

FEMA R-2
Coastal Flood Study
April 5, 2011 Technical Briefing

“Production Runs”
And
Recurrence Statistics

AdCIRC-UNSWAN PRODUCTION RUNS

For 220 “Synthetic” Hurricanes and 30 Nor’easters

General Flow CHART for NY/NJ Production Runs

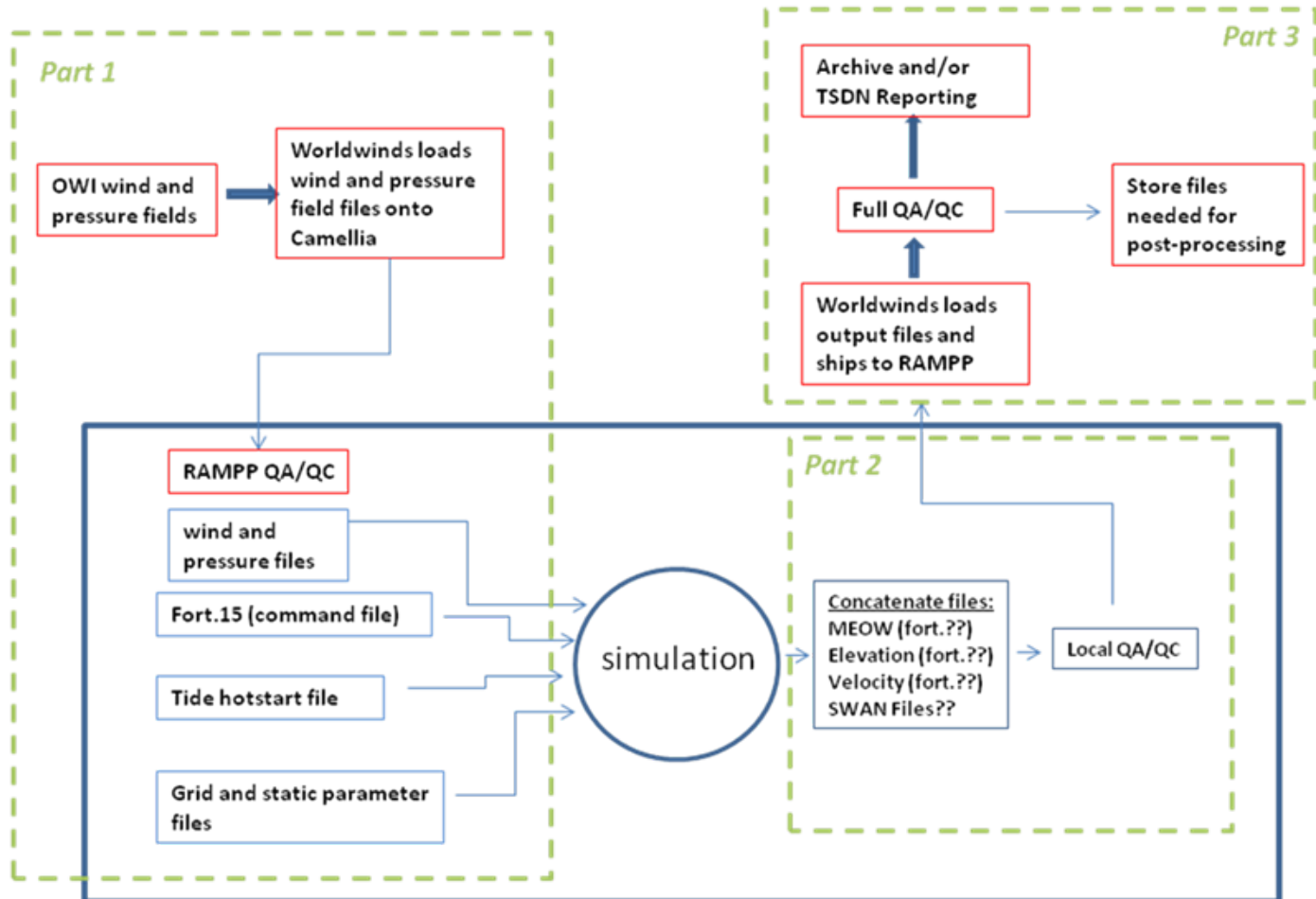
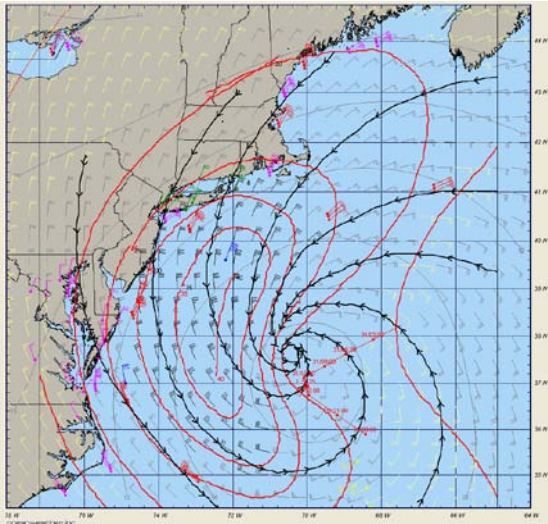


Figure 1. Flow diagram showing steps in completing a storm simulations.

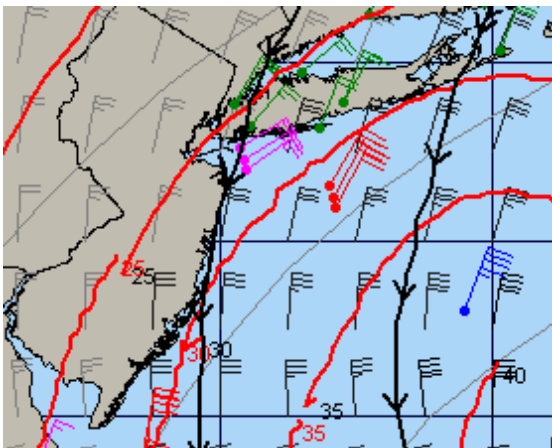
Quality Control

- Local (By project personnel on Worldwinds Parallel Cluster Computer
 - Check run completion, correct output files & sizes
 - Plot preliminary MEOWS
 - Initial representative time-series check
 - Screen for non-fatal errors
- Final
 - Detailed MEOWs
 - Full time series checks
 - Animation checks for Surge and Wave Heights

Empirical Simulation Technique (EST)

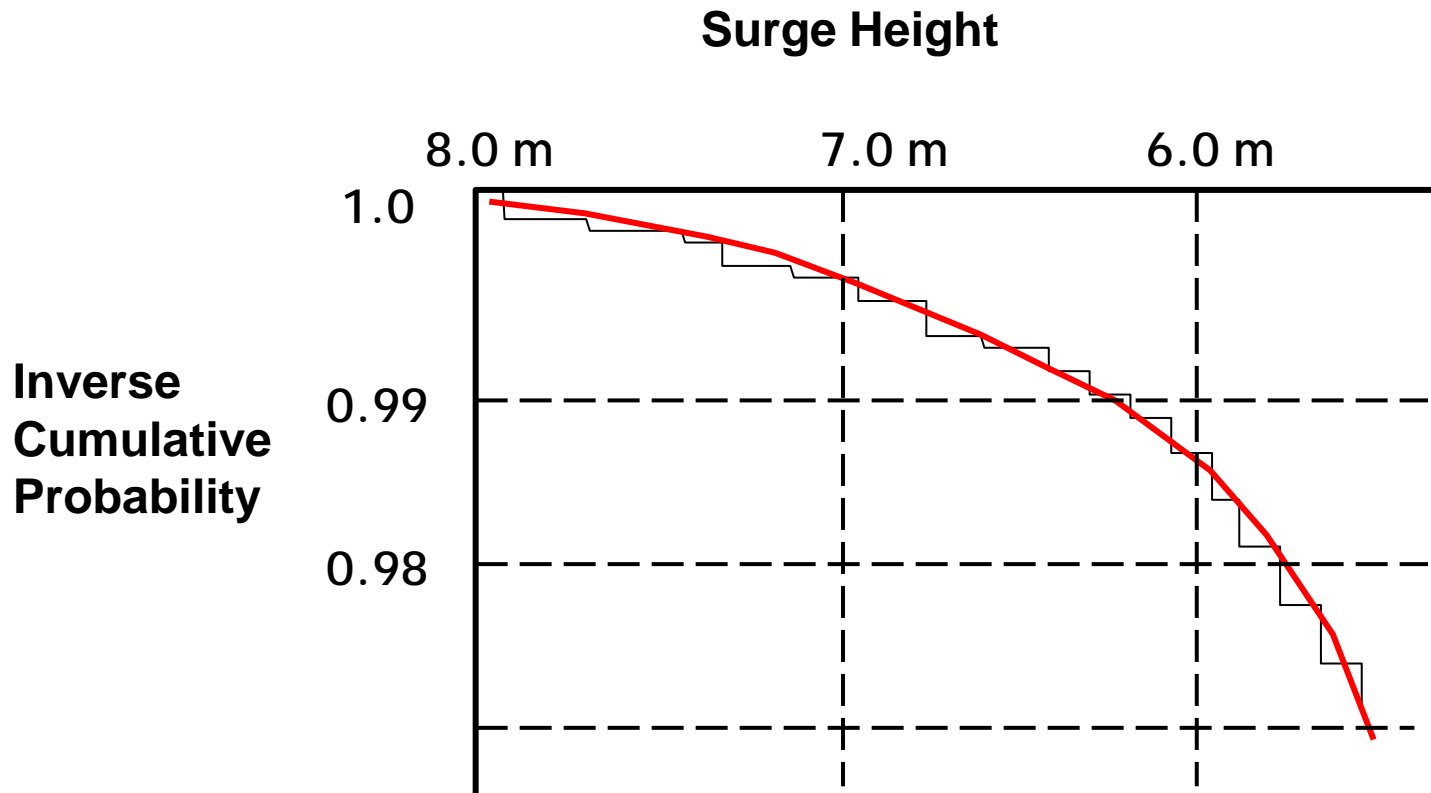


- Uses storms from the historic record
- Bootstrap method expands storm data
- Each storm is modeled (storm and surge) based on its central pressure deviation, radius to maximum winds, forward speed, and track
- Many hundreds or thousands of output points
- Surge heights are ranked and fitted to an extreme distribution function



Output Point Surge Determination

Cumulative Distribution Function



Questions
&
Discussion