Bi-Weekly Teleconference Summary

The first HFIP–Biweekly teleconference in October 2017 was held 2:00 PM–3:00 PM ET Wednesday October 4th online from the NWS Headquarters OSTI, Silver Spring, MD. Following roll call (see back for list of participants), the speaker, Dr. Shane Forsythe-Newell (HFIP), welcomed about 26 members onboard then along with Gopalakrishnan Sundararaman (AOML/HRD) sharing opening remarks thanking everyone present for their participation and noting the purpose of the meeting is to deliver any HFIP Program Office/RDHPCS announcements and to receive updates/input from principal investigators/team leads regarding the status of their HFIP-funded projects and to address issues, if any.

Introduction and Announcements:

The first part of this meeting consisted of announcements from the HFIP Program Office related to letting all PI's and POCs for all RT DEMO Projects know that they need to report any update or issues to the HFIP Program Office. Users were reminded they should open a help ticket if they are having an issue they are unable to resolve by emailing "rdhpcs.jet.help@noaa.gov" and use the preface "HFIP RT -" plus title for issue, in the Subject line as this ensures the issue is tracked through the help system. Also, please release any unused reserved allocations back to the system on a daily basis. The second part of the meeting was the introduction of Jennifer Sprague, NWS Office of Assistant Administrator (OASST), who was the scheduled speaker.

Presentation by Jennifer Sprague on Social Science:

The speaker began with a brief history of NOAA contractors, the Eastern Research Group (ERG), that have done a lot of work for us over the past 4-5 years on the HFIP and hurricane social science work. After adding that "finalized reports" will be made beginning with statistical view of in-depth interviews with a limited number of experts' experience using products associated with TCs' Hermine, Julia, and Mathew. Resultant findings for areas covered for these interviews were: National, Florida, New Jersey, and Virginia were presented. Examples of products discussed were the Potential Storm Surge Flooding, Prototype Storm Surge Watch/Warning, and arrival of tropical storm force winds (ATSFW) maps. It was noted by the speaker that the Storm Surge Watch/Warning graphic needed to have more testing and refinement with additional storms and the public before a formal assessment can be made. Of those surveyed many supported

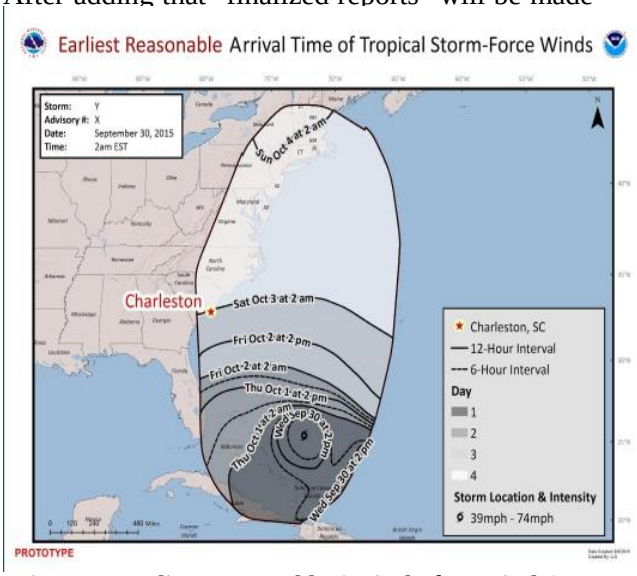


Figure 1. Earliest Reasonable Arrival of Tropical Storm Force Winds (ATSFW) and wind speed probabilities. This product was slightly preferred over the same product with no color of those surveyed.

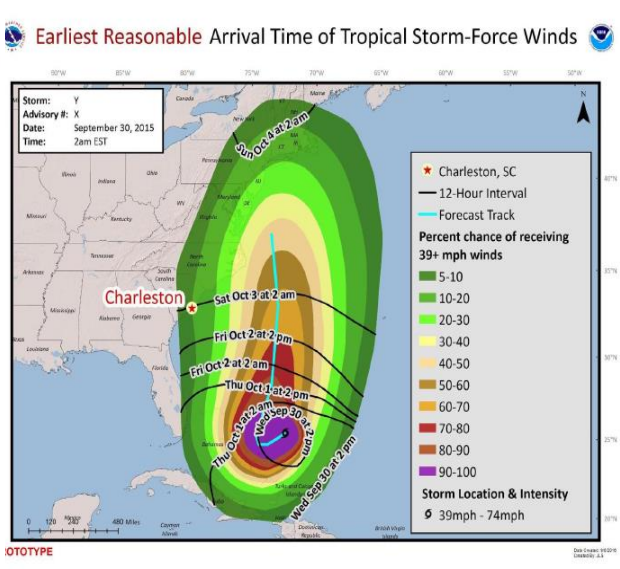
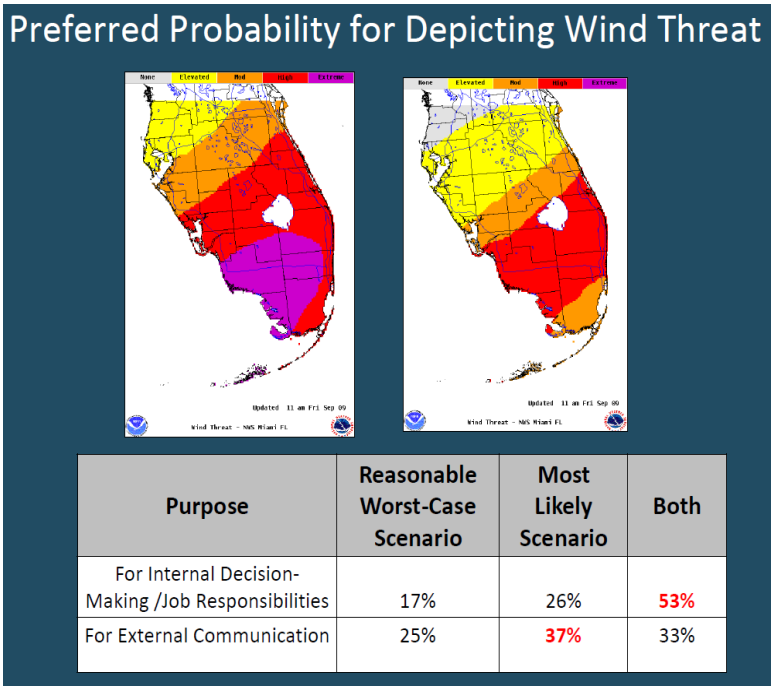


Figure 2. Earliest Reasonable Arrival of Tropical Storm Force Winds (ATSFW) and wind speed probabilities. Over 50% of those surveyed believed this product would be very useful. 89% noted they frequently/ always use current wind speed probabilities. 91% of those surveyed thought NHC should produce this product with more description of the map and the option to toggle information on/off.

continuing to issue watches/warnings and producing potential SS flooding maps for storms as this fills an information gap, especially for higher impact storms. The speaker added that there is still much confusion about terms "Extra Tropical (ET) and "Post Tropical (PT) terminology used to the public. The speaker moved on to social media used during TC Hermine, i.e., tweets related to storm surge maps noting there were 1,122 tweets directly relating to TC Hermine and storm surge for the time period between 8/28/2017-9/06/2017. The breakdown of tweets consisted of 189 (17%) linked to NHC's surge maps and 25 tweets were prominent voices with 10K plus followers. The ATSFW product which covered the Gulf and southeastern coastal states had an online response rate of 119 (18%) of those surveyed via e-mail.

HFIP Social Science Research[1]. Slides from research results were shown via *GoToMeeting*, and also made available to all 32 participants via HFIP's anonymous FTP temporary link for those who might encounter a problem using *Go-To-Meeting*. The presenter stated that 659 people were asked to participate in a survey via e-mail and 119 responded online (response rate of 18% and a completion rate of about 72%). Actual states surveyed were AL, FL, GA, LA, MS, MS and LA, NC, PR, SC, USVI, VA, not listed. Most responses came from not listed, FL and TX, in that order. Least responses came from GA, MS, MS and AL, and PR. No responses came from the US Virgin islands. The favorite product version of those surveyed is shown in Fig. 1. About 75% of those surveyed preferred use of specific times (vs. general times) and over 80% preferred placement of times on the borders (vs. the centers of time segments). There was a slight preference for using shades of gray (vs. no color). Combining ATSFW with wind speed probability and forecast storm track is illustrated in Fig. 2, where more than 50% of both internal and external user samples believed this product would be very useful. Of those surveyed, about 98% indicated they would always or frequently use these products for internal job responsibilities and decision-making and about 88% noted they would always or frequently use this products for external communication. There was strong support of those surveyed for using the Wind Speed Probabilities and Track Information Product (Fig. 2).



Purpose	Reasonable Worst-Case Scenario	Most Likely Scenario	Both
For Internal Decision-Making /Job Responsibilities	17%	26%	53%
For External Communication	25%	37%	33%

Figure 3. Preferred Probability for Depicting Wind Threat. Of those surveyed, 12% more people preferred seeing potential impacts from high wind threat. Using both scenarios confused external communications.

Phase 2 of this project consists of three milestones: 1) Develop an online survey to test product prototypes with the public, 2) Collect and analyze responses and develop recommendations, and 3) Deliver a final presentation/ report on the findings and recommendations.

Preliminary survey findings indicated that both Threat labels and associated wind values (wind speeds in miles per hour) and/or surge values (in feet above ground) should be used For example, "Extreme Threat" and 110+mph and/or 9 ft.$^{+}$ should be used together. Other examples cited were: "High Threat/Significant Impact" equating to 74-110 mph and/or 6 Ft.$^{+}$ surge. Also "Moderate Threat/Considerable Impact"

[1] J. Sprague, Rappaport, E., Rhome, J., et al (2017). *HFIP Social science research*. Presentation by J. Sprague, NWS/OASST, at the Hurricane Forecast Improvement Project HFIP-Biweekly Teleconference, 04 October 2017, NWS HQ, Silver Spring, MD.

corresponded to 58-73 mph and/or 3 ft.$^{+}$ surge. Other threat levels grouped together were a 39-57 mph category corresponding to "Elevated, slight, low and Minor Threats" associated with limited impact and storm surge rising about 1 foot above ground level. It was concluded that further survey analysis is needed along with refinement and testing of SS and ATSFW map products. Also determination of the best approach for communicating extra tropical (ET) storm surge threat associated with transitional storms is required. The HTI website design needs to be re-thought using an agile workflow approach and ongoing user testing. Additionally, more in-depth analysis needs to be conducted of social media during future events. There is a need for physical & social scientists to use process resolving the difference between preferences (Fig. 3).

Closing Remarks:

It was noted the presentation and interaction by participants was good by Dr. Gopal Sundararaman. Dr. Shane Forsythe-Newell followed up by announcing the next meeting date time, thanked everyone, and adjourned the meeting.

Announcements:

- Tuesday, November 07, 2017 there will be a *closed HFIP Strategic Plan Writing Team Meeting* supporting the new HFIP Strategic Plan that is due to Congress April 20, 2018. The first kick-off meeting will be October 11th and 12th in Miami, Florida. It was noted by Sheema Lett that following some offline discussion with NHC, the agenda would be posted on the HFIP Website. Additionally, a full-page agenda will be posted within 2-days.
- The 2016 HFIP Annual Report was provided by Dr. Shane Newell that posted to the HFIP website.
- The AMS will hold their 97th Annual Meeting in Seattle January 22-26, 2018.

Discussion:

Jennifer noted to Shane that she desired to speak again to this group next November following completion of a final report on phase 2 findings and recommendations, especially related to ATSFW products. Frank marks noted that NHC is already putting out the "Time of Arrival of Force Winds" graphics on the NHC website and that NHC uses this product to determine when to close down and further added that product reviews indicated it was great. There was also some general discussion between the speaker, Frank Marks and Gina Galo about focus groups and their perceptions of ATSFW related products being useful with emphasis placed on the timing of risk and product trust. Surge product timing, flash flooding, and winds were discussed between Frank Marks and the speaker relating to evacuation issues. It was noted storm-surge products are not available to the Virgin Islands and Puerto Rico. Timing related to onshore/offshore flow was especially noted by Frank Marks to the speaker.

Next Meeting time: 2:00 PM – 3:00 PM Wednesday, 18 October 2017

- Shane will send out an invite and a reminder. Following roll-call and any announcements from the HFIP Program Office, a round table discussion with project updates Team Leads and principal investigators is planned.

Participants (32):

Andrew Penny (NHC), Bin Liu (EMC), Bryce Tyner (FIU), Chanh Kieu (Indiana Univ.), Chris Rozoff (UCAR), Daniel Melendez, Edward Mifflin (HFIP/PO), Evan Kalina (GSD), Frank Marks (AOML), Gina Galo (NWS/OSTI), Gopal Sundararaman (AOML/HRD), Gus Alaka (AOML/HRD), Hyun-Sook Kim (EMC), James Franklin (NHC), Jennifer Sprague (NWS/OPPSD), Jun Zhang (AOML/HRD), Kate Musgrove (CO State Univ.), Kathryn Newman (DTC), Kevin Kelleher (DTC), Lin Zhu (EMC), Mark DeMaria (NHC), Morris Bender (GFDL), Nysheema Lett (HFIP/PO), Paula McCaslin (GSD), Ryan Torn (SUNY), Sergey Vinogradov (CSDL), Sergio Abarca (EMC), Shane Forsythe-Newell (HFIP/PO), Sue Chen (NRL), Tim Marchok (GFDL), William Lewis (Univ. of WI), and Xuejin Zhang (Univ. of Miami).