



# Belize Port Authority

*25<sup>th</sup> Conference of the  
Meso American - Caribbean Sea  
Hydrographic Commission*

*MACHC 25*

*National Report Presentation*





# Belize Port Authority Departments

1. “Administration  
Department”

2.“Technical  
Department”

3.“Registration  
Department”

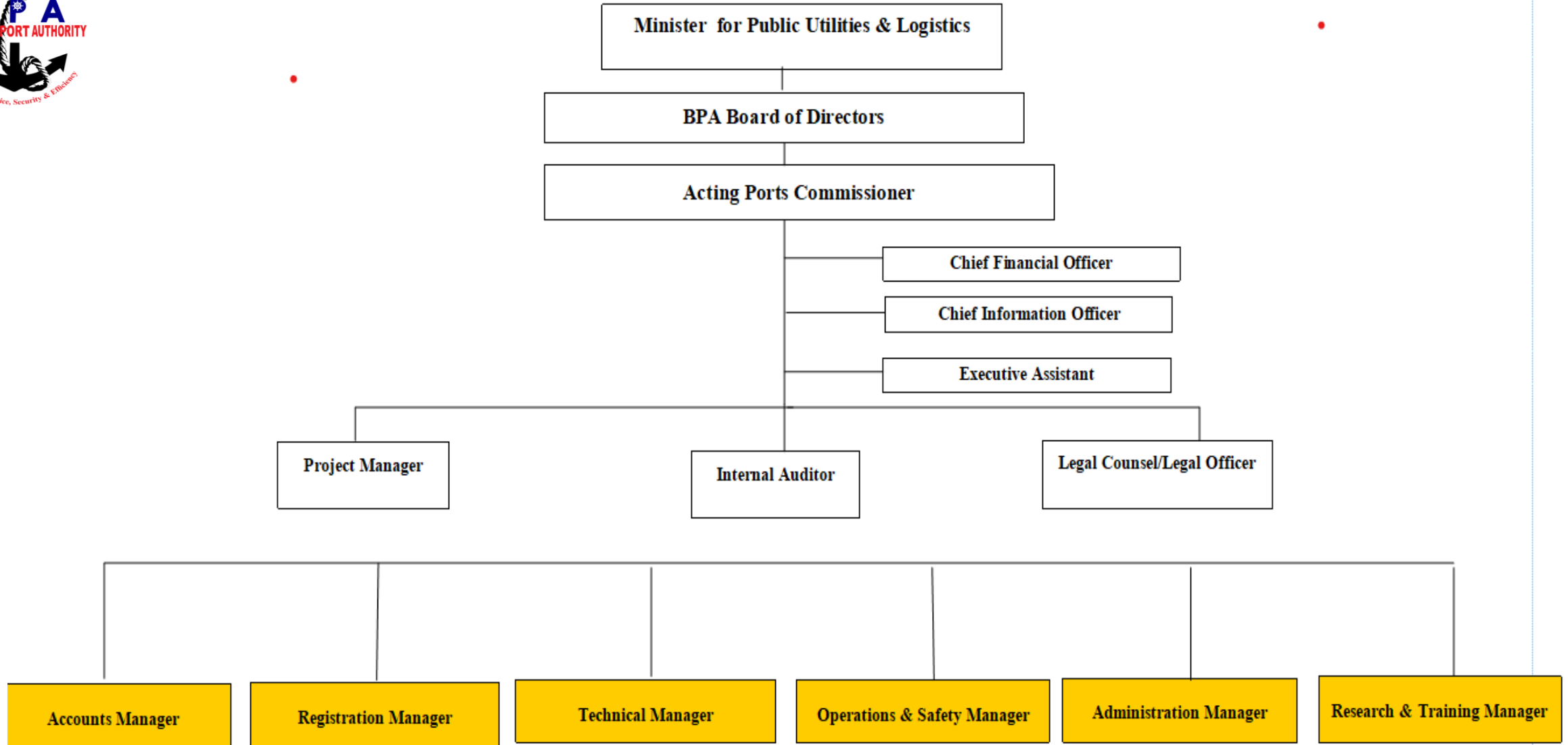
4.“Accounts  
Department”

5.“Operations and  
Safety  
Department”

6.“Research,  
Training and  
Compliance  
Department”



# Belize Port Authority





OPERATIONS & SAFETY DEPARTMENT

Operations & Safety Manager

Aids to Navigation Unit

Supervisor

Hydrography

Navigational Safety Officer

Lighthouse Keepers

Vacant –(01)  
Lighthouse Keeper

Port Inspectorate/Marine Unit

Supervisor

Marine Enforcement Unit

Coxswain

MEOs

Port Inspectors



# surveys



The Belize Port Authority during the year 2024 did not lead any hydrographic surveys.



Surveys were carried out by the private port operators at the Port Of Belize Limited and at the Big Creek Port. Surveys were also carried out by the Fort Street Tourism cruise terminal operator. These surveys were mainly to confirm depths due to excessive siltation in the area and to minimize any navigational risk for the ship to shore passenger tender vessels.

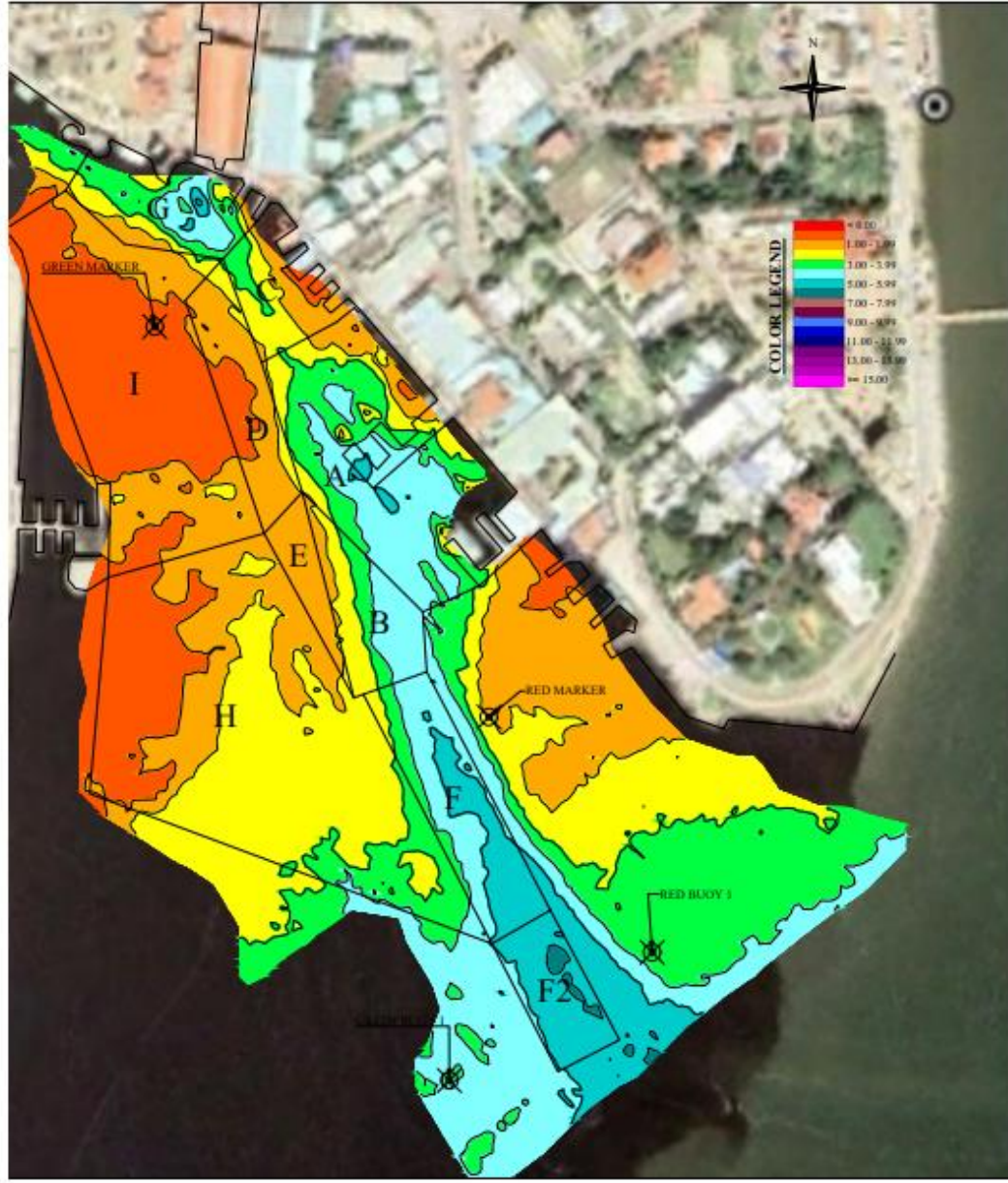


Correction of charts or the publication of new charts were not made from the surveys conducted.





# Mouth of the Haulover Creek Belize City, busiest navigational channel



**FSTV BELIZE RIVER BATHYMETRY**

PLOT PA PER SIZE: ANSI expand B (11.00 x 17.00 inches)  
SCALE: 1:200

**SURVEY NOTES:**

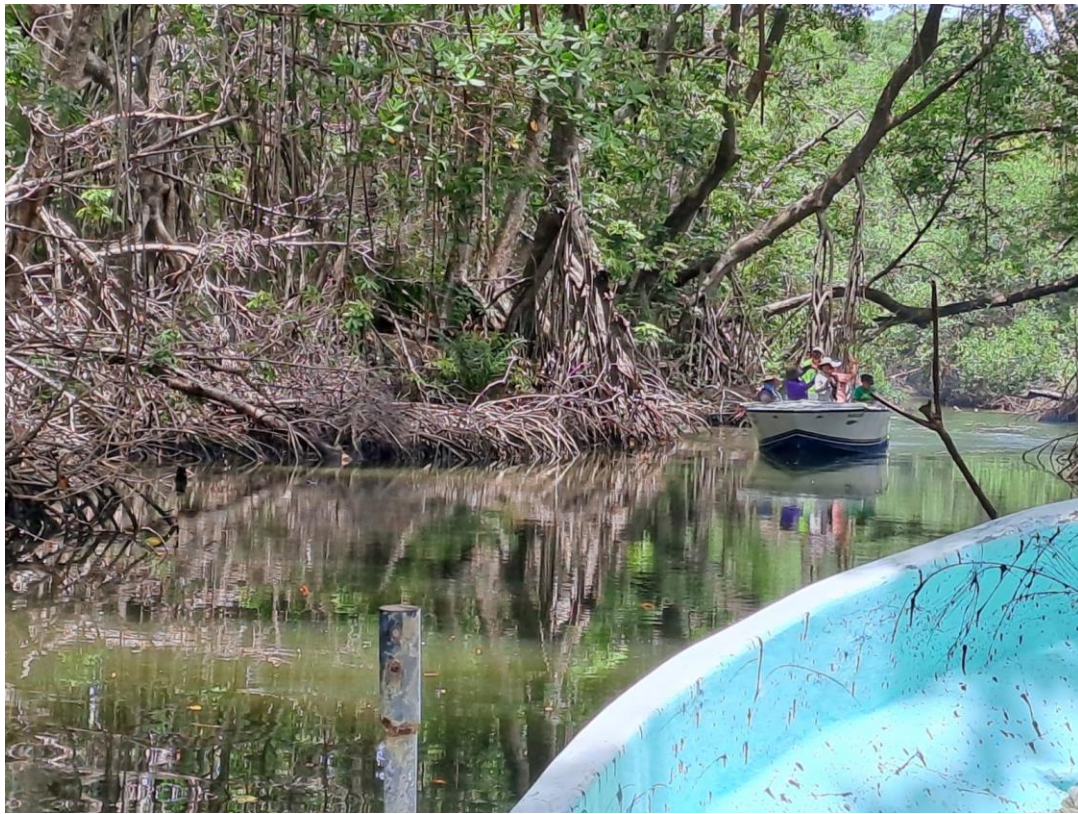
- THE HYDROGRAPHIC SURVEY DATA WAS COLLECTED AND PROCESSED USING A E20 TRIMBLE SINGLE BEAM ECHOSOUNDER WITH TRIMBLE SP5461 POSITIONING SYSTEM
- HORIZONTAL COORDINATES IN DRAWING ARE REFERENCED TO THE TRANSVERSE MERCATOR PROJECTION (UTM), NORTH ZONE 16 ELLIPSOID WGS-84. COORDINATES IN FEET SURVEY SOUNDINGS IN FEET. ALL DEPTHS COLLECTED IN ACCORDANCE WITH US ACE SURVEY AND MAPPING PRACTICES (POSITIVE - DEPTH, NEGATIVE - ELEVATION)
- THE DATA CONTAINED HEREON CAN ONLY BE CONSIDERED AS REPRESENTATIVE OF THE CONDITIONS THAT EXISTED AT THE SITE DURING THE DATE OF THE SURVEY. AS

**VOLUMETRIC TABLE**  
VOLUMES CALCULATED IN HYPACK TIN MODEL AND TINTO LEVEL MODE.  
DEPTH MODE FEET AND VOLUME UNIT CUBIC YARDS

AREA		TARGET DEPTHS (FT) AND VOLUME (CY)		
		8	10	12
A	18,845.60	27,316.80	35,788.10	
B	6,611.40	9,181.50	11,951.50	
C	5,772.50	7,743.90	9,215.20	
D	9,835.50	12,787.70	15,739.80	
E	3,905.50	4,982.50	6,159.40	
<b>TOTALS</b>		<b>62,388.00</b>	<b>89,541.00</b>	<b>116,781.00</b>

AREA		TARGET DEPTHS (FT) AND VOLUME (CY)		
		8	10	12
G	62,388.00	89,541.00	116,781.00	
<b>TOTALS</b>		<b>62,388.00</b>	<b>89,541.00</b>	<b>116,781.00</b>
<b>GOB</b>		<b>TARGET DEPTHS (FT) AND VOLUME (CY)</b>		

# Lead line river depth confirmation





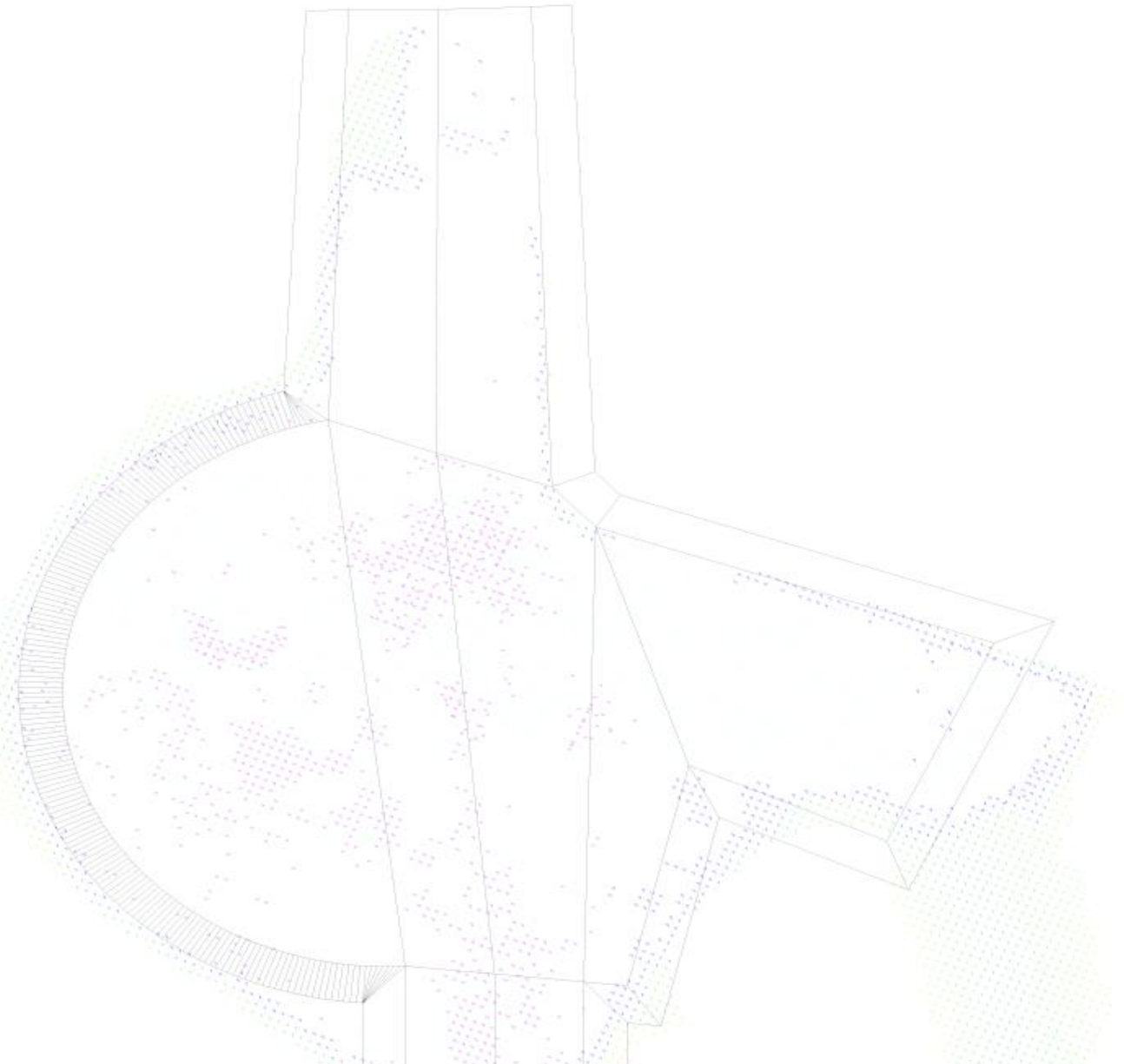
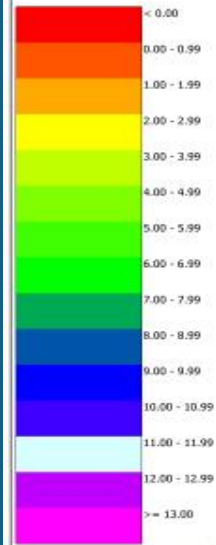
Maintenance dredging of Haulover Creek, safe navigation for tender vessels servicing cruise ship calls.

The second busiest cargo port is the Big Creek port



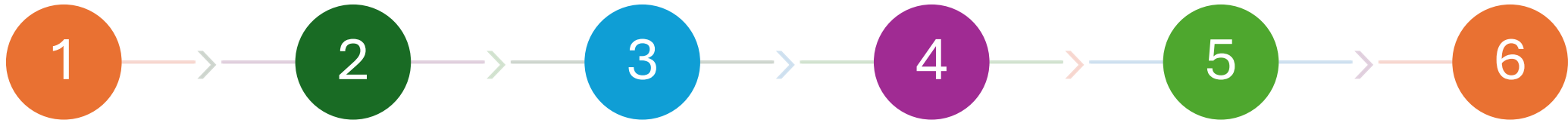


Big Creek Port access channel on last survey conducted verified depths of 12 meters throughout and request has been made by port operators that this depth is reflected on the chart and not the 10.9 meters that is reported.





# Future survey plans



1  
The **Joint Nature Conservation Committee (JNCC)**, under the **Ocean Country Partnership Programme (OCPP)**, is supporting Belize with bathymetric surveys and marine habitat mapping.

2  
The data will inform the **Belize Integrated Coastal Zone Management Plan (ICZM)** the **Belize Sustainable Ocean Plan (BSOP)** and **The Belize Port Authority**.

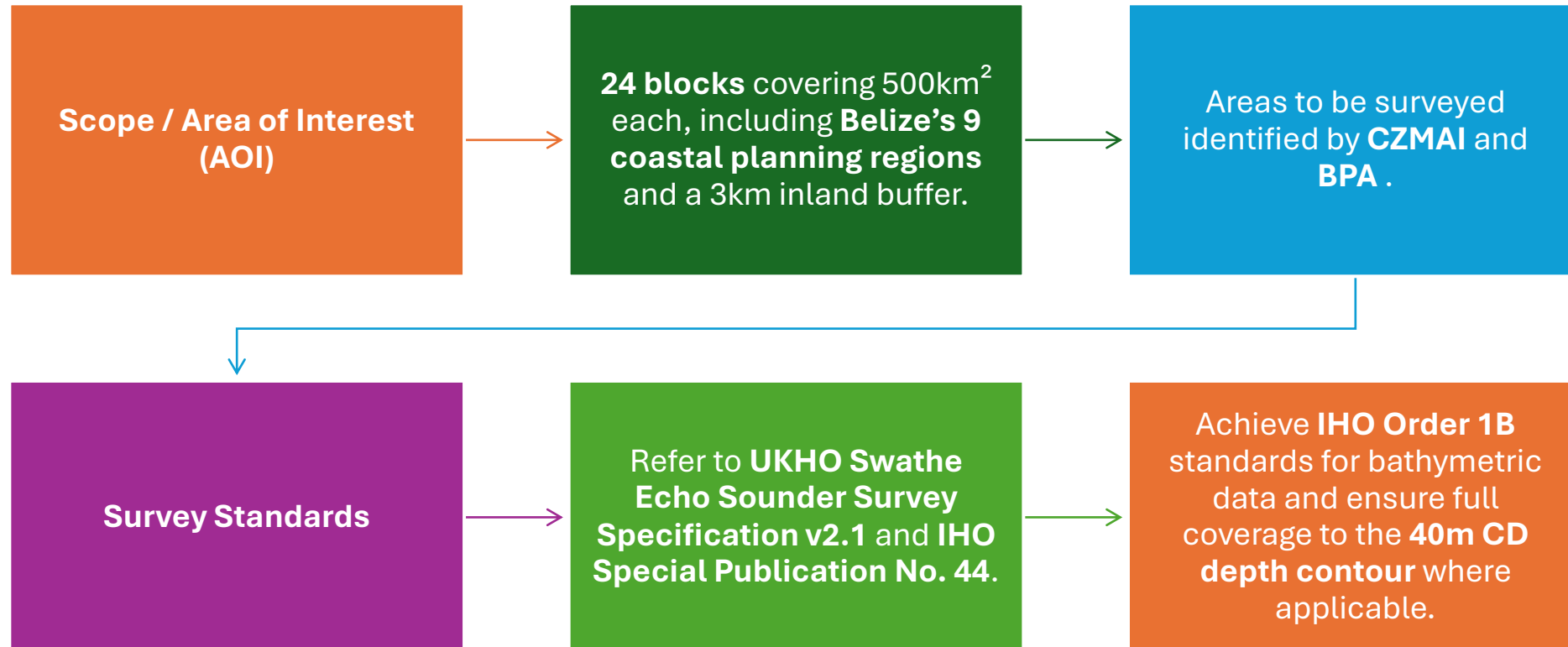
3  
These plans are aligned with Belize's commitments under the **Blue Loan Agreement (BLA)** and **Conservation Finance Agreement (CFA)**, to be completed by November 2025 and 2026.

4  
**Objective**

5  
To build on the **2019 LiDAR surveys** under the **Caribbean Marine Economies (CME)** Programme.

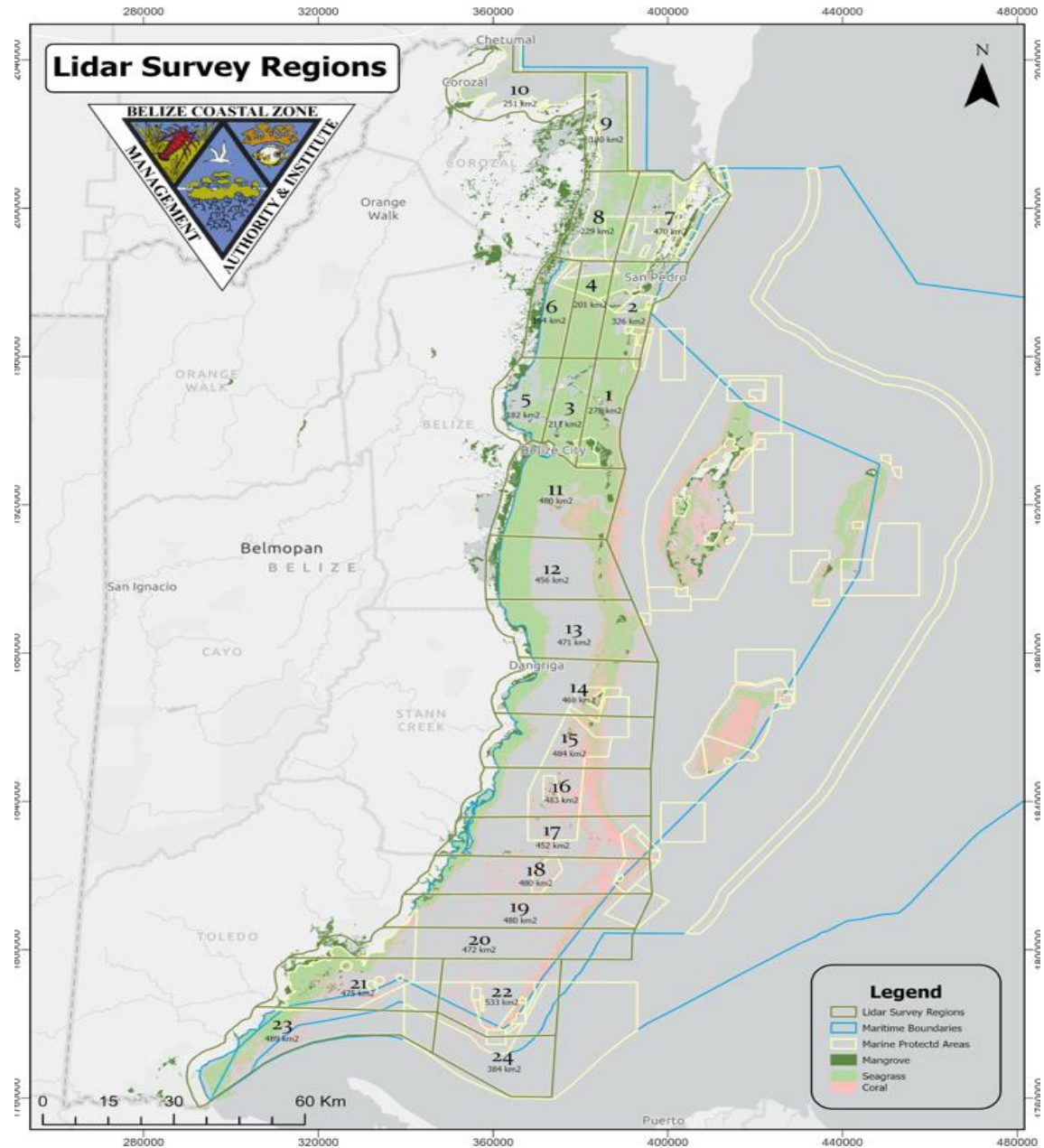
6  
Conduct **bathymetric and topographic LiDAR surveys** to improve **habitat mapping, coastal management, navigation safety, and protection efforts**.

# Plan surveys





Coverage area for future Lidar surveys





# Maritime Safety Information (MSI)

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# C-55 Belize update



## C-55 Summary for:

Country:	Belize
Country Iso Code	BZ
Country SubCode	
INT Region:	B
Country/Depend	
Last updated:	09/11/2023
Provided by:	

## Comments on Charts:

General  
 662 (Apr 2009 WGS INT 1:500K) GB200662  
 Coastal  
 1573 (May 2020 WGS 1:125K) GB389310  
 1797 (May 2020 WGS 1:125K) GB389320  
 959 (Apr 2020 WGS 1:125K) GB389330  
 Approach  
 522 (Apr 2020 WGS 1:40K) GB400522  
 Port  
 1979 (2020 WGS 1:20 & 1:12K) GB58932B & GB58932A

Chart coverage	Passage (%)	Coastal (%)	Port (%)
INT	100	75	100
RNC	100	75	100
ENC	100	75	50

## Comments on Surveys:

The approach channel to Belize City and the S part of the Inner Channel (inside the barrier reef) are surveyed to modern standards. Lidar survey from Belize city covering ~2500km<sup>2</sup> was completed 2018/19 to depths of upto 40m

## Status of Paper Charts

Paper charts with depths in meters (%)		100	
Paper charts referenced to a satellite datum (%)		100	
Status of surveys	Adequate (%)	Resurvey (%)	No survey (%)
0-200m	10	42	48
> 200m	1	0	99

MSI	Y/N	Comments on MSI:
Local warning	YES	NMCC VHF? - ALRS and GISIS hold no information regarding this service??
Coastal warning	NO	
Nav warning	Yes	
Port warning	Unknown	
GMDSS	Y/N	Comments on GMDSS:
Master Plan	NO	
Area A1	NO	
Area A2	NO	
Area A3	NO	
NAVTEX	NO	
SafetyNet	NO	

# Achievements: Spatial Data Infrastructure

- The Belize Sustainable Ocean Plan, Maritime Administrative Technical Working Committee has established three spatial data viewer:
  - Maritime Administration Data Viewer
    - Purpose and Features
    - Developed specifically for the **Maritime Administration Technical Working Group**.
    - Provides a **comprehensive data repository** for detailed maritime planning and analysis.
    - Includes critical layers:
      - Ports
      - Shipping lanes
      - Marine transportation routes
      - Existing LiDAR datasets
      - Belize Maritime Areas
    - Significance
      - Enhances data accessibility for informed decision-making.
      - Supports sector-specific planning and operational activities.





# Maritime Technical Working Committee

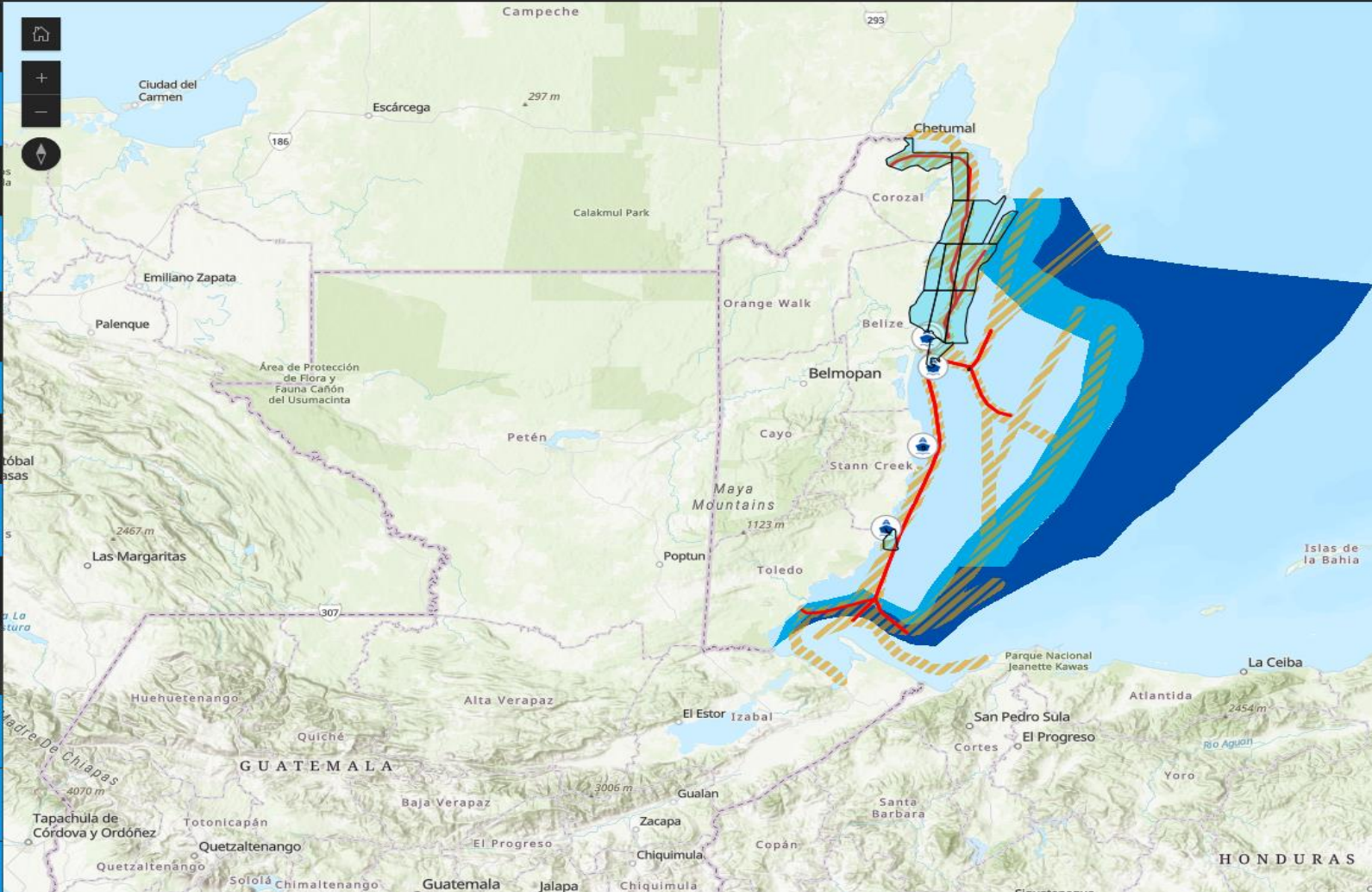
- **BSOP Data Viewer & Ocean Use Survey Results**
- **BSOP Data Viewer**
- Designed for **public use**, with a simplified **Marine Transportation Data layer**.
- Facilitates **public engagement** in marine spatial planning.
- **Future Updates Needed:** Incorporation of new data to enhance functionality and accuracy.
- **Ocean Use Survey Results**
- Preliminary findings available for public access:
  - Navigate to the **Overlay Layer** page.
  - Select “**Draft Ocean Use Survey Heatmaps**” and enable the **Maritime Administration** layer.
- Highlights key patterns in maritime usage, aiding in informed decision-making for the sector.

# Maritime Administration Data Viewer



Maritime Administration TWG

- Location of Existing Bathymetric Lidar
- Ports
- Shipping Lanes
- Marine Transportation 2020
- Territorial\_Seas
  - Exclusive Economic Zone
  - Internal Waters
  - Territorial Seas



# Hydrographic training needs



- **Survey Techniques:** Training in advanced hydrographic survey methods, including multi-beam sonar and lidar technologies.
- **Data Processing:** Skill-building in processing, analyzing, and interpreting bathymetric and topographic data for accurate mapping.
- **2. Marine Spatial Planning (MSP)**
- **Integrated Planning:** Educating BPA staff on best practices for implementing marine spatial planning and using hydrographic data for sustainable coastal management.
- **GIS Software Training:** Mastery of GIS tools and software for analyzing and visualizing hydrographic data in the context of coastal management and development.
- **3. Maintenance and Calibration**
- **Equipment Maintenance:** Training in the upkeep of hydrographic equipment to ensure accuracy and reliability.
- **Calibration Protocols:** Ensuring proper calibration of survey instruments to maintain high-quality data collection standards.

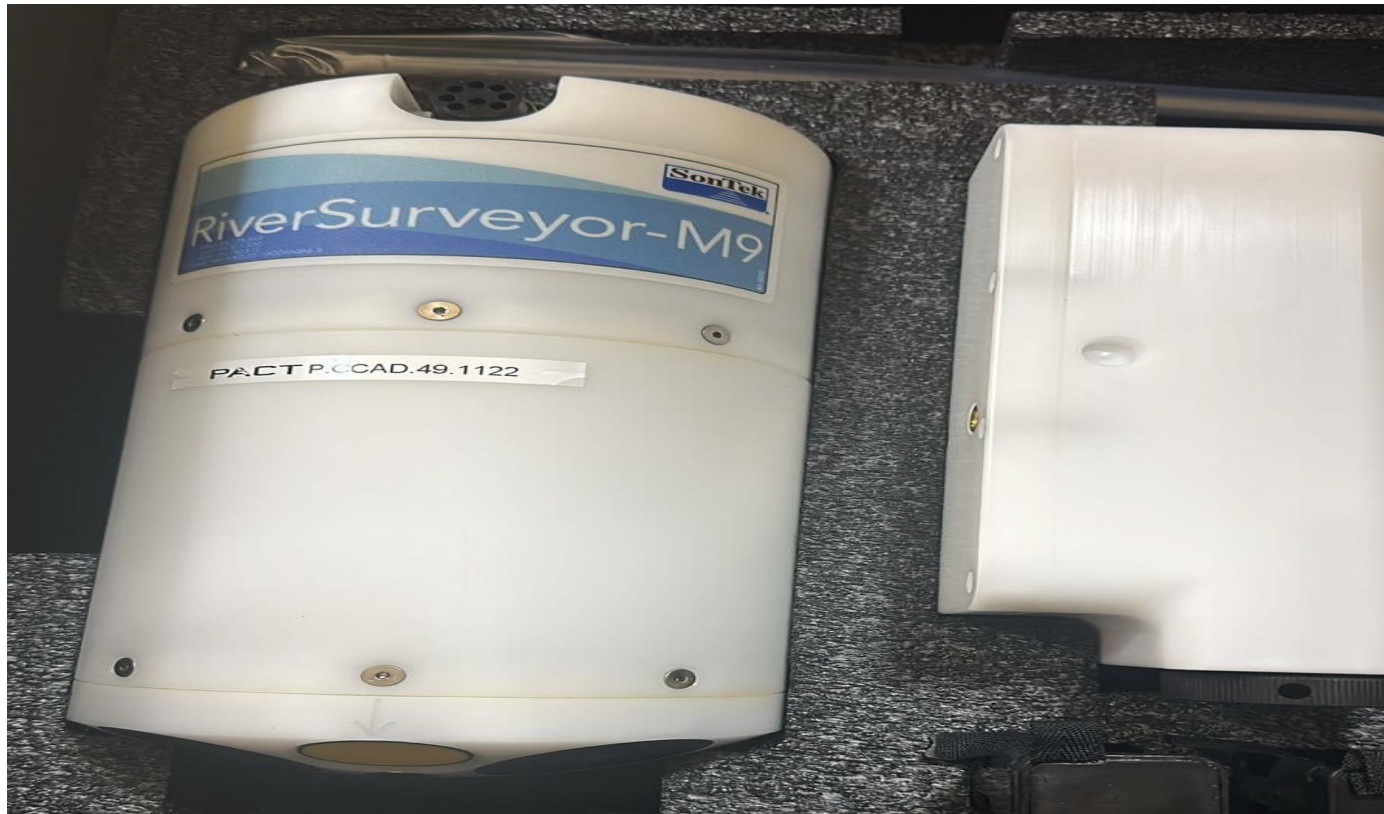


# BPA hydrographic challenges

- **Improved Hydrographic Data Collection**
- **LiDAR Surveys:** Further bathymetric and topographic surveys to enhance marine habitat mapping and navigation safety.
- **Hydrographic Equipment:** Investment in updated survey equipment for precise data acquisition (e.g., multi-beam echo sounders, GPS systems).
- **Data Coverage:** Expanded survey coverage in all coastal and port areas, especially around critical infrastructure and navigation routes.
- **2. Enhanced Marine Spatial Planning**
- **Comprehensive Mapping:** Utilize updated hydrographic data to support marine spatial planning and Integrated Coastal Zone Management (ICZM).
- **Environmental Protection:** Improved data for better management of marine habitats and sustainable ocean use.
- **3. Navigation Safety & Port Management**
- **Navigational Aids:** Ensuring continuous maintenance and replacement of navigational buoys and markers to maintain safe marine routes.
- **Port Infrastructure:** Regular surveys to support port management, dredging operations, and navigation safety.

The BPA through the Department of Environment has recently acquired A SunTek River Surveyor M9 which is an acoustic Doppler Current Profiler used for the precise measurement of water flow, depth, and velocity.

- The Belize Port Authority along with the Department of Environment is seeking training in the overall understanding of the M9 survey equipment, proper deployment techniques, Data accuracy and validation, software proficiency and safety and maintenance of equipment.



# BPA Obligation

- The Belize Port Authority remains committed to ensuring efficient maritime service, security, and sustainability in alignment with national and international objectives. Through collaborative efforts such as the 25th MACHC Conference, Belize continues to play a vital role in advancing hydrographic research, maritime safety, and regional cooperation. These ongoing initiatives reflect our dedication to fostering growth and development in the maritime sector, supporting economic prosperity, and safeguarding Belize's maritime resources for future generations.





Thank You!