



Precision Navigation

Captain Elizabeth Kretovic, NOAA

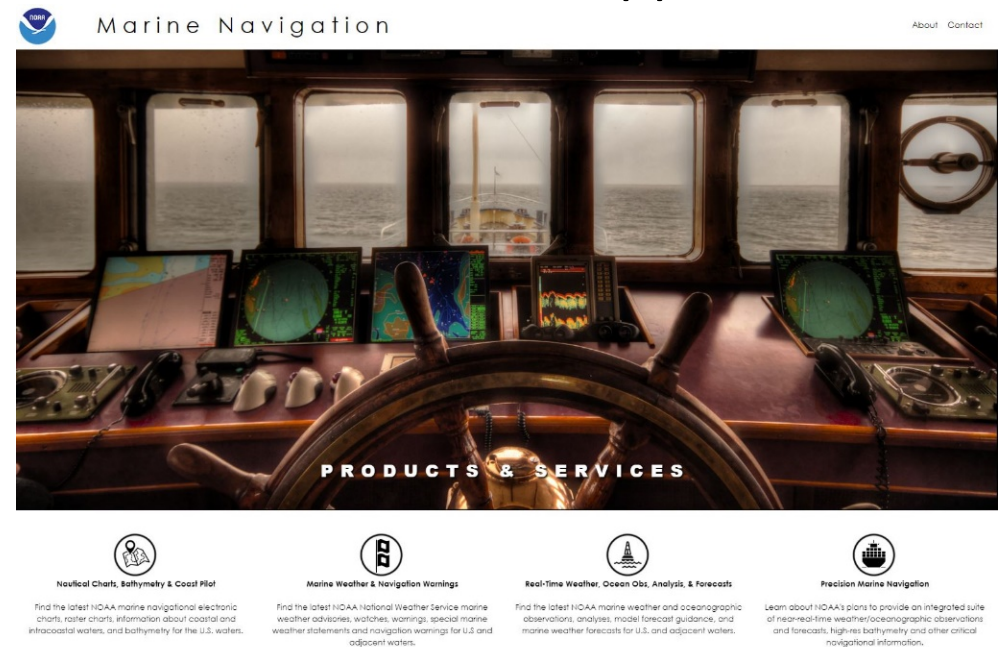
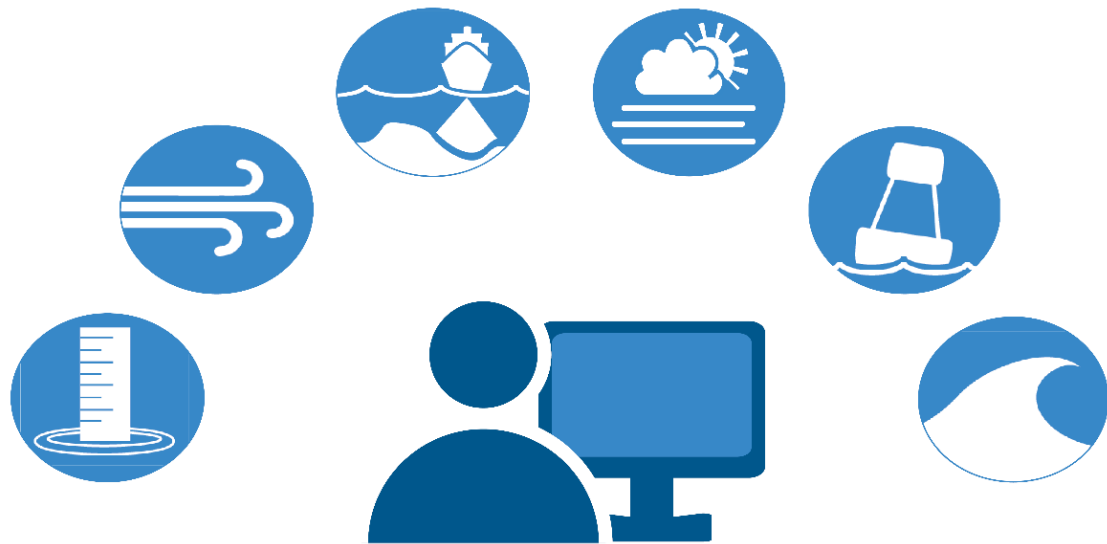
Office of Coast Survey, NOAA

Foundations – International Standards



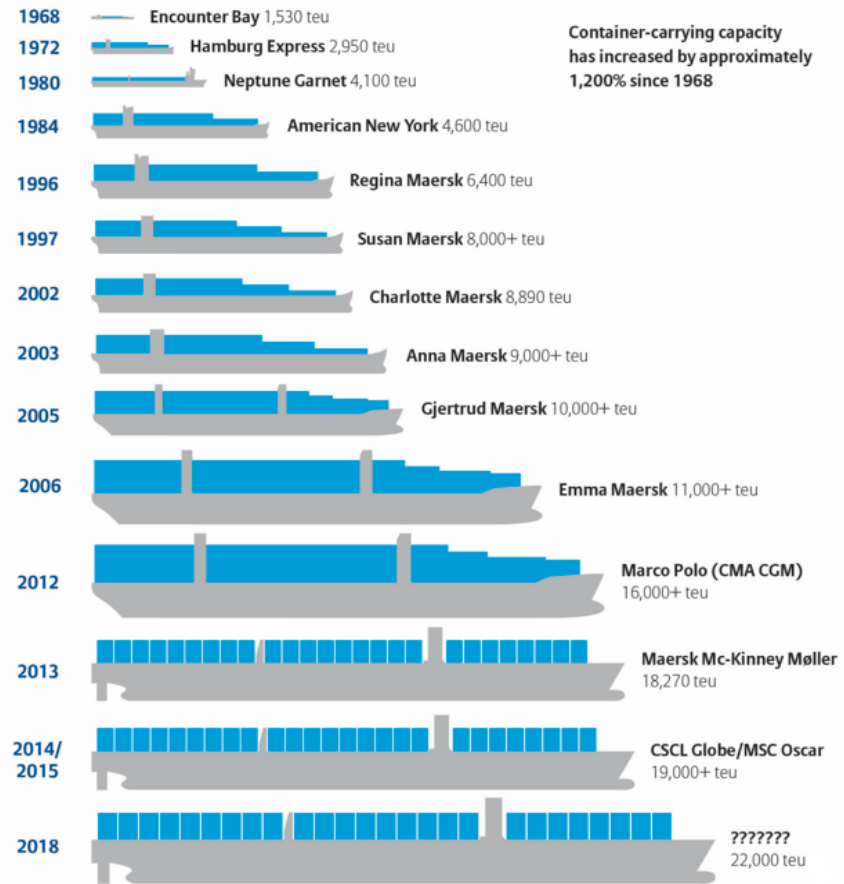
What is Precision Navigation

Goal: Seamlessly integrate high-resolution bathymetry, high accuracy positioning and shoreline data with real-time observations, predictions, and forecast data—such as water levels, currents, salinity, temperature, waves, and weather forecasts—to provide NOAA's data in formats that can be easily accessed and integrated into portable pilot units, underkeel clearance management system, electronic chart viewers or other decision support tools.

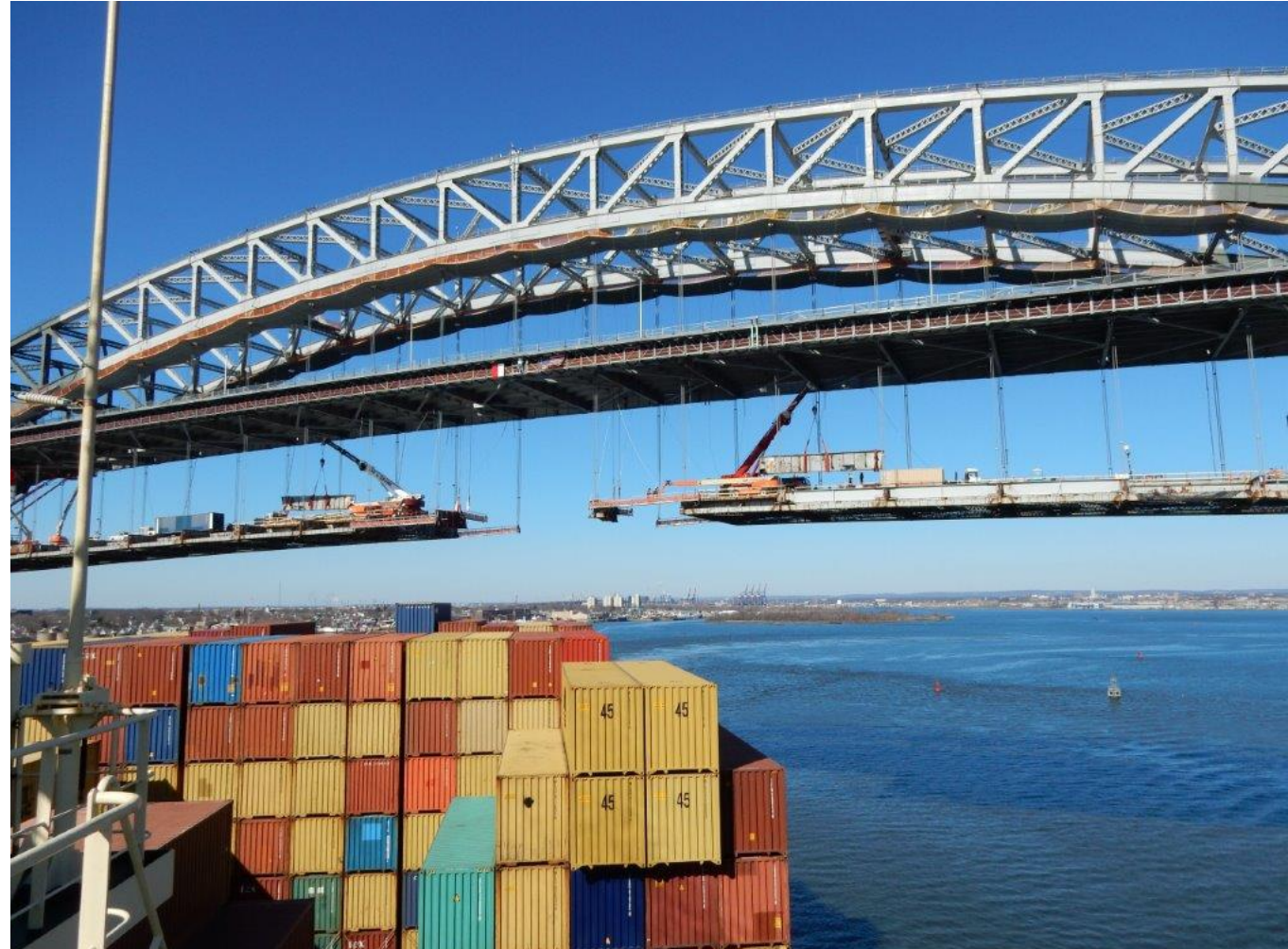


Why do we need Precision Navigation?

50 years of Container Ship Growth

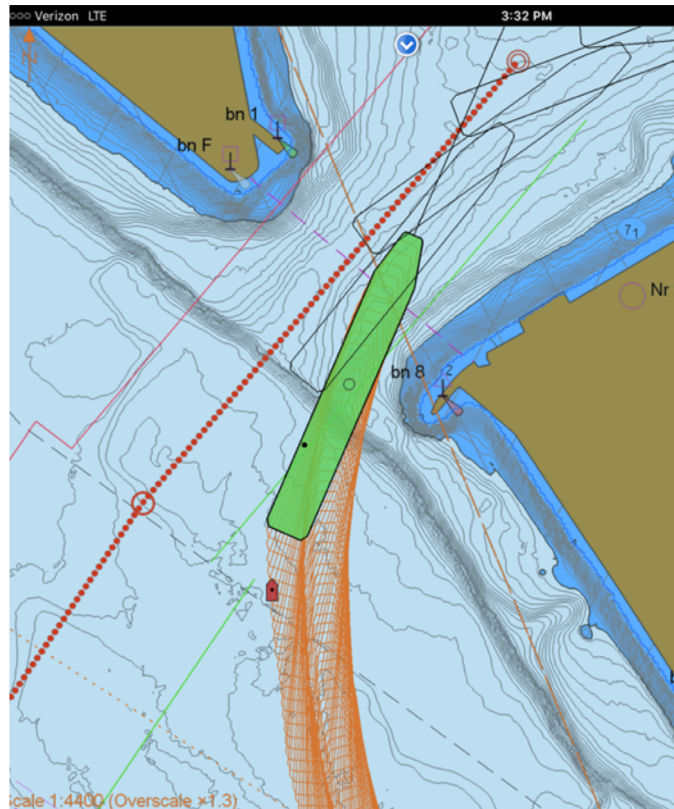


Graphic: Allianz Global Corporate & Specialty.
Approximate ship capacity data: Container-transportation.com

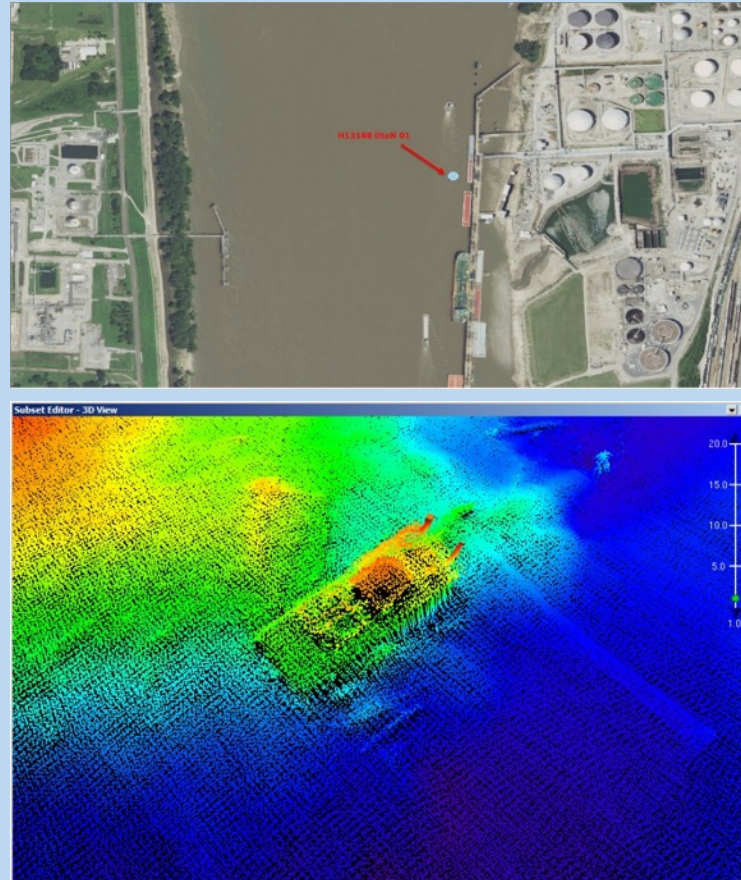


Precision Navigation Program Projects

Port of Long Beach *Pilot project complete*



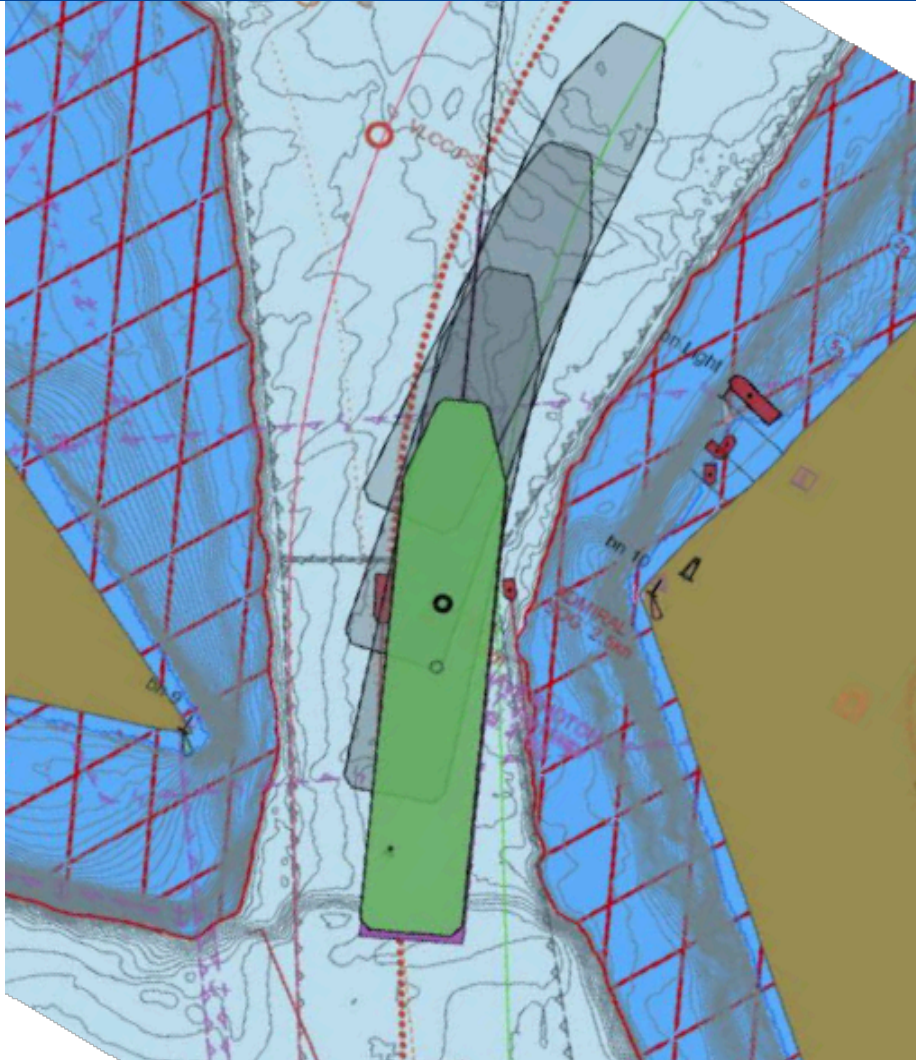
Lower Mississippi



New York/New Jersey



Precision Navigation in Action: Port of Long Beach, CA



When will I benefit from Precision Navigation Program?

This program is just getting started:

Completed pilot project (Long Beach)→
the approach to different port challenges

- Socio-economic study to help prioritize ports

The dissemination site is in development

- Held a workshop with PPU, ECS, UKCM companies
- We will be reaching out to end users for our next workshop to ensure our success





Future of Navigation and NOAA Navigation Services

Precision Navigation

1. We are working to provide you with integrated data marine navigation data
 - We will be asking for your input throughout this process
2. We are working to meet the future needs of the mariner and maritime industry

Raster Sunset

1. In order to improve our marine navigation data, we will be sun-setting our raster service and products including paper charts
 - This process will happen over 5 years
 - We are asking for your feedback on the manner and timing of this

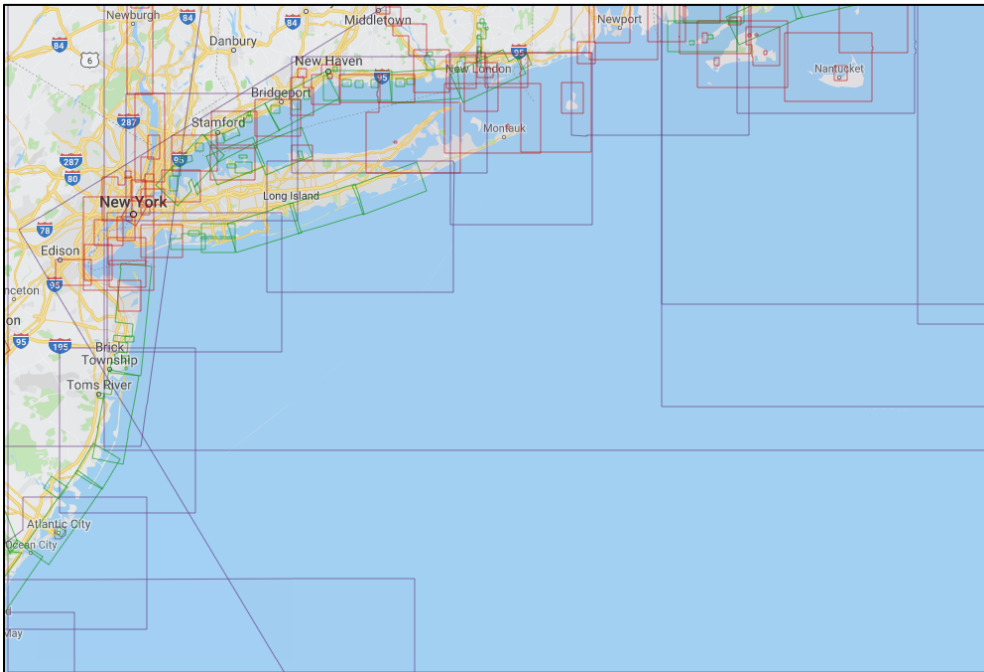


End of Traditional NOAA Paper Nautical Chart Production

- **A five year process** to end all traditional paper nautical chart production
 - Includes all other raster chart products
 - Products and services are expected to be cancelled by 2025.
- **NOAA is seeking feedback** from all chart users and industry partners
 - This will shape feedback on the manner and timing of the sunseting process
- **NOAA is undertaking a three pronged sunseting process**
 - Improving data consistency and providing larger scale coverage
 - Providing access to paper chart products based on ENC data
 - Shutting down all traditional paper and associated raster production
- **Paper charts from ENC data** can be created with the NOAA Custom Chart web app
- **Historical editions of nautical charts** are still available for downloading

Raster Sunset: ENC - Rescheme

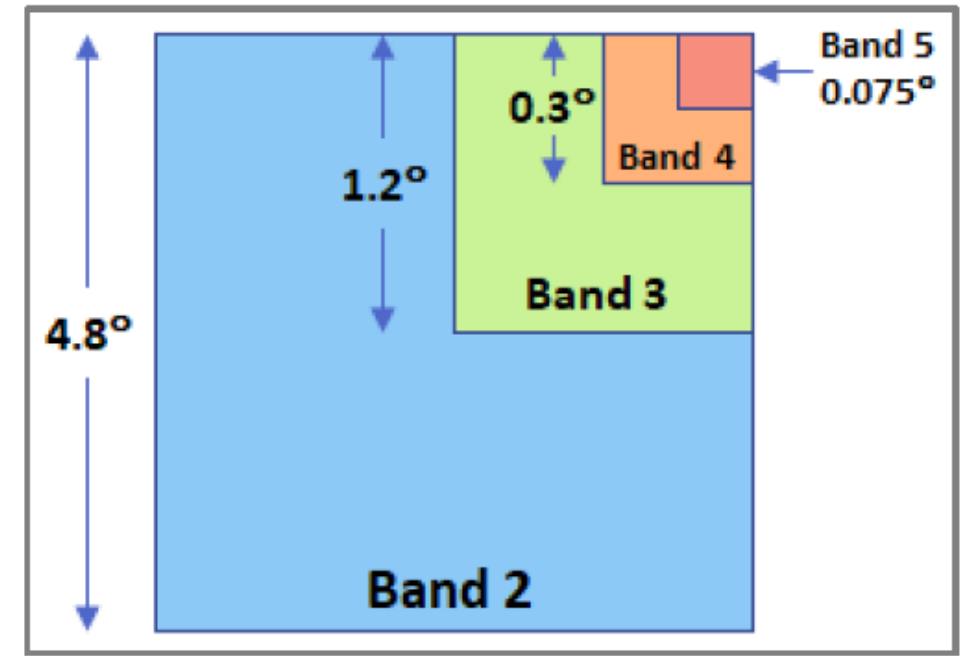
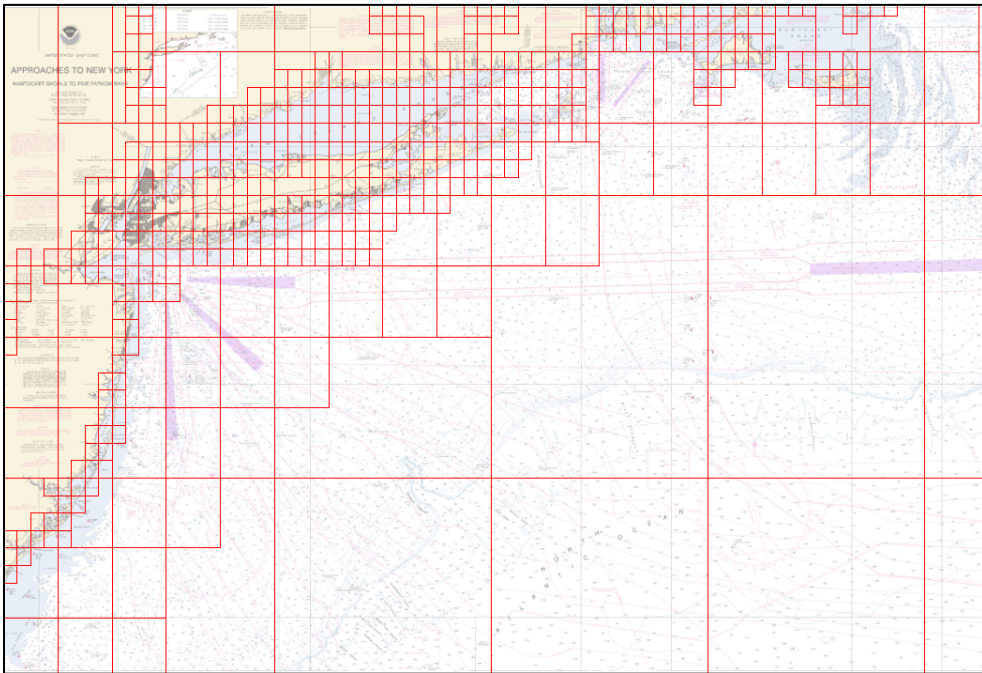
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ENC Usage Band	Navigational Purpose	Current (2019) NOAA ENC Scale Ranges	Reschemed NOAA ENC Scales
1	Overview	1:587,870 – 10,000,000	1:5,120,000 1:2,560,000
2	General	1:240,000 – 1:1,534,076	1:1,280,000 1:640,000
3	Coastal	1:150,000– 1:600,000	1:320,000 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

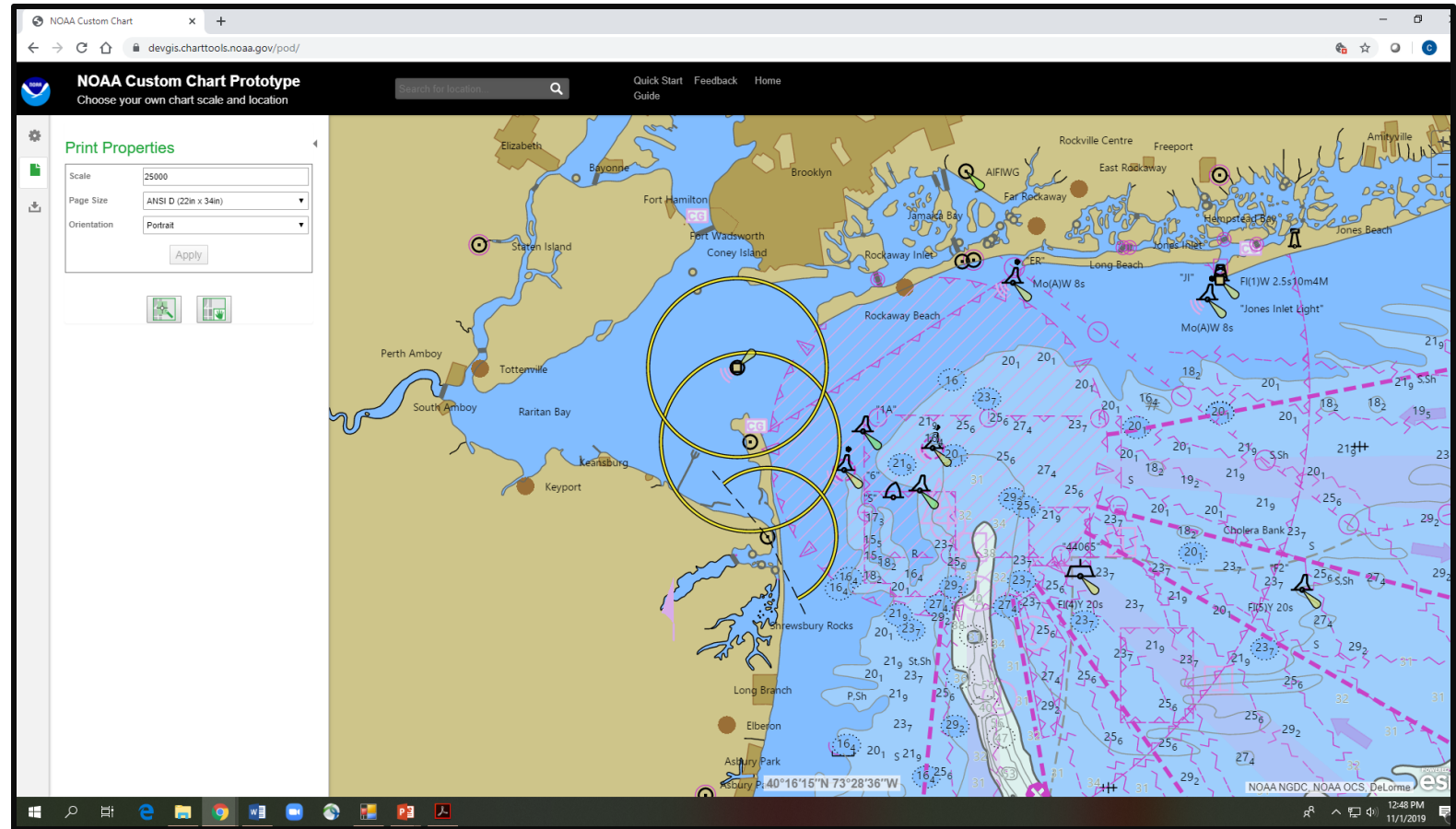
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Raster Sunset: NOAA Custom Chart

- Paper charts from ENC data can be created with the NOAA Custom Chart web app
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Questions?

For more contact: Elizabeth.Kretovic@noaa.gov