

**Critical Minerals Mapping - Earth MRI (3DEEP)**

**FY2021 Request: \$2,450,000**

**Reference No: 61849**

**AP/AL:** Appropriation

**Project Type:** Research / Studies / Planning

**Category:** Natural Resources

**Location:** Statewide

**House District:** Statewide (HD 1-40)

**Impact House District:** Statewide (HD 1-40)

**Contact:** Raquel Solomon-Gross

**Estimated Project Dates:** 07/01/2020 - 06/30/2025

**Contact Phone:** (907)465-2422

**Brief Summary and Statement of Need:**

This program will produce geological and geophysical maps of high-potential mineral areas in Alaska, focused on critical minerals. The newly published data and digitally upgraded historical data will spur private sector investment in Alaska, generate jobs, and improve the nation's critical mineral supply.

<b>Funding:</b>	<u>FY2021</u>	<u>FY2022</u>	<u>FY2023</u>	<u>FY2024</u>	<u>FY2025</u>	<u>FY2026</u>	<u>Total</u>
1002 Fed Rcpts	\$1,500,000	\$1,500,000	\$1,500,000	\$1,500,000	\$1,500,000	\$1,500,000	\$9,000,000
1003 G/F Match	\$750,000	\$750,000	\$750,000	\$750,000	\$750,000	\$750,000	\$4,500,000
1108 Stat Desig	\$200,000	\$200,000					\$400,000
<b>Total:</b>	<b>\$2,450,000</b>	<b>\$2,450,000</b>	<b>\$2,250,000</b>	<b>\$2,250,000</b>	<b>\$2,250,000</b>	<b>\$2,250,000</b>	<b>\$13,900,000</b>

<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"/> Ongoing
25% = 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	
<b>Totals:</b>	<b>0</b>	<b>0</b>

**Prior Funding History / Additional Information:**

Sec1 Ch19 SLA2018 P8 L14 SB142 \$5,000,000

**Project Description/Justification:**

Mineral exploration companies rely on publicly available information to target areas that may be prospective for a particular metal or commodity. Providing these basic data for critical minerals will encourage exploration. Encouraging exploration is the essential first step in ensuring discovery and development of mineral resources. Therefore, this work will provide the information necessary to attract explorers to Alaska to discover critical mineral resources. The subsequent development of these resources will improve the nation's critical mineral supply. This project is a continuation of the FY2019 National Mineral Security Program – 3DEEP capital project. The USGS project 3DEEP has been re-named Earth MRI (Mapping Resources Initiative).

White Rock Minerals CEO stated that work by the Alaska Airborne Geophysical/Geological Mineral Inventory (AGGMI) program brought them to Alaska to explore for minerals. White Rock Minerals contracted an Alaska company to conduct their currently active, multi-million dollar drilling program targeting Zinc (Zn) - Lead (Pb) - Copper (Cu) - Silver (Ag) prospects (similar to Greens Creek mine)

at Red Mountain in the north-central Alaska Range. In the 2019 Minerals Commission report, the Mineral Commission placed restarting this mapping program as their highest priority for the State.

From 1993-2015, the State's AGGMI program annually produced geophysical surveys, geologic maps, and datasets to attract industry exploration investment and facilitate resource development. The AGGMI program and an associated position was deleted in FY2016, but later effectively restarted in 2019 with the FY2019 National Mineral Security Program – 3DEEP capital project. This leveraged State funds as match to acquire federal funds available under the recently launched federal Critical Minerals Mapping Initiative – Earth MRI (previously called 3DEEP).

President Trump (in Executive Order 13817) and Secretary Zinke (in Secretarial Order 3359) initiated a national mapping program to provide modern, digital, geological, and geophysical mapping across the nation to provide information on the nation's supply of critical minerals. This program is part of a broader federal effort to improve the nation's resilience to constrained supplies of critical minerals.

In FFY2019, the President and Congress allocated \$9.6 million for this program, and an additional \$1.0 million was added to this total in FFY2020 by the US House. Other federal agencies in the Departments of Defense and Interior are anticipated to contribute funds to Earth MRI, with the goal of a funding level of \$50 million per year for ten years. The Earth MRI program within USGS began in 2019, and it is anticipated to last at least a decade.

Since the inception of this program, Alaska has been noted as one of four priority regions nationally. Due to its size and mineral endowment, Alaska is anticipated to feature prominently, and have stable funding throughout the program. USGS indicates that funding will go to those states or regions with match funding, and the capability to rapidly deliver initial products to demonstrate early successes.

Sources for critical minerals could be developed in the U.S., but private-sector exploration is hampered by the lack of modern geological and geophysical data. Competitor countries provide such data sets to attract private-sector investment. However, geologic maps at a suitable scale for minerals exploration are available for less than 17 percent of Alaska. The mineral deposits required to meet domestic needs can only be found through comprehensive geophysical and geologic mapping.

This funding will produce 1:100,000 scale geologic maps in the Yukon-Tanana Upland, an area prioritized for geologic mapping by the Division. This area is a highly prospective region of the state, with existing large mines. Airborne geophysical data collection over a 10,000-15,000 square kilometer area in the Yukon-Tanana Upland will be acquired and published. Data collection will be completed by private-sector contractors. These data will be of great value to mineral companies exploring in Alaska for precious, industrial Copper (Cu), Lead (Pb), Zinc (Zn), Molybdenum (Mo), or critical metals.

Division of Geological and Geophysical Surveys (DGGs) is coordinating with industry and other federal agencies to leverage current funding. SDPR funds from industry are anticipated in years 1 and 2 and will be used to increase survey detail or data types over areas of interest to industry.

Alaska contains critical and strategic minerals vital to national security and the economy. Without this funding, the private-sector exploration will be hampered due to the lack of new geological and geophysical data. It will reduce Alaska's worldwide competitiveness in attracting industry investment, and it will inhibit industry exploration, mineral discovery, and development, thereby reducing future

state revenues. Additionally, Alaska would be prevented from being geologically mapped at scales useful for mineral exploration. With current funding levels and personnel, DGGs will complete mapping the state at useful scales in approximately 400 years. Lastly, without this request the State would forgo federal funds.

**What was accomplished with prior funding?**

Between FY1993 and FY2015, the AGGMI program completed new airborne geophysical mapping of 15,771 square miles of Alaska. This program made significant contributions towards the goal of creating comprehensive geophysical and geological map coverage of Alaska, where current mapping is limited or nonexistent. The AGGMI products have attracted millions of dollars in industry investment, directly facilitated mineral discoveries, and brought in state revenue via increased claim staking and associated rental fees.

With FFY2019 funds, DGGs conducted 6.5 weeks of critical-minerals-related, field-based geologic mapping in the Eastern Tanacross Quadrangle geologically mapping 1,867 square miles. On-going office work includes creating the geologic map, preparing associated data for public release, and industry outreach to convey what we learned to stimulate exploration interest in Alaska. DGGs also constructed a multi-year, multi-vendor request for proposals to screen airborne geophysical survey contractors for upcoming contracts. Airborne geophysical surveying will begin in spring 2020.

While the exact matching requirements are not known at this time, states will be expected to match a portion of the federal funds. We estimate the state match requirement will be 25% (3:1), or \$1,500,000 FED / \$500,000 State Match.

Note, this is intended to be a 10-year program, and future requests will be amended to reflect changes in anticipated federal funding and match requirements. The budget below reflects the time and expenses under this project and not the operating component utilized as a partial in-kind match.

**Position Detail**

- Full-time Geological Scientist I (PCN 10-2046), Range 22, Fairbanks
- Full-time Geologist IV (10-2224), Range 21, located in Fairbanks
- Full-time Geologist IV (10-2122), Range 21, located in Fairbanks
- Full-time Geologist IV (10-2229), Range 21, located in Fairbanks
- Full-time Geologist III (10-2008), Range 19, located in Fairbanks
- Full-time Geologist III (10-2064), Range 19, located in Fairbanks
- Full-time Geologist II (10-0115), Range 17, located in Fairbanks
- Non-permanent Geologist I (10-#188), Range 15, located in Fairbanks
- Non-permanent Geologist II (10-#189), Range 17, located in Fairbanks

Line Item	Amount (use whole dollars)
1000 Personal Services	\$680,000
2000 Travel	\$205,000
3000 Services	\$1,480,000

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4000 Commodities	\$85,000
5000 Capital Outlay	\$0
7000 Grants	\$0
<b>Total Request</b>	<b>\$2,450,000</b>