The project “Oil Spill Preparedness in Small Communities” was approved by the Emergency Prevention, Preparedness and Response (EPPR) Working Group of the Arctic Council in June 2015. The project co-leads Norway, U.S., Canada and Aleut International Association developed a community self-assessment tool that will help EPPR better understand community preparedness and risk exposure.

Community leaders and local emergency response officials were asked to complete the questionnaire. Based on the self-assessment, community preparedness dashboards are displayed via a web-based, interactive map. Also available on the publicly-accessible website is a resource guide with state-specific tools and support. The outcomes from the project are:

- Greater awareness of risk and preparedness at a local level, and access to best practices
- The ability for national governments to address misperception or lack of awareness
- The identification of gaps in preparedness relative to risk

The survey is distributed:

- 350 communities ranging from 150 to 15,000 people and/or significantly distant (120 miles) from response centers
- Local government and/or emergency response officials
- Across all eight Arctic States, within the geographic boundaries as defined by each
- Facilitated by Permanent Participants as appropriate or possible, as well as all States
- 88 question survey to assess planning, training, impact, risk, equipment

Survey attributes

- Questions relate to prevention, preparedness and response
- Independent of national response systems and assets, though capturing their intersection with communities – access, training, awareness
- Independent of private or nongovernmental response systems and assets, though capturing their intersection with communities – access, training awareness
- Focus on community-owned or operated assets, as well as planning, training and systems of response
- Include community-based industry assets, as features of the community (local fuel distribution or marine service companies)
- Capture community perspectives and understandings of risk (scale and potential of large, medium and small scale incidents) and impact (distance to and prioritization of culturally or environmentally sensitive areas)
- The survey asks questions that are directly relevant to communities and within a community’s area of responsibility or jurisdiction.
- The results capture the community’s sense of preparedness, which can be measured against the same assessment by national response organizations and agencies
Survey Framework

Risk Awareness
- Potential for and scale of significant spill (destinational or trans-Arctic shipping; offshore or onshore development)
- Potential for and scale of medium size spill (local fuel distribution, including barge operations and bulk tank farms)
- Potential for and scale of small spill (local private sector, government or independent fuel tanks)

Preparedness
- Community planning efforts
- Awareness of and participation in regional or national plan
- Access to National or sub-national Government Resources and assets
- Funding mechanism
- Community-driven training
- Local emergency responders and systems

Impact
- Prioritization of impact—people, environment, assets, reputation
- Distance to and importance of culturally sensitive areas
- Distance to and importance of environmentally sensitive areas
- Distance to and importance of economic assets

Deliverable http://ppr.arcticinfrastructure.org

The deliverables for this project include the data visualization tool, or map; the database of survey responses; and the resource guide to share with small communities.

Database

The database, which includes all the data from the self-assessment tool, will provide:
- Web-based data management where users can view information for each community response, including the location on a map, pictures, graphs, charts.
- Ability to export or transfer the data to Access or to another database
- Ability to query data: how many, minimum, maximum, average, etc.
- Ability to perform spatial analysis of the data, or with other datasets hosted by Arctic Portal (AMATII, AREA, etc)
- Embedded response matrix to the database. When information is updated online or with a new Excel import, the index of preparedness is updated on-the-fly to the map or to any material that is distributed (shapefile, csv, excel)
- Ability to map the database to any other data model and enable to comply with international standards.
Arctic Oil Spill Response and Recovery Library

Sample list from more extensive library found online at ppr.arcticinfrastructure.org.

Multilateral:
- EPPR Completed Work documents.
- Environmental Response Management Application (ERMA), NOAA.

USA:

Canada:

Norway:
- Protection against acute pollution. Kystverket.
- Operasjonsmanual for fartøy i kystnær oljeverneredskap. Kystverket.
- Veileder for utarbeidelse av tiltakskort ved akutt forurensning i miljøsårbar område. Kystverket.
- Joint industry program on oil spill contingency for Arctic and ice-covered waters. 2010. Sørstrøm, S.E. et al. Sintef, Norway.
- Health, Safety and Environment handbook (Kystverket and NOFO – 2008 and later updated).
- “Beach Cleaning after acute oil pollution” (Kystverket – 2012).

Finland:
- Öljyntorjuntaopas. 2013. WWF Finland.
- Öljyntyneiden eläinten hoito -opas. 2013. WWF Finland.
- Öljynnettомуiden jälkeen - WWF:n opas öljyynnteiden rantojen puhdistukseen. WWF Finland.

Russia:

Greenland/ Denmark:
- Greenland Oil Spill Response company.
- Government of Greenland’s manual for handling and prevention of oil spill.
- Government of Greenland’s Oil Spill Contingency Plan.
- Joint Arctic Command Oil Spill Contingency Plan.
- Greenland Oil Spill Response (GOSR), provides resources to its members to prepare for and respond to oil spills offshore Greenland. www.gosr.gl.
- Review on Burn Residues from in Situ Burning of Oil Spills in Relation to Arctic Waters. 2015. Fritt-Rasmussen, J; Wegeberg, S; Gustavson, K. Water, Air and Soil Pollution, 226, 10.
- Effects of oil and oil burn residues on seabird feathers. 2016. Fritt-Rasmussen, J; Linnebjerg, J; Sørensen, M; Brogaard, N; Rigét, F; Kristensen, P; Joona, G; Boertmann, D; Wegeberg, S; Gustavson, K. Marine Pollution Bulletin, 109, 1.

Iceland:
- Spill Notification Point and Country Contacts, Iceland. The International Tankers Owners Pollution Federation Limited (ITOPF).
- Guidelines for Transfer of Refined Oil and Oil Products in Arctic Waters. 2014. Arctic Council - Protection of Arctic Marine Environment (PAME).

Sweden:
Analysis of Data

The survey responses have each been given a value. Each category of question (Local Plans, Training and Updates, Risk, Effect, and Resources) were calculated by counting up the values that are populated for that category of questions for example. That value was then divided by the number of questions answered per category.

Based on these values and the associated scoring, a dashboard was developed and populated with the overall value for each category. These are color-coded in the scrollover of the community in the online map.

### Planning, Training and Resources
- **Green** = High Score
- **Yellow** = Moderate Score
- **Red** = Low Score

The categories were divided into “Risk” and ‘Preparedness” groups, which are fairly equal in numbers.

- Preparedness group = Plans, Training, Resources account for 43 questions
- Risk group = Risk and Effects account for 46 questions.

An overall score for each community is determined by dividing preparedness by risk, it gives a score for “Preparedness Index.” Overall, roughly 25% of small communities are prepared relative to risk; 50% of small communities are moderately prepared relative to risk; and 25% are less than adequately prepared relative to risk.

### Review of Analytics Based on Community Responses to Preparedness Survey

**Population**
- 16 communities under 500
- 27 between 500 and 10,000

**Responses**
- 4/60 – Canada
- 3/94 – Greenland
- 3/18 – Finland
- 4/15 – Norway
- 34/100 – United States

**Preparedness - overall**

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<th>Training</th>
<th>Risk</th>
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**Risks and Impact**
- **Red** = High Score
- **Yellow** = Moderate Score
- **Green** = Low Score

**Preparedness Index**

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**Planning**
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**Training**
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**Risk**
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**Impact**
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**Resources**
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