13th Meeting of the WENDWG

Report of the United States – Canada Hydrographic Commission (USCHC)

Agenda Items 05.1Axx and 05.3Aa

WENDWG13, Aalborg, Denmark – 21 – 23 February 2023

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S-57 ENC COORDINATION

- Trans-boundary agreements have been in place for many years
  - Based on a ‘single agency’ charting concept
  - Agreements on a sub-region basis
    - i.e., Pacific coast, Arctic, Great Lakes, and Atlantic
  - Situations monitored by the USCHC Hydrographic Geospatial Products and Services Committee (HGPSC)
- WEND Overlap report noted 9 US-CA overlaps up from 0 in 2020
  - Some overlaps attributed to the move to new ENC gridded schema by both agencies
  - These are being addressed
  - USCHC Transboundary Web App has been deployed to help coordinate and manage

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PROGRESS ON S-100 IMPLEMENTATION AND COORDINATION (1)

- Moving to new ENC gridded schema is a foundational move to prepare for S-100.
  - CA and US have chosen different grid implementations
  - Both agencies rationalized (reduced) the number of standard scales
  - These standard scales will be used for all S-100 in CA
  - The status of the NOAA gridding can be found here
- The S-57 ENC Trans-boundary agreements will have to be reviewed for S-101 and extended for other S-100 products and services.

PROGRESS ON S-100 IMPLEMENTATION AND COORDINATION (2)

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- CA approach

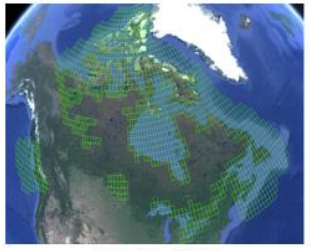
1,000	15,000	60,800	97,280
1,500	18,000	61,528	100,000
200	18,750	70,000	108,836
2,400	20,000	72,000	120,000
2,500	22,000	72,880	145,000
3,000	23,800	72,968	150,000
4,000	24,000	73,010	175,000
4,500	24,440	73,026	200,000
4,800	25,000	74,486	250,000
5,000	30,000	74,490	300,000
6,000	36,494	74,516	350,000
7,200	36,500	75,000	365,100
7,500	37,500	75,185	400,000
8,000	38,318	75,200	500,000
10,000	38,900	75,574	525,000
12,000	39,000	75,730	750,000
12,100	39,023	75,733	1,000,000
12,161	39,416	75,888	1,250,000
12,500	40,000	77,700	3,500,000
12,904	50,000	80,000	
13,700	60,000	90,000	
14,600	60,588	96,000	

Existing ENC scales

1,000	L
2,000	
3,000	
4,000	
8,000	
12,000	
22,000	M
45,000	
90,000	
180,000	S
350,000	
700,000	
1,500,000	
3,500,000	

S-101 scales

- S-101 ENC
- S-102 Bathymetric Surfaces
- S-104 Water Levels
- S-111 Surface currents



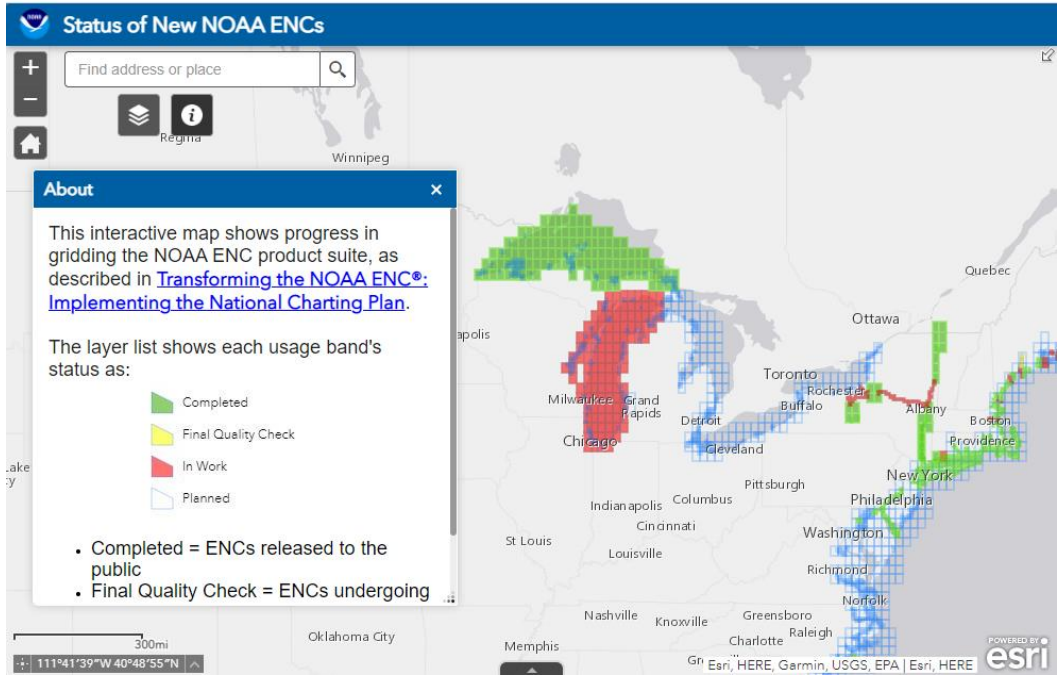
1° x 1° - 100m

0.1° x 0.1°, 10m

0.02° x 0.02° - 2m

- US approach

ENC Usage Band	Navigational Purpose	Current (2019) NOAA ENC Scale Ranges	Reschemed NOAA ENC Scales
1	Overview	1:587,870 – 10,000,000	1:5,120,000 1:2,560,000
2	General	1:240,000 – 1:1,534,076	1:1,280,000 1:640,000
3	Coastal	1:150,000– 1:600,000	1:320,000 1:160,000
4	Approach	1:25,000 – 1:150,000	1:80,000 1:40,000
5	Harbor	1:5,000 – 51,639	1:20,000 1:10,000
6	Berthing	1:2,500 – 12,000	1:5,000 1:2,500



PROGRESS ON S-100 IMPLEMENTATION AND COORDINATION (3)

- Individually, CA and US are in a good positions to provide the minimum S-100 Route Monitoring information in accordance with the IHO Roadmap and the IMO timelines.
  - CA, working closely with its production s/w provider, plans to migrate its database holdings from the S-57 data model to the S-100 model for S-101 (and S-57) ENC production
  - US, in consultation with its production provider is working on a transition plan to maintain dual production of S-101 and S-57
    - We are moving to aggressively complete our rescheming effort by 2026 as that will enable a smoother transition to S-101
    - Reconsidering our rescheming scales for S-57 to align to the S-101 scales.
- Discussions have been held as to how S-100 implementation impacts traditional paper chart production.
  - Both countries working on an ENC-direct-to-paper chart solution
- See also USCHC IGIF matrix.

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CHALLENGES (1)

- A clear, synoptic regional (US-CA) vision of the S-xxx world has not been developed.
- Regionally, the trans-boundary agreements that extent beyond ENCs will have to be finalized e.g., S-111.
- The implementation of different grid solutions in the Member States has increased the level of effort.
- The timing of the transition to S-101 and the introduction of new S-100 products and services, including must be coordinated.
  - A joint communication strategy is required
- Issues of distribution have not been discussed in depth.
  - CA and US operate under very different business models

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CHALLENGES (2)

- For CA domestic coordination important, as well
  - Responsibility of some products is beyond the HO, e.g., S-124 and S-129 the responsibility of CCG (S-124 being tested; S-129 being evaluated for requirement)
  - Other layers like S-123, S-125 (and S-201), S-127, S-421 are also considered critical, but need more work
  - The design and implementation of a national S-128 catalogue
  - Across the board training for S-xxx
- For US
  - Completing rescheming of US ENCs in order to prepare for S-101
    - Development of a S-101 transition plan
  - S-57 rescheme scales do not align to S-101
  - Working out a national dissemination system for S-100 products
    - RENC will be for SOLAS navigation
    - National S-128 catalogue and digital signatures
  - Certification of S-102 data for navigation

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CONCLUSIONS AND RECOMMENDATIONS

- USCHC Member States (MS) are individually well positioned to deliver the route monitoring elements of the S-100 Roadmap.
- There is much work to be done and further coordination and collaboration will be required both internally to the MS and within the Commission itself to fulfill the promise S-100.
- The interests and the perspectives of the clients must be considered.
- Coordinated national and regional communication plans are required.
- The implementation of S-128 may need special consideration by the WENDWG.

ACTIONS TO BE CONSIDERED BY THE WENDWG

- WENDWG is invited to:
  - Note the USCHC Report