

**Alaska Landslide Hazards**

**FY2022 Request: \$0**

**Reference No: AMD 63321**

**AP/AL:** Appropriation

**Project Type:** Climate Change / Erosion

**Category:** Natural Resources

**Location:** Southeast Alaska

**House District:** Southeast Region (HD 33-36)

**Impact House District:** Southeast Region (HD 33-36)

**Contact:** Cheri Lowenstein

**Estimated Project Dates:** 07/01/2020 - 06/30/2025 **Contact Phone:** (907)465-2422

**Brief Summary and Statement of Need:**

The Division of Geological & Geophysical Surveys (DGGS) proposes a multi-faceted approach to assess landslide hazards in the Prince William Sound area that would leverage federal-sourced funds and develop synergy among state, federal, and university entities investigating landslide hazards.

<b>Funding:</b>	<b>FY2021</b>	<b>FY2022</b>	<b>FY2023</b>	<b>FY2024</b>	<b>FY2025</b>	<b>FY2026</b>	<b>Total</b>
1002 Fed Rcpts	\$2,500,000						\$2,500,000
1004 Gen Fund	\$750,000						\$750,000
<b>Total:</b>	<b>\$3,250,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$3,250,000</b>

<input type="checkbox"/> State Match Required	<input checked="" type="checkbox"/> One-Time Project	<input type="checkbox"/> Phased - new	<input type="checkbox"/> Phased - underway	<input type="checkbox"/> Ongoing
0% = Minimum State Match % Required		<input checked="" 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:**

The UGF for this will be offset with utilization of Federal American Rescue Plan Act (ARPA) in other areas of the budget.

**Project Description/Justification:**

Landslides and landslide-generated hazards cause deaths, injuries, and homelessness every year, and they damage or destroy settlements, roads, and other critical infrastructure. Alaska’s complex terrain, complicated geology, glacierized landscape, and dynamic climate system make the state particularly susceptible to unstable slopes and has led to some of the world’s largest landslides in recent time. However, very little is known about the extent of landslide hazard and risk across Alaska. There is currently limited baseline data and fundamental knowledge to support landslide public awareness, preparedness, and mitigation and adaptation efforts. The project proposed here directly addresses a statutory priority of the state (AS § 41.08.017) that the “Systematic collection, evaluation, archival, and distribution of geologic data and information on .... geological hazards throughout the state are in the public interest and necessary to orderly, safely, and cost-effective development in the state.”

Throughout coastal southern Alaska, melting glaciers and thawing permafrost are contributing to slope instabilities that could lead to highly destructive landslide-generated tsunamis. Indeed, unstable glacierized slopes have generated the tallest tsunamis ever recorded, and the frequency of these landslides is increasing. In May 2020, a large, steep unstable slope in the Barry Arm fjord 30 miles northeast of Whittier was identified as having the potential to generate a tsunami that could have devastating local effects on those who live, work, and recreate in and around Whittier and in northern Prince William Sound. The Division of Geological & Geophysical Surveys (DGGs) is working with the USGS, NOAA, and NFS to evaluate this landslide, and is part of regular communication with the Prince William Sound communities of Whittier, Valdez, and Cordova.

Identification of this potentially tsunamigenic landslide in Prince William Sound and recent events in southeast Alaska have increased public awareness of landslides. While, this work is restricted to Southcentral Alaska, DGGs has received inquiries regarding landslides from numerous communities including Valdez, Whittier, Cordova, Sitka, Haines, Homer, Gustavus, Hoonah, Hyder, Juneau, Petersburg, Skagway, Tenakee Springs, and Wrangell. In response to this, DGGs proposed taking a portion of the funds to conduct outreach to these communities to determine their interest in landslide assessments. In addition, DGGs has recently been contacted by industry regarding landslides of concern to the future stability of the Trans-Alaska Pipeline System (TAPS).

DGGs has a close working relationship with the USGS and proposes a multi-faceted approach to assess landslide hazards in Southcentral Alaska that would leverage available federal funds and develop synergy among state, federal, and university entities investigating landslide hazards.

This proposed work will primarily focus on remote areas of Prince William Sound. We will closely coordinate with communities to provide updates on progress, results, and findings. We propose:

- Baseline data collection and mapping (State CIP request: \$700,000 UGF)  
Collection of critical baseline data needed to evaluate and plan for landslide hazards, including, among others, high-resolution lidar elevation models and aerial photography; geologic field data on the distribution, thickness, and geotechnical properties of soil and rock materials; and surficial-geologic mapping, including existing landslides and landslide prone areas. A portion of these funds will be used as match for the FEMA Building Resilient Infrastructures and Communities (BRIC) funding.
- Mapping and monitoring of Barry Arm unstable slope (Federal Authorization request: \$2,000,000 FED)  
Develop a cooperative agreement with the U.S. Geological Survey (USGS) in the amount of \$2,000,000 for hazard assessment and collaborative monitoring of the potentially tsunami-generating unstable slope at Barry Arm, and other identified areas in South Central Alaska. This effort would include detailed geologic mapping of areas of interest, repeat airborne and satellite remote sensing to monitor and map slope movement, repeat unstable slope feature mapping and characterization, instrumentation deployment to monitor slope movement and weather, and coordination with other agencies for the development of a landslide-generated tsunami warning systems.
- Lidar collection (Federal Authorization request: \$500,000 FED)

In collaboration with communities, seek funding from the FEMA BRIC program in the amount of \$500,000 to collect lidar over at-risk areas without existing lidar data. Lidar data is foundational information for construction and community development as well as geologic hazards.

- Community engagement (\$50,000 UGF)  
 Community engagement to assess community interest and concerns for starting this work beyond the confines of the federally funded work in Prince William Sound.

This work promotes public safety. All maps and data will be available from the DGGGS website, and results will be communicated and transmitted directly to communities and local governments. DGGGS recognizes the concerns of issuing derivative landslide maps in communities and will not conduct mapping within community boundaries without prior consent from the community.

**Personal Service Detail**

New Full-time Geologist I, range 15

**Line Item Breakdown**

<b>Line Item</b>	<b>Amount</b>	<b>Items</b>
1000 Personal Services	\$1,210,000	Scientific and support staff
2000 Travel	\$175,000	Fieldwork, working group meetings
3000 Services	\$1,165,000	Ground control surveys, aircraft charters
4000 Commodities	\$700,000	Weather stations, monitoring equipment
<b>Total Request</b>	<b>\$3,250,000</b>	