

Figure 2. Channel deepened on existing side slopes

Navigation Safety in Right Whale Habitats

Charleston Branch Pilots Association

November 6, 2013

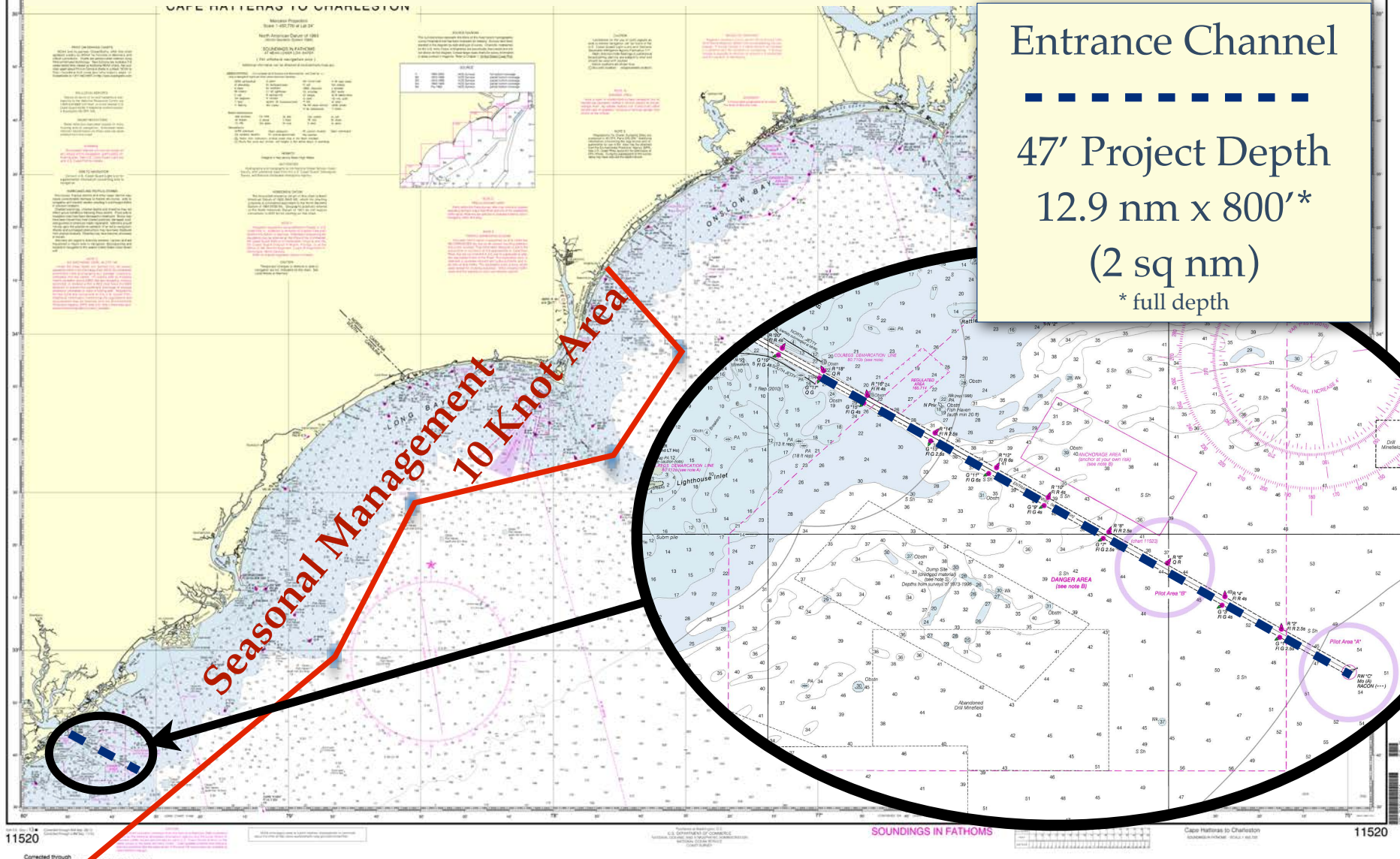
SMA & Charleston Entrance Channel

CAPE HATTERAS TO CHARLESTON

Entrance Channel

- - - - -
 47' Project Depth
 12.9 nm x 800'*
 (2 sq nm)
 * full depth

Seasonal Management
 10 Knot Area



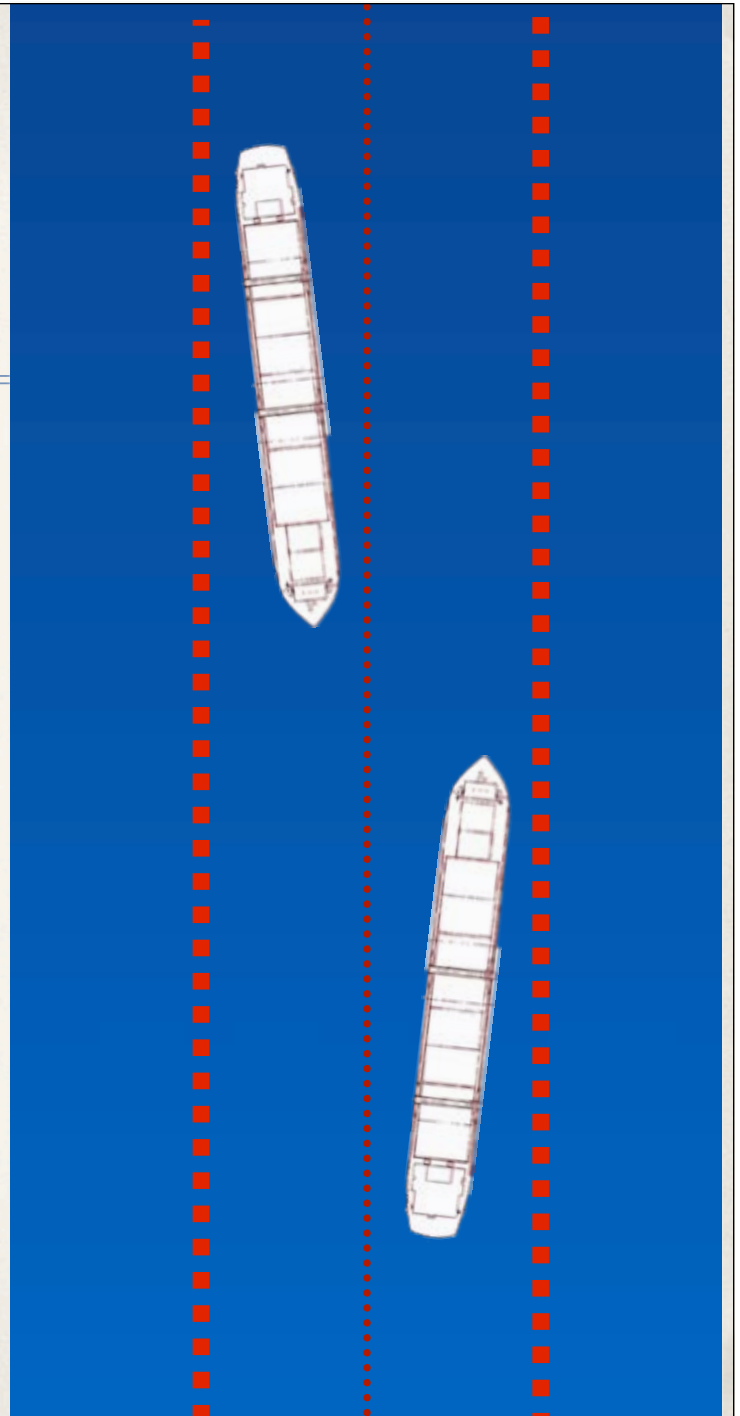
Charleston Entrance: Precision Navigation

Vessels Dimensions

1100' x 150'

Shown at 7 degrees
(typical w/ 15+ kts)

**Two meeting ships occupy 71% of
available width dredged to full depth**



Charleston Entrance: Precision Navigation

Vessels Dimensions

1100' x 150'

Shown at 10 degrees
(typical w/ 10+ kts)

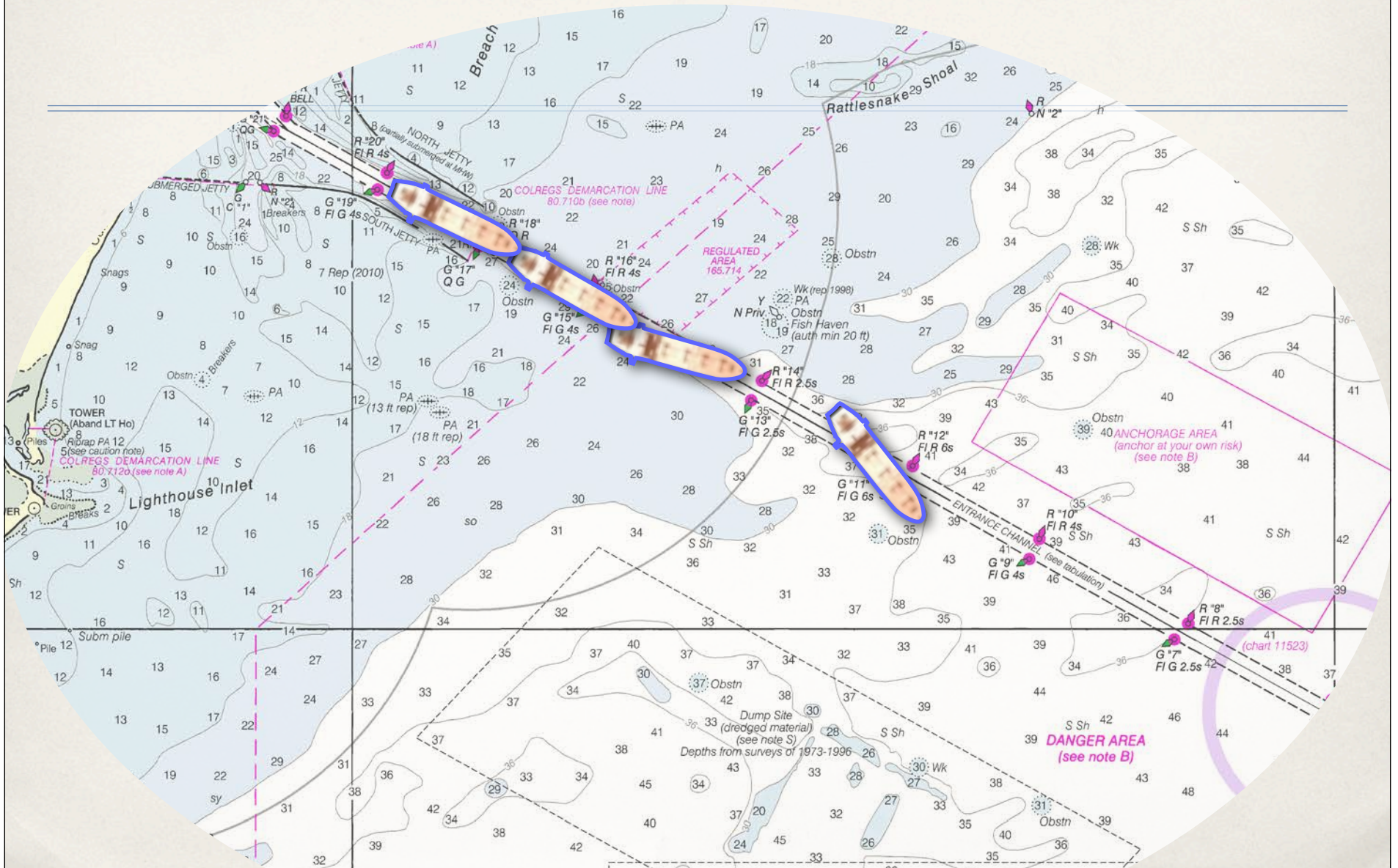
**Meeting Vessels Occupy 85%
(50% margin reduction)**



Collision Avoidance



Groundings / Pile-Ups

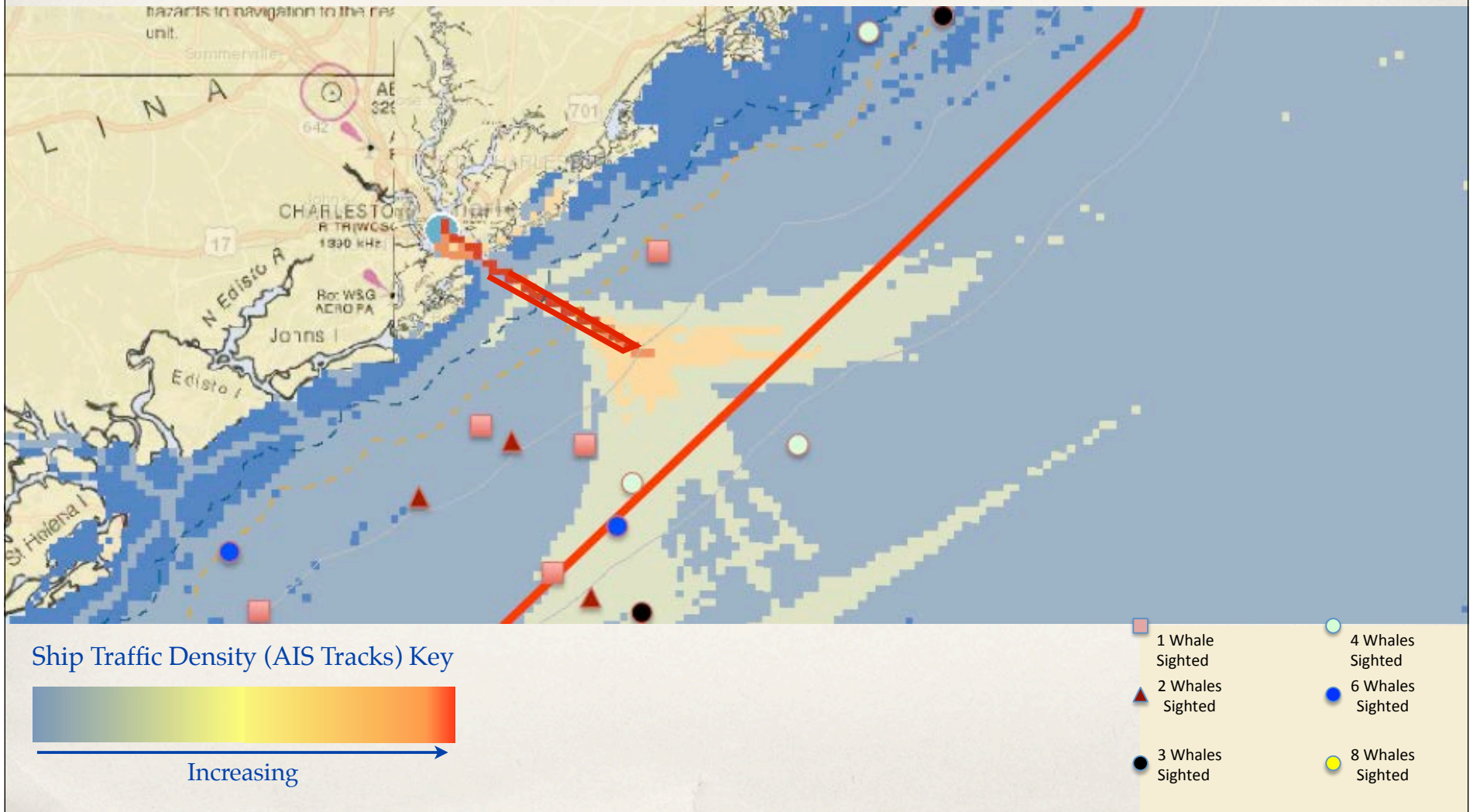


Charleston Entrance:

SMA Compliance Requirements / Master Pilot Exchange

- * Hydrographic Conditions
- * Oceanographic Conditions
- * Meteorological Conditions
- * Severity
- * Deviation Speed(s)
- * Start Point Coordinates
- * Deviation Start Time
- * Deviation End Time
- * End Point Coordinates
- * Conditions
- * Verification

2010 Charleston Approach Ship Tracks and Right Whale Sightings



Safety Comparisons: Charleston vs. Others

Some ports have naturally deep water in their ocean approaches without confined, dredged channels, where navigational risk at slow speed is inconsequential. Deep water all around allows maneuverability to facilitate passing, to avoid collisions, and to leave the lane in event of loss of control.

- * Hong Kong: 3000' wide undredged "lane", water depth outside lane is 120'.
- * LA/LB: 1200' wide undredged lane, water depth outside lane is 90'.
- * Boston: Slow speed requirement is for security and applies only to LNG vessels, and only inside the harbor. Tugs required to assist slow speed.
- * Charleston's approach is dredged and only 800' wide at full depth, with shallow water on either side leaving no margin for error or for contingencies outside the channel.

Alternate Safe Navigation Strategy: Boston

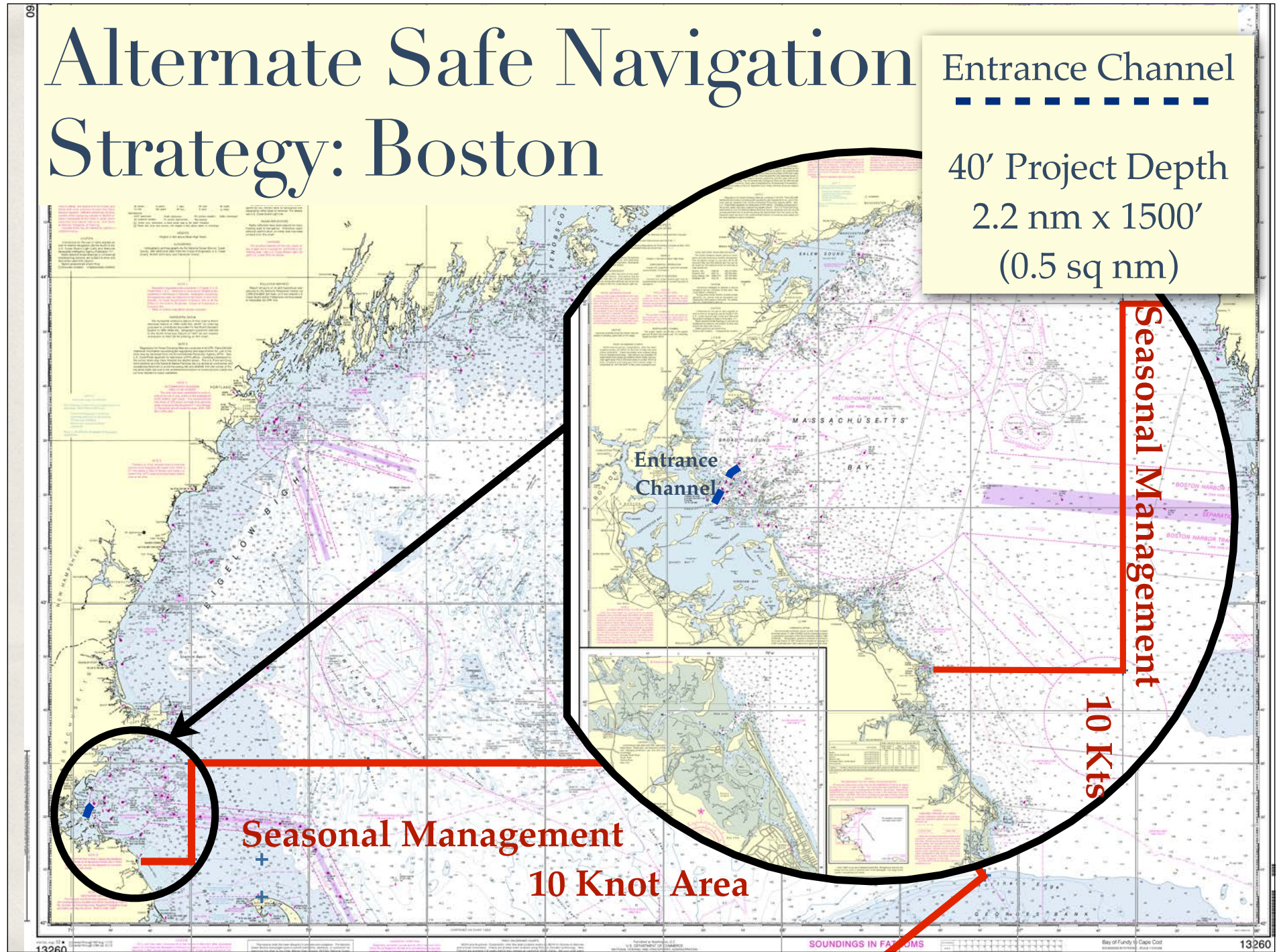
Entrance Channel

40' Project Depth
2.2 nm x 1500'
(0.5 sq nm)

Seasonal Management

10 Kts

Seasonal Management
10 Knot Area

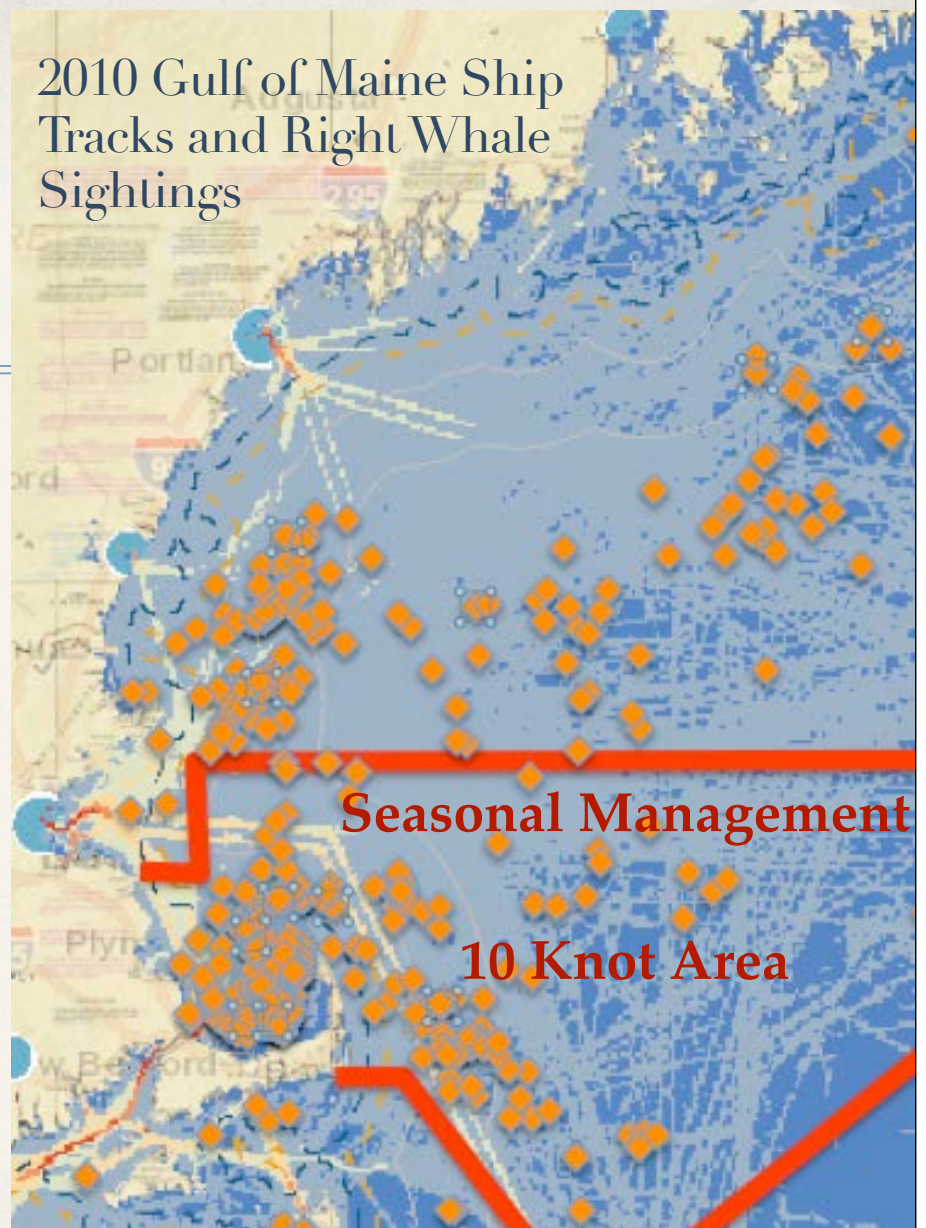


Total Environmental Safety

- ❖ Boston and Gulf of Maine Port Entrances and Pilotage Waters Omitted from Speed Zones
- ❖ Federal Register references study stating this strategy is 90% effective reducing ship strike mortality risk.
- ❖ Full Environmental Safety Solution

◆ ~ 4.65 Sighted Right Whales

Ship Traffic Density (AIS Tracks) Key



Navigation Safety Solution

Respectfully request that the rule remove dredged ocean channels and pilot boarding areas from Seasonal Management Areas, and defer to the Army Corps of Engineers' codified authority and expertise in channel design and performance. While affecting only 2 square miles near Charleston, this would be a powerful net gain in the environmental benefit of the rule.

Seasonal Management
10 Knot Zone