



# U.S. GEOLOGICAL SURVEY

## Mission

The U.S. Geological Survey (USGS) monitors, analyzes, and predicts current and evolving Earth-system interactions and delivers actionable intelligence at scales and time frames relevant to decision makers. USGS provides science about natural hazards, natural resources, ecosystems and environmental health, and the effects of climate and land-use change.

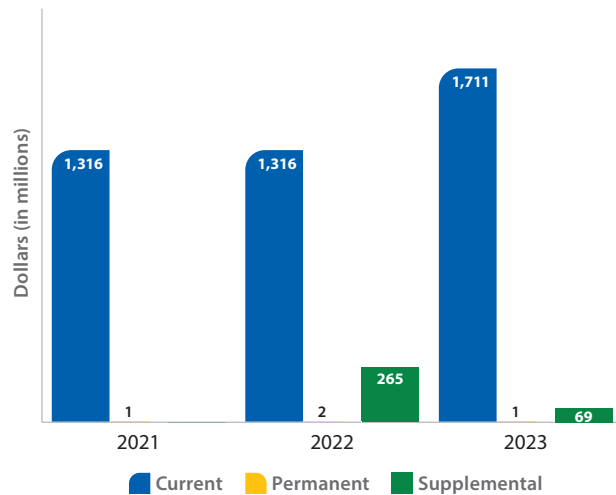
## Budget Overview

The 2023 USGS budget is \$1.7 billion; USGS estimates that staffing is 8,344 full-time equivalents (FTEs). The budget prioritizes science addressing climate change and invests in research and development to support economic growth, inform balanced decisions regarding resources, and ensure the well-being of the Nation.

### Ecosystems Programs

The 2023 budget includes \$375.7 million for Ecosystems programs. These programs provide the science to help ensure that America's ecosystems are managed sustainably and biological resources in wild and urban spaces are conserved now and into the future. Scientists examine the consequences of climate and environmental change; effects of management actions on communities, lands, and species; and risks of and solutions to harmful invasive species, wildlife diseases, and contaminants in the environment. Environmental Health is funded at \$27.8 million. Species Management Research is funded at \$74.4 million, with increases to support conservation and adaptation, watershed management, forecasting for coastal ecosystems, and clean energy development. Land Management Research is funded at \$72.7 million, with increases

## USGS Funding



supporting energy transitions, conservation and carbon management, wildfire research, and research to better understand and quantify ecosystems services. The Biological Threats and Invasive Species Research program is funded at \$47.9 million, with an expanded focus on climate-driven invasive species and wildlife disease. The Climate Adaptation Science Center and Land Change Science programs are funded at \$124.7 million. The request includes investments in collaboration and investigation, synthesis of regional research, Tribal climate science, biologic carbon sequestration, monitoring of greenhouse gas reduction processes, and other research on climate effects. Cooperative Research Units are funded at \$28.2 million.

### Energy and Mineral Resources Programs

The 2023 budget includes \$147.0 million for Energy and Mineral Resources programs. The

- **The U.S. Geological Survey (USGS) was founded by an Act of Congress in 1879.**
- **It is the Nation's largest water, Earth, biological science, and civilian mapping agency.**
- **USGS employs more than 8,000 scientists, technicians, and support staff working in more than 400 locations throughout the United States.**
- **USGS is a primary Federal source of science-based information available to the public, providing data and analysis on ecosystems, energy and mineral resources, natural hazards, water use availability and quality, and updated mapping and images of the Earth's land surface and subsurface.**
- **The Landsat series of Earth Observation satellites, operated by USGS in cooperation with NASA, have continuously acquired images of the Earth's land surface, providing uninterrupted data to help land managers and policymakers make informed decisions about natural resources and the environment.**

programs provide research and assessments on the location, quantity, and quality of mineral and energy resources, including the economic and environmental effects of extracting and using those resources. The Nation depends on energy resources to power homes and businesses and mineral resources to manufacture products, such as cell phones, laptops, cars, and renewable energy. Energy Resources is funded at \$56.7 million, with increases to support assessments of wind, solar, and geologic energy resources, including geothermal. The request also includes increases to better understand greenhouse gas emissions and sinks on Federal land. The Mineral Resources Program is funded at \$90.3 million, with increases to support supply chain research related to critical minerals, mine waste research and assessment in support of reclamation and potential mineral recovery, and research and assessments of potential new sources of critical minerals.

#### *Natural Hazards Programs*

The 2023 budget includes \$219.8 million for Natural Hazards. These programs provide information and tools to prepare for and respond to hazards such as volcanoes, earthquakes, coastal storms, solar flares, and landslides to enable greater resilience and reduce potential fatalities, injuries, property damage, and other social and economic effects. The Earthquake Hazards Program is funded at \$99.9 million and continues to fund ShakeAlert development and deployment,

research on seismicity related to geothermal energy development, and carbon sequestration, with an increase to support subduction zone science to better understand catastrophic earthquakes, and earthquake analysis and risk reduction. The Volcano Hazards Program is funded at \$34.5 million, with increases to improve hazard assessments and strengthen the National Volcano Early Warning System (NVEWS). The budget also includes \$7.3 million for the Global Seismographic Network, \$5.8 million for the Geomagnetism program, and \$11.4 million for the Landslide Hazards Program. Within the \$60.9 million included for Coastal and Marine Hazards and Resources is \$19.0 million to support science for climate-driven coastal hazards, research on coastal blue carbon sequestration, and risk-focused science to improve community resilience.

#### *Water Resources Programs*

The 2023 budget includes \$302.7 million for Water Resources. These programs work with partners to monitor, assess, conduct targeted research, and deliver information on a wide range of water resources conditions and issues, including stream-flow, groundwater, water quality, and water use and availability. The Water Availability and Use Science Program is funded at \$72.4 million, with increases to advance integrated water prediction, integrated water availability assessments, and water use withdrawal models. The Groundwater and Stream-flow Information program is funded at \$117.0

million, with increases to continue buildout of the Next Generation Water Observing System and expand the Federal Priority Streamgange network. The National Water Quality Program is funded at \$98.3 million, with increases to improve the USGS capacity to forecast impacts of climate change and land management on water availability and ecosystem health. The Water Resources Research Act program is funded at \$15.0 million, with increases that provide competitive grant opportunities through the Water Resources Research Institutes. Across the Water Resources mission area, the budget maintains support for Cooperative

Matching Funds that allow USGS to leverage funding from State, Tribal, and local partners to support cooperative water projects.

#### *Core Science Systems Programs*

The 2023 budget includes \$348.8 million for Core Science Systems. These programs provide the Nation with access to science, information, data, imagery, and geospatial frameworks to better manage natural resources, support new infrastructure planning, and plan for and respond to natural hazards. The National Geospatial Program is funded at \$98.5 million, with increases for



NASA and USGS launch Landsat 9 on September 27, 2021, making a third land-imaging satellite operational. This satellite continues the Landsat program's mission to add to the longest unbroken record of repeat Earth observations to monitor, understand, and manage natural resources.

*NASA photo.*

coordinating with Tribes for targeted data collection and research on Tribal lands. The request also includes funding for a Federal climate data portal that will provide the public with accessible information on historical and projected climate impacts, inform decision making, and strengthen community climate resilience. The National Cooperative Geologic Mapping Program is funded at \$41.3 million. The Science Synthesis, Analysis, and Research Program is funded at \$84.3 million, including \$30.0 million for a collaborative climate innovation response and resilience framework. The request includes \$25.5 million to lead the development of the Administration's American Conservation and Stewardship Atlas (Atlas) that will be used by the Department and the Nation to support conservation, stewardship, and restoration. The creation of the Atlas will provide scientific data to inform conservation, providing the information needed to achieve the Administration's goal of conserving 30 percent of America's lands and waters by 2030. The National Land Imaging program is funded at \$124.7 million, which includes \$92.3 million to support the Landsat 7, 8, and 9 satellite ground and flight operations and continue developing sustainable land imaging, including Landsat Next. The request for Science Research and Investigations is \$14.7 million, and Land Cover Monitoring and Assessments is funded at \$17.7 million to support biologic carbon sequestration studies; land change monitoring research, assessment, and projection; and tools to support targeting of conservation, land-use planning, and development.

#### *Science Support Programs*

The 2023 budget includes \$129.2 million for Science Support. These programs provide the necessary business services and information technology management to operate USGS science programs. The budget includes \$96.0 million in Administration and Management and strengthens scientific integrity efforts across Interior. The budget also includes \$6.1 million to transition the USGS fleet of vehicles to cleaner, electric vehicles and \$800,000 to support the Departmentwide Diversity, Equity, Inclusion, and Accessibility initiative. The request for Information Services is \$33.2 million, including funding to support, deliver, and protect USGS science with improved security products and services, cloud access, and other information technology for the data-intensive needs of a modern science organization.

#### *Facilities*

The 2023 budget provides \$188.1 million for Facilities. Funding includes \$113.2 million for Rental Payment and Operations and Maintenance and \$74.8 million for Deferred Maintenance and Capital Improvements, including \$176,000 for the Department of the Interior Field Communications Modernization (DIFCOM) initiative to deploy remote broadband connectivity and provide employees in the field with voice, video, and data capabilities for all missions.

#### **Fixed Costs**

Fixed costs of \$31.5 million are fully funded.

## SUMMARY OF BUREAU APPROPRIATIONS <sup>1/</sup>

(dollar amounts in thousands)

### *Comparison of 2023 Request with 2022 CR*

|   | 2022 CR      |                  | 2023 Request |                  | Change      |                 |
|---|--------------|------------------|--------------|------------------|-------------|-----------------|
|   | FTE          | Amount           | FTE          | Amount           | FTE         | Amount          |
| <b>Current</b>                              |              |                  |              |                  |             |                 |
| Surveys, Investigations, and Research ..... | 4,619        | 1,580,281        | 5,203        | 1,779,999        | +584        | +199,718        |
| Subtotal, Current .....                     | 4,619        | 1,580,281        | 5,203        | 1,779,999        | +584        | +199,718        |
| <b>Permanent</b>                            |              |                  |              |                  |             |                 |
| Surveys, Investigations, and Research ..... | 0            | 72               | 0            | 79               | 0           | +7              |
| Contributed Funds .....                     | 4            | 1,849            | 4            | 549              | 0           | -1,300          |
| Subtotal, Permanent .....                   | 4            | 1,921            | 4            | 628              | 0           | -1,293          |
| <b>Allocation and Reimbursable</b>          |              |                  |              |                  |             |                 |
| Allocation .....                            | 24           | 0                | 24           | 0                | 0           | 0               |
| Reimbursable .....                          | 3,113        | 0                | 3,113        | 0                | 0           | 0               |
| Subtotal, Reimbursable and Allocation ..... | 3,137        | 0                | 3,137        | 0                | 0           | 0               |
| <b>TOTAL, U.S. GEOLOGICAL SURVEY .....</b>  | <b>7,760</b> | <b>1,582,202</b> | <b>8,344</b> | <b>1,780,627</b> | <b>+584</b> | <b>+198,425</b> |

<sup>1/</sup> Current funding amounts include supplemental appropriations and transfers. For further details see Highlights of Budget Changes tables for each account.

## HIGHLIGHTS OF BUDGET CHANGES

By Appropriation Activity/Subactivity

### **APPROPRIATION: Surveys, Investigations, and Research**

|  | 2021 Actual | 2022 CR | 2023 Request | Change   |
|--|-------------|---------|--------------|----------|
| <b>Ecosystems</b>  |             |         |              |          |
| Environmental Health   |             |         |              |          |
| Contaminant Biology .....                                    | 10,397      | 10,397  | 12,582       | +2,185   |
| Toxic Substances Hydrology .....                             | 14,348      | 14,348  | 15,227       | +879     |
| Species Management Research .....                            | 53,914      | 53,914  | 74,446       | +20,532  |
| Land Management Research .....                               | 56,681      | 56,681  | 72,655       | +15,974  |
| Biological Threats and                                       |             |         |              |          |
| Invasive Species Research .....                              | 38,249      | 38,249  | 47,920       | +9,671   |
| Cooperative Research Units .....                             | 25,000      | 25,000  | 28,150       | +3,150   |
| Climate Adaptation Science Center<br>and Land Change Science |             |         |              |          |
| Climate Adaptation Science Center .....                      | 41,335      | 41,335  | 85,741       | +44,406  |
| Land Change Science .....                                    | 19,153      | 19,153  | 38,971       | +19,818  |
| Subtotal, Ecosystems .....                                   | 259,077     | 259,077 | 375,692      | +116,615 |
| <b>Energy and Mineral Resources</b>                          |             |         |              |          |
| Mineral Resources .....                                      | 59,869      | 59,869  | 90,302       | +30,433  |
| Energy Resources .....                                       | 30,172      | 30,172  | 56,708       | +26,536  |
| Subtotal, Energy and Mineral Resources .....                 | 90,041      | 90,041  | 147,010      | +56,969  |

**APPROPRIATION: Surveys, Investigations, and Research** (continued)

|   | 2021 Actual | 2022 CR   | 2023 Request | Change   |
|---|-------------|-----------|--------------|----------|
| <b>Natural Hazards</b>  |             |           |              |          |
| Earthquake Hazards .....  | 85,403      | 85,403    | 99,920       | +14,517  |
| Volcano Hazards .....   | 30,266      | 30,266    | 34,500       | +4,234   |
| Landslide Hazards .....   | 8,038       | 8,038     | 11,432       | +3,394   |
| Global Seismographic Network.....                                     | 7,153       | 7,153     | 7,280        | +127     |
| Geomagnetism.....   | 4,114       | 4,114     | 5,760        | +1,646   |
| Coastal/Marine Hazards and Resources .....                            | 40,510      | 40,510    | 60,935       | +20,425  |
| Subtotal, Natural Hazards .....                                       | 175,484     | 175,484   | 219,827      | +44,343  |
| <b>Water Resources</b>  |             |           |              |          |
| Water Availability and<br>Use Science Program .....                   | 57,987      | 57,987    | 72,433       | +14,446  |
| Groundwater and Streamflow<br>Information Program .....               | 100,673     | 100,673   | 117,035      | +16,362  |
| National Water Quality Program .....                                  | 93,460      | 93,460    | 98,273       | +4,813   |
| Water Resources Research Act Program.....                             | 11,000      | 11,000    | 15,000       | +4,000   |
| Subtotal, Water Resources.....  | 263,120     | 263,120   | 302,741      | +39,621  |
| <b>Core Science Systems</b>   |             |           |              |          |
| National Land Imaging Program   |             |           |              |          |
| Satellite Operations .....  | 84,337      | 84,337    | 92,274       | +7,937   |
| Research and Investigations .....                                     | 14,557      | 14,557    | 14,669       | +112     |
| Land Cover Monitoring and Assessments.....                            | 7,971       | 7,971     | 17,748       | +9,777   |
| Science Synthesis, Analysis, and<br>Research Program.....             | 25,972      | 25,972    | 84,330       | +58,358  |
| National Cooperative Geologic<br>Mapping Program.....                 | 40,397      | 40,397    | 41,271       | +874     |
| National Geospatial Program .....                                     | 79,454      | 79,454    | 98,506       | +19,052  |
| Subtotal, Core Science Systems .....                                  | 252,688     | 252,688   | 348,798      | +96,110  |
| <b>Science Support</b>  |             |           |              |          |
| Information Services.....   | 21,947      | 21,947    | 33,160       | +11,213  |
| Administration and Management.....                                    | 73,787      | 73,787    | 96,037       | +22,250  |
| Subtotal, Science Support .....                                       | 95,734      | 95,734    | 129,197      | +33,463  |
| <b>Facilities</b>   |             |           |              |          |
| Rental Payments and<br>Operations Maintenance .....                   | 104,719     | 104,719   | 113,239      | +8,520   |
| Deferred Maintenance and<br>Capital Improvements .....                | 74,664      | 74,664    | 74,840       | +176     |
| Subtotal, Facilities .....  | 179,383     | 179,383   | 188,079      | +8,696   |
| <b>TOTAL APPROPRIATION (w/o supplementals<br/>and transfer) .....</b> |             |           |              |          |
|   | 1,315,527   | 1,315,527 | 1,711,344    | +395,817 |
| Bipartisan Infrastructure Law (P.L. 117-58) .....                     | 0           | +239,668  | +69,000      | -170,668 |
| Disaster Relief Act (P.L. 117-43) .....                               | 0           | +26,284   | 0            | -26,284  |
| Transfer to OIG (P.L. 117-58) .....                                   | 0           | -1,198    | -345         | +853     |
| <b>TOTAL APPROPRIATION (w/ supplementals<br/>and transfer) .....</b>  |             |           |              |          |
|   | 1,315,527   | 1,580,281 | 1,779,999    | +199,718 |