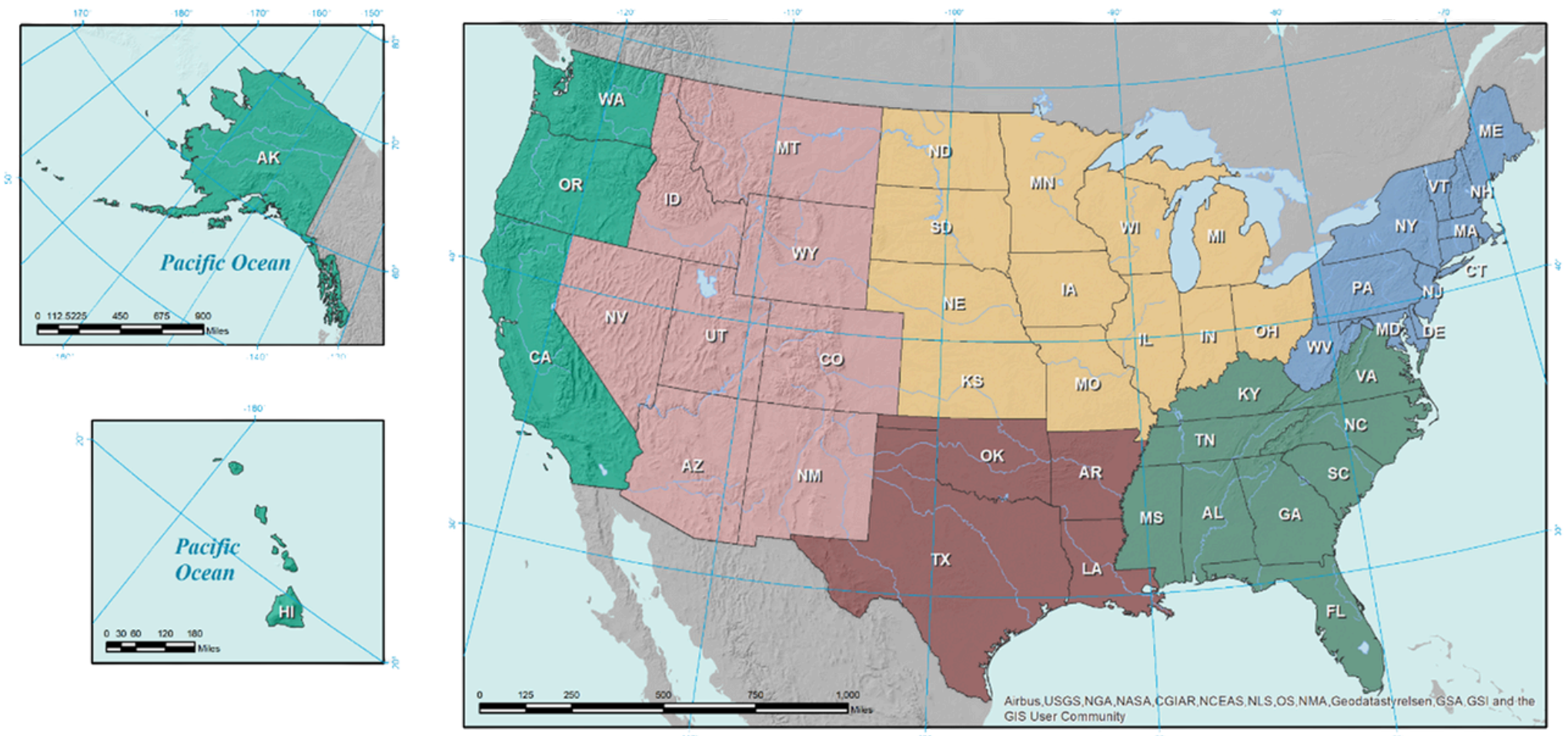


Mapping the Way: Regional Benefits of Geologic Mapping



Explore how geologic mapping drives regional economic growth and supports informed decision-making across key sectors in different regions of the United States. Discover the percentage of gross domestic product (GDP) which relies on geologic maps to support the economic activity in each region. The percentages are based on data from the U.S. Bureau of Economic Analysis (2019), focusing on sectors such as mining, energy, real estate, construction, and transportation. These sectors reported active use of geologic maps in their operations, meaning geological information directly influences their decision-making.

How Do Geologic Maps Make a Difference?

Pacific Rim

Regional GDP impacted by geologic mapping: 37.3%

Earthquake Risk Management: Critical for seismic hazard assessment in earthquake-prone regions along the Pacific Rim.

Coastal Resilience: Used to monitor coastal erosion, sea-level rise, and tsunami risks.

Infrastructure Safety: Support site selection for bridges, ports, and public transportation by assessing ground stability, coastal hazards, and wildfire impact risks.

Intermountain West

Regional GDP impacted by geologic mapping: 43.4%

Mining & Energy Exploration: Geologic maps support mineral and energy resource development, aiding in exploration efficiency and reducing uncertainty in site selection.

Natural Hazard Preparedness: Used for assessing earthquake, landslide, and erosion risks that impact infrastructure and land stability.

Sustainable Development: Provide critical data for renewable energy projects, including geothermal and solar site assessments.

Great Lakes/Great Plains

Regional GDP impacted by geologic mapping: 37.8%

Agriculture & Water Management: Aids groundwater resource planning, ensuring reliable water supplies for farming and rural communities.

Infrastructure Development: Provides critical data for selecting suitable sites for roads, bridges, and urban expansion.

Risk Reduction: Helps identify flood-prone areas and assess land surface stability to mitigate risks in land use planning.

Northeast

Regional GDP impacted by geologic mapping: 37.8%

Real Estate & Urban Development: High demand for custom geologic maps informs land-use planning, flood risk assessment, and radon mitigation, supporting compliance with stringent building regulations.

Environmental Compliance: Geologic maps provide detailed site assessments for brownfield redevelopment and other industrial land reuse projects.

Transportation Planning: Geological data supports infrastructure projects by assessing subsurface conditions for roads, bridges, and tunnels.

South Central U.S.

Regional GDP impacted by geologic mapping: 40.6%

Energy Infrastructure: Support site selection for oil, gas, and renewable energy projects, ensuring stability and efficiency.

Environmental Assessments: Provide critical data for land-use decisions related to pipelines and industrial facilities.

Engineering & Construction: Aid in geologic site assessments, helping to mitigate risks related to land stability, groundwater contamination, and flood risk evaluation.

Southeast

Regional GDP impacted by geologic mapping: 38.4%

Transportation & Urban Planning: Geologic maps provide data for land-use decisions and infrastructure planning.

Geological Hazard Assessment: Used in floodplain mapping to help evaluate risks.

Natural Resource Management: Provide information on groundwater availability.

Reference: Berg, R.C., and Faulds, J.E., eds., 2025, Economic Analysis of the Costs and Benefits of Geological Mapping in the United States of America from 1994 to 2019: Alexandria, Virginia, American Geosciences Institute, 184 p.

Source: Chapter 11