

# AASG

Association of American State Geologists

## GEOLOGIC MAPPING

### AASG

The Association of American State Geologists (AASG) speaks for the State Geologists of the 50 United States and Puerto Rico. Founded in 1908, AASG seeks to optimize the role that State Geological Survey agencies play in delivering benefits to the people of the U.S., in relation to economic prosperity, natural hazards, and public health, as well as appreciation and preservation of our natural heritage

### Position Statement

AASG calls for all geologic map users to support the National Cooperative Geologic Mapping Program, a critically important means of optimizing geologic map production by State and Federal Geological Surveys across the U.S.

### Background

Up-to-date and progressively more web-accessible geologic mapping is essential to any water, energy, mineral resource, engineering, health, hazard, habitat, or research-related application that requires knowledge of what lies underground—

**Resources**—well water is the principal drinking water source in many regions; and readily available sources of sand, gravel, and stone for construction are key factors to the success of communities, whereas management of the full spectrum of mineral and subsurface energy sources requires geologic maps to ensure wise stewardship.

**Engineering**—infrastructure and other construction require subsurface maps to guide siting and design, as well as to manage costs and ensure safety related to foundation conditions, drainage, and variable geologic conditions, and this information is also essential in guiding subsurface pipe and cable installation.

**Hazards**—geologic maps are used to explain and reduce damage caused by earthquakes, landslides, volcanoes, sinkholes, coastal erosion, and other hazards, as well as to aid safe and economic infrastructure design and siting of critical facilities.

**Public Health**—geologic maps are needed for groundwater protection, in ensuring the integrity of waste disposal sites, in cleaning up underground pollution, and in explaining naturally occurring hazardous elements such as arsenic and radon.

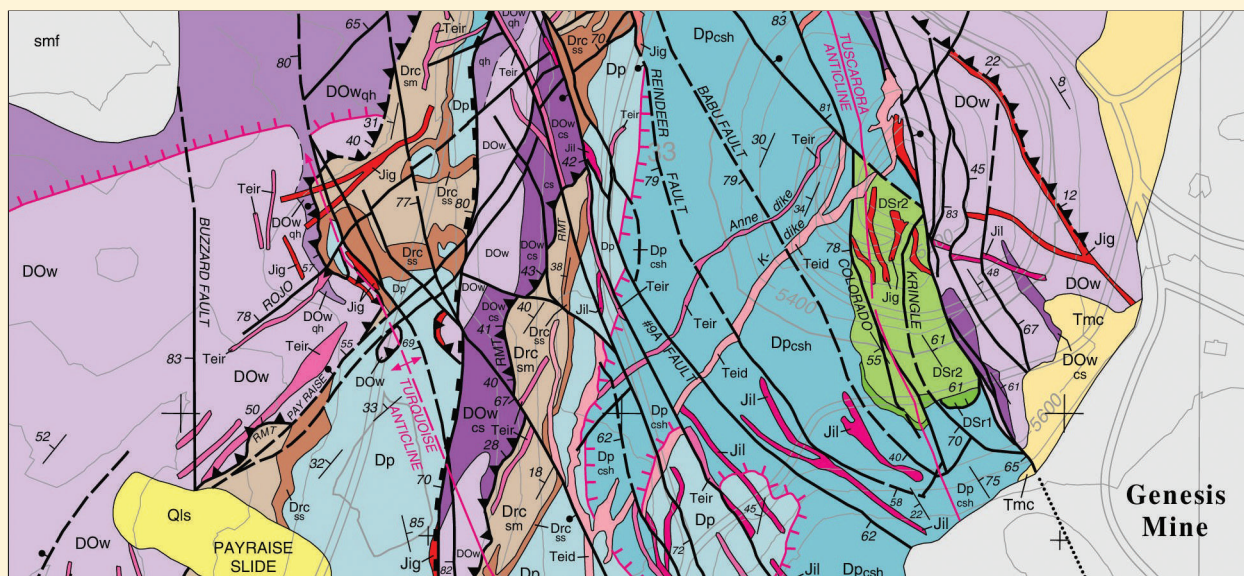
**Research and Habitat Protection**—geologic mapping yields discoveries and guides our understanding of Earth history and evolution, while being essential to land and habitat restoration and protection, such as wetland protection.

Everyone benefits directly or indirectly from ongoing geologic mapping. Federal agencies, State and local governments, industry, and the public depend on the information provided by geologic maps to carry out their missions. Efficient production of maps at county, state, and national scales, in both paper and digital format, requires coordination between Federal and State Geological Surveys. Concurrently there is much progress in the coordination of topographic, soil, and geologic mapping, as needed by users. This mapping, which is the job of State and Federal agencies, provides needed context for site-scale investigations by consultants and local agencies. Many cases of natural disasters and groundwater contamination can be cited in which major savings could have been realized had mapping been completed and consulted in advance.

## A National Vision for Geologic Mapping

AASG supports reauthorization and full funding of the **National Cooperative Geologic Mapping Program**. Since passage of the National Geologic Mapping Act by Congress in 1992, collaboration between the U.S. Geological Survey, State Geological Surveys, and universities has led to much new mapping and training of the next generation of qualified mapping professionals, although large areas remain unmapped geologically. Reauthorization of the program, and funding at the fully authorized level, are vital to national efforts to ensure availability of needed geologic mapping. States and universities are capable of providing significantly more matching funds than are currently available from Federal appropriations.

AASG urges all government agencies with a stake in geologic mapping to actively support this crucial activity. The many Federal agencies that rely on geologic maps to ensure the success of their programs include **Agriculture** (Forest Service, Natural Resources Conservation Service), **Commerce** (National Oceanic and Atmospheric Administration), **Defense** (Army Corps of Engineers, military bases), **Energy** (related to applications in carbon sequestration, coal, oil and gas, geothermal, nuclear, solar, wind), **Interior** (Bureau of Indian Affairs, Bureau of Land Management, National Park Service, Minerals Management Service, Office of Surface Mining, U.S. Geological Survey), **Homeland Security** (Federal Emergency Management Agency), **Transportation, Environmental Protection Agency, National Aeronautics and Space Administration, National Science Foundation, and others**. At State and local levels, departments of water, conservation, natural resources, emergency management, environment, health, land, parks, recreation, and transportation all need geologic maps.



Part of the geologic map of the northern Carlin trend, the nation's premier source of gold (Source: Moore, S., 2002, in Thompson, T. B., Teal, L., and Meeuwig, R. O., eds., Gold deposits of the Carlin trend: Nevada Bureau of Mines and Geology Bulletin 111, 204 p., scale 1:12,000). This mapping provided an accounting of subsurface materials and unraveled the geologic history of the area, thereby facilitating exploration, development, and reclamation. This widely used map was produced by the State Geological Survey in cooperation with industry, with support from the National Cooperative Geologic Mapping Program.

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