119TH CONGRESS
1ST SESSION

S. 933

To authorize programs for the National Aeronautics and Space Administration for fiscal year 2025, and for other purposes.

IN THE SENATE OF THE UNITED STATES

MARCH 11 (legislative day, MARCH 10), 2025

Mr. CRUZ (for himself, Ms. CANTWELL, Mr. MORAN, Mr. PETERS, Mr. SCHMITT, Mr. LUJÁN, and Ms. DUCKWORTH) introduced the following bill; which was read twice and referred to the Committee on Commerce, Science, and Transportation

---

A BILL

To authorize programs for the National Aeronautics and Space Administration for fiscal year 2025, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE; TABLE OF CONTENTS.

(a) SHORT TITLE.—This Act may be cited as the ''NASA Transition Authorization Act of 2025''.

(b) TABLE OF CONTENTS.—The table of contents for this Act is as follows:

SEC. 2. DEFINITIONS.

In this Act:

(1) ADMINISTRATOR.—The term ''Administrator'' means the Administrator of the National Aeronautics and Space Administration.

(2) APPROPRIATE COMMITTEES OF CONGRESS.—The term ''appropriate committees of Congress'' means—

(A) the Committee on Commerce, Science, and Transportation of the Senate; and

(B) the Committee on Science, Space, and Technology of the House of Representatives.

(3) CISLUNAR SPACE.—The term ''cislunar space'' means the region of space beyond low-Earth orbit out to and including the region around the surface of the Moon.

(4) COMMERCIAL PROVIDER.—The term ''commercial provider'' means any person providing space services or space-related capabilities, primary control of which is held by persons other than the Federal Government, a State or local government, or a foreign government.

(5) CONTINUOUS HUMAN PRESENCE; CONTINUOUS PRESENCE.—The terms ''continuous human presence'' and ''continuous presence'' mean the maintenance by the United States of the presence, in low-Earth orbit on 1 or more space stations on a permanent, on-going basis, of not fewer than—

(A) 1 government astronaut; or

(B) 1 astronaut sponsored by the United States Government.

(6) DEEP SPACE.—The term ''deep space'' means the region of space beyond low-Earth orbit that includes cislunar space.

(7) GOVERNMENT ASTRONAUT.—The term ''government astronaut'' has the meaning given such term in section 50902 of title 51, United States Code.

(8) ISS.—The term ''ISS'' means the International Space Station.

(9) LOW-EARTH ORBIT.—The term ''low-Earth orbit'' means the area encompassing Earth-centered orbits at an altitude not more than 1,200 miles (2,000 kilometers).

(10) NASA.—The term ''NASA'' means the National Aeronautics and Space Administration.

(11) ORION.—The term ''Orion'' means the multipurpose crew vehicle described in section 303 of the National Aeronautics and Space Administration Authorization Act of 2010 (42 U.S.C. 18323).

(12) SPACE LAUNCH SYSTEM.—The term ''Space Launch System'' means the Space Launch System authorized under section 302 of the National Aeronautics and Space Administration Authorization Act of 2010 (42 U.S.C. 18322).

TITLE I—AUTHORIZATION OF APPROPRIATIONS

SEC. 101. AUTHORIZATION OF NASA FOR FISCAL YEAR 2025.

For fiscal year 2025, there is authorized to be appropriated to NASA $25,507,540,000 as follows:

(1) For the Exploration Systems Development Mission Directorate, $7,648,200,000.

(2) For the Space Operations Mission Directorate, $4,473,500,000.

(3) For the Space Technology Mission Directorate, $1,181,800,000.

(4) For the Science Mission Directorate, $7,575,700,000.

(5) For the Aeronautics Research Mission Directorate, $965,800,000.

(6) For the Office of STEM Engagement, $143,500,000.

(7) For Safety, Security, and Mission Services, $3,044,440,000.

(8) For Construction and Environmental Compliance and Restoration, $424,100,000.

(9) For Inspector General, $50,500,000.

TITLE II—EXPLORATION

SEC. 201. CONTINUITY OF PURPOSE FOR SPACE EXPLORATION.

(a) FINDINGS.—Congress makes the following findings:

(1) NASA continues to make progress in developing and testing the Space Launch System, Orion, and associated ground systems, including through the successful completion of the Artemis I mission in November 2022 and through continued preparations for the Artemis II crewed flight demonstration mission.

(2) The number of spacefaring countries is increasing, and foreign countries have expanded activities for space exploration efforts, including efforts to explore and use the Moon through human and robotic missions.

(3) A strong and ambitious space exploration program conducted with international and commercial partners is important to maintaining United States leadership in space and enhancing United States international competitiveness.

(4) Clear mission objectives that tie to concrete, long-term programmatic goals provide a measure to ensure accountability, enhance public support for exploration missions, and provide a clear signal of commitment to both international and domestic partners.

(b) CONTINUITY OF EXISTING CAPABILITIES AND PROGRAMS.—

(1) As part of the human exploration activities of the Administration, including progress on Artemis missions and activities, the Administrator shall continue development of space exploration elements pursuant to section 10811 of the National Aeronautics and Space Administration Authorization Act of 2022 (Public Law 117–167; 51 U.S.C. 20302).

(2) The Administrator shall leverage the private sector for logistical services to the extent practical, consistent with the Moon to Mars architecture requirements and in accordance with section 50131 of title 51, United States Code.

(3) Congress reaffirms the sense of Congress to maintain continuity of purpose as described in section 201 of the National Aeronautics and Space Administration Transition Authorization Act of 2017 (Public Law 115–10; 131 Stat. 21).

SEC. 202. ARTEMIS PROGRAM.

(a) FINDINGS.—Congress makes the following findings:

(1) Exploration of outer space, including exploration of the lunar surface and cislunar space, provides benefits and economic opportunity, including by inspiring future generations and expanding the science, technology, engineering, and mathematics workforce needed to sustain United States leadership in science, space, and technology.

(2) The lunar south pole is home to shadowed craters that may contain water ice and other volatiles. Understanding the nature of lunar polar volatiles, such as water ice, would advance science related to the origin and evolution of volatiles in the

inner solar system and could facilitate the long-term future of space exploration. Water ice lunar resources have the potential to become an enabling component of future space exploration missions throughout the solar system, including crewed missions to Mars.

(3) Other countries have demonstrated technological advances and successful robotic missions for lunar exploration and have announced credible plans for long-term human exploration of the Moon that include the intent to establish lunar bases.

(4) United States leadership of and measurable progress on the exploration of deep space is essential for guiding development of norms related to operations on and around the Moon and for other space destinations.

(5) It is in the national interest of the United States to hold a leadership role in discussions of future norms governing activities in space, including those on the lunar surface and in cislunar space.

(b) REQUIREMENTS.—In carrying out activities to enable Artemis missions under the Moon to Mars Program set forth in section 10811 of the National Aeronautics and Space Administration Authorization Act of 2022 (Public

Law 117–167; 51 U.S.C. 20302 note), the Administrator shall—

(1) use relevant elements set forth in section 10811(b)(2)(B) of the National Aeronautics and Space Administration Authorization Act of 2022 (Public Law 117–167; 51 U.S.C. 20302 note);

(2) continue to ensure that the elements under paragraph (1) enable the human exploration of Mars, consistent with section 10811(b)(2)(C)(i) of the National Aeronautics and Space Administration Authorization Act of 2022 (Public Law 117–167; 51 U.S.C. 20302 note);

(3) engage with international partners, as appropriate, in a manner that is consistent with section 10811(b)(2)(C) the National Aeronautics and Space Administration Authorization Act of 2022 (Public Law 117–167; 51 U.S.C. 20302 note), and that increases redundancy, efficiency, and cost savings; and

(4) leverage capabilities provided by United States commercial providers, as appropriate and practicable.

(c) UNITED STATES COMMERCIAL PROVIDER CAPABILITIES IN SUPPORT OF LUNAR EXPLORATION EFFORTS.—The Administrator may enter into agreements

with United States commercial providers or engage in public-private partnerships to procure capabilities and services to support the human exploration of the Moon or cislunar space.

SEC. 203. REAFFIRMATION OF THE SPACE LAUNCH SYSTEM.

(a) IN GENERAL.—Congress reaffirms—

(1) support for the full development of capabilities of the Space Launch System as set forth in section 302(c) of the National Aeronautics and Space Administration Authorization Act of 2010 (42 U.S.C. 18322(c)); and

(2) its commitment to the flight rate of the integrated Space Launch System and Orion crew vehicle missions set forth in section 10812(b) of the National Aeronautics and Space Administration Authorization Act of 2022 (Public Law 117–167; 51 U.S.C. 20301 note).

(b) BRIEFING.—Not later than 180 days after the date of the enactment of this Act, the Administrator shall provide the appropriate committees of Congress with a briefing on NASA's progress towards achieving the flight rate referred to in subsection (a)(2) and the expected launch of the integrated Space Launch System and Orion

crew vehicle missions after which such cadence shall be achieved.

SEC. 204. HUMAN-RATED LUNAR LANDING CAPABILITIES.

(a) REAFFIRMATION.—Congress reaffirms that the Moon to Mars program set forth in section 10811 of the National Aeronautics and Space Administration Authorization Act of 2022 (Public Law 117–167; 51 U.S.C. 20302 note) shall include human-rated lunar landing systems.

(b) HUMAN-RATED LUNAR LANDING CAPABILITIES.—

(1) IN GENERAL.—The Administrator shall support the development and demonstration of, and shall obtain, human-rated lunar landing capabilities to further the goals of the human exploration roadmap under section 432 of the National Aeronautics and Space Administration Transition Authorization Act of 2017 (Public Law 115–10; 51 U.S.C. 20302 note) and the Moon to Mars Program set forth in section 10811 of the National Aeronautics and Space Administration Authorization Act of 2022 (Public Law 117–167; 51 U.S.C. 20302 note).

(2) RELEVANT REQUIREMENTS.—The Administrator shall ensure that such human-rated lunar landing capabilities meet all relevant requirements,

including requirements of the Moon to Mars program, and for human-rating and certification.

(3) UNITED STATES COMMERCIAL PROVIDER.—Any commercial provider from which the Administrator obtains human-rated lunar landing capabilities must be a United States commercial provider.

(4) DUTIES OF ADMINISTRATOR.—In carrying out paragraph (1)—

(A) the Administrator may include uncrewed lunar landing services; and

(B) the Administrator shall, subject to the availability of appropriations for such purpose, seek to obtain capabilities from not fewer than 2 commercial providers.

SEC. 205. ADVANCED SPACESUIT CAPABILITIES.

(a) FINDINGS.—Congress finds the following:

(1) Space suits and associated extravehicular activity (EVA) technologies are critical exploration technologies that are necessary for future human deep space exploration efforts, including crewed missions to the Moon.

(2) The NASA civil service workforce at the Johnson Space Center provides unique capabilities to design, integrate, and validate Space Suits and associated EVA technologies.

(3) Maintaining a strong NASA core competency in the design, development, manufacture, and operation of space suits and related technologies allows NASA to be an informed purchaser of competitively awarded commercial space suits and subcomponents.

(4) According to a 2018 NASA Office of Inspector General (OIG) report, current EVAs space suits, the Extravehicular Mobility Units (EMUs), were developed in the late 1970s, are reaching the end of their useful life, have experienced multiple maintenance issues that threaten astronaut lives, and no longer accommodate the varying sizes of a diverse astronaut corps.

(5) The same NASA OIG report found that ''manufacturers of several critical suit components, including the very fibers of the suits, have now gone out of business'', which further reinforces the importance of NASA's role in maintaining a space suit core competency and limiting the risk posed by outsourcing key national capabilities.

(6) The private sector currently is developing space suit capabilities.

(7) Testing space suits and related technologies on the International Space Station could reduce risk and improve safety of such suits and technologies.

(b) REQUIREMENT.—The Administrator shall obtain advanced spacesuit capabilities necessary to achieve the goals of NASA's human spaceflight exploration programs.

(c) ELIGIBILITY.—Any commercial provider from which the Administrator obtains advanced spaceflight capabilities shall be a United States commercial provider.

(d) PRESERVING SPACESUIT EXPERTISE.—

(1) In carrying out subsection (b), NASA shall maintain the internal expertise necessary to develop space suits for both extravehicular activity and surface operations, including through partnerships with the private sector.

(2) The Johnson Space Center shall continue to manage NASA's spacesuit and extravehicular activity programs.

(e) BRIEFING.—

(1) IN GENERAL.—Not later than 180 days after the date of the enactment of this Act, the Administrator shall provide the appropriate committees of Congress with a briefing on NASA's plans for—

(A) in-space testing of advanced spacesuit capabilities, including—

(i) space suit tests that shall be conducted in microgravity in low-Earth orbit; and

(ii) space suit tests that shall be conducted on the International Space Station before decommissioning of the International Space Station;

(B) transitioning from existing spacesuits in use on the International Space Station to use of advanced spacesuit capabilities;

(C) future use of advanced spacesuit capabilities by government astronauts with any non-governmental platform in low-Earth orbit that is certified for use by the Administration for government astronauts; and

(D) disposition of retired spacesuits used on the Space Shuttle or the International Space Station.

(2) ELEMENTS.—The briefing required by paragraph (1) shall include—

(A) a detailed justification of compliance with section 30301 of title 51, United States Code; and

(B) a detailed certification and justification of compliance with section 50503 of title 51, United States Code.

TITLE III—SPACE OPERATIONS

SEC. 301. MAXIMIZING UNITED STATES PRESENCE IN LOW-EARTH ORBIT.

(a) SENSE OF CONGRESS.—It is the sense of Congress that—

(1) it is in the national and economic security, foreign policy, and scientific interests of the United States to maintain a continuous presence in low-Earth orbit;

(2) low-Earth orbit include a mix of crewed and uncrewed capabilities;

(3) low-Earth orbit should be used to advance human space exploration, scientific discoveries, and United States economic competitiveness and commercial participation; and

(4) until the date on which a commercial low-Earth orbit destination capability achieves an initial operating capability, it is in the national and economic security, foreign policy, and scientific interests of the United States to maintain and support the International Space Station in the same effective

manner that has made the International Space Station successful for many years.

(b) CONTINUOUS HUMAN PRESENCE REQUIREMENT.—The Administrator shall maintain the capability for a continuous human presence to advance human space exploration, scientific discoveries, international cooperation and United States economic competitiveness and commercial participation in low-Earth orbit through and beyond the useful life of the International Space Station.

(c) COMMERCIAL LOW-EARTH ORBIT DEVELOPMENT PROGRAM.—

(1) IN GENERAL.—The Administrator may establish, within the Space Operations Mission Directorate, a Commercial Low-Earth Orbit Development Program for the purpose of procuring, from 1 or more United States commercial providers, services to support activities described in subsection (b) in low-Earth orbit, as appropriate and practicable.

(2) CONSOLIDATION.—In establishing a program under paragraph (1), the Administrator may, as appropriate and practicable, consolidate programs of other National Aeronautics and Space Administration centers that support such activities.

(d) PROPER SUPPORT.—

(1) IN GENERAL.—To adequately maintain the effective use of the International Space Station, the Administrator shall, subject to the availability of appropriations, seek to maintain the same average number and frequency of commercial crew and cargo flights, tempo of operations and crew size, and research throughput until such time as 1 or more commercial space stations is capable of providing services to the National Aeronautics and Space Administration.

(2) MANAGED TRANSITION.—

(A) IN GENERAL.—When 1 or more commercial space stations is capable of providing services to the National Aeronautics and Space Administration, the Administrator shall begin the process of an orderly, managed transition of operations from the International Space Station to commercial providers in such a way as to maintain a continuous human presence.

(B) MIXED PORTFOLIO.—In transitioning operations under subparagraph (A), the Administrator shall seek to maintain the same average number and frequency of commercial crew and cargo flights to, and tempo of operations and crew size and research throughput in, low-

Earth orbit, managed across a portfolio that includes the International Space Station and 1 or more commercial space stations.

(3) DE-ORBIT VEHICLE.—

(A) IN GENERAL.—The Administrator shall develop a de-orbit vehicle for the eventual decommissioning of the International Space Station.

(B) ANNUAL REPORT.—Not less frequently than annually until the date on which the ISS is decommissioned, the Administrator shall include, in the budget justification materials submitted to Congress in support of the budget of the President for a fiscal year pursuant to section 1105 of title 31, United States Code, a report that—

(i) contains a description of the annual and lifecycle costs for activities related to the de-orbit of the International Space Station; and

(ii) describes the manner in which such costs are shared among ISS partners.

(e) WAIVER.—

(1) IN GENERAL.—The Administrator may waive the application of subsections (b) and (d) if

the Administrator determines that technical issues exist that prohibit the continued safe and effective operation of the International Space Station, including issues with crew and cargo flights.

(2) NOTIFICATION.—The Administrator shall notify the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science, Space, and Technology of the House of Representatives of the exercise of a waiver authority under paragraph (1).

SEC. 302. COMMERCIAL LOW-EARTH ORBIT DEVELOPMENT PROGRAM.

(a) CONTINUOUS CREW PRESENCE AND ACTIVITY.—The Administrator shall use commercial low-Earth orbit destinations to ensure the continuous presence of United States Government crew to advance human space exploration, scientific discoveries, and United States economic competitiveness and commercial participation in low-Earth orbit.

(b) SUPPORT AND FUNDING.—The Administrator, subject to the availability of appropriations, shall support and fund the Commercial Low-Earth Orbit Development Program to provide a commercially supported follow-on capability to the International Space Station.

(c) DEVELOPMENT OF COMMERCIAL LOW-EARTH ORBIT DESTINATIONS.—

(1) SOLICITATION.—

(A) IN GENERAL.—The Administrator shall issue a solicitation using full and open competition to identify commercial entities capable of providing services to the National Aeronautics and Space Administration on commercial destinations in low-Earth orbit.

(B) REQUIREMENTS.—Not later than April 30, 2025, the Administrator shall release a document outlining the requirements for a commercial destination in low-Earth orbit to facilitate the development of a request for proposal for services to be provided to National Aeronautics and Space Administration.

(C) FINAL REQUEST FOR PROPOSAL.—Not later than September 30, 2025, the Administrator shall make available the final request for proposal to solicit industry proposals for such services.

(2) SELECTION.—

(A) IN GENERAL.—Not later than March 31, 2026, the Administrator shall select from among commercial entities that submit a pro-

posal in response to the solicitation under paragraph (1), subject to the availability of meritorious proposals and appropriations, 2 or more commercial low-Earth orbit destinations to be developed, with the goal of establishing, not later than December 31, 2030, not fewer than 1 such destination capable of—

(i) providing safe, efficient, and reliable operations for continuous human presence in low-Earth orbit; and

(ii) offering such services to the National Aeronautics and Space Administration.

(B) USE OF FUNDS.—Funds provided by the Administrator to the Commercial Low-Earth Orbit Development Program shall be used to support the selection described in subparagraph (A).

(d) TRANSITION PERIOD.—The Administrator may not de-orbit the International Space Station until the date on which a commercial low-Earth orbit destination space station has reached initial operational capability in low-Earth orbit, in accordance with the managed transition process described in section 301(d)(2).

(e) WAIVER.—The Administrator may waive the application of subsection (d) if—

(1) the Administrator determines that technical issues exist that prohibit the safe and effective operation of the International Space Station; or

(2) a commercial system is capable of providing safe, efficient, and reliable operations for National Aeronautics and Space Administration missions, including not fewer than 2 mission-related flights.

SEC. 303. TRANSITION TO A COMMERCIALLY LED LOW-EARTH ORBIT ECONOMY.

(a) SENSE OF CONGRESS.—It is the sense of Congress that—

(1) the transition from the International Space Station to commercial destinations to support a continuous human presence in low-Earth orbit is in the national and economic security interests of the United States; and

(2) the United States should—

(A) facilitate partnerships between the Federal Government, international partners, and the commercial space sector, including through the purchase of commercial low-Earth orbit services, to ensure the evolution of an ecosystem with private sector development of new

technologies, hardware, processes, capabilities, and other commercial low-Earth orbit service offerings; and

(B) continue to consider private sector proposals that further the development of the low-Earth orbit economy in which the National Aeronautics and Space Administration is one of many customers.

(b) AUTHORIZATION.—The Administrator shall authorize activities on the International Space Station and within the National Aeronautics and Space Administration that develop infrastructure, hardware, processes, capabilities, technologies, and personnel to enable the development of commercial low-Earth orbit destinations and a United States-led low-Earth orbit economy.

(c) COMMERCIAL ACTIVITIES.—The Administrator may permit the use of the International Space Station, in a manner consistent with the policy and purposes of the Administration under section 20102 of title 51, United States Code—

(1) to carry out the activities described in subsection (b); and

(2) to conduct—

(A) science and technology research with commercial applications; and

(B) marketing and sponsorship of services and products on a cost-reimbursable basis.

(d) REPORTS.—Section 50111 of title 51, United States Code, is amended by striking subsection (c) and inserting the following:

''(c) LOW-EARTH ORBIT TRANSITION PLAN.—

''(1) IN GENERAL.—The Administrator, in coordination with the ISS management entity (as defined in section 2 of the National Aeronautics and Space Administration Transition Authorization Act of 2017 (Public Law 115–10)), the commercial low-Earth orbit management entity, the commercial crew management entity, International Space Station partners, and the scientific user community shall develop a plan to transition from the current regime that relies heavily on Administration sponsorship to a regime where the United States Government is one of many customers of a low-Earth orbit nongovernmental human space flight enterprise.

''(2) BRIEFING.—Not later than April 1, 2025, and annually thereafter until the date on which the International Space Station has de-orbited and not fewer than 1 commercial destination supports a continuous presence in low-Earth orbit, the Administrator shall provide the Committee on Commerce,

Science, and Transportation of the Senate and the Committee on Science, Space, and Technology of the House of Representatives with a briefing that includes—

''(A) an evaluation of the service life of the International Space Station through 2030, as a unique scientific, commercial, and space exploration-related facility, including—

''(i) the cost associated with extending the service life of the International Space Station through 2030;

''(ii) an assessment of the technical limiting factors of the service life of the International Space Station; and

''(iii) such other information as may be necessary to fully describe the justification for and feasibility of extending the service life of the International Space Station, including the potential scientific or technological benefits to the Federal Government, the public, or academic or commercial entities;

''(B) an identification of barriers to the development and commercialization of the low-Earth orbit economy, including potential policy,

regulatory frameworks, research security protocols, and intellectual property and data protection laws, that could prohibit—

"(i) commercial research and development on the International Space Station; or

"(ii) expansion of a userbase, other than the Administration, for commercial destinations in low-Earth orbit;

"(C) the steps the Administration is taking to eliminate barriers described in subparagraph (B);

"(D) an identification of the necessary actions and an estimate of the costs to de-orbit the International Space Station at the end of its service life;

"(E) the status of the actions identified under subparagraph (D);

"(F) the impact on the Commercial Low-Earth Orbit Development Program, the Moon to Mars program, and any other human exploration program of extending the service life of International Space Station beyond 2030;

"(G) a summary of the status of the transition from the International Space Station to

commercial destinations in low-Earth orbit, including—

"(i) the status of the prospects for accomplishing future mission requirements, space exploration objectives, recommendations and schedules under the current National Academies of Sciences, Engineering, and Medicine Decadal Survey on Biological and Physical Sciences in Space, and other research objectives to maintain United States leadership in scientific and commercial discovery on future commercially led low-Earth orbit platforms or migration of such objectives to cis-lunar space (as defined in section 2 of the National Aeronautics and Space Administration Transition Authorization Act of 2017 (Public Law 115–10);

"(ii) a description of the commercial low-Earth orbit destination services procurement strategy, including status of the commercial low-Earth orbit destination procurement timeline and the schedule for attaining operational capacity of such des-

tinations after contract awards are made; and

''(iii) a description and schedule of major milestones and the manner in which such milestones relate to de-orbiting the International Space Station; and

''(H) an evaluation of the functions, roles, and responsibilities for management and operation of the Commercial Low-Earth Orbit Development Program, including an identification of—

''(i) such functions, roles, and responsibilities the Federal Government could retain during and at the end of the transition from the International Space Station to commercial destinations;

''(ii) such functions, roles, and responsibilities that would be transferred to the commercial space sector;

''(iii) the metrics that would indicate the readiness and ability of the commercial space sector to assume the functions, roles, and responsibilities identified under clause (ii); and

''(iv) any legislative changes, and any changes to any agreement or other document, necessary to enable the mission requirements, objectives, steps identified under subparagraph (C), and recommendations and schedules described in subparagraph (G)(i).

''(3) LOW-EARTH ORBIT DEFINED.—In this subsection, the term 'low-Earth orbit' means the area encompassing Earth-centered orbits at an altitude not more than 1,200 miles (2,000 kilometers).''.

SEC. 304. NONGOVERNMENTAL MISSIONS ON THE INTERNATIONAL SPACE STATION.

(a) SENSE OF CONGRESS.—It is the sense of Congress that—

(1) nongovernmental missions involving crew or spaceflight participants on the International Space Station carried out, as appropriate, pursuant to NASA policies and procedures, and Federal Government laws and regulations, can provide lessons and learning experiences for both government and nongovernment entities to inform the development of future commercial low-Earth orbit platforms and a low-Earth orbit economy; and

(2) the Administrator should share lessons learned from nongovernmental missions on the International Space Station to advance the commercial human spaceflight industry, to promote the safety of future commercial low-Earth orbit platforms, and to inform the evolution of policies guiding such activities in low-Earth orbit.

(b) NONGOVERNMENTAL MISSIONS ON THE ISS.—The Administrator may enter into 1 or more agreements to enable 1 or more United States commercial providers to conduct nongovernmental missions on the International Space Station pursuant to NASA policies and procedures, and Federal government laws and regulations.

(c) DEFINITIONS.—In this section, the terms ''crew'' and ''spaceflight participant'' have the meanings given such terms in section 50902 of title 51, United States Code.

SEC. 305. BRIEF ON SUBORBITAL CREW MISSIONS.

Not later than 180 days after the date of the enactment of this Act, the Administrator shall provide the appropriate committees of Congress with a briefing on the costs, benefits, risks, training requirements, and policy or legal implications, including liability matters, of launching United States Government personnel on commercial suborbital vehicles.

SEC. 306. LUNAR COMMUNICATIONS.

(a) FINDINGS.—Congress makes the following findings:

(1) Reliable communication and navigation capabilities are essential for sustainable human and robotic exploration of the Moon.

(2) Fostering the development of commercial capabilities can accelerate the deployment of lunar communication and navigation services.

(b) AUTHORIZATION.—The Administrator is authorized to develop a robust and resilient architecture for lunar communications and navigation to support the Administration's human and robotic lunar exploration activities.

(c) STUDY AND PLAN.—To inform the development described in subsection (b), the Administrator shall conduct a study and develop a plan—

(1) to enable interoperable communications and navigation services for cislunar missions;

(2) to work with the private sector, other Federal agencies, and, as appropriate, international partners to establish technical standards, consistent with section 12(d) of the National Technology Transfer and Advancement Act of 1995 (Public Law 104–113), protocols, and interface requirements for cislunar communications and navigation services and systems;

(3) to support NASA lunar activities;

(4) to leverage NASA's space technology research, development, and demonstration activities related to space communications and navigation; and

(5) to evaluate the opportunities, benefits, feasibility, and challenges of the potential use of commercial cislunar communication and navigation services, as appropriate, by United States commercial providers.

SEC. 307. CELESTIAL TIME STANDARDIZATION.

(a) SENSE OF CONGRESS.—It is the sense of Congress that—

(1) United States leadership of a sustained presence on the Moon and in deep space exploration is important for advancing science, exploration, commercial growth, and international partnership;

(2) the Artemis and Moon to Mars program of the National Aeronautics and Space Administration will involve governmental, commercial, academic, and international partners where there is a need for interoperability between systems;

(3) the use of Coordinated Universal Time has challenges when used beyond Earth at other celestial bodies due to relativistic effects;

(4) the United States should lead in developing time standardization for the Moon and other celestial bodies other than Earth to support interoperability and safe and sustainable operations; and

(5) development of such standardization will advance United States leadership in standards setting for global competitiveness, and will benefit other spacefaring countries and entities.

(b) DEVELOPMENT OF CELESTIAL TIME STANDARDIZATION.—The Administrator, in consultation with the Director of the Office of Science and Technology Policy, shall conduct the following activities:

(1) Enable the development of celestial time standardization, including by leading the study of, and development of a definition for, a coordinated lunar time.

(2) Develop a strategy to implement a coordinated lunar time that would support future operations and infrastructure on and around the Moon.

(3) In carrying out paragraphs (1) and (2)—

(A) coordinate with relevant Federal entities, including the Department of Commerce, the Department of Defense, the Department of State, and the Department of Transportation; and

(B) consult with relevant—

(i) private sector entities;

(ii) academic entities; and

(iii) international standards-setting bodies.

(4) Incorporate the following features of a coordinated lunar time, to the extent practicable, in the development of the strategy developed under paragraph (2):

(A) Traceability to Coordinated Universal Time.

(B) Accuracy sufficient to support precision navigation and science.

(C) Resilience to loss of contact with Earth.

(D) Scalability to space environments beyond the Earth-Moon system.

(c) BRIEFING.—Not later than 2 years after the date of the enactment of this Act, the Administrator shall provide the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science, Space, and Technology of the House of Representatives with a briefing on the strategy developed pursuant to subsection (b)(2), including relevant plans, timelines, and resources

required for the implementation of a coordinated lunar time pursuant to such strategy.

TITLE IV—SPACE TECHNOLOGY

SEC. 401. SPACE TECHNOLOGY MISSION DIRECTORATE.

(a) SENSE OF CONGRESS.—It is the sense of Congress that an independent Space Technology Mission Directorate is critical to ensuring continued investments in the development of technologies for missions across the portfolio of NASA, including science, aeronautics, and human exploration.

(b) SPACE TECHNOLOGY MISSION DIRECTORATE.—The Administrator shall maintain a Space Technology Mission Directorate consistent with section 702 of the National Aeronautics and Space Administration Transition Authorization Act of 2017 (Public Law 115–10; 51 U.S.C. 20301 note).

SEC. 402. SBIR PHASE II FLEXIBILITY.

Section 9 of the Small Business Act (15 U.S.C. 638) is amended in subsection (cc) by striking ''and the Department of Education'' and inserting ''the Department of Education, and the National Aeronautics and Space Administration''.

SEC. 403. SENSE OF CONGRESS ON CRYOGENIC FLUID VALVE TECHNOLOGY REVIEW.

It is the sense of Congress that advancing cryogenic fluid valve technology would support the Administration's efforts to improve cryogenic fluid management and improve space vehicle reliability and efficiency.

TITLE V—AERONAUTICS

SEC. 501. DEFINITIONS.

In this title:

(1) ADVANCED AIR MOBILITY; AAM.—The terms ''advanced air mobility'' and ''AAM'' mean a transportation system that is comprised of urban air mobility and regional air mobility using manned or unmanned aircraft.

(2) REGIONAL AIR MOBILITY.—The term ''regional air mobility'' means the movement of passengers or property by air between 2 points using an airworthy aircraft that—

(A) has advanced technologies, such as distributed propulsion, vertical takeoff and landing, powered lift, nontraditional power systems, or autonomous technologies;

(B) has a maximum takeoff weight of greater than 1,320 pounds; and

(C) is not urban air mobility.

(3) UNMANNED AIRCRAFT SYSTEM.—The term ''unmanned aircraft system'' has the meanings given such term in section 44801 of title 49, United States Code.

(4) URBAN AIR MOBILITY.—The term ''urban air mobility'' means the movement of passengers or property by air between 2 points in different cities or 2 points within the same city using an airworthy aircraft that—

(A) has advanced technologies, such as distributed propulsion, vertical takeoff and landing, powered lift, nontraditional power systems, or autonomous technologies; and

(B) has a maximum takeoff weight of greater than 1,320 pounds.

SEC. 502. HYPERSONIC RESEARCH.

(a) SENSE OF CONGRESS.—It is the sense of Congress that—

(1) basic and applied hypersonic research—

(A) is critical for enabling the development of advanced high-speed aeronautical and space systems; and

(B) can improve understanding of technical challenges related to high-speed and reusable vehicle technologies, including those related

to propulsion, noise, advanced materials, and entry, descent, and landing operations;

(2) investments in hypersonic research are critical to sustaining United States global leadership in space and aeronautics; and

(3) NASA efforts to study hypersonic research—

(A) should not duplicate, and may complement, research supported by the Department of Defense; and

(B) should be conducted in partnership with universities and industry, as appropriate.

(b) HYPERSONIC RESEARCH.—The Administrator, in coordination with the Administrator of the Federal Aviation Administration and the Secretary of Defense, as appropriate, and in consultation with industry and academia, shall continue to carry out basic and applied hypersonic research.

(c) HYPERSONIC RESEARCH ROADMAP.—

(1) IN GENERAL.—Not later than 180 days after the date of the enactment of this Act, the Administrator, in consultation with the Administrator of the Federal Aviation Administration, the Secretary of Defense, industry, and academic institutions, shall update the hypersonic research roadmap

required under section 603 of the National Aeronautics and Space Administration Transition Authorization Act of 2017 (Public Law 115–10; 131 Stat. 55).

(2) CONSIDERATIONS.—In updating the research roadmap, the Administrator may consider—

(A) advancements in—

(i) system level design, analysis, and validation of hypersonic aircraft technologies;

(ii) propulsion capabilities and technologies;

(iii) vehicle technologies, including vehicle flow physics and vehicle thermal management associated with aerodynamic heating;

(iv)(I) advanced materials, including materials capable of withstanding high temperatures;

(II) demonstrating durable materials; and

(III) efforts to apply such materials; and

(v) other areas of hypersonic research as determined appropriate by the Administrator; and

(B) data trends regarding sonic boom overpressures associated with hypersonic aircraft.

(d) REPORT AND BRIEFING.—Not later than 1 year after the date of the enactment of this Act, the Administrator shall—

(1) submit to the appropriate committees of Congress the updated research roadmap under subsection (c); and

(2) provide the appropriate committees of Congress with a briefing on the research conducted under subsection (b), including with respect to the manner in which such research aligns with such updated research roadmap.

SEC. 503. ADVANCED MATERIALS AND MANUFACTURING TECHNOLOGY.

(a) REPORT.—Not later than 180 days after the date of the enactment of this Act, the Administrator shall submit to the appropriate committees of Congress a report on the status of NASA activities relating to subsections (e) and (f) of section 10831 of the National Aeronautics and Space Administration Authorization Act of 2022 (Public Law 117–167; 51 U.S.C. 40102 note).

(b) UPDATE AND BRIEFING.—Not later than 2 years after the date on which the report required by subsection (a) is submitted, the Administrator shall—

(1) submit to the appropriate committees of Congress an update to the findings contained in such report; and

(2) provide the appropriate committees of Congress with a briefing on such update.

SEC. 504. UNMANNED AIRCRAFT SYSTEM AND ADVANCED AIR MOBILITY.

The Administrator shall continue research, as appropriate and necessary, in collaboration with the Administrator of Federal Aviation Administration, the heads of other relevant Federal agencies, and appropriate representatives of academia and industry, on unmanned aircraft systems and advanced air mobility.

SEC. 505. ADVANCED CAPABILITIES FOR EMERGENCY RESPONSE OPERATIONS.

(a) IN GENERAL.—The Administrator may continue to conduct research and development activities under the Advanced Capabilities for Emergency Response Operations (ACERO) project, or appropriate successor project or projects, to improve aerial responses to wildfires.

(b) BRIEFING.—

(1) IN GENERAL.—Not later than 180 days after the date of the enactment of this Act, the Administrator shall provide the appropriate committees of Congress with a briefing on ongoing research and development activities related to improving aerial responses to wildfires.

(2) ELEMENTS.—The briefing required by paragraph (1) shall include the following:

(A) An identification of any topic related to improvement of aerial responses to wildfires that could benefit from further research.

(B) A description of collaboration with other relevant Federal agencies.

(C) A description of any continuing efforts under this section.

(D) Any other information the Administrator considers appropriate.

SEC. 506. HYDROGEN AVIATION.

(a) IN GENERAL.—Subject to the availability of appropriations for such purpose, the Administrator may carry out research on emerging technologies related to hydrogen aviation.

(b) REPORT.—Not later than 180 days after the date of the enactment of this Act, the Administrator shall provide the appropriate committees of Congress with a brief-

ing on the ongoing research under subsection (a) that includes—

(1) an identification of any agency with which NASA has partnered on such research; and

(2) a description of anticipated further actions and activities related to the topic of hydrogen aviation.

SEC. 507. HIGH-PERFORMANCE CHASE AIRCRAFT.

(a) SENSE OF CONGRESS.—It is the sense of Congress that—

(1) NASA programs benefit from and rely upon high-performance chase aircraft for providing research and mission support; and

(2) NASA currently faces maintenance challenges related to its aging high-performance aircraft fleet, which is resulting in increased program costs.

(b) BRIEFING.—Not later than 60 days after the date of the enactment of this Act, and biannually thereafter, the Administrator shall provide the appropriate committees of Congress with a briefing on the strategy of NASA relating to the following:

(1) Collaboration with the Department of Defense on efforts for research and flight asset sharing to support NASA's research mission support and pilot training requirements.

(2) Efforts to seek aircraft parts and engines to keep NASA's current fleet of chase aircraft operational, including potential use of 3D additive manufactured parts.

(3) Strategies for acquiring or using through loan, sharing, or other agreements, as appropriate, Department of Defense aircraft to support NASA's research and mission support activities, as required.

SEC. 508. COLLABORATION WITH ACADEMIA.

It is the sense of Congress that—

(1) colleges and universities are hubs of research and innovation, with expertise in various fields of science and aeronautics;

(2) collaborating with academia allows NASA to access cutting-edge research and expertise that can further enable advancements in aeronautics research and technology and address complex aeronautical challenges;

(3) a cutting-edge civil aeronautics research and development program can inspire the next generation to pursue education and careers in science, technology, engineering, and mathematics, including aeronautics; and

(4) opportunities for students to participate in NASA-supported academic research and develop-

ment projects, such as the University Leadership Initiative, the University Students Research Challenge, the National Space Grant College and Fellowship Project, and related aeronautic projects and competitions, contributes to training the next generation and developing the aeronautics workforce to support continued United States leadership and economic growth in civil aeronautics and aviation.

TITLE VI—SCIENCE

SEC. 601. MAINTAINING A BALANCED SCIENCE PORTFOLIO.

(a) SENSE OF CONGRESS.—Congress reaffirms the sense of Congress that—

(1) a balanced and adequately funded set of activities consisting of research and analysis grant programs, technology development, suborbital research activities, and small, medium, and large space missions, contributes to a robust and productive science program and serves as a catalyst for innovation and discovery; and

(2) the Administrator should set science priorities by following the recommendations and guidance provided by the scientific community through the National Academies of Sciences, Engineering, and Medicine decadal surveys.

(b) POLICY REAFFIRMATION.—Congress reaffirms the policy of the United States set forth in section 501(c) of the National Aeronautics and Space Administration Transition Authorization Act of 2017 (Public Law 115–10; 51 U.S.C. 20302 note), which states, ''It is the policy of the United States to ensure, to the extent practicable, a steady cadence of large, medium, and small science missions''.

SEC. 602. IMPLEMENTATION OF SCIENCE MISSION COST CAPS.

(a) SENSE OF CONGRESS.—It is the sense of Congress that—

(1) NASA science missions address compelling scientific questions prioritized by the National Academies decadal surveys, and often such missions exceed expectations in terms of performance, longevity, and scientific impact;

(2) the Administrator should continue to pursue an ambitious science program while also seeking to avoid excessive cost growth that has the potential to affect the balance across the Science portfolio and within the Science Divisions;

(3) audits by the NASA Inspector General and the Government Accountability Office have reported that early cost estimates for missions in the prelimi-

nary phases of conception and development are immature and unreliable, and the cost of a mission typically is not well-understood until the project is further along in the development process;

(4) cost growth of a mission beyond its early cost estimates is a challenge for budget planning and has the potential to affect other missions in the Science Mission Directorate portfolio, including through delays to future mission solicitations; and

(5) relying on early cost estimates made prior to preliminary design review for science missions which then experience such cost growth may disincentivize program and cost discipline moving forward.

(b) REQUIREMENT.—To the maximum extent practicable, the Administrator shall ensure that, unless overwhelmingly necessary to do otherwise, NASA—

(1) minimizes changes to requirements, capabilities, and mission objectives under to fixed-price contracts with commercial providers; and

(2) otherwise adheres to the requirements, capabilities, and mission objectives of such contracts.

(c) REPORT.—

(1) IN GENERAL.—Not later than 1 year after the date of the enactment of this Act, the Comp-

troller General of the United States shall submit to the appropriate committees of Congress a report of NASA practices related to the establishment of and compliance with cost caps of competitively selected, principal investigator-led science missions.

(2) ELEMENTS.—The report required by paragraph (1) shall—

(A) assess current cost cap values and determine whether existing cost cap amounts are appropriate for different classes of missions;

(B) consider the effectiveness of cost caps in maintaining a varied and balanced portfolio of mission types within the Science Mission Directorate;

(C) describe the information NASA requires as part of a proposal submission related to project cost estimates and proposal compliance with cost caps, and assess whether such required information provides sufficient insight or confidence in the estimates;

(D) consider NASA processes for assessing proposed cost estimates and the accuracy of such assessments for past competitively selected, principal investigator-led science missions; and

(E) for the period starting on January 1, 2000 and ending on the date of the enactment of this Act—

(i) a list of—

(I) competitively selected, principal investigator-led science missions for which costs have exceeded the associated cost cap; and

(II) reason the mission costs exceeded the cost cap;

(ii) an assessment of NASA's role in predicting, preventing, or managing competitively-selected, principal investigator-led science mission cost increases; and

(iii) a description of the impact of increased competitively-selected, principal investigator-led science mission costs beyond the cost caps on—

(I) the missions for which the cost cap has been breached; and

(II) other missions within the applicable division and within the Science Mission Directorate.

SEC. 603. REEXAMINATION OF DECADAL SURVEYS.

Section 20305(c) of title 51, United States Code, is amended by inserting ", significant changes to the NASA budget," after "growth".

SEC. 604. LANDSAT.

Not later than 180 days after the date of the enactment of this Act, the Administrator shall submit to the appropriate committees of Congress a report describing—

(1) the Administrator's efforts to comply with section 60134 of title 51, United States Code;

(2) aspects of Landsat NEXT or any other Landsat observations that—

(A) could be provided by private sector data-buys or service procurements; and

(B) could—

(i) meet associated science requirements while maintaining or exceeding the quality, integrity, and continuity of the Landsat observational capabilities and performance, including requirements necessary to ensure high-quality calibrated data continuity and traceability with the 50-year Landsat data record; and

(ii) comply with nondiscriminatory availability of unenhanced data and public archiving of data pursuant to section

60141 and 60142 of title 51, United States Code, and all other relevant Federal laws, regulations, and policies related to open science and data accessibility;

(3) any potential tradeoffs or other impacts of the requirements described in clauses (i) and (ii) of paragraph (2)(B) that could reduce the benefit of Landsat data for scientific and applied uses or reduce the Federal Government's ability to make such data available for the widest possible use; and

(4) recommendations and opportunities for the Federal Government to mitigate potential tradeoffs or impacts identified under paragraph (3) or to otherwise facilitate private sector data-buys or service procurements.

SEC. 605. COMMERCIAL SATELLITE DATA.

(a) FINDINGS.—Congress makes the following findings:

(1) Section 60501 of title 51, United States Code, states that the goal for the Earth Science program of NASA shall be to pursue a program of Earth observations, research, and applications activities to better understand the Earth, how it supports life, and how human activities affect its ability to do so in the future.

(2) Section 50115 of title 51, United States Code, states that the Administrator of NASA shall, to the extent possible and while satisfying the scientific requirements of NASA, and where appropriate, of other Federal agencies and scientific researchers, acquire, where cost effective, space-based commercial Earth remote sensing data, services, distribution, and applications from a commercial provider.

(3) The Administrator of NASA established the Commercial SmallSat Data Acquisition Pilot Program in 2017 to identify, validate, and acquire from commercial sources data that support the Earth science research and application goals.

(4) The Administrator of NASA has—

(A) determined that the pilot program described in paragraph (3) has been a success, as described in the final evaluation entitled ''Commercial SmallSat Data Acquisition Program Pilot Evaluation Report'' issued in 2020;

(B) established a formal process for evaluating and onboarding new commercial vendors in such pilot program;

(C) increased the number of commercial vendors and commercial data products available through such pilot program; and

(D) expanded procurement arrangements with commercial vendors to broaden user access to provide commercial Earth remote sensing data and imagery to federally funded researchers.

(b) COMMERCIAL SATELLITE DATA ACQUISITION PROGRAM.—

(1) IN GENERAL.—Chapter 603 of title 51, United States Code, is amended by adding at the end the following:

"§ 60307. Commercial satellite data acquisition program

''(a) IN GENERAL.—The Administrator, acting through the Earth Science Division of the Science Mission Directorate, shall continue to acquire and disseminate cost effective and appropriate commercial Earth remote sensing data and imagery in order to satisfy the operational and scientific requirements of the Administration, and as appropriate, the scientific requirements of other Federal agencies and scientific researchers to augment or complement the suite of Earth observations acquired by the

Administration, other United States Government agencies, and international partners.

''(b) DATA PUBLICATION AND TRANSPARENCY.—The terms and conditions of commercial Earth remote sensing data and imagery acquisitions under the program described in subsection (a) shall take into consideration—

''(1) the publication of commercial data or imagery for scientific purposes; or

''(2) the publication of information that is derived from, incorporates, or enhances the original commercial data or imagery of a vendor.

''(c) AUTHORIZATION.—In carrying out the program under this section, the Administrator may—

''(1) procure the commercial Earth remote sensing data and imagery from commercial vendors to advance scientific research and applications in accordance with subsection (a); and

''(2) establish or modify end-use license terms and conditions to allow for the widest-possible use of procured commercial Earth remote sensing data and imagery by individuals other than NASA-funded users, consistent with the goals of the program.

''(d) UNITED STATES VENDORS.—Commercial Earth remote sensing data and imagery referred to in sub-

sections (a) and (c) shall, to the maximum extent practicable, be procured from United States vendors.

''(e) REPORT.—Not later than 180 days after the date of the enactment of this section, and annually thereafter, the Administrator shall submit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science, Space, and Technology of the House of Representatives a report that includes the following information regarding the agreements, vendors, license terms, and uses of commercial Earth remote sensing data and imagery under this section:

''(1)(A) In the case of the initial report, a list of all agreements that are providing commercial Earth remote sensing data and imagery to NASA as of the date of the report.

''(B) For each subsequent report, a list of all agreements that have provided commercial Earth remote sensing data and imagery to NASA during the reporting period.

''(2) A description of the end-use license terms and conditions for each such vendor.

''(3) A description of the manner in which each such agreement is advancing scientific research and applications, including priorities recommended by

the National Academies of Sciences, Engineering, and Medicine decadal surveys.

''(4) Information specifying whether the Administrator has entered into an agreement with a commercial vendor or a Federal agency that permits the use of data and imagery by Federal Government employees, contractors, or non-Federal users.''.

(2) CLERICAL AMENDMENT.—The table of contents for chapter 603 of title 51, United States Code, is amended by adding at the end the following:

''60307. Commercial Satellite Data Acquisition Program.''.

SEC. 606. PLANETARY SCIENCE PORTFOLIO.

(a) SENSE OF CONGRESS.—It is the sense of Congress that—

(1) planetary science missions advance the scientific understanding of the solar system and the place of humans in it while also advancing the design and operations of spacecraft and robotic engineering; and

(2) the Discovery, New Frontiers, and Flagship programs allow NASA to fund a range of missions that vary in size, cost, and complexity, and maintaining balance across these mission classes allows for a broad scope of discoveries and scientific advances.

(b) MISSION PRIORITIES REAFFIRMATION.—Congress reaffirms the direction in section 502(b)(1) of the National Aeronautics and Space Administration Transition Authorization Act of 2017 (Public Law 115–10; 51 U.S.C. 20301 note) that—

(1) in accordance with the priorities established in the most recent Planetary Science Decadal Survey, the Administrator shall ensure, to the greatest extent practicable, the completion of a balanced set of Discovery, New Frontiers, and Flagship missions at the cadence recommended by the most recent Planetary Science Decadal Survey; and

(2) consistent with the missions described in paragraph (1), and while maintaining the continuity of scientific data and steady development of capabilities and technologies, the Administrator may seek, if necessary, adjustments to mission priorities, schedule, and scope in light of changing budget projections.

SEC. 607. PLANETARY DEFENSE.

(a) NEAR-EARTH OBJECT SURVEY AND POLICY.—Section 808 of the National Aeronautics and Space Administration Authorization Act of 2010 (42 U.S.C. 18387), is amended in subsection (b) by striking ''implement, before September 30, 2012,'' and inserting '', in co-

ordination with the NASA Administrator, maintain and regularly update''.

(b) POLICY ON NEAR-EARTH OBJECTS AND RESPONSIBLE FEDERAL AGENCY.—Section 71103 of title 51, United States Code, is amended to read as follows:

''§ 71103. Policy on near-Earth objects and responsible Federal agency

''The Director of the Office of Science and Technology Policy, in coordination with the Administrator, shall maintain and regularly update policy for notifying Federal agencies and relevant emergency response institutions of an impending near-Earth object threat, if near-term public safety is at risk, and provide recommendations for a Federal agency or agencies to be responsible for—

''(1) protecting the United States from a near-Earth object that is expected to collide with Earth; and

''(2) implementing a deflection campaign, in consultation with international bodies, should one be necessary.''.

(c) PLANETARY DEFENSE COORDINATION OFFICE.—Chapter 711 of title 51, United States Code, is amended by adding at the end the following:

"§ 71105. Planetary Defense Coordination Office

''(a) OFFICE.—As directed in section 10825 of the National Aeronautics and Space Administration Authorization Act of 2022 (Public Law 117–167), the Administrator shall maintain an office within the Planetary Science Division of the Science Mission Directorate to be known as the 'Planetary Defense Coordination Office'.

''(b) RESPONSIBILITIES.—Consistent with the direction in section 10825 of the National Aeronautics and Space Administration Authorization Act of 2022 (Public Law 117–167) the Planetary Defense Coordination Office under subsection (a) shall—

''(1) plan, develop, and implement a program to survey threats posed by near-Earth objects equal to or greater than 140 meters in diameter, as required by section 321(d)(1) of the National Aeronautics and Space Administration Authorization Act of 2005 (Public Law 109–155; 119 Stat. 2922);

''(2) identify, track, and characterize potentially hazardous near-Earth objects, issue warnings of the effects of potential impacts of such objects, and investigate strategies and technologies for mitigating the potential impacts of such objects; and

''(3) assist in coordinating government planning for a response to a potential impact of a near-Earth objects.''.

(d) CONFORMING AMENDMENT.—The table of contents for chapter 711 of title 51, United States Code, is amended—

(1) by striking the item relating to section 71103 and inserting the following:

"71103. Policy on near-Earth objects and responsible Federal agency."; and

(2) by adding at the end the following:

"71105. Planetary Defense Coordination Office.".

SEC. 608. LUNAR DISCOVERY AND EXPLORATION.

(a) IN GENERAL.—The Administrator may carry out, within the Science Mission Directorate, a program to accomplish science objectives for the Moon, with an organizational structure that aligns responsibility, authority, and accountability, as recommended by the most recent decadal survey for planetary science and astrobiology.

(b) OBJECTIVES AND REQUIREMENTS.—In carrying out the program under subsection (a), the Administrator shall direct the Science Mission Directorate, in consultation with the Exploration Systems Development Mission Directorate and the Space Technology Mission Directorate, to define high-priority lunar science objectives, informed by decadal and other scientific consensus recommendations, and related requirements of an integrated Artemis science strategy for human and robotic missions to the Moon.

(c) INSTRUMENTATION.—The program under subsection (a) shall assess the need for and facilitate the development of instrumentation to support the scientific exploration of the Moon.

SEC. 609. COMMERCIAL LUNAR PAYLOAD SERVICES.

(a) SENSE OF CONGRESS.—It is the sense of Congress that—

(1) the Administrator's encouragement and support for commercial services for lunar surface delivery capabilities and other related services serves the national interest; and

(2) commercial providers benefit from an approach that places low-cost, noncritical instruments on initial deliveries using small- and medium-size landers before proceeding to larger landers for more complex payloads.

(b) COMMERCIAL LUNAR PAYLOAD SERVICES.—The Administrator is authorized to continue the Commercial Lunar Payload Services program for the purpose of procuring, from 1 or more United States commercial providers, services for delivery of NASA science payloads, and the payloads of other NASA mission directorates, as appropriate and practicable, to the lunar surface.

(c) RELATIONSHIP TO OTHER MISSION DIRECTORATES.—A Mission Directorate that seeks to obtain

commercial lunar payload services under the program referred to in subsection (b) shall provide funding for—

(1) any payload, instrument, or other item sponsored by the Mission Directorate for delivery through the program; and

(2) the cost of the commercial lunar payload services obtained on behalf of the Mission Directorate.

(d) IMPLEMENTATION.—In implementing any such activities under subsection (b), the Administrator shall—

(1) conduct updated market research on the commercial lunar economy and identify any changes since the last market analysis;

(2) assess NASA's needs from and role in and contribution to the commercial lunar delivery market;

(3) based on the needs identified under paragraph (2), assess the effectiveness of the task order approach in advancing commercial development of lunar delivery services, including an assessment of the appropriate number of providers necessary to support NASA commercial lunar delivery needs, and identify any challenges and recommendations for improvement; and

(4) strengthen procedures related to the selection, manifesting, interfaces, and requirements of payloads and other relevant factors that could contribute to minimizing future NASA-directed changes to projects following commercial lunar payload service contract awards.

(e) COORDINATION.—The Administrator shall ensure coordination between Mission Directorates and the Moon to Mars Program on the administration of the program referred to in subsection (b) so as to ensure the alignment of goals for lunar delivery services.

SEC. 610. PLANETARY AND LUNAR OPERATIONS.

(a) SENSE OF CONGRESS.—It is the sense of Congress that—

(1) existing NASA lunar and Martian orbital missions are operating well beyond their planned mission lifespans;

(2) NASA relies on such aging infrastructure for observations, communications relay, and other operations to support critical NASA missions; and

(3) the United States plans to increase its activities on and around both the Moon and Mars in coming years.

(b) PLAN.—The Administrator shall develop a plan to ensure continuity of operations and sufficient observa-

tional and operational capabilities on and around the Moon and Mars necessary to continue to enable a robust science program and human exploration program for the Moon and Mars well into the future. Such plan shall consider opportunities to engage both private and international partners in future operations.

SEC. 611. MARS SAMPLE RETURN.

(a) IN GENERAL.—The Administrator shall, subject to the availability of appropriations, lead a Mars Sample Return program to enable the return to Earth of scientifically selected samples from the surface of Mars for study in terrestrial laboratories, consistent with the recommendations of the National Academies decadal surveys for planetary science.

(b) APPROACH.—The Administrator shall pursue the program described in subsection (a) on a timeline and in a manner necessary to—

(1) sustain United States leadership in the scientific exploration of Mars;

(2) capitalize on United States industry and NASA capabilities to land and operate robotic spacecraft on the surface of Mars; and

(3) maintain a balanced and robust planetary science division portfolio without requiring significant increases to the NASA budget.

(c) IMPLEMENTATION PLAN.—As soon as practicable and not later than 90 days after the date of the enactment of this Act, the Administrator shall do the following:

(1) Transmit to the appropriate committees of Congress an acquisition plan and timeline for the implementation of a Mars Sample Return program pursuant to this section, with the goal of enabling the highest scientific return for the resources invested, which plan shall—

(A) include a design and mission architecture; and

(B) establish realistic cost and schedule estimates to enable such goal.

(2) Determine a path forward for the Mars Sample Return that—

(A) is aligned with NASA's Mars Sample Return Strategy Review Team's findings;

(B) considers alternative mission concepts and lower cost sample return methods; and

(C) enables an earlier return of samples to Earth.

(3) Not later than 1 year after the date of the enactment of this Act, the Administrator shall enter into firm fixed-price agreements with 1 or more

United States industry partners to carry out this section.

SEC. 612. HELIOPHYSICS RESEARCH.

(a) SENSE OF CONGRESS.—It is the sense of Congress that—

(1) NASA heliophysics research advances the scientific understanding of the Sun, its impact on the Earth and near-Earth environment, and the Sun's interactions with other bodies in the solar system, the interplanetary medium, and the interstellar medium;

(2) fundamental science supported by the Heliophysics division is critical to improving space weather observations forecasting capabilities, which contribute to—

(A) fortifying national security and other critically important space-based and ground-based assets;

(B) improving the resilience of the energy infrastructure of the United States; and

(C) protecting human health in space; and

(3) the Heliophysics Division should continue to maximize the scientific return on investment of its portfolio through maintaining a balanced portfolio that includes research and analysis, including multi-

disciplinary research initiatives, technology development, space-based missions, and suborbital flight projects that include both directed and strategic missions and principal investigator-led, competitively solicited missions, informed by the science priorities and guidance of the most recent decadal survey in solar and space physics.

(b) PROGRAM MANAGEMENT.—The Administrator shall seek—

(1) to maintain a regular Explorer Announcement of Opportunity cadence and alternate between small and mid-sized missions; and

(2) to enable a regular selection of Missions of Opportunity.

SEC. 613. GEOSPACE DYNAMICS CONSTELLATION.

(a) SENSE OF CONGRESS.—It is the sense of Congress that—

(1) the Geospace Dynamics Constellation mission could enable scientific discoveries that will transform understanding of the processes that govern the dynamics of the Earth's upper atmospheric envelope that surrounds and protects the planet; and

(2) seeking commercial partnerships to provide the technology to understand the phenomena and to use the scientific knowledge gained by such mission

could assist in identifying solutions that could benefit United States industry and citizens.

(b) ASSESSMENT.—Not later than 180 days after the date of the enactment of this Act, the Administrator shall submit to the appropriate committees of Congress a report regarding the schedule and budget profile to launch the Geospace Dynamics Constellation mission by the end of the decade to fulfill the recommendations of the heliophysics decadal survey.

SEC. 614. NANCY GRACE ROMAN TELESCOPE.

The Administrator shall continue development of the Nancy Grace Roman Space Telescope as directed in subsection 10823(b) of the National Aeronautics and Space Administration Authorization Act of 2022 (Public Law 117–167; 136 Stat. 1741).

SEC. 615. CHANDRA X-RAY OBSERVATORY.

The Administrator shall, to the greatest extent practicable, take no action to reduce or otherwise preclude continuation of the science operations of the Chandra X-ray Telescope before the completion and consideration of the next triennial review of mission extensions for the astrophysics division conducted pursuant to section 30504 of title 51, United States Code, and NASA's ongoing operations paradigm change review.

TITLE VII—STEM EDUCATION

SEC. 701. NATIONAL SPACE GRANT COLLEGE AND FELLOWSHIP PROGRAM.

(a) AMENDMENTS.—Title 51, United States Code, is amended—

(1) in section 40303, by striking subsections (d) and (e); and

(2) in section 40304—

(A) by striking subsection (c) and inserting the following:

''(c) SOLICITATIONS.—

''(1) IN GENERAL.—The Administrator shall issue a solicitation to space grant consortia for the award of grants or contracts under this section at the conclusion of the award cycle for fiscal Year 2020 to 2024. The Administrator shall implement the allocation guidance under subsection (e) during each fiscal year covered by the award cycle.

''(2) PROPOSALS.—A lead institution of a space grant consortium that seeks a grant or contract under this section shall submit, on behalf of such space grant consortium, an application to the Administrator at such time and in such manner and accompanied by such information as the Administrator may require.

''(3) AWARDS.—The Administrator shall award 1 or more multi-year grants or contracts, disbursed in annual installments, to the lead institution of an eligible space grant consortium of—

''(A) each of the 50 States of the United States;

''(B) the District of Columbia; and

''(C) the Commonwealth of Puerto Rico.''; and

(B) by adding at the end the following:

''(e) ALLOCATION OF FUNDING.—

''(1) PROGRAM IMPLEMENTATION.—To carry out the purposes set forth in section 40301, each fiscal year, the Administrator shall allocate the funds appropriated for the program under this section for the fiscal year to each space grant consortium awarded a grant or contract under subsection (c)(3) in an equal amount.

''(2) PROGRAM ADMINISTRATION.—

''(A) IN GENERAL.—Each fiscal year, of the funds made available for the National Space Grant College and Fellowship Program, the Administrator shall allocate not more than 10 percent for the administration of the program.

''(B) COSTS COVERED.—The funds allocated under paragraph (1) shall cover all costs of the Administration associated with the administration of the National Space Grant College and Fellowship Program, including—

''(i) direct costs to the program, including costs relating to support services and civil service salaries and benefits;

''(ii) indirect general and administrative costs of centers and facilities of the Administration; and

''(iii) indirect general and administrative costs of the Administration headquarters.

''(3) SPECIAL OPPORTUNITIES.—Each fiscal year, of the funds made available for the National Space Grant College and Fellowship program, the Administrator shall allocate not more than 5 percent to lead institutions of Space Grant Consortia for grants to carry out innovative approaches and programs to further science and education relating to the missions of the Administration pursuant to subsection (b).''.

(b) REVIEW.—The Administrator shall make arrangements for the conduct of a multi-year analysis of the

independent external reviews currently under development in the National Space Grant College and Fellowship Program—

(1) to evaluate its management, accomplishments, approach to funding allocation as described in section 40303(e) of title 51, United States Code, and responsiveness to the purposes and goals defined in chapter 403 of title 51, United States Code;

(2) to consider the benefits partnerships with local education agencies, including those in underserved and rural areas, may provide; and

(3) to propose any statutory updates that may be needed to implement recommendations of the review.

(c) REPORT.—Not later than 270 days after the date of the enactment of this Act, the Administrator shall submit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science, Space, and Technology of the House of Representatives a report on the independent external review of the National Space Grant College and Fellowship Program described in subsection (a).

SEC. 702. SKILLED TECHNICAL WORKFORCE EDUCATION OUTREACH.

(a) IN GENERAL.—The Administrator may conduct or support STEM engagement activities that focus on expanding opportunities for students to pursue skilled technical workforce occupations in space and aeronautics.

(b) LEVERAGING EXISTING PROGRAMS.—The Administrator, in conducting activities pursuant to subsection (a), shall leverage, as appropriate, existing programs of NASA and may consider leveraging other Federal programs and interagency initiatives, such as the Manufacturing USA program under section 34 of the National Institute of Standards and Technology Act (15 U.S.C. 278s).

(c) INCLUSION.—Activities under subsection (a) may include outreach activities that—

(1) engage secondary and post-secondary students, including students at institutions of higher education, 2-year colleges, and high schools and students in vocational or career and technical education programs;

(2) expose students to careers that require career and technical education;

(3) encourage students to pursue careers that require career and technical education; and

(4) provide students hands-on learning opportunities to view the manufacturing, assembly, and testing of NASA-funded space and aeronautical systems, as the Administrator considers appropriate and with consideration of relevant factors such as workplace safety, mission needs, and the protection of sensitive and proprietary technologies.

(d) BRIEFING.—Not later than 1 year after the date of the enactment of this Act, the Administrator shall provide the appropriate committees of Congress with a briefing on NASA's activities, and any planned activities, conducted under this section.

(e) DEFINITIONS.—In this section:

(1) INSTITUTION OF HIGHER EDUCATION.—The term ''institution of higher education'' has the meaning given the term in section 101(a) of the Higher Education Act of 1965 (20 U.S.C. 1001(a)).

(2) SKILLED TECHNICAL WORKFORCE.—The term ''skilled technical workforce'' has the meaning given the term in section 4(b)(3) of the Innovations in Mentoring, Training, and Apprenticeships Act (Public Law 115–402; 42 U.S.C. 1862p note).

TITLE VIII—NASA POLICY

SEC. 801. NASA ADVISORY COUNCIL.

(a) CONSULTATION AND ADVICE.—Section 20113(g) of title 51, United States Code, is amended by adding ''and Congress'' after ''advice to the Administration''.

(b) SUNSET.—Effective September 30, 2028, section 20113(g) of title 51, United States Code, is amended by striking ''and Congress''.

SEC. 802. NASA ASSESSMENT OF EARLY COST ESTIMATES.

Not later than 1 year after the date of the enactment of this Act, the Comptroller General of the United States shall transmit to the appropriate committees of Congress a review of the development, application, and assessment of early cost estimates made prior to preliminary design review for NASA missions. The review shall include—

(1) an assessment of NASA processes related to the formation and evaluation of proposed and early-stage cost estimates;

(2) an evaluation of NASA's monitoring and management of cost estimates throughout mission development, in accordance with section 10861(b)(4) of the National Aeronautics and Space Administration Authorization Act of 2022 (Public Law 117–167; 51 U.S.C. 20113 note); and

(3) any such recommendations as the Comptroller General determines appropriate.

SEC. 803. AUTHORITY FOR PRODUCTION CONTRACTS FOLLOWING OTHER TRANSACTION PROTOTYPE PROJECTS.

Subsection (e) of section 20113 of title 51, United States Code, is amended—

(1) by striking ''In the performance of its functions'' and inserting the following:

''(1) IN GENERAL.—In the performance of its functions''; and

(2) by adding at the end the following:

''(2) OTHER TRANSACTIONS.—In the case of other transactions to carry out prototype projects, a follow-on production or service contract may be awarded to participants in the prototype transaction without the use of competitive procedures, notwithstanding the requirements of section 2304 of title 10, if—

''(A) competitive procedures were used for the selection of parties for participation in the prototype transaction; and

''(B) the participants in the transaction performed successfully during the prototype project.

''(3) TREATMENT.—Transactions under this authority shall be treated as an agency procurement for purposes of chapter 21 of title 41, with regard to procurement ethics.''.

SEC. 804. ROLE OF THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION IN COMMERCIAL SPACE ACTIVITIES.

(a) SENSE OF CONGRESS.—It is the sense of Congress that—

(1) the National Aeronautics and Space Administration and the commercial space sector complement each other in maintaining the leadership role of the United States in outer space activities;

(2) as more outer space activities are conducted by private industry, it is vital to define the appropriate role of the National Aeronautics and Space Administration; and

(3) the expertise and experience of the National Aeronautics and Space Administration in human space flight is especially important as commercial human space flight activities extend into Earth's orbit, to the lunar surface, and beyond.

(b) BRIEFING.—Not later than 180 days after the date of the enactment of this Act, the Administrator shall

provide the appropriate committees of Congress with a brief on—

(1) the current activities of NASA, including the detail of any NASA personnel, to assist the Secretary of Commerce, the Secretary of Transportation, the Federal Communications Commission, or any other relevant Federal agency with the regulation of the United States commercial space enterprise;

(2) a general breakdown of which NASA expertise, including scientific, technical, and engineering expertise, is being most used in support of other Federal agencies; and

(3) expected future growth in the workload of NASA as it relates to the support described in paragraph (1).

SEC. 805. RESTRICTION ON FEDERAL FUNDS RELATING TO CERTAIN CHINESE SPACE AND SCIENTIFIC ACTIVITIES.

(a) IN GENERAL.—Except as provided in subsection (b), no Federal funds authorized in this Act may be obligated or expended—

(1) for the National Aeronautics and Space Administration (NASA), the Office of Science and Technology Policy (OSTP), or the National Space

Council (NSpC) to develop, design, plan, promulgate, implement, or execute a bilateral policy, program, order, or contract of any kind to participate, collaborate, or coordinate bilaterally in any way with China or any Chinese-owned company unless such activities are specifically authorized by a law enacted after the date of the enactment of this Act; or

(2) to effectuate the hosting of official Chinese visitors at facilities belonging to or utilized by NASA.

(b) EXCEPTION.—The restrictions described in subsection (a) shall not apply to activities with respect to which NASA, OSTP, or NSpC, after consultation with the Federal Bureau of Investigation, have certified—

(1) pose no risk of resulting in the transfer of technology, data, or other information with national security or economic security implications to China or a Chinese-owned company; and

(2) will not involve knowing interactions with officials who have been determined by the United States to have direct involvement with violations of human rights.

(c) SUBMISSION.—Any certification made under subsection (b) shall be submitted to the Committee on Commerce, Science, and Transportation and the Committee on

Appropriations of the Senate, the Committee on Science, Space, and Technology and the Committee on Appropriations of the House of Representatives, and the Federal Bureau of Investigation, not later than 30 days prior to the activity in question. Any such certification shall include a description of the purpose of such activity, its agenda, its major participants, and its location and timing.

SEC. 806. FINDINGS RELATING TO CONTRACT FLEXIBILITY.

Congress finds that NASA FAR Supplement (NFS) 1852.242–72, Denied Access to NASA Facilities instructs that, for the period that NASA facilities were not accessible to contractor employees, the contracting officer may adjust the contract performance or delivery schedule, forego the work, reschedule the work, or consider requests for equitable adjustment to the contract.

SEC. 807. GAO REPORT.

Not later than 1 year after the date of the enactment of this Act, the Comptroller General of the United States shall submit to the appropriate committees of Congress a report on fire and emergency services at NASA launch and reentry facilities that assesses the following:

(1) Current capabilities and projected demands for NASA-provided fire and emergency services.

(2) The manner in which demand for NASA-provided fire and emergency services have been impacted by the following:

(A) An increased rate of launch and reentry operations.

(B) An increased number of leases with commercial launch and reentry service providers for use of NASA property.

(3) Current fire and emergency services provided by commercial providers to support launch and reentry operations that are conducted—

(A) to fulfill a contractual obligation with NASA; or

(B) for non-NASA purposes using NASA-leased property.

(4) Whether NASA-provided and commercially-provided fire and emergency services are able to meet current and projected demands and support all fire response areas on NASA property.

SEC. 808. NASA PUBLIC-PRIVATE TALENT PROGRAM.

Section 20113 of title 51, United States Code, is amended by adding at the end the following new subsection:

''(o) PUBLIC-PRIVATE TALENT PROGRAM.—

''(1) ASSIGNMENT AUTHORITY.—Under policies and procedures prescribed by the Administration, the Administrator may, with the agreement of a private sector entity and the consent of an employee of the Administration or of such entity, arrange for the temporary assignment of such employee of the Administration to such private sector entity, or of such employee of such entity to the Administration, as the case may be.

''(2) AGREEMENTS.—

''(A) IN GENERAL.—The Administrator shall provide for a written agreement among the Administration, the private sector entity, and the employee concerned regarding the terms and conditions of the employee's assignment under this subsection. The agreement shall—

''(i) require that the employee of the Administration, upon completion of the assignment, will serve in the Administration, or elsewhere in the civil service if approved by the Administrator, for a period equal to twice the length of the assignment;

''(ii) provide that if the employee of the Administration or of the private sector

entity (as the case may be) fails to carry out the agreement, such employee shall be liable to the United States for payment of all expenses of the assignment, unless such failure was for good and sufficient reason, as determined by the Administrator; and

''(iii) contain language ensuring that such employee of the Administration or of the private sector entity (as the case may be) does not improperly use predecisional or draft deliberative information that such employee may be privy to or aware of related to Administration programing, budgeting, resourcing, acquisition, or procurement for the benefit or advantage of the private sector entity.

''(B) TREATMENT.—An amount for which an employee is liable under subparagraph (A) shall be treated as a debt due the United States.

''(C) WAIVER.—The Administrator may waive, in whole or in part, collection of a debt described in subparagraph (B) based on a determination that the collection would be against equity and good conscience and not in the best

interests of the United States, after taking into account any indication of fraud, misrepresentation, fault, or lack of good faith on the part of the employee concerned.

''(3) TERMINATION.—An assignment under this subsection may, at any time and for any reason, be terminated by the Administration or the private-sector entity concerned, as the case may be.

''(4) DURATION.—

''(A) IN GENERAL.—An assignment under this subsection shall be for a period of not less than 90 days and not more than 2 years, renewable up to a total of three years. An employee of the Administration may not be assigned under this subsection for more than a total of 3 years inclusive of all such assignments.

''(B) EXTENSION.—An assignment under this subsection may be for a period in excess of 2 years, but not more than 3 years, if the Administrator determines that such assignment is necessary to meet critical mission or program requirements.

''(5) POLICIES AND PROCEDURES.—

"(A) IN GENERAL.—The Administrator shall establish policies and procedures relating to assignments under this subsection.

"(B) ELEMENTS.—Policies and procedures established pursuant to subparagraph (A) shall address the following:

"(i) The nature and elements of written agreements with participants in assignments under this subsection.

"(ii) Criteria for making such assignments, including the needs of the Administration relating thereto.

"(iii) The manner in which the Administration will oversee such assignments, in particular with respect to paragraphs (2)(A)(iii), (7)(C), and (7)(D).

"(iv) Criteria for issuing waivers.

"(v) The manner in which expenses under paragraph (2)(A)(ii) would be determined.

"(vi) Guidance for participants in such assignments.

"(vii) Mission Directorate, Office, and organizational structure to implement and manage such assignments.

''(viii) Any other necessary policies, procedures, or guidelines to ensure such assignments comply with all relevant statutory authorities and ethics rules, and effectively contribute to one or more of the Administration's missions.

''(C) INHERENTLY GOVERNMENTAL ACTIVITIES.—Assignments made under this subsection shall not have responsibilities or perform duties or decision making regarding Administration activities that are inherently governmental, pursuant to section 7.500 of title 48, Code of Federal Regulations, and Office of Management and Budget review.

''(6) STATUS OF FEDERAL EMPLOYEES ASSIGNED TO PRIVATE SECTOR ENTITIES.—

''(A) IN GENERAL.—An employee of the Administration who is assigned to a private sector entity under this subsection shall be considered, during the period of such assignment, to be on detail to a regular work assignment in the Administration for all purposes. The written agreement established under paragraph (2)(A) shall address the specific terms and conditions

related to such employee's continued status as a Federal employee.

''(B) CERTIFICATION.—In establishing a temporary assignment of an employee of the Administration to a private sector entity, the Administrator shall certify that such temporary assignment shall not have an adverse or negative impact on the mission of the Administration or organizational capabilities associated with such assignment.

''(7) TERMS AND CONDITIONS FOR PRIVATE SECTOR EMPLOYEES.—An employee of a private sector entity who is assigned to the Administration under this subsection—

''(A) shall continue to receive pay and benefits from the private sector entity from which such employee is assigned and shall not receive pay or benefits from the Administration, except as provided in subparagraph (B);

''(B) is deemed to be an employee of the Administration for the purposes of—

''(i) chapters 73 and 81 of title 5;

''(ii) sections 201, 203, 205, 207, 208, 209, 603, 606, 607, 643, 654, 1905, and 1913 of title 18, except that such sec-

tion 209 does not apply to any salary, or contribution or supplementation of salary made pursuant to subparagraph (A) of this paragraph;

"(iii) sections 1343, 1344, and 1349(b) of title 31;

"(iv) chapter 171 of title 28 (commonly known as the 'Federal Tort Claims Act') and any other Federal tort liability statute;

"(v) the Ethics in Government Act of 1978; and

"(vi) chapter 21 of title 41;

"(C) shall not have access to any trade secrets or any other nonpublic information which is of commercial value to the private sector entity from which such employee is assigned;

"(D) may not perform work that is considered inherently governmental in nature, in accordance with paragraph (5)(C); and

"(E) may not be used to circumvent—

"(i) section 1710 of title 41, United States Code; or

"(ii) any limitation or restriction on the size of the Administration's civil servant workforce.

"(8) ADDITIONAL REQUIREMENTS.—The Administrator shall ensure that—

"(A) the normal duties and functions of an employee of the Administration who is assigned to a private sector entity under this subsection can be reasonably performed by other employees of the Administration without the permanent transfer or reassignment of other personnel of the Administration;

"(B) normal duties and functions of such other employees of the Administration are not, as a result of and during the course of such temporary assignment, performed or augmented by contractor personnel in violation of section 1710 of title 41; and

"(C) not more than 2 percent of the Administration's civil servant workforce may participate in an assignment under this subsection at the same time.

"(9) CONFLICTS OF INTEREST.—The Administrator shall implement a system to identify, mitigate, and manage any conflicts of interests that may arise

as a result of an employee's assignment under this subsection.

''(10) PROHIBITION AGAINST CHARGING CERTAIN COSTS TO THE FEDERAL GOVERNMENT.—A private-sector entity may not charge the Administration or any other agency of the Federal Government, as direct or indirect costs under a Federal contract, the costs of pay or benefits paid by the entity to an employee assigned to the Administration under this subsection for the period of the assignment concerned.

''(11) CONSIDERATIONS.—In carrying out this subsection, the Administrator shall take into consideration—

''(A) the question of the manner in which assignments under this subsection might best be used to help meet the needs of the Administration with respect to the training of employees; and

''(B) as applicable, areas of particular private sector expertise, such as cybersecurity.

''(12) NASA REPORTING.—

''(A) IN GENERAL.—Not later than April 30 of each year, the Administrator shall submit to the Committee on Science, Space, and Tech-

nology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate a report summarizing the implementation of this subsection.

''(B) CONTENTS.—Each report under subparagraph (A) shall include, with respect to the annual period to which such report relates, the following:

''(i) Information relating to the total number of employees of private sector entities assigned to the Administration, and the total number of employees of the Administration assigned to private sector entities.

''(ii) A brief description and assessment of the talent management benefits evidenced from such assignments, as well as any identified strategic human capital and operational challenges, including the following:

''(I) An identification of the names of the private sector entities to and from which employees were assigned.

''(II) A complete listing of positions such employees were assigned to and from.

''(III) An identification of assigned roles and objectives of such assignments.

''(IV) Information relating to the durations of such assignments.

''(V) Information relating to associated pay grades and levels.

''(iii) An assessment of impacts of such assignments on the Administration workforce and workforce culture.

''(iv) An identification of the number of Administration staff and budgetary resources required to implement this subsection.

''(13) FEDERAL ETHICS.—Nothing in this subsection shall affect existing Federal ethics rules applicable to Federal personnel.

''(14) GAO REPORTING.—

''(A) IN GENERAL.—Not later than 3 years after the date of the enactment of this subsection, the Comptroller General of the United States shall submit to the Committee on

Science, Space, and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate a report summarizing the implementation of this subsection.

''(B) CONTENTS.—The report under subparagraph (A) shall include the following:

''(i) A review of the implementation of this subsection, according to law and the Administration policies and procedures established for assignments under this subsection.

''(ii) Information relating to the extent to which such assignments adhere to best practices relating to public-private talent exchange programs.

''(iii) A determination as to whether there should be limitations on the number of individuals participating in such assignments.

''(iv) Information relating to the extent to which the Administration complies with statutory requirements and ethics rules, and appropriately handles potential conflicts of interest and access to non-

public information with respect to such assignments.

''(v) Information relating to the extent to which such assignments effectively contribute to 1 or more of the Administration's missions.

''(vi) Information relating to Administration resources, including employee time, dedicated to administering such assignments, and whether such resources are sufficient for such administration.''.

SEC. 809. MENTORING.

(a) BRIEFING.—Not later than 180 days after the date of the enactment of this Act, the Administrator shall provide the appropriate committees of Congress with a briefing on existing NASA-wide mentoring programs that are focused in whole or in part on ensuring a robust pipeline for NASA's civil servant workforce, for early-career, mid-level, and senior-level employees at all NASA Centers and NASA Headquarters.

(b) CONSIDERATIONS.—As part of the briefing required by subsection (a), the Administrator may consider the merits of consolidating existing, disparate programs into a single, unified employee development program.

SEC. 810. DRINKING WATER WELL REPLACEMENT FOR CHINCOTEAGUE, VIRGINIA.

(a) IN GENERAL.—Notwithstanding any other provision of law, the Administrator may enter into an agreement, as appropriate, with the Town of Chincoteague, Virginia, for a period of up to 5 years, for reimbursement of the Town of Chincoteague's costs directly associated with the development of a plan for removal of drinking water wells currently situated on NASA-administered property and the establishment of alternative drinking water wells which are located on property under the administrative control, either through lease, ownership, or easement, of the Town of Chincoteague. Such agreement shall, to the extent practicable, include the three remaining wells to be removed and relocated, the location of the site to which such wells would be relocated or are planned to be relocated, and a current estimated cost of the relocation, including for the purchase, lease, or use of additional property, engineering, design, permitting, and construction.

(b) SUBMISSION TO CONGRESS.—Not later than 18 months after the date of the enactment of this Act, the Administrator, in coordination with the heads or other appropriate representatives of relevant entities, shall submit to the appropriate committees of Congress the agreement under subsection (a).

SEC. 811. PASSENGER CARRIER USE FOR ASTRONAUT TRANSPORTATION.

(a) IN GENERAL.—Subchapter III of chapter 201 of title 51, United States Code, is amended by adding at the end the following:

"§ 20150. Passenger carrier use for astronaut transportation

''(a) DEFINITIONS.—In this section:

''(1) GOVERNMENT ASTRONAUT; INTERNATIONAL PARTNER ASTRONAUT; SPACE FLIGHT PARTICIPANT; SPACE SUPPORT VEHICLE.—The terms 'government astronaut', 'international partner astronaut', 'space flight participant', and 'space support vehicle' have the meanings given such terms in section 50902.

''(2) MISSION.—The term 'mission' means an assignment to a space support vehicle of 1 or more—

''(A) government astronauts in the course of their employment; or

''(B) space flight participants.

''(3) OFFICIAL PURPOSE.—With respect to transportation, the term 'official purpose' means transportation necessary for post-mission activities, including medical research, monitoring, diagnosis, and treatment of a government astronaut or space

flight participant before receiving post-mission medical clearance to operate a motor vehicle.

''(4) PASSENGER CARRIER.—The term 'passenger carrier' means a passenger motor vehicle, aircraft, boat, vessel, or other similar means of transportation that is owned or leased by the United States Government.

''(b) AUTHORITY.—

''(1) IN GENERAL.—The Administrator may authorize the use of a passenger carrier to transport a government astronaut or space flight participant between the residence of the individual and various locations if—

''(A) such transportation is provided for an official purpose; and

''(B) the Chief of the Astronaut Office has approved, in writing, post-mission transportation of government astronauts and space flight participants under this section.

''(2) MAINTENANCE, OPERATION, AND REPAIR.—The Administrator may maintain, operate, and repair 1 or more passenger carriers for the purpose of providing transportation pursuant to the authority provided in paragraph (1).

''(c) REIMBURSEMENT.—Transportation under subsection (b)(1) of an international partner astronaut or a space flight participant who is not an employee of the United States Government shall be subject to reimbursement to the Treasury.

''(d) REGULATIONS.—The Administrator shall promulgate such regulations as are necessary to carry out this section.

''(e) APPLICABILITY OF SECTION 1344 OF TITLE 31.—In carrying out subsection (b), the Administrator may expend funds available to the Administration, by appropriation or otherwise, notwithstanding section 1344(a) of title 31.''.

(b) CLERICAL AMENDMENT.—The table of contents for chapter 201 of title 51, United States Code, is amended by inserting after the item relating to section 20149 the following:

''20150. Passenger carrier use for astronaut transportation.''.

SEC. 812. RULE OF CONSTRUCTION.

Nothing in this Act may be construed to alter or limit NASA's scientific integrity policies.

○