

HSRP Working Group Discussion

- **HSRP Planning and Engagement working group (P&E WG) discussion, Mr. Sean M. Duffy, Sr., HSRP chair and Mr. Nathan Wardwell, HSRP co-chair; and Mr. Eric Peace and Ms. Mary Paige Abbott, HSRP discussion and comments on topics such as the HSRP issue papers and other topics**
- **HSRP Technology working group discussion, Dr. Qassim Abdullah, Capt. Anuj Chopra, HSRP Members, Geodesy Crisis and other issue paper discussion**



HSRP Technology Working Group Report

Dr. Qassim Abdullah

Deanne Hargrave

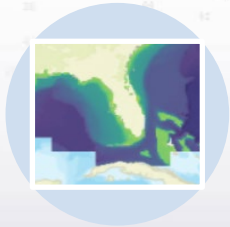
Capt. Anuj Chopra

HSRP Fall public meeting, September 24 to 26, 2024,
Detroit, Michigan

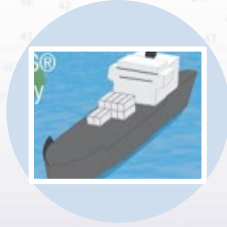


H Y D R O G R A P H I C S E R V I C E S R E V I E W P A N E L

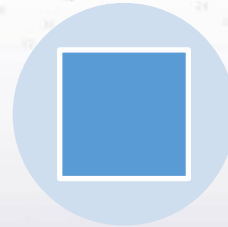
Technology Working Group Current Focus



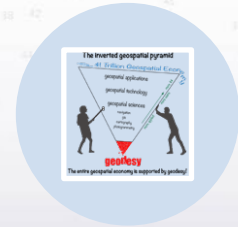
INTEROPERABLE
LAND AND SEA
ELEVATION DATA



PRECISION
NAVIGATION



UNDERSTANDING
DATA FROM WIND
ENERGY PROJECTS



GEODESY
EDUCATION AND
CHALLENGES



HYDROGRAPHIC SERVICES REVIEW PANEL

Technology Working Group Current Focus

❖ INTEROPERABLE LAND AND SEA ELEVATION DATA

Explore the national benefits of connecting NOAA's shoreline bathymetric data and the USGS 3DEP data to coastal resilience, storm surge modeling, seabed mobility, and climate change impact. Where we stand on this?

❖ PRECISION NAVIGATION

- Encourage the development of standard definition of the term;
- Ensure that NOAA's understanding of the terms is compatible with the one used by the industry.
- Highlight the benefit of such capability:
 - critical for food and energy security
 - optimization of assets and economic security
 - optimization implies global greenhouse gas emissions and adds towards climate security.
- Open communication channels between NOAA data services, mariners, and navigation equipment manufacturers to stand on need and optimize NOAA's offerings.
- Maritime Casualty response is dependent on situational awareness, which is significantly dependent on Precision navigational and weather data. NOAA's OR&R to explore international collaborations with non-profit organizations like the International Tanker Owners Pollution Federation (ITOPF) who are global experts in accidental spill mitigation to develop a SOP for easy integration.



Technology Working Group Current Focus .. continued

❖ UNDERSTANDING DATA FROM WIND ENERGY PROJECTS

- These projects will generate a vast amount of data.
- How can this data support NOAA's missions in safe navigation and climate change modeling for seabed and coastlines, including future predictions?

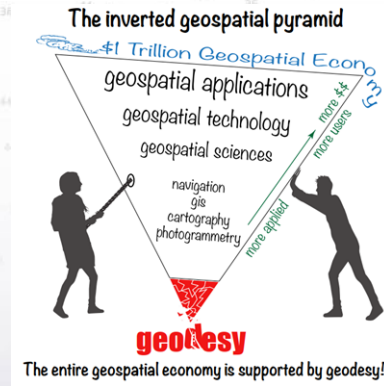
❖ GEODESY EDUCATION AND CHALLENGES

The nation faces a significant shortage of geodesists, surveyors, and geospatial mapping specialists, which may impact future economic growth. The WG aims to continue discussions on these issues and recommend actions to address them.



GEODESY CRISES

Is the sky falling?



GEODESY EDUCATION AND CHALLENGES - Visiting our issue paper from 2023 “the U.S. Geodesy crisis”



HYDROGRAPHIC SERVICES REVIEW PANEL

The answer: Although things seem fine now, our future remains unpredictable.

One example: Key NGS scientists are going to retirement soon with no good options for replacement. Similarly for other agencies.

Why singling out NGS here?

- All federal agencies (including NOAA) use geospatial data and products to meet their missions, and nearly all of them have a direct dependency on NGS and the NSRS.
- Additionally, the work performed by NGS forms the backbone of the entire geospatial data ecosystem across government institutions, academia, and the private sector.
- The roll out of the Modernized NSRS will affect dozens of agencies, trillions of \$, and hundreds of products serving the national security, infrastructure development, maritime and terrestrial navigation, and environmental monitoring.



Full Potential Economic Benefit From the National NGS Led Programs

Gravity Program including NAPGD2022: \$4.3 billion per year (2019 estimate*)

NSRS: \$2.4 billion per year (2009 estimate)**

CORS: \$758 million per year (2009 estimate)**

Grand total of \$7.458 billion annually

* *Scaling the Heights: Socio-Economic Study of the NGS Gravity Program* by Irv Leveson, 2019 report by Prepared by ARCBridge Consulting and Training, Inc.

** *Socio-Economic Benefits Study: Scoping the Value of CORS and GRAV-D* by Irv Leveson, 2009 report by Prepared by ARCBridge Consulting and Training, Inc.



HYDROGRAPHIC SERVICES REVIEW PANEL

Recommendations for NOAA on Geodesy Crises

- Join forces with government officials and academic institutions to bring the geodesy crisis to the forefront of governmental concerns, emphasizing its national security and economic impact.
- Distribute grants and fund training programs, internships, and research initiatives for early to mid-career professionals in geodesy and geomatics.
- Advocate for the updated National Spatial Reference System (NSRS), underlining the advantages of a uniform national coordinate system for uses such as mapping, charting, navigation, infrastructure development, floodplain analysis, resource surveys, and other scientific and managerial applications. Link the success of this initiative to the availability of qualified professionals in geodesy and related disciplines.
- Develop a national 10-year projection plan for the requirements of geodesists, surveyors, and other subject-matter experts. This forecast should serve as the foundation for providing scholarships to students and universities to meet these needs.
- Allocate additional resources to NGS, enabling them to lead and facilitate discussions surrounding this crisis.

