

FACETS

Forecasting A Continuum of Environmental Threats

Kodi Berry

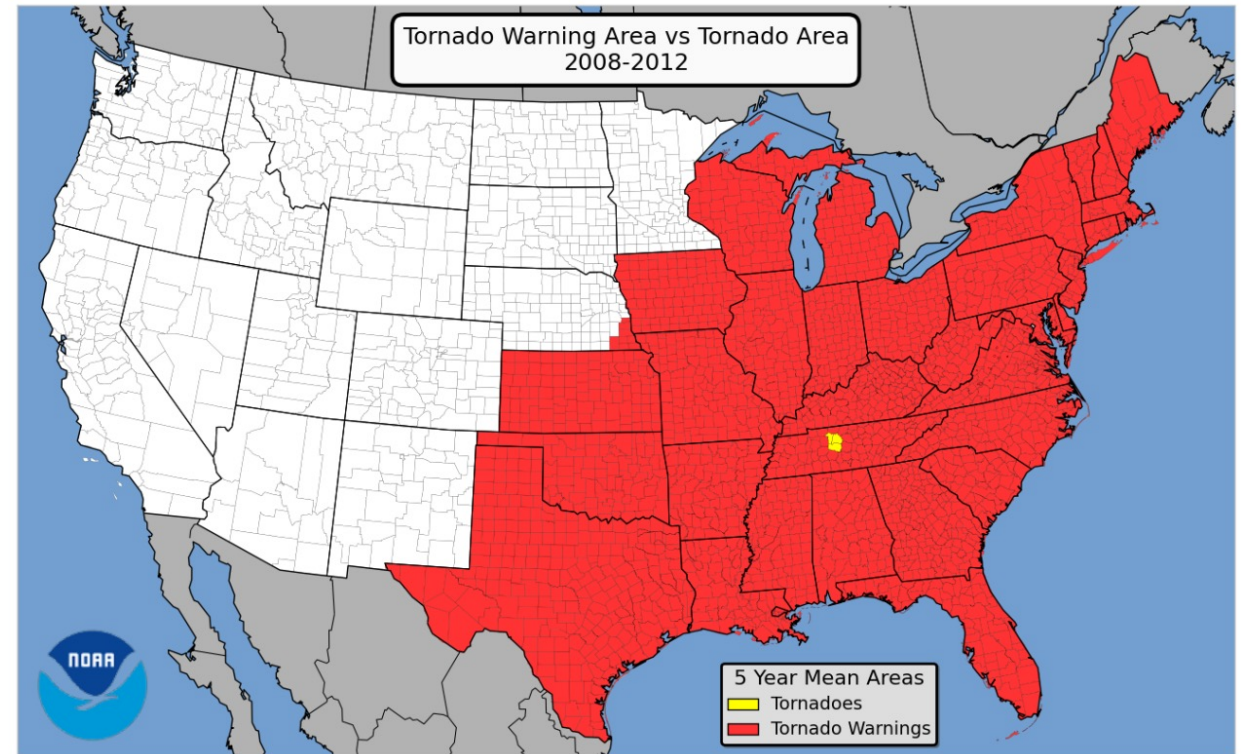
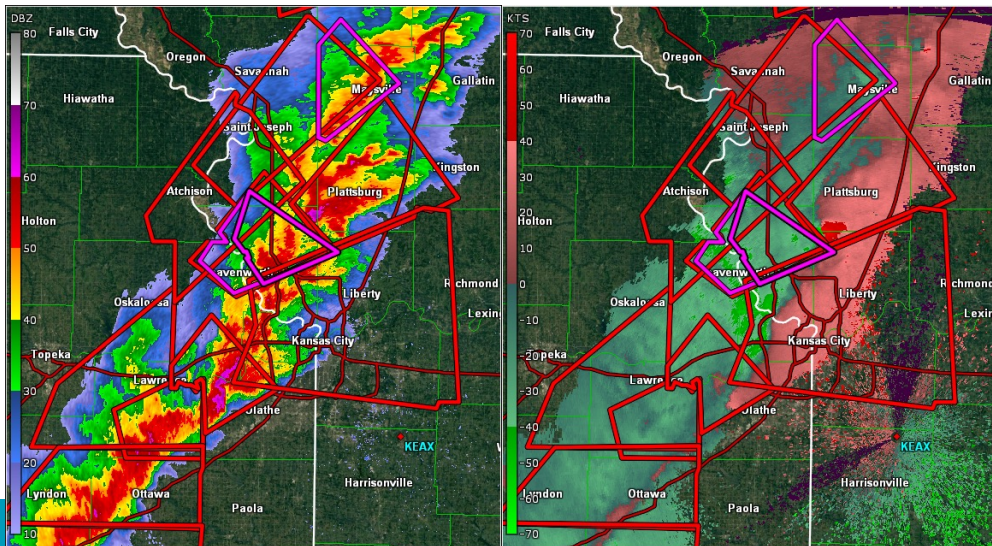
FACETS Program Lead

National Severe Storms Laboratory



Current Warning System

- Inherently “binary”, in/out
- Large false alarm area



Courtesy Patrick Marsh



Current Warning System

- Inherently “binary”, in/out
- Large false alarm area
- Messy
- Designed for teletype era

BULLETIN – EAS ACTIVATION REQUESTED
TORNADO WARNING
NATIONAL WEATHER SERVICE JACKSON MS
1155 AM CST SUN FEB 21 1971

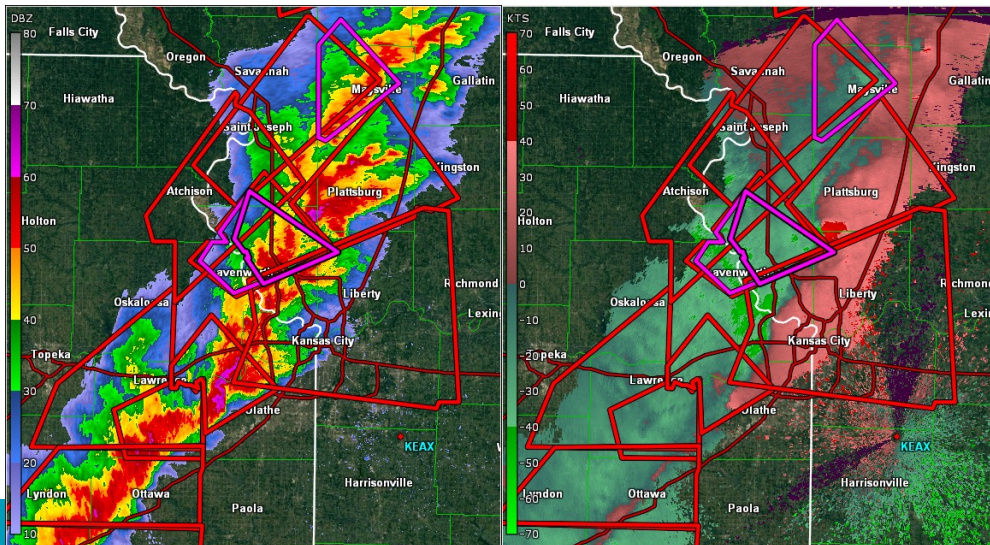
*TORNADO WARNING FOR...
NORTHERN SUNFLOWER COUNTY IN NORTHWEST MISSISSIPPI
TALLAHATCHIE COUNTY IN NORTHWEST MISSISSIPPI
QUITMAN COUNTY IN NORTHWEST MISSISSIPPI

* UNTIL 1 PM CST

* AT 1155 AM CST...A TORNADO WAS REPORTED BY THE PUBLIC AND INDICATED BY RADAR 5 MILES NORTHEAST OF CLEVELAND...AND IS MOVING TOWARD THE NORTHEAST AT 55 MPH.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

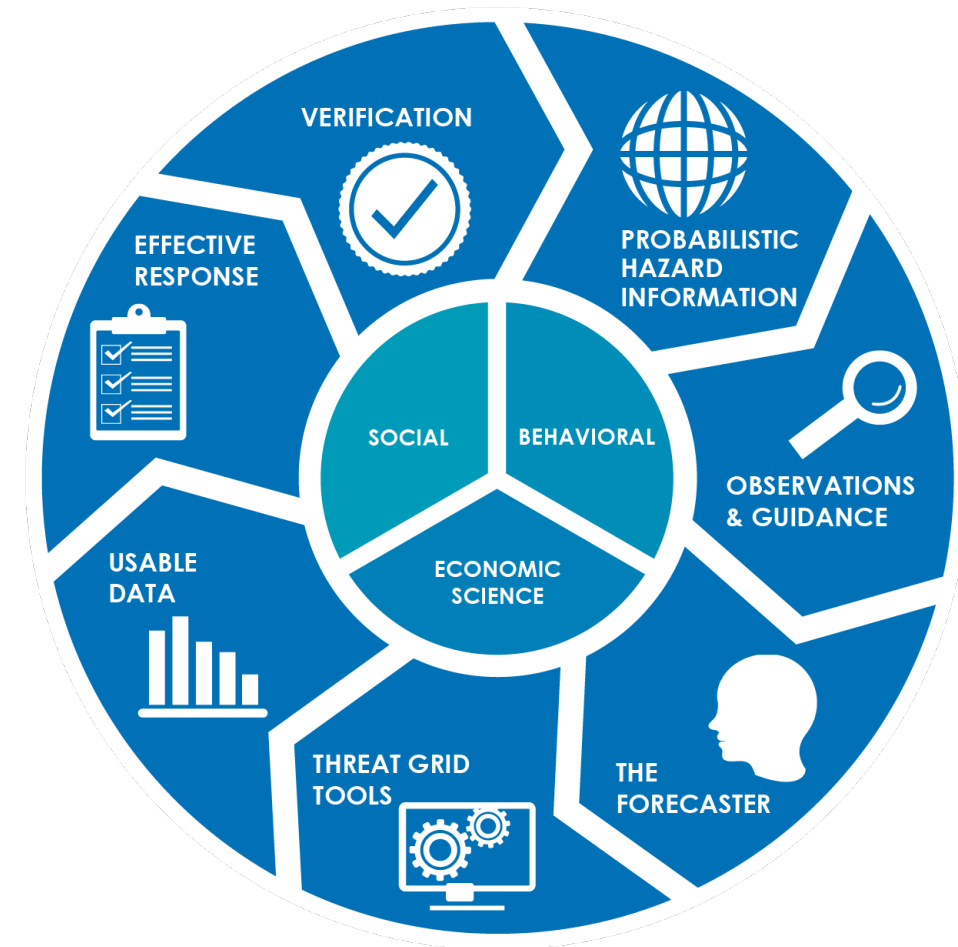
IF THREATENING CONDITIONS ARE SIGHTED...BE PREPARED TO MOVE TO A PLACE OF SAFETY. TO REPORT A TORNADO OR OTHER SEVERE WEATHER...PLACE AN EMERGENCY CALL TO THE JACKSON MS NATIONAL WEATHER SERVICE OFFICE AT 601 939 5751...OR ASK THE NEAREST LAW ENFORCEMENT AGENCY TO RELAY YOUR REPORT TO THE NEAREST NATIONAL WEATHER SERVICE OFFICE.



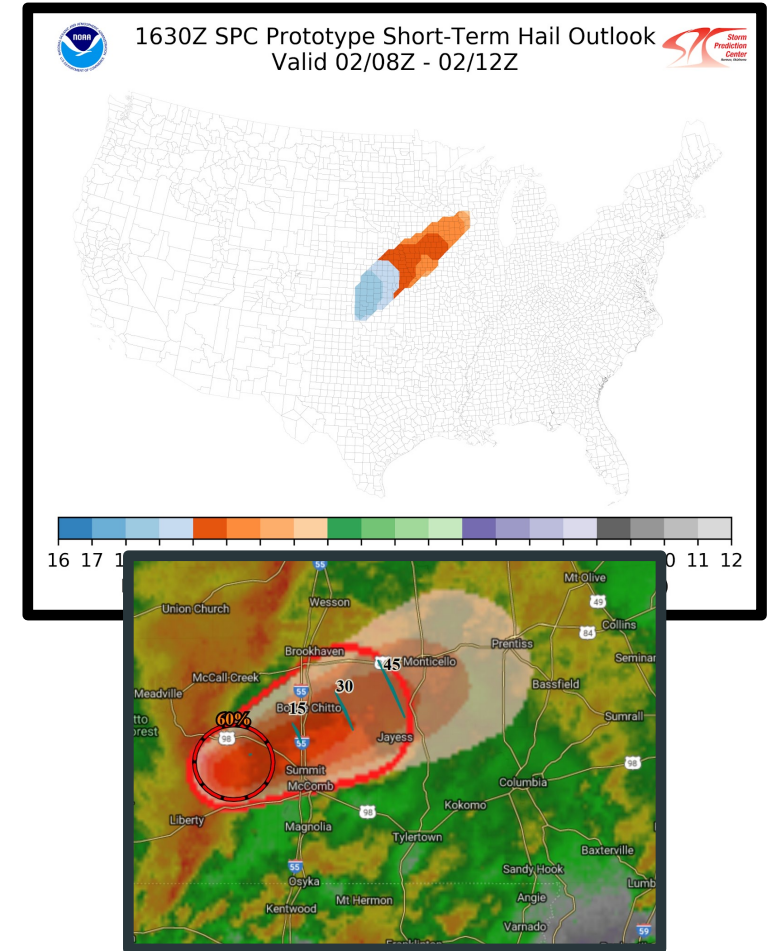
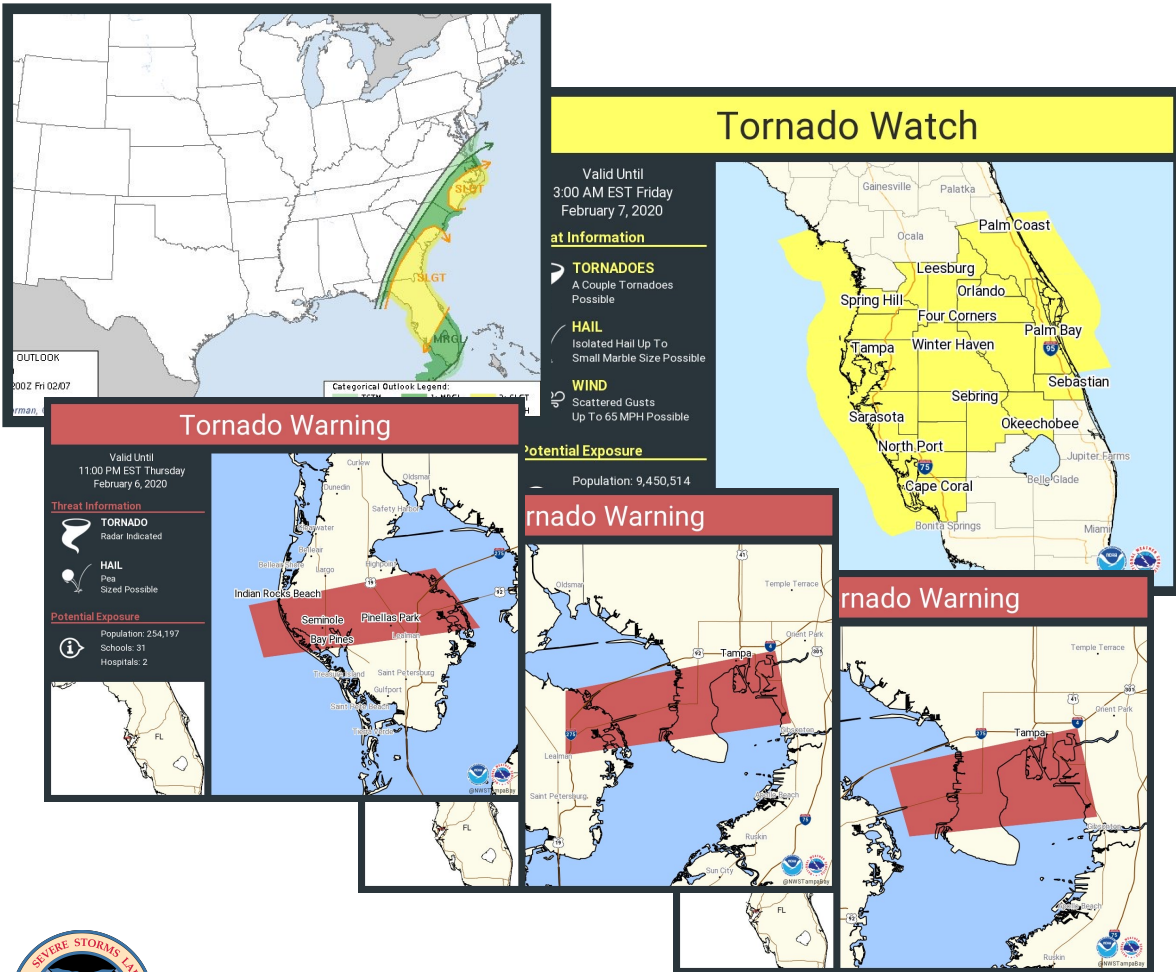
What is FACETs?

Forecasting A Continuum of Environmental Threats

- Modernization of NOAA's entire forecast & warning process
- Requires integration of physical & social/behavioral/economic sciences

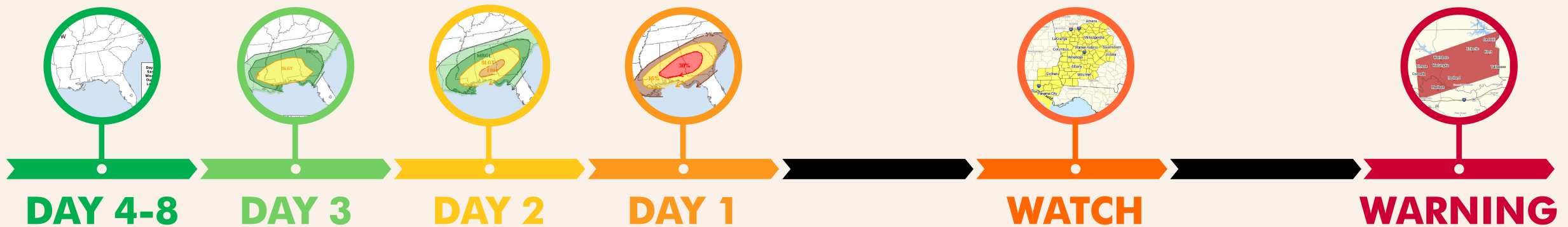


FACETs is a Framework



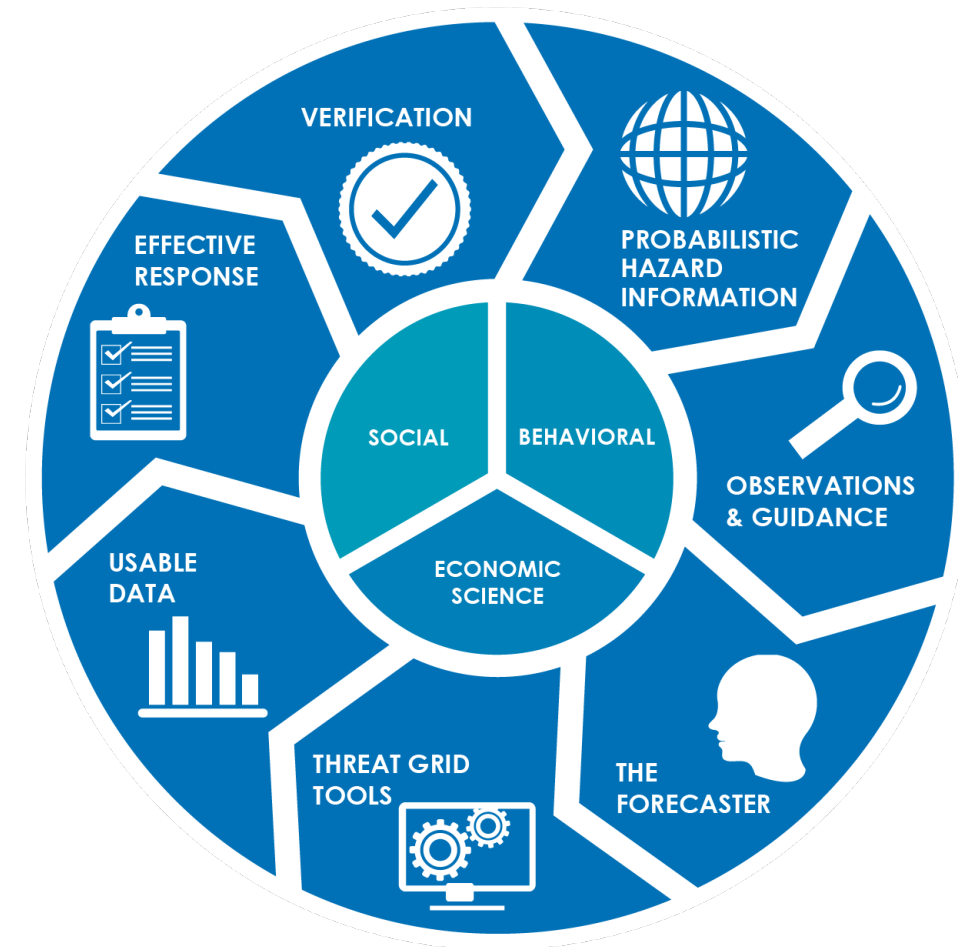
FACETs Goal

To produce a continuous stream of high-resolution **probabilistic hazard information** (PHI) extending from days to within minutes of an event – for all environmental hazards



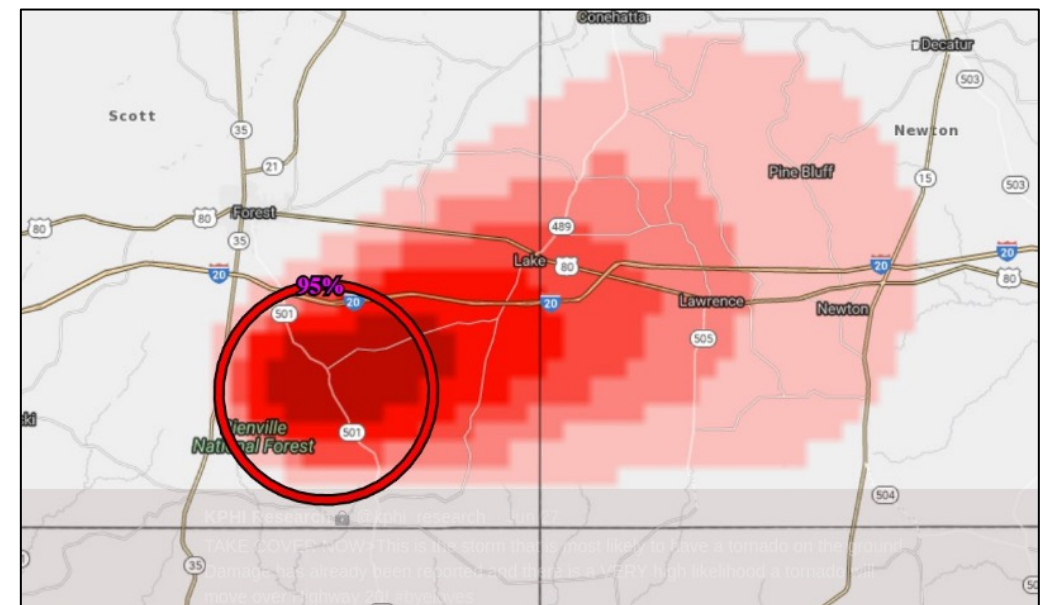
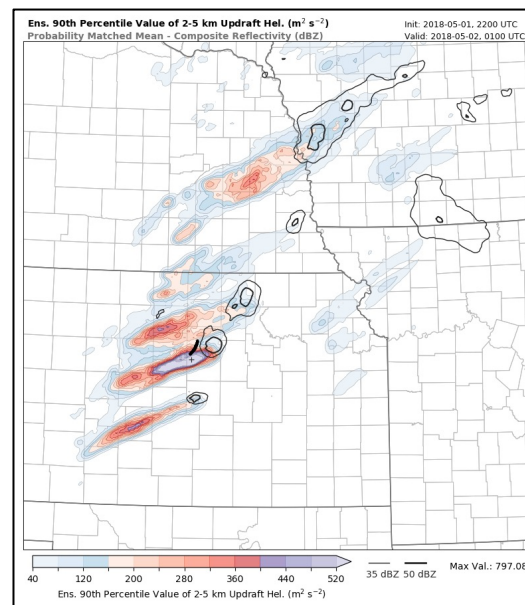
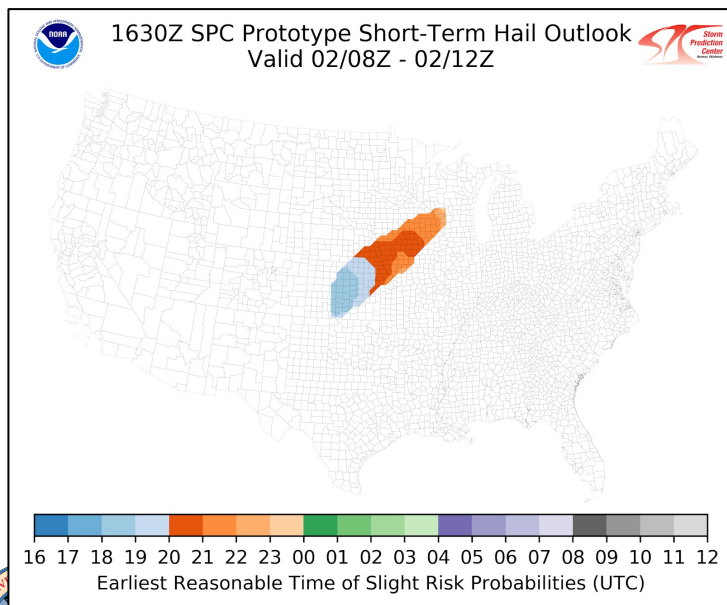
FACETs will enable ...

- Better individual decision making
- More consistent communication & decision support services
- Meaningful quantification of hazard probabilities



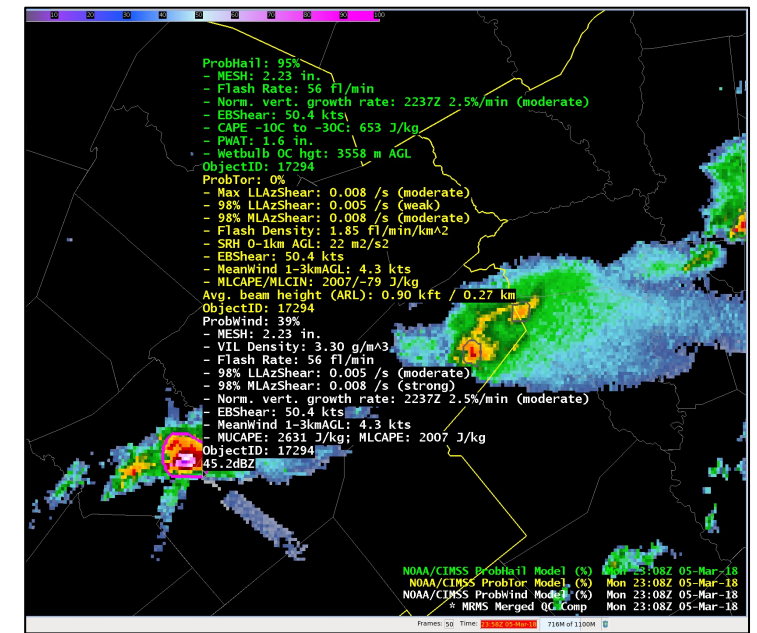
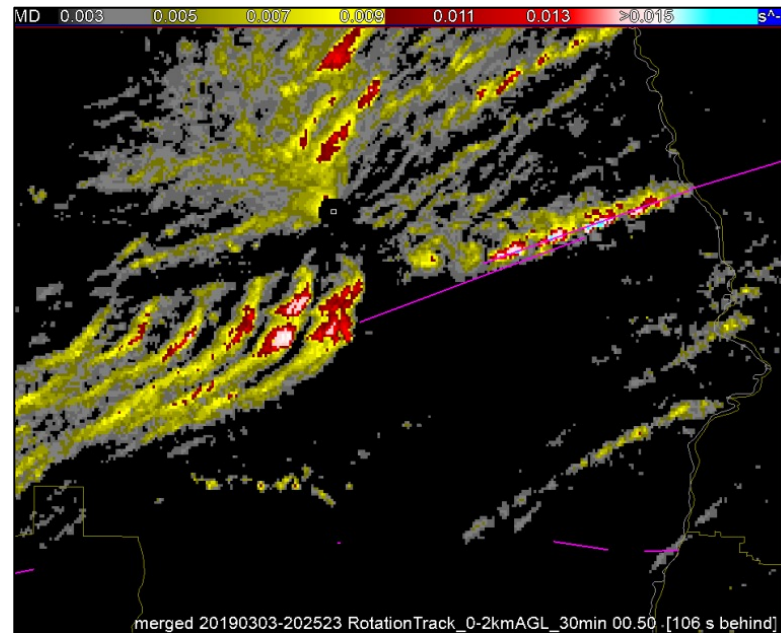
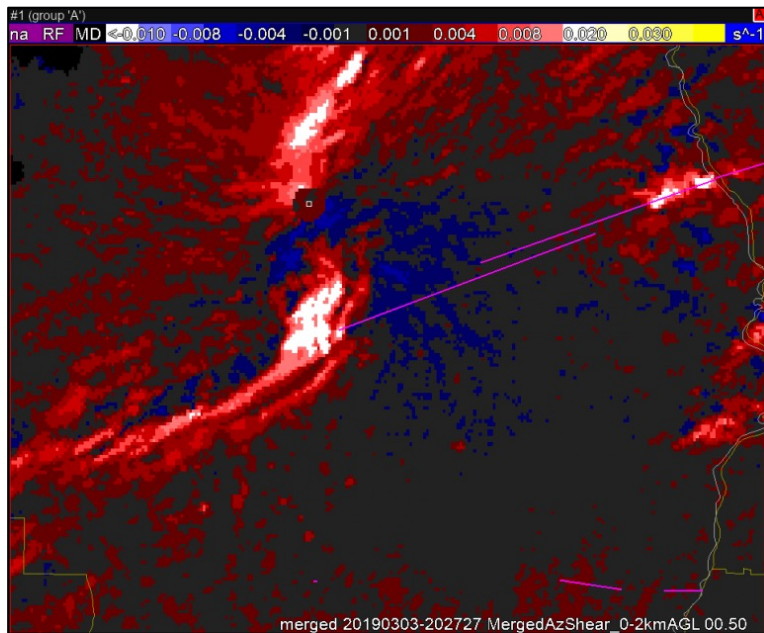
Facet 1: Probabilistic Hazard Information

- Grid-based probabilities
- Already exists in some of the NWS product suites
- Serves as the foundation for decision support services



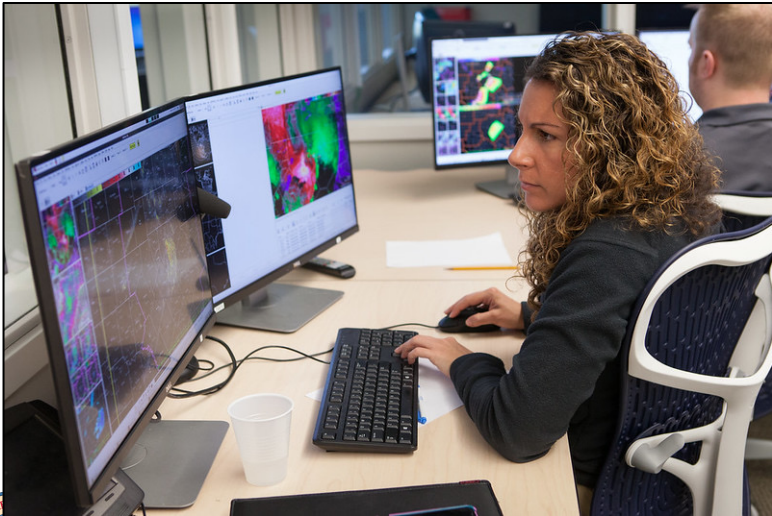
Facet 2: Observations & Guidance

- What forecasters use to make decisions
 - Radar data, satellite data, model output, observations, etc.



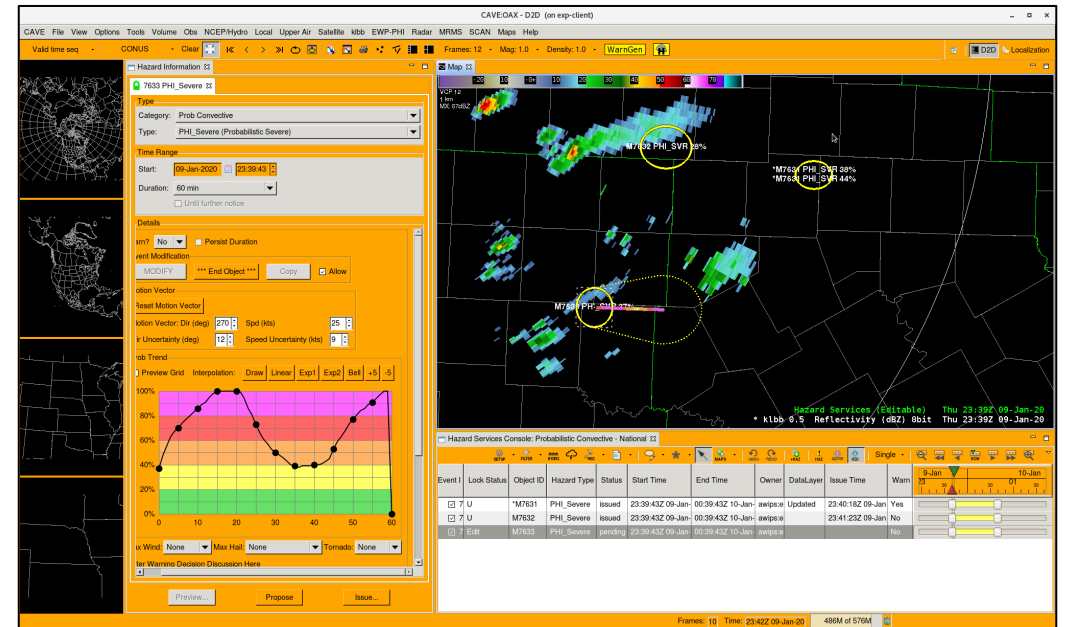
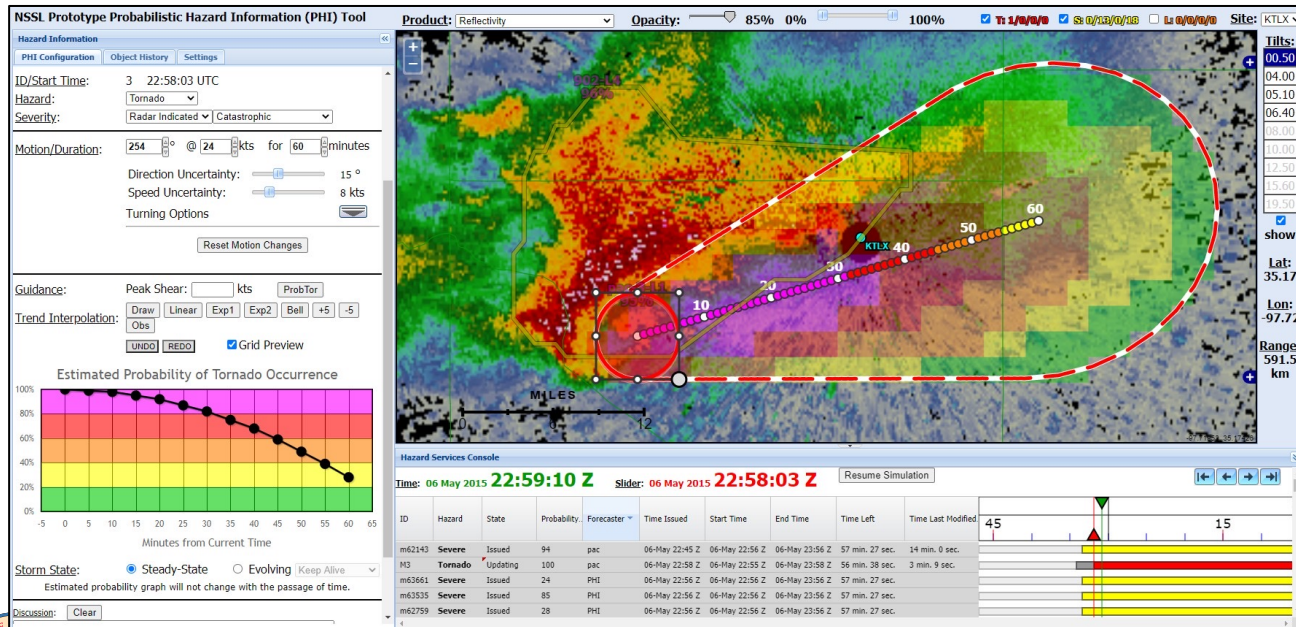
Facet 3: The Forecaster

- The person making the forecast & warning decisions
 - As essential as ever to the entire forecast & warning process
 - Knowledge, skills, abilities
- New paradigm = new training



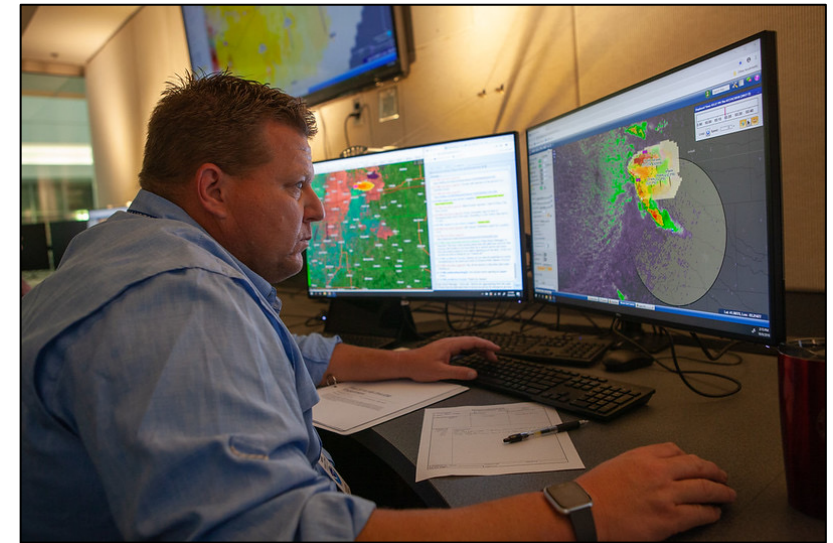
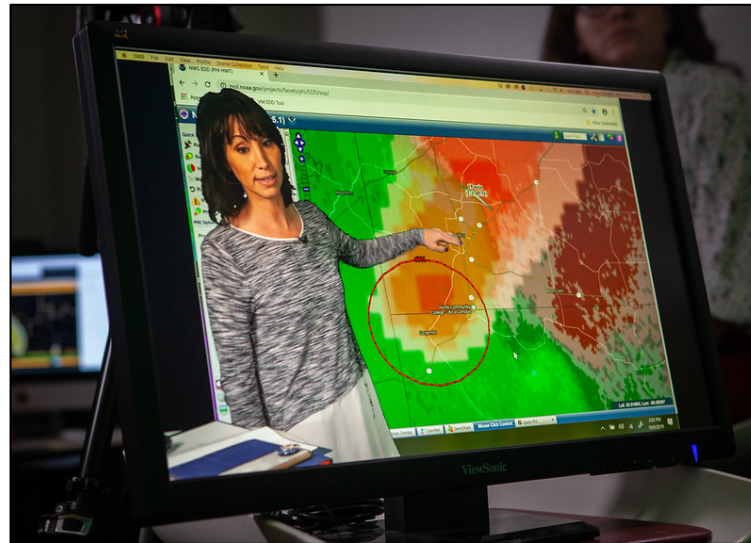
Facet 4: Threat Grid Tools

- What forecasters use to create the probabilistic hazard information
 - Hardware & software



Facet 5: Usable Data

- What the end users see & hear
 - Graphical, textual, auditory, digital, etc.
 - Social/behavioral sciences are key



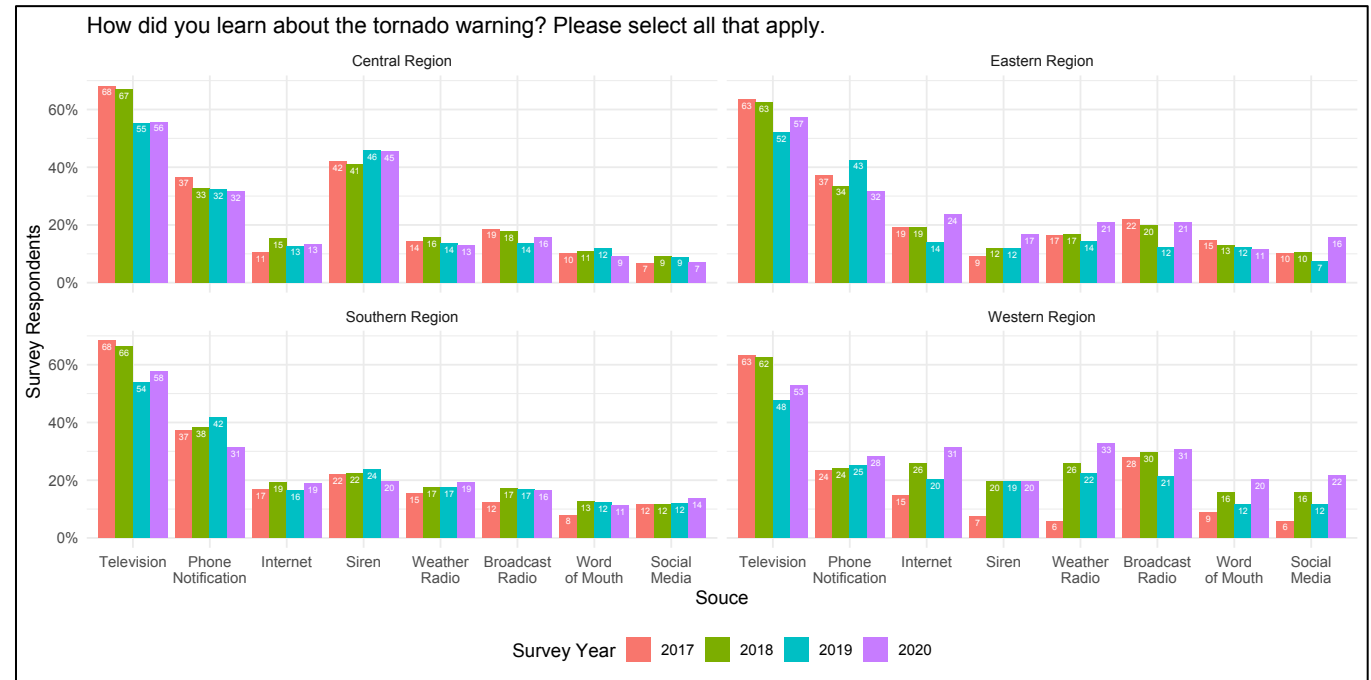
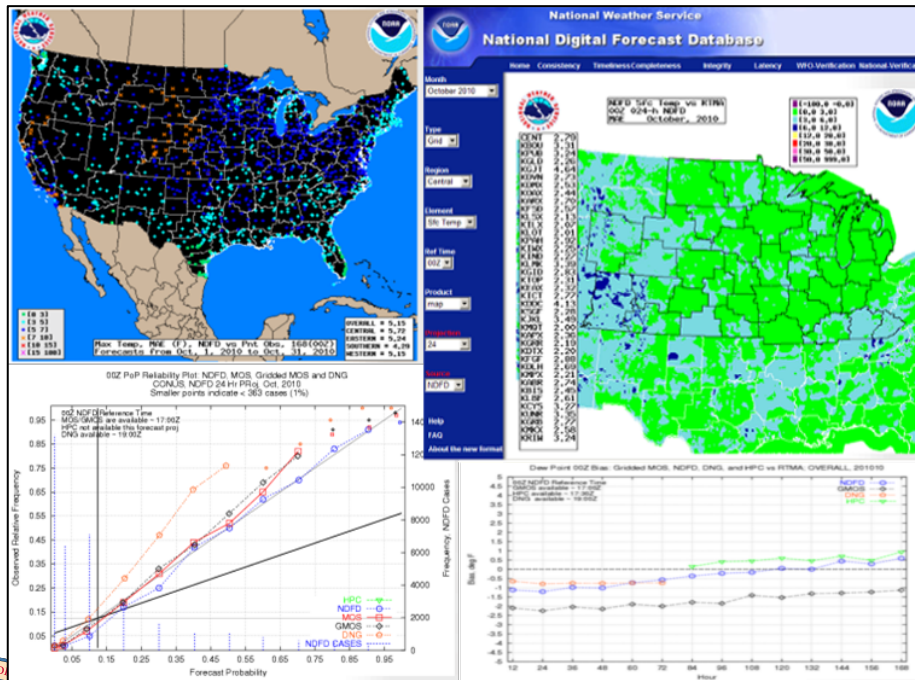
Facet 6: Effective Response

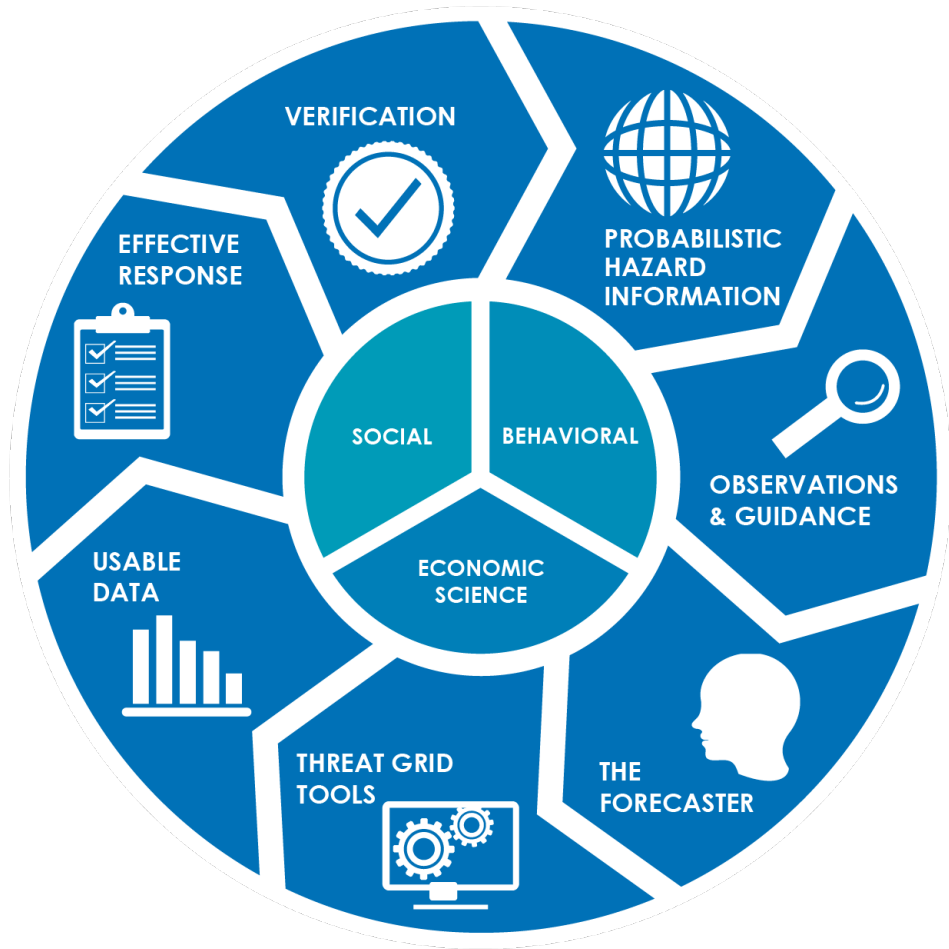
- What the end users do
 - The physical/social interface
 - The most important facet
 - Where social & behavioral science research pays off



Facet 7: Verification

- Evaluating system effectiveness
 - Measuring more than just forecast skill ... measure responses, too!





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