Emerging Needs –Hydrometeorological Forcings

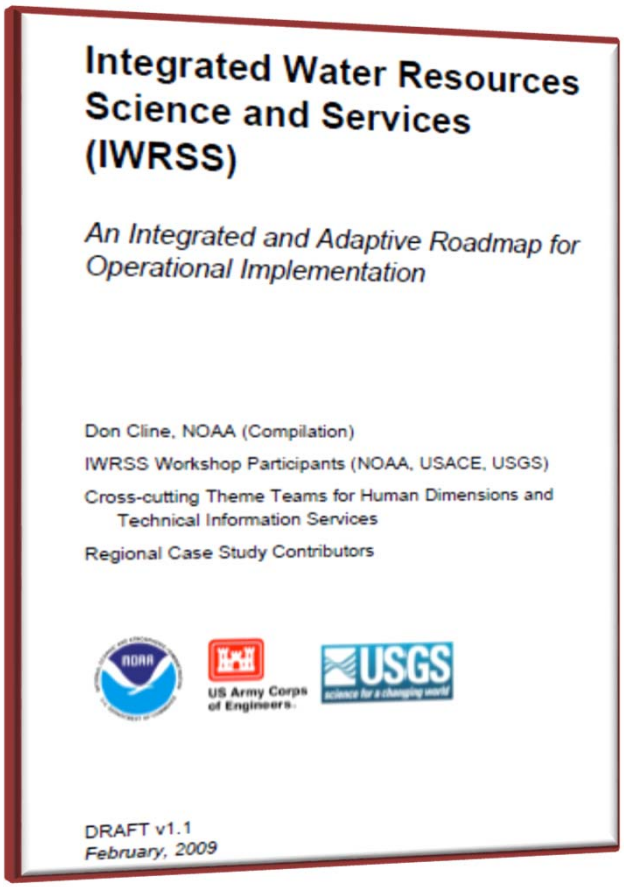
From an IWRSS/NWC Perspective

Notes/Goals for this section:

- *Brief* overview of:
  - The Integrated Water Resources Science and Services (IWRSS)
  - The National Water Center (NWC)
- Describe the vision of what we are working towards, and some high level requirements
- Touch on the perceived role of GPM

IWRSS & the National Water Center

http://www.nohrsc.noaa.gov/~cline/IWRSS/IWRSS_ROADMAP_v1.0.pdf



IWRSS Crosscutting Themes

- Human Dimensions
- Operational Science
- Information Technology/Systems

MOU Signed May 11, 2011

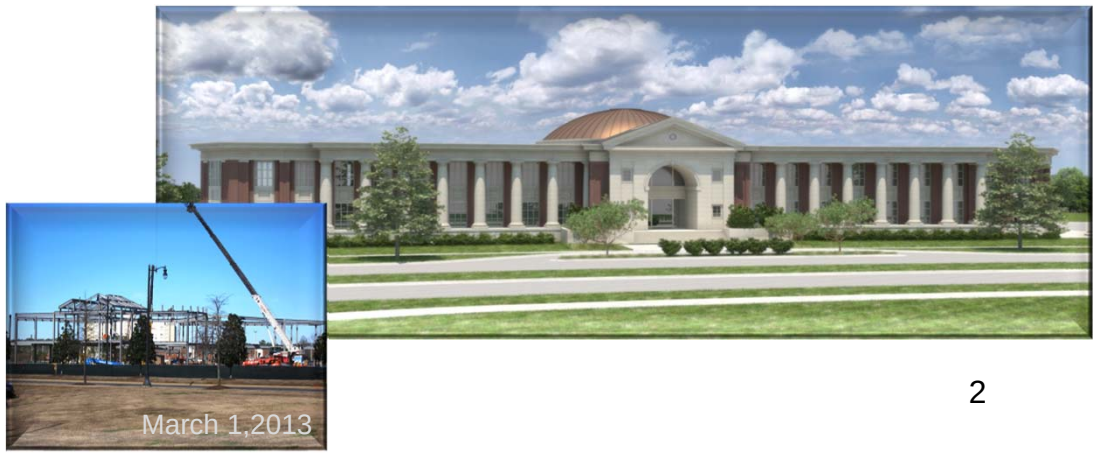
- NOAA – USGS – USACE
- Designed to expand

A new business model

- A framework to align multiple agencies with complementary water-related missions to accomplish operational goals
- Share technology, information, models, best practices

National Water Center (Tuscaloosa, AL)

- NWC will serve as the catalyst to achieve these objectives
- Completion expected late FY2013; Green Building: LEED Gold
- Size: 65,000 sq. ft.; Staff at Full Operating Capacity: 175



IWRSS Vision (Scope)



Provide summit to sea, bedrock to boundary layer, high-resolution (goal: half hour; half km) gridded water resource information for the United States & *North America* and globally (at lower resolution); derived from observations and model output:



-30 to -50 yrs (National Water Census)

Now

Mins.–Hours–Days

Weeks–Months–Decades

IWRSS/NWC Development Path – Short Term

IWRSS Interagency Projects (Teams)

- IWRSS Governance Board
  - To provided executive oversight
- Systems Interoperability & Data Synchronization
  - Underway
- Flood Inundation Mapping
  - Underway
- National Water Modeling System
  - Near future
- eGIS
  - Future

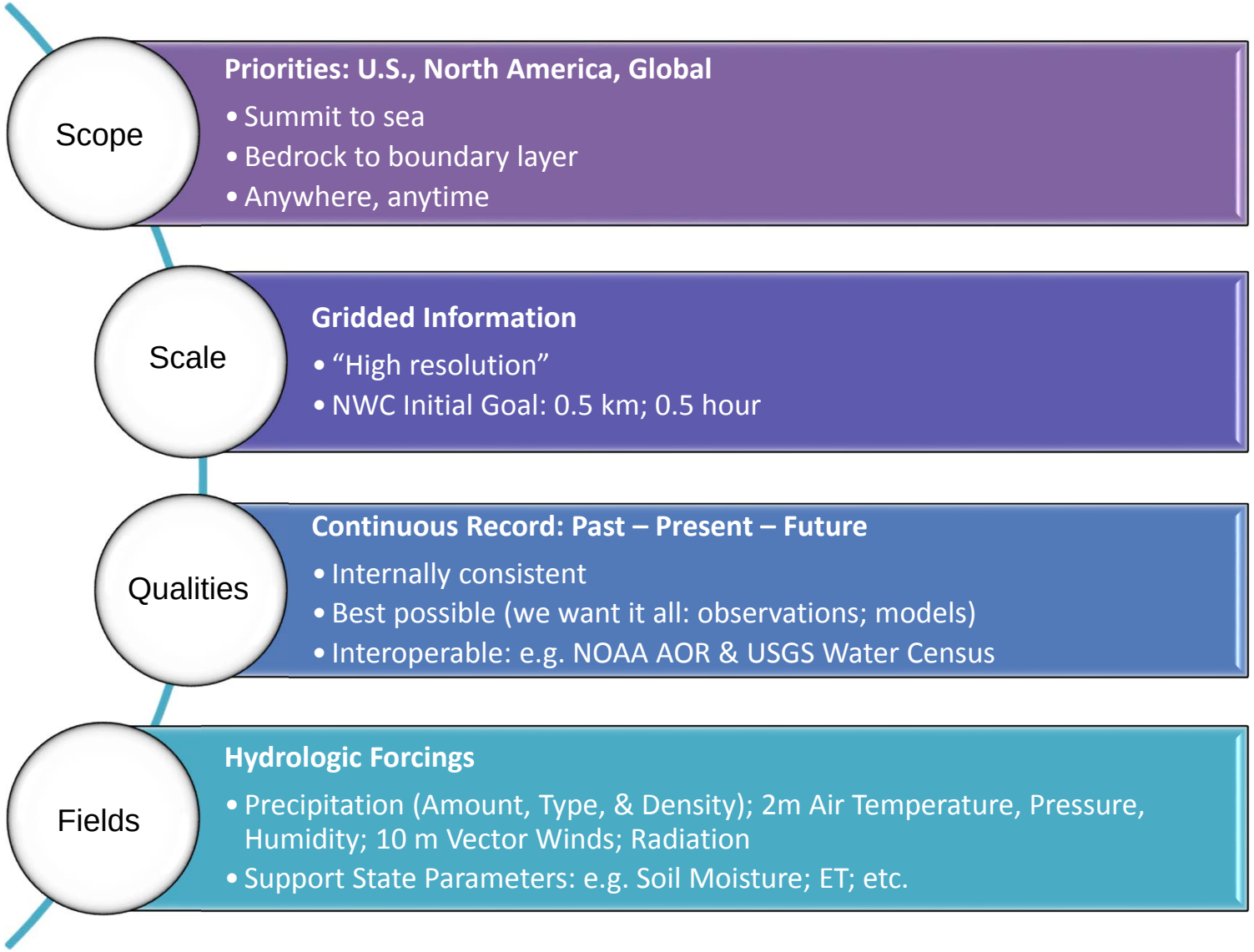
NWC IOC Preparatory Projects

- Data Service
  - Basic Hydrologic and Meteorological Data
  - Parameter Data
  - Forcing Data
- Evaluation Service
  - Analytics and Diagnostics
  - Baseline Current Performance; Evaluate New
- Exploratory integrated/coupled modeling projects
  - Expanded Land-Surface Modeling Capabilities
  - Earth System Modeling
  - High Performance Computing

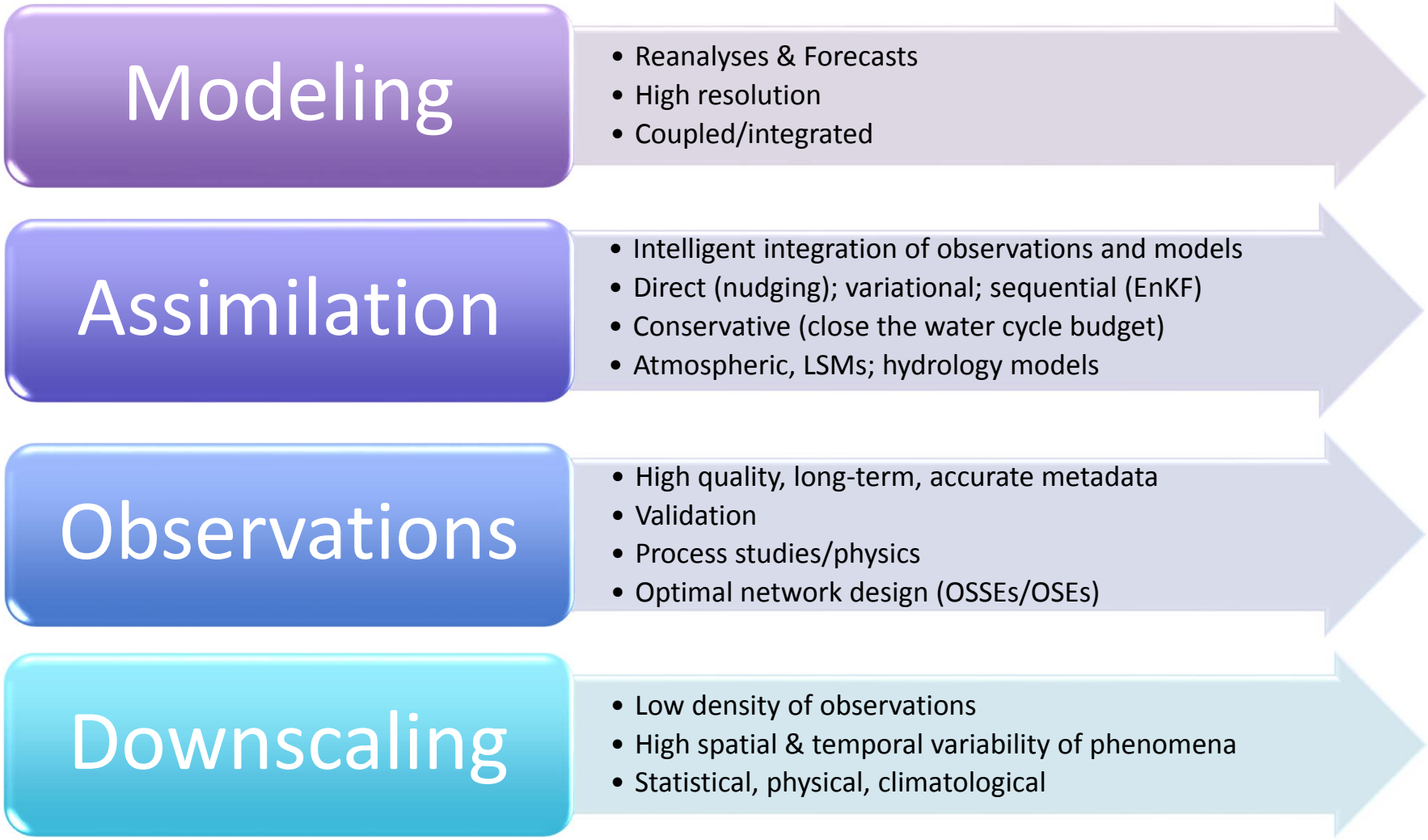


Hydrometeorological Forcings: Working Towards an Ideal

Operational Imperatives for IWRSS

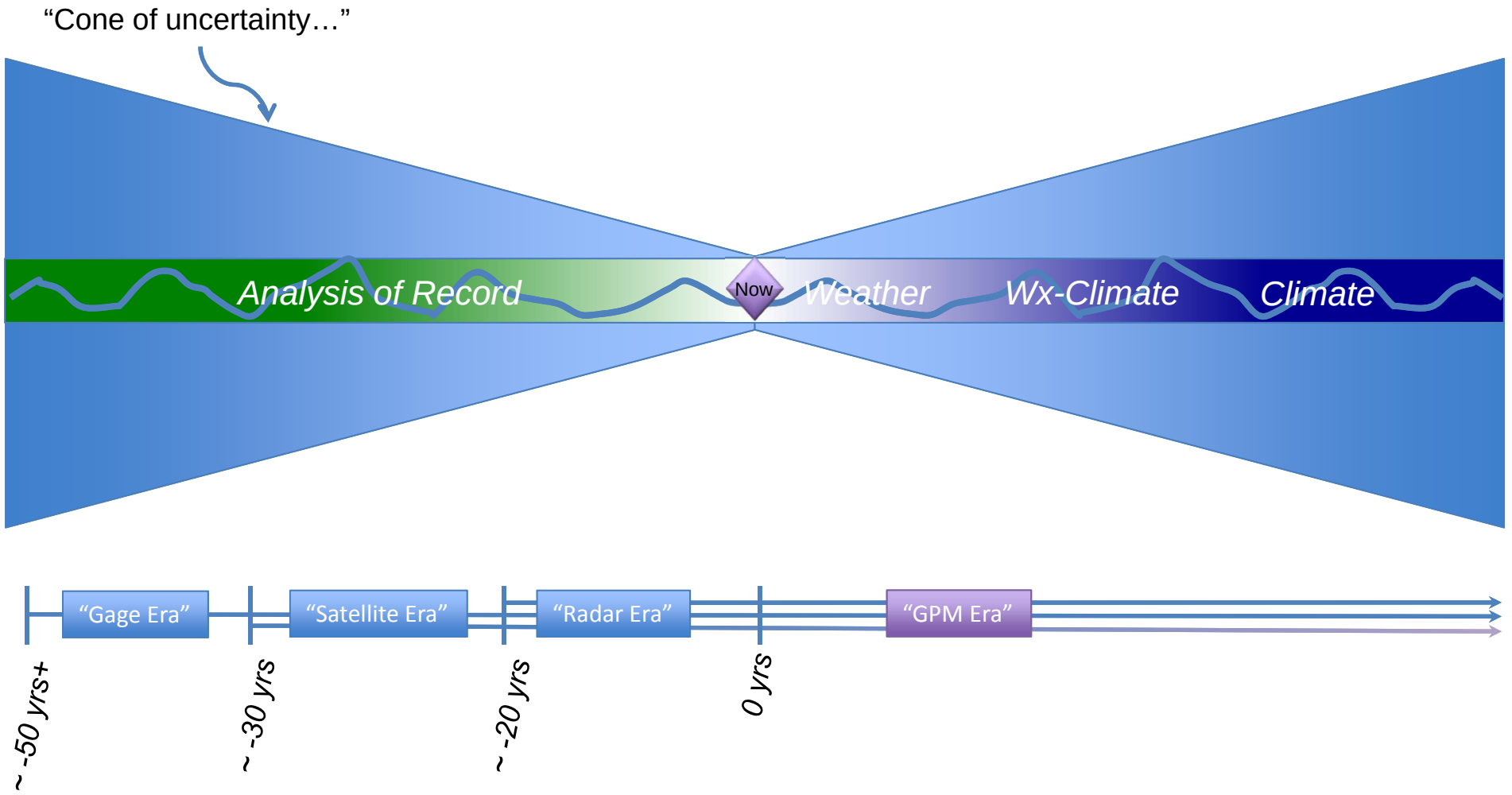


Emerging Needs
Water Now, Next & Future



A Conceptual Model of Data Fusion

Continuity – Consistency - Parsimony



Some Provisional Thoughts on GPM & the NWC…

- Provides uniform global coverage & situational awareness
- Provides critical information in data sparse regions
  - e.g. high latitudes; some parts of the interior west; Central America; the Caribbean
- Better NWP through assimilation
- Independent source of data
  - Constrains retrospective “best estimates”
  - Validation (the tables are turned…)



- However… our view is that the greatest strength/benefit of GPM is via inclusion in a ‘data-fusion system’
  - i.e. bring the best of all data/information into one framework: radar (surface-based) + gages + satellite + model + …