2012 Legislature TPS Report 58901v1

Agency: Commerce, Community and Economic Development

Grants to Named Recipients (AS 37.05.316)

Grant Recipient: National Academy of Sciences **Federal Tax ID:** 53-0196932

Project Title: **Project Type:** Planning and Research

National Academy of Sciences - Arctic Oil Spill Response and Environmental Assessment Study

State Funding Requested: $10,000 **House District:** Statewide (1-40)
One-Time Need

Brief Project Description:

This small budget item will give the State of Alaska a voice in National Academy of Science's National Research Council review of the current state of science regarding oil spill response and environmental assessment in the Arctic.

Funding Plan:

Total Project Cost:	$10,000
Funding Already Secured:	($0)
FY2013 State Funding Request:	($10,000)
Project Deficit:	$0

Funding Details:

Total project cost estimate: $650K, with only $10K required of Alaska.

Contributions recieved from:
API ($100K);
BOEM ($100K);
MMC ($50K);
USARC ($50K).

Funds have been promised by:
USCG ($100K);
OSRI ($50K);
NOAA ($100K).

Recieved and promised funds total $550K. The Academy is looking to the State of Alaska, USDOT's Maritime Administration, the US Navy, and the Canadian goverment for the $100K balance required.

See next section for abbreviation expansion.

Detailed Project Description and Justification:

See attached Statement of Task and Work Plan for project details.

Contact Name: Rob Earl
Contact Number: 465-5141

For use by Co-chair Staff Only:

$10,000 Approved

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-----Expanded funding detail here (funding field required shorter entry)----------

Total project cost estimate: $650K, with only $10K required of Alaska.

Contributions recieved from:
American Petroleum Institute ($100K);
Bureau of Ocean Energy Management ($100K);
Marine Mammal Center ($50K);
United States Arctic Research Commission ($50K).

Funds have been promised by:
US Coast Guard ($100K);
Oil Spill Recovery Institute ($50K);
NOAA ($100K).

Recieved and promised funds total $550K. The Academy is looking to the State of Alaska, USDOT's Maritime Administration, the US Navy, and the Canadian goverment for the $100K balance required.

Project Timeline:

Planners expect the study to Expenditures will begin once the Academy has a full funding plan in place.

Entity Responsible for the Ongoing Operation and Maintenance of this Project:

National Academy of Sciences / National Research Council

Grant Recipient Contact Information:

Name:	Susan Roberts, Ph.D.
Title:	Director, Ocean Studies Board
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Has this project been through a public review process at the local level and is it a community priority? ☐ Yes ☒ No

For use by Co-chair Staff Only:

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Contact Name: Rob Earl
Contact Number: 465-5141

THE NATIONAL ACADEMIES
Advisers to the Nation on Science, Engineering, and Medicine

Responding to Oil Spills in Arctic Environments

Ocean Studies Board
Polar Research Board
Marine Board

National Research Council

Statement of Task:

The National Research Council will assess the current state of the science regarding oil spill response and environmental assessment in the Arctic region (with a specific focus on the regions north of the Bering Strait), with emphasis on potential impacts in U.S. waters. As part of its report, the NRC-appointed committee will further develop existing decision tools and approaches that utilize a variety of spill response technologies under the types of conditions and spill scenarios encountered at high latitudes. The report will also review new and ongoing research activities (in both the public and private sectors), identify opportunities and constraints for advancing oil spill research, describe promising new concepts and technologies for improving the response, including containment approaches to reduce spill volume and/or spatial extent, and recommend strategies to advance research and address information gaps. The committee will also assess the types of baselines needed in the near-term for monitoring the impacts of an oil spill and for developing plans for recovery and restoration following an oil spill in U.S or international waters where a spill could potentially impact US natural resources. For assessing the state of the science, the committee will address the following topics:

(1) Scenarios. Identify potential "hot spots" in U.S. or adjacent waters through mapping of activities that could generate an oil spill (marine transportation routes, cruise ships, fishing, pipeline locations, fuel storage facilities, oil and gas exploration and production) and preventative steps that could be taken to avoid a spill. The scenarios would include descriptions of oil type (including biofuels and diesel fuel) and possible volume and trajectories of spills, season, and geographic location, including proximity to local communities and highly valued fish, bird, and marine mammal habitats.

(2) Preparedness. Describe the anticipated operating conditions, such as ice conditions, currents, prevailing winds, weather, amount of daylight, sea state, and distance/accessibility from responders and resources. This will include an evaluation of the state of hydrographic and charting data for higher risk areas.

- Assess infrastructure (including communication networks), manpower, and training necessary to operate in these conditions.

- Identify avenues for participation of and communication with indigenous communities and regional governmental (e.g. Alaska State) entities during planning and response.

- Build on existing agreements and identify gaps for international cooperation in establishing locations for incident command management, staffing, and supplying oil spill response infrastructure, recognizing the international interests in navigation and resource exploitation in Arctic environments.

(3) Response and Clean Up. Evaluate the effectiveness and drawbacks of current methodologies used in response to a spill in Arctic conditions.

- Assess utility of existing and promising new technologies to detect, map, track and project trajectories of spills under the anticipated operating conditions (e.g., ice conditions, visibility). Evaluate the effectiveness of oil dispersal, removal and recovery technologies under the following criteria:
  - Operation under various conditions and time frames (volatile fractions, wind, sea state, temperature, degree of emulsion, oil type and viscosity);
  - Spatial and temporal dimensions of the spill and the response.
  - Transportation of equipment to remote areas;
  - Natural oil degradation rates; and
  - Ancillary effects of response operations on the indigenous communities, environment, and marine species;

- Assess the potential for separating and recovering spilled oil from water, ice, rocks, and sediment. This assessment will include discussion of constraints in the handling, storing, and disposing of recovered oil in situ or in remote locations, the volume of material to be treated, selection of methodologies for incineration or recycling onboard ship or in a remote location, and the further disposal or transport of the recovered product. The assessment will also include discussion of fate and effects of unrecovered oil left to biodegrade and weather in Arctic environments.

(4) Strategies for Establishing Environmental Baselines for Spill Response Decisions. Characterize the types of baseline information needed in the event of an oil spill. Evaluate existing pre-spill strategies for resource protection and identify additional protection measures for resources at risk. Identify sampling and monitoring priorities for establishing baseline conditions and evaluating impacts of a potential spill.

Work Plan

A committee of approximately 12 members will be appointed by the NRC to conduct the evaluation. Committee members may be drawn from universities, federal

government laboratories, the private sector, and nongovernmental organizations for their expertise in oil spill response and mitigation. This may include expertise in oil spill response and recovery technologies, physical oceanography (currents, sea ice conditions, and trajectory models), ice conditions, Arctic ecology and natural resources, marine engineering, maritime transportation, and maritime safety and risk assessment.

The committee will meet 5 times, at locations to be determined, but including an initial meeting at NRC facilities in Washington, DC which will include discussions with the sponsoring agency(s). One meeting will be held in Barrow, Alaska to facilitate participation of native communities most likely to be affected by a spill and response effort. The meetings will be organized for information gathering, deliberations, and report preparation. Each of the first 3 meetings will include an open session with invited speakers. The report will be based on results published in the literature and on materials provided by invited national and international experts. It is anticipated that the study will take 24 months to complete, including report preparation and outside peer review overseen by the NRC.