Testimony of the
Geological Society of America
Kasey White
Director for Geoscience Policy
Regarding the
U.S. Geological Survey
FY 2024 Budget
to the
United States Senate
Committee on Appropriations
Subcommittee on Interior, Environment, and Related Agencies

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Summary
The Geological Society of America (GSA) recommends that Congress provide $1.85 billion in annual appropriations for the U.S. Geological Survey (USGS) in Fiscal Year 2024. As one of our Nation's key science agencies, the USGS plays a vital role in locating, characterizing and documenting mineral and energy resources that underpin economic security and growth; researching and monitoring potential natural hazards that threaten lives and property; keeping communities informed about the impacts of a changing climate; and determining and assessing water quality and availability. Approximately two thirds of the USGS budget is allocated for research and development. In addition to supporting the science activities and decisions of the Department of the Interior, USGS research, data, and products are used by communities across the nation to make informed decisions in land-use planning, emergency response, natural resource management, engineering, and education. To fully implement the agency's mission and fulfill the USGS 21st-Century Science Strategy will **require $1.85 billion in annual appropriations**.

The Geological Society of America (GSA) is a scientific society with 19,000 members from academia, government, and industry. Through its meetings, publications, and programs, GSA enhances the professional growth of its members and promotes the geosciences in the service of humankind. GSA encourages cooperative research among earth, life, planetary, and social scientists, fosters public dialogue on geoscience issues, and supports all levels of earth science education.

3300 Penrose Place, P.O. Box 9140, Boulder, Colorado 80301-9140 USA ▪ Tel 303.357.1000, Fax 303.357.1070 ▪
www.geosociety.org

The Geological Society of America (GSA) thanks the Committee for recognizing the importance of the work of the U.S. Geological Survey (USGS) to protect lives, property, and national security, and to stimulate economic growth. GSA urges Congress to provide USGS $1.85 billion in Fiscal Year 2024. This increase will allow the USGS to implement new initiatives, maintain the base funding for critical research and monitoring, fill vacant positions, and address deferred maintenance on existing facilities.

U.S. Geological Survey Contributions to National Security, Health, and Welfare

The USGS is one of the nation's premier science agencies, with the unique capacity to engage interdisciplinary teams of experts to gather data, conduct research, and develop integrated decision-support tools. USGS research is used by communities across the nation to make informed decisions regarding land-use planning, emergency response, natural resource management, engineering, and education. USGS provides practical, pragmatic science that informs many of society's greatest challenges related to national security, economic competitiveness, health, and welfare. Several are highlighted below.

Energy and Minerals

As articulated in the Energy Policy Act of 2020, there is a vital need to understand the global and domestic abundance and distribution of critical mineral resources, as well as the geologic processes that form them. Achieving this goal will require continually expanding collection and analysis of geological, geochemical, and geophysical data. Specifically, GSA supports completing the new Energy and Minerals Research Facility on the Colorado School of Mines campus, a USGS facility that will be critical to establishing the workforce needed to secure our energy future by expanding STEM talent, and increasing diversity through student engagement and university partnerships.

GSA supports energy and minerals science, research, data collection and analysis that will allow for more economic and environmental management and utilization. GSA appreciates congressional support for the EarthMRI program, which will both provide new resources and leverage current data to accelerate geological and geophysical mapping, identify critical mineral sites for further scientific study to aid defense, security, and economic uses. The mapping has a central focus on minerals still in the ground and minerals that may be reprocessed from legacy mine waste, and will also provide important data for abandoned mine remediation and for understanding other natural resources.

Natural Hazards

Natural hazards are a major cause of fatalities and economic losses. In 2022 alone, NOAA found that the U.S. disaster costs exceeded $165 billion. An improved scientific understanding of geologic and atmospheric hazards will reduce future losses by informing effective planning, mitigation, and resilience. USGS's products are innovative, reliable, timely, and actionable, providing critical information on potential and developing hazards like floods, droughts, earthquakes, volcanos, landslides, and space weather events. GSA urges Congress to continue supporting efforts for USGS to both maintain its fundamental research capabilities, and modernize and upgrade its natural hazards monitoring and warning systems, such as the ShakeAlert Earthquake Early Warning System which, even while still under development, produced several successful earthquake alerts in California this past year.

Decision makers in many sectors rely upon USGS data to respond to natural hazards. For example, USGS volcano monitoring provides data to enable decisions to ensure aviation safety. Similarly, the USGS plays a key role in the National Tsunami Hazard Mitigation Program by tracking tsunami sources using seismic data, and USGS research on storm surge is used by the National Hurricane Center.

USGS is a key partner in obtaining data necessary to predict severe space weather events, which affect the electric power grid, satellite communications, and navigation systems. The Promoting Research and Observations of Space Weather to Improve the Forecasting of Tomorrow Act (PROSWIFT Act) provides a path forward for USGS research to understand and mitigate space weather risks. In addition, the new Space Weather Advisory Group established by the PROSWIFT Act will conduct a comprehensive survey to identify the research, observations, forecasting, and modeling advances required to improve response to space weather products.

GSA recommends adequate funding to implement recently-enacted hazards-related legislation. For example, the National Landslide Preparedness Act expanded the USGS Landslide Hazards Program, and authorized the 3D Elevation Program (3DEP) which leverages partnerships with the private sector, state and local governments, and other agencies to update and coordinate the collection of high-resolution elevation data across the country. Directives to USGS include identifying, mapping, and understanding landslide hazards, responding to landslide events, and developing landslide guidelines for geoscientists, emergency management personnel, and land-use decision-makers in order to reduce landslide losses and protect communities at risk.

Water Resources

Improved understanding of the quantity, quality, distribution, and use of water resources through monitoring, assessment, research, and delivery of actionable information by the USGS and associated partners is necessary to ensure adequate and safe water resources for the health and welfare of society. For example, the USGS national network of stream gages provides key data for the weekly U.S. Drought Monitor Maps and classifications, but its funding has been flatlined for many years. A reinvestment in this program will allow the Survey to maintain significant long-term data collection necessary for assessing impacts to water resources brought on by stressors such as climate change.

Climate Change

USGS research on climate impacts is used by local policymakers and resource managers to make sound decisions based on the best possible science. In addition to fundamental, long-term climate change research, the USGS provides scientific information necessary to anticipate, monitor, and adapt to the effects of climate change at regional and local levels, allowing communities to make smart, cost-effective decisions. Much of this work operates through the network of nine regional Climate Adaptation Centers (CASC). For example, the Alaska CASC has assessed future landslide risks along road corridors in Denali and other Alaska parks, which will assist planning for new and existing infrastructure to endure under a changing climate. In addition, the Southeast CASC is using artificial intelligence to predict flood damage changes in response to rising sea levels, and Northwest CASC researchers studied the impacts of wildfire severity and climate change on tree species that rely on fire to release their seeds. Additionally, the Federal

Climate Data Portal will provide actionable climate tools and products that will help public and private decision-makers address climate risks.

Core Science Systems, Facilities, and Science Support
Activities from hazard monitoring to mineral forecasts are supported by Core Science Systems, Facilities, and Science Support. These programs and services, such as geologic mapping, data preservation, and satellite observation, provide critical information, data, and infrastructure that underpin the research of the USGS. Investment in advanced scientific computing will allow the agency cutting-edge analytics and models needed to study wildfires and droughts. Stagnant funding has created backlogs in the hiring of new scientists; the agency has fewer employees than in FY1995. Increased investment is needed to fill these critical roles and allow for the recruitment and training of a strong and diverse STEM workforce pipeline, paving the way for increased diversity, equity, inclusion, and accessibility within the field of Earth sciences.

GSA appreciates the committee's recent investments in USGS facilities, including the creation of the Energy and Mineral Research Facility, and encourages continued investment to address deferred maintenance issues. GSA also recommends long-term funding and support for the USGS library, which is used by both federal scientists and external researchers. The Library houses more than 1.5 million volumes and more than three million maps, photographs and field records, with much of the information unique to the USGS.

The Landsat satellites have amassed the largest archive of remotely sensed land data in the world, a tremendously important resource for land use planning, and for assessment of water, energy, mineral and other natural resources, the impacts of natural disasters, and global agriculture production. GSA encourages continued support for existing programs, as well as interagency efforts for LandsatNext with improved spatial resolution and the ability to provide updated imagery with greater frequency.

Thank you for the opportunity to provide testimony about the U.S. Geological Survey. For additional information or to learn more about the Geological Society of America – including GSA Position Statements on climate change, water resources, mineral and energy resources, natural hazards, and public investment in Earth science research – please visit www.geosociety.org or contact GSA's Director for Geoscience Policy Kasey White at kwhite@geosociety.org.