National Cooperative Geologic Mapping Program
STATEMAP Component: States compete for federal matching funds for geologic mapping

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Since 1993, the National Cooperative Geologic Mapping Program’s STATEMAP program has made a significant contribution toward expanding geologic knowledge in Alaska, where current geologic mapping is limited or nonexistent. Alaska is endowed with a rich resource potential but also has significant natural hazards. The state, with its resourced-based economy, supplies a significant portion of the nation’s energy and mineral resources. Our STATEMAP projects are primarily directed toward detailed mapping and analysis in areas of high resource potential and/or hazards to help meet the resource needs of the state and the nation, as well as to mitigate hazard risks.

Alaska’s economy is predicated in large part on the discovery and development of new mineral and energy resources, yet less than 20 percent of its land has been geologically mapped at a scale of 1 inch = 1 mile or better. STATEMAP is helping to expand that coverage where needed for future resource-exploration and development projects, construction-materials evaluation, and geologic-hazards identification. Through 2016, the Alaska Division of Geological & Geophysical Surveys (DGGS) has completed new geologic mapping for 14,885 square miles of Alaska as part of STATEMAP. DGGS STATEMAP projects have included mapping of parts of strategic commercial access corridors, mining districts, and frontier oil and gas provinces. These projects have delivered products that have contributed to increased oil and gas lease sales and mineral exploration, and have helped Alaska Native corporations evaluate the mineral resources of their lands.

In FY2016, DGGS used STATEMAP funds to geologically map 466 square miles of the Tok River area along the eastern Alaska Range. The mapping and related products are helping to address a number of key questions about underexplored extensions of the Delta mineral belt of volcanogenic massive-sulfide (VMS) deposits, in close proximity to an actively drilled gold-copper-silver skarn exploration project, and punctuated by gold-copper porphyry prospects. Results from this proposed mapping project will help to better define the Mesozoic meta-sedimentary and meta-volcanic rocks and their associated VMS deposits, identify how they were deformed and subsequently intruded by Triassic and Cretaceous plutons, and identify new targets for exploration.

Alaska has the potential to supply the nation with all but a few of the 65 strategic nonfuel minerals and materials identified by the U.S. Geological Survey as essential to national security and the U.S. economy. Yet of all the resource-rich regions in the United States, Alaska is the least understood geologically, and arguably maintains the highest unrealized resource potential for both energy and mineral deposits.

DGGS deploys a relatively large and diverse field team to conduct comprehensive geologic mapping within our remote map areas. Our projects result in bedrock, surficial, and engineering-geologic maps, where applicable, and provide basic geologic framework data for use by State and Federal agencies, private industry, scientists, and other end users.