National Report Suriname 2021

22nd MESO-AMERICAN – CARIBBEAN SEA HYDROGRAPHIC COMMISSION MEETING

30 November – 3 December 2021

Maritime Authority Suriname

November 27, 2021

Contents

1. Hydrographic Office/Service

Maritime Authority Suriname aims for the following:

- A safe and efficient transfer securing sea-going vessel to and from Suriname in regards with international norms and rules accepted and in conformity with the treaties established by Suriname.
- Supervision of the compliance of legal requirements for shipping and maritime traffic.
- To be a recognized authority in both the national and international maritime field.
- Further professionalizing of the implementation of duties and making of proposals for the modernizing of the legislation.
- To undergo a culture change, which is focused on productivity and a professional working attitude.

Vision:

TO BE A PROFESSIONAL, COMMERCIAL ORIENTED, INNOVATIVE AND LEADING ORGANIZATION.
INITIATING AND FACILITATING MARITIME DEVELOPMENT

Mission Statement:
“ASSURING SAFE, SECURE, ENVIRONMENTALLY SOUND, EFFICIENT AND SUSTAINABLE SHIPPING”.

2. Surveys

- Coverage of new surveys:
  - No surveys of new areas.
  - However, due to the start of the Suriname River Dredging Project in September 2021, a pre dredge survey before the start of the dredging project and post dredge survey of the areas that have been dredged were conducted.

- New technologies and / or equipment:
  - Trimble RTK system (base station and ships receivers) were renewed.
  - Annual Fugro Marinestar DGPS subscription renewed.

- New ships: none

- Crowdsourced and satellite-derived bathymetry - national policy:
  - All data collected in the offshore area are referenced at Mean Sea Level.
  - All data collected in the nearshore area are referenced at Low Water Spring.
  - Inland surveys are exclusively conducted by MAS and are referenced at Low Water Spring.
  - No national policy established yet for satellite-derived bathymetry.

- Challenges and achievements:
  - Dredging of the Suriname River has started in September 2021. The aim by the end of 2021 is to achieve a minimum depth of 4.5 m LWS from the entrance up to the main harbour of Suriname, the Jules Sedney Harbour.
  - A challenge is the transition to S-100 standards which was initiated this year and is still on going. The challenge for us is to transform our current procedures and forms to the new standards.

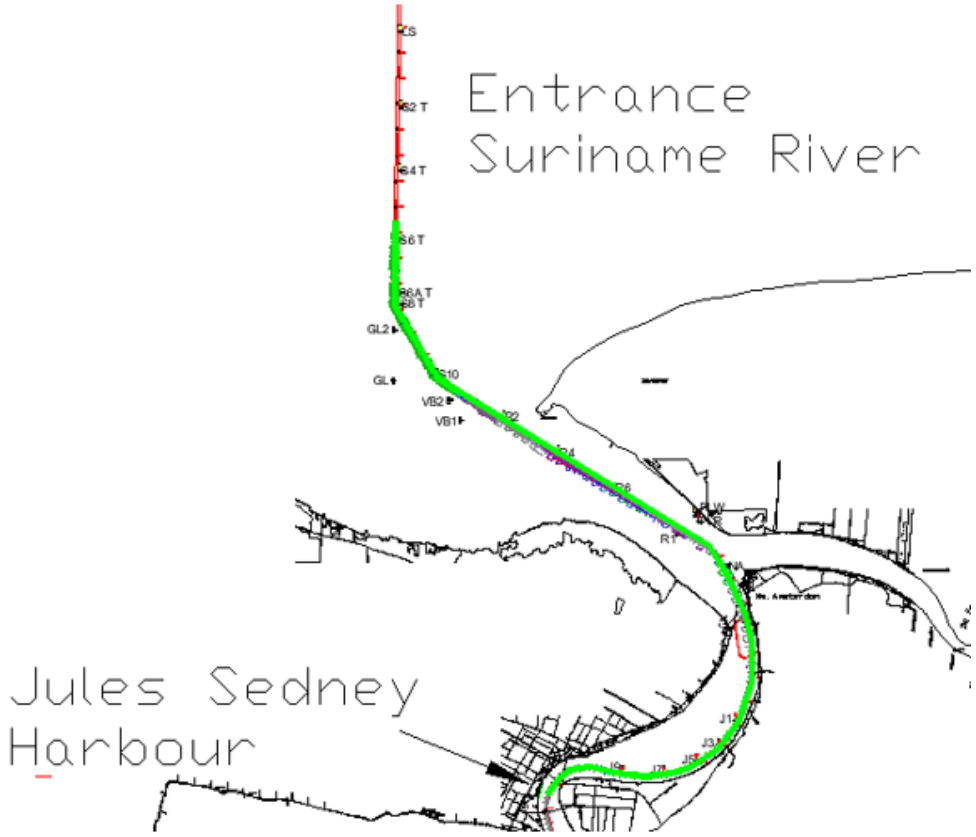

Figure 1: Phase I Suriname River Dredging Project – Achieve minimum depth of 4.5 m LWS from the entrance to the main harbour (Jules Sedney Harbour) by end 2021.

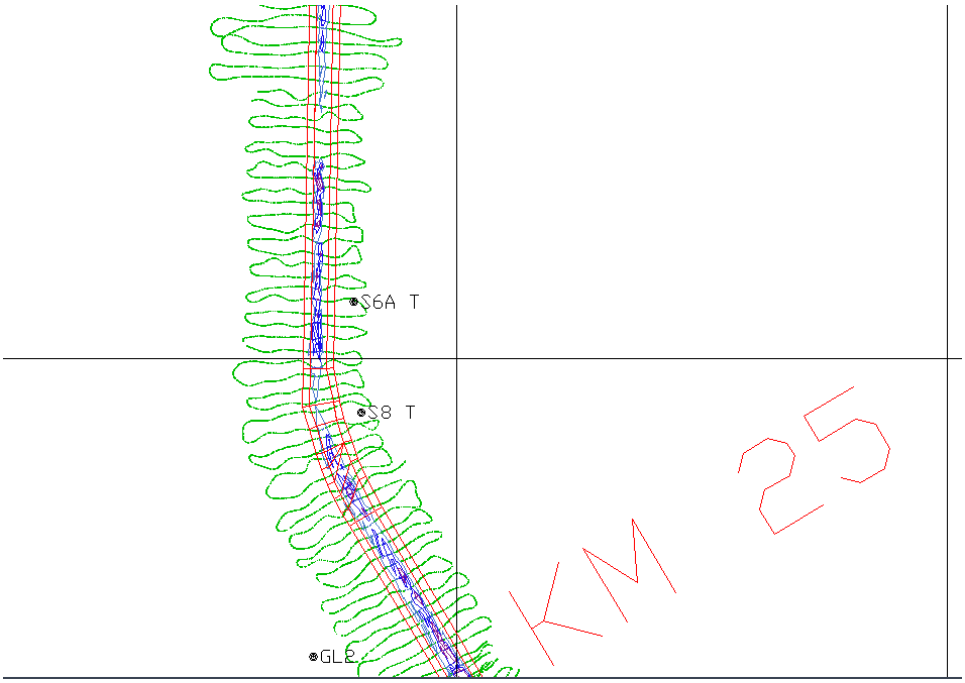

Figure 2: Part of pre dredge survey in the critical area at Outerbank.

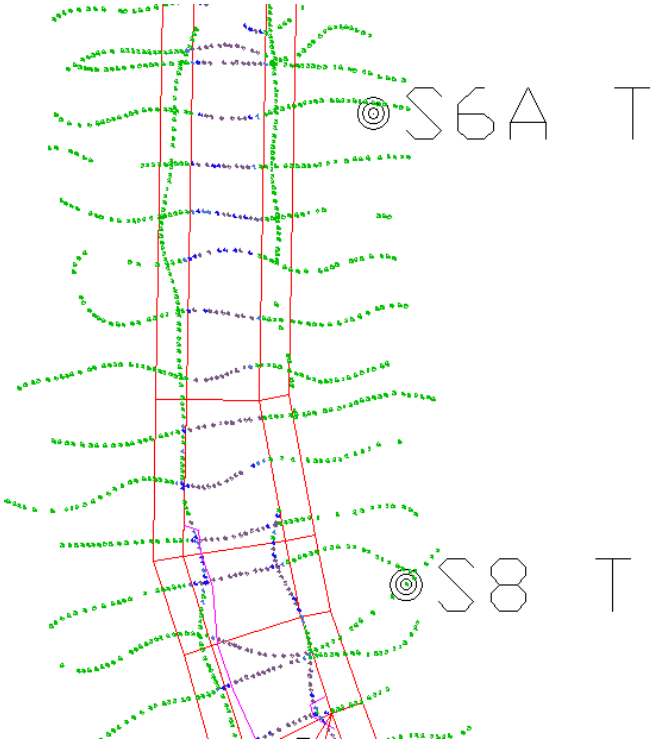

Figure 3: Part of post dredge survey in the critical area at Outerbank

3. New charts & updates:

- ENCs, INT and paper charts:

Planning Paper Charts and ENC's

ENC and Chart	Year	Publication	Producer	Status
Paper Chart SR2218/GB2765	2022	Update	Suriname/ UKHO	New data available. Planning
ENC SR402218, SR52218A, en SR52218B	2022	Update	UKHO	New data available. Planning
Paper Chart 2017	2022	New edition	Suriname/ UKHO	Ongoing.
Paper Chart 2766	2022	Update	UKHO	New data required planning
ENC SR402766, SR5C2766, SR5D2766	2022	Update	UKHO	New data required planning
Paper chart 2215	2022	New edition	Suriname/ SHOM	Planning
ENC ISPS ports	September 2019 - 2022	New edition and updates	Suriname	Ongoing.

New Charts & updates

	ISPS Ports	IMO Nummer	ENC	Frequency update ENC
1	N.V. MEELMAATSCHAPPIJ DE MOLEN	SRPBM-0002	SR6001SR	Yearly
2	LA VIGILANTIA PORT FACILITY	SRSMA-0001	SR6002SR	Yearly

3	TRAYMORE N.V. DOCK 2	SRMOJ-0003	SR60304SR	Yearly
4	TRAYMORE N.V.	SRMOJ-0001	SR60304SR	Yearly
5	HAVEN VAN Nw. NICKERIE	SRICK-0002	SR6005SR	Yearly
6	NIEUWE HAVENTERMINAL	SRPBM-0001	SR6006SR	Yearly
7	OLIESTEIGER	SRPBM-0003	SR6007SR	Yearly
8	SUHOZA WHITE OIL BULK STORAGE FACILITY	SRPBM-0004	SR6008SR	Yearly
9	VENSUR N.V.	SRPBM-0006	SR6009SR	every 6 months
10	STAATSOLIE MIJ. SUR. N.V.	SRPBM-0005	SR6010SR	quarterly
11	Alumina Dock/ Paranam Port	SRPRM-0001	SR610123	Yearly
12	General Dock	SRPRM-0002	SR610123	Yearly
13	LPG Dock	SRPRM-0003	SR610123	Yearly
14	RUDISA HOLDING MAATSCHAPPIJ	SRSMA-0002		Yearly
15	VABI Jetty	SRPBM-0024	SR61516SR	every 6 months
16	KULDIPSINGH PORT FACILITY N.V.	SRPBM-0026	SR61516SR	every 6 months
17	RUBIS	SRPBM-0027	SR6018SR	Yearly

ENC and Chart	Year	Publication	Producer	Status
ENC ISPS ports band 6	2021	update	Suriname	Ongoing
ENC for PPU	2021	Update	Suriname	Ongoing

- ENC Distribution method: through IC-ENC and UKHO

4. New publications & updates:

- New Publications: Tide Table 2022 for Suriname. Tide tables are released each year.
- Updated publications: Shipping Notices for the nautical accessibility of ISPS certified ports and rivers are updated after detail surveys of the ports.
- Means of delivery: The Shipping Notices of the ISPS Ports are published through the website of the Maritime Authority Suriname and are also sent to all shipping agents per email.
- Challenges and achievements:
  - No challenges
  - Achievements: ISPS harbour facilities were surveyed in 2021 for the update of their respective Shipping Notice and ENC

5. MSI

- Existing infrastructure for transmission:
  Partial radio warnings for coastal area through VTC .
  NtM published in local papers and website, emailed to mariners.
  NtM submitted to the NAVAREA coordinator
- Statistics on work of the National Coordinator: This year, a total of 16 MSI has been submitted to the NAVAREA Coordinator and a total of 75 NtM has locally been published.

HAZARDOUS OPERATIONS	4
WARM STACKING	1
SCIENTIFIC SURVEYS	4
EXTENSION DRILLING PERIOD MODU	4
SEISMIC SURVEYS	1
TOTAL	16

- New infrastructure in accordance with GMDSS Master Plan:
  Currently a GMDSS Master Plan is still in concept. The organization responsible for the GMDSS is the Coast Guard of Suriname (established in 2019), Search and Rescue obligation are partially covered. The Coast Guard of Suriname work in collaboration with Search and Rescue coordinator of the region.
  Currently the respective authorities are in discussion regarding the implementation of GMDSS in Suriname.

- Challenge: lack of finance for the development of GMDSS.

6. C-55

See Annex B

7. Capacity Building Offer of and/or demand for Capacity Building

- Training offered:
  - The Suriname Aton Academy in partnership with IALA will provide the IALA L1 Aids to Navigation Manager Course in the last quarter of 2022,

    Please contact for more information:
    Email: dlecouvreur@mas.sr
    or
    bmahabier@mas.sr

- Training received:
  - Blue Data Conference UKHO – January 2021
  - Map the Gaps – January 2021
  - ESRI MOOC Trainings
  - Satellite Derived Bathymetry Virtual Conference – June 2021.
  - ECLAC Climate change and disaster indicators workshop in association with the General Office of Statistics of Suriname (ABS) – July 2021.

- National Forest Monitoring Validation Training on Land use and land cover maps with Satellite Land Monitoring System. – September 2021
- Joint IHO-Singapore Innovation and Technology Laboratory Launch - October 2021
- Webinar World Bank “Strengthening Geospatial Information Management: Using the Integrated Geospatial Information Framework” – October 2021
- IC-ENC Technical Conference Sessions 1 and 2 in May and October 2021 Microsoft Teams Meeting.
- IC-ENC Validation training LMS – September – December 2021
- IC-ENC and UKHO Introduction to S-100 LMS

- Training needed:
  - Demand for Capacity Building:
    - Hydrography cat. B
  - Required Internship:
    - Tidal analysis: for the determination of LAT and tidal modelling.
    - Side Scan Sonar image interpretation

- Status of national projects:
  - MoU with Anton de Kom University Suriname in progress
  - North Brazil Shelf Large Marine Ecosystem (NBS LME)Mangroves (GEF IW-6) project: "Setting the foundations for zero net loss of the mangroves that underpin human wellbeing in the North Brazil Shelf Large Marine Ecosystem” The main aim of the is to help establish a shared and multi-national process for Integrated Coastal Zone Management in the NBS.
  - Project ‘Promoting Integrated and Participatory Ocean Governance in Guyana and Suriname: The Eastern Gate to the Caribbean” is a four-year project funded by the EU covering the coastal and marine areas of Suriname and Guyana. the project aims to significantly enhance the governance and protection of marine and coastal resources of Guyana and Suriname through collaborative processes with all ocean stakeholders, improve knowledge of the coastal and marine environment, enhanced capacity of key stakeholders and informed marine spatial management.

- Status of bilateral projects: continuation of established MoU with the various organizations.
  - MoU DNH finalized
  - MoU IC-ENC finalized
  - MoU UKHO finalized
  - MoU SHOM finalized
  - MoU Universiteit Utrecht – Faculteit Geowetenschappen, Nederland (UU-GEO) in process with objectives:
    1. Guarantee the safe and efficient passage of sea-going vessels to and from Suriname based on internationally accepted standards and rules and in accordance with the conventions ratified by Suriname.
    2. Pursue a proactive policy and innovation in the maritime sector and incorporate them in the strategic plan through cooperation.Plays an

increasingly important role nationally and internationally and is of great importance for the economy of Suriname. Developments in the world are constantly making higher demands on safe, secure, and environmentally friendly waterways and shipping.

3. Contribution to the Social, Social and Economic developments of Suriname through projects, scientific research, technological developments, training and education.

8. Oceanographic activities

- General: due to the developments of the offshore and nearshore oil industries, seismic surveys and other surveys are being conducted by third parties. In the blue area in figure below a seismic survey is currently being conducted.

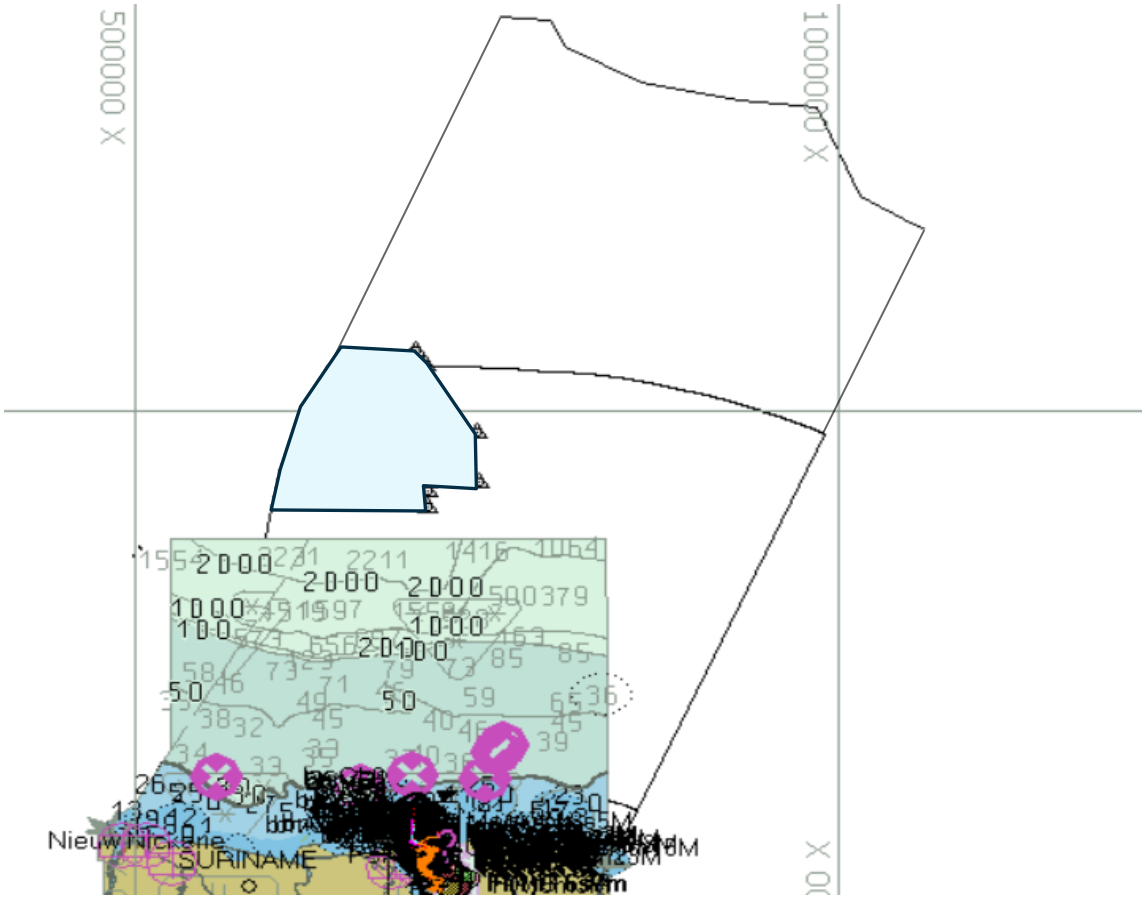

Figure 4: Seismic survey in blue area currently being conducted by third party in regards of offshore oil industry.

- GEBCO/IBC's activities, GEBCO Seabed 2030 activities:
  Developments with regards to Seabed 2030:
  - Bathymetric data of maritime area of Suriname up to the continental shelf received form Regulatory Agency of Oil and Gas. MAS is in the process to acquire formal approval to make the data publicly available.

- MAS Web portal for bathymetric data sharing in construction and available by 2022.

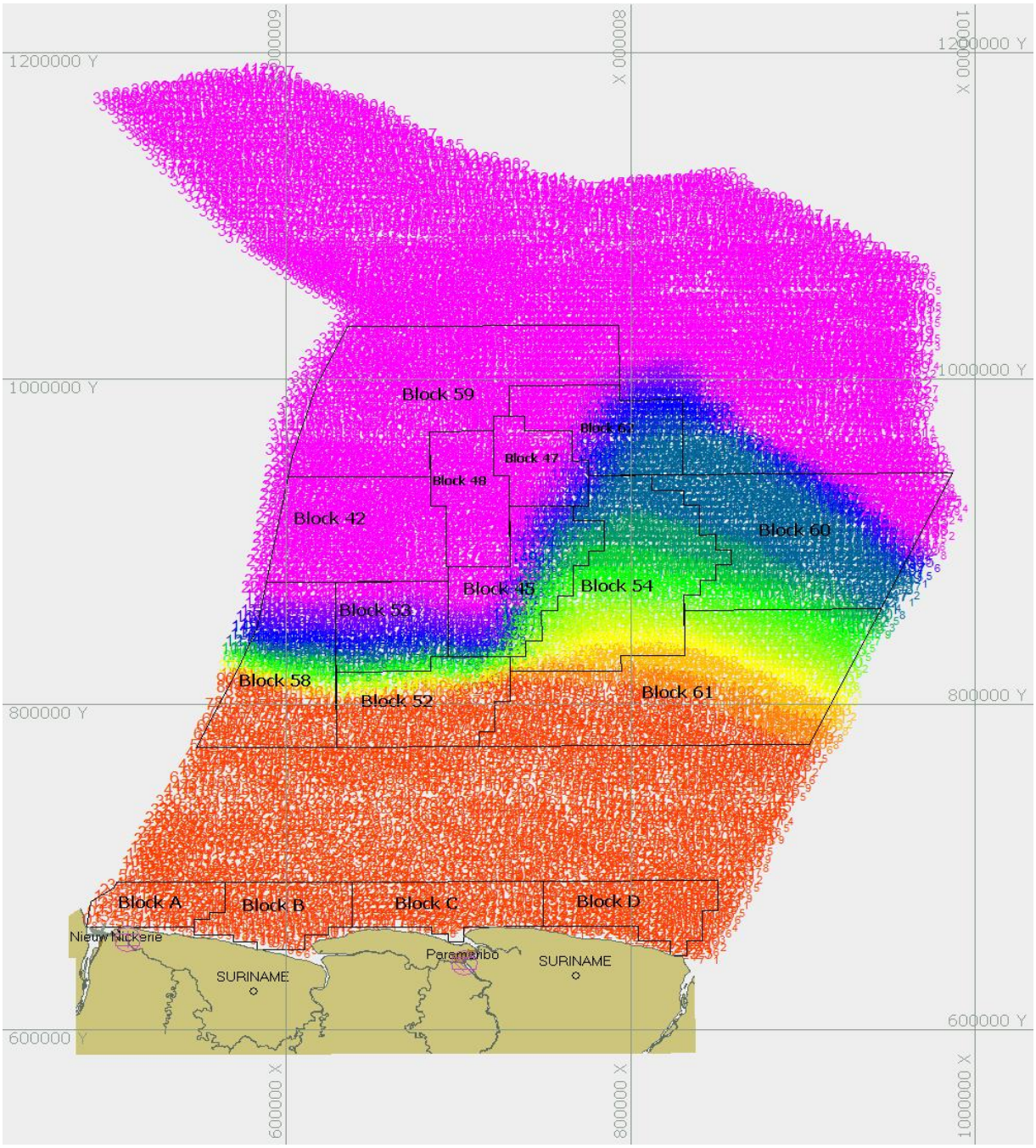

Figure 5: Bathymetric data of maritime area of Suriname up to the continental shelf received form Regulatory Agency of Oil and Gas.

- Tide gauge network: A tide gauge station near the entrance of the Suriname River has been established since April 2018 and is currently gathering water level information every ten minutes. The tide gauge station is located on the leading light GL2.

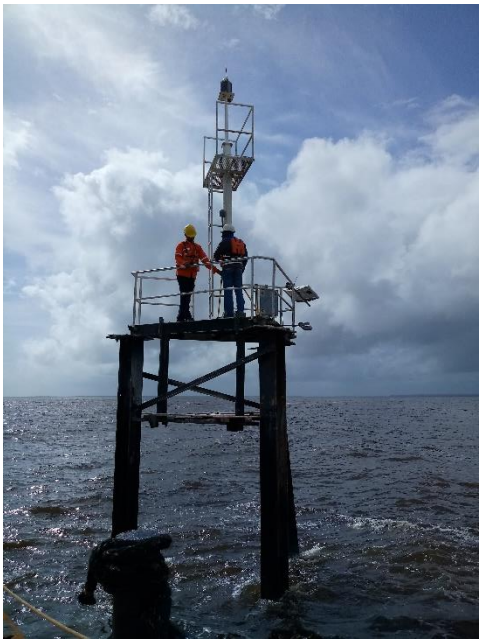

Figure 6: height measurement of the tide gauge station platform at the leading light GL2 located at the entrance of the Suriname River.

- New equipment: none

- Challenges and achievements: a coastal hydrographic survey was in the planning for this year. However, due to the Covid pandemic this project is postponed until next year.

9 Spatial data infrastructure

- Status of MAS MSDI: A structure for the MSDI is now in place and the hydrographic layers are maintained and updated. These layers include wrecks, Fairway Markings, information regarding ISPS Ports and other jetties.
- Relationship with the NSDI: The Management Institute for Land Registration and Land Information System, abbreviated as MI-GLIS is by the Surinamese Law the institution for developing and maintaining of NSDI, which is still under development.
- Involvement in regional or global MSDI efforts: Collaboration with Green Heritage Fund and WWF continues. Info / layers of the 3D model of the Surinamese coast will be placed on the Gonini web portal at https://www.gonini.org/
- National implementation of the Shared Data Principles – including any national data policy and impact on marine data: the Management Institute for Land Registration and Land Information System, abbreviated as MI-GLIS is by the Surinamese Law the institution for developing and maintaining of NSDI, which is still under development.
- MSDI national portal: not yet established.

10. Innovation

- Use of new technologies: ArcGIS
- Risk assessment: none
- Policy matters: needs to be assessed

.11. Other activities

- Suriname River Dredging Project:
  In September 2021 the Suriname River Dredging Project started with the dredging of the most critical part of the fairway at the Outerbank of the Suriname River. The SRDP consist of three phases:
    - Phase I: overall depth of minimum 4.5 m LWS by the end of 2021.
    - Phase II: overall depth of minimum 5.5 m LWS by the end of 2022
    - Phase III: maintain a depth based on shipping needs. Needs to be discussed.

  The spin-off of the SRDP are:
    - To allow vessels with maximum length off 225 m and beam of 35 m.
    - To allow vessels to load deeper.
    - For the development of the oil and gas industry Suriname
    - Increase port efficiency.

  Dredging companies: Joint venture of de Boer and Boskalis.

Average available water depth 4.5 m Channel depth 4.5 m Average Springtide 2.8 m Average Neap Tide: 2.15 m Average water depth available at spring tide: 7.3 m Average water depth available at neap tide: 6.65 m UCK not included (variable depending on ship) **Vessels can load deeper** Depth of 4.5 m Container ships: ± 30 to 40% Tankers: ± 15 to 20% Bulk carriers (wood): ±15 to 20%	**Average available water depth 5.5 m** Channel depth 5.5 m Average Springtide 2.8 m Average Neap Tide: 2.15 m Average water depth available at spring tide: 8.13 m Average water depth available at neap tide: 7.65 m UCK not included (variable depending on ship) **Vessels can load deeper** Depth of 5.5 m Container ships: ± 90 to 120% Tankers: ± 45 to 60% Bulk carriers (wood): ±45 to 60%

- Shore base development

In response to the developments of the offshore oil and gas industries in Suriname, organizations are now preparing shore base facilities on land for the support of this industry. Increase of traffic is expected from the drilling sites on the western part of the offshore area (±85 NM from shore) to the shore base facilities in Paramaribo and Nickerie.

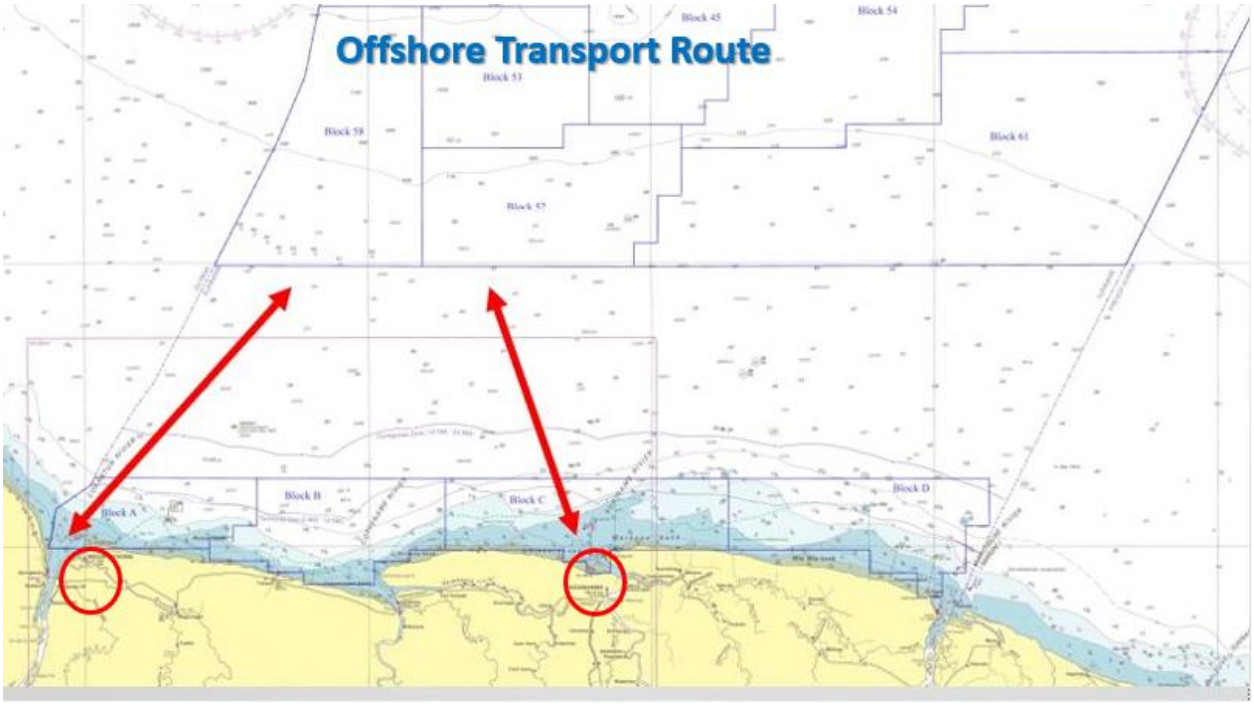

Figure 7: Expected transport route for the support of the oil and gas industry.

Figure 8: Development of shore base facilities.

- Implementation of IHO strategic Goals

IHO Goals	IHO goals converted into MAS Strategic Goals	
1	Evolving the hydrographic support for safety and efficiency of maritime navigation, undergoing profound transformation	
Strategic goals	• Capacity building and training to develop skills of personnel (partnerships, purchase) • Adjust infrastructure to produce S100 products • Implement S100 standards, • Production of S100 products, (inhouse /partners) • Make products available on international market (IC- ENC , UKHO or other)	
2	Increasing the use of hydrographic data for the benefit of society	
Strategic goals	• Use capacity building and training to develop skills of personnel • Set up/ expand MDSDI infrastructure • Data gathering- through survey , crowd sourcing, or other method • Data analysis & production of tailormade products • Data sharing through web portals or data bases (national and international)	
3	Participating actively in international initiatives related to the knowledge and the sustainable use of the Ocean	
Strategic goals	• Expand MSI services in accordance with the joint IMO/IHO/WMO manual on MSI • Data Contribution to DCDB / GEBCO for seabed 2030/ National agencies • Make use of capacity building and training opportunities to develop skills and expand knowledge of personnel • Participate in working groups .	

- Transition to S-100:
  The transition to S-100 standards was initiated this year and is still on going. The challenge for us is to transform our current procedures and forms to the new standards.

Maritime Data Product	IC-ENC Comments	HO Production Estimates Please select one, see definition above.	HO Comments
ENC (S-57 / S-101)	The S-101 ENC Product Specification is evolved from S-57.	Near-term	convert from S57
	ENC Scheming – use of a grid structure?	Medium-term	Streamline with S100 products.
	Conversion	Near-term	convert from S57
S-102 Bathymetric Surface	S-102 allows gridded bathymetric information to be provided in support of navigation.	Near-term	More for critical areas.

S-111 Surface Currents	S-111 uses an HDF-5 encoding to provide surface current information.	Long-term	Training needed
S-122 Marine Protected Area	This vector product specification allows Marine Protected Areas (MPAs) to be captured including more detail than is available in the S-101 ENC product specification.	Near-term	Data is available.
S-124 Navigational Warnings	Action plan being developed	Long-term	Partnership& training
S-104 Water Level Information for Surface Navigation	S-104 uses a gridded HDF-5 encoding to provide height information either from predictions, forecasts or observations. The different types of information have corresponding update intervals.	Medium-term	Tidal modelling
S-412 Weather Overlay	Action plan being developed	Unknown	Partnership National Meteorological centre & training

- The Suriname Red Cross (SRK) approached MAS for assistance with their Community Early Warning System (CEWS) project. For this project vulnerable communities were identified, and the aim of this project is to prepare the communities for natural disasters. Natural disasters that were identified are: drought, high velocity winds and flooding. MAS has trained one community on the indicators of flooding. The CEWS project is still on going and the planning is to install a tide gauge station near vulnerable communities along the Cottica River and place tide gauges for the communities at the Commewijne River as a warning indicator for flooding. Other indicators were the extreme water level table that MAS provided and is derived from the tide tables.

- A virtual 'Maritime Open Day' was held on November 19th, 2021 in regard of World IMO Day, World Hydrography Day and Seafarers Day. Schools and individuals were invited to learn more of maritime aspects. The participating parties were MAS, DP World, Coast Guard of Suriname, The Marine, Suriname Maritime Institute. Maritime Police and WIMAC.

- ISO audit: A virtual ISO audit was held in November 2021. No unconformities found and MAS maintain its certification of three years

Figure 9: CEWS some of the vulnerable communities which has been identified along the Commewijne, Cottica and Marowijne River


Picture: training of the community of Galibi (warning indicators for flooding)

12. Conclusions

In anticipation of the development of Offshore Oil and Gas in Suriname, this year the MAS was preparing for the execution of the Suriname River Dredging Project by conducting a pre and post dredge survey of the section. The SRDP has started in September 2021 and is divided in three phases:

- Phase I: Achieve a minimum depth of 4.5 m LWS from the entrance of the Suriname River up to the Jules Sedney Harbour. Target date December 2021.
- Phase II: Achieve a minimum depth of 5.5 m in the fairway (trace of 68 km long). Target date December 2022.
- Phase III: Maintain a depth based on shipping needs.

The post dredge survey has confirmed that Phase I is achieved.

A spin-off effect of SRDP is that ISPS harbour facilities are now preparing to also dredge alongside their jetty.

In regards the transitioning to S-100 Standards, this year we have begun with the gap analyses for the S-101 and S-102 standards. The challenge for us is to transform our current procedures and forms to the new standards.

With respect to nautical charts, we continued to independently produce and update ENCs band 6 for ISPS certified ports, which will contribute to safe navigation for these areas. To further support safe navigation, we continue to publish and update Shipping Notices of the ISPS Ports and release tide tables for Suriname each year.

Regarding MSI, Notice to Mariners will continue to be published in our local papers and our website and emailed to the mariners and we will continue submitting MSI to the NAVAREA Coordinator. The GMDSS Master Plan, which is now the responsibility of the Suriname Coast Guard, is still in concept due to lack of finance.

We would like to thank all the training opportunities we received for this year.
Regarding the relationships with the various organizations we have, we would like to thank all for the good collaboration with your organizations and wish to continue our partnerships.