



# Revitalizing NOAA HPC



# Drivers from the FY10 PDM

- Provide a detailed plan for addressing NOAA's high performance computing requirements for climate that considers NOAA resources and partnerships with other federal agencies, to include DOE.
  - Plan due August 4 for Climate Goal
  - Similar directives for Weather & Water Goal and the Modeling and Observing Infrastructure sub-goal that manages all NOAA HPC
  - Objective: New NOAA HPC Strategic Plan



# Approaches

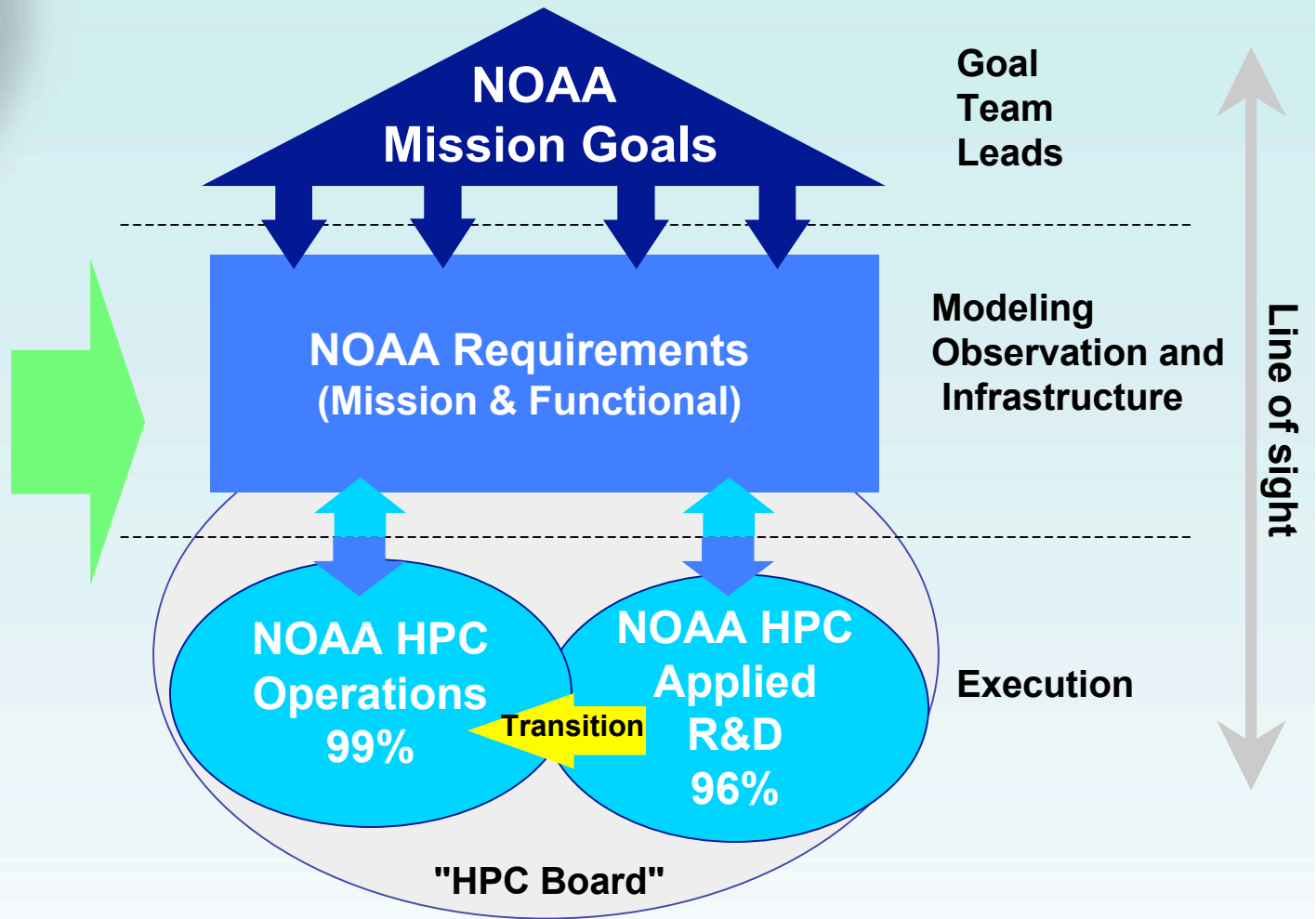
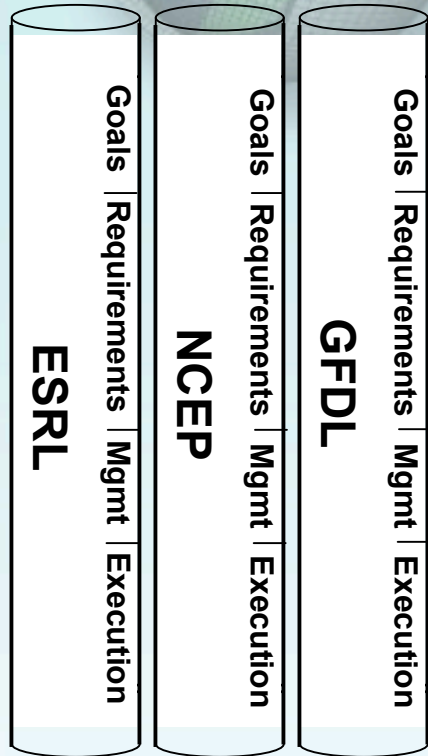
- Improve NOAA HPC management



# Moving to NOAA HPC to an Agency Level

Integrated management, functional alignment

Past State:  
Stove-piped HPC





# Approaches

- Re-architect NOAA HPC
  - New NOAA HPC Strategic Plan by August 2008
  - Build agency-wide capability for software engineering
- Software improvements
  - Focus on building agency-wide software development capabilities
  - NOAA Environmental Modeling System (NEMS) uses ESMF conventions for coupling (among many other capabilities)
- Partner with other organizations for time
  - A very modest computing increment (~5% of current capability) using DOE systems is available to prototype next-generation models
- Seek additional funding
  - Environmental Modeling Program has identified >\$150M computing gap
  - Initiatives for very large computing increments for NOAA R&D HPC submitted each of the last three years



# Facilities

- Larger fraction of the budget spent on power
  - Flops/\$\$ increasing faster than flops/KW
- NOAA HPC Facilities Analysis to assess options for siting NOAA R&D computing
  - Upgrade current facilities
  - Partner to use existing facility
    - DOE/ORNL
    - NSF/NCAR
  - Build new NOAA HPC facility