Sizewell C Harbour Authority

Local Knowledge Endorsement (LKE) awareness course

Rationale

- The Sizewell C Harbour Authority Local Knowledge Endorsement (LKE) Awareness Course is designed to equip vessel masters with the critical operational knowledge required to safely and effectively navigate within the Sizewell C Statutory Harbour Area (SHA).
- As the harbour undergoes significant marine infrastructure development, including construction zones, exclusion areas and evolving traffic patterns, vessel masters must be fully informed of the unique navigational and regulatory environment.
- By completing this course, vessel masters will be equipped to contribute to the efficient and secure operation of the Sizewell C Harbour Area.

Agenda

SECTION	CONTENT
1. Statutory Harbour Authority	1.1 Legal basis 1.2 Jurisdiction, extent, and location 1.3 Adjacent facilities and infrastructure
2. Navigation & Safety	2.1 Aids to Navigation (AtoNs) 2.2 General Directions 2.3 Special Directions 2.4 Marine Safety Management System (MSMS) 2.5 Passage Planning 2.6 Towage 2.7 Marine Segregation 2.8 Swing Mooring 2.9 Emergency Response Plan
3. Metocean Conditions	3.1 Wind and wave patterns 3.2 Tidal regime
4. Communication & Reporting	4.1 VHF radio procedures 4.2 Incident reporting requirements
5. Vessel Traffic & Operations	5.1 Routeing and anchorages 5.2 Vessel Traffic Monitoring System (AIS, radar, CCTV) 5.3 Baseline vessel traffic
6. Marine Works	6.1 Marine Works Application process 6.2 SIMOPS (Simultaneous Operations) protocol 6.3 Notices to Mariners 6.4 Planned future works

Section 1. Sizewell C Statutory Harbour Authority (SHA)

1.1 Legal Basis

1.2 Jurisdiction, extent, and location

1.3 Adjacent facilities and infrastructure

1. Statutory Harbour Authority (SHA)

1.1 Legal Basis

The two main pieces of legislation which form the legal basis for the establishment of the SZC Harbour Authority area are:

- The Sizewell C (Nuclear Generating Station) Order 2022 (the 'Development Consent Order', or "DCO");
- Harbours, Docks and Piers Clauses Act 1847

The harbour is an open section of the North Sea off the East Suffolk coast with no administrative boundaries. However, the Sizewell C Statutory Harbour Area will be run as if it were an enclosed port.

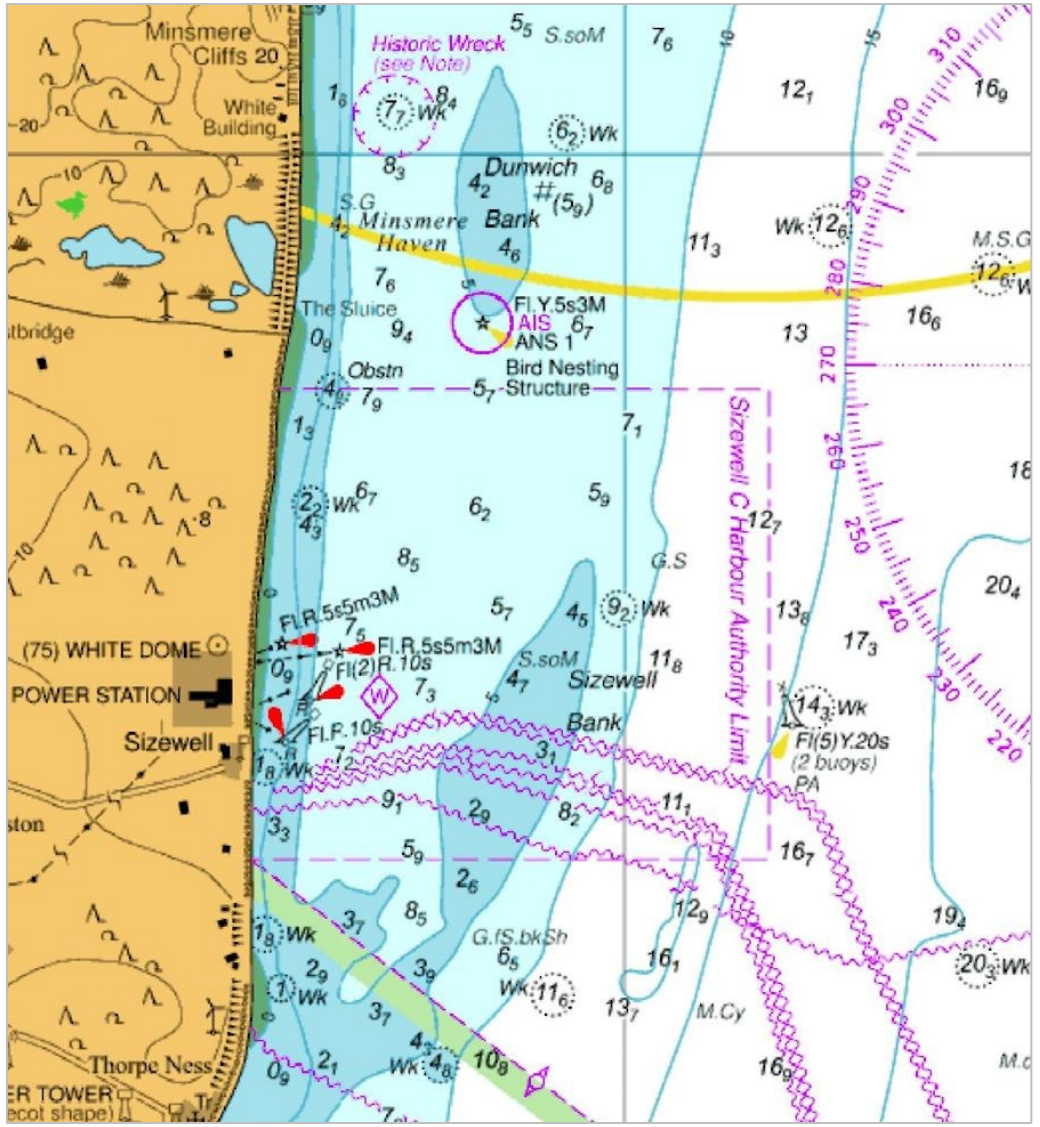
- Sizewell C DCO
- Harbours Docks Piers and Clauses Act 1987

1. Statutory Harbour Authority (SHA)

1.2 Jurisdiction, extent and location

- SZC SHA covers an area of 2.2 x 2.0 nautical miles off the Suffolk coastline.
- SZC functions as if it were an enclosed port and is located circa. 16 nautical miles from Lowestoft, to the north, and 20 nautical miles from Harwich, to the south.
- The coordinates for the harbour authority are as follows:

Extent	Latitude	Longitude
Northwest	52°14’0”	001°37’37”
Northeast	52°14’0”	001°41’0”
Southeast	52°12’0”	001°41’0”
Southwest	52°12’0”	001°37’20.8”



1. Statutory Harbour Authority (SHA)

1.3 Adjacent facilities and infrastructure

Sizewell A Power Station

Status: Decommissioned.

Marine Infrastructure: Two redundant outfall towers still marked by Aids to Navigation (AtoNs).

Ownership: Managed by Magnox.

Navigation Role: SZC Harbour Authority monitors and reports AtoN status for these structures.

Sizewell B Power Station

Status: Operational.

Marine Infrastructure: Two intake and outfall positions actively used and marked by AtoNs.

Ownership: Managed by EDF Energy.

Navigation Role: SZC Harbour Authority acts as the Local Lighthouse Authority, coordinating with EDF for AtoN maintenance and reporting.

Sizewell A (left) and Sizewell B (right)

Section 2.
Navigation and Safety

2.1 Aids to Navigation (AtoNs)

2.2 General Directions

2.3 Special Directions

2.4 Marine Safety Management System (MSMS)

2.5 Passage Planning

2.6 Towage

2.7 Marine Segregation

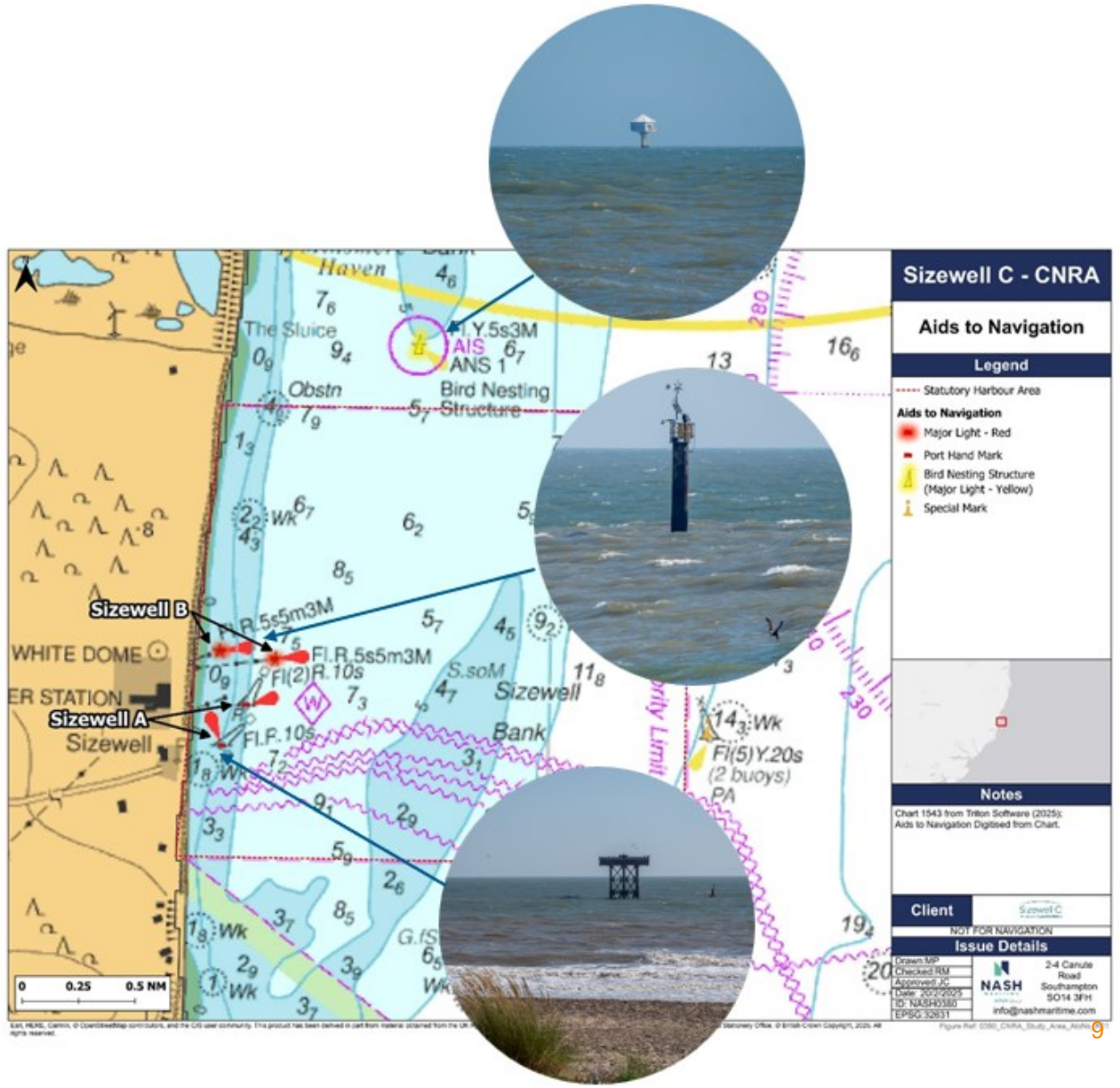
2.8 Swing Mooring

2.9 Marine Emergency Response Plan

2. Navigation & Safety

2.1 Aids to Navigation (AtoNs)

- SZC has four lit and charted AtoNs:
- Two redundant intake/outfall towers from Sizewell A power station.
- Two operational intake and outfall positions for the Sizewell B power station.
- In addition, there is a special mark buoy just east of the SHA and a bird nesting structure to the north.
- In October 2025, two additional special markers will be installed in the harbour area approximately 1km offshore and approximately 1.05km apart by latitude. This will mark the marine construction zone.



2. Navigation & Safety

2.2 General Directions

- The Sizewell C Harbour Authority, in exercise of their powers under the DCO provides General Directions.
- Following public consultation, the General Directions came into force on 14 April 2025.
- The SZC SHA's General Directions are rules that apply to all harbour users, including those on the water within the SZC Harbour Authority jurisdiction.
- The General Directions will be kept under review and revised as appropriate following due consultation with stakeholders.

2. Navigation & Safety

2.3 Special Directions

- Article 67 of the DCO: Harbour Master (HM) may give Special Directions (SD) to *any* vessel within the SHA or on the approaches to it.
- Special Directions will be determined, issued, and logged on a case-by-case basis by the HM. A duly issued Special Direction therefore has a properly authorised legal basis.
- The SDs may include regulating the time at which, and the way in which, any vessel must enter, go out of, or lie in or at the harbour.
- This includes prohibiting the mooring of vessels in any part or parts of the harbour and regulating or requiring the movement, mooring or unmooring of a vessel.

2. Navigation & Safety

2.4 Marine Safety Management System (MSMS)

- Additional policies, procedures, tools, forms and checklists contained with the SZC MSMS.
- Prior to the commencement of marine works, marine contractors will be expected to have read any relevant procedures and incorporated any required actions within their own Risk Assessments, Method Statements and Safe Systems of Work.
- Marine contractors will be required to comply with any conditions within the marine works approval.
- A non-exhaustive list of procedures, tools, forms and checklists can be seen overleaf.

2. Navigation & Safety

2.4 Marine Safety Management System (MSMS)

SZC SHA Procedures	Doc Ref No.	SZC Forms & Checklists	Doc Ref No.
Harbour Works Procedure	101453347	Bunker Checklist	101600228
Accident Investigation Procedure	101600017	Accident/Incident Investigation Form	101600017
Waste Management	101600623	Marine Works Approval Daily Report	
Reporting Procedure	101600591	Hot Work Permit	101600461
Pilotage Procedure		Gangway Checklist	
Means of Access Procedure	101600475	Diving Permit	
General Directions Procedure	101600253	Dangerous Goods Arrival	
Special Directions Procedure	101600670	Pre Arrival Information	
Training Procedure	101600597	Pilot Master Exchange	
Diving Procedure	101600246	Non-routine Towage	101600656
Weather Limits		Port Waste Landing	101600623
Passage Planning	101600644	Permit to Manoeuvre	
Navigation Risk Assessment Procedure	101600589	Planned Maintenance	

Should you require any of copies of the above, email: harbour.master@sizewellc.com

2. Navigation & Safety

2.5 Passage Planning

- All vessels are required to have prepared a berth-to-berth passage plan.
- The purpose is to ensure that:
  - The whole bridge team know relevant details of any port passage in advance;
  - There is a clear, shared understanding of potential hazards, margins of safety, and the ship's characteristics;
  - Intentions and required actions are agreed for the conduct of the port passage – including the use of tugs and their availability – and any significant deviation should it become necessary.

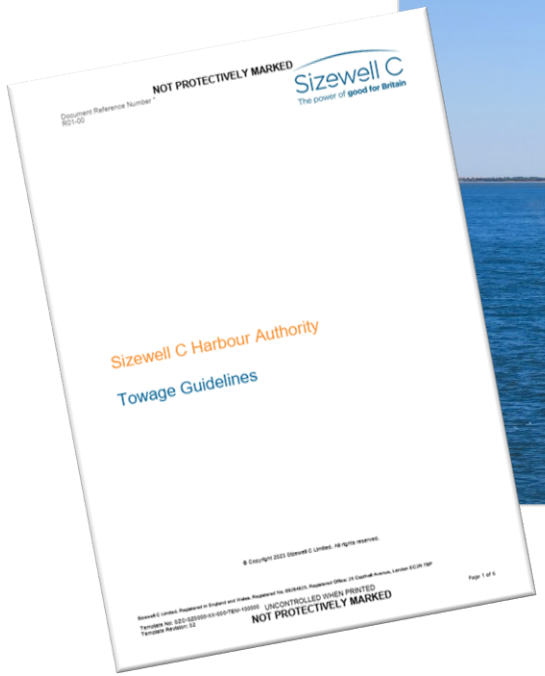
Mandatory Requirements:

- When transiting the SHA, the vessel's bridge is to be properly manned as required by regulation 11/1 of the STCW Convention.
- When transiting any area of the harbour, a dedicated look out is posted and not assigned other duties.
- Adhere to 500m exclusion zone from the SZB uptake / outfall positions (which must be marked on the vessel's ECDIS).
- Observe any other exclusion zones within, or on the approach, to the SZC SHA.
- Permission to enter Marine Construction Zone (MCZ)

2. Navigation & Safety

2.6 Towage

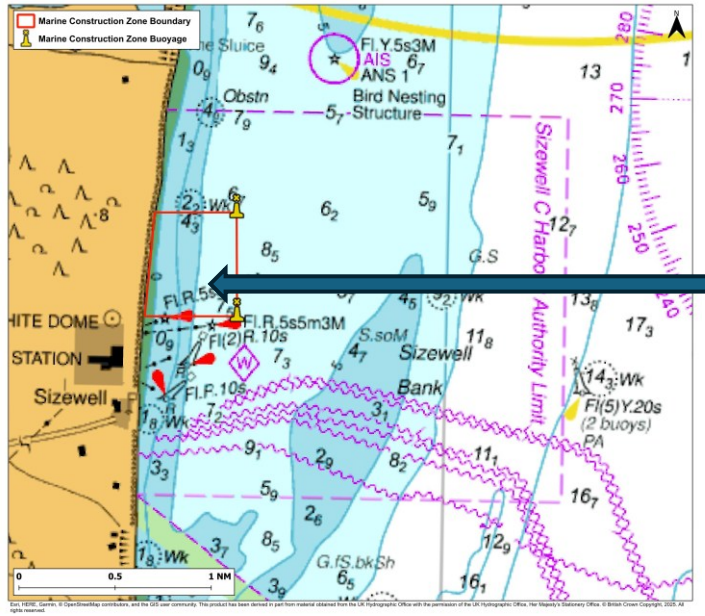
- The number and type of towage assistance deployed will be agreed following a dynamic risk assessment of the intended manoeuvre and will be assessed on a case-by-case basis by the harbour master, vessel master and/or tow master.
- Marine Works Applicants must consult the Harbour Authority Towage Guidelines when planning towage in the SZC Harbour Area.



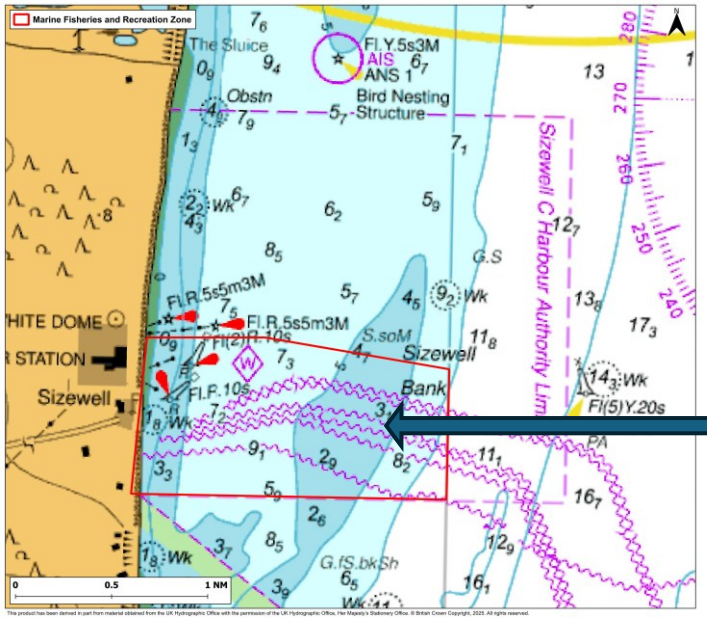
2. Navigation & Safety

2.7 Marine Segregation

- The SHA is to be partitioned into zones to deconflict vessel traffic.
- A proposed Marine Construction Zone (MCZ) is to be marked by buoys in the nearshore.
- A Marine Fishing & Recreation Zone (MFRZ) has been established and is shown in the southern part of the SHA.
- Formalisation of these, and any future zones, will be promulgated via a Notice to Mariners (NtMs).



Marine Construction Zone



Marine Fishing & Recreation Zone

2. Navigation & Safety

2.8 Swing Mooring

- Between October 2025 and September 2026, an interim swing mooring position for exclusive use of Sizewell C contractors will be located at:

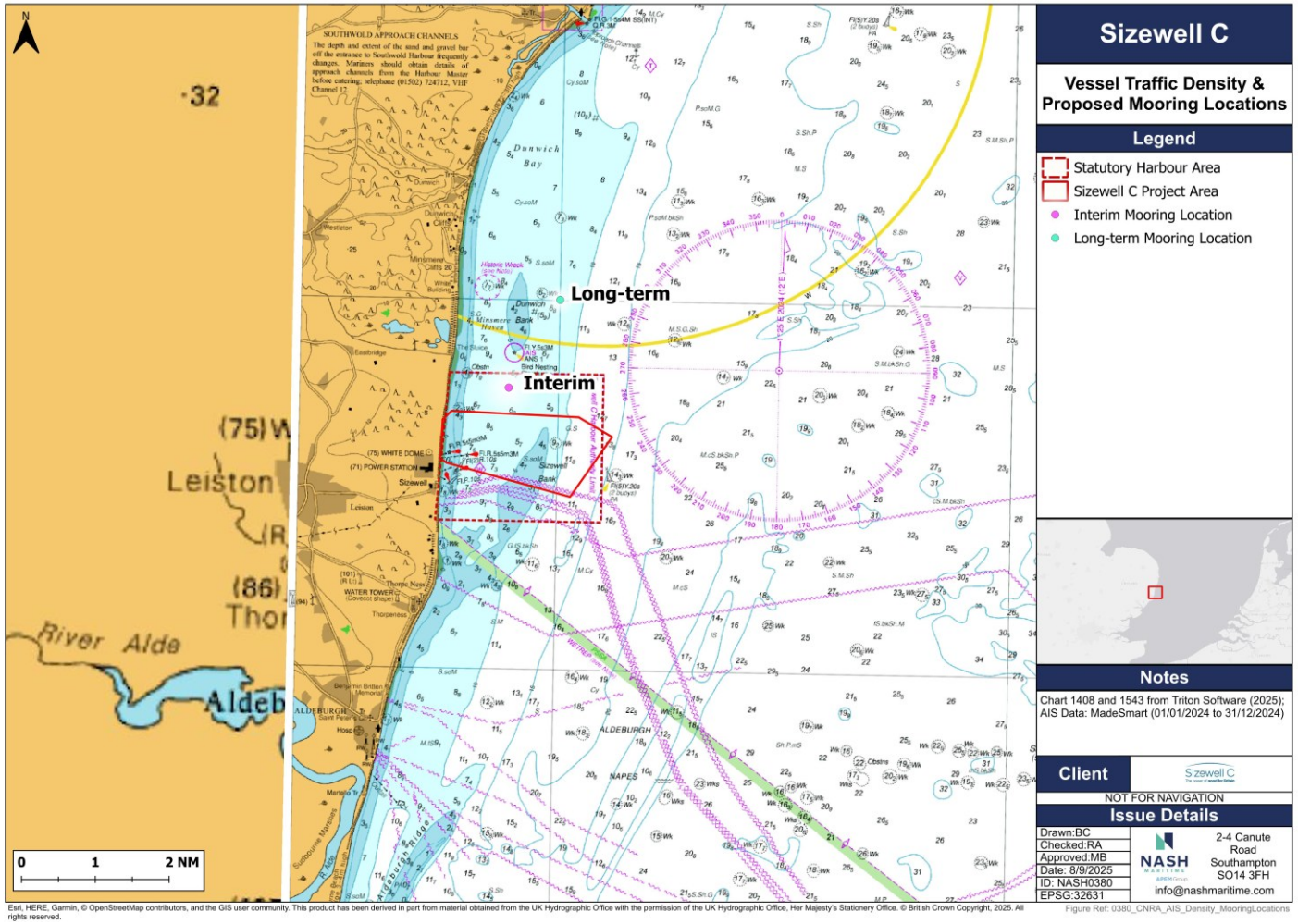
  52° 13.8'N 001° 38.9'E

- Longer term, the intention is to have a permanent swing mooring outside of the harbour area, located at:

  52° 15.0'N 001° 40.0'E.

This is subject to Marine Management Organisation (MMO) approval so will be confirmed at a later date.

- The interim and long-term mooring locations are shown on the chart to the right.



2. Navigation & Safety

2.9 Marine Emergency Response Plan

- The Harbour Authority Emergency Response Plan is saved on SZC Team Centre site which provides a contractual requirement for all SZC contractors to develop their own plan in accordance with the ERP.
- This document can be made available on request by sending an email with your name, role and vessel name to: harbour.master@sizewellc.com.
- The document is also available on Sizewell C's Team Center Document Management System Ref: 101445494.

Section 3.
Metocean Conditions

3.1 Wind and Wave Patterns

3.2 Tidal regime

3. Metocean Conditions

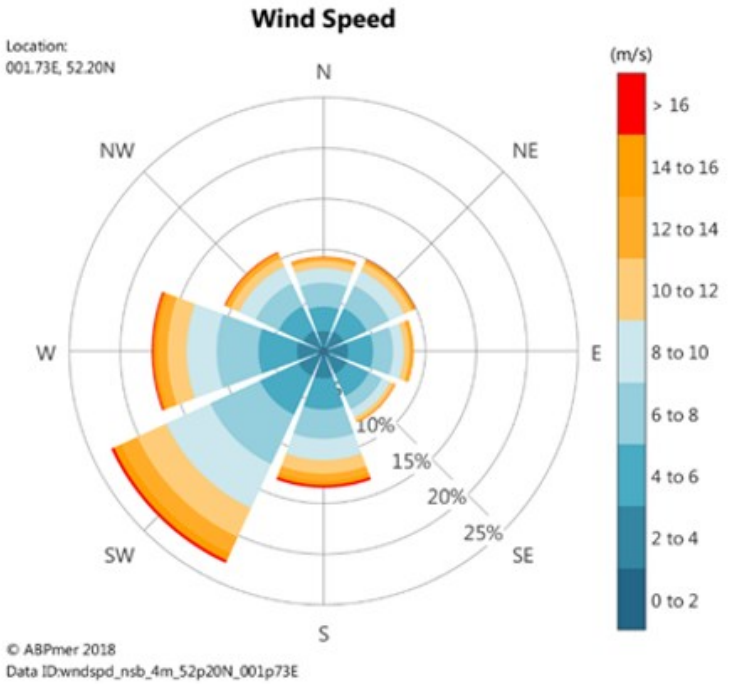
3.1 Wind and Wave Patterns

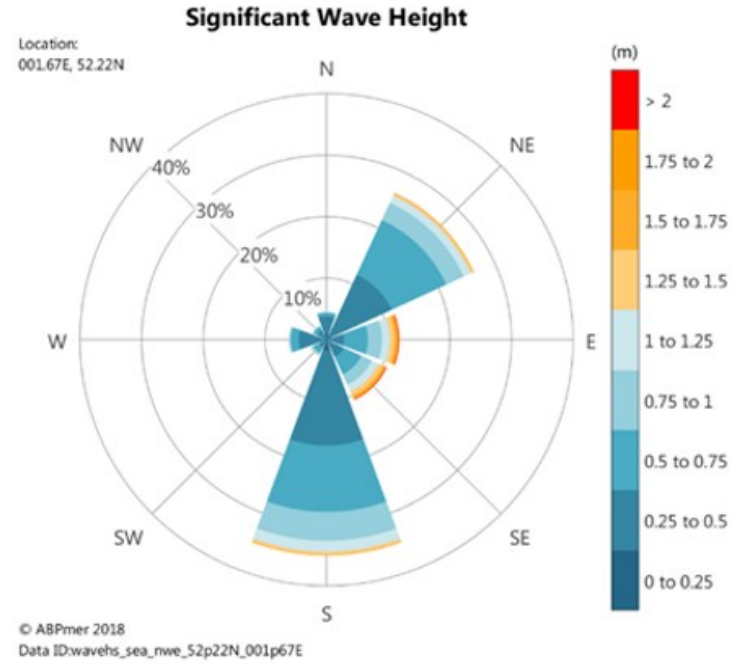
- **Wind**

SW wind most common and highest speed (31 Kts); considerable wind from S and W.

- **Waves**

Frequently from S with a considerable amount from NE, both with wave height up to 1.5m





Data from ABPmer (2018)

3. Metocean Conditions

3.2 Tidal Regime

- **Flood:**

Direction: Southward (current starts 1 hour after low water)

Speed: Spring 3.3 Kts; Neap 1.7 Kts

Max. flow 3 hours before high water

- **Ebb:**

Direction: Northward (slack water 1 hour after high water)

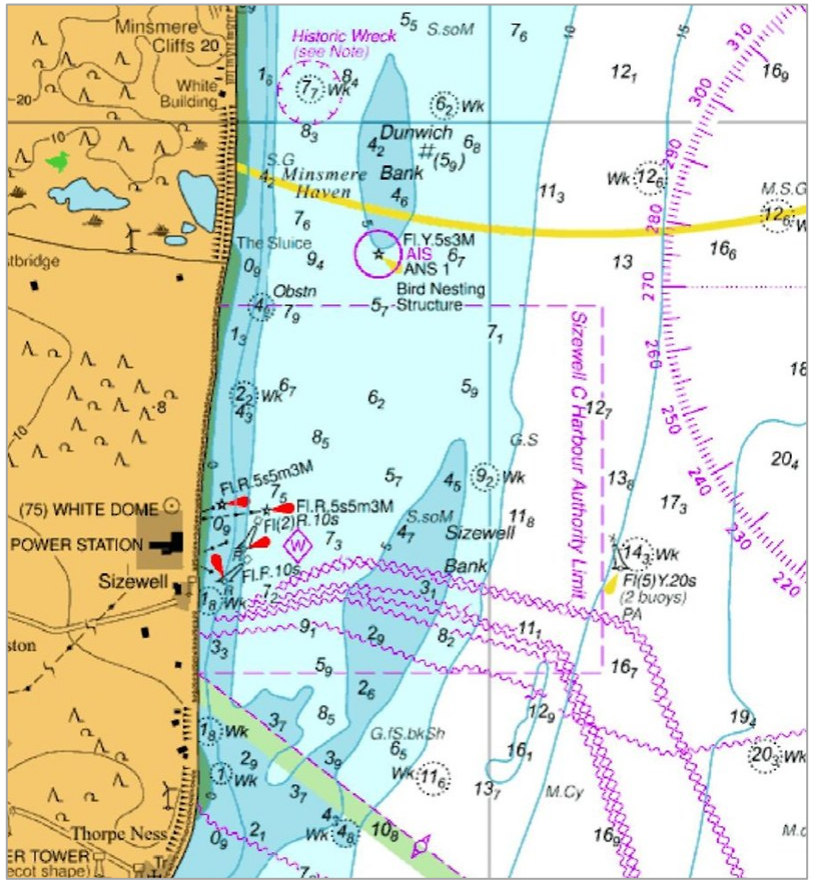
Speed: Spring 2.7 Kts; Neap 1.6 Kts

Max. flow 3 hours after high water

Note:

- Tidal diamond above refers to HW at Dover
- HW and LW at Sizewell are broadly 1 hour earlier than HW and LW at Dover
- Sizewell bank causes asymmetric tidal regime where flood currents are stronger than ebb currents.

Hours	Geographical Position	52°12'·7 N 1 38·3 E
	Directions of streams (degrees)	Rates at spring tides (knots)
		Rates at neap tides (knots)
Before High Water 6	191	1·0 0·5
Before High Water 5	187	1·3 0·6
Before High Water 4	185	1·2 0·6
Before High Water 3	185	1·1 0·5
Before High Water 2	187	0·7 0·3
Before High Water 1	005	0·2 0·1
High Water	007	1·2 0·6
After High Water 1	007	1·4 0·7
After High Water 2	007	1·1 0·5
After High Water 3	007	0·9 0·4
After High Water 4	007	0·7 0·3
After High Water 5		0·0 0·0
After High Water 6	193	0·8 0·4



Section 4. Communication & Reporting

4.1 VHF radio procedures

4.2 Incident reporting requirements

4. Communication & Reporting

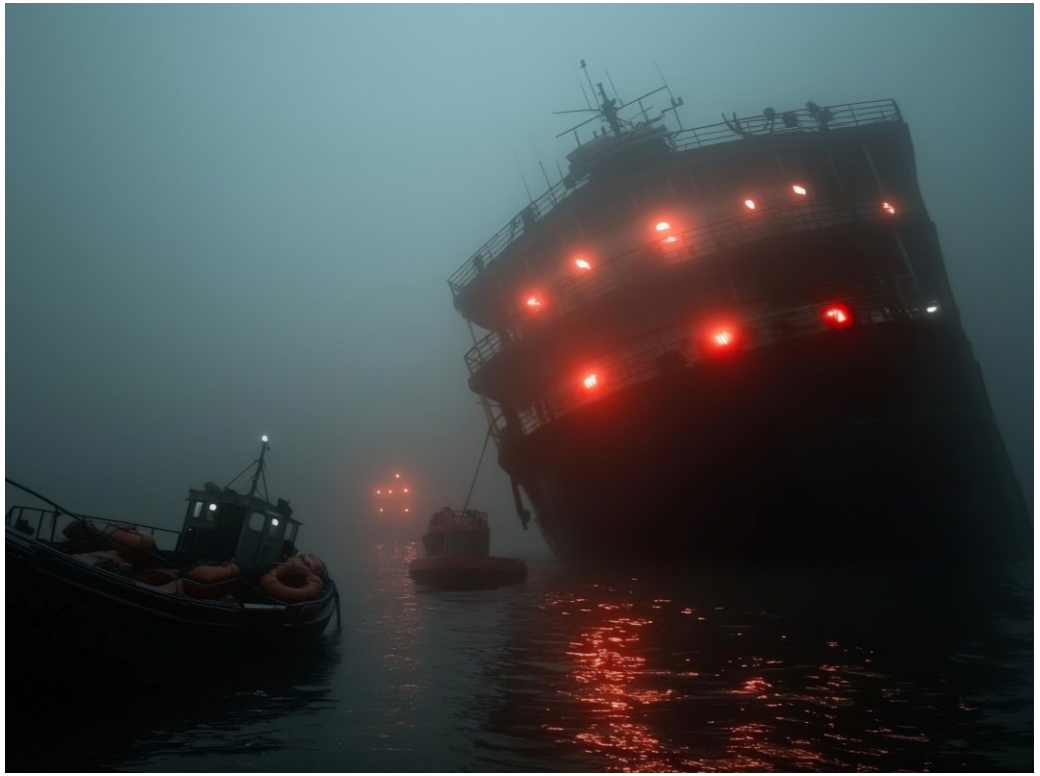
4.1 VHF radio procedures

- Masters of vessels ≥24m or engaged in marine works must call SZC Security Control Room (on VHF Radio Ch. 12 or via telephone (tel. 01728 653138)
- This is required to announce their intended arrival into, or departure from, the SZC Harbour Area.
- In addition, a pre-arrival telephone call into the SZB Security Control Room is required (tel. 01728 653720).

4. Communication & Reporting

4.2 Incident reporting requirements

- Any incident should be reported to the harbour master immediately and be followed up by a written report within 24 hours.
- The vessel master must notify the Marine Accident Investigation Branch (MAIB) of any marine casualty or marine incident. (Marine Casualty and Marine Incident Reporting)
- SZC has a template incident reporting form that can be found on the MSMS (section 2.4). It is expected that the master of the vessel reports any incident as soon as possible after occurrence.



Section 5.
Vessel Traffic & Operations

5.1 Routeing

5.2 Anchorages

5.3 Vessel Traffic Monitoring System (AIS, radar, CCTV)

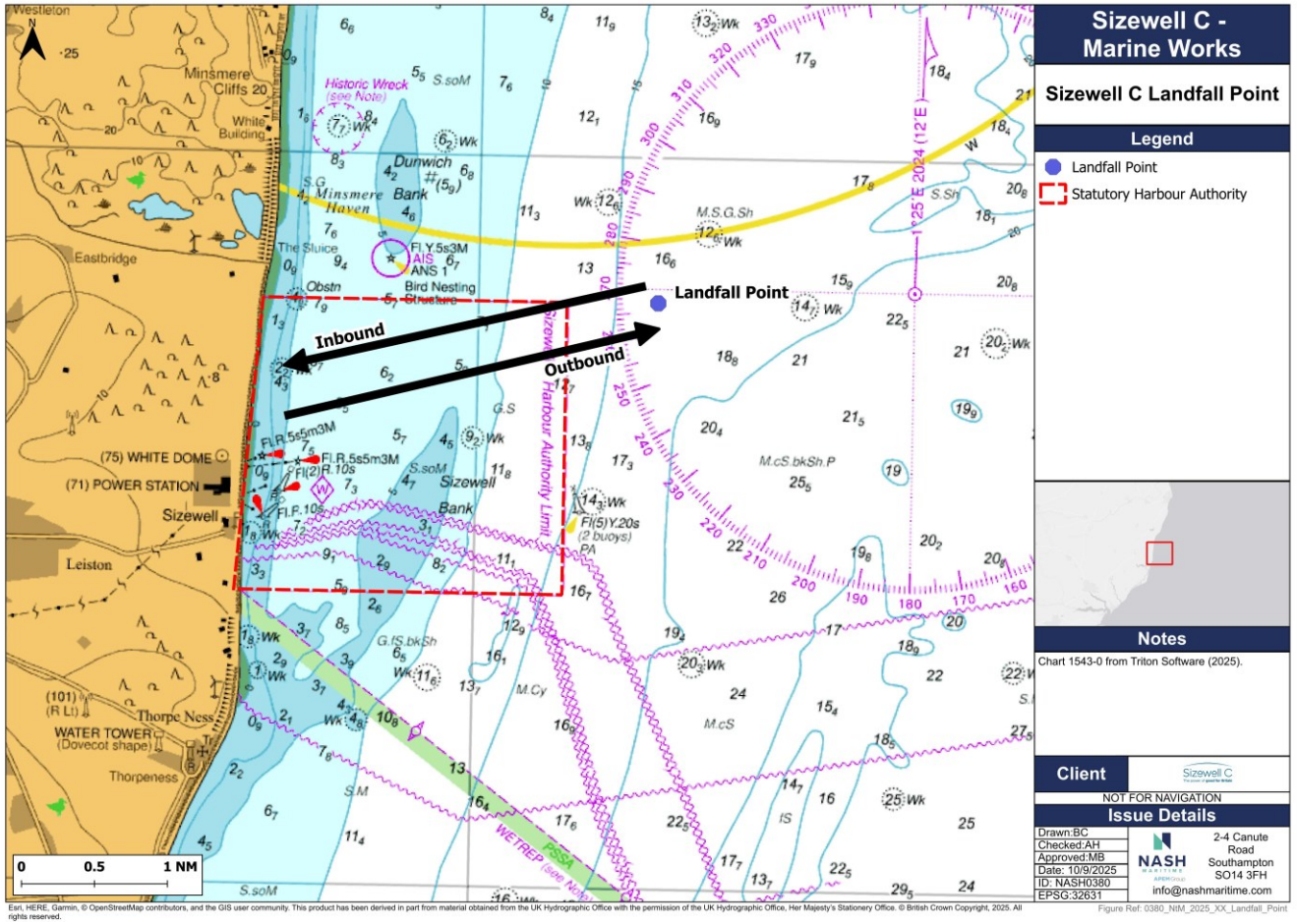
5.4 Baseline vessel traffic AIS

5.5 Baseline vessel traffic Radar

5. Vessel Traffic & Operations

5.1 Routeing and anchorages

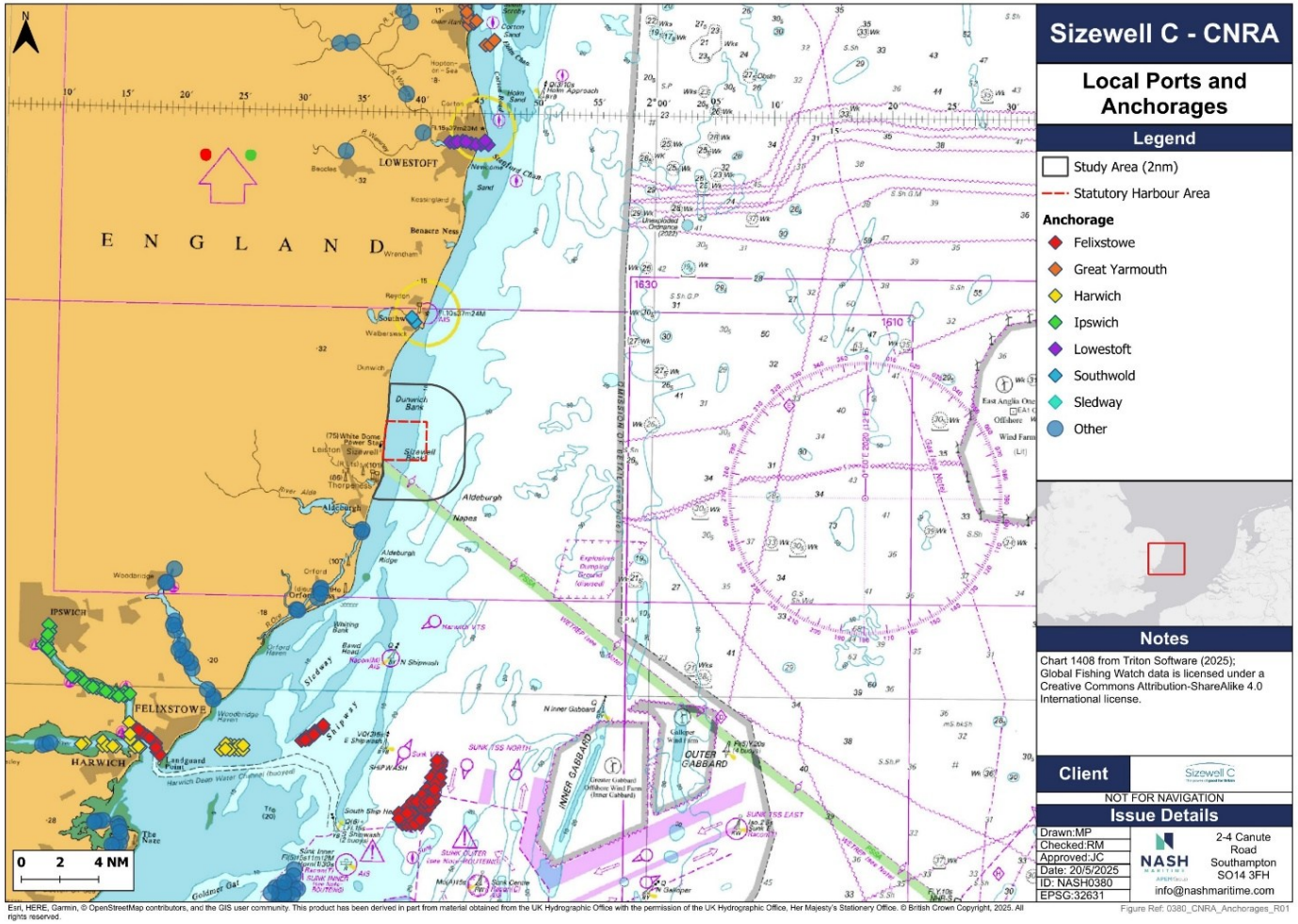
- Once formalised, designated vessel routes into the harbour will be promulgated via Notice to Mariners (NtMs).
- A landfall point for traffic routeing purposes is located at 52° 14.0' N, 001° 42.0'E, see chart for location and direction of inbound and outbound transits for SZC construction traffic.



5. Vessel Traffic & Operations

5.2 Anchorages

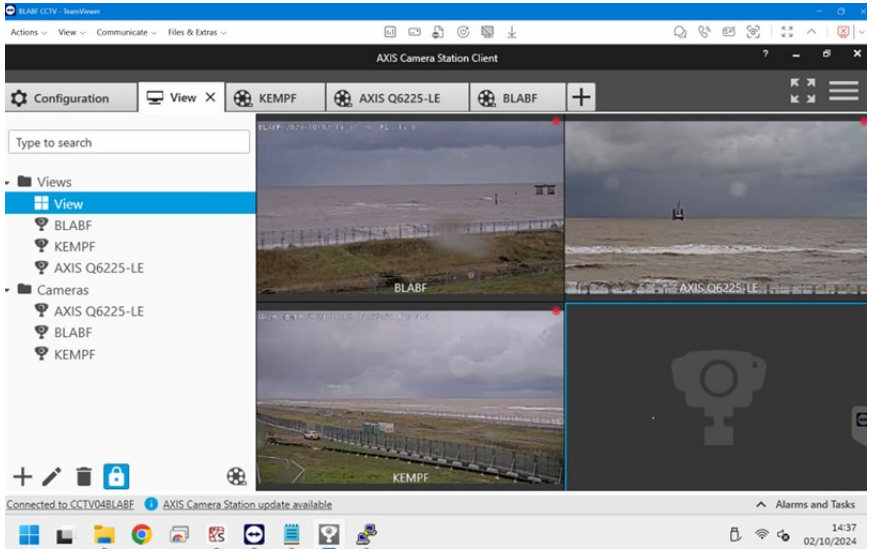
- Anchoring is not permitted in the SHA apart from in an emergency. The closest local anchorages are shown on the chart.

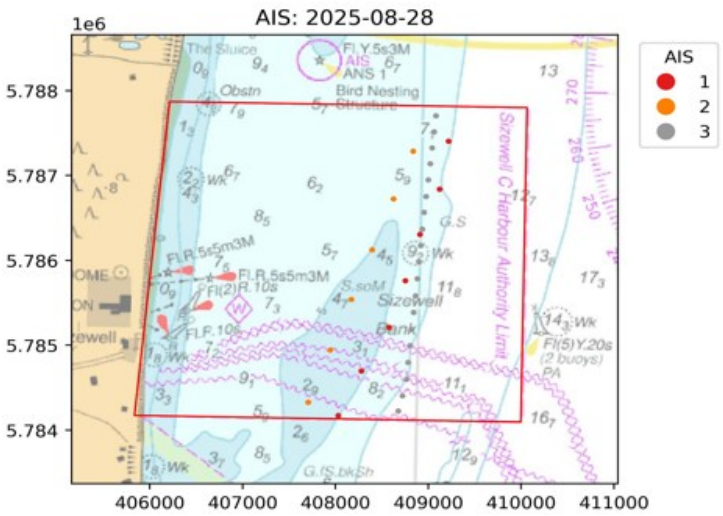


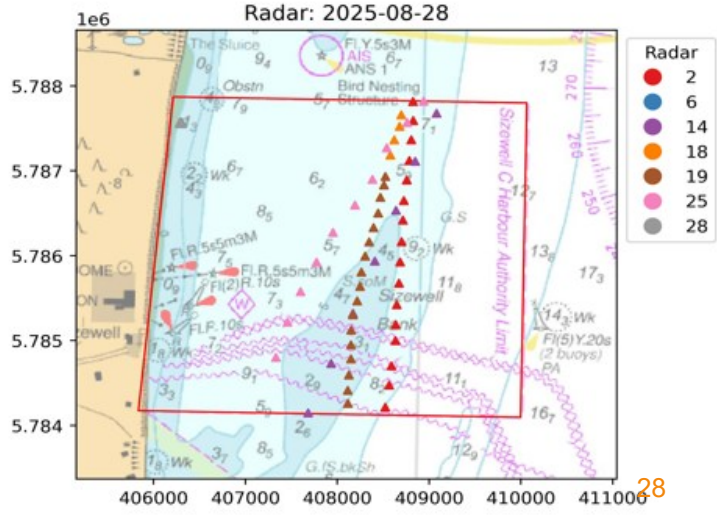
5. Vessel Traffic & Operations

5.3 Vessel Traffic Monitoring System (AIS, radar, CCTV)

- Currently, no formal VTS or LPS exists.
- Daily AIS, Radar data and Operational CCTV are used to monitor vessel traffic in the SHA.
- This allows seasonal patterns to be established and ensure general directions are followed.
- This information can then be used to further support safe navigation within the SHA.







Right: Image of CCTV camera set-up and below, example of AIS and Radar track plots

5. Vessel Traffic & Operations

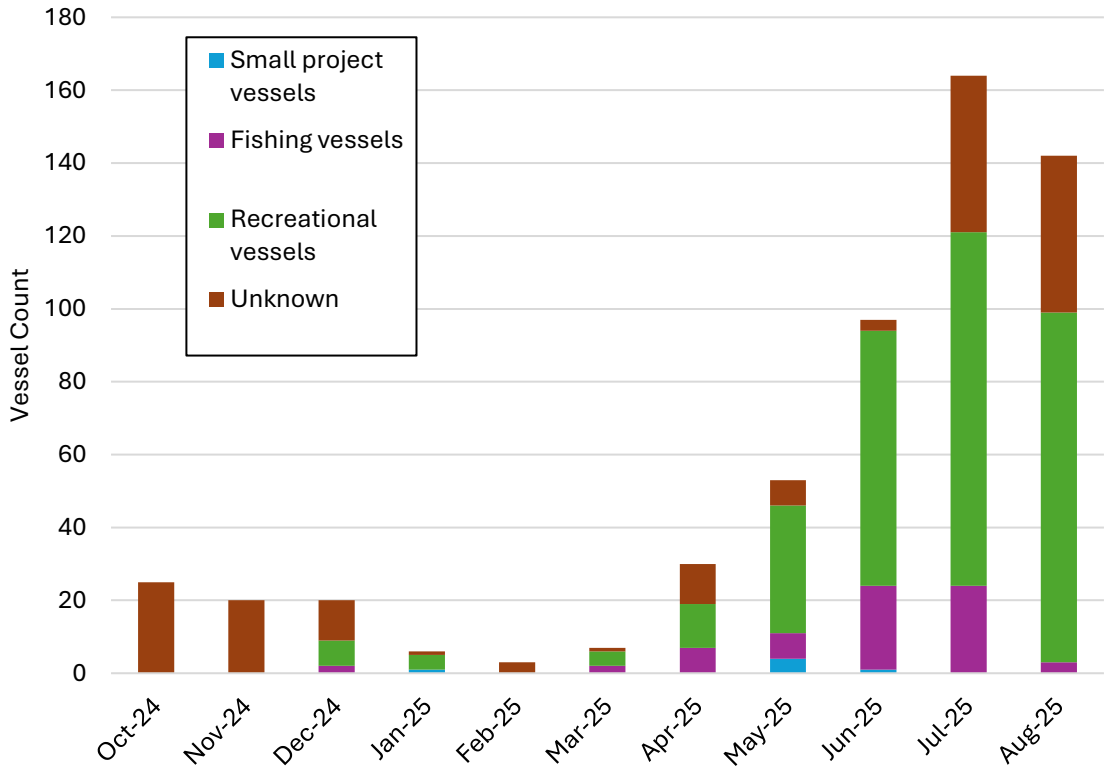
5.4 Baseline Vessel Traffic AIS

- Majority of vessels in SHA are recreational vessels, tug and service vessels or fishing vessels.
- Masters should be aware that small fishing vessels are launched from Sizewell beach.
- The beach is also used for unpowered recreational craft such as standup paddle boards (SUP), kayaks and canoes.

5. Vessel Traffic & Operations

5.5 Baseline Vessel Traffic Radar

- CCTV images are used to manually identify vessel targets detected on radar.
- Manual identification is not always possible depending on image clarity. In this case a vessel is classed as ‘unknown’ (see bar chart).
- Recreation and fishing vessels show seasonality over the past year (October 2024 – August 2025).
- The number of ‘small project vessels’ is expected to increase from October 2025 as SZC construction works begin.



Section 6. Marine Works

6.1 Marine Works Application process

6.2 SIMOPS (Simultaneous Operations) protocol

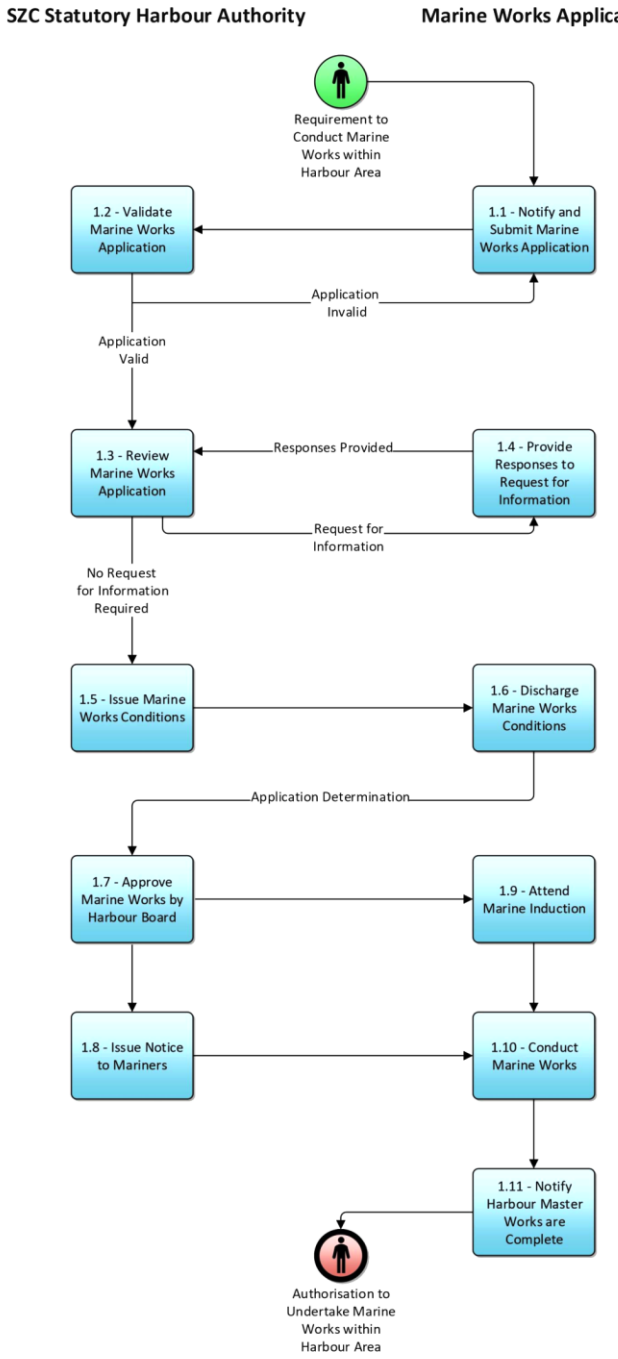
6.3 Notices to Mariners

6.4 Planned future works

6. Marine Works

6.1 Marine Works Application process

- ALL marine works in the SHA must be approved in advance by the Harbour Authority.
- Applicants must submit a Marine Works Application along with relevant supporting documentation to SZC Harbour Master and Marine Operations Manager.
- The process for marine works approval by SZC Harbour Board will be:
  - 8 weeks from validation of a completed application where the works are deemed **obstructive/intrusive**, or
  - 4 weeks from validation of a completed application where the works are deemed **non-obstructive** and have minimal impact on safety of navigation (e.g. surveys, monitoring, etc.)
- If the use of divers is intended, a separate dive permit must be applied for.
- Further information can be found in the harbour works procedure which can be found on the SZC Team Centre Doc Ref No. 101453347.



Left:
Process flowchart for SZC Marine Works Applications.

6. Marine Works

6.2 SIMOPS (Simultaneous Operations) protocol

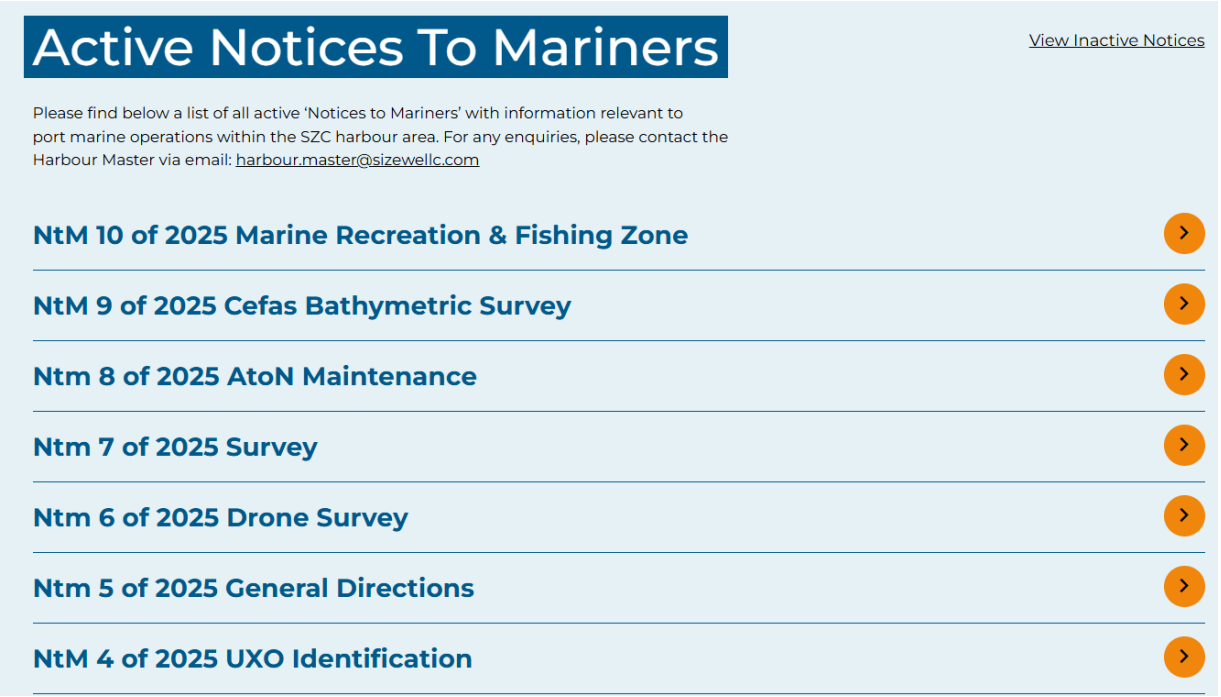
- SIMOPS protocol is used to control multiple marine activities occurring at the same time within the SHA. It is used following the assessment of multiple marine works applications.
- This process will change depending on the nature of the marine works occurring. Typically, it includes a daily call between contractors and the harbour authority.
- Contractors are required to produce a daily report on the progress of their operation, and this should be submitted to the harbour master within 24 hours.

6. Marine Works

6.3 Notices to Mariners

- Following approval of a marine works application, details of the forthcoming operation will be circulated via a Notice to Mariners (NtM) on the SHA website:

https://www.SizewellCHarbour.com



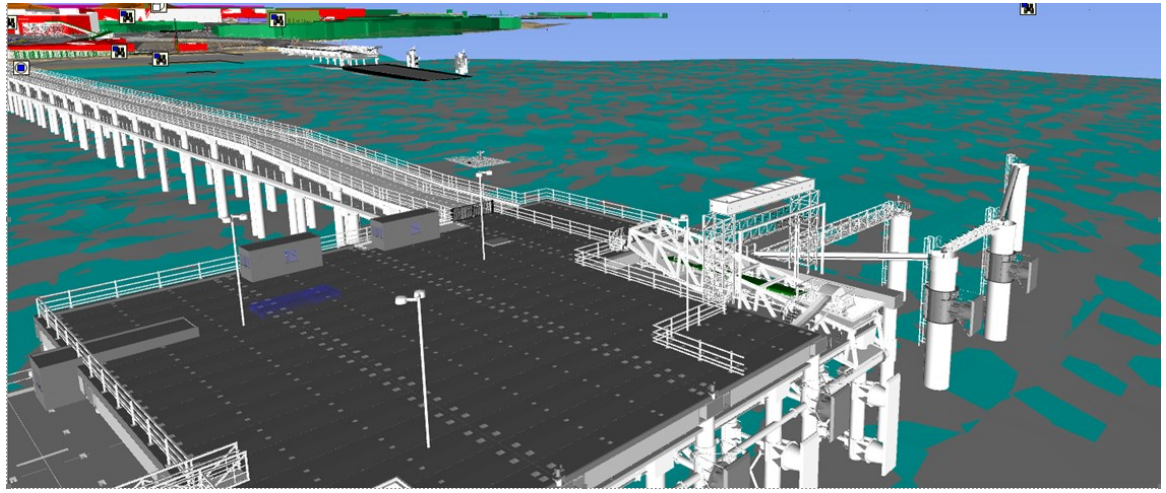
Example of website showing contemporary NtM (August 2025)

6. Marine Works

6.4 Planned future works

A list of the key future SZC marine works with the proposed duration of construction is provided in the table. The location of the infrastructure is shown on the next slide.

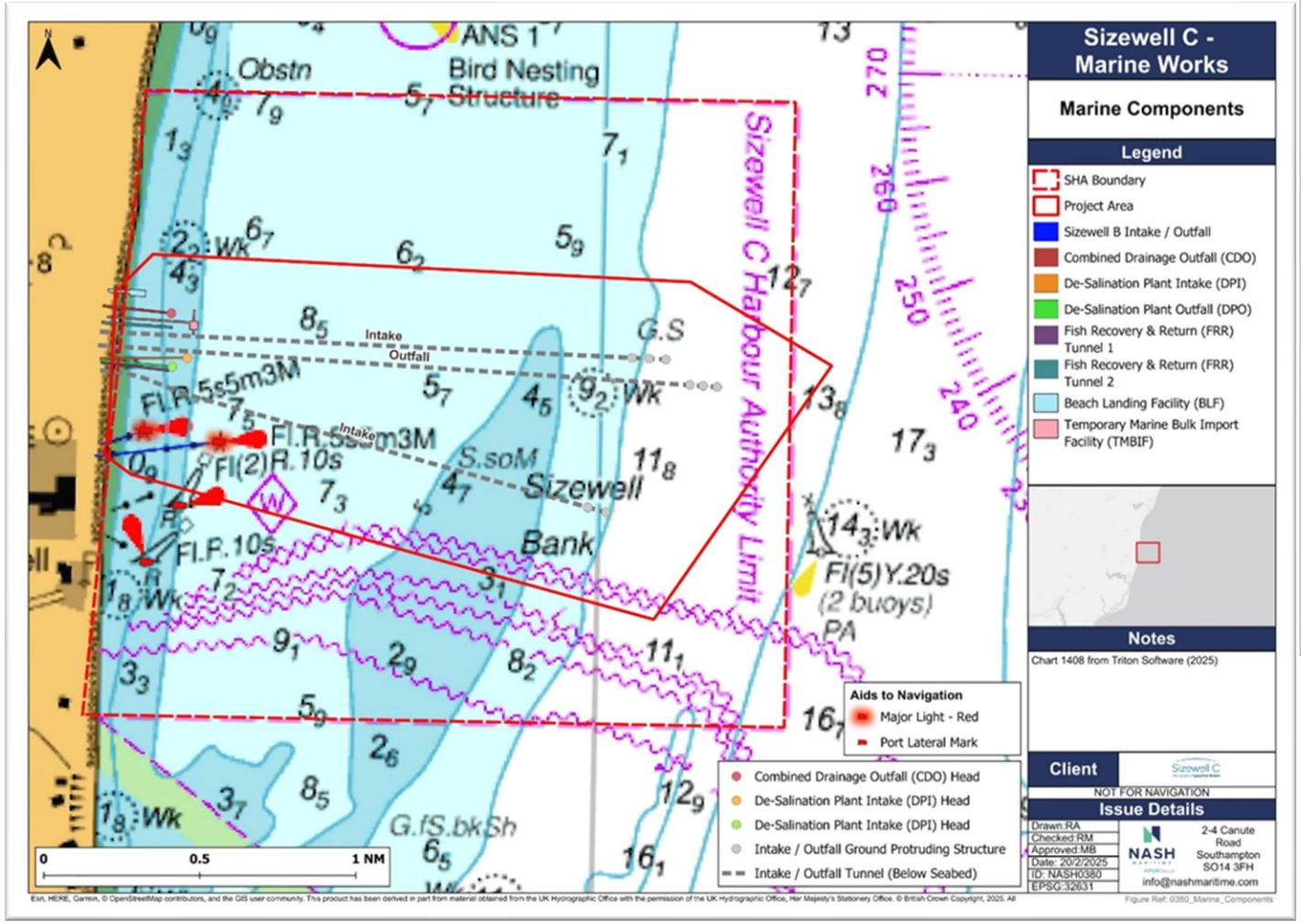
Marine Infrastructure / Facility	Start Date	End Date
Combined Drainage Outfall	Nov 2025	May 2026
Temporary Desalination Plant Outfall	Nov 2025	May 2026
Temporary Marine Bulk Import Facility	Dec 2025	Mar 2027
Fish Recovery and Return System (Reactor 1)	Apr 2026	May 2026
Beach Landing Facility	Aug 2026	May 2027
Fish Recovery and Return System (Reactor 2)	Jun 2027	Jul 2027
Cooling Water Intake/Outfalls	Jan 2028	Dec 2029

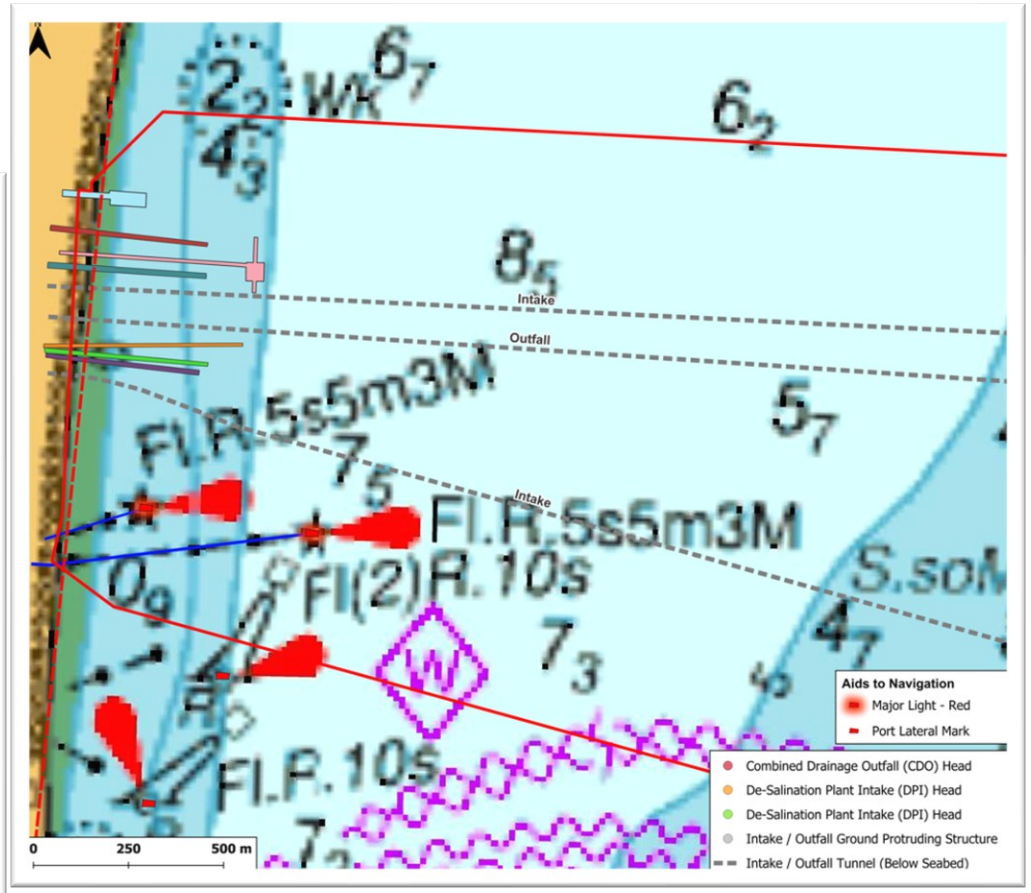


Above: Computer-generated design of Temporary Marine Bulk Import Facility at Sizewell C

6. Marine Works

6.4 Planned future works





Closing Remarks

- These slides provide information pertinent to navigational safety of all harbour users.
- As a vessel master operating within the Sizewell C Statutory Harbour Area (SHA), your role is pivotal in maintaining the safety, efficiency and integrity of maritime operations.
- The completion of this LKE will enable you to make informed decisions and respond effectively to dynamic conditions in line with the harbour General Directions and practices.
- Thank you for your cooperation.

Any questions should be directed to:
Capt. Neil Glendinning OBE, SZC Harbour Master
Email: harbour.master@sizewellc.com
Tel. 07801 681136