

**Yukon River Crossing Fault Characterization**

**FY2015 Request: \$630,000**

**Reference No: 58256**

**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:** Jean Davis

**Estimated Project Dates:** 07/01/2014 - 06/30/2019

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

**Brief Summary and Statement of Need:**

The Yukon River crossing is a critical point on the only land link along the Trans-Alaska Pipeline, Dalton Highway, proposed natural gas pipeline corridors, and to the oil and gas resources of Northern Alaska. Geologic conditions here are poorly understood and locally unstable. With 90 percent of state revenue crossing the bridge daily, state revenue, Alaska's economy, human safety, and the environment are at risk. This project will fund needed geological mapping and hazards assessment to understand threats to existing infrastructure and aid engineering of new projects.

<b>Funding:</b>	<u>FY2015</u>	<u>FY2016</u>	<u>FY2017</u>	<u>FY2018</u>	<u>FY2019</u>	<u>FY2020</u>	<u>Total</u>
Gen Fund	\$630,000						\$630,000
<b>Total:</b>	\$630,000	\$0	\$0	\$0	\$0	\$0	\$630,000

<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"/> On-Going
0% = 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
<b>Totals:</b>	<b>0</b>	<b>0</b>

**Prior Funding History / Additional Information:**

No Prior Funding History

**Project Description/Justification:**

**What is the issue or problem to be solved?**

Geologic conditions in the area of the Yukon River crossing are poorly understood and locally unstable, as demonstrated by the 2012 landslide near the South Bridge abutment. The area contains extensions of the Tintina and Kaltag faults, two recently active faults similar in scale to the Denali fault responsible for the 2002 magnitude 7.9 earthquake. These fault locations are not well mapped and their potential hazard to infrastructure is unknown.

**What is the scope of the project to be performed?**

This project will fund needed geological mapping and hazards assessment to understand threats to existing infrastructure and aid engineering of new projects.

**What results will be achieved or products produced?**

This project provides needed regional geological mapping, fault characterization, and related geologic hazards assessment to understand potential hazards to existing infrastructure and aid engineering of new projects. A desktop study, Geographic Information System (GIS) compilation of existing data,

and field reconnaissance will be completed in the first year, followed by two years of helicopter-supported field work and a final year to synthesize and publish results. Planned products include paper and digital geologic maps, accompanied by reports, and databases presenting project findings regarding regional geology, recent faulting, and geologic hazards.

**How does this project contribute to the division and/or department mission?**

The project directly addresses the Division of Geological and Geophysical Surveys' (DGGs) statutory mission (AS 41.08.020) to determine "...the potential geologic hazards to buildings, roads, bridges, and other installations and structures."

**Why is this project needed now – What is the impact of remaining status quo?**

Without this project, the state will be vulnerable to significant economic, human safety and environmental impacts resulting from damage to, or destruction of, the existing Trans-Alaska Pipeline and the Dalton Highway at the Yukon crossing from earthquakes, tectonic ground motion, or slope failure. Additionally, the State of Alaska and industry will have inadequate geologic data to properly route and design gas pipelines through this region.

**Specific Spending Detail:**

<u>LINE ITEM</u>	<u>DOLLAR AMOUNT</u>	<u>DESCRIPTION</u>
Personal Services	\$ 404,500	Salary & benefits of project personnel
Travel	\$134,000	Helicopter, fuel, lodging, meals for field work
Services	\$83,000	Consultants, lab analyses, field safety training
Commodities	\$8,500	Air photos, satellite images, field & office supplies
<b>Project Total</b>	<b>\$630,000</b>	

**Personal Services Detail:**

Number of new position(s)  Type of Position(s): PFT  LTNP  STNP

Number of existing position(s):  Type of Position(s): PFT  NP  NP

Existing positions (to be partially funded): (10-2226) Geologist IV, (10-2060) Geologist V, (10-2064) Geologist IV, (10-2016) Geologist IV, (10-2133) Geologist IV, (10-2238) NRT III, (10-2062) GIS Analyst III  
 All positions are in Fairbanks