



NOAA Satellite and Information Service

FY 2009 Budget Brief to Constituents and International Partners

Mary E. Kicza

Assistant Administrator for Satellites and Information Services

February 29, 2008



NOAA's Mission and Goals

2

Mission:

- To understand and predict changes in the Earth's environment and manage coastal and marine resources to meet the Nation's economic, social, and environmental needs

Mission Goals:

- Protect, restore, and manage the use of coastal and ocean resources through an ecosystem approach to management
- Understand climate variability and change to enhance society's ability to plan and respond
- Serve society's needs for weather and water information
- Support the Nation's commerce with information for safe, efficient, and environmentally sound transportation
- Provide critical support for NOAA's mission



NOAA Satellite and Information Service (NESDIS)



3

OUR VISION

To be the world's premiere source of comprehensive environmental data and information

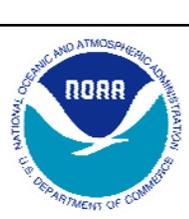
OUR MISSION

To deliver accurate, timely, and reliable satellite observations and integrated products and to provide long-term stewardship for global environmental data in support of the NOAA mission

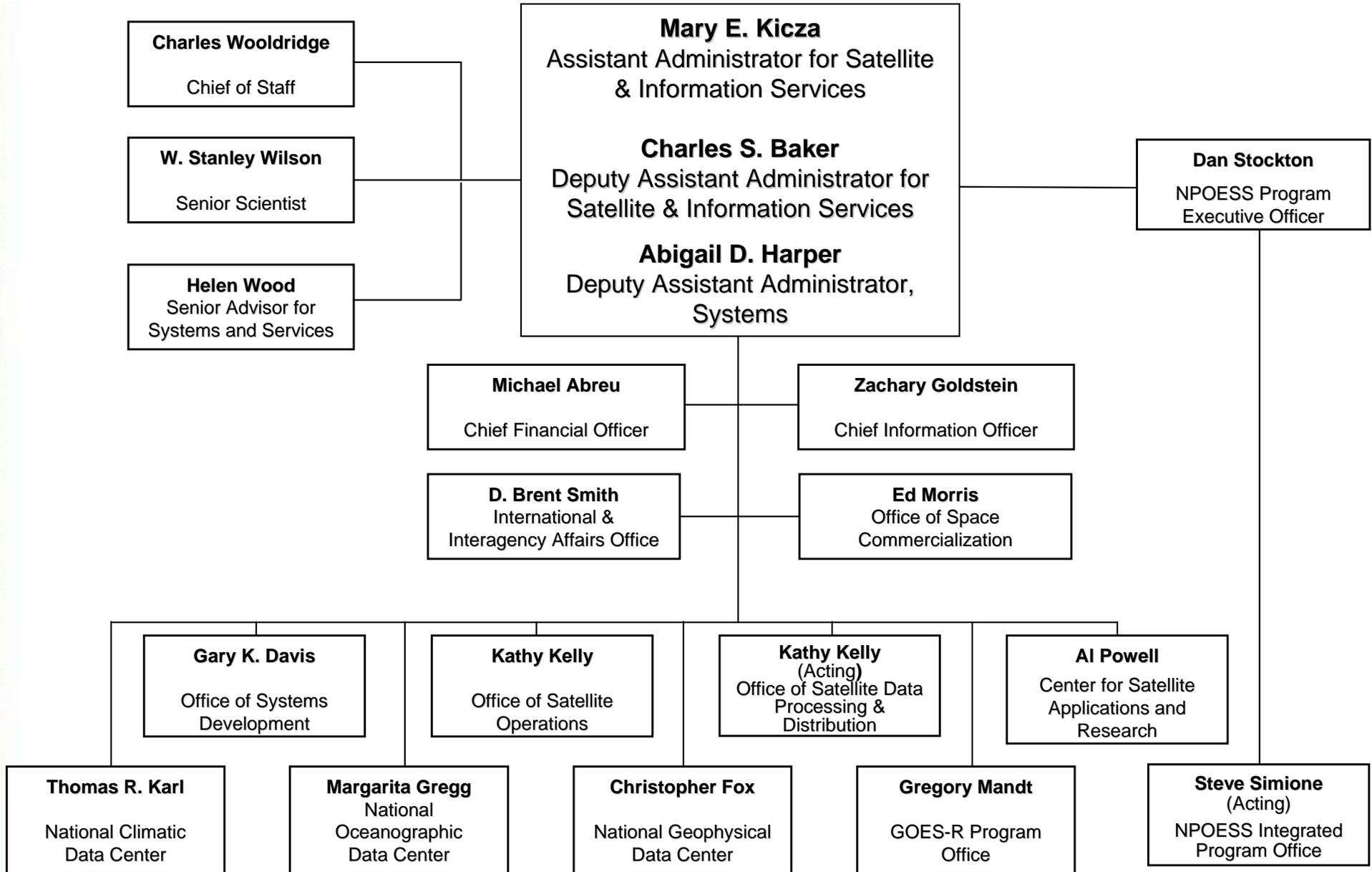




NOAA Satellite and Information Service Organizational Chart



4





NOAA Satellite and Information Service FY 2007 Accomplishments



5

- Completed a major milestone in Geostationary Operational Environmental Satellite-R Series (GOES-R) development
- Completed restructuring of National Polar-orbiting Operational Environmental Satellite System (NPOESS) and continuing to monitor the development of the program closely
- Remanifested an ozone climate sensor onto NPOESS Preparatory Project
- Opened a state-of-the-art NOAA Satellite Operations Facility (NSOF). Awarded a Gold Leadership in Energy and Environmental Design (LEED)
- Improved satellite-derived products that enhance monitoring of coral reefs, drought, climate, harmful algal blooms, natural gas flaring, tropical systems, and wildland fires
- Delivered a record number of data to users from NOAA's Data Centers, an increase over 2006 deliverables
- Major Contributor to Nobel Prize-Winning Intergovernmental Panel on Climate Change (IPCC) Reports
- Supported satellite-aided search and rescue of 353 persons, nation-wide; over 5,700 rescues since the program started 25 years ago



NOAA Satellite and Information Service Major FY 2008 Activities



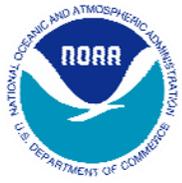
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- GOES-O Launch (date under review)
- Ocean Surface Topography Mission/Jason 2 launch support, June
- Defense Meteorological Satellite Program Launch, June
- Committee on Earth Observation Satellites, Strategic Implementation Team (CEOS/SIT), April and September meetings
- NPOESS Preparatory Project launch preparations, yearlong
- GOES-R space and ground systems contract award preparation, yearlong
- Climate sensors and climate data records work, yearlong



NOAA Satellite and Information Service

What's New?



7

NESDIS Leadership Team

- Charles S. Baker, Deputy Assistant Administrator for Satellite and Information Services
- Abigail Harper, Deputy Assistant Administrator for Systems
- Michael Abreu, Chief Financial Officer/Chief Administrative Officer

Program Management

- Dan Stockton, NPOESS Program Executive Officer
- Greg Mandt, GOES-R System Program Director
- Margarita Gregg, Director, National Oceanographic Data Center

International Leadership

- Mary Kicza, Committee on Earth Observation Satellites/Strategic Implementation Team (CEOS/SIT) Chair

Professional Organizations

- Tom Karl, President-elect, American Meteorological Society



NOAA Satellite and Information Service

What's New?



8

GOES-R Development

- Approval to enter acquisition and operations phase
 - Final space segment request for proposals (RFP) issued on January 25, 2008
 - Draft ground segment RFP issued on February 4, 2008
- All major instruments under contract
- NOAA-NASA relationship to leverage strengths of each agency

NPOESS

- Monitoring contract and VIIRS development closely
- Making progress on ground segment development
- Strong tri-agency partnership among NOAA-NASA-Air Force

Climate Sensors and Climate Data Records

- White House initiative to place new funds in NOAA's budget to restore climate measurements
- Important for NOAA's climate responsibilities and climate science work

Science Community

- National Research Council input to data archiving and to operationalizing key satellite measurements has been invaluable
- Supports science-based management and decision-making



NOAA Satellite and Information Service

What's New?



9

NASA-NOAA Research-to-Operations

- Ocean Surface Topography
- Ocean Surface Vector Winds trade studies

External Reviews

- Learning important lessons from Government Accountability Office and Inspectors General (DOC, DoD, NASA)
- GOES-R Independent Review Team (IRT) and NPOESS IRT
- Independent Cost Estimates

International Partnerships

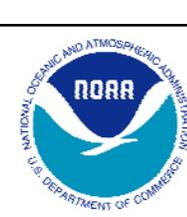
- Relationships with international space agencies are strong and evolving
- NOAA chairs the Committee on Earth Observation Satellites, Strategic Implementation Team (CEOS/SIT)
- Group on Earth Observation's and Global Earth Observation System of Systems (GEOSS) role is important and growing

Industry Involvement

- Continued outreach by the Office of Space Commercialization
- Transparency in the licensing process of the commercial remote sensing industry
- Examining commercial sector capability for select operational requirements

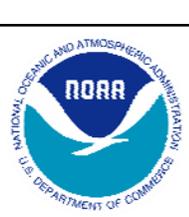


Committee on Earth Observation Satellites Strategic Implementation Team (CEOS/SIT)

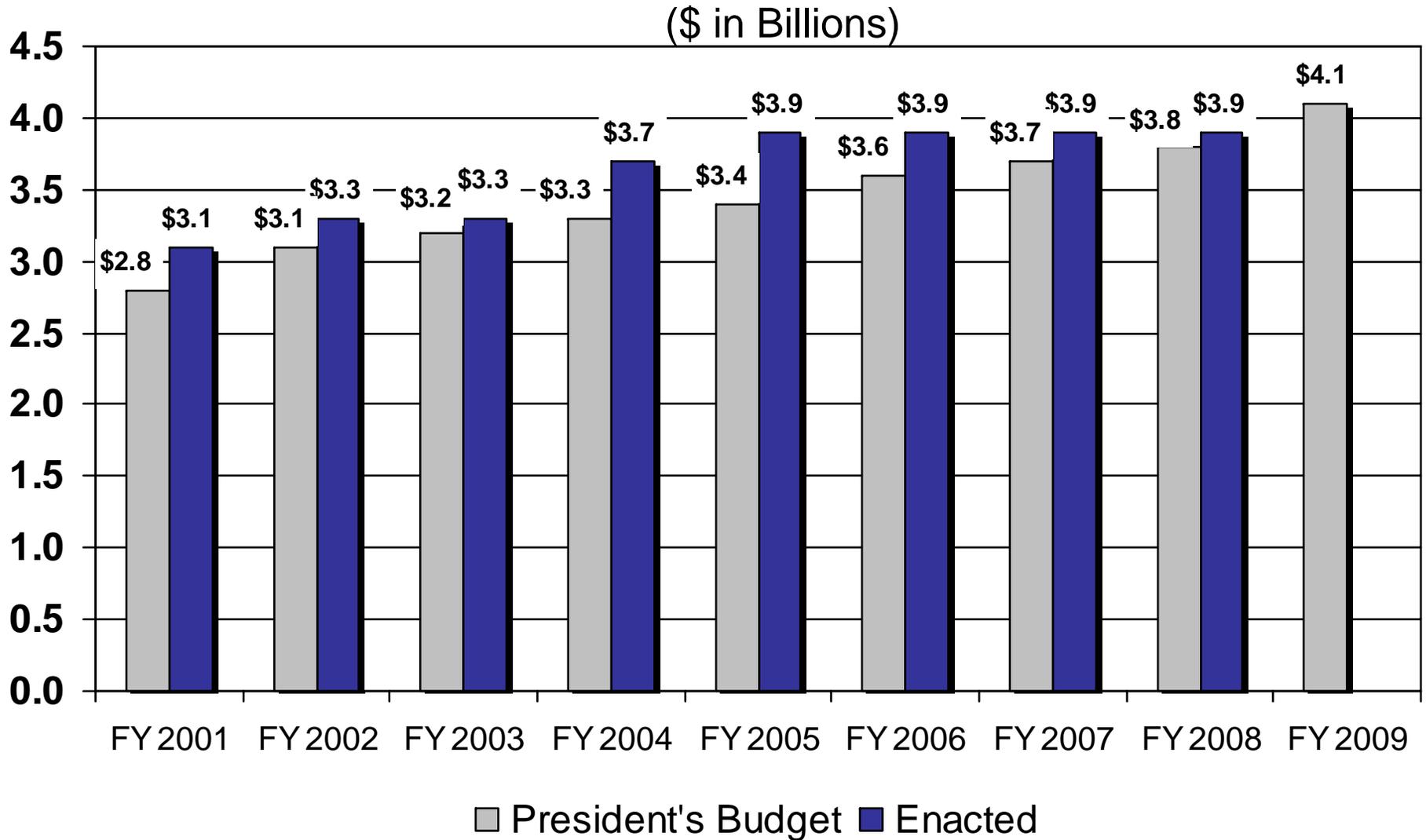


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- Conclude year-long Constellation pilot phase
 - Consolidate gains and assess lessons learned
 - Develop a framework and process for identifying the need for new constellations
- Strengthen connection of CEOS to Global Earth Observation System of Systems (GEOSS)
- Increase forward momentum of CEOS
 - Create clear traceability between CEOS Implementation Plan tasks and actions, and the GEOSS actions and targets
 - Implement strong process for completing tasks
- Clear synergy between CEOS SIT and NOAA activities



NOAA Budget Trends





NOAA FY 2009 President's Budget Summary by Line Office

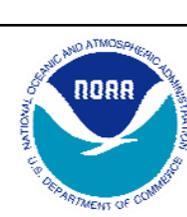


12

Line Office <i>(\$ in millions)</i>	FY 2008 President's Request	FY 2008 Enacted	FY 2009 President's Request	FY 2009 Request vs. FY 2008 Enacted (\$)	FY 2009 Request vs. FY 2008 Enacted (%)
National Ocean Service	\$465.5	\$536.1	\$488.2	(\$47.9)	(8.9 %)
National Marine Fisheries Service	\$796.0	\$829.1	\$782.3	(\$46.8)	(5.6 %)
Office of Atmospheric Research	\$368.8	\$398.1	\$382.6	(\$15.4)	(3.9 %)
National Weather Service	\$903.5	\$911.4	\$930.7	\$19.3	2.1 %
National Environmental Satellite, Data, and Information Service	\$978.3	\$955.1	\$1,157.9	\$202.8	21.2 %
Program Support/Marine & Aviation Operations	\$442.1	\$445.7	\$519.1	\$73.3	16.5 %
Total (Net of Financing)	\$3,815.4	\$3,907.3	\$4,109.8	\$202.6	5.2 %



NOAA Satellite and Information Service FY 2009 Budget Overview



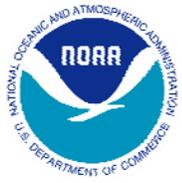
13

Line Item/Account * (\$ in millions)	FY 2008 Enacted	Terminations	Total ATBs	Program Change	FY 2009 President's Budget
Environmental Satellite Observing Systems	\$101.9	(\$0.1)	\$2.6	\$7.2	\$111.6
NOAA'S Data Centers & Information Services	\$77.2	(\$25.8)	\$1.0	\$1.2	\$53.7
Subtotal Operations, Research & Facilities (ORF)	\$179.2	(\$25.9)	\$3.6	\$8.4	\$165.3
Subtotal Procurement, Acquisition, and Construction (PAC)	\$775.9	(\$0.8)	(\$0.2)	\$217.7	\$992.6
Other Accounts	\$0	\$0	\$0	\$0	\$0
NESDIS TOTAL *	\$955.1	(\$26.7)	\$3.4	\$226.1	\$1,157.9

* Numbers may not add due to rounding



NOAA Satellite and Information Service FY 2009 Budget Change Summary/Priorities

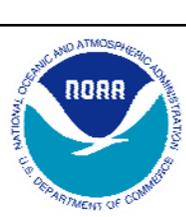


14

Budget Line	Program Changes (\$ in millions)
Calculated ATBs – labor and inflationary increases only	\$3.0
Technical ATBs	\$0.4
Total	\$3.4
Geostationary Satellite System (GOES-N Series)	(\$7.0)
Geostationary Satellite System (GOES-R Series)	\$242.2
Polar-orbiting Satellite System (POES)	(\$48.9)
Polar-orbiting Satellite System (NPOESS)	(\$43.0)
Climate Sensors and Climate Data Records	\$74.0
NOAA Data Centers & Information Services	\$1.2
Environmental Satellite Observing System	\$7.2
Other PAC Items	\$0.3
Total	\$226.1



Procurement Acquisition and Construction (PAC) Overview: \$992.6 million



15



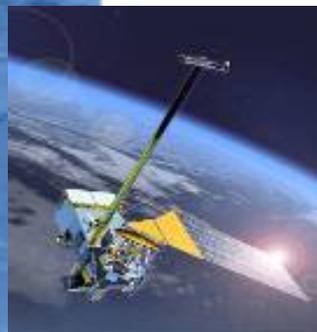
Geostationary and Polar Satellite Acquisition \$903.7 million

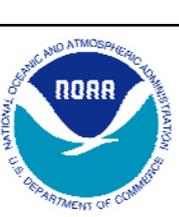
Climate Sensors and Climate Records \$ 74.0 million

Data and Other Systems Investments \$ 12.7 million

Construction & Infrastructure \$ 2.2 million

Total \$992.6 million



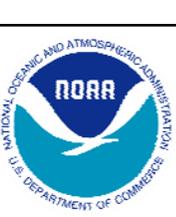


Satellite Acquisition: \$977.7 million

16

PAC Account (\$M)	FY 2008 Enacted	Program Change	FY 2009 President's Budget
Geostationary Operational Environmental Satellite (GOES) I-M Series	\$0.0	\$0.0	\$0.0
GOES-N Series	\$80.4	(\$7.0)	\$73.3
GOES-R Series	\$234.8	\$242.2	\$477.0
Geostationary-orbiting Satellites	\$315.2	\$235.2	\$550.3
Polar-orbiting Operational Environmental Satellite (POES)	\$114.9	(\$48.9)	\$65.4
National Polar-orbiting Operational Environmental Satellite (NPOESS)	\$331.3	(\$43.0)	\$288.0
Polar-orbiting Satellites	\$446.2	(\$91.9)	\$353.4
Subtotal, Geostationary and Polar Satellite Acquisition	\$761.4	\$143.3	\$903.7
Climate Sensors and Climate Data Records	\$0.0	\$74.0	\$74.0
Total Satellite Acquisition *	\$761.4	\$217.3	\$977.7

* Numbers may not add due to rounding



Geostationary Operational Environmental Satellite (GOES) NOP-Series: \$73.3 million

17

FY 2009 Budget will:

- Support GOES-P launch
- Fund NOAA government program office and NASA technical management
- Support product development for data from GOES-NOP satellites
- Provide lifetime support of GOES-NOP ground systems and required technology upgrades
- Provide up to 5 years post-launch support to address engineering and technological anomalies that may arise prior to and during operations

Schedule

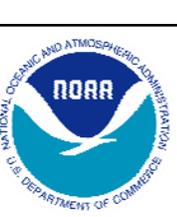
- GOES-13 (GOES-N) in on-orbit storage
- GOES-O launch in 2008 & GOES-P launch in 2009



FY 2009 budget reflects a planned decrease of \$7.0 million with the near completion of GOES-NOP satellites



Geostationary Operational Environmental Satellite GOES-R Series: \$477.0 million



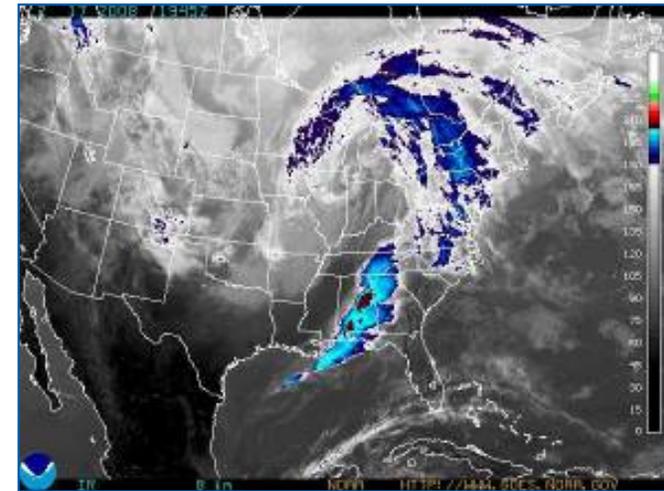
18

FY 2009 Budget will:

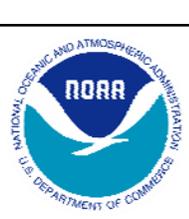
- Support award of spacecraft and ground systems contracts in FY 2009
- Support continued development of all major instruments
- Fund NOAA program management, and NOAA and NASA project management
- Fund systems engineering and integration capabilities
- Allow implementation of the revised life cycle estimate of \$7.672 billion
 - Vetted by an Independent Cost Estimate (ICE) team and by the GOES-R Independent Review Team (IRT)

Schedule

- First satellite in the GOES-R series scheduled for 2015 launch (launch date under review)



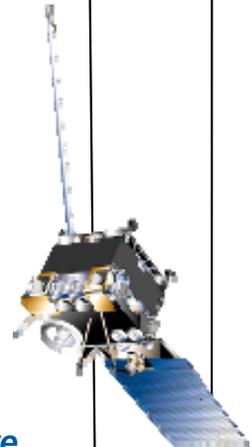
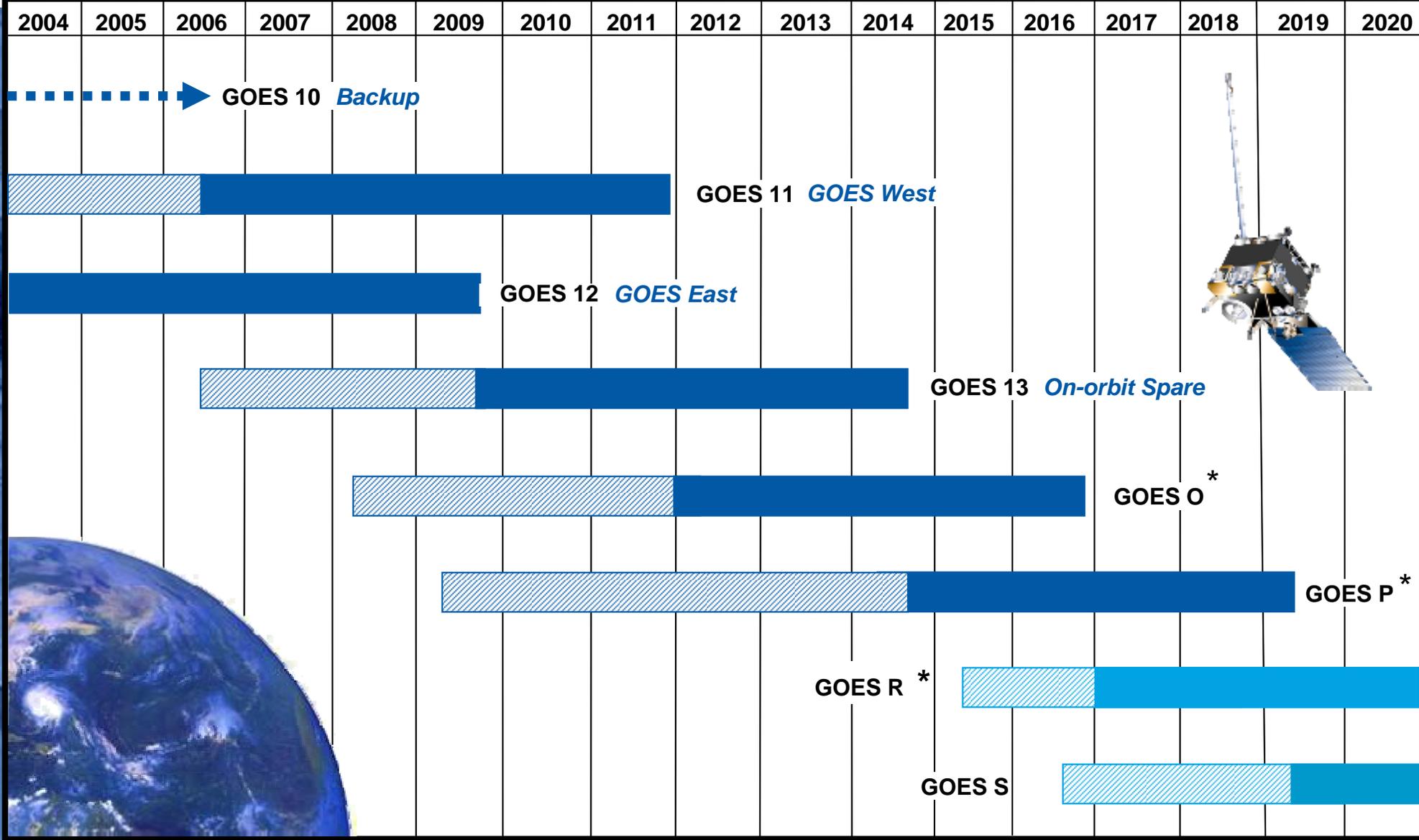
FY 2009 budget reflects an increase of \$242.2 million



Planned Geostationary Missions

19

Calendar Year

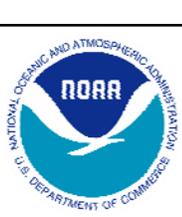


 Satellite is operational beyond design life
 On-orbit GOES storage
 Operational

* Launch dates under review



Polar-orbiting Operational Environmental Satellite (POES): \$65.4 million



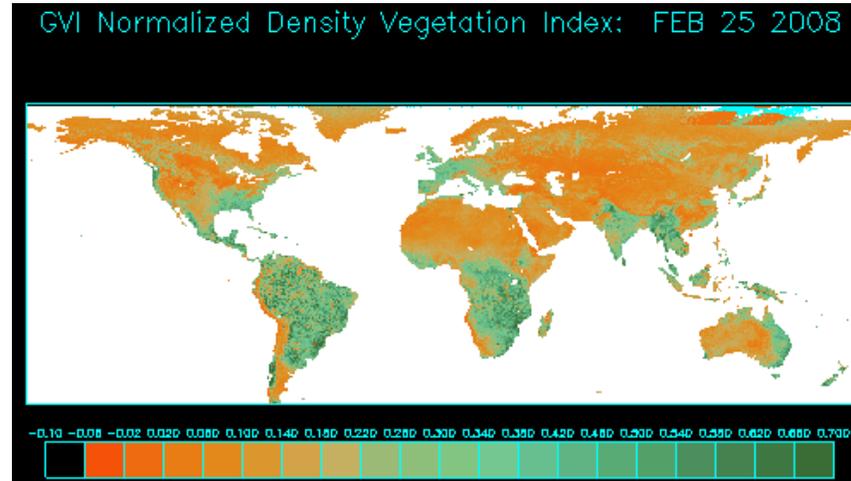
20

FY 2009 Budget will:

- Support NOAA N-Prime February 2009 launch
- Fund NOAA program management office and NASA technical management
- Support completion of development, installation, and maintenance of NOAA instruments that will fly onboard MetOp B and C which will provide NOAA morning polar satellite observations
- Provide lifetime support of POES Series ground systems and required technology upgrades
- Provide \$4 million above pre-planned amounts for FY 2009 to fund launch contingency

Schedule

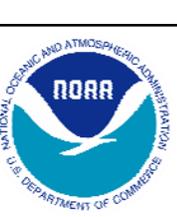
- February 2009 NOAA N-Prime launch
- MetOp B launch in 2011 & MetOp C launch in 2015



FY 2009 budget reflects a decrease of \$48.9 million



National Polar-orbiting Operational Environmental Satellite System (NPOESS): \$288.0 million



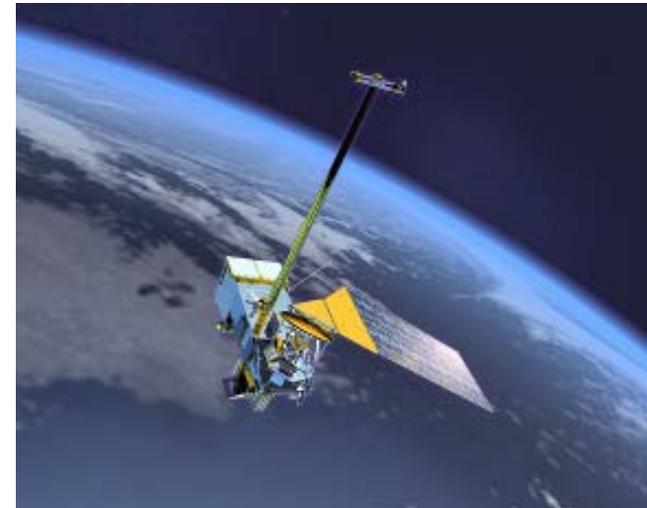
21

FY 2009 Budget will:

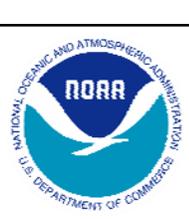
- Fund 50 percent share of program funding for the restructured NPOESS Program
- Fund spacecraft, instruments, ground systems and program management of the NPOESS spacecraft and instruments that will fly on the NPP
- Ensure continuity of polar satellite observations for the Nation after the final launches of NOAA POES and Department of Defense's Defense Meteorological Satellite Program

Schedule

- First NPOESS satellite to launch in 2013
- NPP launch date rescheduled by NASA to 2010 to allow resolution of production issues related to the Visible/Infrared Imager Radiometer Sensor (VIIRS) development

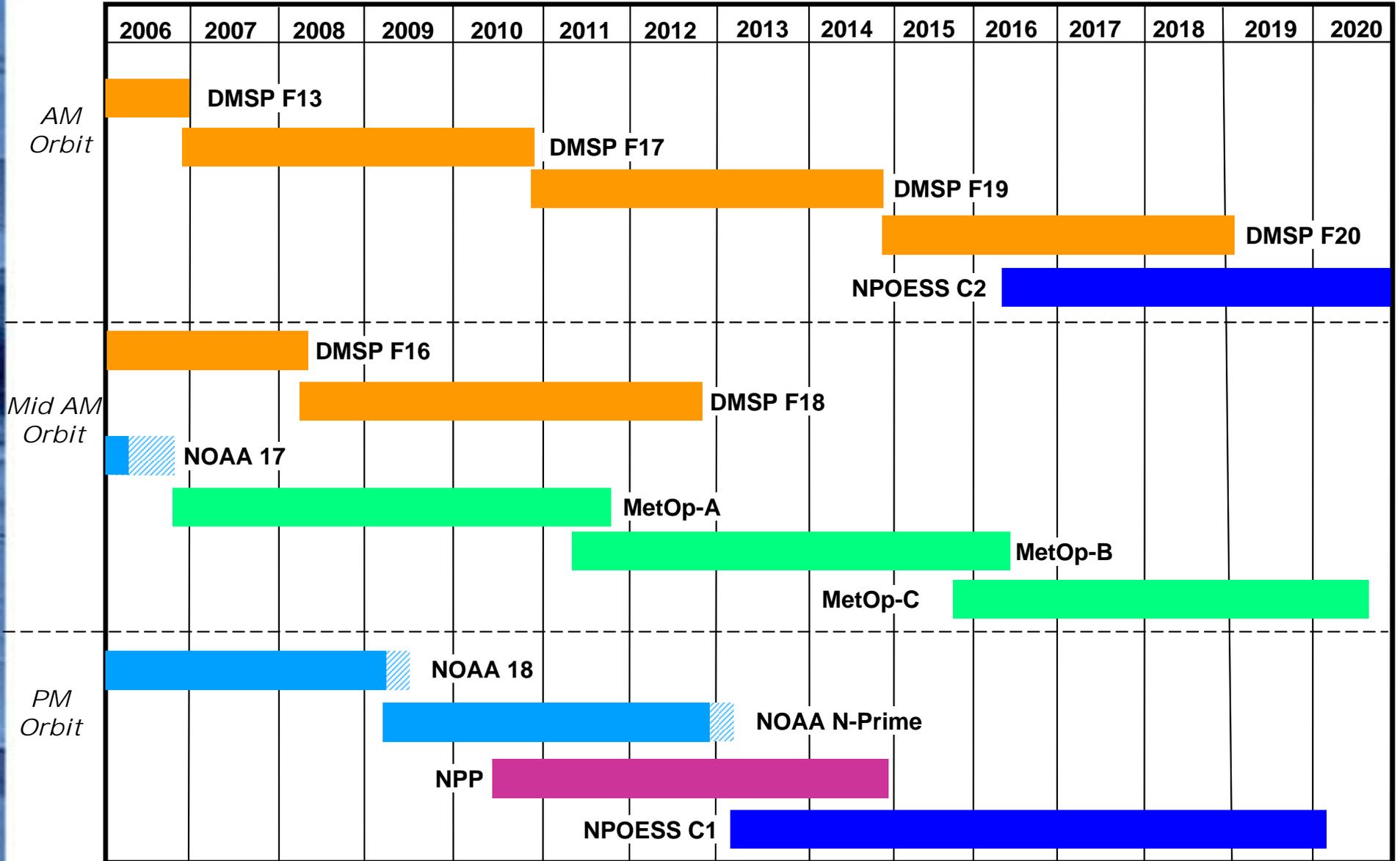


Budget reflects a planned decrease of \$43.0 million based on the 2006 restructured program funding profile



Planned Polar Satellite Programs

Calendar Year



- Defense Meteorological Satellite Program (DoD)
- European Polar System (EUMETSAT)
- NOAA Polar Satellite Program
- NPOESS Preparatory Project (NASA/NOAA)
- National Polar-orbiting Operational Environmental Satellite System (NOAA/DoD/NASA)
- Extended operation

New Initiative: Climate Sensors and Climate Data Records: \$74.0 million

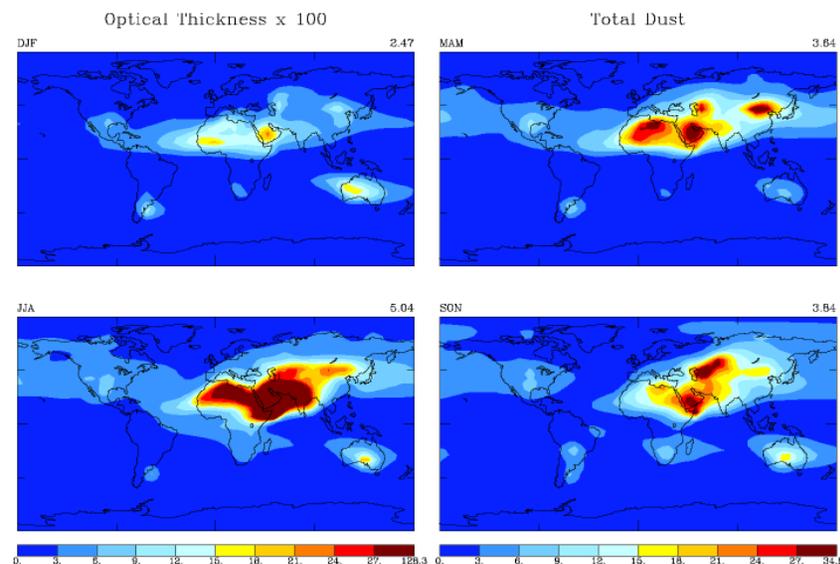
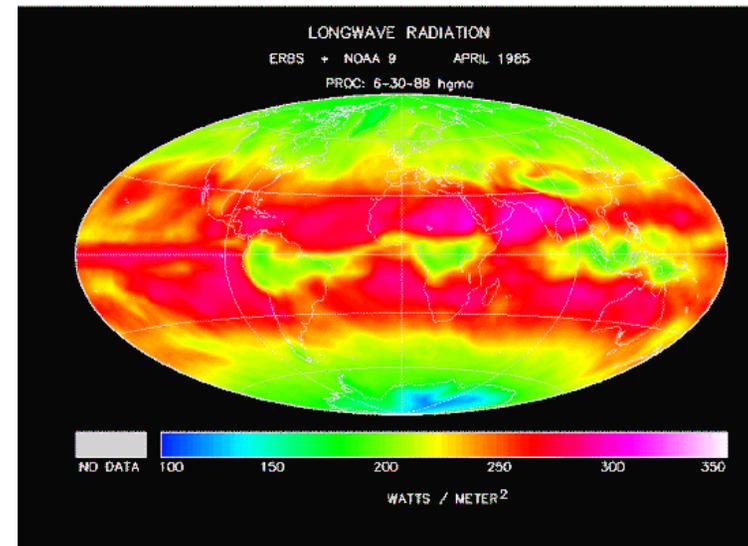
23

FY 2009 Budget will:

- Support continued development of the Clouds and the Earth's Radiant Energy System (CERES) and the Total Solar Irradiance Sensor (TSIS) climate sensors for operational platforms
- Support continued development of data records and system architecture to support long-term data archive, access and assessment activities

Schedule

- NPOESS Executive Committee (EXCOM) decided to remanifest CERES onto NPOESS Preparatory Project
- NOAA and NASA examining platform options to accommodate TSIS instrument
- Continue work to implement climate data records





Status of Climate Sensors Removed from NPOESS



24

- White House strategy to restore climate sensors that had been removed from the NPOESS program in June 2006 through Nunn-McCurdy restructuring
- NOAA, NASA, and the climate science community provided input
- White House is currently reviewing space weather sensors that had been removed from NPOESS

Sensor	Status
Total Solar Irradiance Sensor (TSIS)	FY 2009 budget will build on initial FY 2008 work
Earth Radiation Budget Sensor (ERBS)	Mitigated through January 2008 decision to place Clouds and the Earth's Radiant Energy System (CERES) instrument on NPOESS Preparatory Project (NPP)
RADAR Altimeter (ALT)	Mitigated through June 2008 launch of Ocean Surface Topography Mission on the Jason-2 satellite (OSTM/Jason-2) to continue Jason observations. International collaboration among NOAA, NASA, the French Space Agency (CNES), and EUMETSAT to provide operational support for Jason-2
Ozone Mapping & Profiler Suite (OMPS) Limb subsystem	OMPS-Limb was restored on NPP by April 2007 joint NOAA-NASA decision
Aerosol Polarimeter Sensor (APS)	Planned mitigation through APS instrument on NASA GLORY mission



Data and Other Systems Investments: \$12.7 million



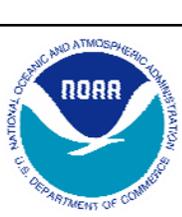
25

PAC Account (\$M)	FY 2008 Enacted	Program Change	FY 2009 President's Budget
Comprehensive Large Array-data Stewardship System (CLASS)	\$6.3	\$0.2	\$6.5
EOS Archive Enhancements	\$1.0	\$0.0	\$1.0
NPOESS Data Exploitation	\$2.4	\$0.0	\$2.5
Critical Single Point of Failure	\$2.7	\$0.1	\$2.8
Data System Investments *	\$12.4	\$0.3	\$12.7

* Numbers may not add due to rounding



Comprehensive Large Array-data Stewardship System (CLASS) and EOS Archive: \$7.5 million



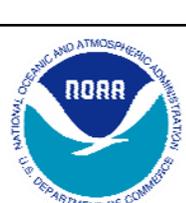
26

- CLASS supports NOAA's mission to acquire, archive, and disseminate environmental data
- NOAA spends approximately \$1 billion per year collecting environmental data from *in situ* and space-based platforms
- NOAA has over 30 years of data in archives and other collections
- CLASS is an upgraded data access and archive system that meets 21st Century requirements for performance, reliability, and security
- The long-term goal for CLASS is the stewardship of all environmental data archived at NOAA
- CLASS is NOAA's premiere on-line facility for the distribution of POES, GOES and derived data
- National Research Council study affirmed the importance of data standards for this national enterprise system





Construction and Infrastructure: \$2.2 million



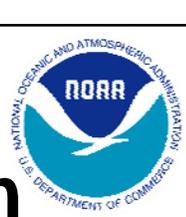
27

NESDIS Facilities Budget Request

NESDIS PAC Account (\$M)	FY 2007 Enacted	FY 2008 Enacted	Program Change	FY 2009 President's Budget
NESDIS Facilities and Infrastructure	\$2.2	\$2.2	\$0.0	\$2.2

NESDIS request continues critical on-going maintenance of facilities and infrastructure at Wallops Island and Fairbanks Satellite Command and Data Acquisition Stations:

- Buildings are over 40 years old
 - Critical to NOAA observations network
 - Operate on a 24x7 basis
 - Required to fill operational requirements till 2026+
 - Located in harsh environments (Fairbanks in sub-Arctic area; Wallops Island in hurricane-prone area)



New Initiative in NOAA Facilities Request: Fairbanks Building Replacement: \$11.7 million

28

NOAA Facilities Budget Request

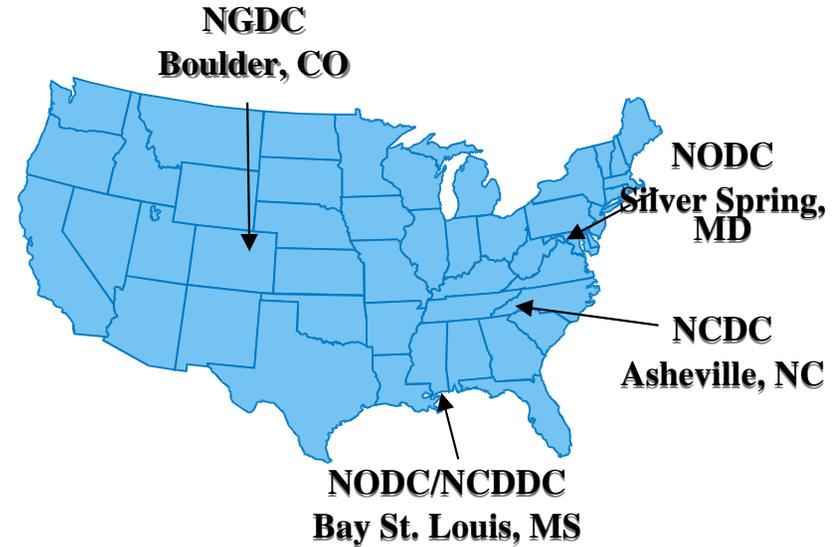
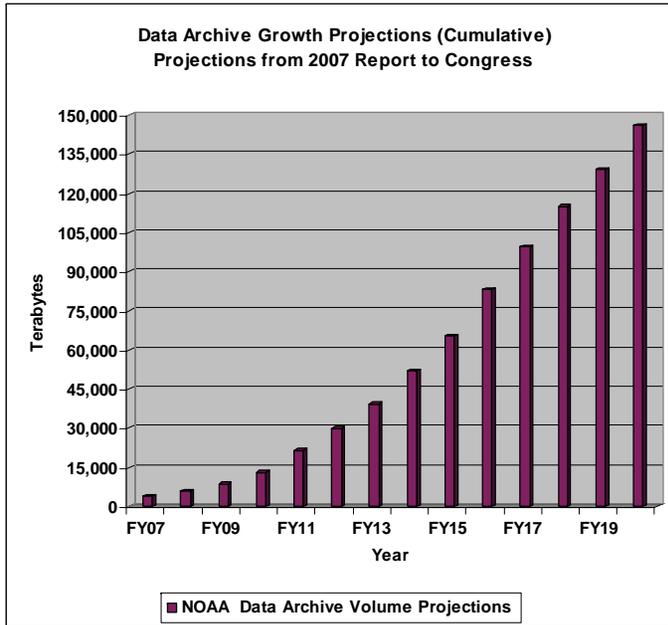
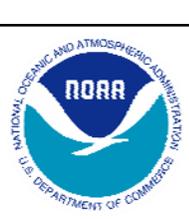
NOAA Facilities PAC Account (\$M)	FY 2007 Enacted	FY 2008 Enacted	Program Change	FY 2009 President's Budget
Fairbanks Satellite CDA Replacement	\$0.0	\$0.0	\$11.7	\$11.7

- NOAA Facilities request supports the first of two-year funding to replace operations building at Fairbanks station
- Fairbanks is critical to NOAA's polar-orbiting satellite program, MetOp partnership, Department of Defense weather satellites through 2020 and beyond
- Fairbanks provides back up support to NASA research satellites





Operations, Research, and Facilities (ORF) Overview: \$165.3 million



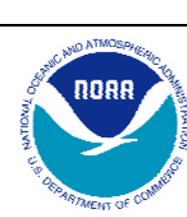
Environmental Satellite Observing Systems \$111.6 million

NOAA's Data Centers & Information Services \$53.7 million

Total **\$ 165.3 million**



Environmental Satellite Observing Systems: \$111.6 million



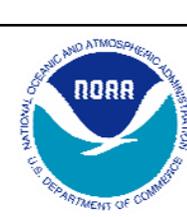
30

ORF Account (\$M)	FY 2008 Enacted	Program Change	FY 2009 President's Budget
Satellite Command and Control	\$43.4	\$1.6	\$46.4
Product Processing and Distribution	\$29.7	\$1.2	\$31.5
Product Development, Readiness & Application	\$26.5	\$1.4	\$28.4
Office of Space Commercialization	\$0.6	\$0.0	\$0.6
Commercial Remote Sensing Licensing & Enforcement	\$1.2	\$0.0	\$1.3
Group on Earth Observations (GEO)	\$0.5	\$0.0	\$0.5
Ocean Surface Vector Winds Studies	\$0.0	\$3.0	\$3.0
Total *	\$101.9	\$7.2	\$111.6

* Numbers may not add due to rounding



Environmental Satellite Observing Systems: \$111.6 million



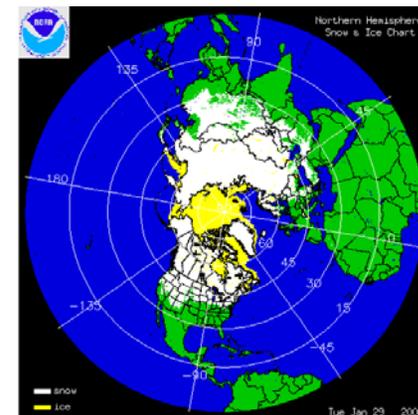
31

FY 2009 Budget will:

- Continue operational satellite product processing and distribution to support forecasts and warnings to the American public and US interests internationally

Budget increase of \$7.2 million:

- \$0.5 million to upgrade ground systems to improve access to US-European MetOp data by procuring high speed data link
- \$0.5 million for purchase a license to acquire synthetic aperture radar satellite data from the European Space Agency to monitor sea ice hazards in Alaskan waters, Great Lakes, and the Chesapeake Bay/Delaware Bay
- \$3.2 million to develop satellite-derived products and services to support NOAA weather and water, ecosystem, climate, commerce & transportation programs
- \$3.0 million to continue studies on ocean surface vector winds and observations alternatives

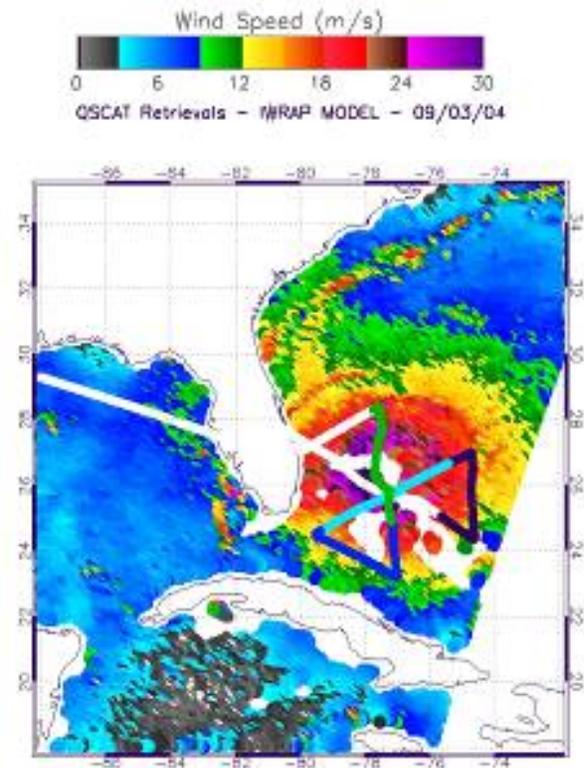


New Initiative: Ocean Surface Vector Wind Studies: \$ 3.0 million

32

FY 2009 Budget will:

- Complete and evaluate trade studies for both space and non-space based alternatives in FY 2009 to determine the best alternative to measure ocean surface vector winds
- Support an analysis of alternatives (AoA) to satisfy requirements for ocean surface wind speed and direction observations

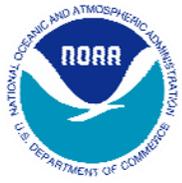


NOAA's National Hurricane Center forecasters use QuikSCAT data to support operational forecasts and warnings

NASA's QuikSCAT research satellite is beyond its projected lifetime, but is continuing to operate



NOAA's Data Centers & Information Services: \$53.7 million



33

ORF Account (\$M)	FY 2008 Enacted	Program Change	FY 2009 President's Budget
Archive, Access & Assessment	\$33.8	\$0.8	\$35.5
Climate Database Modernization	\$21.0	\$0.0	\$4.1
Coastal Data Development	\$4.4	\$0.2	\$4.6
Regional Climate Centers	\$3.6	\$0.0	\$0.0
International Pacific Research Center (U of HI)	\$1.8	\$0.0	\$0.0
Integrated Data & Environmental Applications Center	\$2.5	\$0.0	\$0.0
Center for the Application of IT and Remote Sensing Science	\$1.0	\$0.0	\$0.0
Environmental Data Management Modernization	\$9.2	\$0.2	\$9.5
Total *	\$77.2	\$1.2	\$53.7

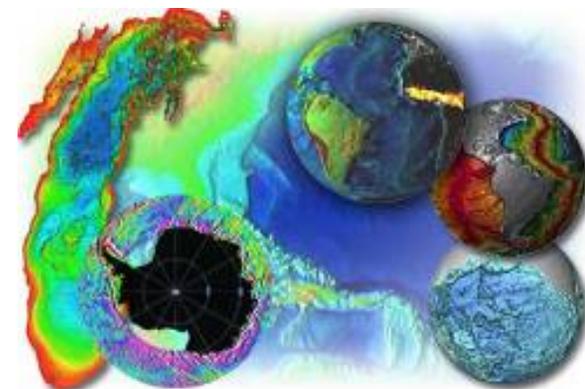
* Numbers may not add due to rounding

NOAA's Data Centers & Information Services: \$53.7 million

34

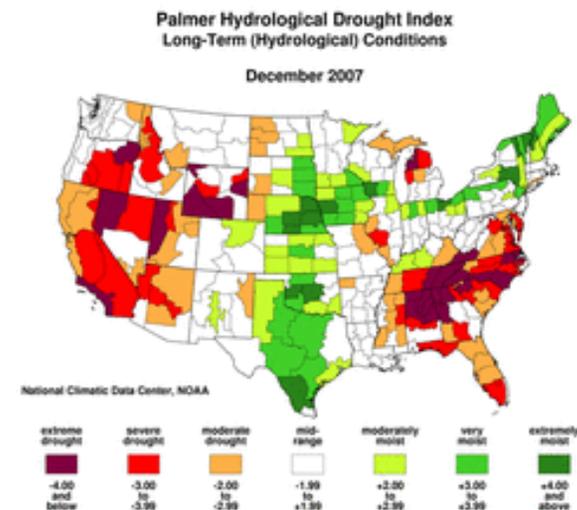
FY 2009 Budget will:

- Support continued development of quality-controlled data archives that are essential in supporting the long-term analysis and assessment required to determine environmental changes
- Provide resources to NOAA Data Centers to respond to the significant increases in requests for climatic, coastal and oceanographic, and geophysical data



Budget increase of \$1.2 million provides:

- **\$0.8 million** to archive and perform assessments in support of NOAA's weather and water, climate, ecosystems, and commerce and transportation goals
- **\$0.2 million** will support critical coastal and ecosystem projects at NODC's National Coastal Data Development Center at Stennis Space Center in Mississippi
- **\$0.2 million** will support recurring upgrades to existing data archive and access systems





NOAA Satellite and Information Service FY 2009 Budget Request Summary



35

- Allows us to maintain current services while preparing for future challenges
- Will support major milestones:
 - Award of GOES-R space and ground segment contracts
 - Launch NOAA N-Prime
 - Launch GOES-P (date under review)
- Will continue critical operations:
 - Command and control, data processing and distribution of products and services
 - Data Center archive, access, and assessment
- Allow for systematic evaluation and planning to address emerging requirements:
 - Ocean surface vector winds replacement trade studies
 - Climate Sensors and Climate Data Records
 - Review of National Research Council recommendations



NOAA Satellite and Information Service For Additional Information



36

www.nesdis.noaa.gov

NOAA Blue Book

www.corporateservices.noaa.gov/~nbo/09bluebook_highlights.html

NESDIS Budget Web Site

www.nesdis.noaa.gov/About/fy09_budget/fy09_budget.html