Product/Service Description Document
Experimental Probabilistic Snowfall Products

WFO Baltimore/Washington (LWX)
WFO Mt. Holly, NJ (PHI)
WFO New York, NY (OKX)
WFO Taunton, MA (BOX)

Part I - Mission Connection

a. Product/Service Description – Experimental probabilistic internet-based snowfall graphics indicating the minimum, most likely and maximum snowfall scenarios; the probability of various snowfall thresholds such as ≥ 0.1″, 1″, 2″, 4″, 6″, 8″, 12″, 18″; and a table showing the probability of various ranges of snow occurring.

b. Product Type – Experimental

c. Purpose - The purpose of these experimental probabilistic internet-based snowfall products is to provide customers and partners along the Boston to Washington, DC corridor a range of snowfall possibilities, better communicate forecast uncertainties and enhance Decision Support Services (DSS) during winter weather events. The probabilistic snowfall products will complement existing NWS deterministic snowfall graphics, indicating areas of low and/or high uncertainty. These four offices will also produce 10% and 90% exceedance percentile graphics represented as the “Minimum Case” and “Maximum Case” scenarios. Winter weather coordination calls with partners and customers frequently involve requests regarding forecast uncertainty, forecaster confidence, and worst/best case scenarios. These experimental probabilistic snowfall products will convey this critical information and enhance DSS. These probabilistic products were initially introduced to the LWX emergency management community during the winter of 2012/2013 and their feedback was overwhelmingly favorable. Eastern Region wants to expand the LWX template up the east coast to improve services across the most densely populated part of the United States.

d. Audience - The target audiences for this experimental product are LWX, PHI, OKX and BOX customers and partners with a mission focused on DSS, including but not limited to emergency managers, state and local officials including School Superintendents, DOT, media, and other high-end users in the general public.

e. Presentation Format – The format for the first probabilistic snowfall graphic is: minimum/most likely/maximum case scenario; the second graphic shows snowfall threshold amounts in whole inches with color curve probabilities from zero to 100 percent; the third product is a text-based range probability table for specific locations. Please see examples in Part II.

f. Feedback Method – Feedback will be gathered from representatives from federal, state, county, and local government agencies and broadcast media during scheduled customer review meetings.

Feedback may be provided by electronic survey online at:

www.nws.noaa.gov/survey/nws-survey.php?code=PSTSP

Customer comments or questions on the Probabilistic Snowfall products may be addressed to:

Rick Watling
National Weather Service (NWS) Eastern Region HQ
E-mail: Richard.Watling@noaa.gov
Phone: 631-244-0123

Chris Strong
NWS Weather Forecast Office, Baltimore/Washington
E-mail: Christopher.Strong@noaa.gov
Phone: 703-996-2223

Joe Miketta
NWS Weather Forecast Office, Mt. Holly, NJ
E-mail: Joseph.Miketta@noaa.gov
Phone: 609-262-6602

Gary Conte
NWS Weather Forecast Office, New York, NY
E-mail: Gary.Conte@noaa.gov
Phone: 631-924-0593 x 223

Glenn Field
NWS Weather Forecast Office, Taunton, MA
E-mail: Glenn.Field@noaa.gov
Phone: 508-823-1900 x 223

The customer comment period runs from Dec 1, 2014 through April 30, 2014.

Part II – Technical Description

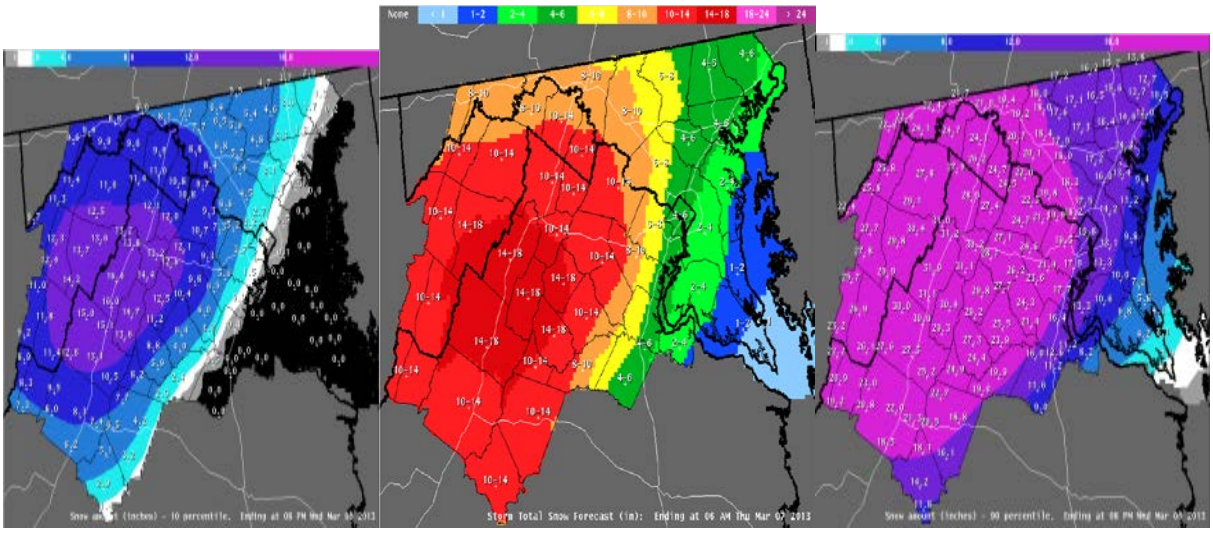
a. Format and Science Basis – The format is described in Part I under "Presentation Format." As for the scientific basis, a 58 member multi-model ensemble will serve as the basis for computing the 10th and 90th percentile boundaries of expected accumulation, with forecasters adjusting the most likely snowfall amount based on experience. A probability density function (PDF) will be created automatically based on these three reference points, with exceedance probabilities falling out of the PDF.

b. Availability – These products will be available at all times during the winter season, except once accumulating snowfall from a storm has begun. Probability charts will restart once accumulating snow from that storm has ended.

Probabilistic Snowfall Product examples:

1. The graphic below depicts the minimum, most likely and maximum snowfall totals in the LWX county warning area at 3:30 pm, Thursday, March 7, 2013.

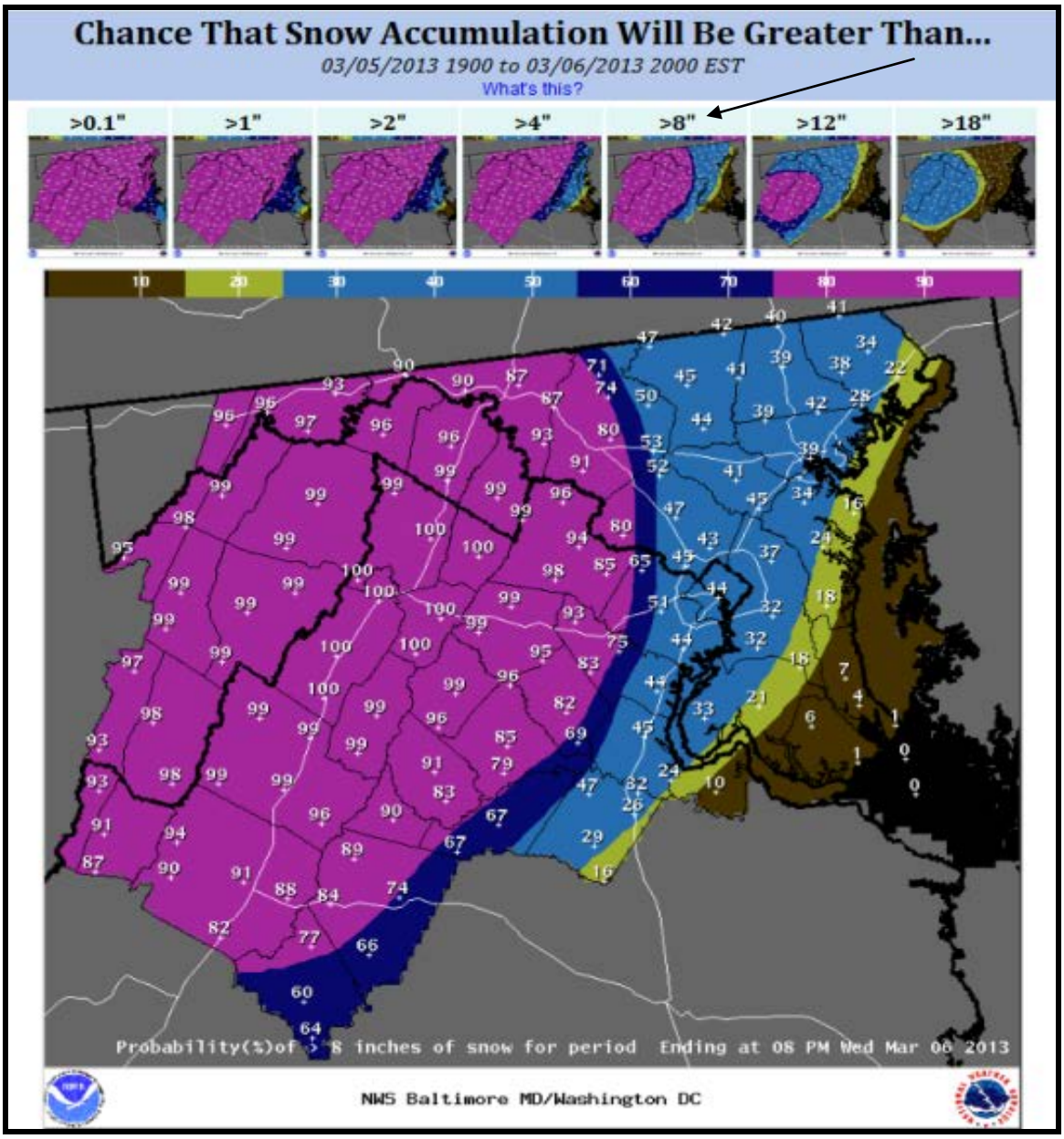
MINIMUM **MOST LIKELY** **MAXIMUM**



Expect at least this much **Official NWS Forecast** **Potential for this much**

A wide range between minimum and maximum snow amounts indicates large uncertainty in the forecast. Conversely, a narrow range indicates high confidence in the forecast.

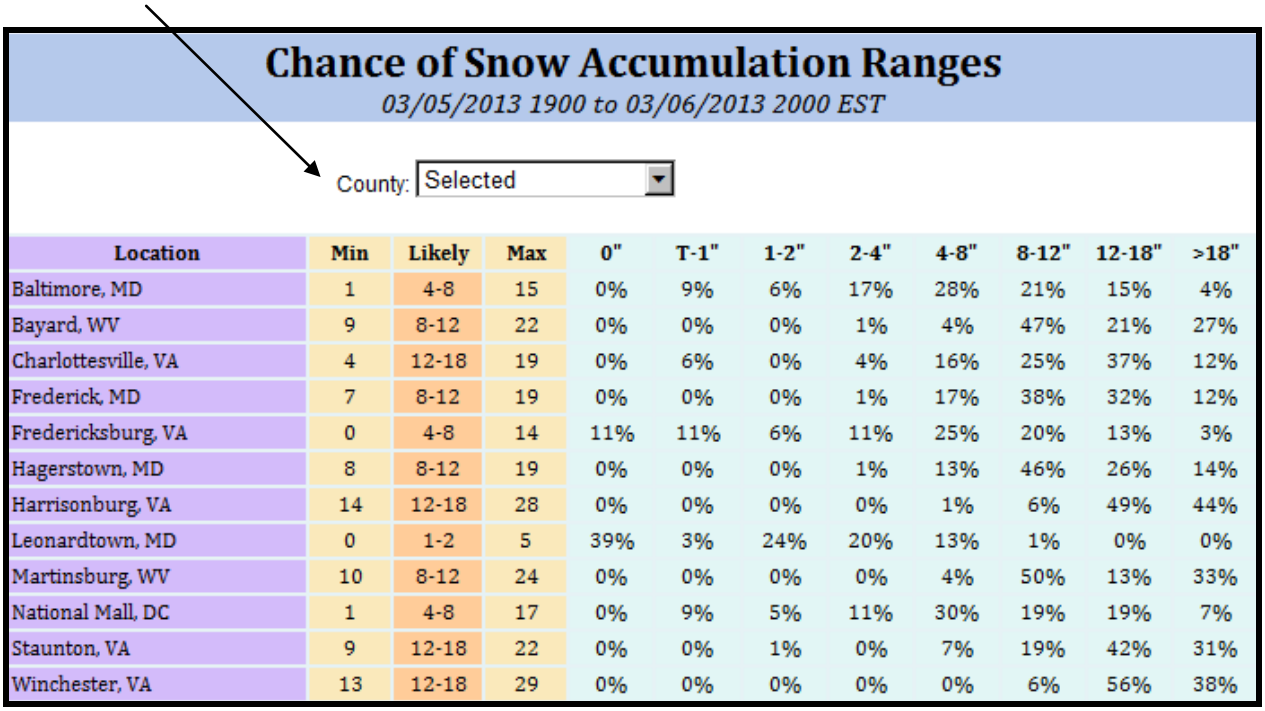
2. The next graphic shows the probabilities of exceeding certain snowfall threshold amounts in whole inches with color curve probabilities from zero to 100 percent.



In this example, clicking on the thumbnail picture with the > 8” threshold at the top displays an enlarged image of that frame below, for the period ending at 8 PM Wed Mar 6, 2013.

3. The final product is a text-based range probability table:

Select County:



Chance of Snow Accumulation Ranges

03/05/2013 1900 to 03/06/2013 2000 EST

County: Selected

Location	Min	Likely	Max	0"	T-1"	1-2"	2-4"	4-8"	8-12"	12-18"	>18"
Baltimore, MD	1	4-8	15	0%	9%	6%	17%	28%	21%	15%	4%
Bayard, WV	9	8-12	22	0%	0%	0%	1%	4%	47%	21%	27%
Charlottesville, VA	4	12-18	19	0%	6%	0%	4%	16%	25%	37%	12%
Frederick, MD	7	8-12	19	0%	0%	0%	1%	17%	38%	32%	12%
Fredericksburg, VA	0	4-8	14	11%	11%	6%	11%	25%	20%	13%	3%
Hagerstown, MD	8	8-12	19	0%	0%	0%	1%	13%	46%	26%	14%
Harrisonburg, VA	14	12-18	28	0%	0%	0%	0%	1%	6%	49%	44%
Leonardtown, MD	0	1-2	5	39%	3%	24%	20%	13%	1%	0%	0%
Martinsburg, WV	10	8-12	24	0%	0%	0%	0%	4%	50%	13%	33%
National Mall, DC	1	4-8	17	0%	9%	5%	11%	30%	19%	19%	7%
Staunton, VA	9	12-18	22	0%	0%	1%	0%	7%	19%	42%	31%
Winchester, VA	13	12-18	29	0%	0%	0%	0%	0%	6%	56%	38%

Selecting a county displays a list of specific cities within that county and shows the probability of snow amounts falling within a particular range for each location.