

**Arctic Regional Hydrographic Commission (ARHC)
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Gap Analysis For Hydrography In Canadian Arctic

Submitted by: Canada

Executive Summary: The balance between capacity and demand is an ever-increasing challenge for hydrographic offices of which the Canadian Hydrographic Service (CHS) is no exception. In this regard, the balance between changing conditions on the ground and the adequacy of existing hydrographic data and products becomes complex. The mechanisms for assessing priorities and the necessity to keep these priorities relevant to the day and to share these understanding amongst a diverse collection of decision-makers and technical operations levels requires the use of data assembly, visualization and monitoring tools.

Related Documents: none

Related Projects:

Introduction / Background

Identification and prioritization of hydrographic requirements in Canada's Arctic can be advanced with the use of spatial visualization tools. Canada has applied a GIS and interactive web map application to guide decision-makers with access to complex data in an integrated fashion.

Analysis/Discussion

The marine transportation industry world-wide is changing in response to global economic drivers, marine engineering and navigational technologies. Canada is not immune to this as expansion of global trading and the interest in responsible resource development continues to garner interest in the Arctic. Canada has launched studies to understand the status of the national marine transportation system with the specific focus on establishing a world-class oil spill preparedness and response regime. Both South and North of the 60⁰ north latitude are being studied. Transport Canada is the lead department and has additionally, commissioned a non-governmental Expert Panel to provide its objective recommendations. The reports of this Expert Panel will be publicly available and form points of discussion for dialogue with all stakeholders in the analysis and decision process.

<http://www.tc.gc.ca/eng/tankersafetyexpertpanel/menu.htm>

As attention turns to North of 60⁰ the Canadian Coast Guard has been asked to lead, in conjunction with the Canadian Hydrographic Service (CHS) and Transport Canada, an

assessment the marine transportation system in Arctic waters with a view to using existing and predicted traffic patterns to guide the definition of gaps and service improvements.

CHS has been active in the development of a Geographic Information System (GIS) based tool to layer various sources of information and data to aid analysis. Particular focus was given to analysis of the traffic including frequency and type, status of bathymetry and finally physical environmental factors including shallow water zones, ecosystem zones.

This project remains in a development stages with outcomes to be determined. However, as an internal tool for guiding insights into hydrographic operational priorities it has strong potential to be a useful tool for the CHS to create a systematic and knowledge-based approach to assessing priorities for hydrography in Canada's Arctic.

Conclusions

The CHS considers there is great potential in the use of GIS technology interfaced with interactive web mapping technology to bring complex layers of data onto the desk-tops of decision makers. This work creates a shared forum for the understanding of the gaps and progress made to achieve the best outcomes for Arctic hydrography and charting.

Recommendations

That ARHC note the Information Paper.

Justification and Impacts

The work to analyze, report and improve Arctic hydrography has clear alignment with the objectives of the Arctic Regional Hydrographic Commission. Canada is sharing its approaches with ARHC participants to share its experiences and to gain feedback and alignment with similar projects by ARHC Members.

Action Required of ARHC

The ARHC is invited to note the Information Paper