/ehwo>
- WFO Dodge City KS (DDC) - <http://www.weather.gov/ddc/ehwo>
- WFO Milwaukee WI (MKX) - <http://www.weather.gov/mkx/ehwo>
- WFO Twin Cities MN (MPX) - <http://www.weather.gov/mpx/hwo>

Development is underway to provide real-time access at 8 Eastern Region offices:

- WFO Caribou, ME (CAR)
- WFO Burlington, VT (BTV)
- WFO Boston, MA (BOX)
- WFO New York, NY (OKX)
- WFO Pittsburgh, PA (PBZ)
- WFO Newport/Morehead City, NC (MHX)
- WFO Columbia, SC (CAE)
- WFO Blacksburg, VA (RNK)

3. Additional Information:

(a) Working documentation for the WFO SGF EHWO can be accessed from the following link:
https://products.weather.gov/PDD/SGF_EHWO_User_Guide.pdf

(b) WFO SGF would be happy to assist other offices in installing the EHWO system. This would include supplying GFE and web-based code, documentation, and the staff training curriculum. Requests for assistance should be made to:

National Weather Service

Attn: Jason Schaumann and Andy Foster

5805 W. HWY EE Springfield, MO 65802

or e-mail comments to: Jason.Schaumann@noaa.gov, Andy.Foster@noaa.gov

Example:

Enhanced Hazardous Weather Outlook - Springfield, MO

[Weather.gov](#) > [Springfield, MO](#) > Enhanced Hazardous Weather Outlook - Springfield, MO

Springfield, MO
Weather Forecast Office

[Current Hazards](#) [Current Conditions](#) [Radar](#) [Forecasts](#) [Rivers and Lakes](#) [Climate and Past Weather](#) [Local Information](#)

Risk Level - Legend									
None		Limited		Elevated		Significant		Extreme	

Click tabs to switch between Graphical and Text:

[Graphical HWO](#) [View HWO Text](#)

Product Suite Last Updated: Friday April 24, 2015 4:44 AM

Click on risk level to display risk map and proper legend

Risk Level - Legend				Hail Risk - Today/Tonight				
Risk	Level	Risk	Level	NONE	LIMITED	ELEVATED	SIGNIFI...	EXTREME
Tornado		Fog		<p>Hail Potential for Fri Apr 24 2015</p>				
Hail		Non - Thunderstorm Winds						
Thunderstorm Wind Gusts		Excessive Heat						
Flooding		Snow and Sleet						
Lightning		Ice Accumulation						
Severe Thunderstorm Arrival Tool		Frost and Freeze						
Fire Weather		Excessive Cold						

National Weather Service WFO Springfield MO

Risk	Saturday to Thursday					
	Sat	Sun	Mon	Tue	Wed	Thu
	Level					
Severe Thunderstorms						
Lightning						
Flooding						
Fire Weather						
Fog						
Non - Thunderstorm Winds						
Excessive Heat						
Snow and Sleet						
Ice Accumulation						
Frost and Freeze						
Excessive Cold						

Risk Level	Definition
None	No risk of hail.
Limited	Risk of sub-severe hail (less than 1") or Probability of severe hail (1" or greater) within 25 miles of a point: less than 15%
Elevated	Probability of severe hail (1" or greater) within 25 miles of a point: Equal to or greater than 15%
Significant	Probability of severe hail (1" or greater) within 25 miles of a point: Equal to or greater than 45%
Extreme	Probability of severe hail (1" or greater) within 25 miles of a point: Equal to or greater than 60%