Ideas for New NHC Tropical Cyclone Products and Services in the Next 3-10 Years

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Background

• For the past several years, NHC’s focus has been on implementation of the Storm Surge Watch/Warning, as well as the addition of Post-Tropical and Potential Tropical Cyclone advisories

• What should be the next advances in NHC’s tropical cyclone products and services over the next 3 to 10 years?

• We began by collecting ideas from Hurricane Specialist Unite and then from the rest of the NHC staff

• We’ll be sharing those ideas today and asking for additional feedback and comments
Potential External Product and Service Enhancements

• Three main categories:
  1. Forecasts/Warnings
  2. Graphics
  3. Communication

• Beyond making more accurate forecasts

• Separate list of new/improved techniques for the hurricane forecasters
Potential Product Enhancements
Forecasts/Warnings

• Dynamic track uncertainty cone based on model spread and synoptic situation instead of climatological errors
• Replace cone graphic with a more hazard-based product

• Intensity forecast cone and/or landfall intensity probability information
Potential Product Enhancements
Forecasts/Warnings

• Day 6-7 track and intensity forecasts

• Intermediate tropical cyclone forecast points beyond 48 h

• Extend real-time storm surge guidance availability to 72 h prior to landfall
  • More actionable time period for many evacuation decisions and other preparedness actions
Potential Product Enhancements
Forecasts/Warnings

• 7-day genesis forecasts
  • Perhaps initially only make 6-7 day forecasts for tropical storms

• Surface wind analysis and forecast (grids?) from Hurricane Specialist Unit

• New product or extension of an existing product that provides a bulk measure of forecast uncertainty
  • Could start with track, but later be extended to include intensity and maybe wind structure
Potential Product Enhancements

Graphics

- Show all Tropical Storm/Hurricane/Storm Surge watches/warnings for the NHC website and briefings

- Graphical representation of all hurricanes hazards, including rip current threat
Potential Product Enhancements

• Display storm surge forecast inundation values included in the public advisory
• Improve communication of inland flood threat through new graphics or probabilistic products from Weather Prediction Center
  • Storm-centered excessive rainfall outlook graphic will be on NHC website in 2018
Reformatting the Tropical Cyclone Forecast/Advisory (TCM) product to a matrix or data table and removing the watch/warning information

- Some reformatting will probably be necessary when additional forecast points are added (60-h and/or day 6/7)
- Easier to add new parameters (e.g., probabilistic information)
- Need a larger discussion of what tropical cyclone information the marine user community needs in the Tropical Cyclone Forecast/Advisory or perhaps another product for marine users
Potential Product Enhancements
Communication

- Compiling post-storm data that currently go into Tropical Cyclone Report tables into a GIS database that could become part of the permanent archive from the storm, and that users could download

- Audio/Video Tropical Cyclone Discussions (“TCD”) and/or briefings
Externally Contributed Ideas/Feedback

• Issue Potential Tropical Cyclone (PTC) advisories prior to the watch timeframe

• Information on time of departure of tropical storm winds
  • Concern about giving public false sense of safety if other hazards still ongoing

• EMs interested in 6-7 day forecasts as a planning tool even if large uncertainty
What’s Next?

- What are highest priorities given limited resources?
- Collected feedback and additional ideas in meetings with customers and partners during the past few months
- Prioritize items, determine resources needed, and develop timelines
  - How does this work in current NWS governance structure?
- Interact with users to determine details
- Involve social science for any changes or additions to public products (could be folded into new HFIP effort to examine entire NWS TC product suite)