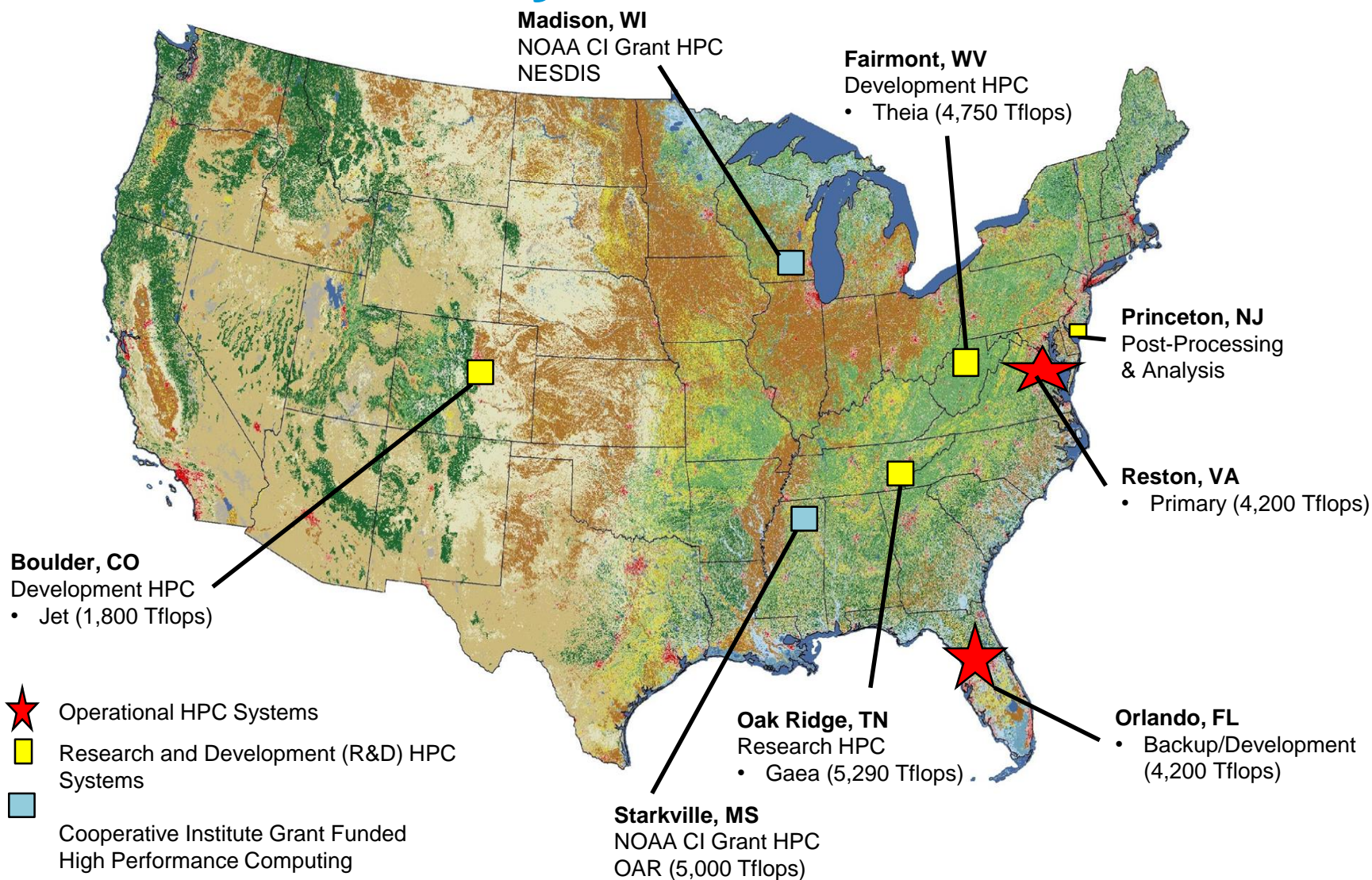# NOAA HPC Update

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NOAA's High Performance Computing Locations and Systems

Madison, WI
NOAA CI Grant HPC
NESDIS

Fairmont, WV
Development HPC
- Theia (4,750 Tflops)

Princeton, NJ
Post-Processing
& Analysis

Reston, VA
- Primary (4,200 Tflops)

Boulder, CO
Development HPC
- Jet (1,800 Tflops)

★ Operational HPC Systems

▪ Research and Development (R&D) HPC Systems

▪ Cooperative Institute Grant Funded High Performance Computing

Oak Ridge, TN
Research HPC
- Gaea (5,290 Tflops)

Orlando, FL
- Backup/Development (4,200 Tflops)

Starkville, MS
NOAA CI Grant HPC
OAR (5,000 Tflops)

MSU and Supplemental Compute

- MSU System
  - Orion
  - 72,000 Skylake Processors
  - Dell System
- Supplemental System
  - Hera
  - 52,000 Skylake Processors
  - Cray System
  - 50% availability initially, then gradual phased transition with Theia
- Expected availability in mid-July

Additional Capacity in R&D

- Jet update
  - Kjet installed in December
  - 55,984 total core count
- Gaea update
  - 4 additional racks added to c4 in FY19
  - 143,488 total core count

Cloud Evaluation & Supporting Task Orders

- Completion at the end of the fiscal year

- 7 vendors evaluated
  - Usability
  - Performance
  - Cost models
  - Portability
  - Scalability

- Data Transfer and Related Infrastructure
  - Updated networking between R&D infrastructure
  - Expanded support of transfer tools to align with the community

Other Outcomes from Evaluation and Supporting Contract Actions

- Containerized version of FV3gfs & UPP

- Improved strategy for integration with our current and future environment

  - Increased portability for use on other platforms
  - This can include exascale work with more forward looking processor/accelerator types

- Modernization of the current software infrastructure

- Better integration for a larger set of potential workloads – data centric, etc.