

# **NASA Office of Inspector General**

## **Open Recommendations as of May 15, 2023**

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The National Aeronautics and Space Administration (NASA) Office of the Inspector General (OIG) makes recommendations to improve economy, efficiency, and effectiveness and to identify waste and mismanagement in NASA programs, projects, operations, and contractor activities. This report contains information about 186 recommendations that remained open as of May 15, 2023. Although NASA may have already taken steps to implement these recommendations, a recommendation is not considered closed until it has been fully implemented. Further, the status of open recommendations is subject to change as NASA continues its efforts to implement them, and we review those efforts. Therefore, some recommendations identified as open in this report may have subsequently been closed.

**NASA OFFICE OF THE INSPECTOR GENERAL – OPEN RECOMMENDATIONS as of May 15, 2023**

Row No.	Issue Date	Report Title	Report No.	Recommendation No.	Recommendation	Responsible Office
1	3/9/2017	NASA's Management of Electromagnetic Spectrum	IG-17-012	2	Incorporate the "Spectrum Guidance for NASA Small Satellite Missions" into formal NASA spectrum policies--NASA Policy Directive 2570.5E, "NASA Electromagnetic Spectrum Management - Revalidated 9/13/16," and NPR 2570.1C, "NASA Radio Frequency Electromagnetic Spectrum Management Manual."	Human Exploration and Operations
2	4/5/2018	NASA's Management of Goddard Institute for Space Studies and Related Activities	IG-18-015	8	Implement the GAO's best practices for establishing partnerships, including the formalization of agreements that outline the roles and responsibilities of each agency in the performance and application of climate research. B.3.8 ep. 3 ¶ 2 Bulleted Items 1-8	International and Interagency Relations
3	10/22/2018	Audit of NASA's Historic Property Management	IG-19-002	2	Develop comprehensive procedures for identifying and managing heritage assets, including defining roles and responsibilities for the different NASA entities responsible for evaluating what historic items would most effectively be maintained by the Agency and considered as heritage assets; and We encourage NASA to adopt a process that more resembles the Smithsonian's approach to more effectively assess historic assets as to whether they should be retained or transferred to other organizations for preservation and utilization.	Strategic Infrastructure
4	10/22/2018	Audit of NASA's Historic Property Management	IG-19-002	3	Evaluate and justify the existing list of NASA and contractor held heritage assets to determine whether NASA is the most effective owner and what property the Agency will retain because of its historical value. We encourage NASA to adopt a process that more resembles the Smithsonian's approach to more effectively assess historic assets as to whether they should be retained or transferred to other organizations for preservation and utilization.	Strategic Infrastructure
5	10/22/2018	Audit of NASA's Historic Property Management	IG-19-002	5	Ensure NASA policy for using the proceeds from facilities leased under NHPA authority appropriately aligns with Agency goals to minimize excess facilities.	Strategic Infrastructure
6	5/29/2019	Audit of NASA's Europa Mission	IG-19-019	9	Reassess the process of isolating key project personnel from instrument selection to balance their additional insight in integration and cost estimation while maintaining fairness in the announcement.	Science
7	10/21/2019	Audit of NASA's Security Management	IG-20-001	4	Evaluate Agency-wide jurisdictions to determine if it is feasible for all Centers to be under the same jurisdiction or at least to determine if individual Centers should have all of their property under the same type of jurisdiction	Office of Protective Services

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8	10/21/2019	Audit of NASA's Security Management	IG-20-001	5	Coordinate with the Office of General Counsel to standardize the carrying of firearms by NASA civil servants in an Agency-wide policy while also addressing the appropriate situations when NASA contractors may carry their government-issued weapons off NASA property.	Office of Protective Services
9	11/14/2019	NASA's Management of Crew Transportation to the International Space Station	IG-20-005	2	Correct identified safety-critical technical issues before the crewed test flights, including parachute and propulsion systems testing, to ensure sufficient safety margins exist.	Human Exploration and Operations
10	3/3/2020	Audit of NASA's Management of the Distributed Active Archive Data Centers	IG-20-011	1	In conjunction with ESDIS, once SWOT and NISAR are operational and providing sufficient data, complete an independent analysis to determine the long-term financial sustainability of supporting the cloud migration and operation while also maintaining the current DAAC footprint.	Science
11	3/10/2020	NASA's Cost Management of the Space Launch System	IG-20-012	2	Review HEOMD and NASA program management policies, procedures, and ABC reporting processes to provide greater visibility into current, future, and overall cost and schedule estimates for the SLS Program and other human space flight program	Human Exploration and Operations
12	3/10/2020	NASA's Cost Management of the Space Launch System	IG-20-012	2	Establish methodologies and processes to track and set cost commitments for Artemis II.	Human Exploration and Operations
13	3/10/2020	NASA's Cost Management of the Space Launch System	IG-20-012	2	Determine reporting and tracking procedures for setting cost and schedule commitments, and monitoring progress throughout the entire life cycle of the SLS Program (through at least 2030).	Human Exploration and Operations
14	3/17/2020	Audit of the Mobile Launcher	IG-20-013	3	Ensure life-cycle and milestone reviews incorporate programmatic and technical risks and are conducted with the Associate Administrator for Human Exploration and Operations Directorate and other senior Agency officials.	Human Exploration and Operations
15	3/17/2020	Audit of the Mobile Launcher	IG-20-013	4	Require the ML-2 project to develop an ABC separate from the EGS Program.	Human Exploration and Operations
16	5/15/2020	Audit of NASA's Compliance with the Improper Payments Information Act for Fiscal Year 2019	IG-20-016	2	In accordance with OMB guidance, obtain a statistically valid estimate of the annual amount of improper payments in the SLS program for reporting in the FY2020 AFR, and complete the associated required reporting.	Chief Financial Officer
17	7/16/2020	Audit of NASA's Management of the Orion Multi Purpose Crew Vehicle	IG-20-018	2	To the extent practicable, adjust the production schedules for Artemis 4 and 5 to better align with the successful demonstration of Artemis 2 to reduce schedule delays associated with potential rework.	Human Exploration and Operations
18	9/16/2020	Planetary Science Division Portfolio	IG-20-023	2	In coordination with the Office of Chief Financial Officer, engage relevant Centers and technical capability leaders to implement budgetary and accounting system options to support critical discipline capabilities.	Science

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19	10/2/2020	Geospatial Data Act Audit	IG-21-001	2	Develop a unified Strategy Implementation Plan or “Roadmap” that defines detailed action items, milestones, and responsibilities for geospatial data management in support of missions across NASA.	Chief Information Officer
20	10/27/2020	NASA’s Management of Its Acquisition Workforce	IG-21-002	1	To help ensure the success of the MAP transformation, finalize and fully implement the Performance Metrics Dashboard to measure acquisition performance.	Procurement
21	10/27/2020	NASA’s Management of Its Acquisition Workforce	IG-21-002	2	To help ensure the success of the MAP transformation, document contract assignments to COs, CORs, and program/project managers in a centralized system for inclusion in the Performance Metrics Dashboard.	Procurement
22	11/10/2020	NASA’s Acquisition Strategy for the Lunar Gateway and Artemis Missions	IG-21-004	1	Baseline the Gateway requirements and specifications in contract modifications prior to updating and awarding the PPE and HALO fixed-price contracts.	Human Exploration and Operations
23	11/10/2020	NASA’s Acquisition Strategy for the Lunar Gateway and Artemis Missions	IG-21-004	2	Ensure PPE and HALO delivery and launch dates are realistic by including sufficient schedule margin in the development schedule.	Human Exploration and Operations
24	11/10/2020	NASA’s Acquisition Strategy for the Lunar Gateway and Artemis Missions	IG-21-004	3	Develop a HEOMD policy that establishes a reasonable amount of recommended schedule margin by phase of the program or project.	Human Exploration and Operations
25	12/3/2020	Audit of NASA’s Management of Hazardous Material	IG-21-006	7	Require Center Directors to inspect and replace, as required, laboratory hazardous material storage structures and improve shelters that do not follow CDC guidelines or comply with Agency requirements.	Chief, Safety and Mission Assurance
26	12/3/2020	Audit of NASA’s Management of Hazardous Material	IG-21-006	5	Assess various options for development and implementation of an Agency-wide hazardous materials information system that tracks hazardous materials throughout the life cycle, and ensure processes are in place to consistently maintain a complete and accurate inventory.	Chief, Safety and Mission Assurance
27	1/27/2021	NASA’s Efforts to Mitigate Risks Posed by Orbital Debris	IG-21-011	1	Lead national and international collaborative efforts to mitigate orbital debris including activities to encourage active debris removal and the timely end-of-mission disposal of spacecraft.	Office of the Administrator
28	1/27/2021	NASA’s Efforts to Mitigate Risks Posed by Orbital Debris	IG-21-011	2	Collaborate with Congress, other federal agencies, and partners from the private and public sectors to adopt national and international guidelines on active debris removal and strategies for increasing global compliance rates for timely removal of spacecraft at the end of a mission.	Office of the Administrator
29	1/27/2021	NASA’s Efforts to Mitigate Risks Posed by Orbital Debris	IG-21-011	3	Invest in methods and technologies for removing defunct spacecraft. As part of this effort, conduct a study evaluating the technical merit and cost to investing in active debris removal systems and technologies.	Office of the Administrator

Row No.	Issue Date	Report Title	Report No.	Recommendation No.	Recommendation	Responsible Office
30	5/18/2021	Audit of NASA 's Cybersecurity Readiness	IG-21-019	4	Determine the total annual cost of A&A for NASA's 526 systems, account for annual A&A costs at each Center, and set a baseline for what a typical A&A should cost.	Chief Information Officer
31	5/18/2021	Audit of NASA 's Cybersecurity Readiness	IG-21-019	5	Develop and include requirements in the planned consolidated cybersecurity contract (CyPrESS) for a dedicated enterprise A&A functional team to be provisioned to mission and institutional systems as required by the A&A lifecycle.	Chief Information Officer
32	5/18/2021	Audit of NASA 's Cybersecurity Readiness	IG-21-019	1	Formally integrate EA and ESA, and develop metrics on the overall progress and effectiveness of EA.	Chief Information Officer
33	5/18/2021	Audit of NASA 's Cybersecurity Readiness	IG-21-019	2	Collaborate with the Chief Engineer on strategies to strengthen EA across mission and institutional IT boundaries.	Chief Information Officer
34	5/18/2021	Audit of NASA 's Cybersecurity Readiness	IG-21-019	3	Determine the optimal organizational placement of the Enterprise Architect and Enterprise Security Architect.	Chief Information Officer
35	9/8/2021	NASA's Management of the Construction of Facilities Process	IG-21-027	1	Develop and institute an agency-wide process to prioritize and fund institutional and programmatic CoF projects that align with Agency-level missions and goals and require business case analyses to be completed and considered as part of the process prior to the project's approval.	Strategic Infrastructure
36	9/8/2021	NASA's Management of the Construction of Facilities Process	IG-21-027	2	Revise NPR 8820.2G to define and establish parameters for the use of institutional and programmatic CoF funds and establish a cost-sharing method for facilities that will have more than one user.	Strategic Infrastructure
37	9/8/2021	NASA's Management of the Construction of Facilities Process	IG-21-027	3	In coordination with the Mission Directorates, institute a process to ensure facility requirements are identified and funding sources are specified during a program's development and implementation phases.	Strategic Infrastructure
38	11/15/2021	NASA's Acquisition Strategy for the Artemis Program	IG-22-003	1	Develop a realistic, risk-informed schedule that includes sufficient margin to better align Agency expectations with the development schedule.	Human Exploration and Operations
39	11/15/2021	NASA's Acquisition Strategy for the Artemis Program	IG-22-003	2	Expand upon the existing draft Artemis IMS to include Artemis programs outside AES and ESDto properly align dependencies across directorates.	Human Exploration and Operations
40	11/15/2021	NASA's Acquisition Strategy for the Artemis Program	IG-22-003	3	Develop an Artemis-wide cost estimate, in accordance with best practices, that is updated on an annual basis.	Human Exploration and Operations
41	11/15/2021	NASA's Acquisition Strategy for the Artemis Program	IG-22-003	6	Develop a realistic funding profile and schedule given the underfunding of HLS in FY 2021, the selection of one HLS award, and the desire to compete a sustainability contract for future lunar missions.	Human Exploration and Operations

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42	11/15/2021	NASA's Acquisition Strategy for the Artemis Program	IG-22-003	7	Identify measurable cost reduction targets for its ESD contractors.	Human Exploration and Operations
43	11/15/2021	NASA's Acquisition Strategy for the Artemis Program	IG-22-003	4	Maintain an accounting of per-mission costs to increase transparency and establish a benchmark against which NASA can assess the outcome of initiatives to increase the affordability of ESD systems.	Human Exploration and Operations
44	11/30/2021	NASA's Utilization, Management, and Commercialization of Low Earth Orbit	IG-22-005	1	In order to mitigate risks to the Station's structural integrity, ensure the risks associated with cracks and leaks in the Service Module Transfer Tunnel are identified and mitigated prior to agreeing to an ISS life extension.	Human Exploration and Operations
45	1/11/2022	NASA's Management of its Astronaut Corps	IG-22-007	1	Further centralize and maintain its collection, summary, and monitoring of detailed astronaut data—to include skills, certifications, training, and demographics—to better support the sizing and alignment of the astronaut corps, and to help inform recruiting and training of astronauts to fulfill NASA's strategic goals, including continuing to expand the diversity of the astronaut corps.	Human Exploration and Operations
46	1/11/2022	NASA's Management of its Astronaut Corps	IG-22-007	3	At least 18 months prior to the planned Artemis II launch, coordinate with Artemis program offices to complete the development and chartering of the framework of Artemis boards and panels to ensure alignment with future mission training needs for new vehicles and missions, including Orion, next-generation spacesuits, HLS, and Gateway.	Human Exploration and Operations
47	3/14/2022	Audit of NASA's Insider Threat Program	IG-22-009	2	Improve cross-discipline communication by establishing a Working Group that includes OPS, OCIO, Procurement, human resource officials, and any other relevant Agency offices to collaborate on wide-ranging insider threat related issues for both classified and unclassified systems.	Office of Protective Services
48	4/6/2022	Volatiles Investigating Polar Expansion Rover (VIPER)	IG-22-010	2	Develop a VIPER mission cost estimate that includes all critical mission components and risks, specifically associated with the Astrobotic task order, and update the MPAR accordingly.	Science
49	4/6/2022	Volatiles Investigating Polar Expansion Rover (VIPER)	IG-22-010	3	Update NPR 7120.8 to require major acquisition projects that cost over \$250 million to complete a JCL analysis.	Chief Engineer
50	4/6/2022	Volatiles Investigating Polar Expansion Rover (VIPER)	IG-22-010	4	Update NPR 7120.8 to require major acquisition projects that cost over \$250 million to implement EVM.	Chief Engineer
51	4/6/2022	Volatiles Investigating Polar Expansion Rover (VIPER)	IG-22-010	1	Coordinate with the Chief Knowledge Officer to submit and at appropriate intervals document and publish lessons learned associated with using a CLPS provider, particularly on major acquisitions.	Science

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52	4/7/2022	NASA's Multi-Mission Program Cost Estimating	IG-22-011	5	Establish procedural requirements to ensure compliance with the Title 51 requirement to report full life-cycle cost and schedule for all major programs should NASA elect to estimate, track, and report baseline costs for major programs or activities that exceed \$250 million by component rather than by mission.	Chief Engineer
53	4/7/2022	NASA's Multi-Mission Program Cost Estimating	IG-22-011	6	Review NPR 7120.5F and update it as necessary to ensure compliance with laws and regulations and recommendations 1 through 5 above. Ensure the use and definitions of terms, such as "capability" and "life cycle," are consistent with those established in federal statutes and other NASA procedural requirements and policy directives.	Chief Engineer
54	4/7/2022	NASA's Multi-Mission Program Cost Estimating	IG-22-011	7	Establish procedural requirements for a risk posture analysis to ensure that major programs supporting multiple missions identify and estimate the cost and schedule impact of global and major interdependency risk.	Chief Engineer
55	4/7/2022	NASA's Multi-Mission Program Cost Estimating	IG-22-011	1	Estimate, track, and report ongoing production costs for all major programs, such as SLS and Orion, as development costs (Phase C & D) and not as Operations and Sustainment (Phase E) costs.	Chief Financial Officer
56	4/7/2022	NASA's Multi-Mission Program Cost Estimating	IG-22-011	2	Include in the next MPAR to Congress the estimated baseline life-cycle cost and schedule for each Artemis mission (starting no later Artemis III) for which NASA proposes to expend funds in the subsequent fiscal year.	Chief Financial Officer
57	4/7/2022	NASA's Multi-Mission Program Cost Estimating	IG-22-011	3	Should NASA elect to estimate, track, and report life-cycle costs for major programs or activities that exceed \$250 million by component rather than by mission, include estimates for each component in the MPAR and provide Congress a cost estimate, outside of the MPAR, for each Artemis mission currently planned, starting no later than Artemis III.	Chief Financial Officer
58	4/7/2022	NASA's Multi-Mission Program Cost Estimating	IG-22-011	4	Develop a formal process by which a risk-based probabilistic analysis is conducted to cover the global and interdependency risks of major programs and projects when those individual projects are required for the successful implementation of a mission; regardless of how those programs/ projects are categorized (i.e., tightly coupled, single-project program, etc.).	Chief Financial Officer
59	6/9/2022	NASA's Management of the Mobile Launcher 2 Contract	IG-22-012	3	To the extent that some or all of the Bechtel contract is converted to a fixed-price contract, ensure that an Independent Government Cost Estimate (IGCE) is established before entering into any new contractual agreements.	Human Exploration and Operations
60	6/9/2022	NASA's Management of the Mobile Launcher 2 Contract	IG-22-012	4	Ensure acquisition officials minimize the availability of award fees when contract modifications and value increases are the result of shortcomings in contractor performance and require documentation of the rationale for any award fees granted.	Human Exploration and Operations

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61	6/9/2022	NASA's Management of the Mobile Launcher 2 Contract	IG-22-012	1	Evaluate Bechtel's support for the updated estimate of cost and schedule at project completion and finalize negotiations for Bechtel's currently proposed cost increases and NASA's government-driven changes.	Human Exploration and Operations
62	6/9/2022	NASA's Management of the Mobile Launcher 2 Contract	IG-22-012	5	Issue policy guidance to reinforce current FAR and NASA FAR Supplement regulatory guidance for stopping or withholding payments to a contractor for significant deficiencies in business systems, such as the EVMS.	Procurement
63	6/9/2022	NASA's Management of the Mobile Launcher 2 Contract	IG-22-012	3	To the extent that some or all of the Bechtel contract is converted to a fixed-price contract, ensure that the Critical Design Review has been completed in accordance with NASA's life-cycle policies prior to conversion.	Human Exploration and Operations
64	6/9/2022	NASA's Management of the Mobile Launcher 2 Contract	IG-22-012	2	Before completing and finalizing the ML-2 project-level ABC, update the JCL analysis to reflect realistic life-cycle cost and schedule estimates to ensure effective budgeting and management of the project.	Human Exploration and Operations
65	6/14/2022	Management and Resilience of NASA's Earth Science Disasters Program	IG-22-013	1	Establish and document Program management requirements in a strategic plan and/or NPR 7120.8 project plan format for consistent messaging on ESDP priorities, objectives, and quantifiable performance metrics.	Science
66	6/14/2022	Management and Resilience of NASA's Earth Science Disasters Program	IG-22-013	2	Perform a funding analysis of ESDP to determine if current resources are adequate to manage, oversee, and administer Program goals and objectives in accordance with its strategic plan and/or project plan.	Science
67	6/14/2022	Management and Resilience of NASA's Earth Science Disasters Program	IG-22-013	3	In accordance with the Stafford Act, coordinate with appropriate NASA offices to develop Memorandums of Understanding (MOUs) that facilitate reimbursement agreements with applicable federal agencies that request Agency support for disaster events.	Science
68	6/14/2022	Management and Resilience of NASA's Earth Science Disasters Program	IG-22-013	4	Require ESDP, in coordination with ASP leadership, to finalize the NASA Disasters Program Playbook and complete associated annexes and appendixes.	Science
69	6/14/2022	Management and Resilience of NASA's Earth Science Disasters Program	IG-22-013	5	Ensure ESDP provides regular training to Center disaster coordinators regarding the Playbook and expectations of application.	Science
70	6/14/2022	Management and Resilience of NASA's Earth Science Disasters Program	IG-22-013	6	Require the ESDP Program Manager to develop a formalized plan to capture knowledge and increase the frequency of conducting after-action activities as appropriate.	Science



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71	6/14/2022	Management and Resilience of NASA's Earth Science Disasters Program	IG-22-013	7	Require the ESDP Program Manager to develop a system to track lessons learned recommendations resulting from after-action assessments to ensure the recommendations are implemented and routinely evaluated for effectiveness.	Science
72	6/28/2022	Audit of NASA's Compliance with the Payment Integrity Information Act for Fiscal year 2021	IG-22-014	2	Report disaster relief funding as a separate program from the Institutional Construction of Facilities program when satisfying payment integrity reporting requirements.	Chief Financial Officer
73	6/28/2022	Audit of NASA's Compliance with the Payment Integrity Information Act for Fiscal year 2021	IG-22-014	3	Complete the OMB data call process for all programs with outlays over \$10 million.	Chief Financial Officer
74	6/28/2022	Audit of NASA's Compliance with the Payment Integrity Information Act for Fiscal year 2021	IG-22-014	4	Ensure that program outlays exclude any transactions that do not meet the outlay definition provided by OMB.	Chief Financial Officer
75	6/28/2022	Audit of NASA's Compliance with the Payment Integrity Information Act for Fiscal year 2021	IG-22-014	5	Revise the materiality risk calculation methodology and sampling and estimation methodology plan to include payment transactions only.	Chief Financial Officer
76	6/28/2022	Audit of NASA's Compliance with the Payment Integrity Information Act for Fiscal year 2021	IG-22-014	6	Consider adhering to OMB's \$10 million threshold for program selection for the annual risk assessment.	Chief Financial Officer
77	6/28/2022	Audit of NASA's Compliance with the Payment Integrity Information Act for Fiscal year 2021	IG-22-014	1	Complete steps outlined in OMB guidance for when an agency is not compliant with PIIA for one fiscal year. Non-compliant agencies must provide information describing the actions that the agency will take to become compliant in the OMB annual data call, including: a. measurable milestones to be accomplished to achieve compliance (i.e., report the SLS testing results in the FY 2022 OMB data call), b. designation of a senior agency official who will be accountable for the progress to become compliant, and c. establishment of an accountability mechanism with appropriate incentives and consequences tied to the success of the senior agency official in leading NASA's efforts to achieve compliance.	Chief Financial Officer

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78	6/28/2022	Audit of NASA's Compliance with the Payment Integrity Information Act for Fiscal year 2021	IG-22-014	7	Develop a detailed review process, such as a checklist or job aid, outlining the review procedures performed by the Quality Assurance Division within the reporting process for overpayments from sources other than recapture audits to ensure that the primary reviewer and the supervisory quality control reviewers are performing a thorough review of the aggregated submissions of overpayments. Necessary review steps include ensuring overpayments are not reported twice, capturing issues with overpayments submitted for the incorrect period, and tracking identified and collected portions that occur in different fiscal years for accurate reporting.	Chief Financial Officer
79	6/28/2022	Audit of NASA's Compliance with the Payment Integrity Information Act for Fiscal year 2021	IG-22-014	8	Determine the specific programs that had overpayments identified and collected during the reporting period and report those amounts by the Agency program as requested by OMB. If NASA deems this effort not cost-effective, the Agency should document its determination and report overpayments by Treasury Account Fund Symbol or another more meaningful method than by the Center or office that responded to QAD's inquiries for overpayments.	Chief Financial Officer
80	8/4/2022	Ames Lease Management Practices	IG-22-015	1	Conduct cyclical reviews (no less than once every 5 years) of the Ames lease process to ensure compliance with federal and NASA requirements.	Strategic Infrastructure
81	8/4/2022	Ames Lease Management Practices	IG-22-015	2	Update applicable real estate policies and NASA-wide guidance to enhance requirements and procedures to comply with EUL authority and to require maintaining appropriate documentation, documenting decisions, and fostering transparent coordination and communication with internal and external stakeholders in a timely manner.	Strategic Infrastructure
82	8/4/2022	Ames Lease Management Practices	IG-22-015	3	Update applicable real estate policies and NASA-wide guidance to enhance requirements and standardize applicable financial practices (such as the benefit and cost analysis, life-cycle cost analysis, and audits of tenants' books and records when required) associated with leases.	Strategic Infrastructure
83	8/4/2022	Ames Lease Management Practices	IG-22-015	6	Ensure FRED and Center organizations' management such as the PSO, OCFO, and Facilities Engineering and Real Property Management Division are involved in the entire lease process from initial planning through termination to identify and assess resources, budgets, schedules, risks, and compliance with federal and NASA requirements.	Ames Research Center (Center Director)

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84	8/4/2022	Ames Lease Management Practices	IG-22-015	5	Implement written procedures in the lease process to ensure compliance with federal and NASA requirements applicable, but not limited to, timely involvement of the RPAO, competition, life-cycle cost analysis, fair market value assessments, certifications, and termination clauses as appropriate.	Ames Research Center (Center Director)
85	8/4/2022	Ames Lease Management Practices	IG-22-015	7	Establish a formal management structure for implementing the NASA Ames Development Plan that includes a documented and transparent process and emphasizes continuous internal and external stakeholder coordination for the research and development campus.	Ames Research Center (Center Director)
86	8/4/2022	Ames Lease Management Practices	IG-22-015	8	Establish a documented process with defined performance metrics to objectively measure progress and success for the research and development campus program, including evaluating tenant and partner contributions to NASA missions, and monitoring and reporting the performance metrics at least annually.	Ames Research Center (Center Director)
87	8/4/2022	Ames Lease Management Practices	IG-22-015	4	Update applicable real estate policies and NASA-wide guidance to incorporate applicable security requirements and agreement clauses in leases.	Strategic Infrastructure
88	8/4/2022	Ames Lease Management Practices	IG-22-015	9	Within the next 3 years, conduct a Center-wide security vulnerability risk assessment, including the districts outside Ames Campus, to ensure compliance with federal and NASA requirements.	Office of Protective Services
89	8/4/2022	Ames Lease Management Practices	IG-22-015	10	Identify and implement mitigation strategies and resource requirements to address the security vulnerability assessment risks.	Office of Protective Services
90	9/29/2022	NASA's Contract Management of the Johns Hopkins University Applied Physics Laboratory	IG-22-017	1	Document this occurrence as a lessons learned, as well as provide supplemental guidance to NASA procurement officials that, in the absence of prohibitive regulation or direction, the FAR provides them the authority to take the lead in encouraging business process innovations to ensure efficient contract actions.	Procurement
91	9/29/2022	NASA's Contract Management of the Johns Hopkins University Applied Physics Laboratory	IG-22-017	2	Document a process to periodically assess and compare the total cost estimate for awarded APL tasks to the established maximum and take timely action to modify the contract or request a deviation from the FAR to exclude a maximum for ARDES II and any future ARDES-type IDIQ contracts for APL.	Marshall Space Flight Center (Center Director)
92	10/5/2022	Audit of NASA's Compliance with the Geospatial Data Act for Fiscal Year 2022	IG-23-001	3	The implementation plan for the Geospatial Data Strategy contains detailed action items and milestones, including those for developing a complete and accurate inventory of the Agency's geospatial data.	Chief Information Officer

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93	10/5/2022	Audit of NASA's Compliance with the Geospatial Data Act for Fiscal Year 2022	IG-23-001	1	The role of the SAOGI is strategically positioned within the Agency to have responsibility, accountability, and authority needed to meet GDA-assigned agency responsibilities.	Chief Information Officer
94	10/5/2022	Audit of NASA's Compliance with the Geospatial Data Act for Fiscal Year 2022	IG-23-001	2	Roles and responsibilities of the SAOGI and other key stakeholders are defined in both the Geospatial Data Strategy and its implementation plan.	Chief Information Officer
95	10/5/2022	Audit of NASA's Compliance with the Geospatial Data Act for Fiscal Year 2022	IG-23-001	4	Continued coordination with NARA to establish the appropriate level of scientific data for inclusion in NARA-approved records schedules.	Chief Information Officer
96	12/19/2022	Review of NASA's Space Technology Mission Directorate (STMD) Portfolio	IG-23-005	3	Complete efforts to develop additional outcome-based performance measures based on the transition, advancement, and infusion of technologies.	Space Technology
97	12/19/2022	Review of NASA's Space Technology Mission Directorate (STMD) Portfolio	IG-23-005	1	Reexamine its SPAR data system to ensure it provides as accurate and complete a picture of project costs as is practicable.	Space Technology
98	12/19/2022	Review of NASA's Space Technology Mission Directorate (STMD) Portfolio	IG-23-005	2	Update the STARPort data system with complete information on project alignment to STAR desired outcomes for all projects active in FY 2021 and beyond.	Space Technology
99	12/19/2022	Evaluation of NASA's Information Security Program under FISMA for FY 2022	IG-23-006	2	Design and implement the necessary entity-wide oversight, enforcement mechanisms, and controls to ensure all system-level BIAs are accurate and reviewed annually, as well as ensure the information system owners of the systems selected for testing in this evaluation complete a system-level BIA.	Chief Information Officer
100	12/19/2022	Evaluation of NASA's Information Security Program under FISMA for FY 2022	IG-23-006	3	Review all information systems to determine if a BIA has been performed in accordance with NASA's Information Technology Security Handbook (ITS-HBK), Contingency Planning (ITS-HBK-2810.08-01A).	Chief Information Officer
101	12/19/2022	Evaluation of NASA's Information Security Program under FISMA for FY 2022	IG-23-006	17	RMA recommends the Office of the Chief Information Officer revise its ISCM policies to document and implement lessons learned based on risk events whereby employees are instructed to record, analyze, and revise control activities to improve NASA's security posture.	Chief Information Officer
102	12/19/2022	Evaluation of NASA's Information Security Program under FISMA for FY 2022	IG-23-006	1	Implement the necessary entity-wide oversight to monitor RISCS for delinquent ATOs and SARs and ensure the information system owners of the systems selected for testing in this evaluation complete delinquent ATOs and SARs so RISCS provides sufficient information to determine NASA's risk exposure.	Chief Information Officer

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103	12/19/2022	Evaluation of NASA's Information Security Program under FISMA for FY 2022	IG-23-006	4	Implement the necessary entity-wide oversight to monitor RISCs for accuracy and completeness, including reviewing portfolio-wide reports or dashboards demonstrating compliance with Federal requirements and enhancing decision-making.	Chief Information Officer
104	12/19/2022	Evaluation of NASA's Information Security Program under FISMA for FY 2022	IG-23-006	7	Document the NMI process in NASA's ISCM Strategy to ensure its hardware inventory monitoring process is accurate, complete, and fully aligned with NASA's other continuous monitoring guidance.	Chief Information Officer
105	12/19/2022	Evaluation of NASA's Information Security Program under FISMA for FY 2022	IG-23-006	5	Design and implement the necessary entity-wide oversight enforcement mechanisms and ensure the information system owner of the system selected for testing during this evaluation perform a system inventory of its software assets and licenses to ensure all software and license information are accurate and reviewed annually.	Chief Information Officer
106	12/19/2022	Evaluation of NASA's Information Security Program under FISMA for FY 2022	IG-23-006	6	Develop policies, procedures, and processes to manage the cybersecurity risks of risk framing, risk response, and risk monitoring in accordance with NASA policy.	Chief Information Officer
107	12/19/2022	Evaluation of NASA's Information Security Program under FISMA for FY 2022	IG-23-006	9	Implement the necessary oversight to monitor POA&Ms and RBDs in RISCs to identify ones that require action so it can ensure that the ISOs take the necessary action to review, update, and approve POA&Ms and RBDs, as necessary, before they become delinquent, taking into consideration the length of time required to obtain necessary approvals, and update RISCs.	Chief Information Officer
108	12/19/2022	Evaluation of NASA's Information Security Program under FISMA for FY 2022	IG-23-006	10	Ensure that the system owners of the systems selected for testing in this evaluation address its past due POA&Ms and unapproved RBDs.	Chief Information Officer
109	12/19/2022	Evaluation of NASA's Information Security Program under FISMA for FY 2022	IG-23-006	11	Ensure that the system owner of the system selected for testing in this evaluation addresses its unapproved RBD.	Chief Information Officer
110	12/19/2022	Evaluation of NASA's Information Security Program under FISMA for FY 2022	IG-23-006	8	Develop a policy and implement the necessary entity-wide oversight to monitor risk through a risk register and a risk profile to provide enterprise-wide metrics to inform top management of its IT risks.	Chief Information Officer
111	12/19/2022	Evaluation of NASA's Information Security Program under FISMA for FY 2022	IG-23-006	12	RMA recommends the Office of the Chief Information Officer incorporates supplier risk evaluations into its continuous monitoring practices outlined in NASA's ISCM Strategy.	Chief Information Officer

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112	12/19/2022	Evaluation of NASA's Information Security Program under FISMA for FY 2022	IG-23-006	13	Increase its resources and effort to enforce MFA using a NASA Identify based account and token from Agency ICAM service offerings (i.e., NASA PIV, Agency Smart Badge) for all moderate and high information systems in NASA's environment to comply with NASA, NIST, and OMB's guidelines.	Chief Information Officer
113	12/19/2022	Evaluation of NASA's Information Security Program under FISMA for FY 2022	IG-23-006	14	Ensure the information system owner of the system selected for testing during this year's evaluation implement PIV or Phishing Resistant MFA for its non-privileged users to comply with NASA, NIST, and OMB's guidelines.	Chief Information Officer
114	12/19/2022	Evaluation of NASA's Information Security Program under FISMA for FY 2022	IG-23-006	15	Ensure the security controls for protecting PII and other agency-sensitive data throughout the data lifecycle found in control families PM, PT, and SR are updated and defined within the Agency's ISCM strategy.	Chief Information Officer
115	1/12/2023	Audit of NASA's Software Asset Management	IG-23-008	1	Establish enterprise-wide (institutional and mission) Software Asset Management policy and procedures.	Chief Information Officer
116	1/12/2023	Audit of NASA's Software Asset Management	IG-23-008	3	Align the Agency Software Manager position to report to the Agency CIO.	Chief Information Officer
117	1/12/2023	Audit of NASA's Software Asset Management	IG-23-008	2	Implement a single Software Asset Management tool across the Agency.	Chief Information Officer
118	1/12/2023	Audit of NASA's Software Asset Management	IG-23-008	4	Establish formal legal representation and guidance for vendor software audits.	Chief Information Officer
119	1/12/2023	Audit of NASA's Software Asset Management	IG-23-008	7	Develop an Agency-wide process for limiting privileged access to computer resources in accordance with the concept of least privilege.	Chief Information Officer
120	1/12/2023	Audit of NASA's Software Asset Management	IG-23-008	5	Establish a software license awareness training 'short course' focusing on approvals, compliance, and other issues a general user might encounter.	Chief Information Officer
121	1/12/2023	Audit of NASA's Software Asset Management	IG-23-008	9	Centralize software spending insights to include purchase cards.	Chief Financial Officer
122	1/12/2023	Audit of NASA's Software Asset Management	IG-23-008	6	Implement a centralized repository for NASA's internally developed software applications.	Chief Information Officer
123	1/17/2023	Review of NASA's Efforts to Partner with International Space Agencies for the Artemis Missions	IG-23-004	4	Perform a detailed gap analysis and cost estimate for Artemis missions beyond Artemis IV that will help inform a cost-sharing strategy with international partners.	Exploration Systems Development
124	1/17/2023	Review of NASA's Efforts to Partner with International Space Agencies for the Artemis Missions	IG-23-004	1	Establish a coordination strategy with NASA's international partners that includes recurring forums specifically for Artemis Accords signatories that are (or are interested in) participating in the Artemis campaign.	Exploration Systems Development

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125	1/17/2023	Review of NASA's Efforts to Partner with International Space Agencies for the Artemis Missions	IG-23-004	2	Establish NASA-led Artemis campaign boards and working groups for partners with agreed-upon commitments with NASA and provide opportunities for liaison representation from international partner agencies.	Exploration Systems Development
126	1/17/2023	Review of NASA's Efforts to Partner with International Space Agencies for the Artemis Missions	IG-23-004	9	In conjunction with NASA's Mission Directorates and the State Department, execute appropriate Artemis agreements with key international space agency partners to ensure partner roles and responsibilities are clearly understood and allow for efficient and timely partnerships in support of Artemis.	International and Interagency Relations
127	1/17/2023	Review of NASA's Efforts to Partner with International Space Agencies for the Artemis Missions	IG-23-004	10	Develop an automated routing method for the processing of international agreements within NASA.	International and Interagency Relations
128	1/17/2023	Review of NASA's Efforts to Partner with International Space Agencies for the Artemis Missions	IG-23-004	5	Establish a full-time export control team dedicated to the various Artemis programs in support of space flight developments.	Exploration Systems Development
129	1/17/2023	Review of NASA's Efforts to Partner with International Space Agencies for the Artemis Missions	IG-23-004	6	Review export control requirements and consider additional roles for partner astronauts to increase their utilization in NASA space flight operations, to include amending existing agreements if necessary.	Space Operations
130	1/17/2023	Review of NASA's Efforts to Partner with International Space Agencies for the Artemis Missions	IG-23-004	7	Establish a full-time export control team dedicated to the Artemis programs in support of space flight operations.	Space Operations
131	1/17/2023	Review of NASA's Efforts to Partner with International Space Agencies for the Artemis Missions	IG-23-004	8	Coordinate with other federal agencies to gain a unique EAR classification for the Gateway as appropriate.	International and Interagency Relations
132	3/20/2023	NASA's Management of Radioisotope Power Systems (RPS) Program	IG-23-010	2	Conduct high quality, frequent, and routine self-assessment TRAs by project management beginning after the initial implementation of a technology development project as a basis for TRL assessment and risk management discussions.	Science
133	3/20/2023	NASA's Management of Radioisotope Power Systems (RPS) Program	IG-23-010	1	Create an RPS resource allocation and technology development strategic plan that includes an evaluation and mitigation of risks for each project through its completion and provide a communication plan to stakeholders and mission managers.	Science
134	3/20/2023	NASA's Management of Radioisotope Power Systems (RPS) Program	IG-23-010	3	Per Title 51 and NPR 7120.5F, recalculate the life-cycle costs for Next-Gen RTG and DRPS projects to include funding NASA provides to DOE.	Science
135	3/20/2023	NASA's Management of Radioisotope Power Systems (RPS) Program	IG-23-010	4	Institute an EVM process for Next-Gen RTG and DRPS projects that conforms with NASA policy, FAR requirements, and industry best practices.	Science



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136	3/20/2023	NASA's Management of Radioisotope Power Systems (RPS) Program	IG-23-010	5	For Next-Gen RTG and DRPS development efforts that transition to a space flight project, execute a JCL analysis at the proper phases in accordance with NPR 7120.5F.	Science
137	3/20/2023	NASA's Management of Radioisotope Power Systems (RPS) Program	IG-23-010	9	Reevaluate the need and if appropriate reauthorize the organizational position of the Nuclear Power and Propulsion System Capability Leadership Team through the appropriate Mission Directorate and provide the Team responsibility for monitoring and advocating strategic nuclear power coordination across NASA.	Space Technology
138	3/20/2023	NASA's Management of Radioisotope Power Systems (RPS) Program	IG-23-010	8	Leverage the RPS Program's existing business processes with its element structure to monitor fission technology development for SMD feasibility and educate stakeholders on the possibilities and differences.	Science
139	3/20/2023	NASA's Management of Radioisotope Power Systems (RPS) Program	IG-23-010	6	In coordination with DOE, develop a means for the RPS Program to obtain high-fidelity Pu-238 and fueled clad current and future inventory information.	Science
140	3/20/2023	NASA's Management of Radioisotope Power Systems (RPS) Program	IG-23-010	7	Develop a means to quantify risk of future Pu-238 and fueled clad availability that can be communicated to NASA mission managers and incorporated into mission development proposals and plans.	Science
141	4/20/2023	NASA's Efforts to Increase Diversity in Its Workforce	IG-23-011	1	Ensure hiring and promotion managers across NASA receive appropriate training to increase DEIA awareness on topics such as implicit bias and inclusive leadership.	Human Capital Management
142	4/20/2023	NASA's Efforts to Increase Diversity in Its Workforce	IG-23-011	2	Ensure leadership-related professional development courses and detail assignments are widely available to prepare a more diverse cohort of employees for promotional opportunities.	Human Capital Management
143	4/20/2023	NASA's Efforts to Increase Diversity in Its Workforce	IG-23-011	3	Establish a comprehensive Agency-wide mentoring program for both mid-level (GS-11, GS-12, and GS-13) and senior level employees at all NASA Centers.	Human Capital Management
144	4/20/2023	NASA's Efforts to Increase Diversity in Its Workforce	IG-23-011	4	Conduct a barrier analysis to identify obstacles restricting women and minorities from senior management positions and develop a plan to address and eliminate these obstacles.	Office of Diversity and Equal Opportunity
145	4/20/2023	NASA's Efforts to Increase Diversity in Its Workforce	IG-23-011	5	Develop a plan that consistently utilizes ERGs to conduct supplemental recruiting activities.	Office of Diversity and Equal Opportunity
146	4/20/2023	NASA's Efforts to Increase Diversity in Its Workforce	IG-23-011	6	Conduct an analysis of all applicant data (similar to interns), including veterans, to better understand hiring trends and outcomes.	Human Capital Management



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147	4/20/2023	NASA's Efforts to Increase Diversity in Its Workforce	IG-23-011	7	Designate an official or organization to oversee coordination between the stakeholders (OCIO, ODEO, and OCHCO) to develop a sustainable operation and funding structure for the EDP.	Office of the Administrator
148	5/3/2023	Audit of NASA's Management of its Artificial Intelligence Capabilities	IG-23-012	1	Establish a standardized definition for AI within the Agency, to include harmonizing the definitions in the NASA Framework for the Ethical Use of Artificial Intelligence (AI), NASA's Responsible AI Plan, and NASA AIML SharePoint.	Chief Information Officer
149	5/3/2023	Audit of NASA's Management of its Artificial Intelligence Capabilities	IG-23-012	2	Ensure the standardized AI definition is used to identify, update, and maintain the Agency's AI use case inventory.	Chief Information Officer
150	5/3/2023	Audit of NASA's Management of its Artificial Intelligence Capabilities	IG-23-012	3	Identify a classification mechanism to assist in the rapid application of federal requirements for cybersecurity controls and monitoring practices.	Chief Information Officer
151	5/3/2023	Audit of NASA's Management of its Artificial Intelligence Capabilities	IG-23-012	4	Develop a method to track budgets and expenditures for AI use case inventory.	Chief Information Officer

**Note: This table omits 35 recommendations that NASA determined to be classified or sensitive and are therefore unsuitable for public release.**

### RECENTLY CLOSED RECOMMENDATIONS

Row No.	Issue Date	Report Title	Report no.	Recommendation No.	Recommendation	Responsible Office
1	3/26/2019	Audit of NASA's Service Contracts	IG-19-014	1	Develop an Agency-wide standardized set of metrics for contracts that can be collected, tracked, and analyzed over time to identify efficiencies resulting from a change in contract structure	Procurement
2	3/26/2019	Audit of NASA's Service Contracts	IG-19-014	2	Require Center Procurement Offices to formally collect, track, and report data to the Headquarters Office of Procurement on these metrics at least annually.	Procurement
3	1/17/2023	Review of NASA's Efforts to Partner with International Space Agencies for the Artemis Missions	IG-23-004	3	Issue a detailed strategy and mission architecture for beyond Artemis IV that considers potential international partner roles and responsibilities.	Exploration Systems Development
4	1/12/2023	Audit of NASA's Software Asset Management	IG-23-008	8	Implement a "penalty spend" classification in SAP to track license infractions and true-up payouts.	Chief Financial Officer