Using Probabilistic Data for Strategic Traffic Flow Management

"How Humans Deal with Uncertainty"

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Introduction of SREF to ATCSCC:
- Prototyping weather translation and integration techniques for Nextgen
- SREF – one of the first mesoscale model systems to go from 3 to 1-hour output
- Hourly probabilistic forecast guidance out to 39 hours

Strategic Traffic Flow Management (TFM) Beyond 6 Hours:
- Slow paradigm shift towards longer range guidance
- SREF lag time causes trepidation, considered “old” by the time it’s utilized

Interpreting and Using Probabilistic Data:
- Why 50% probability for the SREF is not a “coin-flip” proposition
- Supplement for establishing flow management structure to the system
- Developing multiple strategic options to hedge against inherent forecast uncertainty

Looking Forward:
- Operators not solely focused on skill scores, an applied understanding of SREF has established its value
- Experience and subjective judgment remains heavily relied upon for TFM strategies
Managing Uncertainty

- **Decision-Making Utility for TFM**
  - Determining risk ( % probability and location)
  - Deciding how to set up the NAS to maintain system integrity
  - Operator self-calibration (Becoming comfortable with probability)
  - Handling Low probability / High risk scenarios
  - Interaction with human forecasters at SCC
Example: Forecast Guidance Utilized for TFM

- **CCFP (4hr-6hr-8hr)**
- **Hourly SREF (00-39hrs)**
- **Hourly HRRR (00-15hrs)**
- **CoSPA (00-8hrs)**