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Public Information Statement 17-22  
National Weather Service Headquarters Silver Spring MD  
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To:           Subscribers:  
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              Other NWS Partners and NWS Employees

From:         Allison Allen  
              Chief, Marine, Tropical and Tsunami Services Branch

Subject:      Soliciting comments on an experimental Arrival of  
              Tropical-Storm-Force Winds Graphic through  
              November 30, 2017

Effective May 15, 2017 and continuing through November 30, 2017, NWS is seeking user feedback on an experimental Arrival of Tropical-Storm-Force Winds Graphic issued by the National Hurricane Center (NHC).

The anticipated arrival of sustained tropical-storm-force winds from a tropical cyclone is a critical threshold for coastal communities. For example, emergency managers use this information to help determine when to begin and complete coastal evacuations, while members of the public need to know when to prepare their homes or businesses. Once sustained tropical-storm-force winds begin, such preparations usually become too dangerous or difficult.

Historically, many decision makers have inferred the arrival of sustained tropical-storm-force winds from NHC products deterministically, without accounting for tropical cyclone track or size uncertainty. The risk in not factoring in these elements of uncertainty is that communities may have less time to prepare if a tropical cyclone speeds up or increases in size beyond NHC's initial forecasts.

To better meet users' needs, NHC has developed a set of prototype graphics that depict when sustained tropical-storm-force winds from an approaching tropical cyclone could arrive at individual locations. The prototype maps were developed and tested using social science techniques, including one-on-one telephone interviews, focus groups, and surveys with emergency managers, broadcast meteorologists, and NWS meteorologists to gather opinions on the idea, content, and design of the products.

NHC creates the prototype timing graphics using the same Monte Carlo wind speed probability model currently used to determine

the risk of tropical-storm- and hurricane-force winds at individual locations. This model constructs 1,000 plausible scenarios using the official NHC tropical cyclone forecast and its historical errors. Additional information on this product and the underlying technique are online at:

[http://www.nhc.noaa.gov/about/pdf/About\\_Windspeed\\_Probabilities.pdf](http://www.nhc.noaa.gov/about/pdf/About_Windspeed_Probabilities.pdf)

NHC will have two thresholds for producing the experimental Arrival of Tropical-Storm-Force Winds Graphic and posting it on the NHC website for all tropical cyclones, post-tropical cyclones, and potential tropical cyclones for which NHC is issuing advisories:

1. Earliest Reasonable Arrival Time: This graphic identifies the time window that users at individual locations can safely assume will be free from tropical-storm-force winds. Specifically, this is the time before which there is no more than a 1-in-10 (10 percent) chance of seeing the onset of sustained tropical-storm-force winds. This is when preparations should ideally be completed for those with a low tolerance for risk.
2. Most Likely Arrival Time: This graphic identifies the time before or after which the onset of tropical-storm-force winds is equally likely. This graphic would be more appropriate for users who are willing to risk not having completed all their preparations before the storm arrives.

Timing information will only be available for locations that have at least a 5 percent chance of experiencing sustained tropical-storm-force winds during the next 5 days.

Each of these thresholds will also be available overlaid on top of the cumulative 5-day probability of tropical-storm-force winds, providing a single combined depiction of the likelihood of tropical-storm-force winds at individual locations, along with their possible or likely arrival times.

The graphics will be updated with each new NHC full advisory package. Arrival times will be depicted with higher temporal resolution (i.e., in 6-hour intervals) during the first day of the 5-day forecast, increasing to lower temporal resolution (i.e., in 12-hour intervals) after the first day of the 5-day forecast period. Arrival times will be referenced to 8 AM and 8 PM local time, using a constant time zone that corresponds to where the cyclone is located at the time of the advisory. For example, if a cyclone is located in the Eastern Time Zone at the time of an advisory but is forecast to move into the Central Time Zone during the 5-day forecast period; all times on the graphic will be referenced to the Eastern Time Zone.

When NHC is issuing advisories, the default graphic will be

available as a clickable thumbnail within the storm window box for active cyclones on the NHC main webpage ([www.nhc.noaa.gov](http://www.nhc.noaa.gov)). After clicking on the thumbnail, users can select any of the four options.

Additional information and map examples are online at:

[www.hurricanes.gov/experimental/arrivaltimes/](http://www.hurricanes.gov/experimental/arrivaltimes/)

Users are encouraged to provide feedback on this experimental product by using the brief survey and comment form available online at:

<http://www.nws.noaa.gov/survey/nws-survey.php?code=ARRIVALTSFW>

For technical questions regarding this notice, please contact:

James Franklin  
Chief, Hurricane Specialist Unit  
National Hurricane Center  
Miami, FL 33165  
Telephone: 305-229-4475  
Email: [James.Franklin@noaa.gov](mailto:James.Franklin@noaa.gov)

For policy questions regarding this notice, please contact:

Jessica Schauer  
NWS Marine, Tropical and Tsunami Services Branch  
Miami, FL 33165  
Telephone: 305-229-4476  
Email: [Jessica.Schauer@noaa.gov](mailto:Jessica.Schauer@noaa.gov)

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