

The Lighthouse Green Fuels Order

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Contents

Abbreviations	1
20 Marine Navigation	3
20.1 Introduction.....	3
20.2 Assessment methodology and significance criteria	6
Scoping and consultation	6
Assessment approach	14
Study area	17
Revised draft Order Limits.....	18
Criteria for assessment	18
Embedded Mitigation.....	21
Worst case design scenario	22
20.3 Baseline conditions.....	23
Data collection	23
Key navigational features	24
Vessel traffic movements.....	25
Historical incidents.....	26
Future baseline	26
Data limitations and assumptions.....	27
20.4 Likely impact and effects of the Proposed Development.....	27
Phase 1: Construction of the quay (and demolition of existing jetties) and dredging of the berth pocket and access channel	27
Impact on Port operations	27
Impact on adjacent terminals	28
Impact on risk of collision	28
Impact on risk of allision/contact	29
Impact on risk of grounding	30
Impact on risk of diving.....	30
Impact on risk of mooring/anchoring	31
Impact on risk of girting	31
Phase 2: Marine operating during the construction of the LGF plant.....	32
Impact on Port operations	32
Impact on adjacent terminals	32
Impact on risk of collision	33
Impact on risk of allision/contact	33

Impact on risk of grounding	34
Impact on risk of mooring/anchoring	34
Impact on risk of girting	35
Phase 3: Marine operation during the operational phase of the facility	35
Impact on Port operations	35
Impact on adjacent terminals	36
Impact on risk of collision	36
Impact on risk of allision/contact	37
Impact on risk of grounding	37
Impact on risk of mooring/anchoring	38
Impact on risk of girting	38
20.5 Residual effects and conclusions.....	38
Mitigation and enhancement measures	38
Phase 1	40
Phase 2	40
Phase 3	41
20.6 Cumulative impacts	41
20.7 Summary of significant effects	42
References	44

Tables

Table 20.1	Marine Navigation, Summary of Key Policy, Legislation and Guidance	4
Table 20.2	Summary of the EIA Scoping Opinion in Relation to Marine Navigation	6
Table 20.3	Marine Navigation Engagement Summary	7
Table 20.4	Vessel Types.....	15
Table 20.5	Hazard Types.....	15
Table 20.6	Adjacent Terminals.....	18
Table 20.7	Impact Magnitude Criteria for Marine Navigation	19
Table 20.8	Impact Sensitivity/Consequence Criteria for Marine Navigation	19
Table 20.9	Impact Sensitivity/Consequence Criteria for Marine Navigation	20
Table 20.10	Summary of embedded mitigations	21
Table 20.11	Key Sources of Marine Navigation Data	23
Table 20.12	Key Summary of Additional Mitigation	39
Table 20.13	Summary of Impacts and Subsequent Effects	42

Insets

Inset 20.1	Study Area, Adjacent Terminals and Key Navigational Features	17
Inset 20.2	Vessel Traffic Movements in the Study Area	26

Abbreviations

Abbreviations	In Full / Term
AIL	Abnormal Indivisible Load
AIS	Automatic Identification System
ALARP	As Low As Reasonably Practicable
AtoNs	Aids to Navigation
CD	Chart Datum
DCO	Development Consent Order
DfT	Department for Transport
DWT	Deadweight Tonnage
EA	Environment Agency
EIA	Environmental Impact Assessment
ES	Environmental Statement
HGV	Heavy Goods Vehicle
HW	High Water
IMO	International Maritime Organisation
JUB	Jack-Up Barge
LGF	Lighthouse Green Fuels
LOA	Length Over All
MBL	Minimum Breaking Load
MC	Marine Classification
MCA	Maritime and Coastguard Agency
MHWS	Mean High Water Springs
MMO	Marine Management Organisation
MPS	Marine Policy Statement
NPS	National Policy Statement
NRA	Navigation Risk Assessment
NtM	Notice to Mariners
PDT	PD Teesport
PEC	Pilotage Exemption Certificate
PEIR	Preliminary Environmental Information Report
PMSC	Ports and Marine Facilities Safety Code
PNRA	Preliminary Navigation Risk Assessment
PWC	Personal Water Craft
RHIB	Rigid Hull Inflatable Boat
RO/RO	Roll on-Roll off

Abbreviations	In Full / Term
SABIC	Saudi Basic Industries Corporation
SAF	Sustainable Aviation Fuel
SHA	Statutory Harbour Authority
UK	United Kingdom
VTs	Vessel Traffic Service

20 Marine Navigation

20.1 Introduction

- 20.1.1 This chapter of the Environmental Statement (ES) presents the assessment of likely significant effects on marine navigation arising from the construction and operation of the Proposed Development phases. It has been prepared by NASH Maritime Limited.
- 20.1.2 The Proposed Development covers three main phases of marine operations. More detail on each of the phases and a description of marine activity, vessel types and numbers is provided within Section 3 of the **Navigation Risk Assessment (NRA) Appendix 20A (ES Volume III, Application Document Ref. 6.3)**. In summary, the phases are as follows:
- Phase 1: Construction of the quay (and demolition of existing infrastructure) and capital dredging of the berth pocket and access channel;
 - Phase 2: Marine operations during the construction of the rest of the Proposed Development (import of construction materials and modules); and
 - Phase 3: Marine operations during the operation of the facility (the import of biomass and waste wood feedstock via the quay).
- 20.1.3 The navigational impacts of maintenance dredging (i.e. cyclical dredging activity undertaken during operation of the Proposed Development) have not been assessed within the NRA as maintenance dredging is a routine operational activity undertaken within the Port with associated navigational risks managed by PD Teesport (PDT) in its role as Statutory Harbour Authority (SHA). As an established business-as-usual activity, maintenance dredging associated with the Proposed Development is not anticipated to materially alter the existing navigational risk profile of the Port, and any incremental navigational risk associated with such activities is therefore considered negligible relative to the baseline navigational risk environment.
- 20.1.4 This chapter is informed by the **NRA Appendix 20A (ES Volume III, Application Document Ref. 6.3)**, produced in accordance with the relevant guidance and in accordance with the methodology set out in Section 7 of the NRA which was agreed by PDT as SHA. The NRA provides the detailed technical evaluation of the risks and impacts of the Proposed Development on maritime navigation which has been

used to inform this Chapter. Methodologically, the Environmental Impact Assessment (EIA) is based on impact significance (magnitude and sensitivity), whereas the NRA is based on risk assessment (likelihood and consequence) parameters. For the purposes of this Chapter the likelihood parameter has been translated into magnitude and the consequence parameter has been translated into sensitivity.

- 20.1.5 Navigational impacts arising from the export of Sustainable Aviation Fuel (SAF) products during the operational phase of the Proposed Development are not considered. This was agreed at a project kick-off meeting with PDT held on 3rd October 2025 and is documented in the meeting minutes in Annex A of **Appendix 20A: NRA (ES Volume III, Application Document Ref. 6.3)**. The assumption is that SAF will be exported by existing third-party liquid cargo terminals who are licensed to export the product either via their existing marine facility/facilities or via Heavy Goods Vehicles (HGV) within Seal Sands Area Legislation, Planning Policy Context and Guidance.
- 20.1.6 The policy, legislation, and guidance relevant to the assessment of marine navigation for the Proposed Development is summarised in Table 20.1.

Table 20.1 Marine Navigation, Summary of Key Policy, Legislation and Guidance

Policy, Legislation or Guidance	Description
Policy	
National Policy Statement (NPS) for Ports (2012) [Ref 1]	Sets out the Department for Transport's (DfT) policy, and framework for decisions, for new port developments. Note, an updated draft of this document (2025) has been published but has not yet been adopted [Ref 2].
National Policy Statement for energy (EN-1) (2024) [Ref 3]	Overarching policy designated under the Planning Act 2008 for developers of energy infrastructure projects examined under the 2008 Act.
National Policy Statement for renewable energy infrastructure (EN-3) (2025) [Ref 4]	Policy designated under the 2008 Act for developers of renewable energy infrastructure projects examined under the 2008 Act.
UK Marine Policy Statement (MPS) (2020) [Ref 5]	This MPS is the framework for preparing Marine Plans and taking decisions affecting the marine environment.
North East Marine Plans (2025) [Ref 6]	Information and documents on the development of the North East Marine Plans.
DfT Ports and Marine Facilities Safety Code (PMSC) (2025) [Ref 7]	A United Kingdom (UK) national standard developed by the DfT and the Maritime and Coastguard Agency (MCA). It provides a framework to ensure safe

Policy, Legislation or Guidance	Description
	marine operations in ports, harbours, terminals, marinas, and other marine facilities across the UK.
Teesport Marine Safety Plan 2024 to 2026 [Ref 8]	Document compiled to demonstrate how navigation safety is managed within Teesport and illustrate how port policies and procedures satisfy the requirements of the PMSC.
Legislation	
General Directions for Safety of Navigation, Persons and Property in the Harbour (PD Teesport, 2021). [Ref 10]	A General Direction given in exercise of PD Teesport Limited's powers conferred by the Tees and Hartlepool Port Authority Revision Order 1974, to establish mandatory rules and procedures for the safe navigation, berthing, operation, and conduct of vessels and individuals within the Tees and Hartlepool Harbour area, ensuring the protection of life, property, and the marine environment.
Harbours, Docks & Piers Clauses Act 1847 (UK Parliament, 1847) [Ref 11]	The Harbours, Docks, and Piers Clauses Act 1847 is a foundational piece of UK legislation designed to standardise and consolidate provisions commonly included in individual Acts that authorise the construction and improvement of harbours, docks, and piers.
Tees and Hartlepool Port Authority Act 1966 (UK Parliament, 1966) [Ref 12]	A local Act of Parliament that established the statutory framework for the governance and operation of the Tees and Hartlepool Port Authority
The Tees and Hartlepool Harbour Byelaws 1977 & 1985 (PD Teesport, 1985) [Ref 13]	Grants the Tees and Hartlepool Port Authority certain powers and duties as the harbour authority for the River Tees.
Marine and Coastal Access Act 2009 [Ref 14]	UK law that established a comprehensive system for managing marine environments, including the creation of marine conservation zones and improved planning for coastal and offshore activities. Any works below the Mean High Water Spring (MHWS) would fall under the Marine Licensing regime, administered by the Marine Management Organisation (MMO).
Guidance	
Ports and Marine Facilities Safety Code – “Guide to Good Practice on Port Marine Operations” (DfT, 2025) [Ref 15]	A guide to supplement the Port and Marine Facilities Safety Code, containing useful information and detailed guidance on issues relevant to the management of ports and other marine facilities.
River Tees Passage Plan (PDT, 2024) [Ref 16]	This guide is prepared by PDT to assist mariners in creating a passage plan for navigation in the River Tees
Notice to Mariners – PDT [Ref 17]	The Notices to Mariners contain important navigational information including chart updates, changes in channels and aids to navigation.
International Maritime Organisation (IMO), Revised Guidelines for Formal Safety Assessment (IMO 2025) [Ref 18]	Offers a method for identifying and evaluating hazards and risks related to marine operations, along with suitable mitigation measures, in a clear and consistent manner.

20.2 Assessment methodology and significance criteria

Scoping and consultation

- 20.2.1 An EIA Scoping Opinion was received by the Applicant from the Planning Inspectorate ('the Inspectorate') on behalf of the Secretary of State dated 11 November 2025. The scoping responses from the Inspectorate in relation to marine navigation and how these matters should be addressed by the Applicant are set out in Table 20.2.
- 20.2.2 A summary of the stakeholder engagement activities specific to Marine Navigation is provided in Table 20.3. The issues raised and the actions to address them are incorporated throughout this Chapter.

Table 20.2 Summary of the EIA Scoping Opinion in Relation to Marine Navigation

Section ID	Applicant's Proposed Matters to Scope out	Scoping Opinion Comments	Applicant's Response
Paragraph 20.6.13	Decommissioning	The Scoping Report proposes to scope out an assessment of decommissioning on the basis that the proposed development would operate for at least 30 years after commissioning. Therefore, the applicant considered it is not appropriate to outline decommissioning operations due to the extent of unknown factors related to the future marine baseline and technical requirements for decommissioning. Furthermore, a decommissioning plan is proposed to be prepared at the point of decommissioning. The Inspectorate is content with this approach but would expect an outline Decommissioning Plan, which describes any measures likely to be in place during decommissioning which would reduce the impact of the proposed development on marine navigation to be provided as part of the application documents.	The decommissioning of the Proposed Development, from a marine navigation perspective, is likely in worst case to be a reverse of the construction phase. Therefore, the impacts on navigation during decommissioning are likely to be similar to, or less than, those during construction and similar risk controls will be implemented.
Table 20.4	Risks associated with export of finished product – operational phase	The Scoping Report proposes to scope this matter out during operational phase on the basis that the export operations are anticipated to use existing infrastructure and agreements, with no material change to the vessel traffic and marine navigation expected in the area. Paragraph	In preparing this NRA, NASH Maritime undertook an initial meeting with PDT on 3 October 2025. The purpose of this meeting was to provide a Proposed

Section ID	Applicant's Proposed Matters to Scope out	Scoping Opinion Comments	Applicant's Response
		20.6.11 states that the use of existing infrastructure and agreements and the number of vessel movements in relation to export vessel navigation during the operational phase are yet to be confirmed. Paragraph 20.9.1 states that Statutory Harbour Authority agreement would be sought on the scope of the assessment. On the basis of the information provided the Inspectorate does not agree to scope this matter out at this stage. The ES should assess the risks associated with export of finished product during operational phase or evidence should be provided to demonstrate that the relevant statutory consultees agreed to scope this matter out in the ES.	Development introduction for PDT, agree the NRA approach, NRA methodology, identify Proposed Development input data and confirm key engagement with PDT, (see Appendix 20A: NRA (ES Volume III, Application Document Ref. 6.3)) . As documented in the minutes of the meeting (see Appendix 20A: NRA (ES Volume III, Application Document Ref. 6.3)) , PDT agreed that liquid bulk export should not be included in the study as it will be carried out via a third party and will be part of the port's business-as-usual activity. The NRA project team met with PDT for a second time on 27 April 2026 and received confirmation from the Harbour Master that the position remains the same.

Table 20.3 Marine Navigation Engagement Summary

Date	Consultee	Summary	Applicant's comments
3 October 2025	PDT	Microsoft Teams meeting to provide a project introduction for PDT, agree Navigation Risk Assessment approach, risk assessment methodology, identify project input data and	During the meeting, the NRA methodology was confirmed and will expand on PDT's existing Port-wide Risk Assessment (see Appendix 20A: NRA (ES Volume III,

Date	Consultee	Summary	Applicant's comments
		confirm key engagement with PDT.	Application Document Ref. 6.3)). Baseline port-wide risk control measures were provided by PDT for inclusion in the assessment. It was agreed during the meeting that the export of the SAF products would constitute Business-As-Usual port operations so would be excluded from the NRA and Chapter 20: Marine Navigation (ES Volume I, Application Document Ref. 6.1). The need for, and positioning of, Aids to Navigation (AtoNs) near the Proposed Development Berth and turning circle within the Proposed Development were discussed during the meeting and PDT agreed in principle to the permanent removal of one AtoN and temporary removal of a second AtoN (see Appendix 20A: NRA (ES Volume III, Application Document Ref. 6.3)).
January 2026	PDT (s.42 written response).	PDT's written comments in response to the PEIR Report and in relation to Shipping & Navigation are summarised below.	-
		i) As Statutory Harbour Authority, PDT raised the point that there is a need to ensure that the Proposed Development does not adversely affect the use of the turning circle, ships navigating within the River Tees or using other facilities within the Port. PDT considers that the area of navigable waters shown within the proposed DCO limits may be larger than is actually required and urges the Applicant to	The main impact on the turning circle will be in phase 2 of the marine operations when delivering Abnormal Indivisible Loads (AIL) to construct the Proposed Development and when a stern-to (also known as a 'Mediterranean' Mooring or Med-mooring) arrangement is preferable for unloading. This was further discussed at a meeting with PDT on 27 April 2026 during which the harbour master confirmed, even with an encroachment of 40m into the turning circle when the largest heavy lift vessel is present, this can still be managed.

Date	Consultee	Summary	Applicant's comments
		consider whether it can be reduced.	
		ii) PDT acknowledge that there has been constructive engagement with them on a preliminary NRA and production of the PEIR but requested continuous communication to enable PDT to understand the impacts of the Proposed Development on the Port.	PDT were re-consulted on the updated marine concept plan as part of the NRA on 27 April 2026.
		iii) PDT agrees that maintenance dredging has been carried out within the area of the Port below MHWS within the DCO limits, however it is not the responsibility of PDT to dredge third party berths and insofar as it has done so previously, it is a chargeable activity.	Comment has been noted and has been considered in development of the Proposed Development.
13 November 2025	MMO	A meeting took place to discuss Proposed Development scoping with the MMO to agree ES approach, risk assessment methodology, identify project input data and confirm engagement with the MMO.	The identified items were presented to and discussed with the MMO during the meeting.
January 2026	MMO (s.42 response)	The Preliminary Environmental Information Report (PEIR) suggests capital dredging of up to 1,000,000m ³ as a worst-case scenario, but it is not clear if the volume of dredge material required for the excavation and cutting of the piles of the existing jetties is included in this estimate.	Capital dredging volume have been subsequently reduced to maximum 800,000m ³ . This does include for the excavation and cutting of piles for the existing jetties. This is secured by the maximum parameters stated in the deemed marine licence at Schedule 10 to the draft Development Consent Order (DCO) (Application Document Ref 3.1) .
13 November 2025	Tees Bay Pilots	MS Teams meeting to discuss the NRA scope and study area, provide a summary of the Proposed	During the meeting, it was acknowledged that most scenarios would require deconfliction, but there is

Date	Consultee	Summary	Applicant's comments
		Development phases, type of marine activity and anticipated number of project vessels to elicit input on potential navigational impacts presented by the Proposed Development. Various scenarios were put to the Pilots' representative to highlight potential navigational impact of tankers and general cargo vessels utilising the turning circle and assessing the jetties/terminals within the Study Area when the largest project vessel is alongside the Proposed Development Berth.	standard practice for PDT and their Vessel Traffic Service (VTS) is effective in this regard. Overall, it was felt that no additional risk was presented by the Proposed Development.
14 November 2025	Marine services providers (representatives from Boluda Towage, Svitzer Marine, Foyboatmen)	MS Teams meeting to discuss the NRA scope and study area, provide a summary of the Proposed Development phases, type of marine activity and anticipated number of project vessels to elicit input on potential navigational impacts presented by the Proposed Development. Boluda raised the question of marine service availability during high tides.	The project team indicated during the meeting that it is likely that private towage contractors will be used during phase 1 though port towage providers are likely to be used for other phases. Participants also assessed that there was adequate navigational width for a Panamax size vessel to safely manoeuvre on to the Proposed Development Berth when a large tanker is moored alongside Navigator Terminal No. 2 Jetty.
13 January 2026	Navigator Terminals (s42 written response)	Navigator Terminals' written comments in response to the PEIR Report and in relation to Shipping & Navigation are summarised below.	-
		i) Navigator Terminals are a key operator of 4 berths within the port with three located on the Seal Sands Terminal (Jetty 1, 2 and 3) and one located at the North Tees Terminal (Jetty 4). They operate 24/7 365 days a year and highlight the critical importance of maintaining depths and access to all the Jetties	The importance of maintaining access to existing port facilities was recognised. Potential operational impacts are addressed in the response below.

Date	Consultee	Summary	Applicant's comments
		via the port channel, as well as turning circles and berth depths. Changes to the existing access arrangements has the potential to disrupt operations and impact upon Navigator Terminals' commercial service offering.	
		ii) Additional marine traffic could potentially impede vessels approaching or leaving the Navigator Terminals' Jetties (1-4), resulting in significant operational impacts. It will be vital for LGF to present assessments that demonstrate how such operations will be managed to avoid these impacts.	Since this comment was made, the results of the preliminary NRA have been discussed with Navigator Terminals and this has been assessed within the NRA. Additionally, risk mitigation has been discussed with PDT to safely manage increased levels of marine traffic.
		iii) There is little information presented on exclusion zones (loading, unloading and sailing) and explosion risk. This may represent a long-term operational risk that could impact the productivity of Navigator Terminals' facilities. Larger passing vessels may affect the loads on mooring lines for at-berth vessels. These loads must be quantified to determine their effect on the Minimum Breaking Load (MBL).	The Applicant recognises that some cargoes may present fire, explosion or other hazards. These hazards will be addressed through the project's design safety management process, including DSEAR assessments, QRA and other safety studies undertaken as part of detailed design (see Chapter 4: Proposed Development (ES Volume I, Application Document Ref. 6.1))). Vessels moving within, and to the north of, the turning circle will be proceeding at slow speed, with tugs in assistance (see Inset 20.1 and Appendix 20A: NRA (ES Volume III, Application Document Ref. 6.3))). The potential effects on neighbouring berthed vessels, including mooring line loads, were considered during the NRA. Given that vessels of a similar displacement already navigate to adjacent and

Date	Consultee	Summary	Applicant's comments
			upstream berths and that project vessels would be manoeuvring at low speed with tug assistance, no materially different effects from the existing baseline are expected and so the matter was not assessed further.
		iv) They note with significant concern that the latest Proposed Order Limits seem to encompass the Navigator Terminal's North Tees Jetty No. 4 frontage (including jetty and mooring infrastructure) and the Navigator Terminal's Seal Sands No.1 Jetty upstream dolphin. Navigator Terminals must be able to continue to operate, inspect, maintain and repair these critical facilities on which its operations rely. To the extent that works are proposed at this location, it should be noted that this is a complex asset with multiple pipelines converging from an array of vessels across the wider Navigator Terminals sites. There is limited capacity for additional infrastructure, and any works must be carefully planned and executed in order to manage major accident hazard risks as well as operational impacts on Navigator Terminals.	The revised Order Limits exclude Navigator Jetty No. 4. In any event, arrivals and departures to Navigator Jetty No.4 have been assessed within the NRA and show sufficient clearance away from the proposed largest vessel when moored alongside the Proposed Development. Construction of the north wing wall is expected to require the temporary removal of an existing Navigator mooring structure located adjacent to Jetty No. 1, which is noted to not be currently operational. The mooring structure would be reinstated on completion of the works. The proposals have been shared with Navigator Terminals and the Applicant will continue to work with Navigator Terminals to minimise disruption to existing operations and to agree the timing and method of reinstatement.
		v) It is also noted that dredging the proposed LGF berth to -14m chart datum (CD) (currently - 7.2mCD) presents a potential risk to the stability of Navigator Terminals' jetties. This	Potential dredging impacts on Navigator Terminals' jetties have been considered during the outline design development of the Proposed Development and will be further refined through subsequent design stages

Date	Consultee	Summary	Applicant's comments
		must be assessed and mitigation presented.	prior to construction to avoid or mitigate any impacts to Navigator Terminals' jetties.
13 February 2026	Navigator Terminals (pNRA results)	MS Teams Meeting to present the results of the preliminary Navigation Risk Assessment (pNRA). It was attended by the Client, its representatives, PDT Harbour Master and representatives of the NRA project Team.	-
		i) Navigator Terminals stated that their legal team and Royal Haskoning (navigation risk consultants) are reviewing the pNRA and will provide formal comments in due course.	No comments provided from either Navigator Terminals or their consultant at the point of submission. The Applicant will continue to seek to engage.
		ii) Navigator Terminals requested clarity on the project as this will determine the number of vessel arrivals/departures that could potentially be impacted.	Project marine concept plan and construction methodology was still being developed at the time of the meeting, but the Applicant explained that ongoing engagement with Navigator Terminals and PDT would continue as project planning and scheduling developed.
		iii) Navigator Terminals queried the unloading time for Panamax vessels in phase 3 and how many tugs would be used.	This is estimated at one week. 4 tugs would be used to manoeuvre Panamax vessels on to/off the berth.
		iv) Navigator Terminals queried whether the pNRA included an assessment of navigation hazards associated with the operation of Navigator Terminals No.1 Jetty.	NRA project team confirmed that operations associated with No.1 Jetty were scoped out of the NRA as the Jetty is not currently in use and there are no known plans to reinstate marine operations at this location. Navigator Terminals subsequently provided limited information regarding potential future use of No. 1 Jetty. However, this information did not provide anticipated vessel traffic levels or the timeframe for reinstatement of marine operations.

Date	Consultee	Summary	Applicant's comments
January 2026	MCA (s42 written response)	Statement to engage PDT as Statutory Harbour Authority (SHA).	Already actioned as part of NRA discussions.
		Request to add Marine and Coastal Access Act 2009 to be listed table of legislation references in NRA.	Added.
		Confirmation requested that a Hazard Identification Workshop with key stakeholders was part of NRA process.	Navigation hazard ID has been discussed thoroughly with PDT's Harbour Master with separate engagement with Tees Bay Pilots and marine services' representatives. This is documented in the NRA.
		As Automatic Identification System (AIS) data does not capture all vessel traffic including smaller fishing and recreational vessels, MCA understand that the applicant is to engage with local fishing associations and recreational sailing clubs to ensure this vessel activity is captured in the NRA.	PDT Harbour master confirmed in meeting in October 2025 when discussing NRA scope that there is no recreational nor fishing activity taking place in the Study Area.
		It is recommended that the establishment of a new facility conforms to the PMSC and its Guide to Good Practice (2025). The developer will need to produce a Safety Management System under this Code and it should be discussed with the SHA.	The Safety Management System will be secured within a condition of the deemed marine licence (included as a Schedule to the draft DCO (Application Document Ref 3.1)).
27 April 2026	Final PD Teesport Engagement	A MS Teams presentation of the updated NRA was made to PDT to discuss changes to the Proposed Development.	It was agreed that no further additional risk control measures were necessary for the updated NRA in relation to the Proposed Development.

Assessment approach

20.2.3 The Marine Navigation impact assessment has been undertaken in accordance with the following key guidance:

- IMO Formal Safety Assessment [Ref 18].
- Ports and Marine Facilities Safety Code [Ref 7].

- 20.2.4 The scope of the assessment has been agreed by PDT as the Statutory Harbour Authority for the study area.
- 20.2.5 The vessel types and hazard types identified in the Teesport Port Wide Risk Assessment, and deemed pertinent to the NRA, are summarised in Table 20.4 and Table 20.5 respectively. Unless stated otherwise, hazards are scoped in or out for all phases. Where vessel and/or hazard types are not taken forward into the NRA (see Tables 7.5 and 7.6 in the **Appendix 20A: NRA (ES Volume III, Application Document Ref. 6.3)**), this is due to risk exposure level as a result of the Proposed Development being determined as negligible based on the analysis of baseline data and communications with stakeholders.

Table 20.4 Vessel Types

Vessel Types	Detail	Included in NRA?
Tanker	Product Tanker, Crude Oil Tanker, Gas Carriers	Yes
General Cargo Vessels	General Cargo, Container, Non-liquid bulk, Ferries, Wind Farm Construction vessels	Yes
Project Cargo	Project Cargo Vessels associated with the Proposed Development i.e. oil rigs for hot/cold lay-up and vessels cold moved to dock. For the purposes of this NRA project Cargo includes all vessels transporting bulk materials and AILs to the Lighthouse Green Fuels (LGF) site.	Yes
Workboats	Tugs, Pilot boats, Workboats, PDT vessels, Windfarm support vessels and Fishing Vessels (Not fishing). For the purposes of this NRA Workboats include all vessels associated with the dredging and construction phase of the Proposed Development. For example, Jack-Up Barge (JUB), Tugs, Dredger)	Yes
Fishing Vessels	Fishing Vessels (Fishing).	No – no evidence in Study Area
Recreational Vessels	Sailing Yachts, Motor Yachts, Sailing Dinghies, Rigid Hull Inflatable Boats (RHIB), Personal Watercraft (PWC)	No - no evidence in Study Area

Table 20.5 Hazard Types

Hazard Category	Definition	Scoped In or Out?
Anchor Dragging	When a vessel unintentionally moves from its anchored position because the anchor has failed to hold.	Scoped in for Project Cargo vessels only.
Collision	When two or more vessels impact each other whilst manoeuvring.	Scoped in

Hazard Category	Definition	Scoped In or Out?
Contact	When one or more vessels makes physical contact with a fixed object such as a pier/jetty or a mooring buoy. This hazard is sometimes referred to as “allision” when contact is made with a fixed structure, or a “striking” when contact is made with a floating structure (e.g. navigation buoy or anchored or moored ship).	Scoped in
Diving	Diving incident involving Commercial diving.	Scoped in for phase 1 only when diving activity takes place
Girting	Sometimes referred to as “Girding”. This is when a towline under tension exerts a heeling moment which results in excessive heel that could cause the tug to capsize.	Scoped in
Grounding	When a vessel unintentionally makes contact with the seabed.	Scoped in
Mooring Incident/Breakout	When a vessel ranges (moves excessively) whilst alongside the berth or when one or more mooring lines fail resulting in the vessel unintentionally breaking away from its moored position.	Scoped in for Project Cargo vessels and Workboats only
Foundering/ Swamping	When a vessel fills with water, and when overwhelmed, sinks.	Scoped out as Proposed Development would not exacerbate risk beyond what is already captured in the port-wide risk assessment.
Fire and Explosion (on-board a vessel)	No definition provided in Teesport Port Wide Risk Assessment. However, PDT verbally confirmed this is spontaneous fire/explosion, not due to a navigational collision.	Fire/explosion might be a consequence of a collision which is captured elsewhere.
Impact on Port Operations	Any change to the ability of a port, harbour, terminal, or associated marine infrastructure to undertake its normal operational activities safely and efficiently as a result of the proposed development. This may include effects on vessel access and egress, navigation within port approaches, berth availability, vessel scheduling, cargo handling, pilotage, towage, dredging activities, maintenance operations, port expansion plans, and overall port capacity or performance.	Scoped in
Impact on Adjacent Terminals	Any change to the ability of existing or planned marine terminals located within the vicinity of the proposed development to operate safely, efficiently,	Scoped in

Hazard Category	Definition	Scoped In or Out?
	and effectively. This may include effects on vessel access routes, manoeuvring areas, berth utilisation, navigation safety, cargo handling activities, operational capacity, scheduling, marine services, and future terminal development or expansion plans.	

Study area

- 20.2.6 The marine navigation study area is shown bounded in blue in Inset 20.1. The extent of the marine navigation study area was discussed and approved by the PDT Harbour Master during a consultation meeting held on 3rd October 2025 as described in Table 20.3.
- 20.2.7 There are several adjacent terminals within the study area, these are highlighted and numbered in Inset 20.1 and listed in Table 20.6.

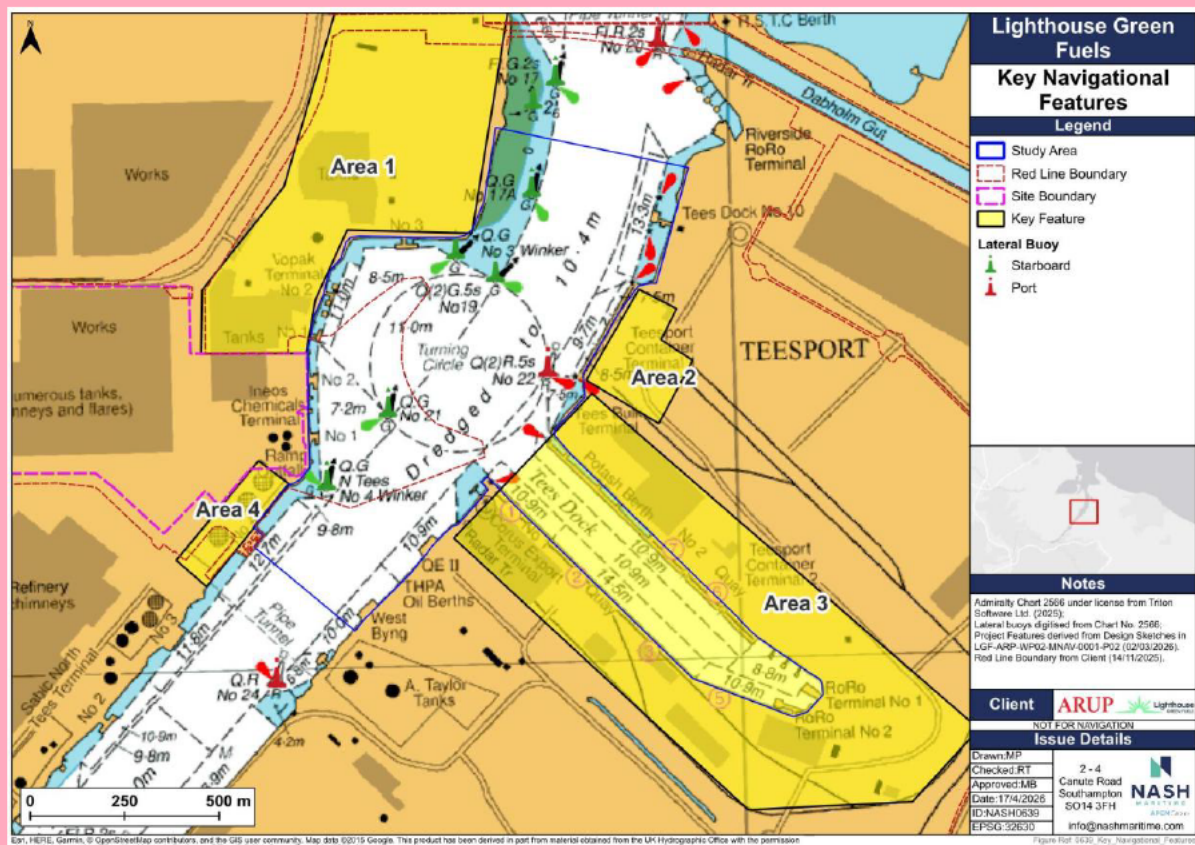


Table 20.6 Adjacent Terminals

Figure Label	Terminal	Description
Area 1	Navigator Seal Sands Terminal	3 jetties
Area 2	PDT Container Terminal 1 & 2	4 berths, 10 Rubber Tyred Gantry cranes, and 5 ship-to-shore cranes
Area 3	Tees Dock	Cleveland Potash Bulk Terminal (3 general cargo berths), PDT Roll-on/Roll-off (RO/RO) Berth (2 RO/RO berths) and Teesport Bulk Terminal (500m quay)
Area 4	Saudi Basic Industries Corporation (SABIC) North Tees and Navigator North Tees Terminals	3 jetties in SABIC North Tees and 1 jetty (No.4 Jetty) at Navigator North Tees

Revised draft Order Limits

- 20.2.8 Following completion of the NRA, minor amendments were made to the Site boundary for the Proposed Development. The updated Site boundary has been added at Inset 1.2 of **Appendix 20A: NRA (ES Volume III, Application Document Ref. 6.3)**. However, all vessel traffic analyses and stakeholder consultation undertaken for the NRA were based on the previous Site boundary. A review of the amendment confirmed that it does not materially affect the conclusions of the NRA.
- 20.2.9 Accordingly, all figures within both this Chapter and the **Appendix 20A: NRA (ES Volume III, Application Document Ref. 6.3)** that include the Site boundary depict the original Site boundary rather than the amended final Site boundary.

Criteria for assessment

- 20.2.10 The process for determining the significance of effects is a two-stage process that involves defining the magnitude of the potential impacts and the sensitivity of the receptors. This section describes the criteria applied in this chapter to assign values to the magnitude of potential impacts and the sensitivity of the receptors.
- 20.2.11 The magnitude criteria for Marine Navigation are provided in Table 20.7 and are based upon NASH Maritime's experience and judgement. In determining magnitude, each assessment considered the likelihood of the impact occurring, or duration of impact to ongoing operations. All percentage figures are included to give approximate numerical probabilities and are intended to be indicative rather than exact.

Table 20.7 Impact Magnitude Criteria for Marine Navigation

Magnitude Value	Description
Remote	Remote probability of hazard occurrence as a result of the Proposed Development and few examples within maritime industry (<1%). No impact on Marine Navigation receptors.
Negligible	Extremely unlikely that hazard occurs at the Proposed Development and has rarely occurred within industry (1%). Non-hazard (commercial) impacts could occur during rare conditions throughout the Proposed Development lifecycle (less than once per year).
Low	Unlikely that hazard occurs during the Proposed Development lifecycle. Non-hazard (commercial) impacts would occur infrequently during uncommon conditions throughout the Proposed Development lifecycle (approximately once per year).
Medium	Reasonably probable that hazard may occur once during the Proposed Development lifecycle (estimated 50% chance). Non-hazard (commercial) impacts would occur periodically under certain conditions throughout the Proposed Development lifecycle (multiple times per year).
High	Frequent hazard occurrence, multiple times during the Proposed Development lifecycle (100%). Non-hazard (commercial) impacts continuous throughout the Proposed Development lifecycle (approximately daily).

20.2.12 The sensitivity criteria for Marine Navigation receptors are provided in Table 20.8 which considers the consequences or severity of the effect. Environmental incident classifications are based on the Maritime and Coastguard Agency (MCA) tiered spill response framework presented in *Contingency Planning for Marine Pollution Preparedness and Response: Guidelines for Ports* [Ref 8].

Table 20.8 Impact Sensitivity/Consequence Criteria for Marine Navigation

Sensitivity Value	Description
Negligible	No perceptible risk to people, property, the environment, or port operations.
Low	Single minor injury to people Minor damage to property, i.e., superficial damage Tier 1 environmental damage with local assistance required Minor reputational risk to business limited to receptors Minor temporary impact to port operations.
Medium	Multiple minor or single serious injury(ies) to people Damage to property not critical to operations Tier 2 environmental damage (as defined by [Ref 8]) with limited external assistance required

Sensitivity Value	Description
	Local reputational risk to business Prolonged/intermittent impact to port operations.
High	Multiple serious injuries or single fatality to people Damage to property resulting in critical risk to operations Tier 2 environmental damage with regional assistance require National reputational risk to business Extensive, long-term disruption to port operations.
Very High	Multiple fatalities to people Total loss of property Tier 3 environmental damage with national assistance required International reputational risk to business Closure of port/terminals.

20.2.13 By assigning and combining magnitude and sensitivity criteria, overall likely significance upon Marine Navigation receptors can be determined (Table 20.9). Where a range of significance of effect is presented, the final assessment for each effect is based upon expert judgement.

20.2.14 A significance of effect of moderate or more will be considered a 'significant' effect for the purpose of the EIA. A level of effect of minor or less will be considered 'not significant'. Effects of moderate significance or above are therefore considered important in the decision-making process, whilst effects of minor significance or less warrant little, if any, weight in the decision-making process.

20.2.15 A full NRA (**Appendix 20A, ES Volume III, Application Document Ref. 6.3**) was conducted that assessed the likelihood and consequences of hazards. For the purposes of the EIA, where hazards were deemed to be Unacceptable, they are assumed to have a Significance of Effect of Moderate or greater. Those hazards scored as either Medium Risk – Tolerable and As Low As Reasonably Practicable (ALARP) or Broadly Acceptable are assumed to be minor or negligible significance respectively.

Table 20.9 Impact Sensitivity/Consequence Criteria for Marine Navigation

Sensitivity of Receptor		Magnitude of Impact				
		Remote	Negligible	Low	Medium	High
	Negligible	Negligible	Negligible	Negligible or Minor	Negligible or Minor	Minor
	Low	Negligible	Negligible or Minor	Negligible or Minor	Minor	Minor or Moderate
	Medium	Negligible	Negligible or Minor	Minor	Moderate	Moderate or Major

		Magnitude of Impact				
	High	Negligible	Minor	Minor or Moderate	Moderate or Major	Major
	Very High	Negligible	Minor	Moderate or Major	Major	Major

Embedded Mitigation

20.2.16 Baseline risk controls are those that are currently utilised to manage navigation risk within the study area and are documented in the PDT port-wide risk assessment. A full list of baseline risk controls is outlined in Table 20.10. **Appendix 20A: NRA (ES Volume III, Application Document Ref. 6.3)** provides further details on these embedded mitigations and their effect on reducing the likelihood or consequences of hazards.

Table 20.10 Summary of embedded mitigations

ID	Risk control title	Control type
1	Admiralty Charts	Surveying and dredging
2	Conservancy - surveying and dredging	Surveying and dredging
3	Crane Maintenance Procedure	Education and training
4	Dry-Docks Operations procedures	Procedure
5	Duty Harbour Master 24/7	Procedure
6	Environment Agency (EA) flood alerts/tidal surge warnings	Procedure
7	Enforcement policy and suitable enforcement action when appropriate	Local Regulations
8	Event Planning	Education and training
9	Fixed life-saving appliances, Rescue Services and Search and Rescue (SAR) provision	Education and training
10	Information on local recreational events and races	Education and training
11	Licensing of tugs and Foyboatmen	Local Regulations
12	Local Regulations – Act, Byelaws, General Directions (GDs)	Local Regulations
13	Management Standards (Standard Operating Procedures)	Procedure
14	National regulations and legislation	National Regulations
15	Navigational aids – appropriate and regularly checked	Nav aids
16	Notices to Mariners	Local Regulations
17	Passage Planning Information	Procedure
18	PDT Pilotage Plan	Pilotage

ID	Risk control title	Control type
19	Pilot and Pilotage Exemption Certificate (PEC) training, examination and revalidation	Pilotage
20	Pilots and PECs	Pilotage
21	Port weather limits	Local Regulations
22	Portable Pilotage Units	Pilotage
23	Project cargoes individual passage plans and Risk Assessment	Procedure
24	Racing Rules	Education and training
25	Restricted visibility restrictions on movements	Local Regulations
26	Routine harbour patrols	Local Regulations
27	Routine stakeholder and public meetings	Procedure
28	Special movement risk assessments, planning and briefings	Procedure
29	Teesport Emergency Plans including COMAH	Procedure
30	Teesport Pollution control plans, equipment and procedures	Procedure
31	Tide gauges, meteorological monitoring and wave rider buoys	Nav aids
32	Towage guidelines	Local Regulations
33	Traffic control lights at Hartlepool	Local Regulations
34	Traffic control procedures for Teesport and Hartlepool	Procedure
35	Traffic Control Regulations October 2002	Procedure
36	Tug masters training and certification	Education and training
37	Tug operator ISM compliant or equivalent	National Regulations
38	Tug Operator Planned Maintenance	Procedure
39	Tugs available 24/7	Procedure
40	Under keel clearance requirements/regulations	Local Regulations
41	Vessel manoeuvring weather limits	Local Regulations
42	VTs - Procedures, training and revalidation	VTs
43	VTs - Traffic/movement control	VTs

Worst case design scenario

- 20.2.17 The Developer has adopted a design envelope approach to impact assessment (also known as a 'Rochdale Envelope'). The design envelope approach offers flexibility in the EIA process by enabling impact assessment to be carried out against several potential design options.

20.2.18 The assessment of Marine Navigation impacts has been undertaken with respect to the details provided in **Appendix 20A: NRA (ES Volume III, Application Document Ref. 6.3)**. A ‘worst case’ design scenario has been selected for each potential impact which would lead to the greatest potential impact for all receptors or receptor groups, when selected from a range of values. Effects of greater adverse significance are not predicted to arise should any other development scenario, based on details within **Appendix 20A: NRA (ES Volume III, Application Document Ref. 6.3)** (e.g., different infrastructure layout), to that assessed here, be taken forward in the final design scheme.

20.2.19 Key Worst Case Design Parameters are as follows:

- Mediterranean-moored Marine Classification (MC)-Class (173m Length Over All (LOA)) Heavy Lift Vessel for 10% of visits (approximately 20 deliveries) over an 18-month period in phase 2; and
- 230m LOA x 32.2m beam Panamax vessel with a deadweight tonnage (DWT) of between 65,000 and 85,000 tonnes moored alongside to unload raw materials in phase 3;

20.3 Baseline conditions

Data collection

20.3.1 For the purposes of this Marine Navigation Chapter, a desk-based review was undertaken using relevant spatial and scientific data sources. These existing data sets and literature are presented in Table 20.11.

20.3.2 Further detail of analysis undertaken using the data and how it was used to assess impacts to Marine Navigation is contained within **Appendix 20A: NRA (ES Volume III, Application Document Ref. 6.3)**.

Table 20.11 Key Sources of Marine Navigation Data

Source, Author and Year	Summary	Area Coverage
Tees and Hartlepool Port Authority Act, 1966.	Primary legislation establishing statutory powers, duties, and jurisdiction of the Tees and Hartlepool Port Authority, including navigation, pilotage and harbour management responsibilities.	Tees Estuary and Hartlepool Harbour statutory limits
PDT Pilotage Directions, 2025.	Local pilotage directions defining compulsory pilotage areas, classes of vessels requiring pilots, pilot exemption criteria, and operational requirements in PDT' harbour limits.	Tees and Hartlepool Harbour pilotage waters.

Source, Author and Year	Summary	Area Coverage
PDT Limited/Harbour Master Tees and Hartlepool Navigational Risk Assessment Review, Marico Marine (22UK1888), 2022.	Independent navigational risk assessment reviewing traffic patterns, hazards, controls, and residual risk within the harbour, supporting compliance with PMSC and Formal Safety Assessment principles.	Teesport, River Tees and Hartlepool Harbour navigational areas.
Tees and Hartlepool Harbour Byelaws, 1977 & 1985.	Statutory local byelaws regulating navigation, vessel conduct, speed limits, mooring, safety of persons and protection of harbour property.	Tees and Hartlepool Harbour statutory limits.
General Directions for Safety of Navigation, Persons and Property in the harbour, PDT, 2021.	Harbour Master's general directions issued under statutory powers to control vessel movements, operational conduct, reporting requirements and navigational safety measures.	Tees and Hartlepool Harbour and approaches.
Copernicus Marine Data Store, 2026.	Provides oceanographic and metocean datasets (tides, currents, waves, sea level, temperature) used to support environmental analysis and risk assessment.	European regional seas including UK coastal waters.
Accident and Incident data from the Marine Accident Investigation Branch, 2010-2024, and the Royal National Lifeboat Institution, 2008-2024.	Historic incident data for occurrences such as collision, contacts and groundings	UK vessels worldwide and UK coastal waters.
AIS data from Made smart, October 2024 – September 2025.	Provides a geographic location of a vessel at a point in time as well as detail regarding speed, course and heading	Tees and Hartlepool Harbour and approaches.
Admiralty Charts, United Kingdom Hydrographic Office, 2025.	Provides information on navigation features in the area.	Tees and Hartlepool Harbour and approaches.

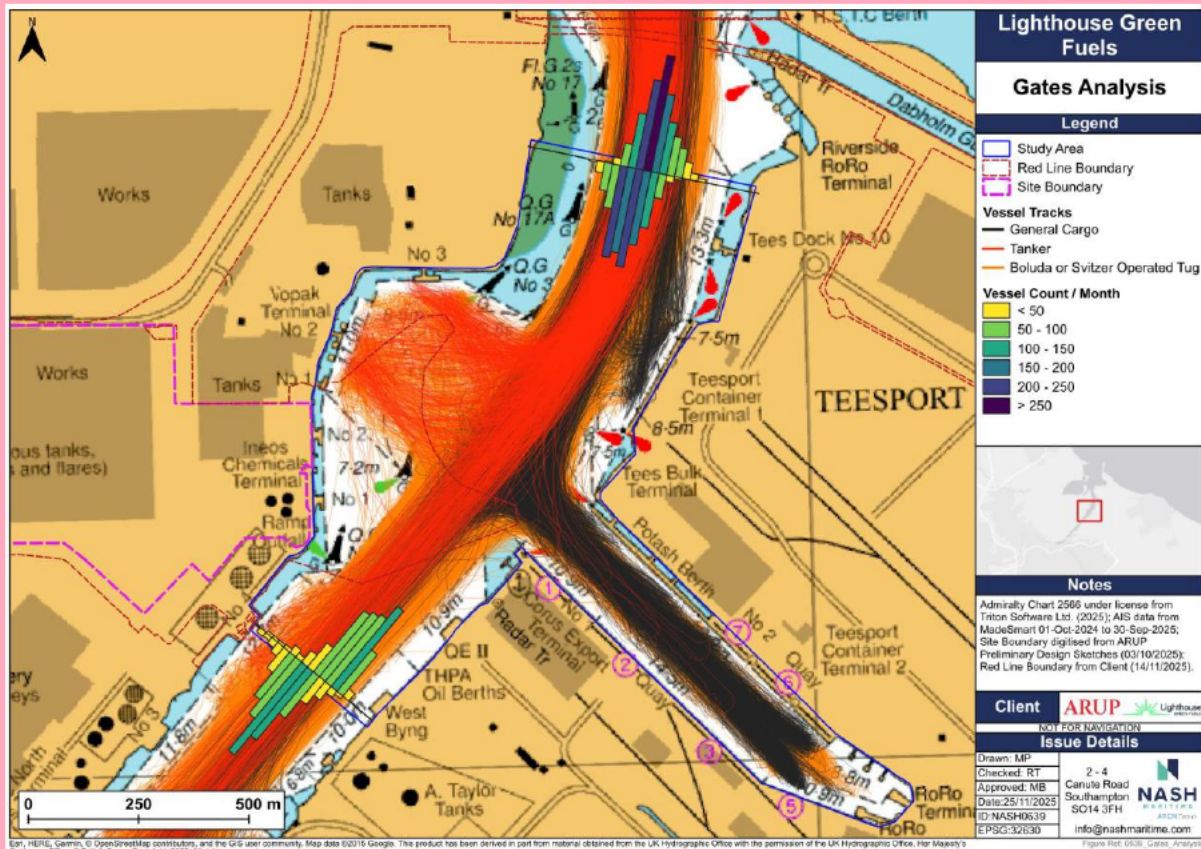
Key navigational features

- 20.3.3 Key navigational features adjacent to the Proposed Development are described in detail in **Appendix 20A: NRA (ES Volume III, Application Document Ref. 6.3)**. This includes Navigator Terminals which comprises four jetties, PD Teesport Container Terminal 1 which is comprised of two berths, on the south side of the river, Tees dock comprised of Cleveland Potash Bulk Terminal (three general cargo berths), PD Teesport Roll-on/Roll-off (RO/RO) Berth (two RO/RO berths) and Teesport Bulk Terminal (500m quay) (see **Appendix 20A: NRA (ES Volume III, Application Document Ref. 6.3)**).

- 20.3.4 The Proposed Development lies entirely within the SHA jurisdiction of PD Ports.
- 20.3.5 The terminal situated adjacent to the Proposed Development is operated by Navigator Terminals and receives frequent tanker deliveries as a bulk liquid storage provider specialising in the supply of chemicals, fuels and biofuels.
- 20.3.6 Additional navigational features include the navigable channel and Tees Dock turning circle (Inset 20.1) which are immediately adjacent to the Proposed Development.
- 20.3.7 Vessels transiting within the study area that are over 20m in length are required to contact VTS before entering the relevant areas and vessels over 95m in length are subject to compulsory pilotage in areas described more fully in the NRA.

[Vessel traffic movements](#)

- 20.3.8 Comprehensive analysis of vessel traffic adjacent to the Proposed Development has been undertaken within **Appendix 20A: NRA (ES Volume III, Application Document Ref. 6.3)**.
- 20.3.9 A total of 13,926 vessel transits were recorded in the study area with workboats (tugs) comprising the majority of transits (73%). Cargo and tanker vessels made up the second and third largest proportion of vessel transits, with Tees Dock being the busiest port area. Inset 20.2 shows the transits of these vessel types along with two gates that show the direction, position and count of vessels navigating within the study area.
- 20.3.10 A total of 79% of cargo vessel transits (2,286 transits) were made by vessels >100m LOA. General cargo vessels >200m LOA primarily utilised Tees Dock or continued transiting upriver within the channel.
- 20.3.11 There was no significant tidal constraint for the arrivals of cargo and tanker vessels ($\geq 95\text{m}$) one hour either side of high water (HW) i.e. the proportions of cargo transits relative to tanker transits remains consistent over a tidal cycle.
- 20.3.12 Very few fishing vessel or recreational vessel transits were recorded – six and eight transits respectively.



Inset 20.2 Vessel Traffic Movements in the Study Area

Historical incidents

- 20.3.13 The **NRA (Appendix 20A, ES Volume III, Application Document Ref. 6.3)** includes a detailed analysis of the existing risk profile through an analysis of historical incident data. The most common type of incident, from data provided by PDT, was equipment/machinery failure at a rate of 12 incidents per year for the last decade. Contact and mooring incidents were the second and third most frequent type of incident with 95 and 38 occurrences respectively, over the ten-year period.

Future baseline

- 20.3.14 The impact assessment has been undertaken against a proposed future case scenario. Analysis of ship arrivals collated by the Department for Transport shows that ship arrivals into Tees and Hartlepool have reduced from 4,360 in 2009 to 3,117 in 2024. This decline has been particularly acute amongst tankers, reducing by approximately 50%, whilst other vessel types have reduced less significantly.
- 20.3.15 It is noted that PDT have proposed new projects and plans to increase container and dry bulk volumes significantly, however, it is not clear to what extent this would translate to additional vessel movements. It is likely that

this would be partly a result of using vessels of greater tonnage rather than more vessels, but no detailed information is available.

- 20.3.16 Therefore, for the purposes of this assessment, a minor increase in third party large commercial shipping movements is considered in the future baseline.

Data limitations and assumptions

- 20.3.17 AIS is not necessarily required on all recreational or fishing vessels, dependent on size. Therefore, AIS analysis alone would underestimate the extent of these activities. Liaison with PDT confirmed that there are only very small numbers of fishing vessels and an insignificant number of recreational vessels operating in the Study Area.
- 20.3.18 The incident data is unlikely to capture all incidents, with underreporting of minor incidents likely. Not all information, particularly position, is captured in every incident report, but there were no data deficiencies that presented concern. Unreported minor incidents are highly unlikely to affect the results of this assessment. Extensive research and consultation provide confidence that all incidents that may have an effect on the outcomes of this assessment have been included.
- 20.3.19 Relevant nautical publications, such as Admiralty Charts, are updated periodically and therefore the information shown may not reflect the real-time features within the region with total accuracy. Additionally, not all navigational features may be charted. Discussion with local operators, including PDT, has been used to verify the baseline.

20.4 Likely impact and effects of the Proposed Development

Phase 1: Construction of the quay (and demolition of existing jetties) and dredging of the berth pocket and access channel

Impact on Port operations

- 20.4.1 The construction of the quay may lead to some disruption of port operations in close proximity to the Proposed Development and the turning area. This is due to dredging operations and movements of workboats (see **Appendix 20A: NRA (ES Volume III, Application Document Ref. 6.3)**). The presence of workboats carrying out dredging may create congestion and delays to port operation, resulting in deviations of vessels and delays to ensure safe passing distances. This impact will occur frequently throughout phase 1 Marine Operations.
- 20.4.2 This impact is to be managed principally through deconfliction and information sharing with VTS at PDT (see **Appendix 20A: NRA (ES Volume III, Application Document Ref. 6.3)**). This was established to be

effective through communication with Tees Bay Pilots and Harbour Master team (Table 20.3). Therefore, the impact on port operations is assessed to be manageable. No concerns have been raised by the harbour master team to manage this impact.

- 20.4.3 Overall, the magnitude of the impact has been assessed as high and the sensitivity of the receptor has been assessed as low. The effect will, therefore, be of minor adverse significance, which is not significant in EIA terms. A minor rather than moderate effect has been concluded given the proven effectiveness of existing port controls at managing additional traffic volumes.

Impact on adjacent terminals

- 20.4.4 The construction of the quay may lead to disruption in the same manner described in paragraph 20.4.1 to 20.4.3 above. The adjacent terminal that is likely to be most affected is the Navigator Terminal No. 2 Jetty due to dredging operations. This impact will occur periodically throughout phase 1 of the Proposed Development, when vessels are arriving or departing from Navigator Terminals.
- 20.4.5 Control measures such as deconfliction and VTS communication will aim to mitigate this impact (see **Appendix 20A: NRA, ES Volume III, Application Document Ref. 6.3**) and was judged to be effective through engagement with stakeholders (Table 20.3). Therefore, the impact on port operations is assessed to be manageable.
- 20.4.6 Overall, the magnitude of the impact has been assessed as high and the sensitivity of the receptor has been assessed as low. The effect will, therefore, be of minor adverse significance, which is not significant in EIA terms. A minor rather than moderate effect has been concluded given the proven effectiveness of existing port controls at managing additional traffic volumes.

Impact on risk of collision

- 20.4.7 The construction of the quay may lead to a potential collision occurrence involving a workboat and either a cargo or tanker vessel or another workboat due to an increase in workboat numbers and the proximity in which these workboats will operate in relation to cargo and tanker vessels (see **Appendix 20A: NRA, ES Volume III, Application Document Ref. 6.3**).
- 20.4.8 Collision risk within the study area is already managed effectively through existing port risk controls. This elevated risk is to be managed through deconfliction whereby workboat activity should be scheduled around cargo

and tanker vessel arrivals/departures (Table 20.12). Again, this mitigation measure was agreed following discussion with PDT (Table 20.3).

- 20.4.9 The NRA assessed three collision hazards which were identified during phase 1 of the Proposed Development. Two of these were scored as Medium Risk – Tolerable if ALARP and one were scored as Low Risk – Broadly Acceptable. The highest collision risk related to a workboat colliding with another workboat (see **Appendix 20A: NRA (ES Volume III, Application Document Ref. 6.3)**). The NRA determined that collisions were unlikely but carried a high potential consequence including loss of life.
- 20.4.10 Overall, the magnitude of the impact has been assessed as low and the sensitivity of the receptor has been assessed as high. The effect will, therefore, be of minor adverse significance, which is not significant in EIA terms. A minor rather than moderate effectiveness has been concluded given the NRA shows mostly broadly acceptable or minor increases on collision hazards.

Impact on risk of allision/contact

- 20.4.11 The construction of the quay may lead to vessels carrying out dredging coming into close proximity to AtoN's or quay infrastructure. Dredging works will take place in the vicinity of navigation buoy No. 21 and the North Tees No. 4 Winker buoy.
- 20.4.12 This increases the magnitude of a potential contact incident i.e. a workboat (dredging) striking one or both of these buoys (see **Appendix 20A: NRA, ES Volume III, Application Document Ref. 6.3**).
- 20.4.13 Allision/contact risk within the study area is already managed effectively through existing port risk controls. This risk will be further mitigated via the relocation of the two navigation buoys during the proposed works. For the No. 21 buoy this will involve permanent removal, and such action should be promulgated via a Notice to Mariners (NtM) and charted (see **Appendix 20A: NRA, ES Volume III, Application Document Ref. 6.3**).
- 20.4.14 The NRA assessed four allision/contact hazards which were identified as being relevant to phase 1 of the Proposed Development. One of these was scored as Medium Risk – Tolerable if ALARP, two hazards were scored as Low Risk – Broadly Acceptable and one hazard was scored as Negligible Risk - Acceptable. The highest allision/contact risk related to a Tanker striking the berth whilst alongside, yet this was deemed to be tolerable and ALARP (see **Appendix 20A: NRA, ES Volume III, Application Document Ref. 6.3**) The consequences of allision/contact were judged to be lower than that of collision.

- 20.4.15 Overall, the magnitude of the impact has been assessed as low and the sensitivity of the receptor has been assessed as medium. The effect will, therefore, be of minor adverse significance, which is not significant in EIA terms.

Impact on risk of grounding

- 20.4.16 The construction of the quay and associated marine operations may lead to increased congestion in the study area which poses the risk of displacing vessels into shallower areas and the potential outcome of running aground.
- 20.4.17 Grounding within the study area is already managed effectively through existing port risk controls. This risk is to be managed by deconfliction of vessels in the same manner described in paras. 20.4.1, 20.4.2 and 20.4.8. Therefore, the likelihood of grounding was assessed to be low.
- 20.4.18 The NRA assessed one grounding hazard which were identified during phase 1 of the Proposed Development. This singular hazard was scored as Low Risk – Broadly Acceptable and related to the grounding of a workboat (see **Appendix 20A: NRA, ES Volume III, Application Document Ref. 6.3**). The consequences of grounding were judged to be lower than that of collision or contact as these hazards present a greater potential for significant effects on port and terminal receptors due to the increased likelihood of infrastructure damage, operational downtime, and wider commercial impacts.
- 20.4.19 Overall, the magnitude of the impact has been assessed as low and the sensitivity of the receptor has been assessed as low. The effect will, therefore, be of minor adverse significance, which is not significant in EIA terms.

Impact on risk of diving

- 20.4.20 The construction of the quay may lead to the presence of divers in the water from a support boat during the construction of the new quayside (see **Appendix 20A: NRA, ES Volume III, Application Document Ref. 6.3**).
- 20.4.21 In this situation, divers may be at risk of vessels performing other Proposed Development operations and so this is to be managed via vessel deconfliction (as described in paras. 20.4.1, 20.4.2 and 20.4.8). Any diving activity will also need to follow the diving procedures and meet with permitting arrangements set out by PDT. Therefore, the likelihood of this hazard occurring was judged to be low.
- 20.4.22 The NRA assessed one diving hazard which was identified during phase 1 of the Proposed Development. This singular risk was assessed as Low Risk – Broadly Acceptable (see **Appendix 20A: NRA, ES Volume III,**

Application Document Ref. 6.3) but carried a heightened potential consequence of loss of life.

- 20.4.23 Overall, the magnitude of the impact has been assessed as low and the sensitivity of the receptor has been assessed as high. The effect will, therefore, be of minor adverse significance, which is not significant in EIA terms. A minor rather than moderate effect has been concluded given the existence of the control measures in place.

Impact on risk of mooring/anchoring

- 20.4.24 The construction of the quay will involve the mooring or anchoring of Proposed Development vessels in between operations. This could result in a vessel parting from its mooring or anchor dragging and result in subsequent damage to the surrounding environment or vessel itself but is not identified as a key navigational issue in the NRA (see **Appendix 20A: NRA, ES Volume III, Application Document Ref. 6.3**), with a low likelihood.
- 20.4.25 The NRA assessed one mooring/anchoring hazard which was identified during phase 1 of the Proposed Development. This hazard was scored as Low Risk – Broadly Acceptable.
- 20.4.26 Overall, the magnitude of the impact has been assessed as medium and the sensitivity of the receptor has been assessed as low. The effect will, therefore, be of minor adverse significance, which is not significant in EIA terms.

Impact on risk of girting

- 20.4.27 The construction of the quay may lead to the use of tugs to tow and manoeuvre flat top barges around the Proposed Development site (see **Appendix 20A: NRA, ES Volume III, Application Document Ref. 6.3**).
- 20.4.28 This poses the risk of the tug girting and is anticipated to be managed through existing port wide risk controls and vessel deconfliction (methods described in paras. 20.4.1, 20.4.2 and 20.4.8).
- 20.4.29 The NRA assessed one girting hazard which was identified during phase 1 of the Proposed Development. Whilst the consequences of a tug girting incident are high, the likelihood was assessed to be low. This hazard was therefore scored as Low Risk – Broadly Acceptable and related to tugs.
- 20.4.30 Overall, the magnitude of the impact has been assessed as low and the sensitivity of the receptor has been assessed as high. The effect will, therefore, be of minor adverse significance, which is not significant in EIA terms. A minor rather than moderate effectiveness has been concluded

given the NRA shows mostly broadly acceptable or minor increases on girting hazards.

Phase 2: Marine operating during the construction of the LGF plant

Impact on Port operations

- 20.4.31 The construction of the Proposed Development may lead to impact on port operations as a result of Mediterranean-moored MC class vessels during offloading of AIL deliveries. This occurrence may affect navigation in the turning circle (see **Appendix 20A: NRA, ES Volume III, Application Document Ref. 6.3**). As this operation will occur infrequently and only for short periods of time, the magnitude of impact is reduced.
- 20.4.32 This impact will be managed by a vessel deconfliction plan with particular detail pertaining to pilotage and towage resources, approval of mooring configuration from the harbour master where Med-mooring is concerned and berthing plans for a variety of scenarios also to be approved (see **Appendix 20A: NRA, ES Volume III, Application Document Ref. 6.3**). No concerns have been raised by the harbour master team to manage this impact.
- 20.4.33 Overall, the magnitude of the impact has been assessed as medium and the sensitivity of the receptor has been assessed as low. The effect will, therefore, be of minor adverse significance, which is not significant in EIA terms.

Impact on adjacent terminals

- 20.4.34 The construction of the LGF plant may impact Navigator Terminal No.2 Jetty due to its close proximity to the Proposed Development. In a worst-case scenario (paras 20.2.17 to 20.2.19), there would be 72.2m between two vessels on the respective berths (see **Appendix 20A: NRA, ES Volume III, Application Document Ref. 6.3**). This could be problematic in adverse weather conditions (see **Appendix 20A: NRA, ES Volume III, Application Document Ref. 6.3**) that might limit access or operational flexibility.
- 20.4.35 Navigator Terminal No.1 Jetty is located closer to the Proposed Development berth than No.2 Jetty. However, No.1 Jetty was not included within the detailed assessment presented in the NRA because it was inactive at the time of the baseline surveys and insufficient information was available regarding the nature, timing and intensity of any future operations. The assessment therefore focused on No.2 Jetty, which was operational and for which vessel movement data were available.
- 20.4.36 This will be mitigated using the same measures as discussed in 20.4.32.

- 20.4.37 Overall, the magnitude of the impact has been assessed as medium and the sensitivity of the receptor has been assessed as low. The effect will, therefore, be of minor adverse significance, which is not significant in EIA terms.

Impact on risk of collision

- 20.4.38 The construction of the Proposed Development may lead to a collision between an MC class vessel depositing AILs and a tanker utilising Navigator Terminal.
- 20.4.39 Control measures discussed previously (deconfliction), as described in paragraph 20.4.8, are assessed to be sufficient to mitigate this risk and this has been confirmed through discussion with PDT (see **Appendix 20A: NRA (ES Volume III, Application Document Ref. 6.3)**).
- 20.4.40 The NRA assessed six collision hazards which were identified during phase 2 of the Proposed Development. All of these were scored as Low Risk – Broadly Acceptable. The highest collision risk related to a workboat colliding with a cargo vessel but the risk score for this hazard was lower than the highest ranked collision hazard for phase 1 (see **Appendix 20A: NRA (ES Volume III, Application Document Ref. 6.3)**). The NRA determined that collisions were unlikely but carried a high potential consequence including loss of life.
- 20.4.41 Overall, the magnitude of the impact has been assessed as low and the sensitivity of the receptor has been assessed as high. The effect will, therefore, be of minor adverse significance, which is not significant in EIA terms. A minor rather than moderate effectiveness has been concluded given the NRA shows mostly broadly acceptable or minor increases on collision hazards.

Impact on risk of allision/contact

- 20.4.42 Phase 2 of the Proposed Development was assessed to have a higher allision/contact risk due to the Mediterranean-mooring arrangement discussed (20.4.31). This is as a result of the level of encroachment this configuration will potentially cause into the turning circle (Inset 20.1), therefore inhibiting vessels accessing Navigator Terminals No. 2 Jetty and/or vessel manoeuvring towards Tees Dock. Additionally, the stern of the tanker may be at risk of contacting the berth.
- 20.4.43 Secondly, the proximity of the Proposed Development berth and Navigator Terminal No.2 Jetty discussed (20.4.34) further increases the likelihood of contact between a Proposed Development vessel and moored tanker, the uplift in risk of this hazard is reflected in the NRA scoring and is to be managed through methods described in 20.4.32.

20.4.44 The NRA assessed six contact hazards which were identified during phase 2 of the Proposed Development. Two of these were scored as Medium Risk – Tolerable if ALARP, two hazards were scored as Low Risk – Broadly Acceptable and two hazards were scored as Negligible Risk - Acceptable. The highest contact risk related to a tanker contacting the berth (see **Appendix 20A: NRA, ES Volume III, Application Document Ref. 6.3**). The consequences of allision/contact were judged to be lower than that of collision.

20.4.45 Overall, the magnitude of the impact has been assessed as low and the sensitivity of the receptor has been assessed as medium. The effect will, therefore, be of minor adverse significance, which is not significant in EIA terms.

Impact on risk of grounding

20.4.46 The construction of the Proposed Development may lead to the risk of grounding due to increased vessel congestion and vessel movements to the Proposed Development. There is a small increased in the assessed risk profile in phase 2 compared to phase 1 due to the increase in Proposed Development cargo vessels and this is reflected in the NRA scoring output (20.4.47). However, risk control measures, discussed in stakeholder engagement, are considered to manage this risk (Table 20.3 and Table 20.12).

20.4.47 The NRA assessed two grounding hazards which were identified during phase 2 of the Proposed Development. One of these was scored as Low Risk – Broadly Acceptable and the other scored as Negligible Risk – Acceptable. The highest grounding risk related to a Proposed Development cargo vessel grounding (see **Appendix 20A: NRA, ES Volume III, Application Document Ref. 6.3**). The consequences of grounding were judged to be lower than that of collision or contact.

20.4.48 Overall, the magnitude of the impact has been assessed as low and the sensitivity of the receptor has been assessed as low. The effect will, therefore, be of minor adverse significance, which is not significant in EIA terms.

Impact on risk of mooring/anchoring

20.4.49 The construction of the Proposed Development may lead to a mooring hazard due to the increased operations and the risk of a breakout that might pose a hazard to the vessel or to other navigating vessels. Risk of a mooring/anchoring hazard for phase 2 of the Proposed Development shows a modest uplift in risk scoring but this will be managed by control measures which will remain consistent from those of phase 1 (20.4.24).

20.4.50 The NRA assessed one mooring/anchoring hazard which was identified during phase 2 of the Proposed Development. This hazard was scored as Low Risk – Broadly Acceptable.

20.4.51 Overall, the magnitude of the impact has been assessed as medium and the sensitivity of the receptor has been assessed as low. The effect will, therefore, be of minor adverse significance, which is not significant in EIA terms.

Impact on risk of girting

20.4.52 The construction of the Proposed Development may lead to a girting hazard due to tugs assisting the delivery of AIL deliveries on MC vessels and other bulk carriers. Yet, this risk is acknowledged to be managed by controls discussed previously (see paragraph 20.4.28) and has been confirmed through liaison with PDT.

20.4.53 The NRA assessed one girting hazard which was identified during phase 1 of the Proposed Development. Whilst the consequences of a tug girting incident are high, the likelihood was assessed to be low. This hazard was therefore scored as Low Risk – Broadly Acceptable and related to tugs.

20.4.54 Overall, the magnitude of the impact has been assessed as low and the sensitivity of the receptor has been assessed as high. The effect will, therefore, be of minor adverse significance, which is not significant in EIA terms. A minor rather than moderate effect has been concluded given the NRA shows mostly broadly acceptable or minor increases on girting hazards.

Phase 3: Marine operation during the operational phase of the facility

Impact on Port operations

20.4.55 The construction of the Proposed Development may lead to an impact on port operations due to delivery and offload of biomass and waste wood feedstock from Panamax vessels which disrupts or impacts other vessel movements or operations in the port whilst the Proposed Development is in operation.

20.4.56 This impact is considered to be managed by similar means relative to phases 1 and 2 and no concerns have been raised by the harbour master team (Table 20.3). Vessels offloading this material will moor alongside the Proposed Development berth which is deemed as lower risk than a med mooring configuration.

20.4.57 Overall, the magnitude of the impact has been assessed as low and the sensitivity of the receptor has been assessed as low. The effect will,

therefore, be of minor adverse significance, which is not significant in EIA terms.

Impact on adjacent terminals

20.4.58 As with phase 2, the proximity of the Proposed Development berth to Navigator Terminal No. 1 and No.2 Jetty results in an impact on this adjacent terminal. This impact could arise from the proximity between vessels moored alongside the respective berths. Control measures are consistent with those discussed previously for the other phases (20.4.32) with no requirement for additional mitigation. This pertains to a lower risk mooring configuration (see paragraph 20.4.56).

20.4.59 Overall, the magnitude of the impact has been assessed as low and the sensitivity of the receptor has been assessed as low. The effect will, therefore, be of minor adverse significance, which is not significant in EIA terms.

Impact on risk of collision

20.4.60 Phase 3 of the proposed development could result in a collision between a Panamax vessel, delivering bulk imports, and another vessel in the port such as a tanker vessel transiting to/from Navigator Terminals. However, this is unlikely considering the embedded commitments in place (para. 20.2.16).

20.4.61 Additionally, the additional risk controls described previously (e.g. deconfliction) in paragraph 20.4.8, will allow this risk to be managed appropriately.

20.4.62 The NRA assessed six collision hazards which were identified during phase 2 of the Proposed Development. All of these were scored as Low Risk – Broadly Acceptable. The highest collision risk related to a workboat colliding with another workboat but the risk score for this hazard was lower than the highest ranked collision hazard for phase 1 (see **Appendix 20A: NRA (ES Volume III, Application Document Ref. 6.3)**). The NRA determined that collisions were unlikely but carried a high potential consequence including loss of life.

20.4.63 Overall, the magnitude of the impact has been assessed as low and the sensitivity of the receptor has been assessed as high. The effect will, therefore, be of minor adverse significance, which is not significant in EIA terms. A minor rather than moderate effectiveness has been concluded given the NRA shows mostly broadly acceptable or minor increases on collision hazards.

Impact on risk of allision/contact

- 20.4.64 As with phase 2 the proximity of the Proposed Development berth to Navigator Terminal No.2 Jetty results in a modest increase in the likelihood of a contact occurrence between a Proposed Development vessel and a tanker moored at Navigator Terminal and so associated controls are consistent too (20.4.43).
- 20.4.65 The NRA assessed six contact hazards which were identified during phase 3 of the Proposed Development. All six of these hazards were scored as Low Risk – Broadly Acceptable. The highest contact risk related to a tanker contacting the berth (see **Appendix 20A: NRA, ES Volume III, Application Document Ref. 6.3**). The consequences of allision/contact were judged to be lower than that of collision.
- 20.4.66 Overall, the magnitude of the impact has been assessed as low and the sensitivity of the receptor has been assessed as medium. The effect will, therefore, be of minor adverse significance, which is not significant in EIA terms.

Impact on risk of grounding

- 20.4.67 Phase 3 of the Proposed Development could lead to the risk of grounding of a Panamax vessel transiting outside of the navigable channel or berth pocket, however, this is unlikely given embedded commitments such as pilotage (para. 20.2.16).
- 20.4.68 The risk control measures discussed previously are applicable (Table 20.3 and Table 20.12) to this hazard and no concerns were raised from PDT (Table 20.3).
- 20.4.69 The NRA assessed two grounding hazards which were identified during phase 2 of the Proposed Development. One of these was scored as Low Risk – Broadly Acceptable and the other scored as Negligible Risk – Acceptable. The highest grounding risk related to a Proposed Development cargo vessel grounding (see **Appendix 20A: NRA (ES Volume III, Application Document Ref. 6.3)**). The consequences of grounding were judged to be lower than that of collision or contact.
- 20.4.70 Overall, the magnitude of the impact has been assessed as low and the sensitivity of the receptor has been assessed as low. The effect will, therefore, be of minor adverse significance, which is not significant in EIA terms.

Impact on risk of mooring/anchoring

- 20.4.71 The construction of the Proposed Development may lead to mooring hazard during the offloading of bulk feedstocks from Panamax vessels. This risk will be managed by control measures described previously (20.4.24).
- 20.4.72 The NRA assessed one mooring/anchoring hazard which were identified during phase 2 of the Proposed Development. This hazard was scored as Low Risk – Broadly Acceptable.
- 20.4.73 Overall, the magnitude of the impact has been assessed as medium and the sensitivity of the receptor has been assessed as low. The effect will, therefore, be of minor adverse significance, which is not significant in EIA terms.

Impact on risk of girting

- 20.4.74 The construction of the Proposed Development may lead to a girting hazard due to tugs assisting the delivery of feedstock to the Proposed Development berth. This hazard will be mitigated by embedded commitments (para. 20.2.16) and additional risk controls (20.4.28).
- 20.4.75 The NRA assessed one girting hazard which was identified during phase 3 of the Proposed Development. This hazard was scored as Low Risk – Broadly Acceptable and related to tugs.
- 20.4.76 Overall, the magnitude of the impact has been assessed as low and the sensitivity of the receptor has been assessed as high. The effect will, therefore, be of minor adverse significance, which is not significant in EIA terms. A minor rather than moderate effectiveness has been concluded given the NRA shows mostly broadly acceptable or minor increases on girting hazards.

20.5 Residual effects and conclusions**Mitigation and enhancement measures**

- 20.5.1 Following the assessment of navigation risk, additional risk controls were developed with PDT that are designed to specifically address the residual navigation issues identified in **Appendix 20A: NRA (ES Volume III, Application Document Ref. 6.3)**.
- 20.5.2 The identified risk controls are summarised in Table 20.12 along with commentary surrounding how the identified risk control will be implemented. The table also highlights the applicability of each of the additional risk controls to each marine operation phase.

Table 20.12 Key Summary of Additional Mitigation

No. & Title	Detail	Phases
1. Deconfliction	Phase 1 Deconfliction of Workboats and other vessels during this phase will need careful management. PDT VTS should be provided with a detailed dredging programme and dredging activity in proximity to the Navigator Terminals and the turning circle should be avoided during Tanker vessel arrivals and departures whilst general cargo vessels are manoeuvring. Standard Operating Procedures should be developed to ensure deconfliction of vessel movements in this scenario and weekly meetings between the dredge contractor, PDT, Tees Dock and Navigator Terminals should take place to ensure effective coordination. Phase 2 The Proposed Development is currently planning for the arrival of approximately 200 AIL deliveries over an 18-month period, this will result in an approximate 50% increase in large vessel movements over one hour either side of HW. Deconfliction with other operations in the area, including Navigator Terminals and Tees Dock will be essential to minimising navigation risk. The deconfliction plan should also consider availability of pilotage and towage resources. It will be the responsibility of the Proposed Development to ensure the plan is agreed with other terminals and the Harbour Master on a weekly basis. Phase 3 Deconfliction of vessel arrivals and departures at Navigator Terminal and the Proposed Development. Delivery and offloading of the dry bulk imports at the Proposed Development. Dry bulk imports to the berth are likely to be handled by handy-sized bulk carriers for UK sourced products and Panamax-sized bulk carriers for overseas-sourced products. PDT VTS should be provided with a detailed programme of planned vessel movements within the guidance and timeframe set out by PDT.	Phase 1 Phase 2 Phase 3
2. Relocation of Existing AtoNs	Dredging works will take place in proximity to navigation buoy No. 21 and North Tees No. 4 Winker buoy. North Tees No. 4 Winker buoy will need to be temporarily relocated during the dredging works whilst Buoy No. 21 will be removed permanently. Any relocation or removal of AtoN will be promulgated to port users via NtM and nautical charts updated accordingly.	Phase 1
3. Approval of Mooring Configuration	Project vessels will be permitted to moor alongside the new quayside without seeking permission from the Harbour Master. Although, permission to Med-moor will be solely subject to the Harbour Master's prior approval. Applications for Med-mooring should only be considered if accompanied by a detailed plan for deconfliction with other operators (Risk Control 1 (phase 2)) and a detailed berthing plan (Risk Control 4).	Phase 2
4. Berthing Plans	Berthing plans should be submitted to the Harbour Master for approval and should be adapted as necessary for all envisaged	Phase 2

No. & Title	Detail	Phases
	berthing scenarios and offload operations. Berthing plans should define suitable operational restrictions to ensure that berthing and offload operations do not take place during adverse weather.	

Phase 1

- 20.5.3 Risk controls identified to be applicable to phase 1 of the Proposed Development include a deconfliction plan and relocation of existing AtoN's (Table 20.12). The former will help to reduce congestion of vessel traffic thereby establishing mitigation against all identified impacts in Section 20.4. The latter will specifically reduce the risk of a contact between a vessel and navigation buoy (Table 20.12).
- 20.5.4 This is reflected in the NRA where some hazards have reduced likelihood as a result of these measures (see **Appendix 20A: NRA, ES Volume III, Application Document Ref. 6.3**).
- 20.5.5 As all likely impacts identified for phase 1 of the Proposed Development were assessed to be not significant in EIA terms and both Tolerable and ALARP within the NRA, all residual effects with proposed additional mitigation are judged to also be not significant in EIA terms.

Phase 2

- 20.5.6 Risk controls identified to be applicable to phase 2 of the proposed development include a deconfliction plan, approval of mooring configuration and a berthing plan. The first control measure will help to reduce congestion of vessel traffic thereby establishing mitigation against all identified impacts in Section 20.4. The latter two control measures will particularly target the risk of contacts (the highest ranked hazards for this stage of the development, see **Appendix 20A: NRA, ES Volume III, Application Document Ref. 6.3**).
- 20.5.7 This mitigation is evidenced by the following hazard: contact of a project vessel alongside a berth, being reduced to Negligible Risk – Acceptable category from the Low Risk – Broadly Acceptable in the residual assessment of **Appendix 20A: NRA (ES Volume III, Application Document Ref. 6.3)**.
- 20.5.8 As all likely impacts identified for phase 2 of the Proposed Development were assessed to be not significant in EIA terms and both Tolerable and ALARP within the NRA, all residual effects with proposed additional mitigation are judged to also be not significant in EIA terms.

Phase 3

- 20.5.9 Risk controls identified to be applicable to phase 3 of the proposed development include the deconfliction plan which will manage the arrivals/departures of vessels at the Proposed Development berth as well as the adjacent Navigator Terminals.
- 20.5.10 These mitigations result in modest reductions in risk in the residual NRA analysis and there are no hazards that are rescored into a lower risk category (see **Appendix 20A: NRA (ES Volume III, Application Document Ref. 6.3))**).
- 20.5.11 As all likely impacts identified for phase 3 of the Proposed Development were assessed to be not significant in EIA terms and both Tolerable and ALARP within the NRA, all residual effects with proposed additional mitigation are judged to also be not significant in EIA terms.

20.6 Cumulative impacts

- 20.6.1 Several other schemes/developments have been identified within Teesport, including:
- Northern Gateway Container Terminal – a proposed deep sea container terminal located in vicinity of the existing Teesport Container Terminal and Riverside RoRo Terminal.
 - Navigator Terminals – Following engagement with Navigator Terminals (February 2026) they indicated that they intend to bring their No.1 jetty back into use and that utilisation at No.2 and No.3 jetty was below their potential utilisation capacity. It was established through engagement with Alfanar (see Table 20.3) that Navigator Terminals have reserved capacity on behalf of their clients (which may not show up on the exiting navigational data). To date, further information has been requested on this additional capacity, but no further information has been received. However, following the preliminary Navigation Risk Assessment, further analyses was carried out as part of the NRA where a 25% uplift in utilisation was applied to Navigator Terminals No.2 and No.3 jetties and this was further discussed with the Harbour Master on 27 April 2026 (Refer to Annex F of **Appendix 20A: NRA (ES Volume III, Application Document Ref. 6.3))**). The Harbour Master and his deputy did not identify any concerns regarding this higher level of utilisation.
- 20.6.2 In the absence of detailed development plans and timescales, it was agreed during engagement with relevant stakeholders that the NRA could be undertaken on the basis of existing projects and that future vessel traffic within the port would be managed through PD Ports using existing risk

control measures. On this basis, it is not anticipated that significant cumulative effects would occur as a result of the Proposed Development.

20.7 Summary of significant effects

20.7.1 A summary of the findings of the effects and cumulative effects assessments undertaken in Section 20.5 and 20.6 is provided in Table 20.13. This includes residual effect significance after any required secondary mitigation and proposed monitoring.

20.7.2 No significant effects were identified for Marine Navigation as a result of the Proposed Development with identified mitigation.

Table 20.13 Summary of Impacts and Subsequent Effects

Impact	Magnitude	Sensitivity	Effect Significance	Mitigation	Residual Effect
Phase 1					
Impact on Port Operations	High	Low	Minor adverse	• Deconfliction	Not significant
Impact on Adjacent Terminals	High	Low	Minor adverse	• Deconfliction	Not significant
Impact on Risk of Collision	Low	High	Minor adverse	• Deconfliction	Not significant
Impact on Risk of Allision/Contact	Low	Medium	Minor adverse	• Relocation of existing AtoNs	Not significant
Impact on Risk of Grounding	Low	Low	Minor adverse	• Deconfliction • Relocation of existing AtoNs	Not significant
Impact on Risk of Diving	Low	Medium	Minor adverse	• Deconfliction	Not significant
Impact on Risk of Mooring/Anchoring	Medium	Low	Minor adverse	• Deconfliction	Not significant
Impact on Risk of Girting	Low	High	Minor adverse	• Deconfliction	Not significant
Phase 2					
Impact on Port Operations	Medium	Low	Minor adverse	• Deconfliction • Berthing Plans	Not significant
Impact on Adjacent Terminals	Medium	Low	Minor adverse	• Deconfliction • Approval of Mooring Configurations • Berthing Plans	Not significant

Impact	Magnitude	Sensitivity	Effect Significance	Mitigation	Residual Effect
Impact on Risk of Collision	Low	High	Minor adverse	Deconfliction Berthing Plans	Not significant
Impact on Risk of Allision/Contact	Low	Medium	Minor adverse	- Deconfliction - Approval of Mooring Configurations - Berthing Plans	Not significant
Impact on Risk of Grounding	Low	Low	Minor adverse	Deconfliction	Not significant
Impact on Risk of Mooring/Anchoring	Medium	Low	Minor adverse	Deconfliction	Not significant
Impact on Risk of Girting	Low	High	Minor adverse	- Approval of Mooring Configurations - Berthing Plans	Not significant
Phase 3					
Impact on Port Operations	Low	Low	Minor adverse	Deconfliction	Not significant
Impact on Adjacent Terminals	Low	Low	Minor adverse	Deconfliction	Not significant
Impact on Risk of Collision	Low	High	Minor adverse	Deconfliction	Not significant
Impact on Risk of Allision/Contact	Low	Medium	Minor adverse	Deconfliction	Not significant
Impact on Risk of Grounding	Low	Low	Minor adverse	Deconfliction	Not significant
Impact on Risk of Mooring	Medium	Low	Minor adverse	Deconfliction	Not significant
Impact on Risk of Girting	Low	High	Minor adverse	Deconfliction	Not significant

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