

# S-126 update

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DEFINITIONS, SURFACE CURRENT RESEARCH, INTEROPERABILITY,  
PROTOTYPES AND LESSONS LEARNED

## 2 main focuses for discussion

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1. What should the focus of S-126 be?  
What publications are the NIPWGs main focus?
2. Surface Current related analysis

# Definition

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WHAT DATA IS REPRESENTED BY THE S-126?

# Definition of S-126 – NIPWG WIKI

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## *Describing*

1. topography (marine and terrestrial)
2. currents, tides, weather (prevailing, seasonal, and hazardous)
3. other environmental conditions.

# Definition of S-126 – NIPWG WIKI

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## **Describing**

1. Maritime Topography
2. Currents, Tidal Streams and Flow (S-111)
3. Sea Level and Tides (S-104)
4. Sea and Swell (S-412)
5. Sea Water Characteristics (S-412)
6. Ice Conditions
7. Climate and Weather Information (S-412)

# Physical environment – NIPWG related

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Describing the topography  
of the physical environment

....to support the S-101

....and establishing relationships amongst features in the physical environment

*(which has been contained in the form of texts in nautical documents.)*

The focus for a future meeting

# WMO related

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Describing the prevailing, seasonal, and hazardous  
Weather and sea state conditions

... Possibly to support the S-412

*(which has been contained in the form of texts in nautical documents.)*

The focus for a future meeting

# TWCWG related data

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Describing the prevailing, seasonal, and hazardous  
Water conditions

... to support the S-111 and S-104

*(which has been contained in the form of texts in nautical documents.)*

The focus for *THIS* meeting



# Definition of S-126 – TWCWG comment

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*There are some elements in S-126 which seems to be close TWCWG domain, relating currents and water level data S-111, S-104.*

*Thus it is important to define what S-126 should contain and what will then be the tasks on NIPWIG relating to it.*

*It should be taken care of that there is not overlap between S-111, S-104 and S-126. This might need some correspondence between NIPWIG and TWCWG.*

# Definition of S-126 – TWCWG comment

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*In Australian Sail directions there are quite a few areas around the coastline where they would not be able to provide S-111 or S-104 quality data but there may be paragraphs about seasonal expectations.*

*Where tidal predictions for major ports and real-time broadcast are available, they are mentioned in the sailing directions referring to the Tide Table Tidal stream publications.*

# Definition of S-126 – WMO comment

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*...the potential for real time data, which if it includes weather data, would then conflict with authoritative content produced in compliance with the future S-412, 413, and 414 specifications.*

*a very clear definition of the intended scope (including temporal scope) of S-126 is needed.*

# Definition of S-126 – KHOA

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The S-126 is the standard for  
expressing the symbols or colors

...so that readability can be enhanced for more intuitive understanding of the  
marine physical phenomenon

*(which has been contained in the form of texts in nautical documents.)*

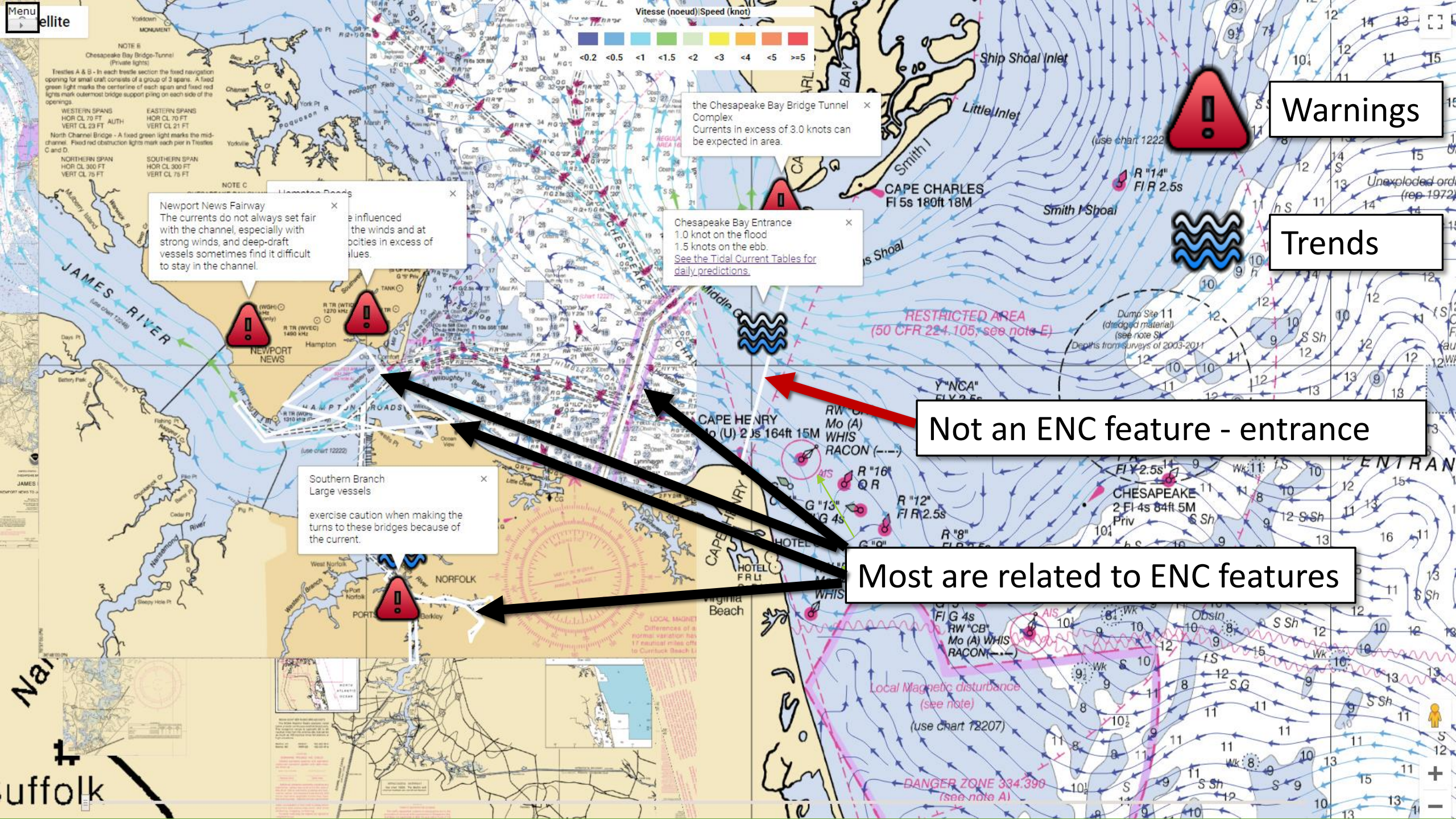
**We need a CLEAR definition  
For S-126**

# surface currents

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A PROTOTYPE FOR S-111 DATA AND THE S-126 SUPPORTING DATA

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Vitesse (noeud)/Speed (knot)



Menu

NOTE B  
Chesapeake Bay Bridge-Tunnel  
(Private lights)  
Trestles A & B - In each trestle section the fixed navigation opening for small craft consists of a group of 3 spans. A fixed green light marks the centerline of each span and fixed red lights mark outermost bridge support piling on each side of the openings.  
WESTERN SPANS  
HOR CL 70 FT  
VERT CL 23 FT  
AUTH  
VERT CL 21 FT  
North Channel Bridge - A fixed green light marks the mid-channel. Fixed red obstruction lights mark each pier in Trestles C and D.  
NORTHERN SPAN  
HOR CL 300 FT  
VERT CL 75 FT  
SOUTHERN SPAN  
HOR CL 300 FT  
VERT CL 75 FT

Newport News Fairway  
The currents do not always set fair with the channel, especially with strong winds, and deep-draft vessels sometimes find it difficult to stay in the channel.

the Chesapeake Bay Bridge Tunnel Complex  
Currents in excess of 3.0 knots can be expected in area.

Chesapeake Bay Entrance  
1.0 knot on the flood  
1.5 knots on the ebb.  
See the Tidal Current Tables for daily predictions.

Southern Branch  
Large vessels  
exercise caution when making the turns to these bridges because of the current.

Warnings

Trends

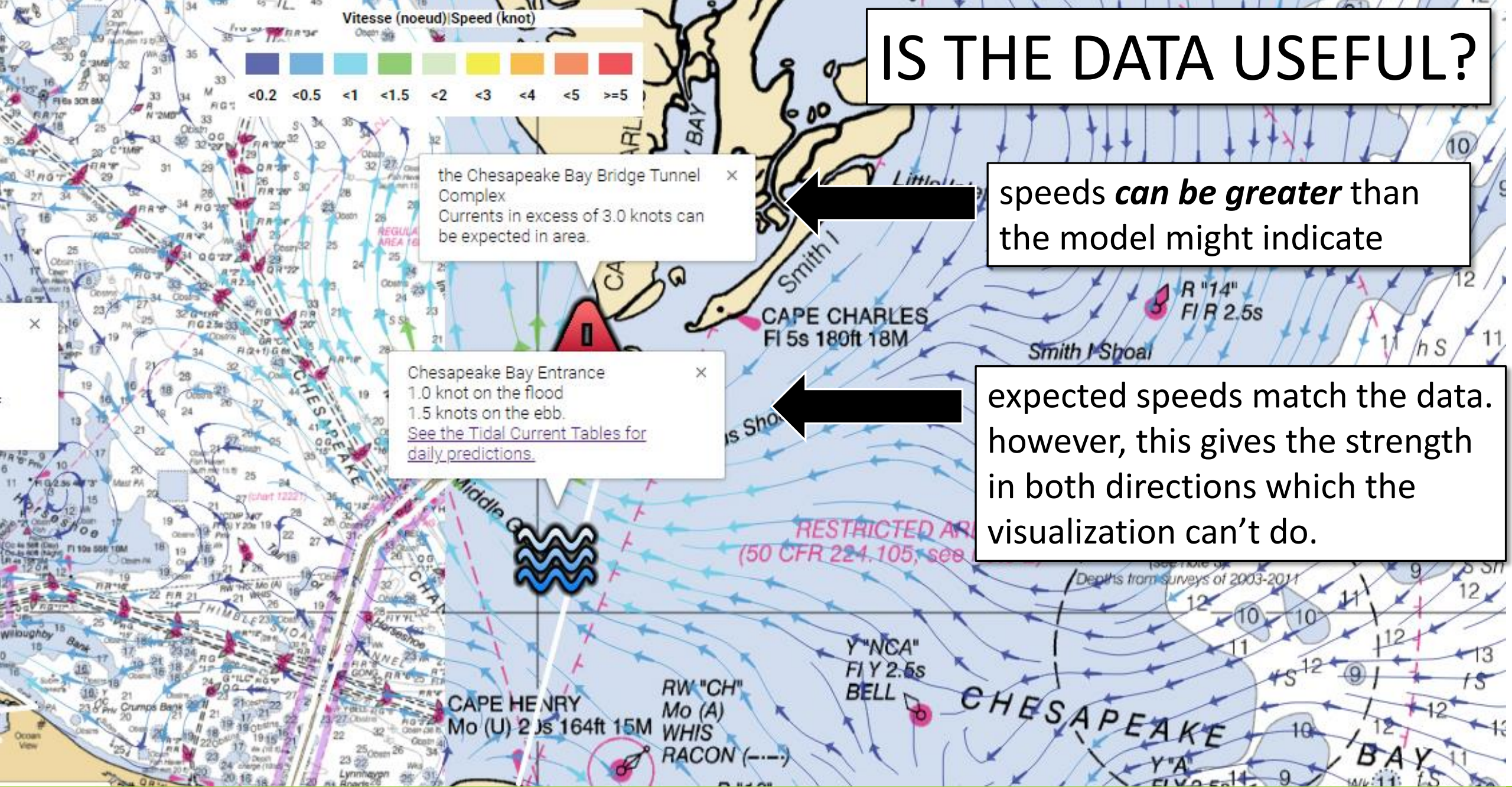
Not an ENC feature - entrance

Most are related to ENC features

Nai

uffolk

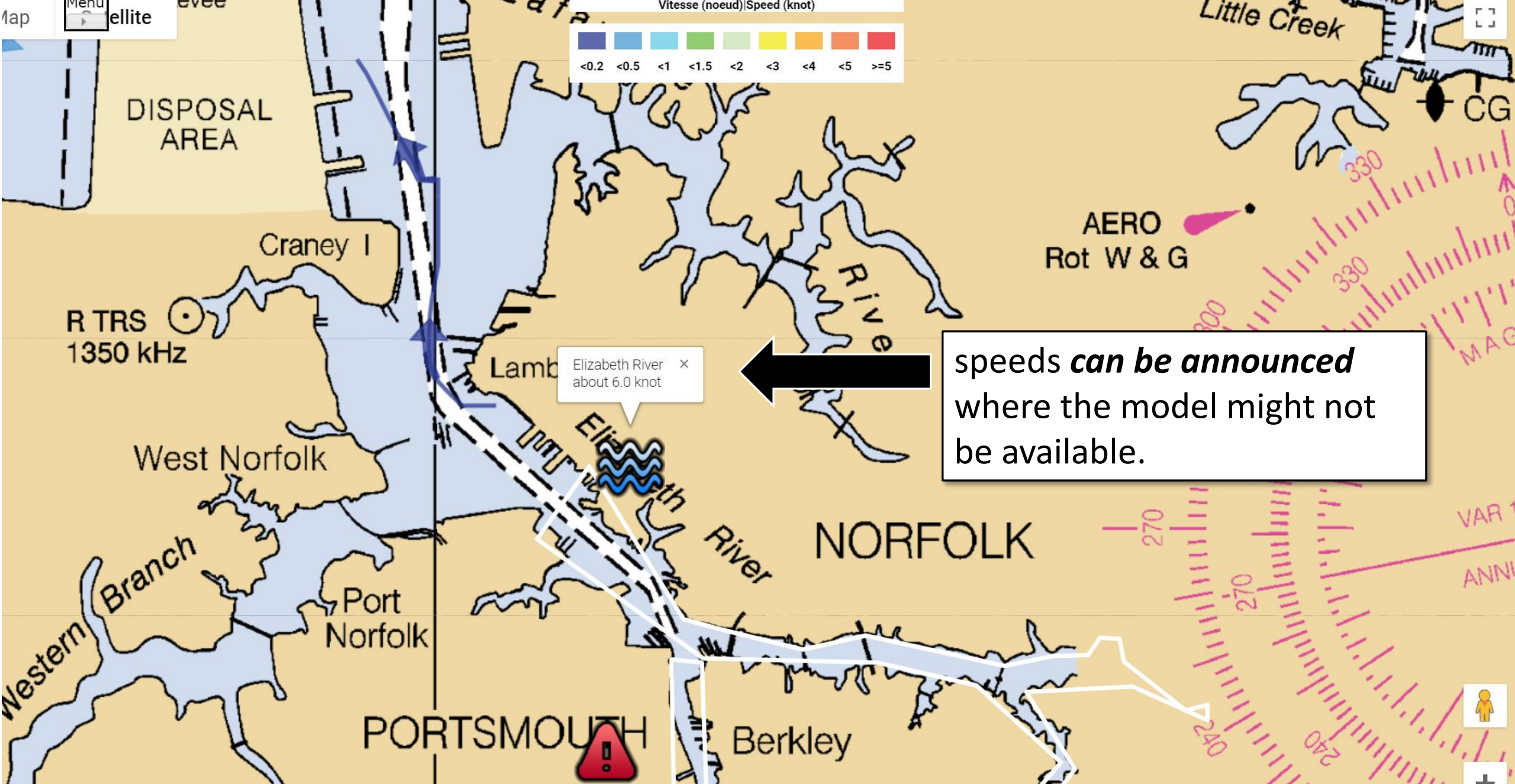
# IS THE DATA USEFUL?



speeds *can be greater* than the model might indicate

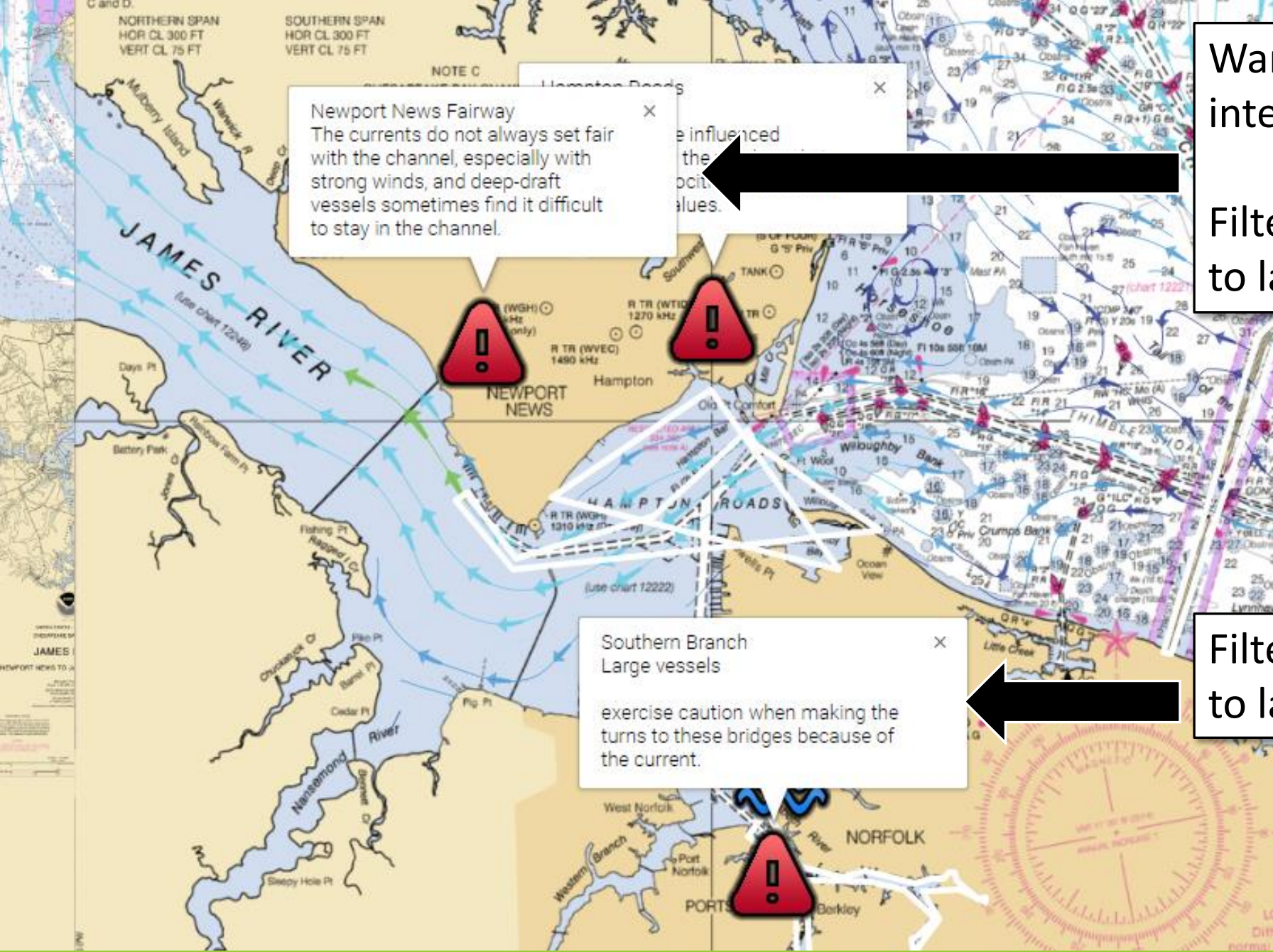
expected speeds match the data. however, this gives the strength in both directions which the visualization can't do.





Elizabeth River  
about 6.0 knot

speeds *can be announced*  
where the model might not  
be available.



Newport News Fairway  
The currents do not always set fair with the channel, especially with strong winds, and deep-draft vessels sometimes find it difficult to stay in the channel.

Southern Branch  
Large vessels  
exercise caution when making the turns to these bridges because of the current.

Warning includes wind interaction with currents  
Filterable sentence applicable to large vessels.

Filterable message applicable to large vessels.



**NOTE B**  
Chesapeake Bay Bridge-Tunnel (Private lights)  
Trestles A & B - In each trestle section the fixed navigation opening for small craft consists of a group of 3 spans. A fixed green light marks the centerline of each span and fixed red lights mark outermost bridge support piling on each side of the openings.

**WESTERN SPANS**  
HOR CL 70 FT AUTH  
VERT CL 23 FT

**EASTERN SPANS**  
HOR CL 70 FT  
VERT CL 21 FT

North Channel Bridge - A fixed green light marks the mid-channel. Fixed red obstruction lights mark each pier in Trestles C and D.

**NORTHERN SPAN**  
HOR CL 300 FT  
VERT CL 75 FT

**SOUTHERN SPAN**  
HOR CL 300 FT  
VERT CL 75 FT

**NOTE C**  
CHESAPEAKE BAY CHANNELS  
The controlling depth in the channels in the Chesapeake Bay are shown on tabulations printed on large scale charts and are not indicated hereon.

Could filter items relative to track line

the Chesapeake Bay Bridge Tunnel Complex  
Currents in excess of 3.0 knots can be expected in area.



Warning

RESTRICTED AREA  
(50 CFR 224.105, see note E)

11

Your Amazon package was delivered. Click to track your package

# features related to surface currents

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in the S-101 already

- RIVER
- BRIDGE/SPAN FIXED SPAN OPENING
- CAUSEWAY
- CANAL
- LOCKS
- FAIRWAYS
- ANCHORAGE AREA
- CAUTION AREA
- HARBOR AREA

**NOT** In the S-101

ENTRANCE

# Tide/current features related to surface currents

## 10 Geo Features – Tides, Currents

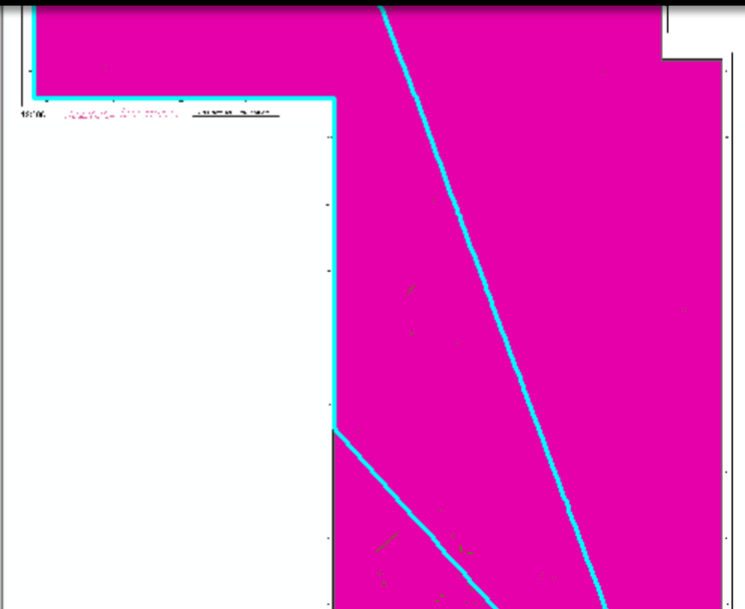
### 10.1 Tidal data (see S-4 – B-406 to B-408)

The inclusion of tidal information in ECDIS is optional. As such, for ENC only tidal stream and current information is required to be encoded. The implementation of tidal models based on predictions or applications to incorporate real-time tidal observations in ECDIS will be the subject of additional Product Specifications utilising the S-100 Universal Hydrographic Data Model.

- Tidal stream – flood/ebb
- Current – non-gravitational
- Tidal Stream Panel data
- Water turbulence

TidesAndVariationsA				
	FCSubtype	Category of Tidal stream	Current velocity	Orientation
▶	LOCMAG_LocalMagneticAnomaly	<Null>	<Null>	<Null>
	MAGVAR_MagneticVariation	<Null>	<Null>	<Null>
	MAGVAR_MagneticVariation	<Null>	<Null>	<Null>
	MAGVAR_MagneticVariation	<Null>	<Null>	<Null>
	MAGVAR_MagneticVariation	<Null>	<Null>	<Null>

- MetaDataP
- MetaDataL
- MetaDataA
- CoastlineP
- CoastlineL
- CoastlineA
- TidesAndVariationsP
- TidesAndVariationsL
- TidesAndVariationsA
- < all other values >
- FCSubtype
- LOCMAG\_LocalMagneticAnomaly
- MAGVAR\_MagneticVariation
- T\_HMON\_TideHarmonic
- T\_NHMN\_TideNonHarmonic
- T\_TIMS\_TideTimeSeries
- TIDEWY\_Tideway
- TS\_FEB\_TidalStream
- TS\_PAD\_TidalStream
- TS\_PNH\_TidalStream
- TS\_PRH\_TidalStream
- TS\_TIS\_TidalStream

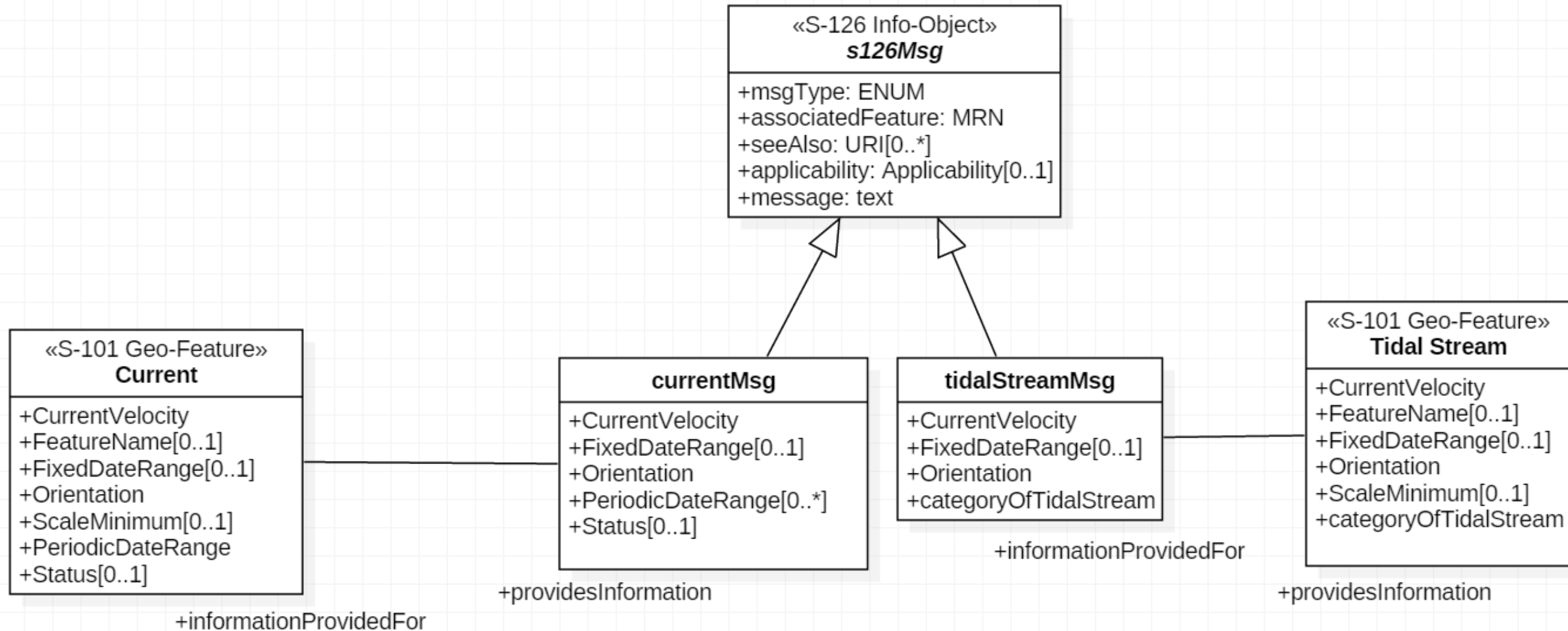


# S-101 tidal/current objects

Non-tidal current

S-101 Attribute	S-57 Acronym	Allowable Encoding Value	Type	Multiplicity
Category of tidal stream	(CAT_TS)	1 : flood stream 2 : ebb stream 3 : other tidal flow	EN	1,1
Current velocity			C	1,1
Velocity maximum	(CURVEL)	velocity maximum > velocity minimum	(S) RE	1,1
Velocity minimum		velocity minimum < velocity maximum	(S) RE	0,1
Feature name			C	0,*
Display name			(S) BO	0,1
Language		ISO 639-3	(S) TE	0,1
Name	(OBJNAM) (NOBJNM)		(S) TE	1,1
Fixed date range			C	0,1
Date end	(DATEND)	ISO 8601: 2004	(S) DA	0,1
Date start	(DATSTA)	ISO 8601: 2004	(S) DA	0,1
Orientation			C	1,1
Orientation uncertainty			(S) RE	0,1
Orientation value	(ORIENT)		(S) RE	1,1
Scale minimum	(SCAMIN)	See clause X.X	IN	0,1

# Possible schema for S-126 tidal/current objects



# Recommendations

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BASED ON THIS EXPERIENCE

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# Recommendations

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- Clearly define expectations of/uses for S-126
- Continue with S-126 data modelling for surface current information (if defined as part of S-126)
- Develop in liaison with TWCWG and S-111 data
- Discuss what was presented for possible data model
- Decide what the next steps should be
- Canvas HO's for viability of implementation within their systems

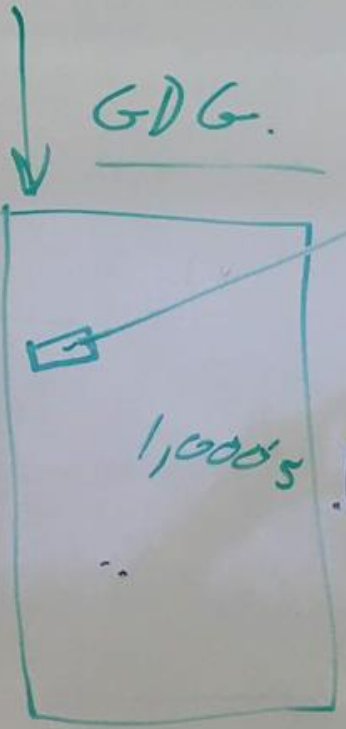
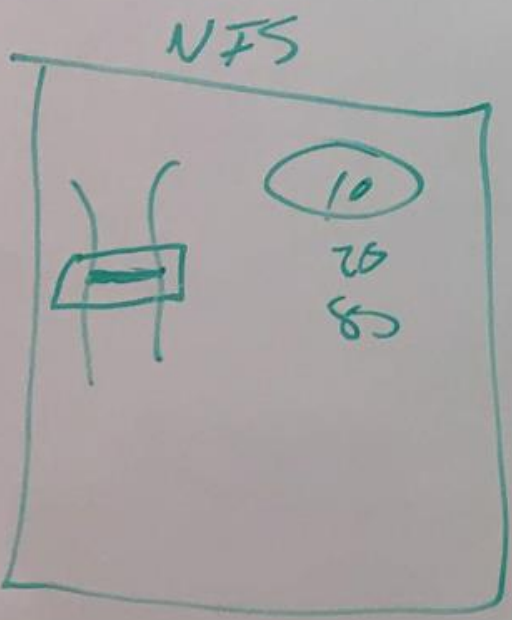
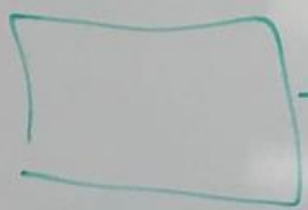
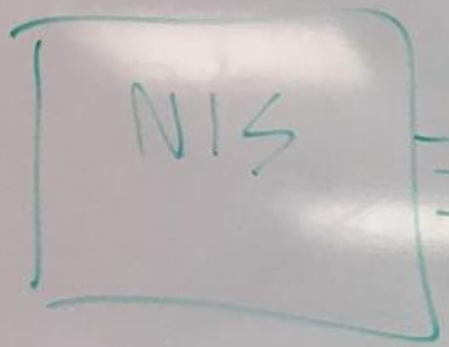
Participant: 245478#

POLY

command

bridge  
DBS

# THANK YOU



POLYGON  
HAS MRN  
EXTRA ATT  
command line

URN: MRN: IHO: SDI: 155: BRIDGE:  
Snow

URN: MRN: USA: NH: PORTSMOUTH:

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