11th MEETING OF THE IHO INTER-REGIONAL COORDINATING COMMITTEE
IHO-IRCC11
Genoa, Italy, 3-5 June 2019

UNITED STATES OF AMERICA - CANADA HYDROGRAPHIC COMMISSION

USCHC report to IRCC11

1. Chair

Chair: Dr. Geneviève Béchard, (Canada) from March 18, 2019 to present.
RDML Shepard Smith (USA) from March 26, 2018 to March 18, 2019.

Vice-Chair:
RDML Shepard Smith (USA) March 18, 2019 to present.
Dr. Geneviève Béchard, (Canada) March 26, 2018 to March 18, 2019.

2. Membership

Members:
USA (represented by the National Oceanic and Atmospheric Administration (NOAA); National Geospatial Intelligence Agency (NGA); US Navy (USN))
CANADA (represented by the Canadian Hydrographic Service (CHS) and the Royal Canadian Navy (RCN)).

Associate member(s): NONE

Observers: INTERNATIONAL HYDROGRAPHIC ORGANIZATION; UNITED KINGDOM HYDROGRAPHIC OFFICE.

3. Meetings:

Following USCHC meetings have taken place since IRCC10:

1st USCHC Hydrographic Geospatial Products and Service Committee (HGPSC) Teleconference Meeting – February 21, 2019.
42nd USCHC Meeting – Biloxi, MS, March 18th, 2019, in conjunction with The Hydrographic Society of America (THSOA) Hydrographic Conference (US Hydro 2019). *See Appendix A USCHC42 Photo*
The USCHC42 documents, including the full list of participants can be found at:
http://iho.int/mtg_docs/rhc/USCHC/USCHC42/USCHC42_Docs.htm

The next USCHC meeting will take place February, 24, 2020 in Québec City, Canada, and will be held in conjunction with the 2020 Canadian Hydrographic Conference (http://www.chc2020.org/).

4. Current [RHC] Working Groups:

a) Hydrographic Geospatial Products and Service Committee (HGPS).
-This was the first meeting of this group which was re-formed from the Chart Advisory Committee (CAC).

5. Status of IRCC actions (relevant for the USCHC, CA, or USA):

See Appendix B

6. Agenda Items (selected):

Introductions

- RDML Shep Smith, Director of the NOAA Office of Coast Survey (OCS) chaired the meeting and he welcomed the other 25 participants from the Canadian Hydrographic Service (CHS), the Royal Canadian Navy (RCN), National Geospatial Intelligence Agency (NGA), NOAA, US Navy, the United Kingdom Hydrographic Office, and the International Hydrographic Organization (IHO).
- The IHO was represented by the Secretary-General Mathias Jonas. Each of the heads of delegation made introductory remarks. SG Jonas offered the following quote in his comments: "Alone you can go fast; together you can go far" (African proverb, variously quoted). He also thanked both US and CA for their continued participation and leadership at the IHO.

Organizational and Personnel Update

- Retirement of Stanley Harvey as Deputy Hydrographer of the US Navy.
- Succession of Matthew Borbash as Deputy Hydrographer of the US Navy

Highlights from National Reports

- CA is continuing to deliver on Ocean Protection Plan (OPP), entering year 3 of 5.
- CA is working on refining a Paper Chart 2.0 solution to produce paper charts from ENCs automatically, with no manual intervention.
- CA is concentrating on digitizing key holdings and releasing more data to the public domain.
- CA has launched a major effort to find the best way of re-scheming of ENCs to a national grid.
- USA reiterated its approach to use the best available data, regardless of source.
- USA is building some ENC-only products (National Charting Plan 2017, p. 25).
- USA is moving to a gridded scheme for ENCs.
- USA is continueing to develop and implement services for precision navigation including surface currents (S-111) from hydro-dynamic modeling and gridded high-density bathymetry (S-102).
- It is apparent that the US and CA are moving in the same direction in many areas and there are excellent opportunities for cooperation and collaboration. This will be particularly crucial with the re-scheming of ENCs and the delivery of services in trans-boundary waters. The goal of the USCHC is to ensure the provision of these products and services to users is as seamless and streamlined as possible.

Hydrographic Geospatial Products and Service Committee (HGPSC) –formerly the Chart Advisory Committee (CAC).

- Under its new Terms of Reference, this group met formally for the first time by teleconference in February.
- Subjects of foremost importance for collaboration and cooperation are: the new ENC schemes and grids an how they are resolved in the trans-boundary areas; and, Paper Chart 2.0. Face-to-face workshops and other collaborative events are being planned for both these topics.
- 3 paper charts generated automatically from ENCs of varying complexity were displayed. There were no negative comments about the output. It was explained that CHS still has some work to do with ESRI to deal with some minor issues. CA and the UK have submitted a paper to

HSSC11 requesting that the IHO move to standardize a paper chart specification that is generated exclusively from an ENC. This is related to the ongoing work of the IHO Nautical Cartography Working Group regarding the future of the paper chart.

S-100 Services

- Both MS gave presentations on their developments vis-à-vis S-100 services. US (NOAA) is looking at standing up a S-111 surface currents service in 2020 that will provide forecasts every 6 hours. S-412 weather and wave information may also be included in the service. CHS gave on overview of its bathymetric data in the cloud project. This project with TeledyneCARIS, PRIMAR, EEC, and the Norwegian Hydrographic Service (NHS) is working through the challenges of operationalizing the delivery of S-102 gridded bathymetry data via the cloud and a RENC. Data set size and the rate of refresh are issues for both agencies are facing.
- RDML Smith tabled his ideas regarding extending the WEND principles to the services (WENS). This is significant as it covers such things as avoiding the duplication of services and utilizing modern delivery mechanisms like those used by RENCs, while recognizing customers may demand multiple service provision options. USCHC will continue to be involved in the development of this concept.

Technology briefs

- Agencies from both nations gave presentations on research and development in the area of autonomous survey platforms. In general, there is great promise in this technology as a force multiplier and especially in extremely shallow waters and/or areas where there could be significant risk to more traditional platforms. Advancements are being made in some technical areas such as operating distance from the base station. The legal framework for autonomous vessels in both countries is still developing which impact both testing and deployment.

Capacity building and cooperation

- CHS is planning to send 3 staff to NOAA to work on their survey ships. Other opportunities for inter-agency exchanges were discussed (e.g. between CHS and NGA). CHS is also hosting a KHOA employee for two years to work on S-100 related implementation issues.

Data contributions

- The US reported on its gap analysis for Seabed 2030. The method was to use a 100m X 100m grid over all US and US territorial waters and evaluate the presence or absence of at least one sounding in the cell. If there is one sounding in the cell, it is considered ‘mapped’. With this analysis it has been calculated that just over 42% of US waters are mapped. Further refinements to this method are possible, but in general, this is the approach that the US will use for its evaluation vis-à-vis the Seabed 2030 goals. It was noted that for overall consistency, there should be appropriate directives to ensure that the RDACS are using similar processes and metrics.
- CHS announced that its 100m resolution bathymetric data set for non-navigation (NONNA-100) is now available through the IHO DCDB and there are plans to release a NONNA-10 dataset in the future. Now available to the public through DCDB, this data is now also available to GEBCO and by extension to the Seabed 2030 project.

IHO Related

- US introduced the Japanese proposed draft amendments to Resolution 1/2005 IHO Response to Disasters. JP and AU are proposing lowering the prescriptions in the resolution to make it much more flexible. USCHC has a mechanism within the MOU (known as 'Schedule A') which can be utilized rapidly to deploy resources across international boundaries for research and response purposes. CHS is supportive of the amendments and is in the process of getting feedback from other CA agencies involved with emergency response.
- USCHC endorsed the revised IHO Resolution 2/1997 on Regional Hydrographic Commissions (RHCs).

General

- A brief history of the USCHC, prepared by the US, was presented and approved by the USCHC. This background document will be added to the USCHC IHO Web page. *See Appendix C*.

7. USCHC cooperation with stakeholders (organizations, industry, etc.):

- NOAA held its second Open House on Nautical Cartography 27 July 2018. There were a wide variety of presentations from several different organizations on subjects including automated chart production, products and services supporting precision navigation, and initiatives moving forward. Captain Navy Marc CJ van der Donck Director NLHO / Hydrographer RNLN delivered the keynote address.
- CHS participated in the Mariners' Workshop sponsored by the Shipping Federation of Canada held in Vancouver CA 23-24 January 2019. The group was briefed on CHS's service approach to dynamic products, as well, other developments and initiatives at CHS. The concept of Paper Chart 2.0 was presented and discussed. The general response was positive, especially if this approach facilitates access to new information in a more timely manner.
- US and CA were both present at the Crowd-Sourced Bathymetry Working Group (CSBWG) meeting held in Québec in February and participated in the related industry/stakeholders workshop. The workshop was significant because it allowed the stakeholders to understand what the IHO was planning for crowd-sourced bathymetry, but also it allowed the IHO to better understand the concerns and the offerings from the other side. As an example, many potential contributors will participate for altruistic reasons but some degree of recognition is always appreciated, if not expected; and, for others, access to others' data was seen as a quid pro quo.

8. Conclusions:

- USCHC continues to provide a positive structure for collaboration and the exchange of expertise and information. The work of the HGPSC and the exchange of personnel are examples of this collaboration.
- The MS share a common view of many transformative initiatives such as 'paper chart 2.0' and the re-scheming of ENCs.
- This view also includes the goals of greater data access and the provision of products and services in a manner that is seamless from the perspective of the end users.

10. Actions required of IRCC:

The IRCC is invited to:

a. Note that USCHC endorsed the revised IHO Resolution 2/1997 on Regional

Hydrographic Commissions (RHCs).

b. note this report

Dr. Geneviève Béchard

USCHC Chair

Appendix A. USCHC42 Group Photo

Appendix B. Status of IRRC actions for USCHC, USA, or CA (**highlighted**)

N.	Action (Agenda item)	Responsible	Deadline	Status
1	to submit the endorsed amendments to the IRCC ToR and RoP (Annex A) to the Council (4)	Chair	C-2	DONE
2	to submit the IHO Resolution 2/1997 as amended (original with small amendments, Annex B) to the Council (6.2)	Chair	C-2	DONE
3	to submit draft IHO Resolution 2/1997 as amended (Annex C) to the RHC Members for comments and report back to IRCC (6.2)	RHC Chairs	October 2018	DONE
4	to compile the inputs from RHC Chairs to the draft IHO Resolution 2/1997 as amended and distribute to IRCC Members (6.2)	Chair and IHO Secretariat	November 2018	Pending Action IRCC10/3
5	to provide comments to the revised draft IHO Resolution 2/1997 as amended (6.2)	IRCC Members	January 2019	DONE
6	to submit the updated revised draft IHO Resolution 2/1997 as amended to the next IRCC meeting (6.2)	IHO Secretariat	IRCC11	
7	to investigate the possibility to translate the MSI training material developed with resources from the CB Fund from French to Spanish and report back to IRCC (7b)	Spain	IRCC11	
8	to report the status of MSI in coastal States to the next IRCC meeting (7b)	WWNWS-SC Chair	IRCC11	
9	to submit the revised CBSC ToR and RoP (doc. CBSC16-01D as amended by Decision 8) as amended by the meeting to the Council (7c)	Chair	C-2	DONE
10	to develop basic MSDI training material in order to allow RHCs to deliver trainings with their own personnel (7c)	MSDIWG	IRCC11	
11	to install a permanent CB Coordinator and to ensure the participation in the CBSC meetings and to report back to IRCC (7c)	RSAHC Chair	IRCC11	
12	to report the Decision 11 to the Council (7d)	Chair	C-2	DONE
13	task the IHO Project Team on the implementation of the UN-GGIM Shared Guiding Principles for Geospatial Information Management (PPT) work under its ToR and RoP and to report back to IRCC (7e)	PPT	IRCC11	ONGOING
14	to create a web page to present the work of the IHO Project Team on the implementation of the UN-GGIM Shared Guiding Principles for Geospatial Information Management (PPT) (7e)	Secretariat	July 2018	DONE
15	to submit the CSB Guidance Document to the Council for endorsement and subsequent approval by Member States (7g)	Chair	C-2	DONE
16	to share lessons learned with Rose Points engagement (7g)	USA	IRCC11	ONGOING
17	to amend IHO Publications S-5A Ed 1.0.1 and S-8A Ed 1.0.0 in accordance with Annex C of	Secretariat	July 2018	DONE

N.	Action (Agenda item)	Responsible	Deadline	Status
	doc. IRCC10-07H and publish in the IHO website (7h)			
18	to submit the draft revised IHO Resolution 6/2009 IHR (Annex to doc. IRCC10-11B) to the Council (11)	Chair	C-2	DONE
19	to follow up on Decision WENDWG8/10 to commission the new IHO ENC Catalog and report back to IRCC (14)	Chair and Secretary	IRCC11	

Appendix C. A brief history of the USCHC.

Brief History:

The USCHC was originally established in 1977 with its first full meeting held in April 1978 at the Institute of Ocean Sciences, Patricia Bay, Sidney, B.C. Canada. The first Chairman was G.N. Ewing, Dominion Hydrographer of the Canadian Hydrographic Service. The principal U.S. participant was Rear Admiral A. L. Powell, Director, National Ocean Survey. This Commission was preceded by an already existing coordinating group, specifically the Great Lakes Charting Advisors. This group was established in October 1963 primarily as a result of the successful interagency cooperation of the United States Lake Survey and the Canadian Hydrographic Service's efforts in charting of the boundary waters of the St. Lawrence Seaway. When the Commission was formally founded, an Atlantic Coast Charting Advisors Committee and a Northeast Pacific Charting Advisors Committee was added to address more regional issues in the boundary waters of those areas. Eventually, these groups formed the Charting Advisory Committee. A major achievement of this group thus far was the development and implementation of the Trans-boundary ENC Agreements which resolved all ENC overlap issues between the USA and Canada.