



FULL COMMITTEE

HEARING CHARTER

“An Overview of the Budget Proposal for the National Aeronautics and Space Administration for Fiscal Year 2024”

April 27, 2023

1:00 P.M. EST

2318 Rayburn House Office Building

Purpose

The purpose of the hearing is to review the Administration’s Fiscal Year 2024 (FY24) budget request for the National Aeronautics and Space Administration.

Witnesses

- **The Honorable Bill Nelson**, Administrator, National Aeronautics and Space Administration

Overarching Questions

- What new initiatives and terminations are proposed in the FY24 budget request for NASA, and why?
- What effect are mission delays and cost overruns having on NASA’s overall portfolio and how are they being addressed?
- What is the balance of human exploration, science, space technology, and aeronautics in the proposed budget for FY24?
- Does the proposed budget reflect expected increases in costs to programs across the agency, or will increased costs be reflected in future budgets?

Background

NASA is the world’s leading civilian space agency; it employs approximately 50,000 civil servants and contractors across the country. In addition to its headquarters, the agency operates nine federal research facilities: Goddard Space Flight Center in Greenbelt, MD; Kennedy Space Center in Merritt Island, FL; Langley Research Center in Hampton, VA; Glenn Research Center in Cleveland,

OH; Johnson Space Center in Houston, TX; Ames Research Center in Mountain View, CA; Armstrong Flight Research Center at Edwards Air Force Base, CA; Marshall Space Flight Center in Huntsville, AL; and, Stennis Space Center in Bay St. Louis, MS. The Jet Propulsion Laboratory (JPL) in Pasadena, CA is a NASA-sponsored Federally Funded Research and Development Center operated by the California Institute of Technology. NASA also owns the Wallops Flight Facility in Wallops Island, Virginia, and the Michoud Assembly Facility (MAF) east of New Orleans, Louisiana.

The President’s FY24 budget request was released on March 13, 2023. The Administration requested \$27.185 billion for NASA in its FY24 budget request. This represents a \$1.8 billion, or 7.1% increase over the FY23 enacted appropriations.

Budget Request

Budget Authority (\$ in millions)	Fiscal Year						
	Op Plan 2022	Enacted 2023	Request 2024	2025	2026	2027	2028
NASA Total	24,041.3	25,383.7	27,185.0	27,728.7	28,283.2	28,848.9	29,425.8
Deep Space Exploration Systems	6,855.1	7,468.9	7,971.1	8,130.5	8,293.1	8,459.0	8,628.2
Common Exploration Systems Development	4,590.7	4,737.9	4,525.4	4,241.7	4,009.3	3,557.3	3,529.7
Artemis Campaign Development	2,007.6	2,600.3	3,234.8	3,674.4	4,068.9	4,686.2	4,879.6
Human Exp Requirements & Architecture	--	--	49.1	50.0	50.5	51.0	51.1
Mars Campaign Development	187.4	--	161.8	164.4	164.4	164.5	167.8
Exploration Research & Development	69.4	--	--	--	--	--	--
Space Operations	3,974.9	4,250.0	4,534.6	4,625.3	4,717.8	4,812.2	4,908.4
International Space Station	1,261.8	--	1,302.6	1,302.1	1,302.5	1,302.9	1,321.7
Space Transportation	1,716.9	--	1,956.7	1,990.6	2,036.2	2,068.7	2,153.4
Space and Flight Support (SFS)	889.1	--	1,047.0	1,103.0	1,076.8	1,005.4	995.4
Commercial LEO Development	102.1	--	228.4	229.6	302.3	435.2	437.8
Exploration Operations	5.0	--	--	--	--	--	--
Space Technology	1,100.0	1,200.0	1,391.6	1,419.4	1,447.8	1,476.8	1,506.3
Science	7,610.9	7,795.0	8,260.8	8,426.0	8,594.5	8,766.4	8,941.7
Earth Science	2,061.2	2,195.0	2,472.8	2,597.5	2,730.0	2,791.2	2,849.0
Planetary Science	3,120.4	3,200.0	3,383.2	3,265.8	3,246.1	3,350.8	3,389.7
Astrophysics	1,568.9	1,510.0	1,557.4	1,622.1	1,665.9	1,689.6	1,749.4
Heliophysics	777.9	805.0	750.9	837.4	847.3	827.4	844.0
Biological and Physical Sciences	82.5	85.0	96.5	103.2	105.3	107.4	109.6
Aeronautics	880.7	935.0	995.8	1,015.7	1,036.0	1,056.7	1,077.8
STEM Engagement	137.0	143.5	157.8	161.0	164.2	167.5	170.9
Safety, Security, and Mission Services	3,020.6	3,129.5	3,369.4	3,436.8	3,505.5	3,575.6	3,647.1
Mission Services & Capabilities	1,987.2	--	2,259.3	2,304.1	2,350.0	2,397.1	2,445.0
Engineering, Safety, & Operations	1,033.4	--	1,110.1	1,132.7	1,155.5	1,178.5	1,202.1
Construction and Environmental Compliance and Restoration	416.8	414.3	453.7	462.8	472.1	481.5	491.1
Construction of Facilities	342.1	--	375.9	383.4	391.1	398.7	406.6
Environmental Compliance and Restoration	74.7	--	77.8	79.4	81.0	82.8	84.5
Inspector General	45.3	47.6	50.2	51.2	52.2	53.2	54.3
NASA Total	24,041.3	25,383.7	27,185.0	27,728.7	28,283.2	28,848.9	29,425.8

The programs in the Administration’s FY24 NASA budget request are summarized below by major organization (directorate or office). All budget numbers provided are based on the information in the NASA FY24 Congressional Budget Justification document,¹ the Consolidated Appropriations Act, 2023,² and NASA's FY 2022 Operating Plan.³

Exploration Systems Development Mission Directorate

Budget Authority (in \$ millions)	Op Plan FY 2022	Enacted FY 2023	Request FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
Common Exploration Systems Development	4,590.7	4,737.9	4,525.4	4,241.7	4,009.3	3,557.3	3,529.7
Artemis Campaign Development	2,007.6	2,600.3	3,234.8	3,674.4	4,068.9	4,686.2	4,879.6
Human Exploration Requirements & Architecture	0.0	--	49.1	50.0	50.5	51.0	51.1
Mars Campaign Development	187.4	--	161.8	164.4	164.4	164.5	167.8
Exploration Research & Development	69.4	--	0.0	0.0	0.0	0.0	0.0
Total Budget	6,855.1	7,468.9	7,971.1	8,130.5	8,293.1	8,459.0	8,628.2
Change from FY 2023 Enacted			502.2				
Percent change from FY 2023 Enacted			6.7%				

The Exploration Systems Development Mission Directorate (ESDMD) manages the development of systems and capabilities required for human exploration of the Moon and Mars, including the Artemis Campaign. Additionally, earlier this year NASA established the Moon to Mars Program Office within ESDMD.⁴ The Directorate is composed of four themes: Common Exploration Systems Development; Artemis Campaign Development; Human Exploration Requirements and Architecture; and Mars Campaign Development.

ESDMD is represented through the “Deep Space Exploration Systems” budget line. The Administration is requesting \$7.97 billion for Deep Space Exploration Systems in FY24, an increase of \$502.2 million (6.7%) over FY23 enacted.

In November 2022, the uncrewed Artemis I launch took place. According to the FY24 President’s Budget Request manifest, the current target for the Artemis II mission, a crewed test flight which will transport astronauts around the Moon, is no earlier than November 2024. This will be followed by Artemis III in December 2025, which will include the first human landing on the Moon in over 50 years. The timeline for Artemis II and III is currently being re-assessed because of delays in the Artemis I launch. Following the third Artemis mission, the budget request would delay Artemis IV from 2027 to 2028 and Artemis V from 2028 to 2029 respectively.

Common Exploration Systems Development (CESD): The FY24 request for CESD is \$4.54 billion, a decrease of \$288.1 million (6.0%) from FY23 enacted. The CESD theme is comprised of three programs: Orion, the Space Launch System (SLS), and Exploration Ground Systems (EGS).

¹ NASA, “FY 2024 Full Budget Request (Congressional Justification)”, March 13, 2023. Available at: [nasa_fy_2024_cj_v2.pdf](https://www.nasa.gov/sites/default/files/atoms/files/fy_2024_cj_v2.pdf)

² P.L. 117-328. Available at: [H.R.2617 - Consolidated Appropriations Act, 2023](https://www.congress.gov/bills/117/328)

³ NASA, “FY 2022 SPENDING PLAN FOR APPROPRIATIONS PROVIDED BY P.L. 117-103,” July 2022. Available at: https://www.nasa.gov/sites/default/files/atoms/files/fy_2022_spend_plan_july_2022.pdf

⁴ See: <https://www.nasa.gov/press-release/new-program-office-leads-nasa-s-path-forward-for-moon-mars>

These three programs make up the integrated system that will be used for the Artemis Campaign. The budget request for Orion is \$1.225 billion, a decrease of \$113.7 million (-8.49%) from FY23 enacted levels. The budget request for SLS is \$2.506 billion, a decrease of \$94 million (-3.62%) from FY23 enacted levels. The budget request for EGS is \$794 million, a decrease of \$5.15 million (-.64%) from FY23 enacted levels.

NASA asserts in its Congressional Justification that the budget cuts reflect a reduction in costs for Orion and SLS as they transition from active development to production.⁵ A potential hurdle to the cost reduction goal is the increased funding required for the Mobile Launcher-2 (ML-2), within the EGS program. The funding is needed to address contractor underperformance, increased material costs owing to inflation, and government contract changes.⁶ As ML-2 is currently on the critical path for Artemis IV, NASA is increasing funding for ML-2 and proposing to delay Artemis IV one year from 2027 to 2028.

Artemis Campaign Development (ACD): The FY24 request for ACD is \$3.23 billion, an increase of \$634.5 million (24.4%) over FY23 enacted. The ACD theme is responsible for the development of systems that will enable humans to live and operate in deep space, land humans on the Moon, explore the lunar surface, and prepare for Mars exploration. This will be accomplished through four programs: Gateway; Advanced Cislunar and Surface Capabilities (ACSC); the Human Landing System (HLS); and Exploration Extravehicular Activity (xEVA) and Human Surface Mobility Program (EHP).

Two major elements of the ACD budget growth are Gateway and HLS. For Gateway, the budget increase supports a technical redesign following the decision to co-manifest the Power and Propulsion element and Habitation and Logistics Outpost. This has pushed the Launch Readiness Date from Nov. 2024 to Oct. 2025. More significantly, the request for HLS in FY24 is \$1.88 billion, an increase of \$395 million (26.6%) over FY23 enacted. The additional funding would support the development of a second lunar lander contractor through an additional procurement.

Human Exploration Requirements and Architecture (HERA): The FY24 request for HERA is \$49.1 million. The HERA theme funds the Moon to Mars Architecture program which is responsible for the integration of strategy and architecture across ESDMD. HERA also conducts the annual Architecture Concept Review to maintain alignment with NASA's exploration objectives.

Mars Campaign Development (MCD): The FY24 request for MCD is \$161.8 million. The MCD theme works on developing and testing technologies as well as planning and development for human missions to the Moon and Mars. MCD primarily funds the Exploration Capabilities program which is working to identify and address knowledge gaps and develop capabilities and technology for future human space flight missions, including long-duration Mars missions.

⁵ Dreier, Casey, "NASA's 2024 budget proposal is pretty good, but it faces political headwinds," The Planetary Society, March 16, 2023. Available at: <https://www.planetary.org/articles/nasas-2024-budget>

⁶ NASA, Office of Inspector General, "NASA'S MANAGEMENT OF THE MOBILE LAUNCHER 2 CONTRACT," IG-22-012, June 9, 2022. Available at: [Final Report - IG-22-012 - NASA's Management of the Mobile Launcher 2 Contract](#)

Space Operations Mission Directorate

Budget Authority (in \$ millions)	Op Plan FY 2022	Enacted FY 2023	Request FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
International Space Station	1,261.8	--	1,302.6	1,302.1	1,302.5	1,302.9	1,321.7
Space Transportation	1,716.9	--	1,956.7	1,990.6	2,036.2	2,068.7	2,153.4
Space and Flight Support (SFS)	889.1	--	1,047.0	1,103.0	1,076.8	1,005.4	995.4
Commercial LEO Development	102.1	--	228.4	229.6	302.3	435.2	437.8
Exploration Operations	5.0	--	0.0	0.0	0.0	0.0	0.0
Total Budget	3,974.9	4,250.0	4,534.6	4,625.3	4,717.8	4,812.2	4,908.4
Change from FY 2023 Enacted			284.6				
Percent change from FY 2023 Enacted			6.7%				

For FY24, the Administration is requesting \$4.53 billion for the Space Operations Mission Directorate (SOMD), an increase of \$284.6 million (6.7%) over FY23 enacted. SOMD is driven by three objectives, a sustained human presence in LEO; enabling future exploration and advanced operations in our solar system; and advancing scientific discoveries that benefit life on earth. Funding for SOMD is distributed among four themes: the International Space Station, Space Transportation, Space and Flight Support, and Commercial LEO development.

International Space Station (ISS): The FY24 request for the ISS is \$1.3 billion, of which approximately \$1.04 billion is for maintenance and operations and \$266.6 million is for station research. This request provides support to sustain continued operations, following the decision to extend the ISS program through 2030, as well as to expand the breadth of researchers and non-governmental entities using the ISS. Of note, the Boeing vehicle sustaining engineering contract for the ISS only extends through September 2024.⁷

Space Transportation: The FY24 request for Space Transportation is \$1.95 billion. This includes approximately \$1.85 billion for the Crew and Cargo Program and \$100.6 million for the Commercial Crew Program. Together, these programs advance the U.S. commercial spaceflight industry through partnerships with industry providers for crew and cargo transportation services to the ISS and LEO. As of September 2022, NASA has allocated approximately \$25.4 billion to service providers under this contract, supporting vehicle development, 42 commercial cargo flights to the ISS, and several crew flights to the ISS through SpaceX.⁸ NASA is currently planning for seven commercial resupply flights and two commercial crew flights in FY24. Additionally, the Space Transportation request includes \$180 million for ISS de-orbit vehicle development up from the \$10 million appropriated in FY23. Under the Intergovernmental Agreement for the ISS, both the U.S. and Russia are responsible for deorbiting their respective segments.⁹

⁷ *Id. at 1*

⁸ *Id. at 1*

⁹ Agreement Among the Government of Canada, Governments of Member States of the European Space Agency, The Government of Japan, the Government of the Russian Federation, and the Government of the United States of America Concerning Cooperation on the Civil International Space Station. January 29, 1998. Available at:

<https://www.state.gov/wp-content/uploads/2019/02/12927-Multilateral-Space-Space-Station-1.29.1998.pdf>

NASA plans to award a contract to a U.S. industry provider in 2023 and estimates it will take between four and five years to develop the capability. NASA’s cost estimate for the entire deorbit capability is approximately \$1 billion.¹⁰

Space and Flight Support (SFS): The FY24 request for SFS is \$1.05 billion. This funding supports space communications systems and services, launch services, rocket testing, astronaut training, and research on long-duration human space exploration for NASA as well as other domestic and international government and non-government customers. Within SFS, increased funding is requested for additional deep space communication capabilities to support expanded lunar mission requirements, including additional lunar exploration ground sites (LEGS) for Artemis and lunar communications. Additional funding would also go towards launch site risk mitigation activities, including liquid oxygen (LOX) and methane studies.

Commercial LEO Development: The FY24 request for Commercial LEO Development (CLD) is \$228.4 million, an increase of \$4.1 million over FY23 enacted levels (1.8%). CLD provides support for the development of four commercial space stations to ensure there is a continued U.S. presence in LEO following the retirement of the ISS. The partners include Axiom Space, Blue Origin, NanoRacks, and Northrup Grumman. NASA is currently targeting 2028 for the completion and certification of at least one commercial station to allow for a two-year transition from the ISS to a commercial station.

Space Technology Mission Directorate

Budget Authority (in \$ millions)	Op Plan FY 2022	Enacted FY 2023	Request FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
Early Stage Innovation and Partnerships	126.3	--	138.1	140.9	143.7	146.6	149.5
Technology Maturation	257.7	--	402.3	410.3	418.5	426.9	435.4
Technology Demonstration	489.0	--	551.3	562.3	573.6	585.1	596.8
SBIR and STTR	227.0	--	299.9	305.9	312.0	318.2	324.6
Total Budget	1,100.0	1,200.0	1,391.6	1,419.4	1,447.8	1,476.8	1,506.3

The Administration’s FY24 request for the Space Technology Mission Directorate (STMD) is \$1.39 billion, an increase of \$191.6 million (16%) over FY23 enacted. STMD endeavors to support transformative, crosscutting technologies across the development spectrum that enhance the capabilities and reduce the cost of missions through collaborations with the U.S. aerospace industry as well as academia. STMD includes four portfolios: Early-Stage Innovation and Partnerships, Technology Maturation, Technology Demonstration, and SBIR and STTR.

Early-Stage Innovation and Partnerships (ESIP): The FY24 request for ESIP is \$138.1 million, an increase of \$9.1 million (7%) over FY23 enacted. ESIP supports concept studies, applied research, and early technology development with a recent emphasis on identifying emerging concepts and technologies that support topics such as lunar surface requirements and orbital debris. The ESIP portfolio advances over 700 projects annually, helping to address NASA mission needs and seed future disruptive aerospace capabilities.

¹⁰ Foust, Jeff, “NASA planning to spend up to \$1 billion on space station deorbit module,” SpaceNews, March 13, 2023. Available at: <https://spacenews.com/nasa-planning-to-spend-up-to-1-billion-on-space-station-deorbit-module/>

Technology Maturation: The FY24 request for Technology Maturation is \$402.3 million, an increase of \$78.4 million (24.2%) over FY23 enacted. Technology Maturation works to advance revolutionary space technologies from proof-of-concept to demonstration. The portfolio consists of around 100 projects and tasks, mainly in partnerships and collaborations with industry, academia, and other government agencies. Within Technology Maturation, there are several Lunar Surface Innovation technologies demonstrations planned for FY24 as well as qualification testing of the High Performance Spaceflight Computing production chip.

Technology Demonstration: The FY24 request for Technology Demonstration is \$551.3 million, an increase of \$35.9 million (6.9%) over FY23 enacted. This funding supports flight and ground demonstrations of emerging technologies through Technology Demonstration Missions (TDM); Flight Opportunities (FO); and Small Spacecraft Technologies (SST) programs. Funding for FY24 will support several demonstrations, including Cryogenic Fluid Management, Solar Electric Propulsion, and On-Orbit Servicing, Assembly, and Manufacturing Demonstration-1.

SBIR and STTR: The FY24 request for SBIR and STTR is \$299.9 million, an increase of \$68.2 million (29.4%) over FY23 enacted. The Congressional Justification notes that NASA plans to award over 460 new awards, grants, and contracts in FY24 and will also increase the award amount for SBIR Phase I from \$125,000 to \$150,000. This account funds the entire portfolio of NASA’s statutory responsibilities to allocate 3.2 percent of funding to small business.¹¹

Science Mission Directorate

Budget Authority (in \$ millions)	Op Plan FY 2022	Enacted FY 2023	Request FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
Earth Science	2,061.2	2,195.0	2,472.8	2,597.5	2,730.0	2,791.2	2,849.0
Planetary Science	3,120.4	3,200.0	3,383.2	3,265.8	3,246.1	3,350.8	3,389.7
Astrophysics	1,568.9	1,510.0	1,557.4	1,622.1	1,665.9	1,689.6	1,749.4
Heliophysics	777.9	805.0	750.9	837.4	847.3	827.4	844.0
Biological and Physical Sciences	82.5	85.0	96.5	103.2	105.3	107.4	109.6
Total Budget	7,610.9	7,795.0	8,260.8	8,426.0	8,594.5	8,766.4	8,941.7

The Administration requested \$8.26 billion for the Science Mission Directorate (SMD) in FY24, an increase of \$465.8 million (6.0%) over FY23 enacted levels. NASA’s scientific programs are guided by the overarching goal of expanding human knowledge through scientific discovery. SMD focuses on three objectives: understanding the Earth System and its climate; understanding the Sun, solar system, and universe; and ensuring NASA’s science data are accessible to all and produce practical benefits to society. To achieve these objectives, NASA conducts science in five major disciplines: Earth Science, Planetary Science, Astrophysics, Heliophysics, and Biological and Physical Science.

¹¹ 15 USC §638. Available at: <https://www.govinfo.gov/content/pkg/USCODE-2019-title15/pdf/USCODE-2019-title15-chap14A-sec638.pdf>

Earth Science: The FY24 request for Earth Science is \$2.47 billion, an increase of \$277.8 million (12.6%) over FY23 enacted levels. The Earth Science theme seeks to deepen our understanding of the Earth system and its changes. The request supports the development of the Climate Absolute Radiance and Refractivity Observatory (CLARREO) Pathfinder, NASA-ISRO Synthetic Aperture Radar (NISAR), and Plankton, Aerosols, Clouds, ocean Ecosystem (PACE) projects all of which are planning to launch in 2024. It also funds the initiation of the LandSat Next mission with plans to launch no earlier than Nov. 2030. Additionally, this account funds the Joint Agency Satellite Division, which manages the development and launch of reimbursable satellite programs, projects, and instruments for other agencies like the National Oceanic and Atmospheric Administration (NOAA) and the United States Geological Survey (USGS).

Planetary Science: The FY24 request for Planetary Science is \$3.38 billion, an increase of \$183.2 million (5.7%) over FY23 enacted levels. Within the Planetary Science theme, the Congressional Justification includes a request for additional funds for the Mars Sample Return mission as well as for the Mars Sample Receiving facility. NASA plans to revisit its budget request for Mars Sample Return, as its projected costs continue to rise and require reductions, delays, and cancellations to other agency missions.¹² There is also a request for additional funding to support a one-year launch delay of the Volatiles Investigating Polar Exploration Rover (VIPER) lunar rover. The request reinforces a delay to the Near-Earth Object (NEO) Surveyor mission from 2026 to 2028. The request also reflects NASA's decision to indefinitely delay the VERITAS mission to Venus.¹³

Astrophysics: The FY24 request for Astrophysics is \$1.55 billion, an increase of \$47.4 million (3.1%) over FY23 enacted levels. Within Astrophysics, funding supports the operation of the James Webb Space Telescope as well as the development of the Nancy Grace Roman Space Telescope, planned to launch in 2027. There is also funding for the closeout of the Stratospheric Observatory for Infrared Astronomy mission. The funding also supports the operational extension of Hubble, Fermi, Chandra, and the Transiting Exoplanet Survey Satellite pursuant to the 2022 NASA Senior Review recommendations.¹⁴

Heliophysics: The FY24 request for Heliophysics is \$750.9 million, a decrease of \$54.1 million (6.7%) from FY23 enacted levels. Funding for the Heliophysics theme includes support for two newly-selected Explorer missions, the Multi-slit Solar Explorer and HelioSwarm. It also supports the development of the Interstellar Mapping and Acceleration Probe (IMAP) and the Carruthers Geocorona Observatory. The request also includes a pause of the Geospace Dynamics Constellation mission due to cost growth in other NASA science missions like the Mars Sample Return mission, not because of any issues with the underlying program.

Biological and Physical Science: The FY24 request for biological and Physical Science is \$96.5 million, an increase of \$11.5 million (13.5%) over FY23 enacted. The request includes funding for Commercially Enabled Rapid Space Science (CERISS), a new project which aims to significantly increase research productivity.

¹² Foust, Jeff, "Mars Sample Return cost growth threatens other science missions," SpaceNews, March 18, 2023. Available at <https://spacenews.com/mars-sample-return-cost-growth-threatens-other-science-missions/>

¹³ *Id.* at 4

¹⁴ Available at: https://science.nasa.gov/science-red/s3fs-public/atoms/files/2022_Senior_Review_Subcommittee_Rpt_Tagged.pdf

Aeronautics Research Mission Directorate

Budget Authority (in \$ millions)	Op Plan FY 2022	Enacted FY 2023	Request FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
Airspace Operations and Safety Program	139.1	--	158.7	164.4	179.4	198.2	202.8
Advanced Air Vehicles Program	250.3	--	295.2	311.6	305.0	273.6	257.5
Integrated Aviation Systems Program	231.5	--	264.9	260.5	263.5	279.7	305.5
Transformative Aero Concepts Program	142.8	--	160.0	161.8	170.3	184.5	188.5
Aerosciences Evaluation and Test Capabilities	117.0	--	117.0	117.4	117.7	120.7	123.5
Total Budget	880.7	935.0	995.8	1,015.7	1,036.0	1,056.7	1,077.8

For FY24, the Administration is requesting \$995.8 million for the Aeronautics Research Mission Directorate (ARMD), an increase of \$60.8 million (6.5%) over FY23 enacted levels. ARMD is guided by a Strategic Implementation Plan¹⁵ which includes six strategic thrusts: Safe, Efficient Growth in Global Operations; Innovation in Commercial Supersonic Aircraft; Ultra-Efficient Subsonic Transports; Safe, Quiet, and Affordable Vertical Lift Air Vehicles; In-Time System-Wide Safety Assurance; and Assured Autonomy for Aviation Transformation. In line with these strategic focuses, the Congressional Justification highlights four research focuses for ARMD in FY24: ultra-efficient transport; high-speed commercial flight; future airspace operations; and advanced air mobility.

Funding for ARMD is split across five programs: Airspace Operations and Safety Program (AOSP); Advanced Air Vehicles Program (AAVP); Integrated Aviation Systems Program (IASP); Transformative Aeronautics Concepts Program (TACP); and Aerosciences Evaluation and Test Capabilities Portfolio (AETC). The budget request for FY24 has several notable changes. Within the Sustainable Flight National Partnership (SFNP) program, funding increases are proposed for the Sustainable Flight Demonstrator, High-Rate Composite Aircraft Manufacturing, and Hybrid Thermally Efficient Core projects as they move into the design/build phase. Increased funding is also proposed for the development of zero-emissions aircraft concepts through the University Leadership Initiative. The request also includes a decrease in funding for the Low-Boom Flight Demonstrator project as it moves into the less costly flight validation phase.

Office of STEM Engagement

Budget Authority (in \$ millions)	Op Plan FY 2022	Enacted FY 2023	Request FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
NASA Space Grant	54.5	58.0	58.0	59.2	60.3	61.5	62.8
Established Program to Stimulate Comp Research	26.0	26.0	26.0	26.5	27.0	27.6	28.1
Minority University Research Education Program	43.0	45.5	48.1	49.1	50.1	51.1	52.2
Next Gen STEM	13.5	14.0	25.7	26.2	26.7	27.3	27.8
Total Budget	137.0	143.5	157.8	161.0	164.2	167.5	170.9
Change from FY 2023 Enacted			14.3				
Percent change from FY 2023 Enacted			10.0%				

¹⁵ Available at: <https://www.nasa.gov/sites/default/files/atoms/files/sip-2019-v7-web.pdf>

The Administration’s FY24 request for the Office of STEM Engagement (OSTEM) is \$157.8 million, an increase of 14.3 million (10.0%) over FY23 enacted. OSTEM is responsible for NASA’s STEM Engagement program and its four components: National Space Grant College and Fellowship Project (Space Grant); Established Program to Stimulate Competitive Research (EPSCoR); Minority University Research and Education Project (MUREP); and Next Generation STEM Project (Next Gen STEM). These projects support educators and educational institutions as well as efforts to attract, engage, and educate students.

The Congressional Justification lists four focus areas for OSTEM in FY24: broadening student participation; enhancing the K-12 portfolio opportunities; expanding internships and other direct learning opportunities; and expanding partnerships. Notably, the request for Next Gen STEM is \$25.7 million which is a \$11.7 million (83.6%) increase over FY23 enacted to support the expansion of opportunities and experiences for K-12 students.

Mission Support Directorate

The Mission Support Directorate (MSD) manages the Safety, Security, and Mission Services (SSMS) and Construction and Environmental Compliance and Restoration (CECR) budget accounts. Together they deliver foundational support capabilities to ensure NASA has the technical skills, physical assets, financial resources, and talent the agency needs. SSMS and CECR are dependent on each other and jointly enable NASA’s efforts to maintain critical infrastructure with CECR managing construction and repair activities and SSMS managing maintenance activities.

Budget Authority (in \$ millions)	Op Plan FY 2022	Enacted FY 2023	Request FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
Mission Services & Capabilities	1,987.2	--	2,259.3	2,304.1	2,350.0	2,397.1	2,445.0
Engineering, Safety, & Operations	1,033.4	--	1,110.1	1,132.7	1,155.5	1,178.5	1,202.1
Total Budget	3,020.6	3,129.5	3,369.4	3,436.8	3,505.5	3,575.6	3,647.1

Safety, Security, and Mission Services (SSMS): The FY24 request for SSMS is \$3.36 billion, an increase of \$239.9 million (7.7%) over FY23 enacted. SSMS enables NASA’s missions by providing business, infrastructure, and technical capabilities. The funding is divided between Mission Services & Capabilities and Engineering Safety & Operations.

Budget Authority (in \$ millions)	Op Plan FY 2022	Enacted FY 2023	Request FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
Construction of Facilities	342.1	--	375.9	383.4	391.1	398.7	406.6
Environmental Compliance and Restoration	74.7	--	77.8	79.4	81.0	82.8	84.5
Total Budget	416.8	414.3	453.7	462.8	472.1	481.5	491.1

Construction and Environmental Compliance and Restoration (CECR): The FY24 request for CECR is \$453.7, an increase of \$39.4 million (9.5%) over FY23 enacted. CECR is responsible for capital repair and improvements to NASA’s infrastructure, of which 83% is beyond its design life. This growing problem has created a deferred maintenance backlog of \$3 billion dollars.¹⁶

¹⁶ *Id. at 1*

NASA is attempting to address this problem by modernizing and consolidating their infrastructure. The funding also supports environmental compliance and restoration activities helping to address the agency’s environmental liability.

Inspector General

Budget Authority (in \$ millions)	Op Plan FY 2022	Enacted FY 2023	Request FY 2024	FY 2025	FY 2026	FY 2027	FY 2028
Total Budget	45.3	47.6	50.2	51.2	52.2	53.2	54.3
Change from FY 2023 Enacted			2.6				
Percent change from FY 2023 Enacted			5.5%				

The FY24 request for the Office of the Inspector General (IG) is \$50.2, an increase of \$2.6 million (5.5%) over FY23 enacted. The Office of the Inspector General conducts audits, investigations, and reviews NASA programs to prevent and detect waste, fraud, abuse, and mismanagement.