Testimony of the

Geological Society of America

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Regarding the
U.S. Geological Survey
FY 2018 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) urges Congress to provide $1.2 billion for the U.S. Geological Survey (USGS) in Fiscal Year 2018. As one of our Nation's key science agencies, the USGS plays a vital role in understanding and documenting mineral and energy resources that underpin economic growth; researching and monitoring potential natural hazards that threaten U.S. and international security; and determining and assessing water quality and availability. Approximately two thirds of the USGS budget is allocated for research and development. In addition to underpinning the science activities and decisions of the Department of the Interior, this research is used by communities across the nation to make informed decisions in land use planning, emergency response, natural resource management, engineering, and education. Despite the critical role played by the USGS, funding for the agency has stagnated in real dollars for more than a decade. Given the importance of the many activities of the Survey that protect lives and property, stimulate innovations that fuel the economy, provide national security, and enhance the quality of life, GSA believes that growth in federal funding for the Survey is necessary for the future of our Nation and urges Congress to reject the cuts proposed in the Administration's FY 2018 request.

The Geological Society of America, founded in 1888, is a scientific society with over 26,000 members from academia, government, and industry in all 50 states and more than 100 countries. Through its meetings, publications, and programs, GSA enhances the professional growth of its members and promotes the geosciences in the service of humankind.

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

The USGS is one of the nation's premier science agencies. Approximately two thirds of the USGS budget is allocated for research and development. In addition to underpinning the science activities and decisions of the Department of the Interior, this research is used by communities and businesses across the nation to make informed decisions in land use planning, emergency response, natural resource management, engineering, and education. USGS research addresses many of society's greatest challenges for national security, health, and welfare. Several are highlighted below.

- Natural hazards – including earthquakes, tsunamis, volcanic eruptions, wildfires, and landslides – are a major cause of fatalities and economic losses. Recent natural disasters provide unmistakable evidence that the United States remains vulnerable to staggering losses. Landslides, which occur in every state, cause more than $3 billion in damage each year. An improved scientific understanding of geologic hazards will reduce future losses through better forecasts of their occurrence, which allows for effective planning and mitigation.

  Decision makers in many sectors rely upon USGS data. For example, USGS volcano monitoring provides key data to enable decisions on the safety of aviation. Data from the USGS network of stream gages is used by the National Weather Service to issue flood and drought warnings. Earth and space observations provide data necessary to predict severe space weather events, which affect the electric power grid, satellite communications and information, and space-based position, navigation, and timing systems. GSA urges Congress to support efforts for USGS to modernize and upgrade its natural hazards monitoring and warning systems to protect communities from the devastating personal and economic effects of natural disasters, including additional 3-D elevation mapping and earthquake early warning systems.

- A recent report by the National Research Council, *Emerging Workforce Trends in the Energy and Mining Industries: A Call to Action*, found, "Energy and mineral resources are essential for the nation's fundamental functions, its economy, and its security." Recent studies have shown that rare earth elements are essential to the production, sustainment, and operation of U.S. military equipment. Reliable access to the necessary material is a bedrock requirement for the Department of Defense. In addition, many emerging energy technologies – such as wind turbines and solar cells – depend upon rare earth elements and critical minerals that currently lack diversified sources of supply. GSA supports increases in minerals science, research, information, data collection and analysis that will allow for more economic and environmental management and utilization of minerals. In addition, GSA supports increases in research to better understand domestic sources of energy, including conventional and unconventional oil and gas and renewables.

- The flooding in the western United States is a testament to our dependence on water. The availability and quality of surface water and groundwater are vital to the wellbeing of both societies and ecosystems. Greater scientific understanding of these resources through monitoring and research by the USGS is necessary to ensure adequate and safe water resources for the health and welfare of society.

- USGS research on climate impacts is used by local policymakers and resource managers to make sound decisions based on the best possible science. The Climate Science Centers, for example, provide scientific information necessary to anticipate, monitor, and adapt to climate change's effects at regional and local levels, allowing communities to make smart, cost-effective decisions.

- The Landsat satellites have amassed the largest archive of remotely sensed land data in the world, a tremendously important resource for natural resource exploration, land use planning, and assessing water resources, the impacts of natural disasters, and global agriculture production. GSA supports interagency efforts to plan a path forward for future support of Landsat.

Activities from hazard monitoring to mineral forecasts are supported by the Core System Sciences, Facilities, and Science Support arenas. These programs and services, such as geologic mapping and data preservation, provide critical information, data, and infrastructure that underpin the research of the USGS. Increases are particularly needed in Facilities to address many deferred maintenance issues.

Knowledge of the earth sciences is essential to scientific literacy and to meeting the environmental and resource challenges of the twenty-first century. It is also fundamental to training the next generation of Earth science professionals. GSA is very concerned that cuts in Earth science funding will cause students and young professionals to leave the field, potentially leading to a lost generation of professionals in areas that are already facing worker shortages. Investments in these areas could lead to job growth, as demand for these professionals now and in the future is assessed to be high.

Emerging Workforce Trends in the Energy and Mining Industries: A Call to Action, found, "In mining (nonfuel and coal) a personnel crisis for professionals and workers is pending and it already exists for faculty." Another recent study by the American Geosciences Institute, *Status of the Geoscience Workforce Report 2016*, found an expected deficit of approximately 90,000 geoscientists by 2024. Strong investments in geoscience research are needed to prepare citizens for these job opportunities.

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 water resources, mineral and energy resources, natural hazards, and public investment in Earth science research – please visit www.geosociety.org or contact Kasey White at kwhite@geosociety.org.