

U.S. Department of
Homeland Security
**United States
Coast Guard**



21ST CENTURY WATERWAYS



Marine Transportation Systems CG-5PW

Office of Navigation Systems (CG-NAV)



21ST CENTURY WATERWAYS



PORTS
RNCs
Hydrographic Survey



IENC
Chart Booklets

e-Charts

e-ATON

Physical ATON

DGPS
NAIS

e-MSI

Channel Framework

e-Hydro

Shared Waterway Responsibility






United States Visual Aids to Navigation System (USATONS)

“The primary objective of the USATONS is to mitigate transit risks to promote the safe, economic, and efficient movement of military, commercial, and other vessels by assisting navigators with determining their position, a safe course, and warning them of dangers and obstructions.”



The Role of e-Navigation



“The U.S. vision for e-Navigation is to establish a framework that enables the transfer of data between and among ships and shore facilities, and that integrates and transforms that data into decision and action information.”

“The ultimate goal of e-Navigation efforts in the U.S. is to use timely and reliable information to make the U.S. Marine Transportation System operate better.”



21ST CENTURY WATERWAYS



MTS at a Glance

Infrastructure

- 25,000 miles of navigable waterways
- Over 350 ports
- 3,700 marine terminals
- 238 lock chambers
- 1,400 intermodal connections
- 92,000 aids to navigation

Traffic

- 68,000 vessel calls at US Ports
- 640 ferry vessels – 147 million passengers
- 110+ cruise ships – 10.1 million passengers
- 12 million recreational boats – 74 million persons





Impact of the U.S. MTS

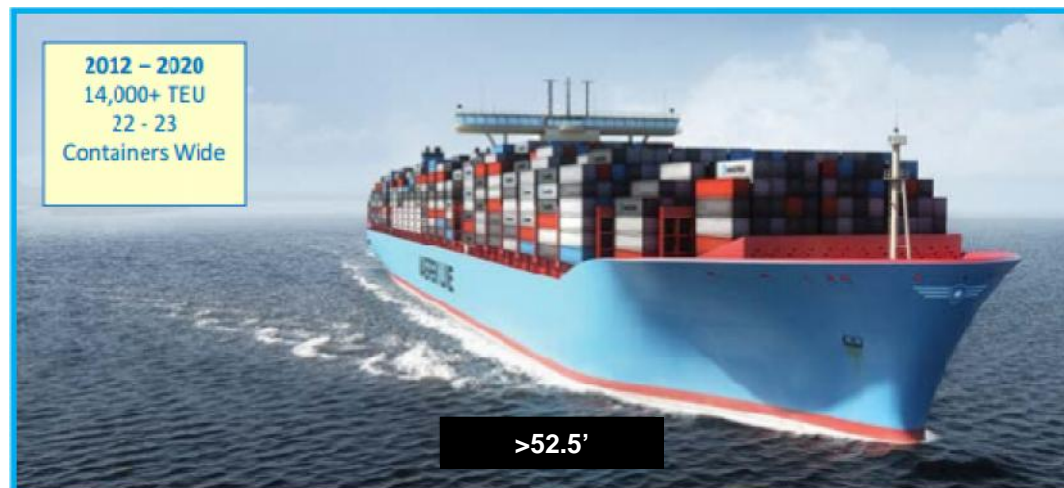
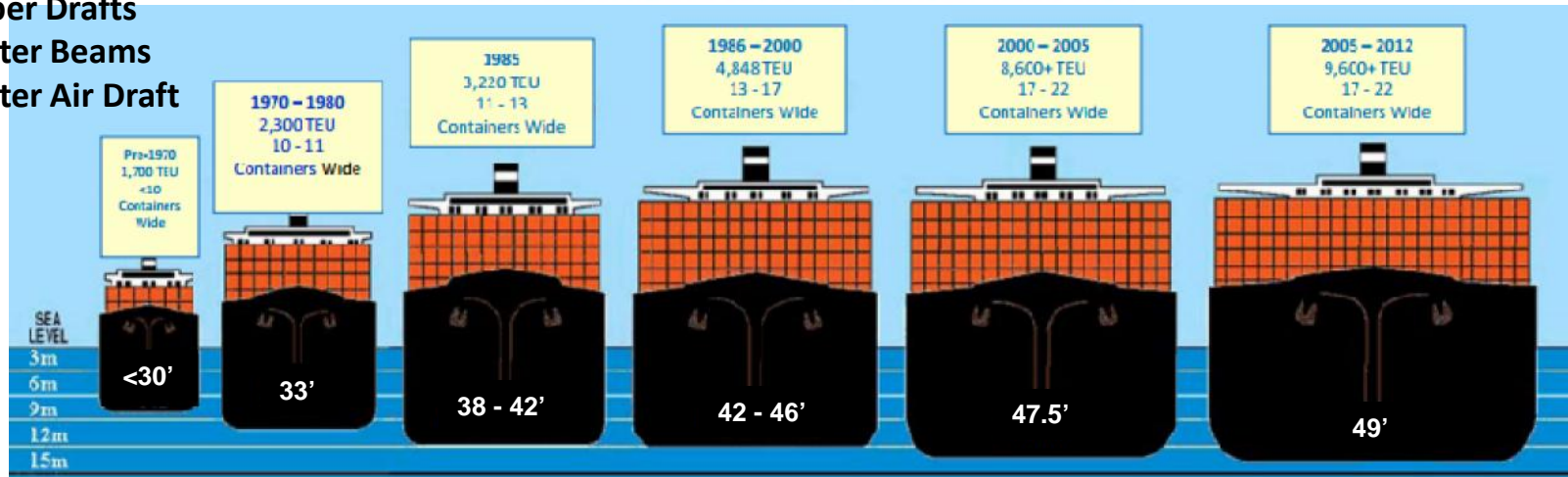
- More than 13 million seaport related jobs accounting for \$649 billion of US GDP
- \$1.3 trillion value, (64.1%) & 99.4% by weight of overseas cargo annually
- \$3.8 billion value of goods moving through U.S. seaports each day
- MTS International trade accounts for 32% of GDP; 37% expected next year
- \$42 billion & 356K jobs – economic impact of cruise line industry
- \$121.5 million & 338K jobs – economic impact of recreational boating





Navigation Situation

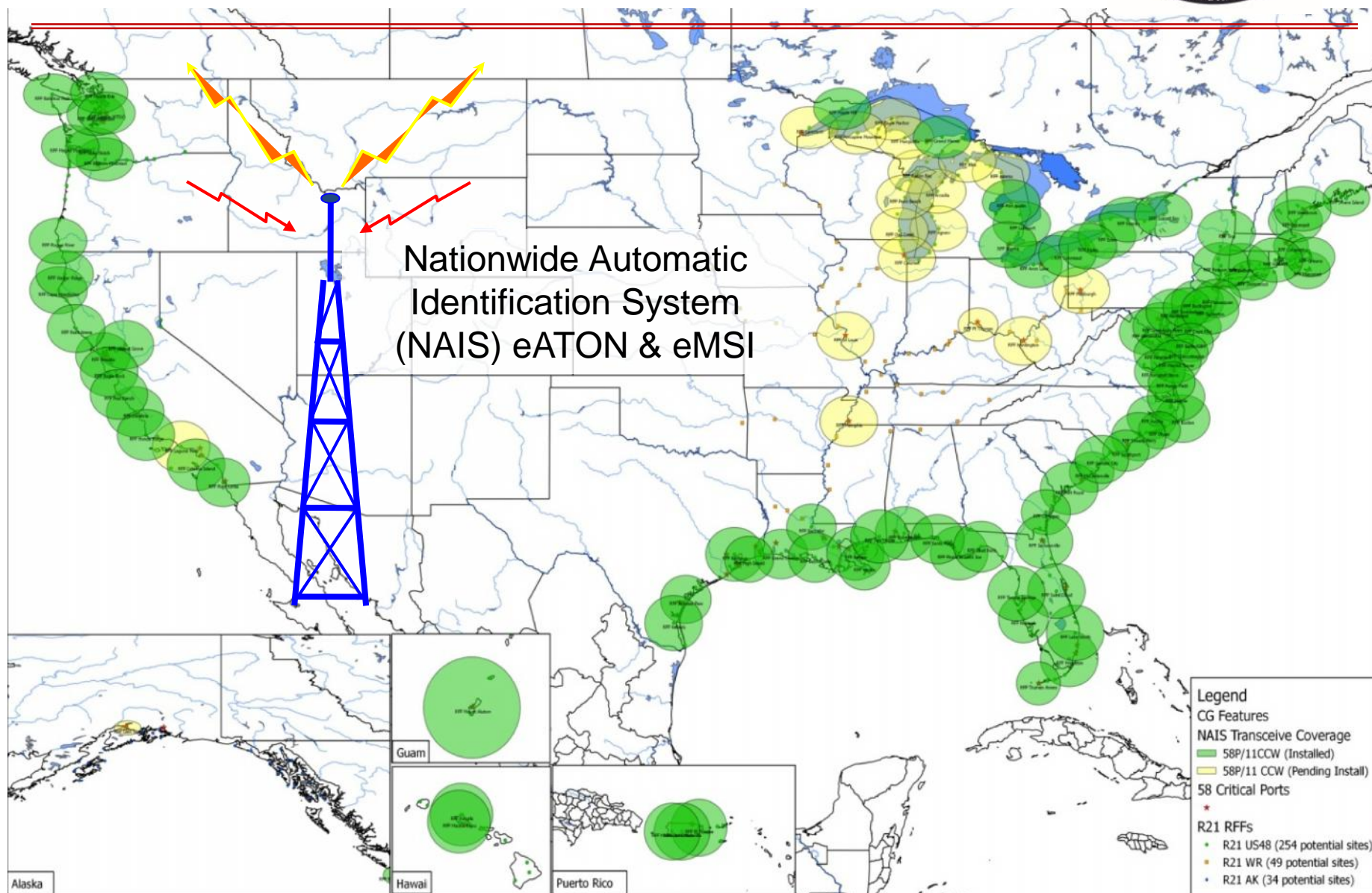
Larger Ships
Deeper Drafts
Greater Beams
Greater Air Draft



Channel
Dimensions have
remained fairly
constant

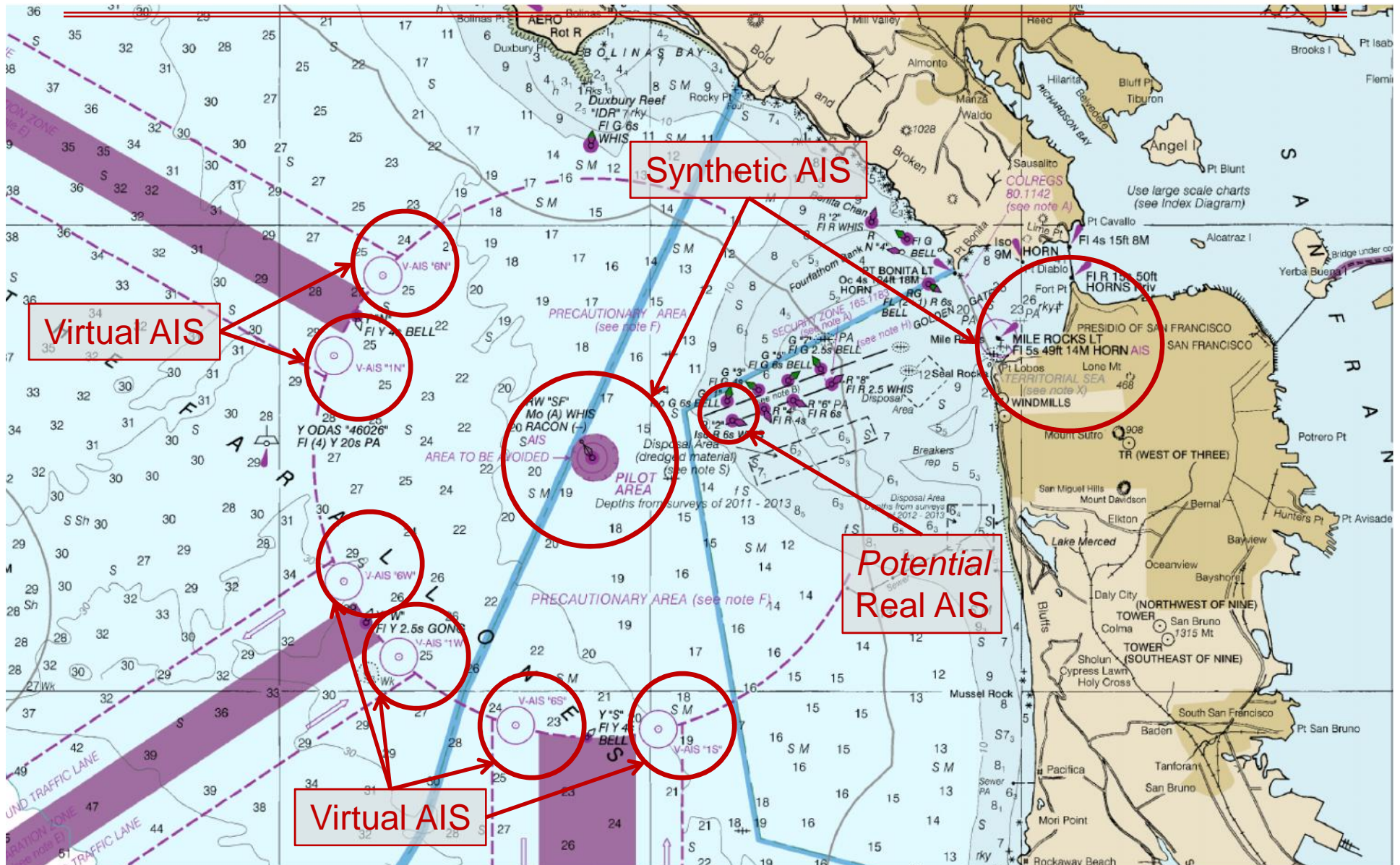


21ST CENTURY WATERWAYS





21ST CENTURY WATERWAYS

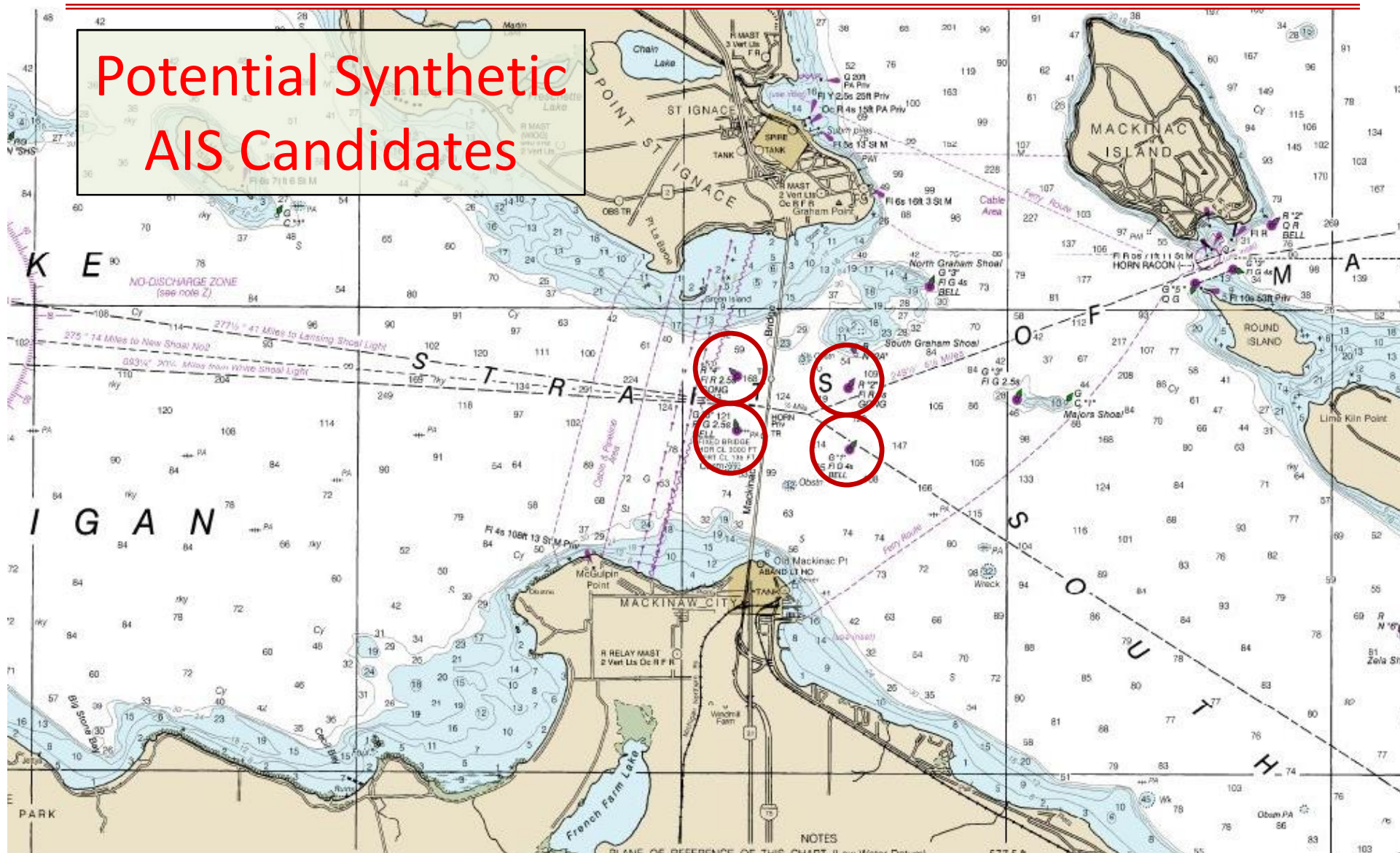




21ST CENTURY WATERWAYS



Potential Synthetic
AIS Candidates





21ST CENTURY WATERWAYS

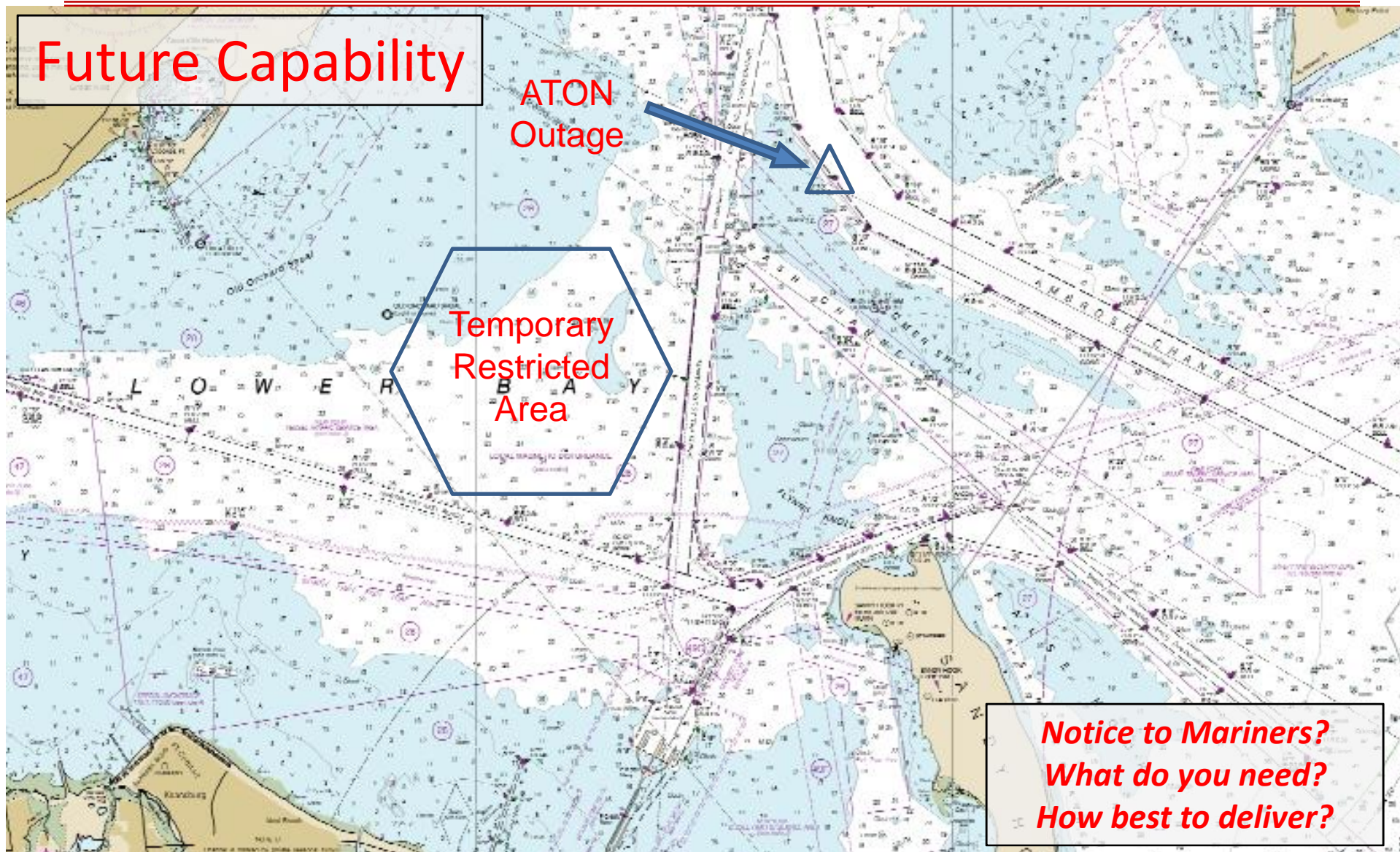


Future Capability

ATON
Outage

Temporary
Restricted
Area

**Notice to Mariners?
What do you need?
How best to deliver?**





21ST CENTURY WATERWAYS



Integrated Navigation
System with Radar,
Echo Sounder, & AIS



Smart Chart
AIS

[Home](#)

[Features](#)

[Member Services](#)

[What Others Say](#)

[Contact](#)

Android App now available!!

FEATURES

It's easy to know exactly where you are and what other vessels are around you. You can also chat with friends on other boats, find the best fuel and dockage prices, see your way in low visibility, and much more.

Smart Chart AIS gives you:

- Electronic Charts
- AIS (Automatic Identification System) via cellular networks
- Augmented Reality (see your way into the harbor or anchorage even in the fog or dark)
- Social Networking
- **All on your Smartphone or Tablet. And it's completely free!**



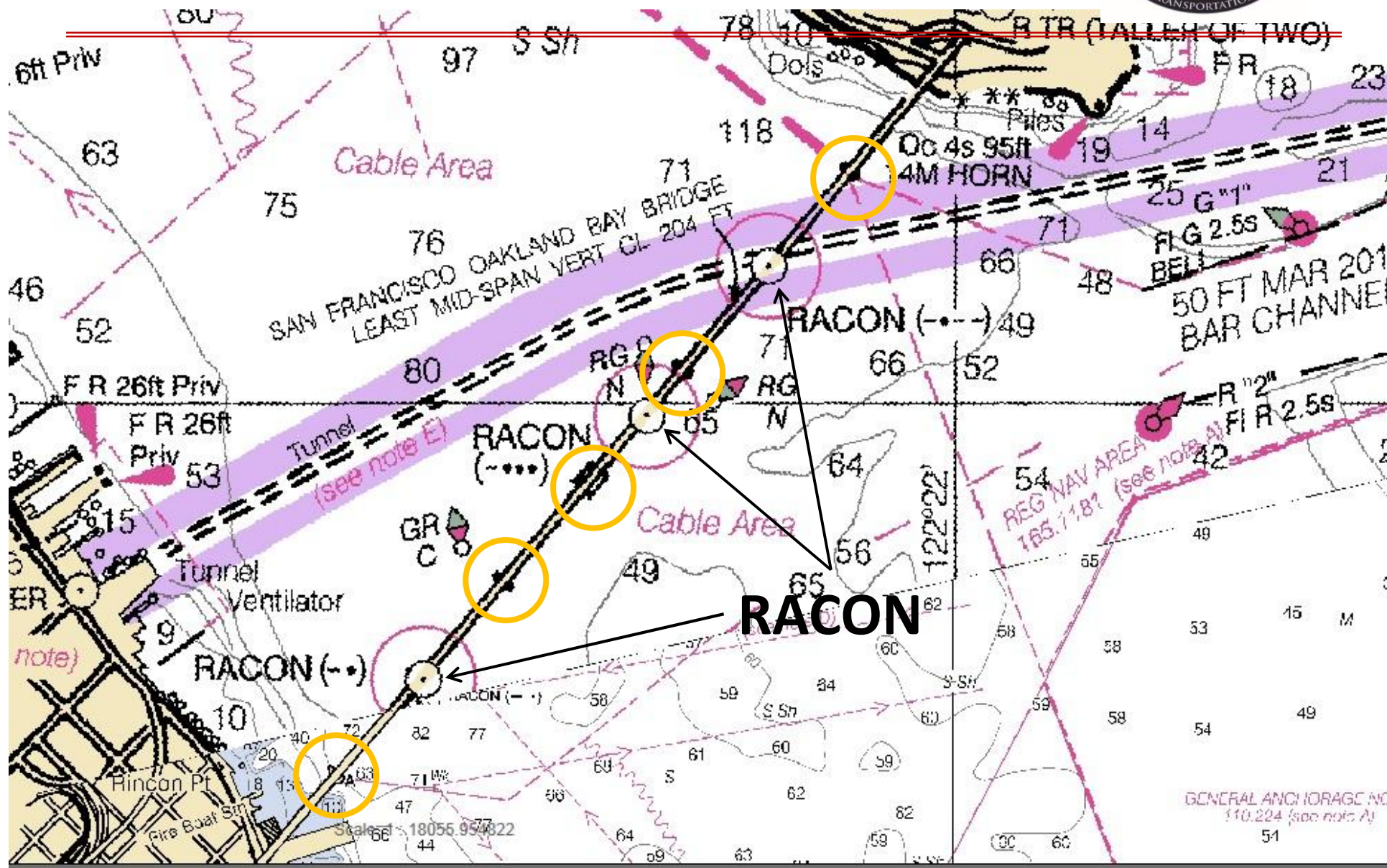


21ST CENTURY WATERWAYS





21ST CENTURY WATERWAYS





21ST CENTURY WATERWAYS





Identify & Mitigate Transit Risks

Waterway User Input!