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Before the House Committee on Natural Resources
Subcommittee on Energy and Mineral Resources

Regarding Reauthorization of the U.S. Geological Survey's Earth Mapping Resources Initiative (Earth MRI)

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Chairman Stauber, Ranking Member Ansari, and Members of the Subcommittee:

Thank you for the opportunity to testify regarding the U.S. Geological Survey's Earth Mapping Resources Initiative, commonly known as Earth MRI.

I appear before you today as Oklahoma State Geologist and as President-Elect of the Association of American State Geologists (AASG). AASG represents the geological surveys of the states and territories and has served for more than a century as the principal forum through which state geological surveys coordinate with one another and with our federal partners. While the structure and responsibilities of state surveys vary considerably across the country, our mission is remarkably consistent: to provide objective geoscientific information that supports responsible resource development, environmental stewardship, hazard mitigation, infrastructure planning, and economic growth.

Throughout my career in academia, federal service, and state government, I have worked on issues related to energy resources, mineral resources, geologic mapping, and scientific infrastructure. From that perspective, I believe Earth MRI is one of the most effective federal-state partnership programs currently operating within the federal government and one that merits reauthorization and continued support by Congress.

The United States has long recognized that investments in geologic information serve a broader public purpose. From the earliest federal surveys of the American West through modern efforts to characterize groundwater resources, energy systems, mineral deposits, and geologic hazards, public investments in earth science have consistently produced benefits that extend far beyond the scientific community. Geologic information reduces uncertainty, supports economic development, informs land-use decisions, improves public safety, and enables private investment.

Earth MRI should be viewed within this longstanding tradition. While the program is frequently discussed in the context of critical minerals, its significance is much broader. At its core, Earth MRI is an investment in knowledge. It seeks to improve the nation's understanding of its geologic foundation through modern mapping, geophysical surveys, geochemical analyses, and

data preservation efforts. In doing so, it provides the information necessary for governments, businesses, and communities to make informed decisions about the resources beneath our feet.

The need for such information has become increasingly apparent. Over the past several decades, the United States has become increasingly dependent upon foreign sources for many minerals essential to modern manufacturing, energy technologies, advanced electronics, and national defense. At the same time, large portions of the country remain under-mapped using modern scientific methods. Policymakers are therefore confronted with an unusual challenge: the desire to strengthen domestic supply chains and resource security while lacking complete information about the nation's own resource potential.

Before resources can be developed, they must first be understood. Before private capital can be invested, exploration risk must be reduced. Before permitting decisions can be streamlined, decision-makers must understand the geology that underlies those decisions. Earth MRI addresses this challenge by providing the foundational information upon which subsequent public and private decisions depend.

One of the most important characteristics of Earth MRI is that it operates in what economists often describe as the pre-competitive space. The program does not subsidize individual companies, select preferred projects, or direct investment toward particular outcomes. Instead, it generates publicly available scientific information that benefits all users equally. The geologic maps, geophysical surveys, geochemical analyses, and preserved data generated through Earth MRI become part of the permanent scientific record and are available to federal agencies, state governments, tribal nations, universities, private industry, and the public.

This distinction is important because information functions differently than many other forms of public investment. A geologic map may be used by a mineral exploration company, a groundwater manager, a transportation agency, an energy developer, a local government, or a university researcher. Airborne geophysical surveys collected today may continue to generate value decades into the future as analytical technologies improve and new questions emerge. In many cases, the value of these datasets increases over time.

For that reason, Earth MRI should not be viewed solely as a critical minerals program. It is fundamentally an investment in the nation's geologic knowledge base. The same information that helps identify critical minerals may later support geothermal development, groundwater management, infrastructure planning, environmental remediation, carbon storage assessments, or hazard mitigation. The benefits are broad, long-lasting, and often impossible to fully predict at the time the information is collected.

Since its establishment in 2019, Earth MRI has demonstrated the value of this approach. Through Fiscal Year 2025, approximately $78.6 million has been distributed directly to state geological surveys, supporting activities in forty states and Puerto Rico. Collectively, Earth MRI has generated new geologic mapping, airborne geophysics, geochemical investigations, mine waste assessments, and data preservation efforts across nearly every region of the country. At least one category of Earth MRI data has now been collected in forty-six states and Puerto Rico, with additional participation anticipated in Fiscal Year 2026.

Equally important, the program has demonstrated that relatively modest federal investments can generate substantial returns. Approximately forty to forty-five percent of annual Earth MRI funding supports airborne geophysical surveys, much of which is executed by private-sector contractors. As a result, Earth MRI not only generates information but also supports American businesses and technical expertise. In several states, federal investments have also encouraged additional state investments, creating a multiplier effect that expands the program's reach and impact.

A defining feature of Earth MRI is its partnership model. The success of the program is due in large part to the close collaboration between the U.S. Geological Survey and state geological surveys. State surveys occupy a unique position within the nation's scientific infrastructure. We maintain geologic maps and databases, preserve core repositories, assess natural resources, support hazard mitigation efforts, and provide technical assistance to government agencies, industry, landowners, and citizens.

Because surveys are embedded within their respective states, they possess a level of local knowledge and institutional continuity that cannot easily be replicated through federal programs alone. Survey scientists understand regional geology, resource potential, land ownership patterns, regulatory environments, and stakeholder concerns. They maintain long-standing relationships with universities, tribal governments, state agencies, local governments, and private industry.

Earth MRI effectively combines these local capabilities with federal leadership and national priorities. Rather than creating a new federal structure, the program builds upon existing expertise and institutions. This approach has enabled projects to be implemented efficiently while ensuring that resulting data products are scientifically rigorous and locally relevant.

The benefits extend beyond the immediate project outcomes. Earth MRI has strengthened scientific and technical capacity throughout the country. In Michigan, partnerships supported through Earth MRI contributed to substantial growth in survey staffing and the establishment of a dedicated minerals program in a state with globally significant mineral resources. In Wyoming, federal investments have complemented substantial state investments in airborne geophysics, creating a model for collaborative resource assessment. In Oklahoma, Earth MRI has enabled new investigations into critical minerals, mine waste resources, and emerging energy opportunities while supporting the adoption of advanced analytical technologies and new scientific partnerships.

These examples are important because they illustrate that Earth MRI is not simply producing maps and datasets. It is strengthening the nation's capacity to understand and manage its natural resources. New personnel, improved laboratories, expanded datasets, and strengthened partnerships remain in place long after individual projects have concluded. The cumulative effect is a stronger national geoscience enterprise capable of supporting future economic development and resource security.

Earth MRI has also proven valuable in facilitating collaboration among federal agencies, states, tribes, universities, and private-sector partners. In Oklahoma, for example, Earth MRI has supported cooperative efforts involving the Oklahoma Geological Survey, the U.S. Geological

Survey, the Quapaw Nation, and industry partners to evaluate historic lead-zinc mining districts and assess opportunities for recovering valuable materials from legacy mine waste. These efforts have the potential to advance resource recovery, environmental stewardship, and economic revitalization simultaneously.

The program's flexibility is one of its greatest strengths. Although originally established to improve understanding of critical mineral resources, Earth MRI data are increasingly supporting geothermal resource assessments, hydrogen exploration, groundwater investigations, infrastructure planning, carbon management initiatives, and other emerging national priorities. The information generated through the program is often applicable to multiple sectors and multiple generations of users.

The case for reauthorization is therefore straightforward. Significant portions of the country remain incompletely mapped using modern techniques. Important geophysical and geochemical datasets have yet to be collected. Opportunities remain to expand resource assessments, improve data preservation efforts, strengthen state survey capabilities, and support emerging energy and mineral priorities. The work is far from complete.

Reauthorization would provide continuity for federal and state partners while preserving the momentum that has been established over the past seven years. It would allow the nation to continue building the geologic knowledge necessary to support domestic resource development, energy security, economic competitiveness, and informed decision-making. Just as importantly, it would preserve and strengthen a federal-state partnership model that has proven both effective and efficient.

Earth MRI is fully consistent with the nation's current priorities. It supports domestic resource development, strengthens supply-chain resilience, improves understanding of critical minerals and energy resources, informs permitting decisions, and promotes economic growth. It does so not through subsidies or mandates, but through the creation of high-quality scientific information that benefits all users.

The United States cannot responsibly develop resources it does not understand. Earth MRI helps provide that understanding. For that reason, the Association of American State Geologists strongly supports reauthorization of the program and continued congressional investment in the geologic information necessary to support the nation's future prosperity, security, and resilience.

Thank you for the opportunity to testify. I would be pleased to answer any questions.