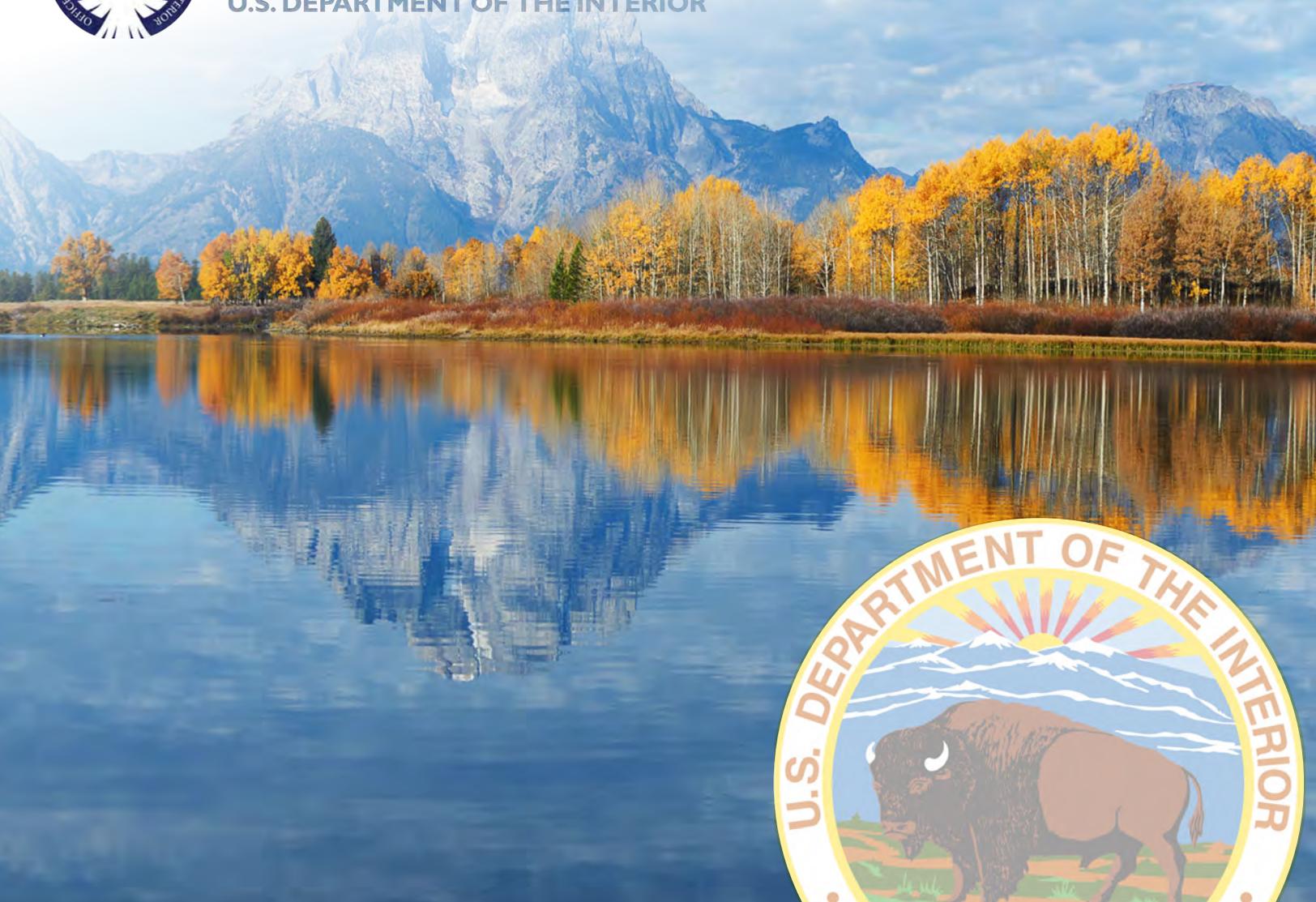




OFFICE OF
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Audit



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MAR 02 2026

Memorandum

To: Ned Mamula
Director, U.S. Geological Survey

From: Nicki Miller *Nicki Miller*
Assistant Inspector General for Audits, Inspections, and Evaluations

Subject: Final Audit Report – *USGS Can Improve Oversight and Substantial Involvement for IIJA Earth Mapping Resources Initiative Agreements*
Report No. 2024-CR-021

This memorandum transmits our audit report on the U.S. Geological Survey's use and oversight of Infrastructure Investment and Jobs Act funding for the Earth Mapping Resources Initiative.¹

We will track open recommendations for implementation. We will notify Congress of our findings, and we will report semiannually, as required by law, on actions you have taken to implement the recommendations and on recommendations that have not been implemented. We will also post a public version of this report on our website.

If you have any questions about this report, please contact me at aie_reports@doioig.gov.

¹ The issuance of this report was delayed because of the lapse in the U.S. Department of the Interior's appropriations that occurred from October 1, 2025, through November 12, 2025.

Audit**USGS Can Improve Oversight and Substantial Involvement for IJA Earth Mapping Resources Initiative Agreements****Objective**

To assess the U.S. Geological Survey (USGS) Earth Mapping Resources Initiative's (MRI's) use and oversight of Infrastructure Investment and Jobs Act (IIJA)-funded cooperative agreements. Specifically, we reviewed whether USGS (1) administered the cooperative agreements and (2) monitored the cooperative agreements in accordance with Federal requirements and the IIJA.

Recommendations

We make eight recommendations that, if implemented, will help USGS improve its oversight of IIJA-funded Earth MRI cooperative agreements to ensure IIJA earth mapping objectives are achieved. Three of the recommendations are resolved, and five recommendations are implemented. Two of our recommendations are significant.

Risk Areas

Contract & Financial Assistance Oversight



Environmental Impact

USGS Earth MRI is a partnership between USGS; State geological surveys; and other Federal, State, Tribal, and private-sector organizations to modernize the Nation's surface and subsurface mapping. USGS distributes funding for geologic and geochemical mapping to State geological surveys through cooperative agreements. In November 2021, the IIJA increased USGS Earth MRI funding by a total of \$320 million—\$64 million each year from fiscal year (FY) 2022 through FY 2026—to identify areas with potential critical mineral resources. Critical mineral resources play a vital role in U.S. manufacturing of key products—these minerals are vulnerable to supply chain disruption, and a shortage could harm the United States' economic stability and national security. Ensuring a steady and secure supply is a strategic priority.

Findings

We found USGS distributed Earth MRI IIJA funds for mapping, survey, and mine waste projects to recipients through cooperative agreements in accordance with the Act. However, we sampled and reviewed eight FY 2022 and 2023 cooperative agreements totaling \$11,658,307 and found that USGS was unable to demonstrate that these agreements met program objectives because it did not establish performance measures or metrics. We also identified oversight deficiencies related to these agreements. Specifically, USGS did not provide substantial involvement for seven of the eight cooperative agreements and did not ensure recipients submitted required progress reporting. Although the terms and conditions of each cooperative agreement required recipients to submit annual progress reports comparing accomplishments to agreement objectives and overall progress to the performance metrics, USGS did not always enforce requirements that recipients submit these reports. In addition, we found weaknesses with subrecipient monitoring for one of the agreements. During our audit, we also identified that the Alaska Department of Natural Resources charged \$32,549 to one IIJA-funded USGS Earth MRI cooperative agreement to pay for the State's unfunded pension liabilities, which represented approximately 16 percent of the payroll costs charged to the grant.

Impact

As of June 2024, USGS had awarded 51 IIJA-funded Earth MRI cooperative agreements totaling \$24,064,237 for FYs 2022 and 2023. Effective oversight is important to provide reasonable assurance that IIJA funds are used as intended and in accordance with the Act itself as well as with other applicable laws and regulations. USGS guidance requires it to implement performance measures and metrics in the cooperative agreements, and in those we reviewed, the terms and conditions require USGS to provide substantial involvement. Without these measures and metrics in place, it is difficult for USGS and outside parties to determine whether the cooperative agreements meet IIJA funding objectives and for USGS to provide adequate oversight of IIJA funds. In addition, required progress reports throughout the project period are an essential management tool for effective oversight, as these reports provide critical information on actual achievements compared to the agreement's objectives. They also identify and explain unmet goals; provide insight into cost overruns or high unit costs, if applicable; and describe planned activities and program adjustments for the next budget period. USGS' review of progress reports is especially crucial given the accelerated efforts to identify areas with potential critical mineral resources.

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Introduction

Objective

The objective of our audit was to assess the U.S. Geological Survey (USGS) Earth Mapping Resources Initiative's (MRI's) use and oversight of Infrastructure Investment and Jobs Act (IIJA)-funded cooperative agreements.² Specifically, we reviewed whether USGS (1) administered the cooperative agreements and (2) monitored the cooperative agreements in accordance with Federal requirements and the IIJA.

See Appendix 1 for our audit scope and methodology and Appendix 2 for a list of sites we visited.

Background

The Organic Act of March 3, 1879, established USGS' Mineral Resources Program to "examine the geological structure, mineral resources, and products within and outside the national domain."³ The fiscal year (FY) 2019 appropriation provided the Mineral Resources Program funding to launch Earth MRI—a partnership between USGS; State geological surveys; and other Federal, State, Tribal, and private-sector organizations to modernize the Nation's surface and subsurface mapping.⁴ This modernization includes acquiring new geologic maps, geophysical surveys, and light detection and ranging (lidar)⁵ data to better understand the fundamental geologic framework of areas across the Nation with potential for hosting critical mineral resources. A critical mineral is an element, substance, or material designated as critical by the Secretary of Interior, acting through the USGS Director. Critical mineral resources are nonfuel minerals that play a vital role in the United States' manufacturing of key products—these minerals are vulnerable to supply chain disruption, and a shortage could harm the United States' economic stability and national security. The United States relies entirely on imports for 21 critical mineral commodities and depends on imports for at least 50 percent of another 28 commodities. See Figure 1 on the next page for a USGS chart showing the percent of U.S. consumption of each commodity met by imports.⁶

² Pub. L. No. 117-58.

³ 43 U.S.C. § 31.

⁴ USGS received appropriations of \$9.6 million in FY 2019, \$10.6 million in FY 2020, \$10.6 million in FY 2021, \$10.6 million in FY 2022, \$10.8 million in FY 2023, and \$10.8 million in FY 2024 for Earth MRI.

⁵ Lidar is a remote sensing technique that requires aircraft and specialized sensors to capture data for analysis.

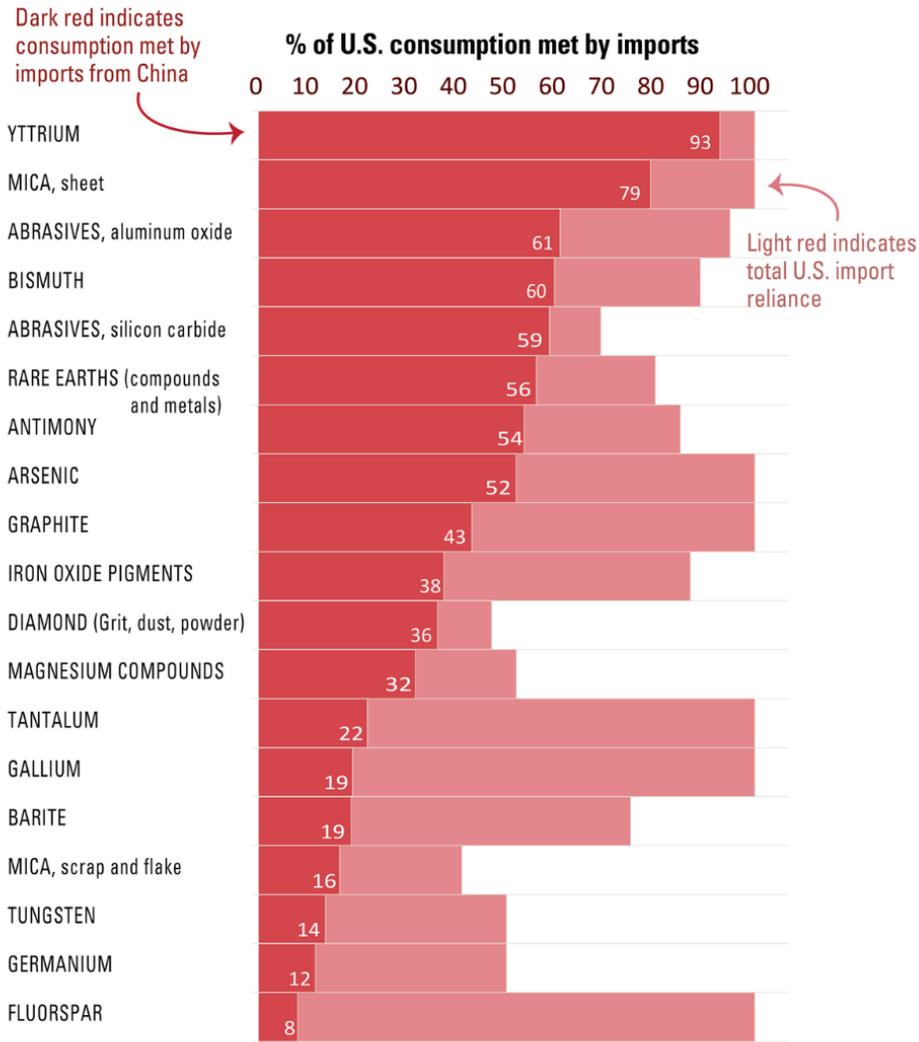
⁶ USGS Mineral Resources Program, *Minerals with Net Import Reliance on China*, dated Mar. 14, 2025, <https://www.usgs.gov/media/images/minerals-net-import-reliance-china>.

Figure 1: Percentage of U.S. Consumption Averaged Over FYs 2020-2023



Mineral Commodities with Net Import Reliance on China

The chart below shows the percent of U.S. consumption of each commodity met by imports in 2024, with the estimated percent of consumption met by imports from China averaged over 2020-2023. From 2020-2023, the U.S. imported at least 29 mineral commodities from China.



Imports from China made up less than 5% of U.S. consumption of: garnet, iron and steel slag, aluminium, perlite, bromine and talc. The U.S. also imported cesium, rubidium, scandium and dimension stone from China, but data were not available on specific percentages.

U.S. Department of the Interior
U.S. Geological Survey

Data: USGS Mineral Commodity Summaries 2025

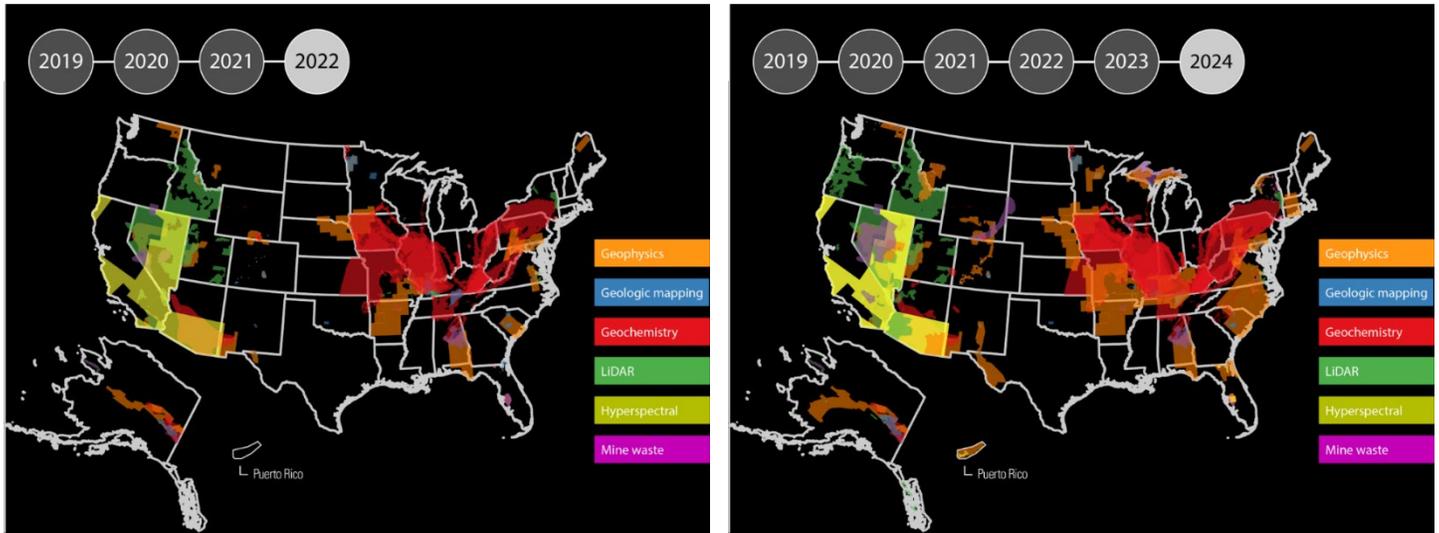
March 2025

Source: USGS.

Although undiscovered deposits of some of these critical and strategic minerals almost certainly exist within the United States, the private sector faces obstacles to exploration due to lack of modern geological, geophysical, and topographic data. Many of these minerals are critical for high-tech, military, clean energy, and manufacturing applications.

See Figure 2 for images USGS published in October 2024 showing Earth MRI progress from FY 2022 to 2024.⁷

Figure 2: Earth MRI Progress FYs 2022-2024



Source: USGS.

In November 2021, through the IJJA, Congress authorized USGS to enter into cooperative agreements with State geological surveys or use existing contracting authorities to accelerate efforts to carry out USGS’ fundamental resources and mapping mission.⁸

The IJJA increased USGS’ Earth MRI funding⁹ by a total of \$320 million (\$64 million each year from FY 2022 through FY 2026) to identify areas with potential critical mineral resources both still in the ground and in mine waste.¹⁰ This includes geologic mapping, geochemical mapping, and geophysical surveys (see Figure 3) to emphasize all the recoverable critical minerals in a given surface or subsurface deposit and collect data for areas containing mine waste to increase understanding of aboveground mineral resources in previously disturbed areas.

See Figure 4 on the next page for a detailed description of each project type.

Figure 3: Helicopter With Geophysical Survey Equipment



Source: USGS.

⁷ USGS Earth Mapping Resources Initiative, *Earth MRI Progress*, dated Oct.14, 2024, <https://www.usgs.gov/special-topics/earth-mri/science/earth-mri-progress>.

⁸ Pub. L. No 117-58 § 40201.

⁹ The IJJA funding is in addition to the \$10.8 million in annual appropriations USGS has received for Earth MRI since FY 2023.

¹⁰ Mine waste is the material left over after mining. It consists of tailings (which are the materials that remain after mined ore is milled and concentrated), waste generated during ore processing (such as slag, leaching solutions, and residues), waste rock, and material that was removed to reach the ore.

Figure 4: Project Type Description

Project Type	Description
Geologic Mapping	Geologists identify and measure visible rock in a mapping area to predict how different “units” of rocks fit together beneath the Earth’s surface and then estimate where mineral and energy resources and natural hazards might exist.
Geochemical Mapping	Scientists collect rock and/or soil samples at a target location and then use sophisticated lab equipment to analyze what minerals and elements occur within the samples to assess whether a specific grouping of rocks has mineral resource potential.
Geophysical Survey	Scientists collect airborne magnetic and radiometric survey data from aircraft flown over large regions, which allows them to understand the composition and structures of rock beneath the Earth’s surface.
Mine Waste Inventory	Scientists study mine waste material left over after mining. The material can contain valuable minerals that were not economically or technologically feasible to process at the time the material was mined. USGS inventories mine waste across the United States by digitizing paper maps, conducting on-the-ground mapping, and identifying mine waste features from geophysical data and aerial images.

Source: USGS, <https://www.usgs.gov/special-topics/earth-mri/mapping-and-science>.

USGS Earth MRI Cooperative Agreements

Although USGS’ Mineral Resources Program manages Earth MRI,¹¹ several USGS programs coordinate to distribute Earth MRI funds and work with partners and private-sector surveyors facilitated through USGS’ National Cooperative Geologic Mapping Program. USGS uses cooperative agreements, a type of Federal award, to distribute funding to State geological surveys for geologic mapping, geochemical mapping, and mine waste inventories. For geophysical surveys in the lower 48 States, USGS contracts with private-sector contractors specializing in airborne geophysical data acquisition; however, USGS staff review final data and publish the surveys, maps, and inventories.

The IJA specifies that the USGS Director may enter into cooperative agreements with State geological surveys to carry out Earth MRI.¹² Consistent with this provision, the U.S. Department of the Interior’s (DOI’s) initial spend plan guidance required USGS to establish cooperative agreements to support significant collaboration between USGS and the recipient throughout the award’s implementation.¹³ Our review focused on USGS’ IJA-funded Earth MRI cooperative agreements.

USGS develops cooperative agreements using proposals submitted by the recipients through Grants.gov for geologic and geochemical mapping as well as airborne geophysical data collection. USGS established FY 2022 awards for mine waste pilot projects¹⁴ to support the development of a new competitive funding program for mine waste projects that followed in FYs 2023 and 2024. USGS selected mine waste projects for funding and developed cooperative agreements with the relevant States. These cooperative agreements have a period of performance of up to three years for all geologic and geochemical mapping projects and a period of performance of up to two years for mine waste projects. As of June 2024, USGS had awarded 51 cooperative agreements to recipients, totaling \$24,064,237 in IJA funding for FYs 2022 and 2023 (see Figure 5 on the next page).¹⁵

¹¹ U.S. Department of the Interior, Secretarial Order No. 3359, *Critical Mineral Independence and Security*, dated Dec. 21, 2017.

¹² Pub. L. No 117-58 § 40201.

¹³ *Department of the Interior U.S. Geological Survey Implementation of the Bipartisan Infrastructure Law Initial Spend Plan*, dated Feb. 16, 2022, <https://www.usgs.gov/media/files/usgs-bipartisan-infrastructure-law-spend-plan>.

¹⁴ USGS developed a standardized protocol to collect data about the geochemistry of legacy mine waste across the Nation.

¹⁵ USGS was still developing FY 2024 cooperative agreements through calendar year 2024; we did not include those agreements as part of our audit.

Figure 5: IJJA Cooperative Agreements

FY	Project Type	No. of Awards	Funding Amount
2022	Geologic Mapping	12	\$3,481,598
	Geochemical Mapping	5	\$2,649,956
	Geophysical Survey (Alaska)	1	\$5,250,000
	Mine Waste Inventory	3	\$767,804
2023	Geologic Mapping	8	\$2,639,172
	Geochemical Mapping	5	\$2,969,716
	Geophysical Survey (Alaska)	1	\$4,250,000
	Mine Waste Inventory	16	\$2,055,991
Totals		51	\$24,064,237

Source: USGS.

Substantial Involvement

Federal regulations define a cooperative agreement as a type of financial assistance award similar to a grant, with one key distinction: in a cooperative agreement, the Federal agency is expected to have substantial involvement in carrying out the funded activity.¹⁶ This means that the Federal agency—in this case USGS—will actively participate beyond standard monitoring or oversight. Federal regulations further define substantial involvement as a relative concept based primarily on programmatic factors such as collaboration, participation, or intervention in the execution of the award.¹⁷ What constitutes “substantial involvement” will vary depending on the particular award and particular program.¹⁸ By entering into a cooperative agreement, USGS serves not only as a funder but also an engaged partner in implementing the project.

Terms and Conditions

The legally binding and enforceable terms and conditions of the IJJA-funded USGS Earth MRI cooperative agreements require USGS to be substantially involved. The geologic, geochemical, and geophysical cooperative agreements state that recipients are to “coordinate efforts to plan and carry out geologic mapping, analysis, and interpretations.” The agreements further state that “USGS’ role will be to support, assist, and guide critical planning and regional synthesis.” According to the mine waste cooperative agreements, the State “will provide USGS with progress reports every six months, and the agreement will involve constant contact and interaction with USGS Mineral Resources Program staff over the entire duration of the project.” The FY 2022 mine waste cooperative agreements’ terms and conditions state that meetings and interactions between the States and USGS will be periodic, or as needed, with some instances “involving collaborative sampling efforts.”

¹⁶ 2 C.F.R. § 182.620.

¹⁷ 32 C.F.R. § 22.215(b).

¹⁸ 2 C.F.R. § 182.650 defines a grant as an award of financial assistance that is used to enter into a relationship with the principal purpose “to transfer a thing of value to the recipient to carry out a public purpose of support or stimulation authorized by a law of the United States rather than to acquire property or services for the Federal Government’s direct benefit or use” and in which “substantial involvement is not expected between the Federal agency and the recipient when carrying out the activity contemplated by the award.”

Each cooperative agreement for geologic, geochemical, geophysical, and mine waste projects requires recipients to submit annual progress reports electronically through GrantSolutions (USGS' system of record for managing grant documentation) or via email to the USGS Program Officer. Specifically, the cooperative agreements state that progress reports shall include:

- A comparison of actual accomplishments to the objectives of the agreement established for the budget period and overall progress in response to the performance metrics.
- The reasons why established goals were not met, if appropriate.
- Additional pertinent information including, when appropriate, analysis and explanation of cost overruns or high unit costs.
- An outline of anticipated activities and adjustments to the program during the next budget period.

If events that have significant impact upon the project or program occur between required reporting dates, the recipient shall inform USGS as soon as the following types of conditions become known:

- Problems, delays, or adverse conditions that will materially impair the ability to meet the objective of the agreement. This disclosure must include a statement of the action taken or contemplated and any assistance needed to resolve the situation.
- Favorable developments that enable meeting time schedules and objectives sooner or at less cost than anticipated or producing more or different beneficial results than originally planned.

USGS Oversight

The IIJA states, "the Secretary of the Interior shall submit to the House and Senate Committees on Appropriations a detailed spend plan for the funds provided to the Department of the Interior in this title in this Act for fiscal year 2022, and for each fiscal year through 2026, as part of the annual budget submission." According to USGS' IIJA initial spend plan, the BIL¹⁹ Executive Oversight Committee is responsible for general oversight of IIJA-funded USGS Earth MRI projects.²⁰ Under this committee, the BIL Implementation Team is responsible for maintaining strong internal controls, overseeing project work, coordinating communications, monitoring progress, and meeting all tracking and reporting requirements established by DOI, USGS, the Office of Management and Budget (OMB), or other executive or legislative authorities. In addition, the BIL Implementation Team's project managers are responsible for monitoring projects from beginning to end and alerting the committee of potential issues with project progress, timeliness of contract awards, reporting, communication with stakeholders, or other operational concerns. USGS' IIJA initial spend plan states that it will monitor funds and track project and administrative costs to meet DOI reporting requirements; ensure that projects are on track; and monitor major milestones and report them on various timelines dependent on DOI, OMB, and external oversight committees, which may include weekly, monthly, quarterly, annual, or ad hoc deadlines.

Performance Measures

In 2022, OMB issued a memorandum stating that agencies should leverage existing processes to set and track measurable performance indicators and define key performance metrics when implementing IIJA programs.²¹ It also provided, "Agencies should ensure program goals and objectives and performance measures established during the [IIJA] program design phase are reflected in . . . [notices of funding opportunity], and are included in award-specific goals and objectives and performance measures and are documented in the award agreement." USGS' IIJA initial spend plan states that it will collaborate with DOI and OMB to establish performance measures and metrics for each project to ensure it meets project objectives and legislative

¹⁹ The IIJA is also referred to as the Bipartisan Infrastructure Law or BIL.

²⁰ *Department of the Interior U.S. Geological Survey Implementation of the Bipartisan Infrastructure Law Initial Spend Plan*, dated Feb. 16, 2022.

²¹ OMB Memorandum M-22-12, *Advancing Effective Stewardship of Taxpayer Resources and Outcomes in the Implementation of the Infrastructure Investment and Jobs Act*, dated Apr. 29, 2022.

requirements. Additionally, Federal regulations state that the “agency must measure the recipient’s performance to show achievement of program goals and objectives, share lessons learned, improve program outcomes, and foster the adoption of promising practices.”²² For Earth MRI, the initial spend plan notes that USGS will work with DOI, as necessary, to develop performance measures and monitor progress toward achieving program objectives.

According to USGS guidance, there are currently no specific performance reporting requirements for the IIJA-funded projects; it states that, when DOI’s Office of Planning and Performance Management provides guidance on tracking and reporting performance, USGS will update its own guidance with those requirements.²³

²² 2 C.F.R. § 200.301.

²³ U.S. Geological Survey *Bipartisan Infrastructure Law Project Execution, Internal Controls & Reporting Guidebook*, dated Apr. 23, 2024.

Results of Audit

The IIJA provided funding to USGS Earth MRI to identify areas in the United States with potential critical mineral resources both still in the ground and in mine waste. Of the 51 USGS Earth MRI cooperative agreements awarded during FYs 2022 and 2023, we reviewed 8 agreements totaling approximately \$11.7 million in IIJA funding. We found that although USGS distributed funds in accordance with the Act, USGS was unable to demonstrate it met program objectives. Specifically, it failed to establish performance measures and did not provide substantial involvement in administering seven out of the eight agreements. Although progress reports were required, USGS did not consistently enforce the requirement. Specifically, recipients submitted and USGS reviewed mine waste progress reports, but recipients did not submit mapping and survey progress reports. We also found weaknesses in subrecipient monitoring for one of the agreements we reviewed.

In addition, we identified that the Alaska Department of Natural Resources (DNR) charged \$32,549 to its IIJA-funded cooperative agreement to pay for unfunded pension liabilities.

USGS Did Not Establish Cooperative Agreement Performance Measures or Metrics

Federal regulations require an agency to assess the cooperative agreement recipient's performance to demonstrate its progress toward program goals and objectives. These regulations also emphasize that agencies should clearly describe specific program goals and objectives in the Federal award, including how achievement is measured.²⁴ These goals and objectives should include specific indicators, targets, and timelines to facilitate monitoring and evaluating program outcomes. Regulations further emphasize that performance measurement is essential for demonstrating achievement of program goals.²⁵ Federal regulations also require cooperative agreement recipients to implement a system to monitor and align spending with project milestones and deliverables.²⁶

OMB Memorandum M-22-12 also instructs agencies to ensure that the goals, objectives, and performance measures established during the IIJA program design phase are consistently carried through as award-specific goals, objectives, and performance measures within the award agreement. As discussed previously, USGS' IIJA initial spend plan specifies that USGS will establish performance measures and metrics and monitor progress. The initial spend plan states USGS will monitor project progress, track major milestones, and report results according to timelines set by DOI, OMB, and external oversight committees. These timelines may include weekly, monthly, quarterly, annual, or ad hoc deadlines. USGS will also maintain accountability by overseeing internal controls, reporting improper payments, and managing grant expenditures.

Project managers on the BIL Implementation Team are responsible for overseeing projects from start to finish. They must alert leadership to any potential issues related to project progress, contract awards delays, reporting, stakeholder communication, or other operational concerns. In addition, USGS will collaborate with DOI and OMB to develop performance measures and metrics for each project to ensure alignment with program objectives and legislative requirements.

We reviewed 8 of 51 IIJA-funded USGS Earth MRI cooperative agreements awarded in FYs 2022 and 2023, totaling \$11,658,307—48 percent of the total awards (see Figure 6 on the next page). Appendix 3 provides additional details on the IIJA cooperative agreements we reviewed.

²⁴ 2 C.F.R. § 200.301.

²⁵ 2 C.F.R. § 200.301(a).

²⁶ 2 C.F.R. § 200.329.

Figure 6: IIJA USGS Earth MRI Cooperative Agreements Reviewed

FY	Award No.	Award Type	State	Recipient	Award Amount
	G22AC00475	Geophysical	Alaska	Alaska DNR	\$5,250,000
	G22AC00510	Mine Waste	New Mexico	New Mexico Institute of Mining and Technology	\$244,370
2022	G23AC00054	Geochemical	Arizona	University of Arizona	\$599,956
	G23AC00056	Geologic	Missouri	Missouri DNR	\$300,000
	G23AC00084	Geologic	Illinois	University of Illinois	\$299,999
	G23AC00408	Geophysical	Alaska	Alaska DNR	\$4,250,000
2023	G23AC00469	Mine Waste	Arizona	University of Arizona	\$53,964
	G23AC00561	Geochemical	New Mexico	New Mexico Institute of Mining and Technology	\$660,018
Total					\$11,658,307

Source; USGS cooperative agreements.

We found that USGS did not establish clear performance measures or metrics for any of the cooperative agreements we reviewed. For example, USGS did not establish measurable milestones to track accomplishments and overall progress for two cooperative agreements with the University of Arizona that we reviewed.

In addition, the University of Arizona did not develop a system to monitor and align spending to assess whether the current allocation of funds will ensure project completion as required by Federal regulations. Rather than aligning the budget with specific tasks needed to achieve measurable milestones, the university said it plans to complete as much work as possible with available IIJA funds. According to university staff, if IIJA funds are depleted before the project is completed, the university intends to use its own funds to complete the project. The university’s intention to complete the project with other funds if necessary, however, does not eliminate the need to adhere to Federal regulations while executing the cooperative agreement.

USGS officials informed us that they track procurement-related performance measures, such as the number of cooperative agreements awarded, rather than measures tied to actual mapping progress. For example, the BIL Implementation Team tracked the closing of a notice of funding opportunity for geologic and geochemical projects but did not track the recipients’ cooperative agreement progress.

An official with DOI’s Office of Planning and Performance Management shared with us that the office first issued guidance to the bureaus and offices in April 2024—meaning USGS did not have performance measures in place for cooperative agreements issued before this time. According to the official, prior to the issuance of the guidance, DOI’s BIL Project Management Office and leadership said that the BIL Project Management Office would not be providing guidance and did not authorize the Office of Planning and Performance Management to issue guidance related to reporting or IIJA performance measures. However, as we noted earlier, Federal regulations require an agency to assess the cooperative agreement recipient’s performance to demonstrate its progress toward program goals and objectives and emphasize that agencies should clearly describe specific program goals and objectives in the Federal award, including how achievement is measured. Additionally, OMB Memorandum M-22-12 instructs agencies to ensure that the goals, objectives, and performance measures established during the IIJA program design phase are consistently carried through as award-specific goals, objectives, and performance measures within the award agreement.

Without a budget tied to specific milestones, there is a risk of overspending, underspending, or misallocating funds, potentially violating the terms of the cooperative agreement with USGS. To mitigate these risks, USGS should establish performance measures in its cooperative agreements and implement comprehensive performance measure plans. This includes setting clear, measurable objectives, aligning budgets with specific tasks, and tracking progress toward meeting goals. Such measures will enhance transparency, accountability, and the overall success of federally funded programs.

Recommendations

We recommend that USGS:

1. Amend all active Infrastructure Investment and Jobs Act cooperative agreements to include performance measures or metrics.
2. Require performance measures or metrics to be included in all future Infrastructure Investment and Jobs Act cooperative agreements as required by 2 C.F.R. § 200.301.
3. Require the University of Arizona to conduct a comprehensive review of Infrastructure Investment and Jobs Act cooperative agreements (Nos. G23AC00054 and G23AC00469) to assess all project milestones, estimate the costs required to complete them, and take appropriate action based on those conclusions.

USGS Did Not Provide Substantial Involvement or Enforce Performance Reporting

Federal regulations state that substantial involvement is based primarily on programmatic factors such as collaboration, participation, or intervention in the activities to be funded by the award. A key feature of a cooperative agreement is the expectation that the Federal agency and the recipient will work closely together to carry out the award's activity.²⁷ In the terms and conditions for each of the cooperative agreements we reviewed, USGS states that it expects substantial involvement throughout the duration of the award. Specifically, the agreements state that USGS' role will be to support, assist, and guide critical planning and regional synthesis.

Federal regulations also state performance reporting frequency and content should be established to allow the Federal awarding agency to understand the recipient's progress, identify promising practices, and build evidence upon which the Federal awarding agency's program and performance decisions are made.²⁸

The cooperative agreements we reviewed require the recipients to submit annual electronic progress reports through GrantSolutions or via email to the USGS Program Officer. As detailed above, according to the agreements, the progress reports shall include:

- A comparison of actual accomplishments to the objectives of the agreement established for the budget period and overall progress in response to the performance metrics.
- The reasons why established goals were not met, if appropriate.
- Additional pertinent information including, when appropriate, analysis and explanation of cost overruns or high unit costs.
- An outline of anticipated activities and adjustments to the program during the next budget period.

We determined USGS failed to provide substantial involvement or require performance reporting for seven of the eight cooperative agreements we reviewed.

²⁷ 2 C.F.R. § 182.620.

²⁸ 2 C.F.R. § 200.301.

Lack of Substantial Involvement

USGS was substantially involved and participated in only one of the eight sampled cooperative agreements (No. G22AC00510). This mine waste pilot project was designed to develop sampling protocols and screening techniques for the mine waste program.²⁹ USGS scientists collaborated and worked closely with the recipient, the New Mexico Institute of Mining and Technology (NM Tech), by helping NM Tech develop sampling methodology and protocols. The mine waste pilot project cooperative agreement stated the recipient will provide USGS with progress reports every six months, and the cooperative agreement will involve constant contact and interaction with USGS Mineral Resources Program staff over the entire duration of the project. Further, the cooperative agreement stated that both the recipient and USGS staff will meet periodically as needed and that some areas may also involve collaborative sampling efforts. Lastly, the cooperative agreement stated meetings and interactions between USGS and the recipient will include email, conferencing platforms, and scheduled meetings between the project chief and staff at the State agencies and USGS.

In contrast, the other seven cooperative agreements we reviewed stated that the recipients will coordinate efforts to plan and carry out mapping, analysis, and interpretations with USGS' role being to support, assist, and guide critical planning and regional synthesis. A USGS official stated USGS relied on recipients to complete mapping and surveys with limited USGS involvement due to previously established Earth MRI working relationships with the recipients. One cooperative agreement even noted that USGS had a history of collaboration with the recipient and stated USGS anticipated continued cooperative activity and substantial involvement consistent with the previous agreement. USGS, however, did not actively engage in the execution of these seven cooperative agreements.

Performance Reporting Not Enforced

We also found inconsistencies in USGS' enforcement of required annual performance report submissions. Recipients of mine waste cooperative agreements submitted their reports as required, and the USGS Program Officer participated in reviewing and approving these reports. However, geologic, geochemical, and geophysical cooperative agreement recipients did not submit the required progress reports, and the USGS Program Officer did not track whether reports had been submitted.

Without reviewing these progress reports, USGS cannot assess whether it needs to intervene in or provide additional support for these projects. Specifically, USGS may be unaware of key project details (e.g., explanations for cost overruns or high costs, anticipated activities, and adjustments for the next budget period) or the need for intervention. Effective oversight of this nature helps ensure Federal managers have reasonable assurance that IJA funds are used appropriately and in compliance with applicable laws, regulations, and the Act.

We informed USGS of the lack of progress report enforcement during a site visit to its Headquarters in September 2024 and through additional correspondence in October 2024. On November 22, 2024, a USGS Program Officer emailed the geologic, geochemical, and geophysical cooperative agreement recipients to request progress reports as required in the award terms and conditions; all recipients in our reviewed sample provided the missing progress reports after this notification. We reviewed the submitted progress reports, however, and found that the narratives did not include the level of detail required by the cooperative agreement terms and conditions (see Figure 7 on the next page). When we asked several recipients if USGS had provided feedback on their progress reports, they stated that USGS had not.

²⁹ In May 2025, the New Mexico Institute of Mining and Technology published its report funded under Cooperative Agreement No. G22AC00510, which identified estimates of critical minerals in the mine wastes of the Copper Flat tailings and the Steeple Rock and Black Hawk waste rock piles and tailings. Available at <https://geoinfo.nmt.edu/publications/openfile/details.cfm?Volume=639>.

Figure 7: Recipient Progress Report Submissions

Award No.	Recipient	Due Date	Date Submitted	Submitted in Accordance with Agreement?
G22AC00475	Alaska DNR	06/18/2023	11/08/2024	No
		06/18/2024		
G22AC00510	NM Tech	03/01/2023	05/22/2023	No
		09/01/2023	09/01/2023	Yes
		03/01/2024	04/03/2024	No
G23AC00054	University of Arizona	10/30/2023	11/06/2024	No
		10/30/2024		
G23AC00056	Missouri DNR	11/10/2023	11/22/2024	No
		11/10/2024		
G23AC00084	University of Illinois	11/22/2023	12/02/2024	No
		11/22/2024		
G23AC00408	Alaska DNR	04/30/2024	11/08/2024	No
G23AC00469	University of Arizona	02/01/2024	02/01/2024	Yes
		08/01/2024	08/01/2024	Yes
G23AC00561	NM Tech	06/09/2024	08/29/2024	No

Source: Progress reports USGS provided.

USGS officials emphasized their positive working relationships with cooperative agreement recipients, and we found no information to the contrary. However, documenting and following up on progress reports is particularly important given the accelerated push to advance resource mapping initiatives and identify areas with potential critical mineral resources.

Recommendations

We recommend that USGS:

4. Document its substantial involvement in each Infrastructure Investment and Jobs Act-funded USGS Earth Mapping Resources Initiative cooperative agreement, including explicitly detailing USGS collaboration, participation, or intervention in the project.
5. Require geochemical mapping, geologic mapping, and geophysical survey cooperative agreement recipients to immediately provide the overdue progress reports.
6. Require recipients of cooperative agreements for geochemical mapping, geologic mapping, and geophysical surveys to submit annual progress reports to the USGS Program Officer with the level of detail specified in the cooperative agreement’s terms and conditions.
7. Implement a cooperative agreement management process to monitor reporting compliance that tracks deadlines; identifies missing progress reports; and provides clear, detailed guidance on reporting expectations during the award process.

USGS Did Not Ensure Consistent Subrecipient Monitoring

A Federal award recipient may issue a subaward to another entity to carry out a portion of its Federal award. The entity that provides the subaward is referred to as a passthrough entity (PTE), and the entity that receives the subaward is called a subrecipient.³⁰ Federal regulations require the PTE to monitor subrecipient activities as necessary to ensure the subrecipient complies with Federal statutes, regulations, and the terms and conditions of the subaward. The PTE is also responsible for monitoring the overall performance of a subrecipient to ensure that the goals and objectives of the subaward are achieved.³¹

The *University of Arizona Subrecipient Monitoring Guide* states the principal investigator—the individual who has ultimate responsibility for the design, execution, and management of a sponsored project—should perform frequent and regular subrecipient monitoring activities that include subrecipient communication, expenditure analysis, and subrecipient reports. Communications can include conference calls, emails, and in-person meetings that discuss progress of the subaward and award expenditures as well as documentation of these communications. The guidance also states that the principal investigator should enforce timely receipt and approval of performance or progress reports and other deliverables to ensure the subrecipient is on schedule.

For Cooperative Agreement No. G23AC00054, the University of Arizona serves as the PTE, and NM Tech is listed as the subrecipient. We found that the University of Arizona did not develop monitoring plans for NM Tech as required by Federal regulations.

Specifically, we found that the project’s principal investigator did not monitor the subrecipient.

The agreement requires NM Tech to provide a comprehensive geochemical analysis, develop an understanding of the distribution of critical minerals, and provide evidence of critical mineral potential for a specific porphyry system³² in New Mexico. Figure 8 shows a New Mexico mine waste project site.

University of Arizona staff told us they were relying on NM Tech staff to accomplish the project and that their only communication with NM Tech was being copied on the NM Tech Principal Senior Economic Geologist’s emails to USGS staff. According to University of Arizona staff, the university has not been tracking NM Tech’s progress and will start the oversight process at the end of the project when NM Tech provides information for the University of Arizona to evaluate and regionally synthesize.

Figure 8: Mine Waste Site in New Mexico



Source: OIG.

University of Arizona staff explained that the lack of subrecipient monitoring occurred because the university did not consider NM Tech as a subrecipient. In particular, it was originally intended and outlined in the University of Arizona’s proposal to USGS that NM Tech would be a co-principal investigator rather than a subrecipient. Prior to issuing the cooperative agreement, USGS performed a risk assessment of both the University of Arizona and NM Tech. However, University of Arizona staff told us that USGS wanted to avoid difficulties and delays it had experienced in issuing awards previously, so it combined Earth MRI projects that addressed focus areas spanning multiple States as one award. USGS informed the University of Arizona that the prime and subrecipient projects were two parallel projects and designated the University of Arizona as the prime recipient and NM Tech the subrecipient for ease of issuing IIJA funds. Nonetheless, the University of Arizona did not put subrecipient monitoring plans in place for NM Tech as required.

³⁰ 2 C.F.R. § 200.331(a).

³¹ 2 C.F.R. § 200.332(e).

³² According to USGS, “Porphyry and epithermal mineral deposits form large economic ore bodies that provide the global economy with copper, molybdenum, gold, silver and other byproducts.” <https://www.usgs.gov/publications/porphyry-and-epithermal-mineral-deposits>.

A USGS official also stated USGS combined the projects into one cooperative agreement and awarded it to the University of Arizona with NM Tech as a subrecipient for efficiency and to ensure the award could be issued timely. The official also noted that USGS was facing an influx of money from the IJJA, along with staff turnover and shortages. USGS staff stated that the primary intent of the joint cooperative agreement was to foster coordination and collaboration on a project that crossed State lines. While USGS also referred to NM Tech as a co-principal investigator, it did not monitor NM Tech's progress or verify the work it had completed.

When the PTE is not effectively monitoring subrecipient activities, the PTE and USGS cannot ensure compliance with Federal regulations, successful implementation of the program, and proper stewardship of Federal funds.

Recommendation

We recommend that USGS:

8. Require the University of Arizona to develop and implement a subrecipient monitoring plan for the New Mexico Institute of Mining and Technology that includes compliance with Federal statutes, regulations, and the terms and conditions of the subaward.

Other Matters

Alaska DNR Charged Unfunded Pension Liability Costs to an IJJA Award

In July 2023, we issued a management advisory to the U.S. Fish and Wildlife Service regarding unfunded pension liabilities that States were allocating to Wildlife and Sport Fish Restoration grants to help pay down the State's unfunded liabilities, which could potentially reduce the efficiency and effectiveness of the Federal grant in accomplishing its agreed-upon objectives.³³

During our current audit of USGS Earth MRI, we found that from October 2022 to September 2024, Alaska DNR charged \$32,549 to a USGS IJJA cooperative agreement (No. G22AC00475) to pay for the State of Alaska Public Employees' Retirement System unfunded pension liabilities,³⁴ which represented approximately 16 percent of the \$204,390 in cooperative agreement-funded payroll. We encourage USGS to consider the effect that using Earth MRI funding for these purposes may have on the overall purposes of the cooperative agreements.

³³ *Unfunded Liabilities for Wildlife and Sport Fish Restoration Program Grants* (Report No. 2020-ER-058-A), issued July 2023, <https://www.doi.gov/reports/management-advisory/unfunded-liabilities-wildlife-and-sport-fish-restoration-program-grants>.

³⁴ In this report, the term "unfunded pension liability" refers to the actuarially accrued liability contribution for employers in the State of Alaska Public Employees' Retirement System.

Conclusion and Recommendations

Conclusion

We found that USGS distributed Earth MRI IJA funds for mapping, survey, and mine waste projects through cooperative agreements in accordance with the Act. However, in our review of eight IJA-funded USGS Earth MRI cooperative agreements awarded in FYs 2022 and 2023, totaling \$11,658,307, we determined that USGS was unable to demonstrate the cooperative agreements met program objectives. Specifically, we found that USGS did not establish required performance measures or metrics, did not provide substantial involvement for seven of the eight cooperative agreements reviewed, and did not consistently enforce the requirement that recipients submit annual progress reports. We also identified weakness in subrecipient monitoring in one cooperative agreement. In addition, we identified that Alaska DNR charged \$32,549 to one IJA-funded USGS Earth MRI cooperative agreement to pay down the State of Alaska Public Employees' Retirement System unfunded pension liabilities.

While our review involved a sample of 8 IJA-funded USGS Earth MRI cooperative agreements, our findings highlight issues that may be applicable across all 51 cooperative agreements.

We make eight recommendations that, if implemented, will help USGS improve its oversight of IJA-funded Earth MRI cooperative agreements to ensure IJA earth mapping objectives are achieved.

Recommendations Summary

We provided a draft of this report to USGS for review. USGS concurred with all eight recommendations. We consider Recommendations 1, 3, and 8 resolved and Recommendations 2 and 4 through 7 implemented. We determined that Recommendations 2 and 4 are significant, and we will report them as such in our semiannual report to Congress in accordance with the Inspector General Act.³⁵ Below we summarize USGS' response to our recommendations, as well as our comments on its response. See Appendix 4 for the full text of USGS' response.

We recommend that USGS:

1. Amend all active Infrastructure Investment and Jobs Act cooperative agreements to include performance measures or metrics.

USGS Response: USGS concurred with the recommendation and stated, "Pending DOI Office of Grants Management approval of updated cooperative agreement terms and conditions . . . , DOI Grants Specialists working with USGS will modify all active IJA cooperative agreements to include performance metrics."

USGS provided a December 31, 2026 target implementation date.

Status: Resolved. We will track implementation under Recommendation No. 2024-CR-021-01.³⁶

OIG Comment: This recommendation will be implemented when USGS provides documentation demonstrating all active IJA cooperative agreements have been amended to include performance measures or metrics to track accomplishments and overall progress.

³⁵ The Inspector General Act of 1978, 5 U.S.C. § 405(b), requires inspectors general to prepare semiannual reports summarizing OIG activities during the immediately preceding six-month periods ending March 31 and September 30. It also states that these semiannual reports shall include an identification of each "significant recommendation" described in previous semiannual reports on which corrective action has not been completed.

³⁶ The numbering convention we use to track recommendations is the report number followed by sequential recommendation digits.

2. Require performance measures or metrics to be included in all future Infrastructure Investment and Jobs Act cooperative agreements as required by 2 C.F.R. § 200.301.

USGS Response: USGS concurred with the recommendation and stated that it “requested approval from DOI Office of Grants Management for updated cooperative agreement terms and conditions language that includes performance metrics.” USGS said that once DOI’s Office of Grants Management approves the terms and conditions, “DOI Grants Specialists working with USGS will include performance metrics in all IJA cooperative agreements issued going forward.”

USGS provided a June 30, 2026 target implementation date.

Status: Implemented. No action is required. Closed under Recommendation No. 2024-CR-021-02.

OIG Comment: After USGS responded to our draft report, it provided documentation demonstrating cooperative agreement terms and conditions language has been updated to include a requirement for performance metrics to track accomplishments and overall progress. We determined this recommendation is significant and will report it as such in our semiannual report to Congress.

3. Require the University of Arizona to conduct a comprehensive review of Infrastructure Investment and Jobs Act cooperative agreements (Nos. G23AC00054 and G23AC00469) to assess all project milestones, estimate the costs required to complete them, and take appropriate action based on those conclusions.

USGS Response: USGS concurred with the recommendation and stated the cooperative agreements’ “award terms and conditions required the recipient to submit a final technical report within 90 calendar days after the end of the performance period and to include a comparison of actual accomplishments to the goals established for the period.” USGS further stated that, on October 27, 2025, the award recipient for Cooperative Agreement No. G23AC00469 submitted its final technical report identifying the award goal “to inventory and catalog 25 mine waste features in northwestern Arizona” and that the “award recipient inventoried and cataloged 34 mine waste features.” USGS also said, “With regards to cooperative agreement No. G23AC00054, USGS will request a review of the award status from the award recipient.”

USGS provided a June 30, 2026 target implementation date.

Status: Resolved. We will track implementation under Recommendation No. 2024-CR-021-03.

OIG Comment: This recommendation will be implemented when USGS provides documentation of the award status of Cooperative Agreement No. G23AC00054 from the award recipient.

4. Document its substantial involvement in each Infrastructure Investment and Jobs Act-funded USGS Earth Mapping Resources Initiative cooperative agreement, including explicitly detailing USGS collaboration, participation, or intervention in the project.

USGS Response: USGS concurred with the recommendation and stated, “All corrective actions have been implemented. The USGS documented its substantial involvement by updating the cooperative agreement terms and conditions substantial involvement statement for awards issued after the delivery of this draft report to date. Going forward, USGS will continue to detail USGS collaborati[on], participation, or intervention in the project through the terms and conditions substantial involvement statement.”

USGS stated that implementation is complete; therefore, it did not provide a target implementation date.

Status: Implemented. No action is required. Closed under Recommendation No. 2024-CR-021-04.

OIG Comment: After USGS responded to our draft report, it provided documentation demonstrating that it has updated cooperative agreement terms and conditions detailing USGS collaboration, participation, and intervention in the IJJA-funded USGS Earth MRI cooperative agreements. We determined this recommendation is significant and will report it as such in our semiannual report to Congress.

5. Require geochemical mapping, geologic mapping, and geophysical survey cooperative agreement recipients to immediately provide the overdue progress reports.

USGS Response: USGS concurred with the recommendation and stated that it “sent requests to the recipients of active geochemical mapping, geologic mapping, and geophysical survey cooperative agreements with overdue progress reports to immediately provide the overdue progress reports with the level of detail specified in the cooperative agreement’s terms and conditions.”

USGS stated that implementation is complete; therefore, it did not provide a target implementation date.

Status: Implemented. No action is required. Closed under Recommendation No. 2024-CR-021-05.

OIG Comment: After USGS responded to our draft report, it provided us the overdue progress reports and final reports for those cooperative agreements that had completed their period of performance.

6. Require recipients of cooperative agreements for geochemical mapping, geologic mapping, and geophysical surveys to submit annual progress reports to the USGS Program Officer with the level of detail specified in the cooperative agreement’s terms and conditions.

USGS Response: USGS concurred with the recommendation and stated, “The submittal of annual progress reports to the USGS is already required in the cooperative agreement award’s terms and conditions for geochemical mapping, geologic mapping, and geophysical survey awards.”

USGS stated that implementation is complete; therefore, it did not provide a target implementation date.

Status: Implemented. No action required. Closed under Recommendation No. 2024-CR-021-06.

OIG Comment: As discussed in the findings section above, we reviewed the progress reports the recipients in our sample submitted after our notification to USGS and found that the narratives did not include the level of detail required by the cooperative agreement terms and conditions. Because USGS stated this recommendation was implemented, we requested the most recent progress reports with the level of detail required. After responding to our draft report, USGS provided documentation demonstrating the annual progress reports submitted by award recipients contained the level of detail specified in the cooperative agreement terms and conditions.

7. Implement a cooperative agreement management process to monitor reporting compliance that tracks deadlines; identifies missing progress reports; and provides clear, detailed guidance on reporting expectations during the award process.

USGS Response: USGS concurred with the recommendation and stated it “is actively implementing a cooperative agreement management process to monitor reporting compliance.” It added that, in October 2024, “the program appointed a Program Analyst to support monitoring reporting compliance for IJJA-funded Earth MRI cooperative agreements.”

USGS stated that implementation is complete; therefore, it did not provide a target implementation date.

Status: Implemented. No action required. Closed under Recommendation No. 2024-CR-021-07.

OIG Comment: After USGS responded to our draft report, it provided documentation showing that it now tracks deadlines and identifies missing progress reports for geochemical mapping, geologic mapping, geophysical survey, and mine waste awards. In addition, it provided an IJJA geologic mapping cooperative agreement awarded in January 2026 that includes detailed guidance on reporting expectations for Federal financial and performance progress reports.

8. Require the University of Arizona to develop and implement a subrecipient monitoring plan for the New Mexico Institute of Mining and Technology that includes compliance with Federal statutes, regulations, and the terms and conditions of the subaward.

USGS Response: USGS concurred with the recommendation and stated it “will request a subrecipient monitoring plan for the New Mexico Institute of Mining and Technology from the award recipient.”

USGS provided a June 30, 2026 target implementation date.

Status: Resolved. We will track implementation under Recommendation No. 2024-CR-021-08.

OIG Comment: This recommendation will be implemented when USGS provides documentation demonstrating that the University of Arizona has developed and implemented a subrecipient monitoring plan for NM Tech.

Appendix 1: Scope and Methodology

Scope

We audited eight IJA-funded USGS Earth MRI cooperative agreements from FYs 2022 and 2023, totaling \$11,658,307.

Methodology

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objective. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective.

We assessed whether internal control was significant to the audit objective. We determined that USGS' control activities and the following related principles were significant to the audit objective:

- Management should design control activities to achieve objectives and respond to risks.
- Management should implement control activities through policies.
- Management should establish and operate monitoring activities to monitor the internal control system and evaluate the results.

We tested the operation and reliability of internal controls over activities related to our audit objective. Our tests and procedures included:

- Gathering background information on the work and mission of USGS' Earth MRI.
- Interviewing officials, including USGS' Mineral Resources Program and National Cooperative Geologic Mapping Program management and staff.
- Selecting a sample and reviewing evidence that supports oversight of IJA-funded USGS Earth MRI projects.
- Conducting site visits to USGS' Headquarters in Reston, Virginia, and State recipient sites in Fairbanks, Alaska; Tucson, Arizona; and Socorro, New Mexico.

We selected our sample of eight IJA-funded USGS Earth MRI cooperative agreements by obtaining USGS Earth MRI funding drawdown data and identifying high-risk States based on scoring indicators developed by our office. Using these criteria, we judgmentally selected agreements with higher drawdown amounts and agreements from high-risk States.

We found deficiencies in internal control resulting in our findings that USGS failed to establish performance measures, did not provide substantial involvement for its IJA-funded Earth MRI cooperative agreements, and did not enforce requirements that recipients submit progress reports. We also found weaknesses in subrecipient monitoring.

We relied on computer-generated data provided by USGS and the States to verify timelines and whether major milestones were monitored and reported as required by USGS' initial spend plan. This included reviewing awardee expenditures to verify whether USGS was monitoring the awardees and complied with applicable laws and regulations and award terms and conditions.

Based on the results of our initial assessments, we assigned a level of risk and selected a judgmental sample of expenditures for testing. We used auditor judgment and considered risk levels relative to other audit work performed to determine the degree of testing performed in each area. Our sample selections were not generated using statistical sampling; therefore, we did not project the results of our tests to the total population of expenditures.

Appendix 2: Sites Visited

USGS Headquarters	Reston, VA
Alaska DNR	Fairbanks, AK
University of Arizona	Tucson, AZ
NM Tech	Socorro, NM

Appendix 3: Audited IIJA Cooperative Agreement Details

Award No.	Recipient	Date Awarded	Project Period	Award Amount	Project Description
G22AC00475	Alaska DNR	08/19/2022	08/19/2022 to 08/18/2025	\$5,250,000	Tier-II airborne magnetic and electromagnetic survey within the northeastern portion of the Kuskokwim River region and airborne magnetic survey of the Graphite Creek area, Seward Peninsula, Alaska.
G22AC00510	NM Tech	08/25/2022	09/01/2022 to 08/31/2024	\$244,370	Characterize and estimate the critical mineral endowment of mine waste in New Mexico to determine the tonnage of the mine waste and calculate the amount of potential critical minerals within the mine waste. Additionally, test sampling procedures for future mine waste studies in New Mexico.
G23AC00054	University of Arizona	12/30/2022	12/30/2022 to 12/29/2025	\$599,956	(1) Provide a rigorous comprehensive compilation of geochemical analyses (both new and legacy data) of porphyry systems in the Laramide magmatic arc of Arizona and New Mexico with an emphasis on specific porphyry systems that have elevated concentrations of critical minerals; (2) develop a better understanding of the distribution of critical minerals within the alteration haloes of porphyry systems; and (3) provide evidence for critical mineral potential for individual prospects/deposits and within specific alteration types and rock types.
G23AC00056	Missouri DNR	01/11/2023	01/11/2023 to 01/10/2026	\$300,000	Evaluation of Mississippi Valley-type-hosted zinc-cobalt nickel mineralization, potential for Mesoproterozoic mineralization, manganese mineralization in multiple lithologies, and relationships between Cambrian-age strata and Mesoproterozoic rocks.
G23AC00084	University of Illinois	01/23/2023	01/23/2023 to 01/22/2026	\$299,999	A 3D model of the Illinois-Kentucky Fluorspar District and the Midwest Permian Ultramafic District that integrates subsurface well, structural, geophysical, geochemical, mineralogical, and historical mine footprint data to aid in critical mineral assessment and future exploration efforts.

Award No.	Recipient	Date Awarded	Project Period	Award Amount	Project Description
G23AC00408	Alaska DNR	06/29/2023	07/01/2023 to 06/30/2025	\$4,250,000	Map the geology, structure, alteration, and mineralized areas to determine the mineralogy, chemical composition, origin, and critical mineral potential of the arsenide 5 element vein deposits in the Black Hawk district and compare those deposits to other arsenide 5 element vein deposits in the world.
G23AC00469	University of Arizona	07/28/2023	08/01/2023 to 07/31/2025	\$53,964	Inventorying Arizona's mine waste.
G23AC00561	NM Tech	08/10/2023	08/10/2023 to 08/09/2026	\$660,018	USGS reanalysis of a select group of existing National Uranium Resource Evaluation sediment pulps using modern geochemical methods.

Appendix 4: Response to Draft Report

USGS' response to our draft report follows on page 25.



United States Department of the Interior
U.S. Geological Survey
Office of the Director
Reston, Virginia 20192

January 12, 2026

Memorandum

To: Caryl Brzymialkiewicz
Acting Inspector General, Office of Inspector General

From: Ned Mamula, Ph.D.
Director

Subject: Office of Inspector General Draft Audit Report, "USGS Can Improve Oversight and Substantial Involvement for IJIA Earth Mapping Resources Initiative Agreements" (Report No. 2024-CR-021)

In the subject report, dated October 2, 2025, the Department of the Interior's (DOI) Office of Inspector General (OIG) made eight recommendations identifying actions the U.S. Geological Survey (USGS) could take to improve the use and oversight of Infrastructure Investments and Jobs Act (IJIA) funding for the Earth Mapping Resources Initiative (Earth MRI). This memorandum provides the USGS response to those recommendations.

Recommendation 1: Amend all active Infrastructure Investment and Jobs Act cooperative agreements to include performance measures or metrics.

Response: The USGS concurs. Pending DOI Office of Grants Management approval of updated cooperative agreement terms and conditions (see Recommendation 2), DOI Grants Specialists working with USGS will modify all active IJIA cooperative agreements to include performance metrics.

Responsible Official: James Jones – Earth MRI Science Coordinator in collaboration with DOI Office of Grants Management

Target Date of Implementation: December 31, 2026

Recommendation 2: Require performance measures or metrics be included in all future Infrastructure Investment and Jobs Act cooperative agreements as required by 2 C.F.R. § 200.301.

Response: The USGS concurs. The USGS requested approval from DOI Office of Grants Management for updated cooperative agreement terms and conditions language that includes performance metrics. Upon approval of the terms and conditions, DOI Grants Specialists working with USGS will include performance metrics in all IJIA cooperative agreements issued going forward.

Responsible Official: James Jones – Earth MRI Science Coordinator in collaboration with DOI Office of Grants Management

Target Date of Implementation: June 30, 2026.

Recommendation 3: Require the University of Arizona to conduct a comprehensive review of Infrastructure Investment and Jobs Act cooperative agreements (Nos. G23AC00054 and G23AC00469) to assess all project milestones, estimate the costs required to complete them, and take appropriate action based on those conclusions.

Response: The USGS concurs. With regards to cooperative agreement No. G23AC00469, the period of performance was 8/1/2023 - 7/31/2025. The award terms and conditions required the recipient to submit a final technical report within 90 calendar days after the end of the performance period and to include a comparison of actual accomplishments to the goals established for the period; reasons why established goals were not met, if applicable; and other pertinent information. On October 27, 2025, the award recipient submitted their final technical report. The award goal was to inventory and catalog 25 mine waste features in northwestern Arizona. The award recipient inventoried and cataloged 34 mine waste features.

With regards to cooperative agreement No. G23AC00054, USGS will request a review of the award status from the award recipient.

Responsible Official: James Jones - Earth MRI Science Coordinator

Target Date of Implementation: June 30, 2026

Recommendation 4: Document its substantial involvement in each Infrastructure Investment and Jobs Act-funded USGS Earth Mapping Resources Initiative cooperative agreement, including explicitly detailing USGS collaboration, participation, or intervention in the project.

Response: The USGS concurs. The USGS is substantially involved in each IJIA-funded Earth MRI cooperative agreement it awards. Recipients work closely with USGS to plan and prioritize project objectives. The recipient provides USGS with progress reports every 6 or 12 months (depending on award type) and the cooperative agreement involves regular contact and interaction with staff of the USGS National Cooperative Geologic Mapping Program and Mineral Resources Program over the entire duration of the project. Members of both the recipient and USGS staff meet periodically as needed. Meetings and interactions between USGS and the recipient include email, conferencing platforms, and scheduled meetings between the project chief and staff at the state agencies and the USGS. Participation in the annual USGS Earth MRI workshop January 27-28, 2026, by the recipient is encouraged during the project.

All corrective actions have been implemented. The USGS documented its substantial involvement by updating the cooperative agreement terms and conditions substantial involvement statement for awards issued after the delivery of this draft report to date. Going forward, USGS will continue to detail USGS collaborative, participation, or intervention in the project through the terms and conditions substantial involvement statement.

Responsible Official: James Jones - Earth MRI Science Coordinator

Target Date of Implementation: Complete

Recommendation 5: Require geochemical mapping, geologic mapping, and geophysical survey cooperative agreement recipients to immediately provide the overdue progress reports.

Response: The USGS concurs. The USGS sent requests to the recipients of active geochemical mapping, geologic mapping, and geophysical survey cooperative agreements with overdue progress reports to immediately provide the overdue progress reports with the level of detail specified in the cooperative agreement's terms and conditions.

Responsible Official: James Jones - Earth MRI Science Coordinator

Target Date of Implementation: Complete

Recommendation 6: Require recipients of cooperative agreements for geochemical mapping, geologic mapping, and geophysical survey to submit annual progress reports to the USGS Program Officer with the level of detail specified in the cooperative agreement's terms and conditions.

Response: The USGS concurs. The submittal of annual progress reports to the USGS is already required in the cooperative agreement award's terms and conditions for geochemical mapping, geologic mapping, and geophysical survey awards.

Responsible Official: James Jones - Earth MRI Science Coordinator

Target Date of Implementation: Complete

Recommendation 7: Implement a cooperative agreement management process to monitor reporting compliance that tracks deadlines, identifies missing progress reports, and provides clear, detailed guidance on reporting expectations during the award process.

Response: The USGS concurs. The USGS is actively implementing a cooperative agreement management process to monitor reporting compliance. In October 2024, the program appointed a Program Analyst to support monitoring reporting compliance for IJA-funded Earth MRI cooperative agreements.

Responsible Official: James Jones - Earth MRI Science Coordinator

Target Date of Implementation: Complete

Recommendation 8: Require the University of Arizona to develop and implement a subrecipient monitoring plan for the New Mexico Institute of Mining and Technology that includes compliance with Federal statutes, regulations, and the terms and conditions of the subaward.

Response: The USGS concurs. The USGS will request a subrecipient monitoring plan for the New Mexico Institute of Mining and Technology from the award recipient.

Responsible Official: James Jones - Earth MRI Science Coordinator

Target Date of Implementation: June 30, 2026



OFFICE OF
INSPECTOR GENERAL
U.S. DEPARTMENT OF THE INTERIOR

REPORT FRAUD, WASTE, ABUSE, AND MISMANAGEMENT

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