

Geological Mapping for Energy Development (USGS STATEMAP)

FY2020 Request: \$700,000
Reference No: 60937

AP/AL: Allocation **Project Type:** Research / Studies / Planning
Category: Natural Resources
Location: Statewide **House District:** Statewide (HD 1-40)
Impact House District: Statewide (HD 1-40) **Contact:** Fabienne Peter-Contesse
Estimated Project Dates: 07/01/2019 - 06/30/2024 **Contact Phone:** (907)465-2422
Appropriation: State Priority Map Imagery

Brief Summary and Statement of Need:

This project will leverage USGS STATEMAP grant federal funds to produce a 1:63,360-scale bedrock geologic map of the Colville River area, in the southern foothills, and will cover economically important formations including the Nanushuk, Seabee, Schrader Bluff, and Prince Creek; all of which have subsurface equivalents that are known to host billions of barrels of oil.

Funding:	FY2020	FY2021	FY2022	FY2023	FY2024	FY2025	Total
1002 Fed Rcpts	\$300,000	\$300,000	\$300,000	\$300,000	\$300,000	\$300,000	\$1,800,000
1004 Gen Fund	\$400,000	\$300,000	\$300,000	\$300,000	\$300,000	\$300,000	\$1,900,000
Total:	\$700,000	\$600,000	\$600,000	\$600,000	\$600,000	\$600,000	\$3,700,000

<input checked="" type="checkbox"/> State Match Required	<input type="checkbox"/> One-Time Project	<input type="checkbox"/> Phased - new	<input type="checkbox"/> Phased - underway	<input checked="" type="checkbox"/> On-Going
100% = Minimum State Match % Required		<input type="checkbox"/> Amendment	<input type="checkbox"/> Mental Health Bill	

Operating & Maintenance Costs:

	<u>Amount</u>	<u>Staff</u>
Project Development:	0	0
Ongoing Operating:	0	0
One-Time Startup:	0	0
Totals:	0	0

Prior Funding History / Additional Information:

Sec1 Ch19 SLA2018 P8 L24 SB142 \$600,000
 Sec1 Ch1 SLA2017 P6 L12 SB23 \$2,100,000
 Sec1 Ch2 SLA2016 P5 L27 SB138 \$200,000
 Sec1 Ch38 SLA2015 P5 L21 SB26 \$800,000

Prior to FY2016 (SLA2015) STATEMAP grant funds were included in the operating budget.

Project Description/Justification:

Federal STATEMAP grants are an annual funding opportunity with a mandatory 1:1 state match requirement to receive the federal funds.

Northern Alaska is a world class petroleum province and experts agree that it is one of the most prospective onshore regions remaining in North America. This promise has been recently affirmed by several newly announced oil discoveries, some of which may prove to be among the largest in North America in decades. The primary purpose of this project is to acquire a comprehensive new geologic data set that will catalyze private-sector oil and gas exploration beyond the core Prudhoe Bay area. In addition, this information will provide a sounder technical basis for estimates of undiscovered resources. The primary focus of this project is the collection and interpretation of sufficient surface

geologic data to create a detailed, high resolution geologic map covering more than 750 square miles of the central North Slope foothills. This is a geologically important region to map as it includes excellent exposures of the Nanushuk Formation—the same unit that serves as the reservoir in two of the recent large discoveries to the north. Work will provide critical insight into this rapidly emerging play in northern Alaska. Completion of these maps will compliment available detailed Division of Geological & Geophysical Surveys (DGGs) mapping to the south, north, and east-northeast, ultimately moving toward DGGs's long-term goal of creating a near continuous sequence of geologic maps of prospective State of Alaska lands between National Petroleum Reserve - Alaska (NPR-A) and Arctic National Wildlife Refuge (ANWR).

The reduction in oil-generated revenue has adversely affected Alaska's economy. This project is expected to encourage new exploration, thus accelerating capitalization of the state's petroleum resources and indirectly contributing to future revenue payments to the State of Alaska. Execution of this project will directly benefit the private sector through the employment of Alaska-based contractors. More than 80% of the expenditures in this proposal will be spent in Alaska, benefiting state commerce (a small portion goes to outside laboratories for sample analyses).

Alaska's North Slope is an expensive area to conduct field work and DGGs regularly seeks external funding from the federal government and private sector to support petroleum geology studies. Funds for this project will be leveraged with these other sources to more efficiently execute program objectives.

The primary accomplishment of this project will be the production of a detailed geologic map covering three inch-to-mile quadrangles in the central North Slope foothills. The map will be published through DGGs as a freely downloadable digital product; all files will be available in ARC-GIS format. During the process of geologic mapping, additional data will be collected on subjects such as reservoir quality and source rock potential. These topical results will be published in technical reports through DGGs and supplement the geologic maps. Furthermore, the map and analytical data will allow for more robust correlations of the subsurface stratigraphy across the North Slope. This is especially relevant as it permits instructive correlations between the poorly understood frontier foothills province and the much better studied producing areas to the north, which are well constrained by a higher density of well and seismic data. Recent examples of this type of regional surface to subsurface correlation have been published by DGGs (in collaboration with DOG) and have been very well received by industry geologists attempting to synthesize the complex geology in support of their exploration efforts.

All data collected during this project will be publicly available via DGGs technical reports and other peer-reviewed scientific literature. These publications are highly valued by petroleum companies exploring for oil and gas in northern Alaska, particularly by smaller independents that often lack the proprietary database and staff with Alaska-specific geological knowledge to effectively explore. Establishment of a more robust knowledge of North Slope geology will provide an incentive to companies seeking to reduce their investment risk. Many foreign governments provide voluminous publicly available geologic data to entice companies to explore for oil and gas resources. Increasing the availability of high-quality data will make the exploration landscape in Alaska more globally competitive and attractive to new companies.

What has been accomplished?

Funding from the U.S. Geological Survey (USGS) under STATEMAP is available annually to the DGGs. The division has obtained STATEMAP grants annually since 1993. The funding allows DGGs to map portions of the state with high energy or mineral resource potential, and use the information to

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stimulate natural resource development. Each year geologic maps are produced, and provided to the USGS as a condition of the STATEMAP grant. FY2016 was used for geologic mapping for energy development in the Red Glacier area in Cook Inlet and FY2017 was used for geologic mapping for mineral development near Tok.

Since 1993, DGGS has received a total of \$4,232,238 in federal funds under STATEMAP. This has been used to geologically map 15,086 square miles of Alaska, resulting in the production of 152 geologic maps and reports.

Line Item	Amount
1000 - Personal Services	\$250,000
2000 - Travel (field work)	\$25,000
3000 - Services (helicopter, drilling contractors, surveys, analytical)	\$275,000
4000 - Commodities (fuel)	\$50,000
7000 - Grants	
Total Request	\$600,000

Project will partially fund existing positions in Fairbanks.

- (10-X013) Petroleum Geologist I, FT
- (10-2133) Geologist IV, FT
- (10-2016) Geologist IV, FT
- (10-2227) Geologist III, FT
- (10-2008) Geologist III, FT
- (10-2124) Geologist II, FT
- (10-2035) Geologist II, FT