

After High Water of 0.2m to 0.3m	Directions of stream	Rates at spring tide	Rates at neap tide		
-1.277	1.4	0.8	272	0.9	0.5
0.275	0.4	0.2	0.60	0.1	0.1
+1.091	0.3	0.2	0.97	0.6	0.3
+2.100	1.5	0.8	0.91	0.9	0.5
+3.097	1.6	0.9	0.79	1.2	0.6
+4.092	1.6	0.8	0.70	1.1	0.6
+5.090	1.1	0.5	0.70	0.6	0.3
+6.052	0.2	0.1	0.77	0.1	0.0

-PROJECT OF ZENI LITE BUOY-BUOYS WHICH PULAU UBIN NEEDS

REIKO, SORAMI, RINA, FUKO

Outline

- + Introduction
- + Purpose and hypothesis
- + Chart
- + Fieldwork
- + Discussion
- + Conclusion
- + Upcoming challenges

Buoy...?

- + To guide ships safe → warn the dangers
- + Red, green, yellow



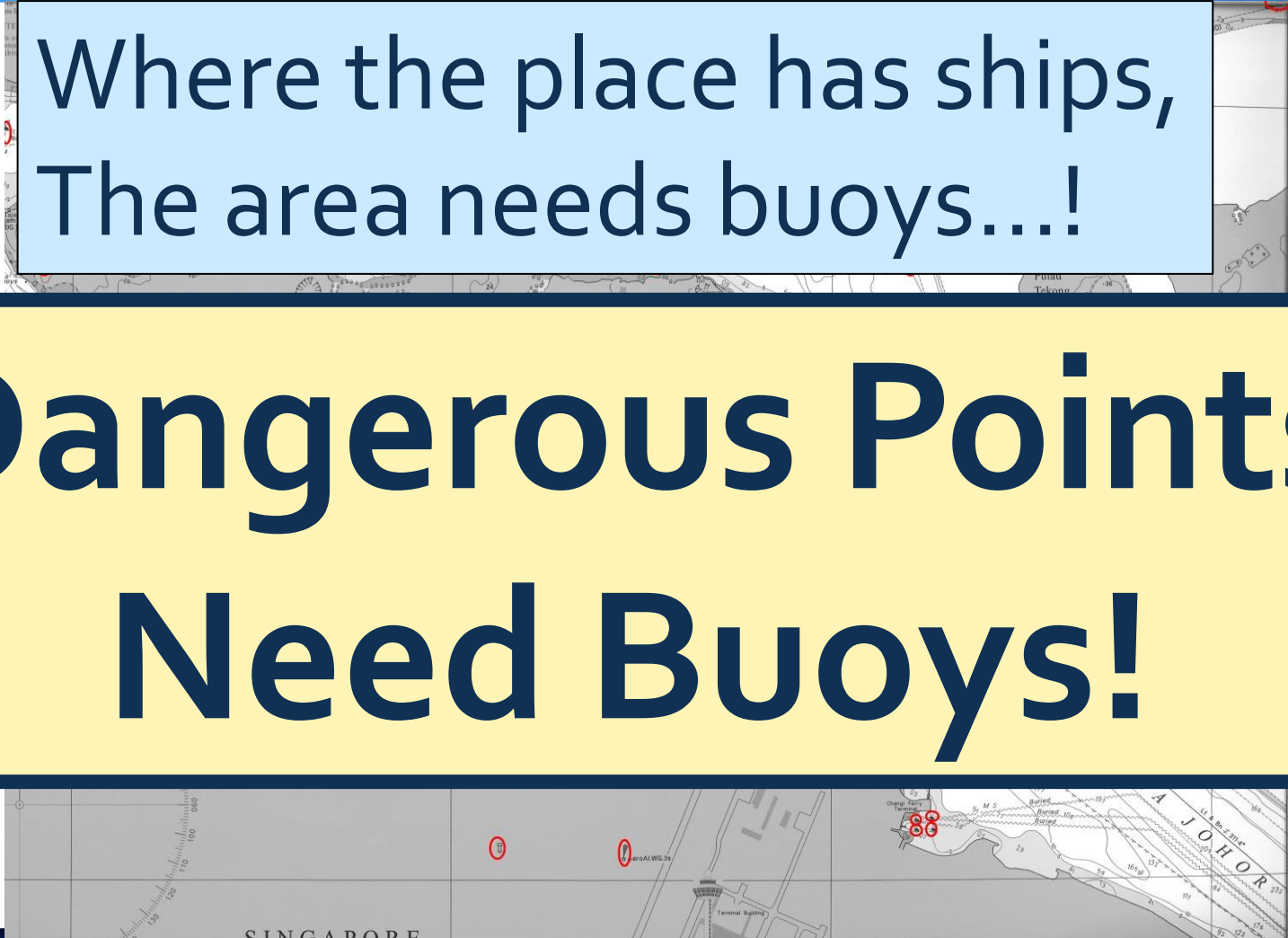
Pulau Ubin...?



Buoys of Ubin

Where the place has ships,
The area needs buoys....!

**Dangerous Points
Need Buoys!**



Purpose and Hypothesis

Propose more demands of buoys !

Are there ships?

Is there any dangerous places?

① Depth

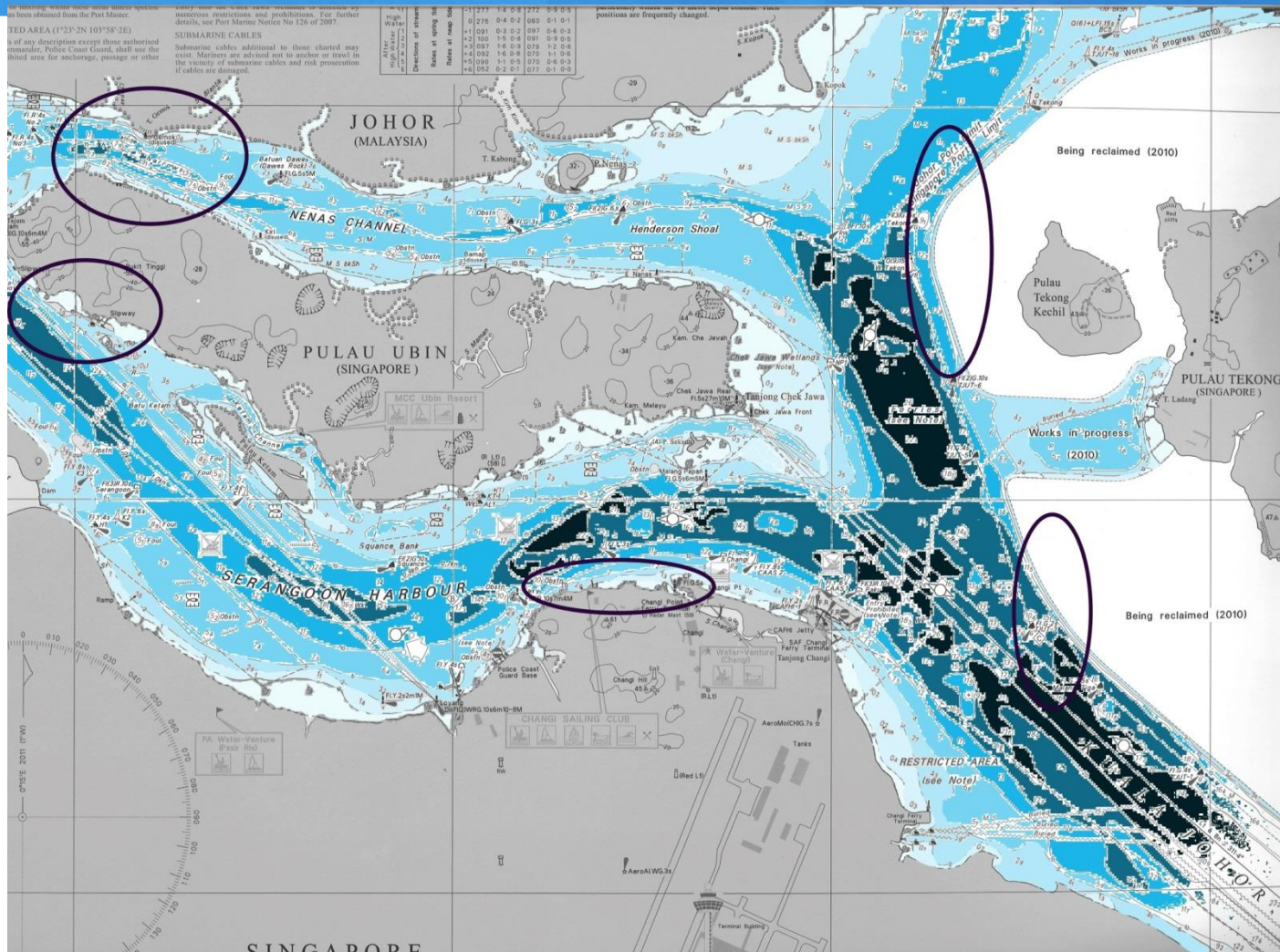
② Obstacles

③ Traffic of ships... 3-1; Number

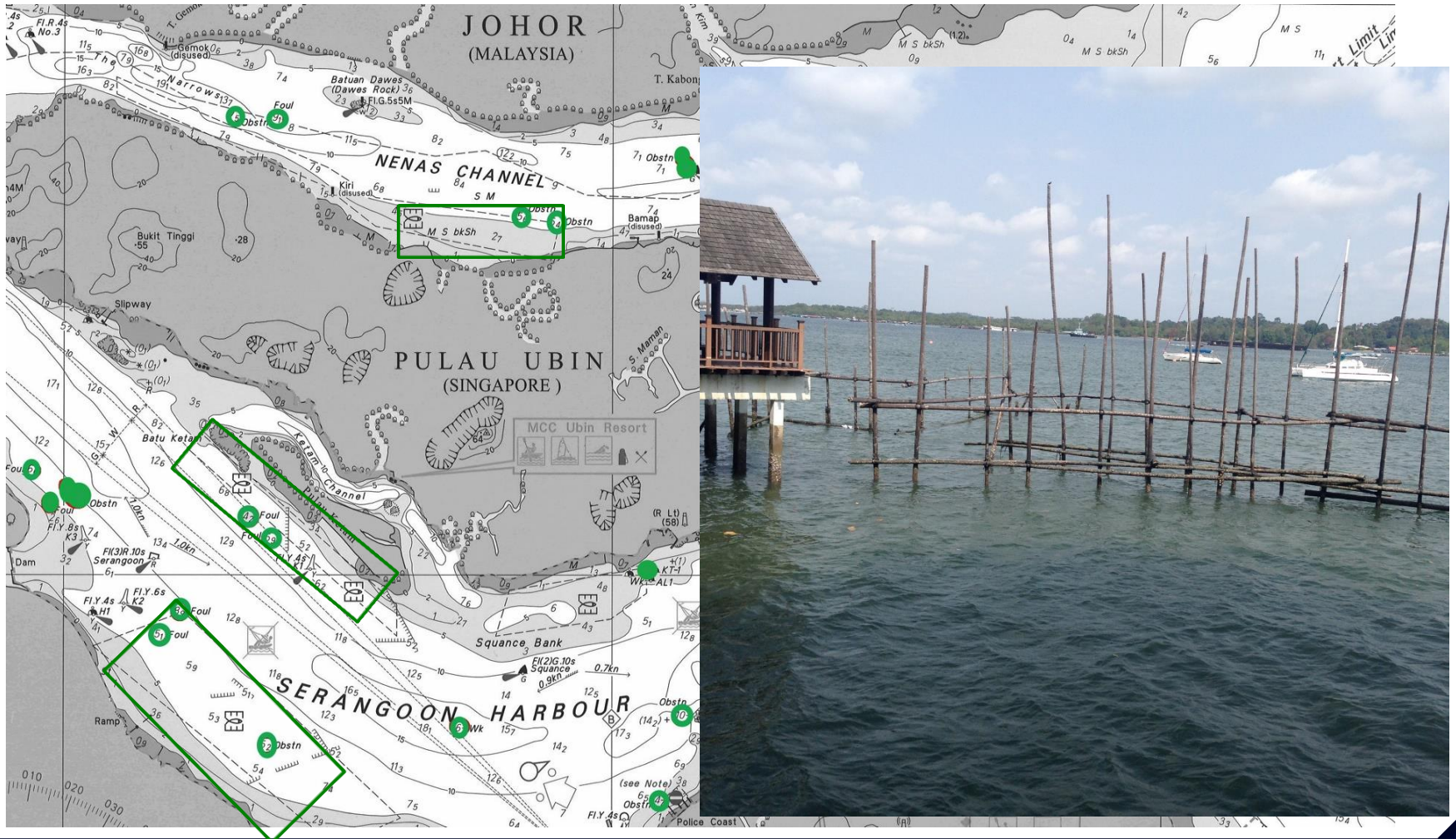
3-2; Category

From Chart

① Depth



② Obstacles

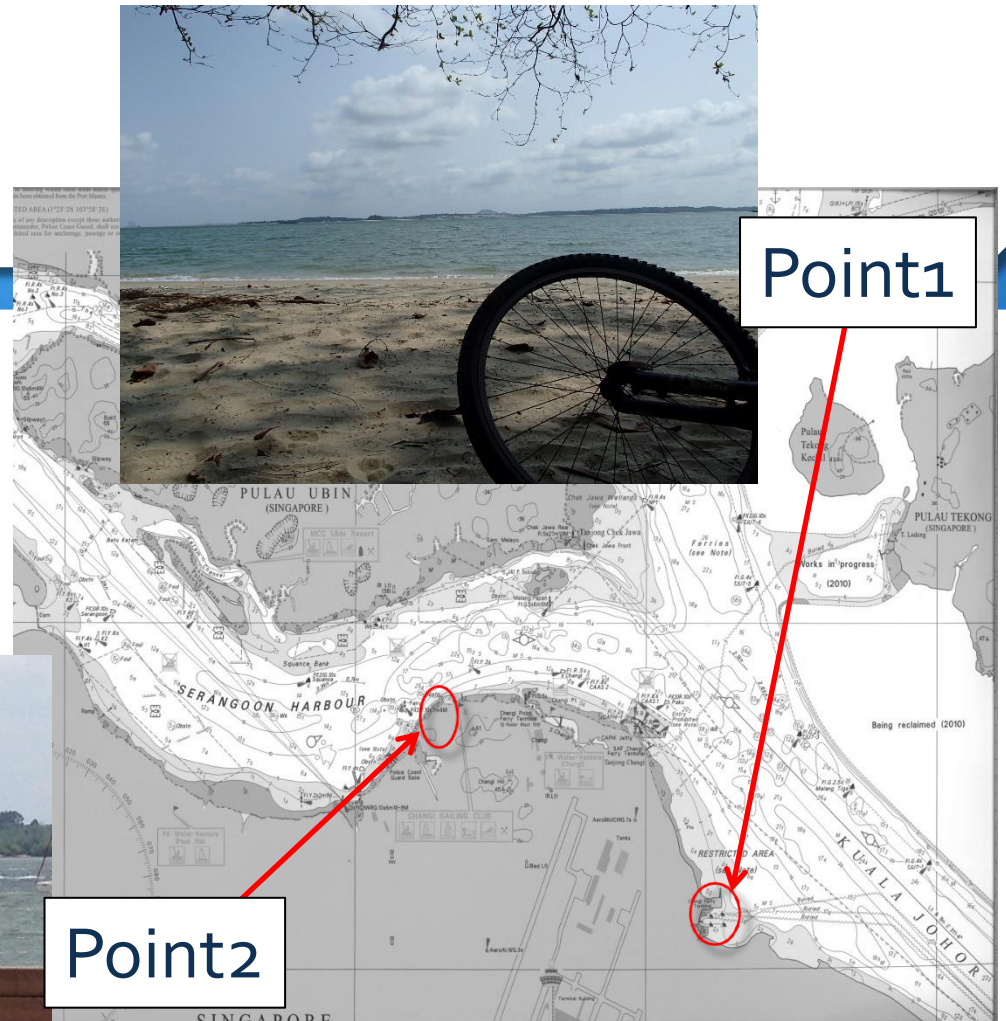


From Fieldwork

Method

→ At Changi Village

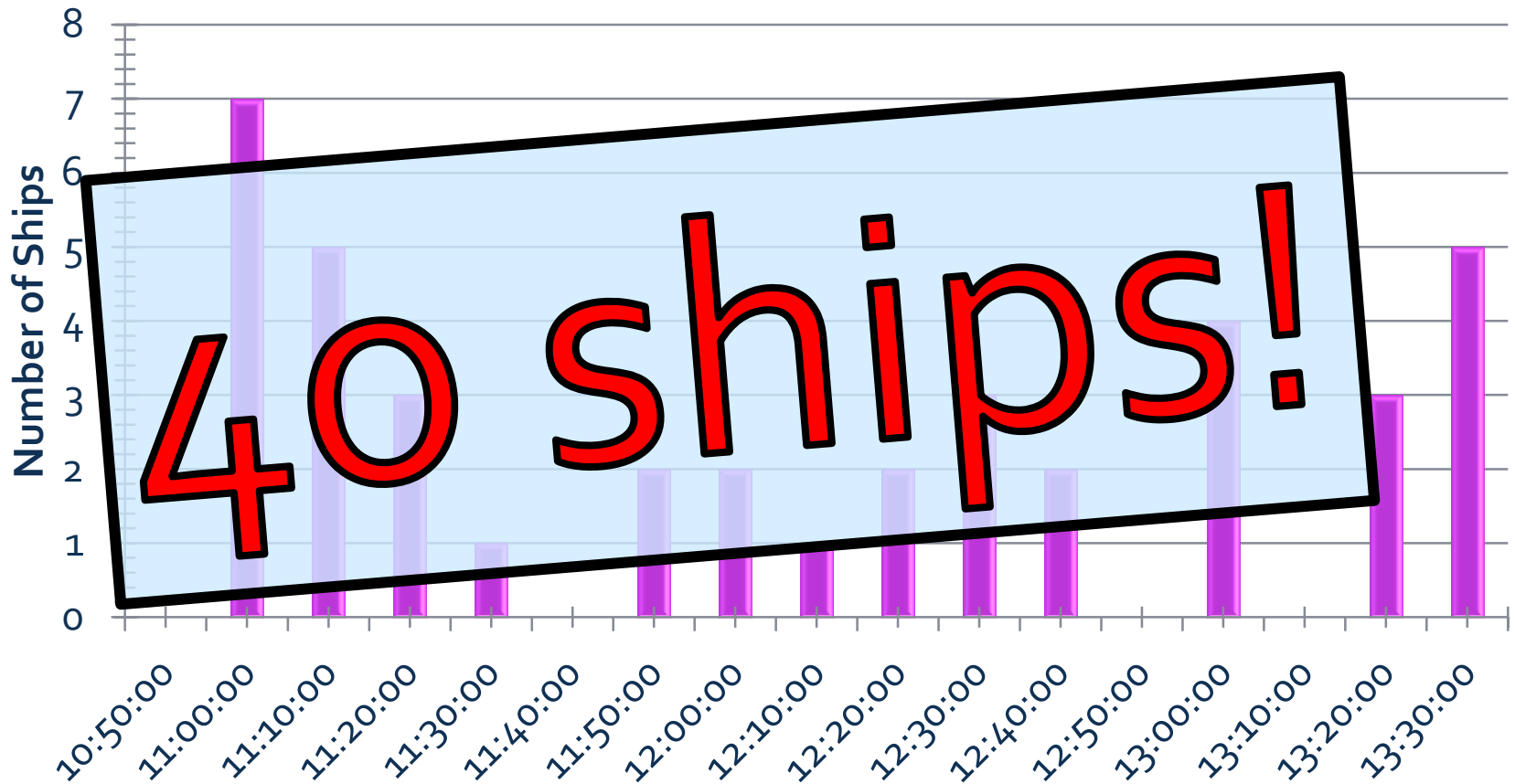
→ On 26 Feb



→ Numbers, category

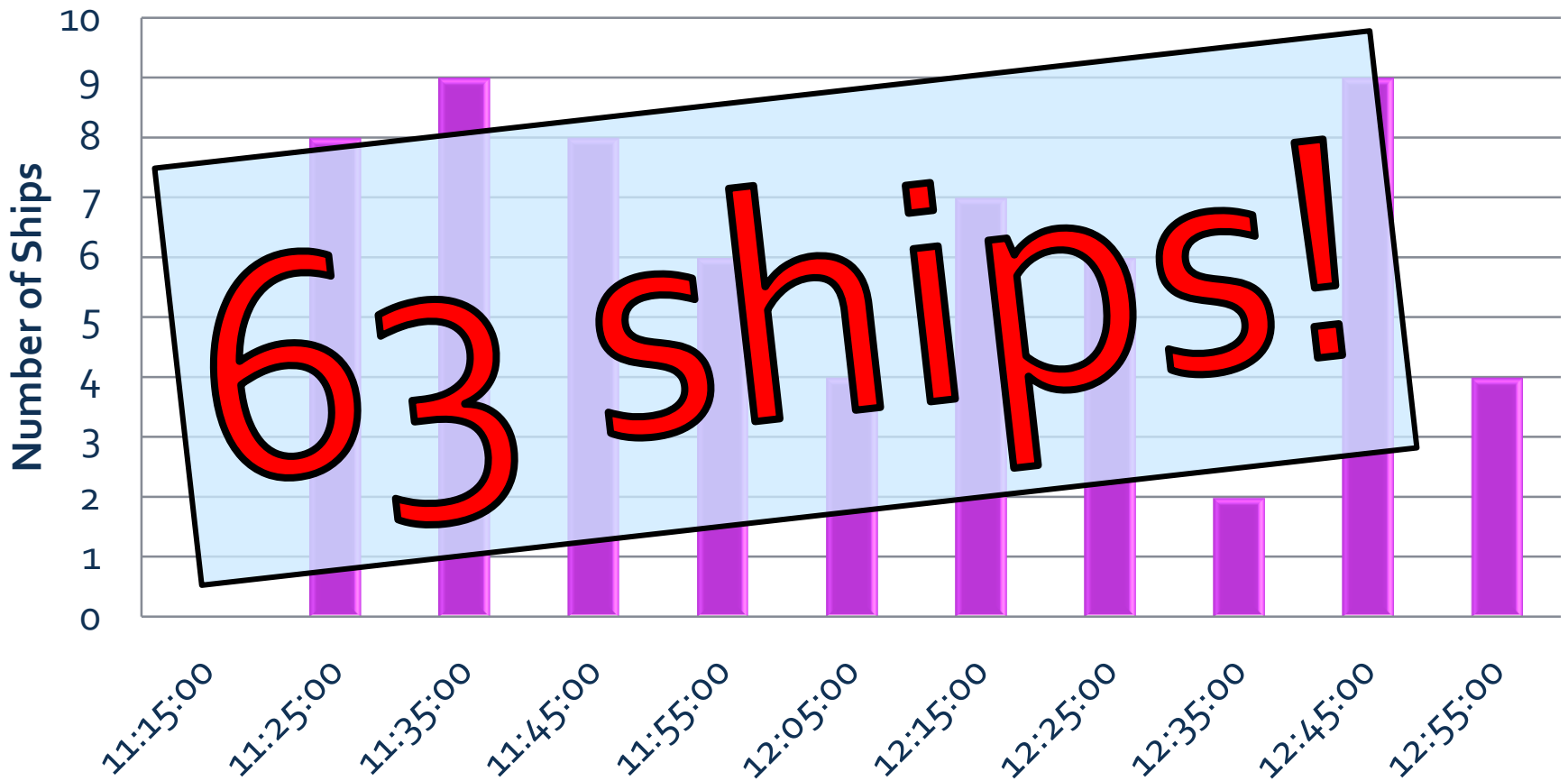
③-1;Number

Point1



③-1;Number

Pointz

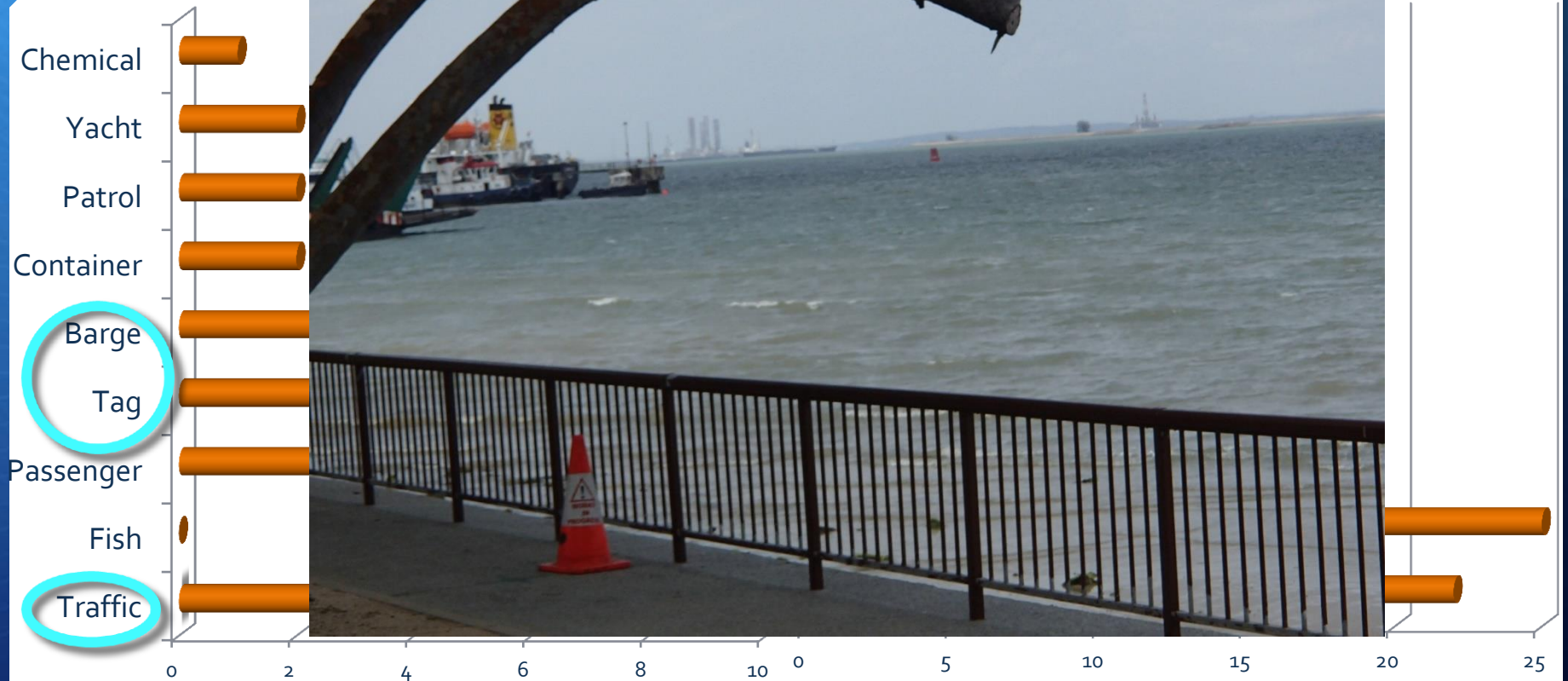


③-2;Category...Many Kinds of Ships

- Fishing Boat
- Yacht
- Passenger Boat
- Commercial Boat
- Traffic Boat
- Barge Carrier
- Tag Boat



③-2;C



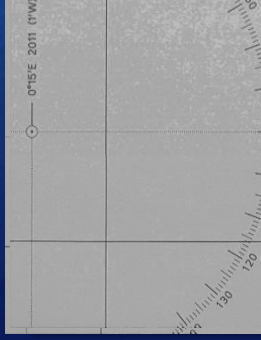
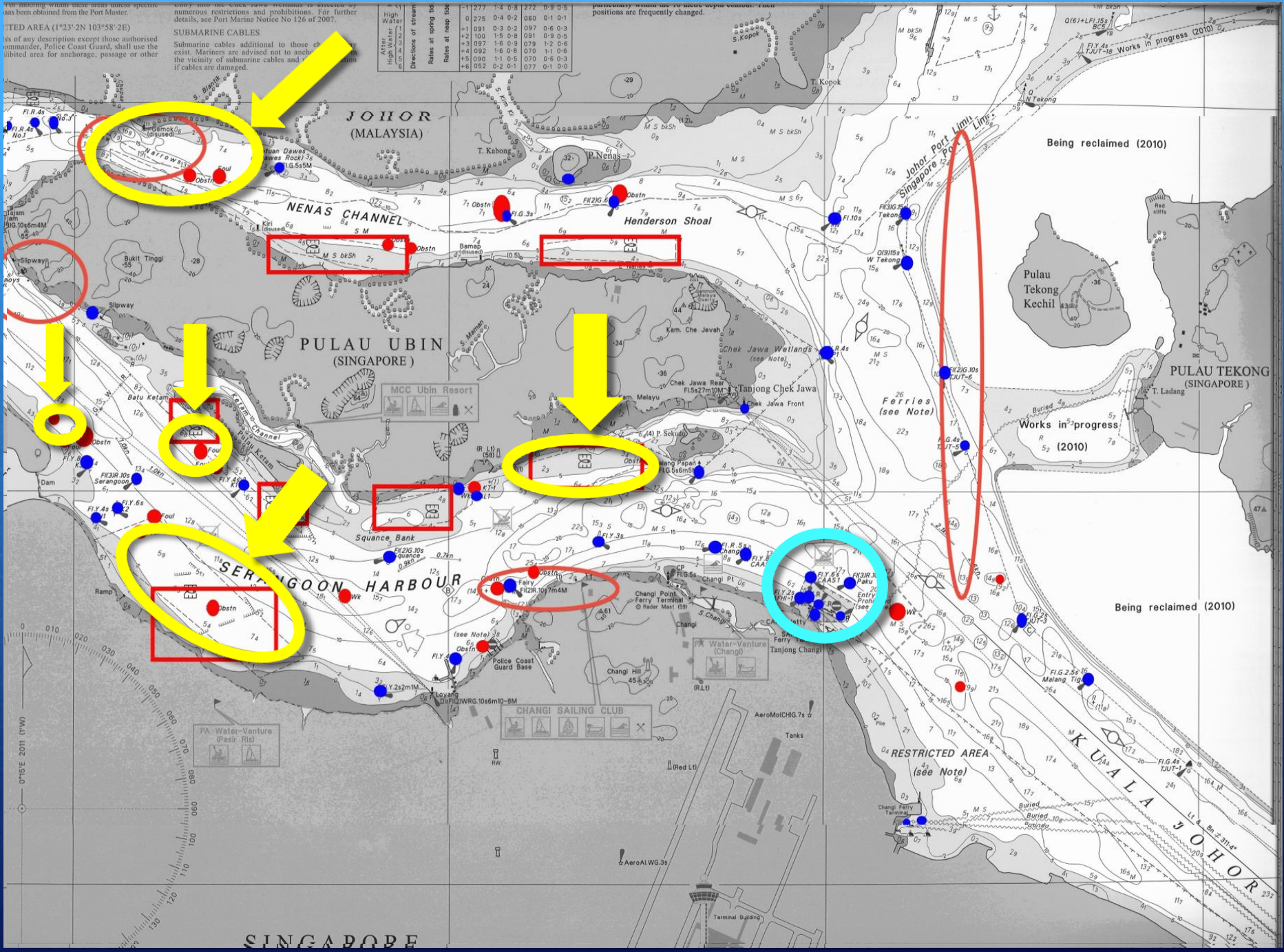
→ Construction?

...moving within these limits unless specific information has been obtained from the Port Master.
RESTRICTED AREA (1°23'2N 103°58'2E)
 ...of any description except those authorised by the Port Master, Police Coast Guard, shall use the restricted area for anchorage, passage or other purposes.

SUBMARINE CABLES
 Submarine cables additional to those shown on this chart exist. Mariners are advised not to anchor in the vicinity of submarine cables and to exercise caution if cables are damaged.

Alter	High Water	Low Water	Directions of spring tide	Rates of spring tide	Rates at neap tide
-1	0.275	0.4	0.2	0.60	0.1-0.1
+1	0.91	0.3	0.2	0.97	0.6-0.3
+2	1.00	1.5	0.8	0.91	0.9-0.3
+3	0.97	1.6	0.9	0.79	1.2-0.6
+4	0.92	1.6	0.8	0.70	1.1-0.6
+5	0.90	1.1	0.5	0.70	0.6-0.3
+6	0.92	0.2	0.1	0.77	0.1-0.0

...positions are frequently changed.



SINGAPORE

Upcoming Challenges

- + More about construction

- + More points

- + More about directions

To Malaysia or to Singapore?

Thank You for Your
Listening!