



NASA Energy and Water cycle Study Road Map

NEWS Challenge:
 Document and enable improved, observationally-based, predictions of water and energy cycle consequences of Earth system variability and change.

Knowledge Base

Exploiting current capabilities and preparing for the future

Phase 1 Deliverables:

- Coordinate global W&E description
- Current prediction system evaluation
- Identify required improvements



Address deficiencies and build prediction system

Phase 2 Deliverables:

- Fix model problems
- New measurement approaches
- End-to-end prediction system

Address the ESD vision of the SMD; deliver and evaluate system

Phase 3 Deliverables:

- Dataset gaps filled and extended
- Intensive prediction system testing
- Prediction system delivery

APPLICATION:

- Improved water & energy cycle forecasts for use in decision support systems

ANALYSIS & PREDICTION:

- Understand variability
- Accurate cloud prediction
- Improved latent heating & convection models

OBSERVATIONS:

- Quantify mean state, variability, and extremes of the water & energy cycles
- Flux, transport, and storage rate quantification

