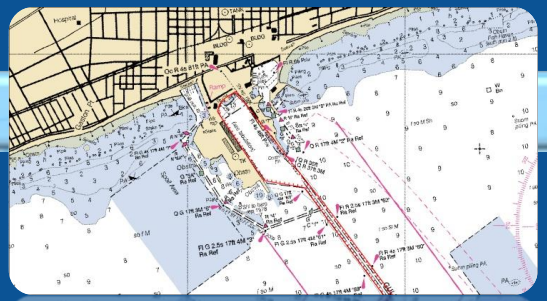
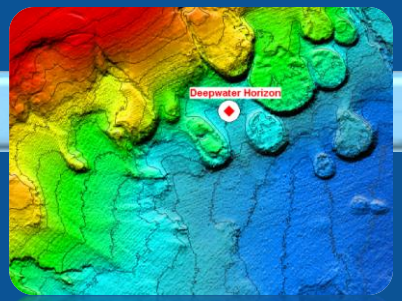
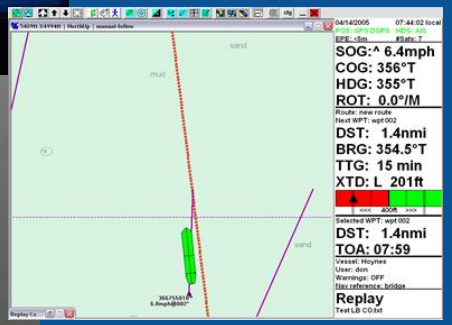




National Harbor Safety Committee
August 27, 2014
Environmental Intelligence in Ports

Captain Shepard M. Smith, NOAA
Deputy to the Hydrographer
Office of Coast Survey

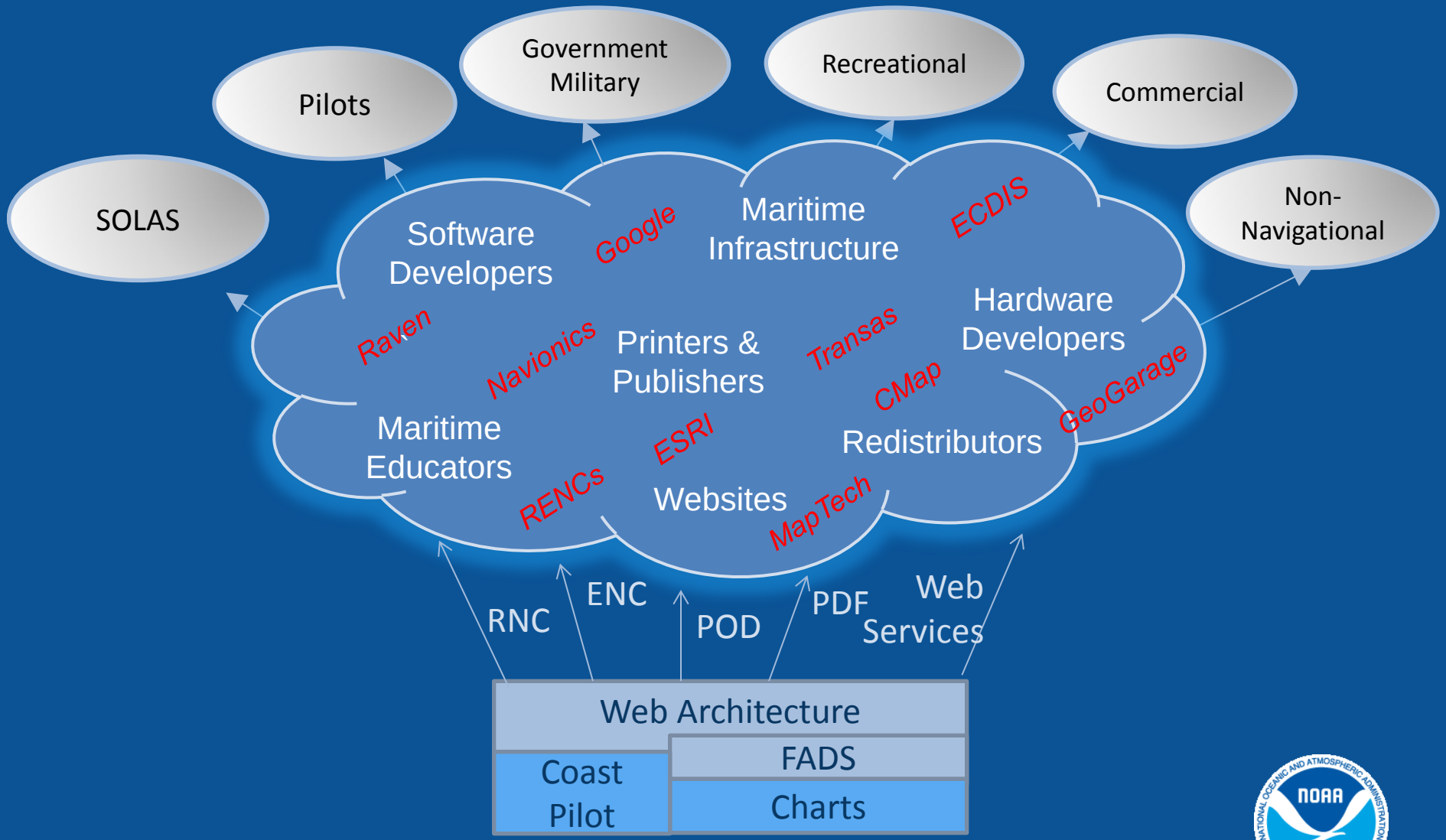

Ship's Store
CHARTS
TACKLE FUEL

Precise navigation in ports is different than coastal navigation



ADNavigation
NavSIM
Navicom
PilotMate

Coast Survey Value Chain



Embrace Unregulated Navigation Technology

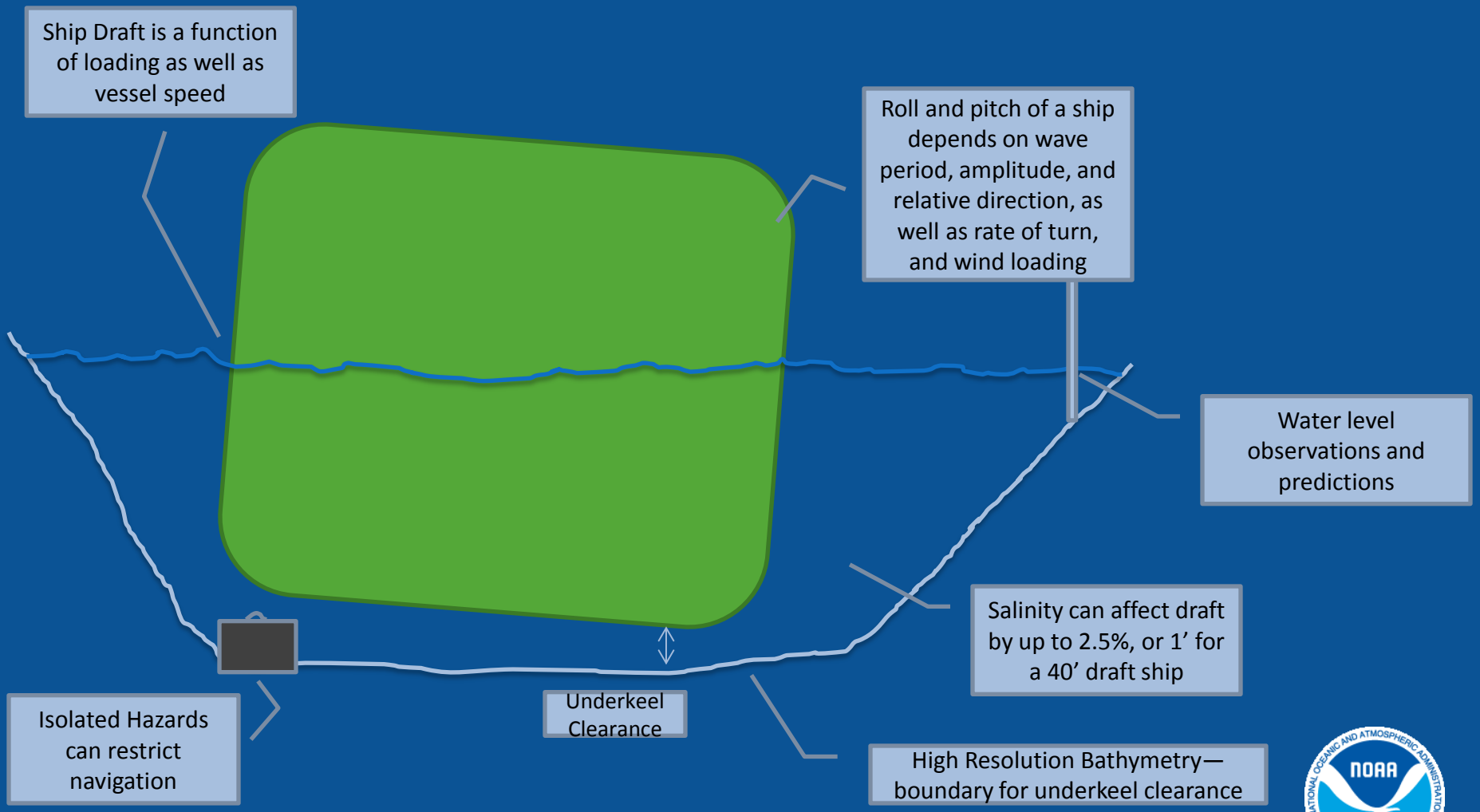
- Tremendous source of innovation
- Medium for chart delivery to millions of customers
- Connectivity creates new opportunities

Bring the information to the point of decision

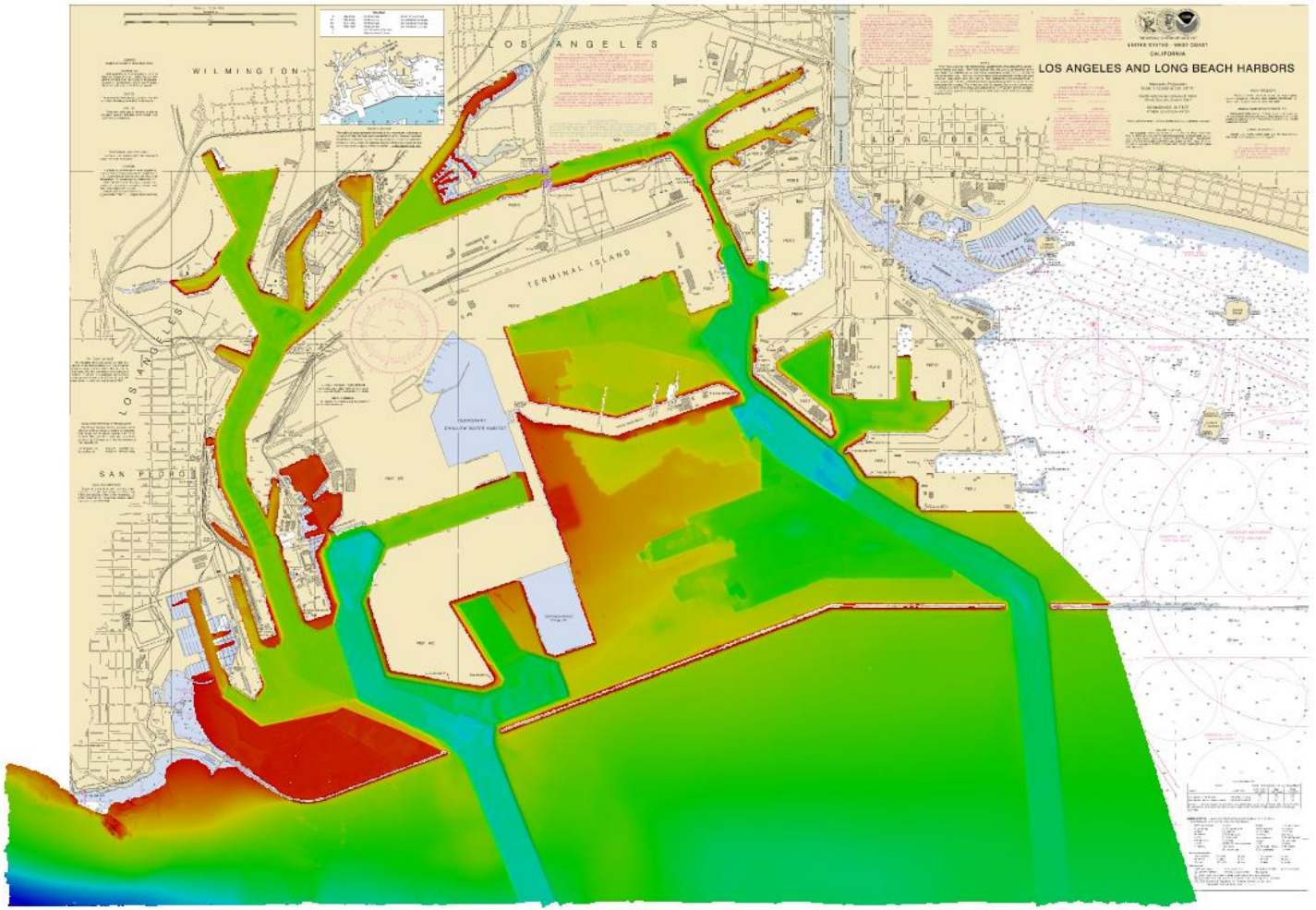
- Planning-how deep can I load?
- Scheduling-when is the window for this ship movement?
- Risk management-what is the risk of this particular transit?
- Execution-where is the available water right now?

- ALL require some environmental information

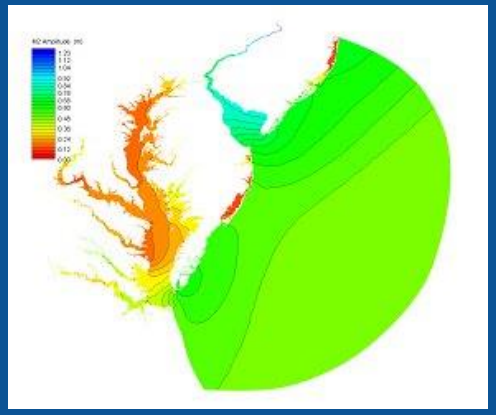
Environmental factors affecting ship manuevering



High Resolution Bathymetry



Full Suite of Environmental Observations and Predictions

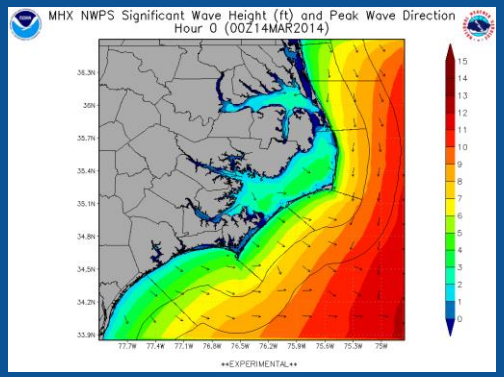


Hydrodynamic Models for predicted water levels, currents and salinity

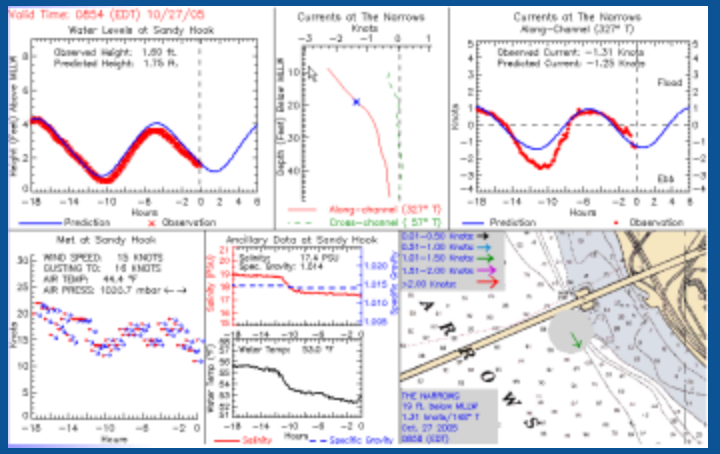
Coastal current observations

Wave observations

High Resolution bathymetry



Coastal Wave predictions



PORTS-Real Time station observations and predictions

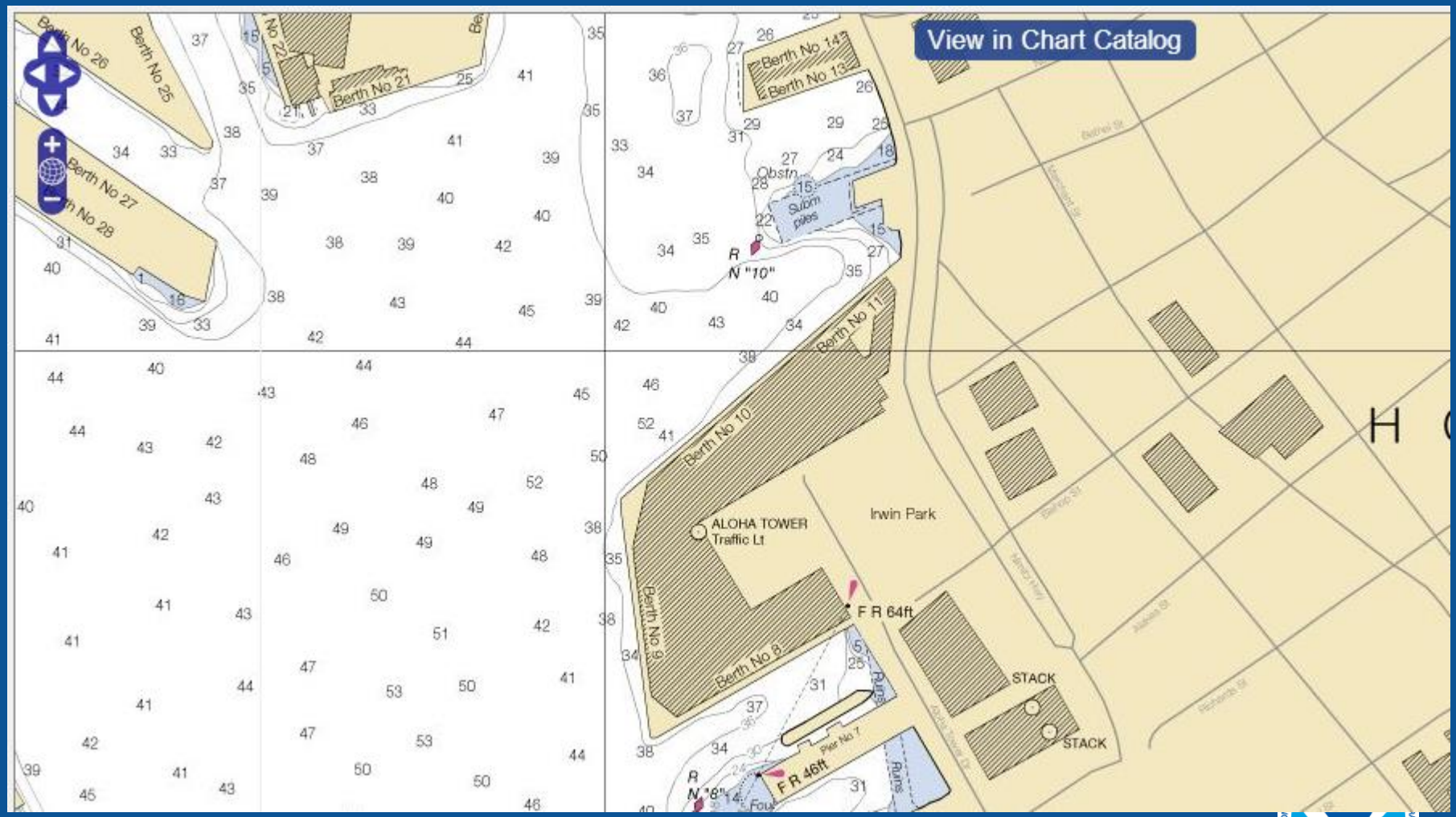
ENC First

- NOAA is retooling our internal systems and workflows to make the ENC our primary chart product
- Changes will be made to the ENC first and distributed weekly, between editions
- This will eliminate the single largest delay in updating charts-waiting for the new edition, reducing latency by up to 80%
- Pacific Islands and California are done, the rest will be done in the next two years.

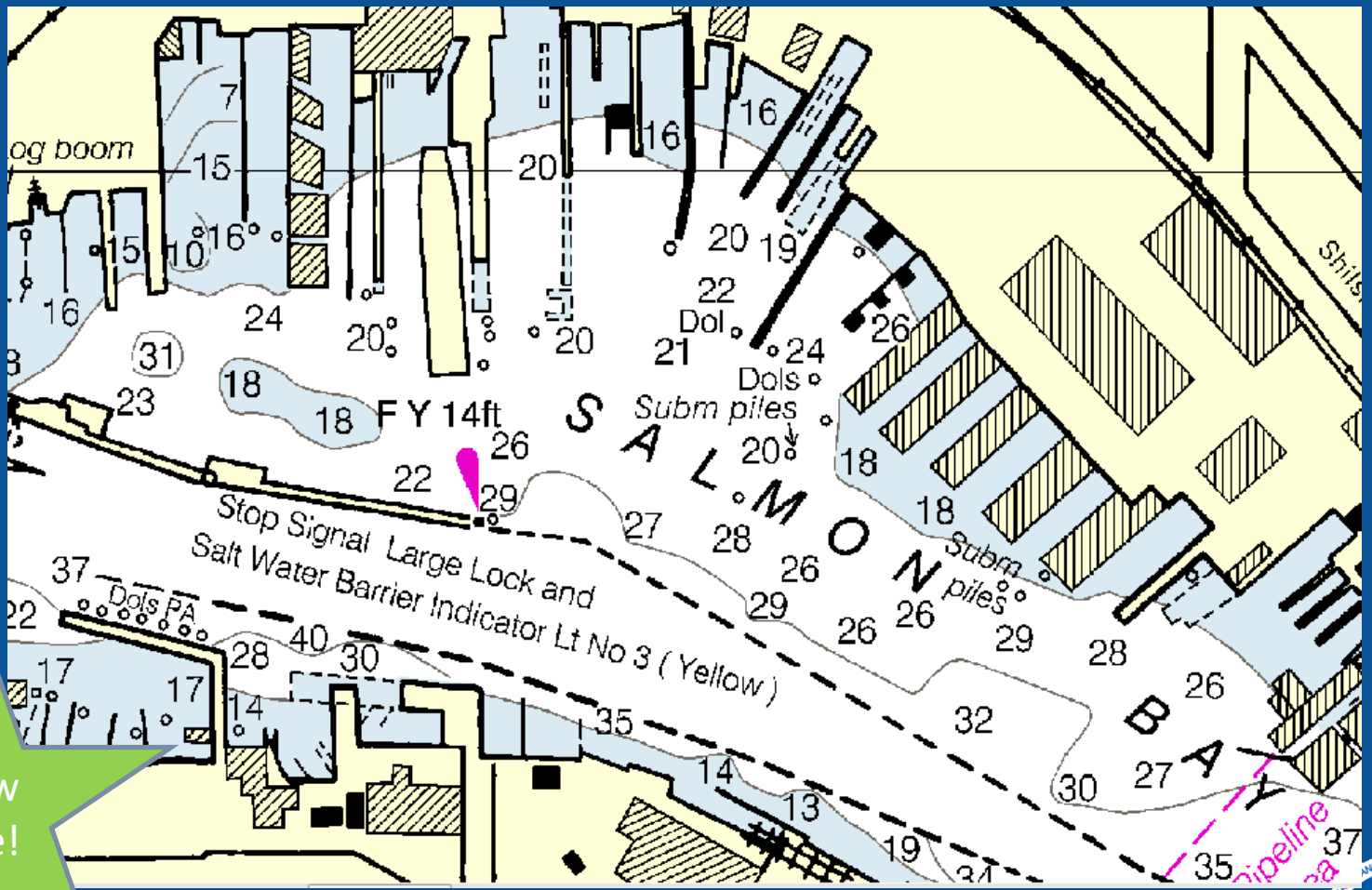
Print and Distribution System for Paper Charts

- NOAA privatized all chart printing and distribution
- April 14, 2014
- We have 15 existing Print on Demand Partners, who offer printed charts suitable for traditional uses
- Government and Military printing will be handled by the Defense Logistics Agency.

First ENC-derived paper chart released

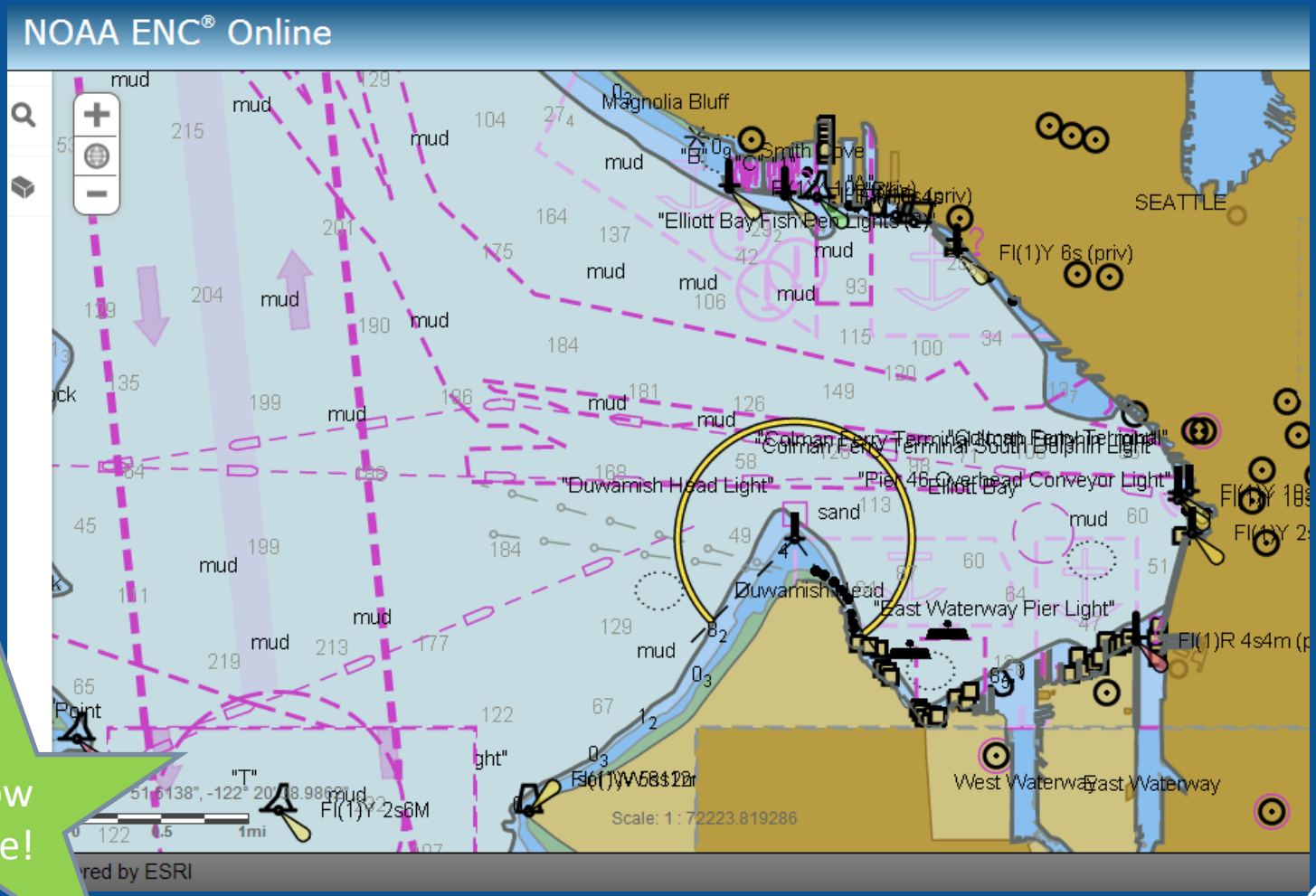


Freely Available PDF Charts



Now Live!

ENC Online



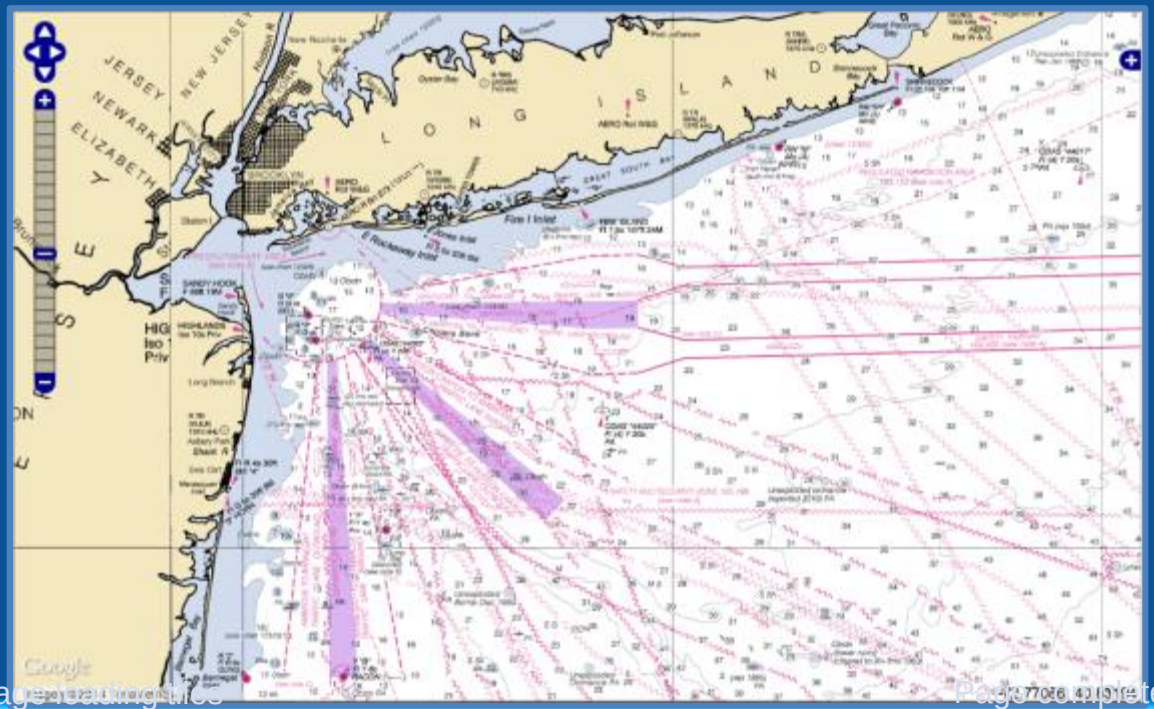
Now Live!

Online Tile Service

- Quilted and single-chart tilesets
- Published weekly to a public-facing web server
- Tile Map Service specification compatible with with Google Maps, Bing Maps, and OpenLayers APIs
- Planning metadata support
- Targeting early Fall 2014

Offline Tile Service

- Planned for Late Fall 2014
- Published weekly
- Distributed through navigation systems or chart data providers
- Packaged in offline format (e.g. MBTiles)
- Offline metadata support (e.g. UTFGrid)
- Delta updates
- Targeting early 2015



NOAA Navigation
INDUSTRY DAY

NOAA is open for business...

and wants to meets with application and web developers, and equipment manufacturers, at the **Annapolis Boat Show**.

October 10, 2014

Free NOAA data adds functionality to navigation systems and maritime apps.

Meet NOAA experts and find out how you can use NOAA data.

NAUTICAL CHARTS

NOAA charts are available for free, in both raster (BSB) and vector (ENC) formats. In response to the rapid change of web and mobile technology, NOAA will release its entire suite of nautical charts in pre-quilted tile sets for online use. They will also be available in regional geo-packages for use in disconnected applications. Like all NOAA charts, the tile sets will be updated with new information every week.

TIDES AND CURRENTS

Many applications use NOAA's tide and current predictions and observations at specific stations, but NOAA makes continuous models of tides and currents in all coastal areas – not just at pre-determined stations. These models are three-day predictions of tides and currents, updated every six hours. The data is free. NOAA is developing new methods of distributing these models for public use.

WEATHER

NOAA weather data (observations, models, radar, and

OFFSHORE CURRENTS

NOAA and partners maintain a network of current-measuring