

**North Slope Tundra Travel Model - U.S. Dept. of Energy Grant**

**FY2004 Request: \$250,000**  
**Reference No: 38391**

**AP/AL:** Appropriation

**Project Type:** Planning

**Category:** Development

**Location:** North Slope Borough

**Contact:** Bob Loeffler

**House District:** Arctic (HD 40)

**Contact Phone:** (907)269-8625

**Estimated Project Dates:** 07/01/2003 - 06/30/2005

**Brief Summary and Statement of Need:**

DNR is engaged in a collaborative research project with the U.S. Department of Energy for the purpose of research to generate a probability prediction model based upon the resistance of tundra to disturbance associated with wintertime cross-country travel. This study is essential to the long-term goal of increasing the length of the winter work season for seismic exploration, ice road construction, and other development and production activities requiring cross tundra travel while ensuring environmental protection of the tundra surface.

<b>Funding:</b>	<u>FY2004</u>	<u>FY2005</u>	<u>FY2006</u>	<u>FY2007</u>	<u>FY2008</u>	<u>FY2009</u>	<u>Total</u>
Fed Rcpts	\$250,000						\$250,000
<b>Total:</b>	<b>\$250,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$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"/> 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
<u>One-Time Startup:</u>	<u>0</u>	<u>0</u>
<b>Totals:</b>	<b>0</b>	<b>0</b>

**Additional Information / Prior Funding History:**

This is a new project request.

**Project Description/Justification:**

Increased oil exploration, development, and production are a priority to enhance the nation's energy security and Alaska's fiscal stability. During the past three decades, however, the number of days during the winter work season has declined markedly along a pronounced downward trend. The number of days between the opening and closing of the tundra for exploration activity has declined from over two hundred days in 1970, to only one hundred-three days in 2002 as a result of progressively later opening dates. This trend appears consistent with findings of general warming in the Alaska arctic associated with global climate change. It is unlikely that the oil industry can implement successful exploration and development plans with a winter work season consistently less than 120 days. Therefore, it is imperative that the Alaska Department of Natural Resources (DNR) develop a new set of criteria that will simultaneously increase the number of days available to companies to conduct exploration and ice road construction in winter while providing equal or greater environmental protection of the tundra.

To protect arctic tundra from significant disturbances, most oil and gas exploration and development activity in northern Alaska is limited to the winter season. In winter it is assumed that frozen ground and snow cover will protect vegetation from crushing and tearing as well as prevent the compaction and rutting of soils. The Alaska Department of Natural Resources-Land Section in the Northern Region Office (DNR) is responsible for determining when the tundra is ready for cross-country vehicle travel related to these exploration and development activities. In order to provide a balance between protection for tundra resources and promotion of a robust oil and gas industry, a minimum DNR standard requiring both 12 inches of frozen ground and 6 inches of snow cover was established in 1970. This is an ad hoc

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standard, adopted without the benefit of prior systematic investigation. Anecdotal, it appears the standard has provided a high degree of tundra protection during oil exploration over the past thirty years, although occasional tundra disturbance has been documented.

An ecological model designed to take into account the interactive affect among snow depth, snow density, ground hardness, vegetation community and soil type, to predict tundra resistance to disturbance, is now sought to replace the current tundra travel standard. The proposed model is designed to provide a refined understanding of tundra resistance to disturbance, so that enhanced environmental protection can take place concurrently with increased exploration and development activity.

Funds for this study are derived from a grant agreement with the U.S. Department of Energy. The study is a collaborative effort with DNR, U.S. DOE and cooperating energy companies. DNR expects to receive \$250,000 from U.S. DOE in FY04, to be spent in FY04 and FY05. The specific line item expenditure plan has not been finalized, but an estimate for the full amount of the grant is below.

Expenditure Detail:

Personal Services \$70,000

Travel Transportation \$35,000

Contractual (Computer Modeling Software and Hardware ) \$20,000

Contractual (Rental of Heavy Equipment - Tucker, D-9, Vibrator, Loader) \$100,000

Equipment (Purchase of Field Equipment) \$25,000