

Your ref: EN010092

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Date: 11 December 2020

National Infrastructure Directorate
The Planning Inspectorate
Temple Quay House
Temple Quay
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BS1 6PN

Thurrock Flexible Generation Plant – Procedural Deadline C Letter

This letter accompanies documents submitted to the Planning Inspectorate at Procedural Deadline C in response to the Examining Authority’s Procedural Decision Letter of 02 November 2020.

As required by step (a) of the process described in Annex A, Section 2 of the Procedural Decision Letter, we are providing further information for each of the matters listed in Annex A together with a record of consultation on this information, responses received and how we have taken those into account. Steps (b) to (f) of Annex A are also being followed to publicise the further information.

The record of consultation undertaken before Procedural Deadline C is annexed to this letter; in summary, using the headings in Annex A, it was as follows.

Consultation prior to Procedural Deadline C		
Topic	Consultees and date	Responses and dates
Shipping and navigation	28 August 2020 to 09 December 2020 (see appended summary) <ul style="list-style-type: none"> Port of London Authority Port of Tilbury London Ltd 	28 August 2020 to 09 December 2020 (see appended summary) <ul style="list-style-type: none"> Port of London Authority Port of Tilbury London Ltd
Saltmarsh creation	16 November 2020 <ul style="list-style-type: none"> Thurrock Council Environment Agency Natural England Port of London Authority Marine Management Organisation Port of Tilbury London Ltd 	24 November 2020 <ul style="list-style-type: none"> Port of London Authority Port of Tilbury London Ltd
	05 November 2020 <ul style="list-style-type: none"> Natural England 	26 November 2020 <ul style="list-style-type: none"> Environment Agency
Impact of the causeway and its maintenance beyond the lifetime of the Proposed Development	16 November 2020 <ul style="list-style-type: none"> Thurrock Council Environment Agency Natural England Port of London Authority Marine Management Organisation 	24 November 2020 <ul style="list-style-type: none"> Port of London Authority Port of Tilbury London Ltd
		26 November 2020 <ul style="list-style-type: none"> Environment Agency

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	<ul style="list-style-type: none">• Port of Tilbury London Ltd	
Update of the HRA Report	Prior to Procedural Decision Letter (pre-November 2020) <ul style="list-style-type: none">• Teleconferences and correspondence with Natural England	21 October 2020 <ul style="list-style-type: none">• Natural England Discretionary Advice Service note
	24 November 2020 <ul style="list-style-type: none">• Natural England	
Flood risk	06 November 2020 <ul style="list-style-type: none">• Thurrock Council• Environment Agency	17 November 2020 <ul style="list-style-type: none">• Environment Agency
	26 November 2020 <ul style="list-style-type: none">• Thurrock Council• Environment Agency	
Cultural heritage	09 November 2020 <ul style="list-style-type: none">• Historic England• Thurrock Council	12 November 2020 <ul style="list-style-type: none">• Historic England
	30 November 2020 <ul style="list-style-type: none">• Historic England• Thurrock Council	04 December 2020 <ul style="list-style-type: none">• Historic England

Update on Potential Change Requests

At the start of examination Thurrock Power intends to request a non-material change to withdraw the saltmarsh creation proposal and to move part of the onshore habitat creation at RWE's request. In anticipation of this we have made the corresponding updates to drawings, management plans, Environmental Statement documents and the draft DCO and have consulted on these changes.

For clarity, although the revised draft of the DCO and other certified documents are being presented with these changes incorporated, which we consider is prudent and useful to do at this stage of further consultation, this does not constitute the request to make the changes nor seek to pre-judge the ExA's determination of their materiality, which we recognise is a process to be followed once the examination is underway.

It also remains Thurrock Power's expectation that it will be necessary to request a material change to the gas pipeline route, to accommodate Lower Thames Crossing engineering requirements, after the examination has started. Although the Lower Thames Crossing application has recently been withdrawn, it is our understanding that it is likely to be resubmitted in early 2021.

Yours sincerely,
for RPS



Tom Dearing

Annex:-

Record of consultation and responses prior to Procedural Deadline C.

Record of consultation undertaken between ExA's Procedural Decision Letter of 02 November and Procedural Deadline C

Section 1: Consultation letters issued

Reference	A
Date	05/11/20
Consultee(s)	Natural England
Topic(s)	Impact of the causeway and its maintenance beyond the lifetime of the Proposed Development

Reference	B
Date	06/11/20
Consultee(s)	Thurrock Council Environment Agency
Topic(s)	Flood risk

Reference	C
Date	09/11/20
Consultee(s)	Historic England Thurrock Council
Topic(s)	Cultural Heritage

Reference	D
Date	16/11/20
Consultee(s)	Thurrock Council Environment Agency Natural England Port of London Authority Marine Management Organisation Port of Tilbury London Ltd
Topic(s)	Saltmarsh creation Impact of the causeway and its maintenance beyond the lifetime of the Proposed Development

Reference	E
Date	24/11/20
Consultee(s)	Natural England
Topic(s)	Update of the HRA Report

Reference	F
Date	30/11/20
Consultee(s)	Historic England Thurrock Council
Topic(s)	Cultural Heritage

Reference	G
Date	August-November 2020
Consultee(s)	Port of London Authority Port of Tilbury London Ltd
Topic(s)	Shipping and navigation

These consultation letters are shown in turn on the following pages.

Reference	A
Date	05/11/20
Consultee(s)	Natural England
Topic(s)	Impact of the causeway and its maintenance beyond the lifetime of the Proposed Development

From: [Tom Dearing](#)
To: [Bustard, Jonathan](#)
Cc: [Chellis, Laura](#); [Stephanie Boswall](#); [Andrew Troup](#)
Subject: Thurrock FGP causeway - public access restrictions
Date: 05 November 2020 16:28:00
Attachments: OXF10872_causeway_public_access_restrictions.pdf
image003.png

Hi Jonathan,

As discussed today we have taken on board Natural England's point about restricting public access to the causeway. I am intending to submit the attached document into the examination setting out how that would be done, and am sharing this as a draft now as requested.

Regards,
Tom

Tom Dearing

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Reference	B
Date	06/11/20
Consultee(s)	Thurrock Council Environment Agency
Topic(s)	Flood risk

From: [Tom Dearing](#)
To: [Purvis, Chris](#); [Abbott, Pat](#)
Cc: [Stephanie Boswall](#); [Andrew Troup](#); [Jonathan Morley](#); [Paula McGeady](#)
Subject: EN010092 - Thurrock FGP - consultation on revised flood risk and drainage documents
Date: 06 November 2020 15:25:00
Attachments: Attached_documents.zip
EN010092_Flood_Risk_Consultation_Letter_06.11.20.pdf
image002.png

Dear Pat and Chris,

As you're aware the Examining Authority (ExA) has taken a procedural decision (letter of 02 November) to delay the start of examination and to request further information on several points by new Procedural Deadline C on 14 December. We are requested to provide at that time also details of any further consultation undertaken.

This email is to consult you further about application document revisions made in response to the flood risk points raised in the ExA's procedural decision letter. Please see attached a consultation letter and the revised documents with tracked changes. I would ask for any comments back by 18 November so that we can take these into account by Procedural Deadline C.

I will be contacting you separately about other points in the ExA's letter where the EA or Thurrock Council are the relevant parties to consult.

Best regards,
Tom

Tom Dearing

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Environment Agency
Pat Abbott
Planning Advisor

Thurrock Council
Chris Purvis
Planning Advisor

06 November 2020

EN010092 – Thurrock Flexible Generation Plant – Flood Risk Further Consultation

Dear Sirs,

I am writing further to the Examining Authority's (ExA's) procedural decision letter of 02 November 2020 in which the ExA has required the Applicant to provide further environmental information concerning flood risk, among other matters.

That information is required to be submitted by Procedural Deadline C on 14 December 2020 together with '*details of any consultation undertaken, responses received and how they have been taken into account*' so I am writing to provide drafts of the updated application documents for your comment. Given the limited timescale required by the ExA, I ask for your comments back by 18 November 2020 so that we can take these into account by Procedural Deadline C.

My understanding is that the information requested by the ExA relates to the points about flood risk raised in the EA's and Thurrock Council's Relevant Representations. We had in any case been updating documents in response to the Relevant Representations and following the helpful discussion with the EA about the H++ scenario, TIL03 breach and condition of the Bowaters Sluice outfall on 30 September 2020, so I have taken this opportunity to provide updates to both the flood risk and drainage strategy documents together.

The revised drafts are enclosed with tracked changes. In summary, these revisions comprise the following.

Flood risk

APP-112 (ES Appendix 15.1: Flood Risk Assessment), APP-141 (A8.5 Flood Evacuation Plan) and APP-064 (ES Chapter 15: Hydrology and Flood Risk) have been revised to:

- refer to the H++ climate change scenario and future resilience options;
- discuss the TIL03 potential tidal defence breach location and warning time for an evacuation;
- update the flood evacuation and warning time information; and
- detail the negligible change and lack of impact on flood storage capacity due to raising ground levels in parts of the main development site.

Drainage

APP-015 (A2.10 Concept Drainage Plan) and APP-125 (A7.3 Conceptual Drainage Strategy) have been revised to provide a clarification of the direction of flows in the ditch network to which the proposed development would discharge. The documents show that surface water discharge will be to either, or both, of Bowaters Sluice outfall or Worlds End Pumping Station outfall (via Pincocks Trough) to the River Thames depending on available hydraulic capacity of either system at any given time, as the ditch network bordering the main development site is interconnected to both outfalls.

The runoff rate and discharge flow rate shown on the Concept Drainage Plan have been corrected to match the figures stated in the Conceptual Drainage Strategy, which are for the correct 1 in 1 year greenfield rate. A clarification has also been added to the Conceptual Drainage Strategy in paragraph 2.7 to explain the soil classifications adopted (which are based on the Phase II Site Investigation for the development site).

The other points raised in the LLFA section of Thurrock Council's Relevant Representation are noted and we consider that these matters of detail would be addressed through discharge of DCO Requirement 10 (Surface and foul water drainage) under Thurrock Council's approval in due course.

Other matters

APP-045 (ES Chapter 2: Project Description) will be revised to specify use of a temporary span bridge for construction plant access across West Tilbury Main river during gas pipeline construction instead of a temporary culverted crossing

I will be writing separately about other matters raised in the ExA's letter, including withdrawal of the saltmarsh creation proposal, at which point I will circulate the revised Project Description including the span bridge change.

Yours sincerely,
for RPS



Tom Dearing

Reference	C
Date	09/11/20
Consultee(s)	Historic England Thurrock Council
Topic(s)	Cultural Heritage

From: [Tom Dearing](#)
To: [Tipper, Jess](#)
Cc: [Stephanie Boswall](#); [Andrew Troup](#); [Nikki Cook](#); [Paula McGeady](#); [Fletcher, Will](#); [Purvis, Chris](#)
Subject: EN010092 - Thurrock FGP - consultation on further field surveys
Date: 09 November 2020 12:40:00
Attachments: EN010092_Historic_England_Consultation_Letter.pdf
image003.png

Dear Jess,

Please see attached a further consultation letter in response to the Examining Authority's procedural decision letter of 02 November, in which the ExA has required the Applicant to undertake further archaeological field surveys on the advice of Historic England. Your response is requested by this Friday 13th November due to the limited timescale before Procedural Deadline C to undertake these surveys.

By copy I am also providing this letter to Thurrock Council as the other interested party that has commented on heritage and archaeology in its Relevant Representation.

Best regards,
Tom

Tom Dearing

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Jess Tipper
Inspector of Ancient Monuments
Historic England
Brooklands, 24 Brooklands Avenue, Cambridge, CB2 8BU

by email
Jess.Tipper@HistoricEngland.org.uk

cc. Chris Purvis, Major Applications Manager, Thurrock Council.

EN010092 – Thurrock Flexible Generation Plant – Historic England Further Consultation

Dear Jess,

I am writing further to the Examining Authority's (ExA's) procedural decision letter of 02 November 2020 in which the ExA has, on the advice of Historic England, required the Applicant to undertake further field surveys to fully characterise the historic environment baseline. That information is required to be submitted by Procedural Deadline C on 14 December 2020 together with '*details of any consultation undertaken, responses received and how they have been taken into account*'.

Accordingly this letter sets out our proposed approach to undertaking further field surveys. Given the extremely tight timescales required by the Inspector we ask for your comments back by **13 November 2020** so that we can meet Procedural Deadline C.

Our understanding is that the requirement for further 'field surveys' in the ExA's letter is in reference to the point raised in Section 3 of Historic England's Relevant Representation, i.e. that this refers to further archaeological evaluation work in the onshore historic environment.

I therefore felt it useful first to briefly recap the field surveys and archaeological evaluation that has already been undertaken and to remind you of the constraints at this location, before moving on to describe the further field surveys proposed.

By copy I am also providing this letter to Thurrock Council as the interested party that has also commented on heritage and archaeology in its Relevant Representation.

Existing field surveys, baseline information and mitigation

A geophysical survey of the main development site for the flexible generation plant and the route of its access road from Station Road was undertaken. This focused on the main development site as the primary area of potential impact due to the earthworks and foundations required.

Following consultation on the PEIR and at the request of both Historic England and officers of Essex County Council (in liaison with Thurrock Council), further investigation of the main development site was undertaken using borehole samples to construct a geo-archaeological deposit model. This model, drawing from the borehole samples together with data from other ground investigations at locations along this section of the Thames, provides an enhanced understanding of the paleo-environmental baseline of the site and its surroundings.

We remain firmly of the view that sufficient information has been available from both the field surveys and existing published data, referenced in the Desk-Based Assessment, to give a clear understanding of the baseline historic environment for the purpose of EIA. The ES has identified the sensitive receptors either known or considered likely to be present; it has predicted the potential impacts and significance of effects; and it has set out a thorough mitigation strategy as detailed in the Outline Scheme of Written Investigation (WSI).

As you are aware, the main development site for the flexible generation plant is registered Common Land. There are strict restrictions set in the Commons Act 2006 on works that may be carried out in common land.

The Applicant has carried out the absolute maximum of no/minimal-impact archaeological investigation works that are possible on this land.

Having taken legal and planning advice and consulted with interested parties including the West Tilbury Commons Conservators and the Open Spaces Society prior to submitting the DCO application, the Applicant does not believe that any greater scope of intrusive investigation works within Walton Common could lawfully be undertaken as this would be in breach of section 38 of the Commons Act 2006, the digging of trenches being specifically included in the list of works prohibited on common land by section 38(3). The Applicant has been advised that an application to consent such works is not likely to be granted, taking into account the criteria in section 39, the guidance of Defra's Common Land Consents Policy (November 2015) and the fact that no development on this land (creating the need for the investigatory works) would at that point be consented.

In parallel with the DCO application, the Applicant is progressing an application under section 16 of the Commons Act to deregister Walton Common, which when granted would then enable further investigation works to be undertaken pre-construction as has been set out in our Outline WSI.

On the land outside the common the Applicant by necessity included a wide corridor (Zone C) for its access road and much of the gas pipeline route. The exact route of the pipeline within this corridor has until recently been highly uncertain due to the Lower Thames Crossing proposals. Further intrusive pre-application investigation in this corridor would have required a wholly disproportionate level of evaluation across the agricultural land for what in reality will be a c. 1.5m wide pipe trench (where not directionally drilled).

With regard to mitigating impacts, as you are aware we have requested comments from Historic England on the Outline WSI in several discussions since the application was accepted for examination and had agreed to pay Historic England's costs so that could proceed. Thank you for confirming the review costs on Friday 06 November 2020 and for providing commentary on the WSI, which we will now review and move forward on agreeing this mitigation package.

Scope of further pre-examination field surveys

The timeline places constraints on additional field survey work that can practicably be undertaken by Procedural Deadline C, taking into account also the need to interpret and report the findings. The table overleaf sets the further field survey works that we will carry out before this deadline for each area of the proposed development. This comprises further geophysical survey of the gas pipeline route, access road, habitat creation land and exchange common land.

A rapid start to the field survey works is required in order for these to be completed within the available programme set by the ExA, and so your comments are invited by no later than **13 November 2020**.

Yours sincerely,
for RPS



Tom Dearing

Dev. zone	Development works	Currently committed mitigation (detailed in Outline WSI)	Additional field survey to be completed before Procedural Deadline C	Notes
A	Flexible generation plant main development site. Greatest impact potential due to the earthworks and foundations for this part of the development.	<ul style="list-style-type: none"> • Stage 1 (completed): geophysical survey • Stage 2: further boreholes and development of geoarchaeological deposit model • Stage 2: targeted evaluation trenching (focusing on areas of impact and interest) equivalent to 4% of affected development area with 1% contingency reserve • Stage 3 (if required) additional archaeological investigation or watching brief 	n/a	Further intrusive investigation within Walton Common is not possible.
B	Electrical connection in Tilbury Substation.	n/a	n/a	No potential for impact in substation site
C	Access road and gas pipeline corridor. Gas pipeline to be trenched (typically 1.5-2m trench depth and 1-2m width) or horizontally directionally drilled (HDD).	<ul style="list-style-type: none"> • Stage 1: further geophysical survey (extending existing) • Stage 2: targeted evaluation trenching (focusing on areas of impact and interest) equivalent to 4% of affected development area with 1% contingency reserve • Stage 3 (if required) additional archaeological investigation or watching brief 	Further geophysical survey (extending existing)	<p>Zone C is a wide corridor for gas pipeline routing flexibility. Intrusive archaeological evaluation via trenching can be most appropriately targeted pre-construction when the final route is narrowed down, and this will be informed by the geophysical survey. HDD is available as a mitigation technique (and will be used for watercourse crossings) should pre-construction investigation indicate that this is necessary.</p> <p>Low-impact road construction (e.g. surface or floating tracks constructed on the existing ground surface using geogrid and aggregate layers) is available as a mitigation technique should pre-construction investigation indicate that this is necessary.</p>
D	Gas pipeline corridor (as per C) and gas connection compound.	<ul style="list-style-type: none"> • Stage 1: geophysical survey • Stage 2: targeted evaluation trenching (focusing on areas of impact and interest) equivalent to 4% of affected development area with 1% contingency reserve • Stage 3 (if required) additional archaeological investigation or watching brief 	Geophysical survey	Lower Thames Crossing has undertaken field surveys in this area, including evaluation trenches. This information should be published in late November and will be used to inform the further environmental information consulted on following Procedural Deadline C. There is no benefit to repeating field surveys of the same land.

HISTORIC ENGLAND FURTHER CONSULTATION

E	Exchange common land	n/a (no impact as topsoil strip now ruled out)	Geophysical survey	Topsoil strip of Zone E was included as a maximum design parameter in the application but is now confirmed not to be required. Schedule 1 of the DCO will be updated accordingly.
F	Habitat creation and enhancement, including topsoil removal and new ditches for water vole	<ul style="list-style-type: none"> • Stage 1: geophysical survey • Stage 2: targeted evaluation trenching (focusing on areas of impact and interest) equivalent to 4% of affected development area with 1% contingency reserve • Stage 3 (if required) additional archaeological investigation or watching brief 	Geophysical survey	This land is regularly ploughed by the current landowner.
G	Construction of access road and use of existing roads. Dredging and construction of causeway.	<p>Onshore environment, undeveloped land:</p> <ul style="list-style-type: none"> • Stage 1: geophysical survey • Stage 2: targeted evaluation trenching (focusing on areas of impact and interest) equivalent to 4% of affected development area with 1% contingency reserve • Stage 3 (if required) additional archaeological investigation or watching brief <p>Marine environment:</p> <ul style="list-style-type: none"> • Watching brief during dredging/excavation • Protocol for any archaeological finds including human remains, treasure, wreck 	Geophysical survey of the access road route section through undeveloped agricultural land	<p>No potential impact for existing roads or road section through former ash fields landfill and land raising operation.</p> <p>A watching brief for dredging/excavation works for causeway construction is proposed. It is not possible to carry out these dredging/excavation works prior to gaining the DCO including deemed marine license.</p>
H	Use of existing road through Tilbury2 port	n/a	n/a	No potential impact
I	Use of Station Road section by HGV traffic	n/a	n/a	No potential impact
J	Temporary diversion of footpath	n/a	n/a	No potential impact

Reference	D
Date	16/11/20
Consultee(s)	Thurrock Council Environment Agency Natural England Port of London Authority Marine Management Organisation Port of Tilbury London Ltd
Topic(s)	Saltmarsh creation Impact of the causeway and its maintenance beyond the lifetime of the Proposed Development

From: [Tom Dearing](#)
To: [Abbott, Pat](#); [Purvis, Chris](#); [Michael Atkins](#); sarah.errington@marinemanagement.org.uk; [Bustard, Jonathan](#); john.speakman@potl.com
Cc: [Stephanie Boswall](#); [Andrew Troup](#); [Paula McGeady](#)
Bcc: [Matthew Fasham](#); [Kevin Linnane](#)
Subject: EN010092 - Thurrock FGP - consultation on revised plans and documents
Date: 16 November 2020 16:49:00
Attachments: EN010092_Causeway_Saltmarsh_and_Onshore_Habitat_Consultation_Letter.pdf
image003.png

Dear all,

As you are aware the Examining Authority (ExA) has taken a procedural decision (letter of 02 November) to delay the start of examination for Thurrock Flexible Generation Plant and to request further information on several points by new Procedural Deadline C on 14 December. We are also requested to provide details of any further consultation undertaken and the responses.

This email is to consult you further about application document revisions made in response to the saltmarsh and causeway points raised in the ExA's procedural decision letter, together with other connected matters. Please see the attached consultation letter. The documents referred to in the letter can be accessed at:

<https://filetransfer.rpsgroup.com/link/FIByoUho7ajh3lI0jayo8J>. I would ask for any comments back by Tues 24th November so that we can take these into account by Procedural Deadline C.

I will be contacting interested parties separately about other points in the ExA's letter as applicable.

Best regards,
Tom

Tom Dearing

Associate, Climate and EIA
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Chris Purvis, Major Applications Manager, Thurrock Council
Pat Abbott, Planning Advisor, Environment Agency
Michael Atkins, Senior Planning Officer, Port of London Authority
Sarah Errington, Marine Licensing Case Manager, Marine Management Organisation
Jonathan Bustard, Casework Manager, Natural England
John Speakman, Senior Asset Manager (Property), Port of Tilbury London Ltd

By email

16 November 2020

EN010092 – Thurrock Flexible Generation Plant – Causeway, Saltmarsh and Onshore Habitat Further Consultation

I am writing further to the Examining Authority's (ExA's) procedural decision letter of 02 November 2020 in which the ExA has required the Applicant to provide further environmental information concerning saltmarsh creation and the impact of the causeway as a permanent structure, among other matters.

That information is required to be submitted by Procedural Deadline C on 14 December 2020 together with '*details of any consultation undertaken, responses received and how they have been taken into account*' so I am writing to provide further information and drafts of updated application documents for your comment. Given the limited timescale required by the ExA, I ask for your comments back by 24 November 2020 so that we can take these into account by Procedural Deadline C.

Besides the points raised in the ExA's letter, there are other interconnected matters affecting the Environmental Statement (ES) and application documents. To avoid (so far as possible) consulting multiple times on several versions of affected documents, each with partial changes, I am therefore grouping these together where that can be done. In particular, as advised during the Preliminary Meeting (Part 1), the Applicant intends to request a non-material change to relocate part of the onshore habitat creation area as well as to withdraw the saltmarsh creation proposal, which jointly affect documents such as the biodiversity net gain calculations and the Outline Ecological Management Plan.

Saltmarsh creation

Existing assessments

The ExA has requested further environmental information assessing the impact of saltmarsh creation, maintenance and monitoring. Although the Applicant intends to withdraw the saltmarsh creation proposal based on recent stakeholder feedback (see section below), this change request has not yet been made, so a response based on the existing position is first given.

In our understanding the further information requested by the ExA seems likely to relate to the point made in Relevant Representations by the Environment Agency, Marine Management Organisation and Natural England that the saltmarsh creation would be on existing mudflat with its own habitat value, carrying a consequent adverse impact of additional mudflat loss to be balanced against the saltmarsh gain. This fact was acknowledged in Section 5.1 of APP-146 (A8.10 Outline Saltmarsh Enhancement and Maintenance Plan).

For the avoidance of doubt, the net effect of saltmarsh creation, including the transformation of existing mudflat to saltmarsh (with loss of the former as habitat) was fully assessed in the Biodiversity Net Gain Assessment (APP-093, Appendix 9.3 to the ES). This did include a loss within the net gain score due to the existing mudflat value and the discount applied in the calculations for uncertainty and timeframe required for new saltmarsh habitat to establish.

Paragraph 4.2.8 of APP-066 (Chapter 17: Marine Environment) identified the minor adverse effect (not significant) during the period where saltmarsh colonises and develops over the accreting mudflat. The net long-term effect was assessed as being neutral or potentially minor beneficial (not significant) based on the judgement of saltmarsh value once fully established and scarcity of this habitat relative to mudflat. However,

the preceding paragraphs 4.2.2 to 4.2.7 have now been edited in the revised chapter to more clearly set out the area of mudflat that could be lost to saltmarsh colonisation and the impact of that change in habitat.

On balance and based on pre-application discussion with the Environment Agency on 12/11/19 it was judged at the time of submitting the DCO application that saltmarsh creation should be pursued as saltmarsh is the rarer habitat and is being lost in this area of the Thames, so extending it would be beneficial.

The ExA's request may also relate to paragraph 6.1 of the PLA's Relevant Representation, which stated:

"The PLA has further concerns in relation to the saltmarsh enhancement design and assumptions made about the creation, retention and long-term monitoring are not adequately addressed in the ES. Insufficient ground investigations have been made to date and there is uncertainty on whether any material will need to be imported to create the saltmarsh and, if so, where it will come from."

It is unclear what prompted the comments in paragraph 6.1. The application documents are clear that the material to create the saltmarsh would come from the balance of sediment to be dredged during the causeway excavation – see for example paragraph 2.10.6 in APP-045 (ES Chapter 2: Project Description). Information about the creation, retention and long-term monitoring of the saltmarsh was set out in APP-146, the outline plan written specifically for that purpose. DCO requirement 14 (saltmarsh management) required that the final saltmarsh management plan be developed and approved prior to construction, which would offer the opportunity for further detail to be provided in the plan if necessary.

Ground investigation (sediment sampling) was undertaken at sample points along the stretch of inter-tidal area where the causeway construction and saltmarsh creation would occur. This is detailed in APP-119 (ES Appendix 17.1). Prior to undertaking this investigation a Sampling Plan was provided to the PLA and the PLA's written agreement to the approach was received on 20 August 2019. Specifically that response confirmed that the PLA agreed with the number of samples and set out the suite of contaminants that should be tested for, which has been done. At the request of the MMO, the investigation results have additionally been provided in the MMO's proforma template on 14 October 2020.

Proposal to withdraw saltmarsh creation

When the examination starts the Applicant intends to request a non-material change to withdraw the saltmarsh creation proposal.

The Applicant has noted the comments made by the Environment Agency, Marine Management Organisation, Natural England and the Port of London Authority concerning saltmarsh creation in their relevant representations. Following a joint meeting with these parties (excepting the PLA, who were unable to attend) on 05 October 2020 the Applicant accepts that on balance it is now considered environmentally preferable not to use dredged material from the causeway construction to promote the establishment of saltmarsh on the mudflat in its lee.

APP-146 (A8.10 Outline Saltmarsh Enhancement and Maintenance Plan) will therefore be withdrawn and the draft DCO requirements and table of mitigation commitments in the Environmental Statement have been updated accordingly.

The dredged material will primarily be dispersed by water injection dredging (WID), as had already been described in the application for the balance of material that was not proposed for use in saltmarsh creation. WID of up to 13,000 m³ (of the total 16,100 m³ material) was assessed in APP-120 (ES Appendix 17.2). The 3,100 m³ balance of material to be excavated would be disposed of onshore. The Applicant considers it likely that some or all of this material could be used for the necessary raise of the main development site ground level, but as a worst case road transport of this material to a licensed disposal site has also been considered, and this could be accommodated within the construction HGV numbers that were set out in the application.

APP-144 (A8.8 Construction Traffic Management Plan) has been updated to provide greater detail about management of the crossing of Footpath 146 (the coastal foot/cycle path, also known as Two Forts Way) by construction plant and HGVs for this activity.

Causeway decommissioning

In the application the causeway was proposed to be a permanent structure, retained during the flexible generation plant's operating life and left in situ rather than removed at the end of that period. This was for two reasons, as explained in APP-045 (Chapter 2: Project Description) of the ES:

1. The causeway is the only means of access for delivery of the largest flexible generation plant components, such as gas engine blocks, which are abnormal indivisible loads (AILs). It must therefore be retained in order that a failed engine or other major plant item could be transported for repair or replaced, should that be needed during the operating life. This would be an exceptional rather than routine use and the environmental effects were judged, in the ES, therefore to be much less than those arising from the more intensive causeway use during the flexible generation plant construction phase.
2. The proposed saltmarsh habitat creation would have been in the lee of the causeway and sheltered by its shape. It was considered that at the end of the flexible generation plant's design operating lifetime – 35 years hence at a minimum – it was likely to be environmentally preferable for the causeway to remain in situ. This judgement was made as the local environment around the causeway would have reached a new equilibrium with regard to saltmarsh habitat and local hydrodynamics. If the causeway were removed in that scenario, it was likely that the created saltmarsh would then be eroded and its habitat value lost.

The Applicant reaffirms that while no alternative access is feasible for the AILs, a permanent causeway retained for the flexible generation plant's operating life is essential to the funding and commercial viability of the project. The flexible generation plant would not be financeable if there were no means to replace large equipment following a failure or the need for repair that requires the return of the equipment to the manufacturer's facilities.

The history of the project during pre-application consultation stages shows the very considerable effort devoted by the Applicant to exploring alternative access routes by port and road for AILs, but ultimately these alternatives were found to be either impossible or to require impractical, impactful and disruptive works to the local and strategic highway network together with haul road construction and greater common land take. The causeway proposal was therefore developed into the project as the preferred option.

Nevertheless, the potential for access options to change over time is acknowledged, in which case it could become possible to decommission the causeway without creating an unacceptable operational and financial risk to the flexible generation plant. The Applicant therefore proposes the following new DCO Requirements:

Review of access for abnormal indivisible loads.

N1 (1) Within five years from the date of final commissioning of the flexible generation plant, the undertaker must submit a report of the review of access options for transportation of abnormal indivisible loads (AIL) to or from Work 1 in writing to the relevant planning authority.

(2) If a permanent, feasible and economic alternative to use of the causeway to be constructed as Work 10 for AIL access is identified in the report submitted under sub-paragraph (1), then the undertaker must:

- (a) submit applications for any consents required for that alternative AIL access within 6 months of the date of the submission of the review, or such other period as may be agreed between the undertaker and the relevant planning authority; and
- (b) advise the relevant planning authority of the outcome of any applications under this sub-paragraph that were not determined by the relevant planning authority, within five business days of the undertaker being notified of that outcome.

(3) Where all the consents required to create and/or use alternative AIL access are granted, the causeway to be constructed as Work 10 and the changes to the sea-defence wall to be carried out as Work 11 must be decommissioned in accordance with requirement N2(4).

(4) (a) Where the review undertaken under sub-paragraph (1) does not identify a permanent, feasible and economic alternative to use of the causeway to be constructed as Work 10 for AIL access, or the necessary consents to create or use such an access are not granted, then the undertaker must carry out a subsequent review within five years of the later of:

- i) the submission of the review under sub-paragraph (1); or
- ii) the undertaker notifying the relevant planning authority of the refusal of consent under sub-paragraph 2(b).

(b) where the review undertaken under this sub-paragraph identifies a permanent, feasible and economic alternative to use of the causeway to be constructed as Work 10 for AIL access which was

not identified in the previous review, sub paragraphs (2) and (3) will apply as if the report had been submitted under sub-paragraph (1).

(c) Where a subsequent review undertaken under this sub-paragraph does not identify a permanent, feasible and economic alternative to use of the causeway to be constructed as Work 10 for AIL access, then a further review will be required at each five year interval as if the subsequent review had been submitted under sub-paragraph (1).

(5) In this requirement, a permanent, feasible and economic alternative means:

- (a) that the alternative route is available and will remain so for the flexible generation plant's operating lifetime;
- (b) that transport of AIL via the alternative route is feasible and practicable, taking into account factors including but not limited to the physical characteristics of the AILs and the route (such as load limits and clearance), the agreement of landowners and having all of the consents required to create and/or use the alternative route; and
- (c) that the alternative route costs no more than 10% more than the cost of shipment from the port of delivery, berthing and unloading at the causeway.

Causeway Decommissioning Plan.

N2 (1) Where in accordance with requirement N1(3), the causeway to be constructed as Work 10 is to be decommissioned, the undertaker must, within 6 months of the undertaker receiving all of the consents for which applications were made under requirement N1(2), submit a Causeway Decommissioning Plan to the relevant planning authority for approval.

(2) Where Work 1 permanently ceases operation and no Causeway Decommissioning Plan has previously been approved under this requirement, the undertaker must, within 6 months of the operation of Work 1 ceasing, submit a Causeway Decommissioning Plan to the relevant planning authority for approval.

(3) The Causeway Decommissioning Plan must include:

- a. a description of the decommissioning works and methods for Works 10 and 11;
- b. a description of environmental management measures to be employed, including pollution control, traffic management and public rights of way management;
- c. details of the reinstatement of the sea defence wall altered as part of Work 11;
- d. details of the restoration of mudflat and coastal saltmarsh habitat; and
- e. details of any barge or other vessel movements required and measures to avoid shipping or navigation risks

(4) Decommissioning of Works 10 and 11 must be carried out in accordance with the approved Causeway Decommissioning Plan.

With the proposed withdrawal of the saltmarsh creation, the Applicant also agrees that it is appropriate to revisit the justification for the causeway to be left permanently in situ after the end of the flexible generation plant's operating lifetime. Decommissioning the causeway at the end of the flexible generation plant's operating lifetime, if it had not been removed before that point, is therefore now proposed (as set out in the requirement above).

Decommissioning of the causeway would involve the removal of the security gate, concrete slabs and stone gabion foundations comprising the causeway structure. The permanent sea wall would be reinstated in place of the access gate. The mudflat area beneath the causeway and barge berthing pocket would refill through natural accretion, as was described in APP-120 (Appendix 17.2 of the ES) for the berthing pocket. The stone is likely to be repurposed for coastal defence works elsewhere and therefore likely to be removed by barge; whether by barge or road vehicle the transport requirements would be no greater than in construction. This description of works has been incorporated into the revised Project Description chapter.

The environmental effects of decommissioning activity have been assessed in revisions to APP-066 (ES Chapter 17: Marine Environment) and in an addendum to the ES, enclosed, for other environmental topic areas. In summary, the effects would be no greater than the temporary effects arising from the construction stage, as already assessed in the ES. The Causeway Decommissioning Plan would set out appropriate

environmental management at that time, to be approved by the relevant planning authority under the DCO requirement set out above, in an equivalent approach to the use of a Code of Construction Practice for the construction phase.

Onshore habitat creation

When the examination starts, the Applicant intends to request a non-material change to the onshore habitat creation proposals.

The Applicant has noted the objection made by RWE about the proposed acquisition and use of a plot of scrubland adjacent to the north-eastern corner of Tilbury Substation for habitat enhancement. This land forms part of Work 2 and was described as 'Zone F4' of the habitat creation and enhancement proposals in the Environmental Statement (ES). It comprises around half of plot 01/20 in the Land Plans.

Following further discussion with RWE and a review of other available land within the Order Limits, the Applicant has decided to remove the Zone F4 land from the Order Limits. Habitat creation is instead now proposed in the area of agricultural land between the main development site and the railway line (part of what is described as 'Zone C' in the ES), within plots 01/17 and 02/06.

This does not affect land acquisition as the entirety of plots 01/17 and 02/06 were already proposed for permanent freehold acquisition. The remainder of plot 01/20 remains in the Order Limits as it is required for the construction of an access route to the main development site.

The replacement habitat creation within Zone C provides an equivalent quantum of habitat and an increase in biodiversity net gain value compared to the previous proposals for Zone F4. The label 'Zone F4' is retained and applied to the replacement habitat creation in updated ES documents.

Habitats Regulations Assessment

The Habitats Regulations Assessment Report (the HRAR, APP-040) will also need to be revised in view of the changes proposed. For the reasons set out above with regard to habitat loss/gain and the impact of causeway decommissioning rather than permanence, we do not consider that there will be any change to the HRA conclusions due to these matters. However, separately, we are in ongoing discussion with Natural England concerning updates to the assessment of wintering bird impacts in the HRAR and therefore will write further to consult with the relevant parties on the revised HRAR when all of the revisions have been made.

Application document changes

The following updated application documents are enclosed:

- APP-006 – A2.1 Location and Order Limits Plans
- APP-007 – A2.2 Land, Special Category Land and Crown Land Plans
- APP-008 – A2.3 Works Plans
- APP-009 – A2.4 Access Rights of Way and Traffic Regulation Measures Plans
- APP-010 – A2.5 Illustrative Highway Engineering Drawings
- APP-011 – A2.6 Illustrative General Arrangement Plans
- APP-012 – A2.7 Illustrative Site Layout Plans
- APP-014 – A2.9 Illustrative Landscape Plan
- APP-015 – A2.10 Concept Drainage Plan
- APP-016 – A2.11 Historic or Scheduled Monument Sites Plan
- APP-017 – A2.12 Statutory and Non-Statutory Nature Conservation Sites
- APP-018 – A2.13 Tree Preservation Order and Hedgerow Plan
- APP-019 – A2.14 Deemed Marine Licence Co-ordinate Plan
- APP-025 – A4.3 Book of Reference
- APP-045 – A6 Vol2 Chapter 2 Project Description
- APP-066 – A6 Vol3 Chapter 17 Marine Environment

-
- APP-082 – A6 Vol5 Chapter 33 Summary of Residual Effects
 - APP-083 – A6 Vol6 Appendix 2.1 Mitigation Enhancement and Monitoring Commitments
 - APP-093 – A6 Vol6 Appendix 9.3 Biodiversity Net Gain Assessment
 - APP-121 – A6 Vol6 Appendix 17.3 Water Framework Directive Assessment
 - APP-143 – A8.7 Outline Ecological Management Plan
 - APP-144 – A8.8 Construction Traffic Management Plan

The following new document is enclosed:

- Thurrock Flexible Generation Plant Causeway Decommissioning ES Addendum

The application plans have been revised to show the proposed changed Order Limits and habitat creation area. The Book of Reference has also been updated accordingly.

The ES Project Description (APP-045) chapter has been revised to be consistent with the change sought, including showing a new ES 'Zone Plan' (Figure 1.5 in Chapter 2), and the selected ES documents listed above have likewise been revised where details of the assessments are affected by the change.

In addition, revisions have been made in Chapter 17: Marine Environment (APP-066) to address other points raised in relevant representations, namely to provide a screening assessment of potential effects on Marine Conservation Zones and to clarify the assessment of potential effects on tentacled lagoon worm.

All other ES and application documents that have not been changed should be read in conjunction with this letter and the enclosed ES addendum. Any references within the un-revised ES and other application documents to the saltmarsh creation plan (APP-146), the 'Zone F4' habitat creation proposals or to causeway permanence should be understood accordingly. The ES Zone Plan where it appears in other ES documents should be regarded as superseded by the revised version in Chapter 2 and the Order Limits appearing on other ES figures should be regarded as superseded by the changes described here.

No revision to Chapter 8: Land Use, Agriculture and Socio-Economics or Chapter 10: Traffic and Transport has been necessary because the impact of construction HGVs, including those crossing Footpath 146, had already been assessed. No revision to Chapter 9: Onshore Ecology in relation to the proposed Zone F4 changes has been necessary as equivalent habitat creation and improved biodiversity net gain are provided so the assessment conclusions are not changed. However, we intend to consult on revisions to Chapter 9 and to APP-094 (ES Appendix 9.4: Foreshore Wintering Bird Surveys 2019-20) in line with updates to the HRAR at the time of consulting on the latter.

Yours sincerely,
for RPS



Tom Dearing

Reference	E
Date	24/11/20
Consultee(s)	Natural England
Topic(s)	Update of the HRA Report

From: [Tom Dearing](#)
To: [Bustard, Jonathan](#)
Cc: [Paula McGeady](#); [Stephanie Boswall](#); [Andrew Troup](#); [Chellis, Laura](#)
Bcc: [Matthew Fasham](#)
Subject: EN010092 - Thurrock FGP - consultation on revised HRAR
Date: 24 November 2020 16:01:00
Attachments: EN010092_HRA_Consultation_Letter.pdf
image003.png

Dear Jonathan,

I am emailing to consult you about revisions to the Habitats Regulations Assessment Report, further to the ExA's procedural decision letter of 02 November and to our earlier discussions.

Please see the attached consultation letter. The documents referred to in the letter can be accessed at: <https://filetransfer.rpsgroup.com/link/Qi2DagEqotFIQsYIObQEO9>. I would ask for any comments back by Tues 24th December so that we can take these into account by Procedural Deadline C.

The enclosed HRAR update presents the extended assessment of impacts on wintering bird species using land functionally linked to the Thames Estuary and Marshes SPA that we have previously discussed. I am also enclosing a response to your Discretionary Advice Service letter of 21 October 2020 with answers to the questions raised and/or references to where matters in it have been addressed.

Best regards,
Tom

Tom Dearing

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Jonathan Bustard, Casework Manager, Natural England

By email

24 November 2020

Dear Jonathan,

EN010092 – Thurrock Flexible Generation Plant – Habitats Regulations Assessment Report Further Consultation

I am writing further to the Examining Authority's (ExA's) procedural decision letter of 02 November 2020 in which the ExA has required the Applicant to provide updates to the Habitats Regulations Assessment Report (HRAR), among other matters.

That information is required to be submitted by Procedural Deadline C on 14 December 2020 together with '*details of any consultation undertaken, responses received and how they have been taken into account*' so I am writing to provide a draft of the updated HRAR together with other relevant application documents for your comment. Given the limited timescale required by the ExA, I ask for your comments back by 01 December 2020 so that we can take these into account by Procedural Deadline C.

HRAR (APP-040, A5.2 Habitats Regulations Assessment Report)

The enclosed HRAR update presents the extended assessment of impacts on wintering bird species using land functionally linked to the Thames Estuary and Marshes SPA, that we have previously discussed with you on 23 July 2020 and 25 September 2020.

The impact matrices in Appendix B have also been updated in response to the comments in the ExA's letter.

I am also enclosing a response to your Discretionary Advice Service (DAS) letter of 21 October 2020 with answers to the questions raised and/or references to where matters in it have been addressed. This includes a response to the ExA's comment about assessment of impacts on Marine Conservation Zones, which had also been mentioned in your DAS letter.

Other documents

Together with the HRAR I am enclosing updates to ES Chapter 9: Onshore Ecology (APP-058) and Appendix 9.4: Foreshore Wintering Bird Surveys 2019-20 (APP-094). These updates are for consistency with the HRAR and with the other project information changes about which I wrote to you on 16 November 2020.

A correction has also been made to the dredging area stated in paragraph 4.1.30 of Chapter 17: Marine Environment (APP-066) to be consistent with the figure correctly given in the HRAR. Chapter 17 is otherwise as it was when circulated on 16 November.

Finally, as mentioned in the DAS response, we propose to edit DCO Requirement 13 (Landscaping and Ecological Management Plan) to require the planning authority to consult Natural England when discharging that requirement, and also to draft a new DCO requirement to undertake wintering bird monitoring related to the causeway construction. These DCO updates will be provided at Procedural Deadline C.

Yours sincerely,
for RPS



Tom Dearing

Reference	F
Date	30/11/20
Consultee(s)	Historic England Thurrock Council
Topic(s)	Cultural Heritage

From: [Tom Dearing](#)
To: [Tipper, Jess](#)
Cc: [Stephanie Boswall](#); [atroup](#); [Nikki Cook](#); [Paula McGeady](#); [Fletcher, Will](#); [Purvis, Chris](#)
Subject: RE: EN010092 - Thurrock FGP - consultation on further assessment of heritage assets" settings
Date: 01 December 2020 10:33:00
Attachments: image010.png
image011.png
image002.png

Jess, understood. That will cut into our time to take on board and respond to any comments before the ExA's deadline, but we'll do so as far as possible.

Regards,

Tom

Tom Dearing

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From: Tipper, Jess <Jess.Tipper@HistoricEngland.org.uk>

Sent: 01 December 2020 10:27

To: Tom Dearing <tom.dearing@rpsgroup.com>

Cc: [Stephanie Boswall](mailto:SBoswall@stateraenergy.co.uk) <SBoswall@stateraenergy.co.uk>; [atroup](mailto:atroup@stateraenergy.co.uk) <atroup@stateraenergy.co.uk>; [Nikki Cook](mailto:nikki.cook@rpsgroup.com) <nikki.cook@rpsgroup.com>; [Paula McGeady](mailto:Paula.McGeady@burges-salmon.com) <Paula.McGeady@burges-salmon.com>; [Fletcher, Will](mailto:Will.Fletcher@HistoricEngland.org.uk) <Will.Fletcher@HistoricEngland.org.uk>; [Purvis, Chris](mailto:CPurvis@thurrock.gov.uk) <CPurvis@thurrock.gov.uk>

Subject: RE: EN010092 - Thurrock FGP - consultation on further assessment of heritage assets' settings

CAUTION: This email originated from outside of RPS.

Dear Tom,

Thank you for sending this further information.

I would be please to provide comments but I will be unable to respond by this Friday, due to other commitments. I can respond by Monday 7th December (close of play) and I hope this will be ok?

Kind regards,

Jess

Dr Jess Tipper MCIfA FSA
Inspector of Ancient Monuments
Tel: 01223 582769

Mob: 07786 126177

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From: Tom Dearing <tom.dearing@rpsgroup.com>

Sent: 30 November 2020 16:23

To: Tipper, Jess <Jess.Tipper@HistoricEngland.org.uk>

Cc: Stephanie Boswall <SBoswall@stateraenergy.co.uk>; atroup <atroup@stateraenergy.co.uk>; Nikki Cook <nikki.cook@rpsgroup.com>; Paula McGeady <Paula.McGeady@burges-salmon.com>; Fletcher, Will <Will.Fletcher@HistoricEngland.org.uk>; Purvis, Chris <CPurvis@thurrock.gov.uk>

Subject: EN010092 - Thurrock FGP - consultation on further assessment of heritage assets' settings

THIS IS AN EXTERNAL EMAIL: do not click any links or open any attachments unless you trust the sender and were expecting the content to be sent to you

Dear Jess,

I am writing in response to the Examining Authority's procedural decision letter of 02 November in which the ExA has required the Applicant to undertake further characterisation of impacts on heritage assets' settings, on the advice of Historic England.

Please see attached the further assessment document for comment. For ease of cross-reference I have also brought the ES wireline and photomontage visualisations together into one file, together with three additional visualisations referred to in the further assessment document.

This is a large file and can be downloaded from:

<https://filetransfer.rpsgroup.com/link/reOTbE8IACKJROJgjFNPkq>

By copy I am providing this document to Thurrock Council, as the other interested party that has commented on the assessment of heritage assets' settings in its Relevant Representation, for comment.

Responses are requested by this Friday 4th December so that we can take these into account by Procedural Deadline C.

Best regards,
Tom

Tom Dearing

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From: Tom Dearing

Sent: 09 November 2020 12:40

To: Tipper, Jess <Jess.Tipper@HistoricEngland.org.uk>

Cc: Stephanie Boswall <SBoswall@stateraenergy.co.uk>; Andrew Troup <atroup@stateraenergy.co.uk>; Nikki Cook <nikki.cook@rpsgroup.com>; Paula McGeady <Paula.McGeady@burgess-salmon.com>; Fletcher, Will <Will.Fletcher@HistoricEngland.org.uk>; Purvis, Chris <CPurvis@thurrock.gov.uk>

Subject: EN010092 - Thurrock FGP - consultation on further field surveys

Dear Jess,

Please see attached a further consultation letter in response to the Examining Authority's procedural decision letter of 02 November, in which the ExA has required the Applicant to undertake further archaeological field surveys on the advice of Historic England. Your response is requested by this Friday 13th November due to the limited timescale before Procedural Deadline C to undertake these surveys.

By copy I am also providing this letter to Thurrock Council as the other interested party that has commented on heritage and archaeology in its Relevant Representation.

Best regards,
Tom

Tom Dearing

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Reference	G
Date	August-November 2020
Consultee(s)	Port of London Authority Port of Tilbury London Ltd
Topic(s)	Shipping and navigation

See correspondence and responses in Section 2 (these are presented as a combined document).

Section 2: Consultee responses; how and where taken into account

Consultee comments and Thurrock Power responses are detailed for each consultee on the following pages.

Natural England

No response to the three consultation letters to Natural England has been received.

However, Thurrock Power and Natural England have been in productive dialogue via teleconferences concerning the HRA Report and impacts of the causeway prior to the ExA's Procedural Decision Letter of 02 November and Natural England had provided a Discretionary Advice Service letter on 21 October 2020. The DAS letter and Thurrock Power's responses to it (provided to Natural England with the consultation letter of 24 November 2020) are shown below.

21st October 2020

Our ref: 321560 / 12766

Your ref: EN010092



Thurrock Power Ltd
1st Floor
145 Kensington Church Street
London
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Customer Services
Hornbeam House
Crewe Business Park
Electra Way
Crewe
Cheshire
CW1 6GJ

T 0300 060 3900

Dear Andrew Troup

DAS Advice: EN010092 Thurrock Flexible Power Generation Plant

Further to our conference call on 25th September 2020 with you and consultants from RPS Group I am writing to provide further written advice on the topics discussed and additional topics where we feel that comments are helpful to progress any outstanding items. We acknowledge receipt of the draft SOCG and will be reviewing and responding separately for those purposes.

Natural England has been working closely with you and your team via the Discretionary Advice Service, and we look forward to progressing these discussions over the coming months.

This letter develops some of the topics highlighted in our Relevant Representations letter of 18 August 2020 and provides greater detail.

1. Causeway Impacts

Construction activities disturbance effect on birds and the marine environment - we have previously suggested that you assess the impacts that might occur in the different seasons to identify a sequential approach to impact assessment and mitigation, by identifying preferred and worst-case timings and the most appropriate measures to take in each scenario. We need to get a clear feel for the duration of the construction works, the period in which it will take place and what the construction methods and approaches will be.

We would appreciate a programme indicating what is involved (e.g. particularly when noisy activities are scheduled; in-river activities; pollution containment details etc.). Please note that Ringed Plovers and Avocets can be numerous within the August/September/October passage period (but possibly as early as July) and high impact during this period can reduce usage for a period of weeks/months afterwards particularly if other operational activity is occurring in the vicinity. Similarly, operational phase disturbance should be minimised by avoiding the winter months.

In our opinion, there is unlikely to be an entirely effective mitigation package that can be used against the varying degrees of impacts through the winter months, so avoidance is by far the best solution if at all possible. Within any sensitive period however, we would expect to see more details regarding the mitigation measures that will be deployed such as – using low disturbance approaches through the use of daylight working (i.e. no artificial lighting), and minimal noise levels from large plant and adherence to freezing weather restrictions during the core winter months (please refer to [BASC / JNCC guidance](#) on this). In this context, the sensitive period should be regarded as spanning August / September – March (to cover the autumn passage (but possibly as early as July) and over-wintering season). (Details may be checked [here](#)). See below for further details. For this reason, it is important that bird monitoring is included throughout the construction phase.

‘Permanent’ nature of the causeway - whilst the length of time the causeway is anticipated to be in situ is generally described as temporary in the submission document, in our opinion that the extended timescales (up to 50 years) should be regarded as effectively permanent for the purpose of the assessment. In our view, and with local precedent (Lower Thames Crossing use of the Goshem’s Farm jetty) temporary effects should be considered not longer than 5 years.

Overall Natural England is concerned that the causeway structure as presented in the submission reports introduces a level of activity within the foreshore that can be expected to cause prolonged disturbance and establish the principle of river-side access for the foreseeable future. We have consistently advised major development projects in this area that this is undesirable from an SPA perspective, noting that the area of foreshore broadly between Tilbury and Coalhouse Forts is functionally linked land to the nearby SPA. Proposals that introduce access and associated disturbance activities are likely to compromise this function to some degree without necessary controls. We have a number of concerns in this regard, which we set out below:-

- The uncertainties regarding future use of the causeway after the initial delivery of project components (AILs) – i.e. engine repair or replacement linked to future emissions targets etc.
- The anticipated difficulties of restricting / controlling access to non-project users, and disturbance caused. We would welcome further clarifications and a proposal that seeks to robustly control and restrict use, to prevent a level of unauthorised use becoming established.
- The precedent this structure may set for approved usage by other development projects in the area, thus prolonging the disturbance effects linked to its use.
- The direct loss of habitats (see below) whilst relatively modest in scale, will reduce the overall resource available for SPA birds (especially either side of high tide), and may have displacement effects that extend beyond the structure itself (even if undisturbed).
- The uncertainties associated with changes to the sedimentation regime in the area, which may cause changes which interrupt the suitability of this area for feeding waders.

There are a number of factors that may lead us to conclude that a temporary causeway, permitted for a short length of time would be more appropriate. With this in mind, we would like to propose that a revised proposal for a temporary causeway of 5 years duration would be more likely to receive a favourable response from Natural England. We suggest that any future use beyond this period could be achieved via a re-application to extend the life of the structure when more detailed information is available regarding its future use for the project’s purposes. These points were raised in our recent meetings on 25th September and 5th October.

From our recent discussions, it is not clear to Natural England what may be the triggers which would require future use of the causeway after initial construction. You have mentioned the possibility of engine upgrades and / or repair, which may be linked to (as yet unknown) climate change targets requiring conversion or replacement with 100% hydrogen engines (and whether or not upgrades could be achieved in-situ). In our view, there is not yet sufficient certainty to justify the retention of the causeway for longer than a temporary (i.e. 5-year) period. In addition, changes (or other upgrades) to the road network within the short-medium term (notably construction of the Lower Thames Crossing) may render future use of the causeway and its associated effects unnecessary. We suggest that it will be appropriate for the DCO to build in formal ‘Requirements’ with agreed trigger points which are linked to the de-commissioning of the

causeway and / or its retention if this can be appropriately justified and evidenced within the initial 5-year period. We would like to explore this option with you before raising more formally through the examination process. Thank you for considering this matter further in our recent meeting (5th October).

Furthermore, whilst the causeway construction may lead to saltmarsh creation (although see our Relevant Representation for uncertainties in this regard), the birds are more likely to be deriving value from the mudflat than the saltmarsh (assuming the marsh is ungrazed) and therefore the mudflat is the prime consideration. Thus the 'trade-off' between mudflat and saltmarsh is not equitable from an ecological point of view in this context.

In addition with sea level rise the surface is likely to become inundated by sediment in due course and with the shipping channel on the seaward side of the causeway and more saltmarsh adjacent to the land on the inner side of the causeway, the mudflat is likely to become steeper in gradient and reduced in surface area resulting in reduced value to species, like avocet, that wade and feed in the shallows.

Similarly, working on the proposed assumption that the causeway may be present for no longer than 5 years, we would like to see the likely effects of de-commission phase more thoroughly understood as the general assumption has been that this phase would be re-assessed in the future, post end of life of the plant. The end of life and dismantling/disassembly of the engines requires further consideration as there may be other options available to transport the whole Abnormal Indivisible Loads (AILs) away using the same methods they arrived (i.e. via improved road network).

The creation of intertidal habitat is developed further in 'Outline Saltmarsh Enhancement & Maintenance Plan'. However we note mud may be removed through dredging and expect that this is very likely to be contaminated. Therefore suitable assessment and adequate pollution containment will be required, both of which have implications for the methodologies chosen for the works and the subsequent use of the materials dredged.

In addition, the removal of mud will have likely effects on local hydrodynamics/sediment regime and adjoining intertidal habitats and supported features need to be understood. As mentioned above we wish to see hydrodynamic modelling and sediment regime information that set out what the changes will mean for the habitats and the birds etc. We note that some of this information has been submitted, and we are giving further consideration to this assessment.

Accessibly of the causeway under Coastal Access – Once the Tilbury to Southend on Sea stretch of the England Coast Path is opened, Coastal Access rights will apply to all land (that is not within excepted land categories) and the causeway will become accessible. Our strong steer is that the causeway should not become accessible to the public and therefore suitable 'informal' management (fencing etc.) or other 'formal' (legal Direction), as described in Coastal Access Approved Scheme, to exclude public access on the causeway at all times and to ensure that it does not develop a secondary purpose (such as leisure or recreation). Therefore management methods should be guaranteed for the lifetime of the causeway. Please note that proposals for exclusion of non-project users will need to be submitted as part of the DCO so that they can be secure in an appropriately enforceable way.

Further information on the management and restriction of Coastal Access Rights can be found in chapter 6 of the Coastal Access Approved Scheme.

<http://publications.naturalengland.org.uk/publication/5327964912746496>

2. Impact of the development on Over Wintering Birds

As highlighted in our Relevant Representation Natural England believes that the proposed causeway is situated on foreshore habitats that should be regarded as functionally linked land to the Thames Estuary and Marshes SPA. We have provided a more detailed analysis of the data submitted and its significance to the SPA below.

Bird survey methodology –

We have undertaken a more detailed assessment based upon the bird survey data collected by your team. Please note that we have not assessed ES vol. 6 Appendix 9.1 Ecological Desk Study & Surveys, but will follow up with further comments in due course. There are limitations to the survey methodology, notably only one non-breeding period (Sep 2019 – March 2020) was surveyed, which limits the capacity to make judgments about the survey count data. We advise that a consideration of the Peak over a 5 year period

and the Mean of Peak counts for individual species would enable an appropriate consideration of the peaks and natural fluctuations in species populations. For example, the value of inner Thames Estuary areas is the more sheltered intertidal habitats it provides to non-breeding birds during severe weather winters and the survey period of September 2019 – March 2020 was an exceptionally mild winter. Ensuring that an adequate extent and quality of suitable conditions exists during the harshest periods is an important role for the SPA to achieve and maintain favourable conservation status, so understanding the actual 'value' of localities supporting this habitat is very important within EIA/HRA to enable robust sustainable development solutions to be achieved. The limited submitted bird survey data therefore requires a suitably precautionary approach when assessing and drawing conclusions, and it is within this context that we advise from the survey data submitted (Table 3.1).

Avocet – peak count (Sep – March) is 44 (49 if Area 2 added) – SPA feature 100% favourable conservation status threshold is 283 and 50% SSSI favourable condition threshold is 142, so the peak survey count in Area 1 alone accounts for over 15% of the entire (Essex & Kent) SPA 100% favourable conservation status threshold and over 30% of the 50% SSSI favourable condition threshold. This is highly significant from a SPA perspective.

Ringed Plover – peak count (Sep – March) is 23 (48 if Area 2 added) – SPA feature (Essex side) 100% favourable conservation status threshold is 133 and 50% SSSI favourable condition threshold is 67, so the peak survey count in Area 1 alone accounts for over 17.3% of the SPA 100% favourable conservation status threshold and nearly 35% of the 50% SSSI favourable condition threshold. The potential effect on the Essex SPA population is highly significant from a SPA perspective. If one considers the effect on the full SPA populations covering both Essex & Kent areas the 100% favourable conservation status threshold is 1,324 so the peak survey count for Area 1 alone is 1.74% of this figure and for Area 1 & 2 is 3.6%, which is also significant from an entire (Essex & Kent) SPA perspective. This is significant from a SPA perspective so the effect on this local aggregation should be considered and counts should be considered in light of any other survey information available for reference, before screening out likely significant effects.

Dunlin – peak count (Sep – March) is 124 (165 if Area 2 added) – SPA feature (Essex side) 100% threshold is 6,333 and 50% threshold is 3,167, so the peak survey count in Area 1 & 2 accounts for 2.6% of the 100% SPA favourable condition threshold and over 5% of the 50% SSSI favourable condition threshold. The potential effect on the Essex SPA population is significant from a SPA perspective however, if one considers the effect on the full SPA populations covering both Essex & Kent areas the 100% favourable conservation status threshold is 29,646 so the peak survey count for Area 1 & 2 is less than 0.6% of this figure, which is not significant from an entire (Essex & Kent) SPA perspective. In this situation, the effect on this local Essex aggregation should be considered in an SPA context, and counts should be considered in light of any other survey information available for reference, before screening out likely significant effects.

Redshank – peak count (Sep – March) is 3 (7 if Area 2 added) - SPA feature (Essex side) 100% threshold is 273 and 50% threshold is 137, so the peak survey count in Area 1 & 2 accounts for over 2.5% of the 100% SPA favourable condition threshold and over 5% of the 50% SSSI favourable condition threshold. The potential effect on the Essex SPA population is significant from a SPA perspective however, if one considers the effect on the full SPA populations covering both Essex & Kent areas the 100% favourable conservation status threshold is 3,251 so the peak survey count for Area 1 & 2 is 0.2% of this figure, which is not significant from an entire (Essex & Kent) SPA perspective. In this situation, the effect on the local Essex aggregation should be considered in an SPA context, and counts should be considered in light of any other survey information available for reference, before screening out likely significant effects.

The Bird report does not clarify what the birds are using the site for (e.g. low tide feeding, high tide roosting etc.) or the relationship of that activity to the tidal state. The peak counts suggest that the site is being used in both high tide (e.g. 26 Nov & 12 Dec) and low tides (3 Dec & 16 Mar). Given that some counts come and go it could be a key site at particular points of tidal cycle or just a transient site in the wider landscape (see previous points about four key species, above).

We advise that you consider the tidal nature of the site and the limitations that would provide during the months when birds are using the functionally linked land.

We note that some further analysis has been presented at our recent meeting (25th September), and we are waiting on some further commentary from you about the 'bird days' method and will comment on this in due course.

We note that some additional earlier bird survey data is referenced within the Environmental Statement, linked to the Tilbury2 NSIP. Natural England expressed concerns about the environmental context of those surveys, and whether the data was representative of baseline conditions (i.e. the surveys may have under-represented bird use of the area for various reasons).

Impact pathways - The degree of concern linked to noise and lighting impact pathways requires further consideration for the scenarios that were scoped out when the original intention was to avoid construction in the winter months (i.e. that construction may take place in the winter months overlapping with the presence of overwintering birds, including avocet).

The intention to avoid construction during the winter months led to a number of impacts being scoped out but since the construction period may now take place during those months appropriate consideration should be made of those impacts arising from the construction activities. The HRA should therefore be revised to include this assessment.

We acknowledge that a 500m impact zone has been examined recently for noise impacts and add that lighting at night may also be an issue (this may be helpfully secured as a Requirement of the DCO). Instantaneous sound levels above 70db are an issue, while above 50db (instantaneous) will elicit responses and any increase over 3db (average over time) warrants investigation (3db is the minimum change in background noise that we can reliably detect, and we advise this is used as the threshold for likely significant effects). The attached report may be of use.



**A Review of the
Effects of NoL**

The best possible screening methods should be employed however, as mentioned above, there may not be an entirely effective mitigation package that can be against the varying degrees of impacts through winter months. We therefore advise that avoidance would be the best solution – using in low disturbance approaches through the use of daylight working, minimal noise levels from large plant avoiding the winter months. The effects of the impacts in the early winter months – September and November should be considered in addition to the latter months when avocets have been recorded to ensure impacts on all species have been thoroughly investigated.

Our preference is to and use the avoidance principle and avoid construction during the sensitive period.

In combination Issues The applicant has reviewed the following for in-combination effects

- Lower Thames Crossing NSIP
- Tilbury2 NSIP
- Goshem's Farm jetty (current use)
- Short Term Operation Reserve (STOR) electricity generating station
- Demolition of Tilbury B power station and remaining structures associated with Tilbury A

The following should also be included in this assessment, as there may be additional disturbance effects to functionally linked land in the area of the Tilbury Fort.

- London Resort (Essex side) NSIP

There are a number of plans/projects in this locality which may act in combination to impact on the SPA bird features. The likely significance of effects at HRA screening and the scale of impacts for an appropriate assessment needs to consider this in adequate detail.

Monitoring

Consistent with the approach taken by other development in the area, we advise that bird monitoring is built into the construction phase of the project. This should ideally align with the approach taken by other projects, and should seek to identify when significant aggregations of birds are present during especially severe weather conditions, so as to provide trigger points for works to pause temporarily. It should also seek to monitor the effects of the project on target species throughout the construction period, to better understand the displacement effects of the construction of the causeway. We will be happy to discuss this further with you in due course.

3. Marine Environment

Deemed Marine Licence – This will be progressed as part of the DCO and Natural England will respond via the MMO consultation.

Dredging - It is not clear how long the maintenance dredging will continue in the marine ES. It says '4.1.18 *The rates of accumulation indicate that maintenance dredging of the vessel grounding pocket is likely to be 2,000 – 6,000 m³/yr.*' however it also says 'The habitat loss/disturbance related to dredging activities and impact on marine ecology receptors is temporary and reversible, being limited to the construction phase only, with sediments expected to infill the vessel grounding pocket within months to a few years following the construction phase (see paragraph 4.1.18).' If the maintenance dredging is continuing beyond the construction period, then we would not agree that it is temporary habitat loss as maintenance dredging would stop any natural processes that would result in the area being infilled.

Natural England prefers dredging to be carried out using Water Injection Dredging (WID) in order to keep the sediment within the system and would not consider this a worst case scenario unless the sediment is too contaminated. We recommend that WID is carried out only on an ebb tide.

Zone of Influence from Sediment Plume - Natural England would like to see the Zone of Influence (ZOI) for the sediment plume created by the proposed works mapped for a full range of tidal conditions before we can consider the ES to be complete. We would like to see evidence that the plume will not settle in the MCZ and effect potential sites for Tentacled Lagoon Worm outside the MCZ.

Swanscombe MCZ – Further assessment of the anticipated impact the works are likely to have on Swanscombe MCZ are needed. Although there may be no impact it should be appropriately screened out if that is the case in the Marine ES.

Tentacled Lagoon Worm (TLW) - Tentacled lagoon worm is a schedule 5 species. Therefore the proposal will need to show that taken all reasonable precautions have been taken to avoid harming the species. If it was found during the dredge and the documents do not show that surveys have found that they are not in the area then this may constitute an offence. Further details of the species protected through this legislation can be found here: <https://www.gov.uk/government/publications/protected-marine-species>

There is no mention of TLW within Chapter 6.6 - Appendix 17.1 - Phase 1 Intertidal Survey Report and Benthic Ecology Desktop Review. Wide ranging ecological surveys do not usually pick up their presence and so species specific survey data will be needed to show that the applicant has taken all reasonable precautions. The suitability of the environment i.e. salinity and substrate testing as well as historic recording could be used to show the absence of the species within the works area.

Due to the lack of Conservation Advice package for Swanscombe MCZ, the Medway Conservation Advice package that also has TLW as a feature can be used to assess the impacts of dredging on the species.

A review of the sediment data for the Swanscombe MCZ shows that the worm can live on this coarser habitat and it is likely that the worm (being only several millimetres in length) can exist in pockets of mud within or on top of a coarser sediment which traditional sediment cores or grab samples will not pick up in analysis. Therefore, the assessment that the sediment is suboptimal could be questioned. However, when considering the invertebrate data gathered from across the Thames Estuary, TLW have not been found downriver of Gravesend. This is the most compelling evidence to support the assessment that TLW will not be present at the project site and that they will not be found within the main channel below Gravesend unless there are localised conditions where there is reduced salinity water entering via a creek or channel that could provide refuge for this species. This would likely be within a creek or saline pond environment, neither of which habitat type is at risk from the dredge.

Visual Disturbance to Seals - Underwater noise disturbance from dredging works have been assessed for mobile marine receptors however we would like to see an assessment of visual disturbance to seals, especially at haul out sites from the construction works in general.

The ZSL Thames marine mammal survey website would suggest that there are seals found in this area.

4. Common Land

S16 Commons deregistration and exchange and DCO relationship

We have raised a query with the Planning Inspectorate as whether to the S16 Commons deregistration and exchange should proceed separately from, or be incorporated into the DCO. Whilst we have not had an answer yet, Andrew Troup explained that he has already made enquiries and due to the complex steps relating to land ownerships, freeholds and leases it makes better sense for the two to progress separately. Please note that Natural England will shortly issue its formal s16 response letter, which we will be happy to discuss further with you in due course.

5. Water Voles

Letter Of No Impediment – further information is required to provide certainty that there will be a net gain for Water Voles, through the provision of suitable reception sites, and relocation of any water voles if required, prior to works commencement to ensure that not water vole are taken into captivity, before a LONI would be issued.

Ditches - we understand that the intention is for the ditches that may support water voles to be filled in, but since ditches cannot be dug on the new common land (since there is at least a year before the examination starts) other options may be needed such as creating new ditches on other sites as a temporary measure. There may be some value in exploring the approaches used for the ditches created for the Tilbury 2 site.

If further advice is required Sonya Gray, protected species specialist maybe able to provide further advice if needed.

6. Invertebrates

As you will be aware, the Tilbury area is a node for nationally important invertebrate assemblages and Natural England has commenced an exercise to review this interest across the Thames Gateway. Whilst we note that the development site is not thought to hold significant terrestrial invertebrate interest, it presents an opportunity to contribute additional high quality habitats and we welcome the comments presented on this in the submission.

In particular we note the 'F' zones – in particular what looks to be F4 – is in a strategically important location, and habitat creation here is to be welcomed in particular (although the current focus is on reptiles). Natural England would like to engage further in its design, management and monitoring. In particular, we would like to understand how DCO Requirements could help secure further steps in the design and implementation of these habitat creation area.

7. Statement of Common Ground (SoCG)

Thank you for providing a first draft Statement of Common Ground. Natural England will be pleased to work with you on this document in due course.

Yours sincerely

Jonathan Bustard
Casework Manager

Responses to Natural England DAS letter

Date: 23 November 2020
 To: Jonathan Bustard, Natural England
 From: RPS
 Pages: 11 inc. this page
 Regarding: Thurrock Flexible Generation Plant

Thurrock Flexible Generation Plant – responses to Natural England DAS letter dated 21/10/20, Natural England reference 321560 / 12766

The table below provides the Applicant's responses to various points raised by Natural England in the Discretionary Advice Service (DAS) letter dated 21/10/20. In addition to the responses, information is also provided on where in existing or updated documents these issues are covered.

Subject		Number	Comment in NE DAS 21/10/20 ref 321560 / 12766	TFGP response	Where addressed
Causeway impacts	Construction activities disturbance effect on birds and the marine environment	1a	we have previously suggested that you assess the impacts that might occur in the different seasons to identify a sequential approach to impact assessment and mitigation, by identifying preferred and worst-case timings and the most appropriate measures to take in each scenario.	The assessment of causeway construction impacts if it overlaps with the Sept– March period has been undertaken for twelve scenarios (assuming construction commences in a different month each time) and therefore presents the sequential approach as requested.	HRA Section 6.4
		1b	We would appreciate a programme indicating what is involved (e.g. particularly when noisy activities are scheduled; in-river activities; pollution containment details etc.).	Further detail of the causeway construction programme, beyond the sequence of works set out in the Project Description, cannot be provided at this stage before a contractor has been appointed. Good practice environmental management measures for the construction phase of the development are set out in the Outline Code of Construction Practice. This requires that specific construction method statements are provided in due course for each aspect of works, and the final Code of Construction Practice will be subject to approval before discharging DCO Requirement 5. One specific aspect of Requirement 5 is to provide a pollution incident control plan.	APP-142 (A8.6 Outline Code of Construction Practice) DCO Schedule 2, Requirement 5(2)(b)(ii)
		1c	Please note that Ringed Plovers and Avocets can be numerous within the August/September/October passage period (but possibly as early as July) and high impact during this period can reduce usage for a period of weeks/months afterwards particularly if other operational activity is occurring in the vicinity. Similarly, operational phase disturbance should be minimised by avoiding the winter months. In our opinion, there is unlikely to be an entirely effective mitigation package that can be used against the varying degrees of impacts through the winter months, so avoidance is by far the best solution if at all possible. Within any sensitive period however, we would expect to see more details regarding the mitigation measures that will be deployed such as – using low disturbance approaches through the use of daylight working (i.e. no artificial lighting), and minimal noise levels from large plant and adherence to freezing weather restrictions during the core winter months (please refer to BASC / JNCC guidance on this). In this context, the sensitive period should be regarded	We have assessed impacts based on surveys undertaken between September - March. The assessment that we are presenting is based on survey data collected between September and March. The potential project programme is unable to commit to complete avoidance of construction or use of the causeway between July – March. Construction of the causeway will take six months, and therefore there is no possible start date that avoids the 9 month July-March period. The construction and use of the causeway has been assessed in the updated HRAR, and our conclusion is that there would be no significant effect on integrity of the Thames Estuary and Marshes SPA from the use of the causeway. Commitments to measures to minimise impacts if construction and use of the causeway overlaps with the Sept - March period are included in the HRAR. A Bird Monitoring Plan would be produced prior to	HRA Sections 6.4-6.5

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		as spanning August / September – March (to cover the autumn passage (but possibly as early as July) and over-wintering season). (Details may be checked here). See below for further details. For this reason, it is important that bird monitoring is included throughout the construction phase.	commencement, setting out details of surveys to be undertaken prior to and during construction, and a DCO Requirement is being drafted to this affect.	
	1d	In our opinion, there is unlikely to be an entirely effective mitigation package that can be used against the varying degrees of impacts through the winter months, so avoidance is by far the best solution if at all possible. Within any sensitive period however, we would expect to see more details regarding the mitigation measures that will be deployed such as – using low disturbance approaches through the use of daylight working (i.e. no artificial lighting), and minimal noise levels from large plant and adherence to freezing weather restrictions during the core winter months	We have assessed impacts based on surveys undertaken between September - March. The assessment that we are presenting is based on survey data collected between September and March. The potential project programme is unable to commit to complete avoidance of construction or use of the causeway between July – March. Construction of the causeway will take six months, and therefore there is no possible start date that avoids the 9 month July-March period. The construction and use of the causeway has been assessed in the updated HRAR, and our conclusion is that there would be no significant effect on integrity of the Thames Estuary and Marshes SPA from the use of the causeway. Commitments to measures to minimise impacts if construction and use of the causeway overlaps with the Sept - March period are included in the HRAR. A Bird Monitoring Plan would be produced prior to commencement, setting out details of surveys to be undertaken prior to and during construction.	HRA Sections 6.4-6.5
	1e	In this context, the sensitive period should be regarded as spanning August / September – March (to cover the autumn passage (but possibly as early as July) and over-wintering season). See below for further details. For this reason, it is important that bird monitoring is included throughout the construction phase.	As noted above, a construction period of six months means that it is not possible to time construction to avoid the entirety of the July - March period. A Bird Monitoring Plan would be produced prior to commencement, setting out details of surveys to be undertaken prior to and during construction.	BMP to be produced prior to commencement. A DCO Requirement to this effect is being drafted.
Permanent nature of the causeway	1f	Overall Natural England is concerned that the causeway structure as presented in the submission reports introduces a level of activity within the foreshore that can be expected to cause prolonged disturbance and establish the principle of river-side access for the foreseeable future. We have consistently advised major development projects in this area that this is undesirable from an SPA perspective, noting that the area of foreshore broadly between Tilbury and Coalhouse Forts is functionally linked land to the nearby SPA. Proposals that introduce access and associated disturbance activities are likely to compromise this function to some degree without necessary controls. ... There are a number of factors that may lead us to conclude that a temporary causeway, permitted for a short length of time would be more appropriate. With this in mind, we would like to propose that a revised proposal for a temporary causeway of 5 years duration would be more likely to receive a favourable response	It is important to be clear that the causeway does not establish a principle of further river access or any activity not authorised through the DCO, which does not propose any long-term use of the causeway by the Applicant or any third parties other than for possible and limited use to transport AIL(s) to the flexible generation plant should that be needed at some point in its operating lifetime. The Applicant has now committed to decommissioning the causeway at the end of the project lifetime (35 years), or sooner if an alternative road option for delivery of AILs to the FGP becomes available. A draft DCO requirement to this effect has been circulated for comment.	ES Addendum on causeway decommissioning Updated ES Chapter 17: Marine Environment Draft DCO Requirement on decommissioning the causeway

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		<p>from Natural England. We suggest that any future use beyond this period could be achieved via a re-application to extend the life of the structure when more detailed information is available regarding its future use for the project's purposes. These points were raised in our recent meetings on 25th September and 5th October.</p> <p>From our recent discussions, it is not clear to Natural England what may be the triggers which would require future use of the causeway after initial construction. You have mentioned the possibility of engine upgrades and / or repair, which may be linked to (as yet unknown) climate change targets requiring conversion or replacement with 100% hydrogen engines (and whether or not upgrades could be achieved in-situ). In our view, there is not yet sufficient certainty to justify the retention of the causeway for longer than a temporary (i.e. 5-year) period. In addition, changes (or other upgrades) to the road network within the short-medium term (notably construction of the Lower Thames Crossing) may render future use of the causeway and its associated effects unnecessary. We suggest that it will be appropriate for the DCO to build in formal 'Requirements' with agreed trigger points which are linked to the de-commissioning of the causeway and / or its retention if this can be appropriately justified and evidenced within the initial 5-year period. We would like to explore this option with you before raising more formally through the examination process. Thank you for considering this matter further in our recent meeting (5th October).</p>		
	1g	<p>Furthermore, whilst the causeway construction may lead to saltmarsh creation (although see our Relevant Representation for uncertainties in this regard), the birds are more likely to be deriving value from the mudflat than the saltmarsh (assuming the marsh is ungrazed) and therefore the mudflat is the prime consideration. Thus the 'trade-off' between mudflat and saltmarsh is not equitable from an ecological point of view in this context.</p>	<p>We acknowledge the trade-off point and the saltmarsh creation is proposed to be withdrawn. A consultation letter and updated application and ES documents associated with this change have been circulated on 16/11/20</p>	<p>Documents circulated for comment on 16/11/20</p>
	1h	<p>In addition with sea level rise the surface is likely to become inundated by sediment in due course and with the shipping channel on the seaward side of the causeway and more saltmarsh adjacent to the land on the inner side of the causeway, the mudflat is likely to become steeper in gradient and reduced in surface area resulting in reduced value to species, like avocet, that wade and feed in the shallows.</p>	<p>Effects on sediment transport processes during the lifetime of the project have been assessed in section 4.1.14 of Chapter 17: Marine Environment, with consequent changes on intertidal habitats (e.g. alterations in boundaries between mudflat and saltmarsh) considered in section 4.2.1 (for the operational phase) and 4.3.1 (following decommissioning). This will include changes to the intertidal mudflat in the lee of the causeway (e.g. accumulation of sediment) with consequent changes to the relative distribution of intertidal habitats. However, following decommissioning of the causeway, it is expected that a new equilibrium between these habitats will be reached, with a neutral effect in the long term.</p>	<p>Sections 4.1.14, 4.2.1 and 4.3.1 of Chapter 17: Marine Environment</p>

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Accessibility of the causeway under Coastal Access		1i	Similarly, working on the proposed assumption that the causeway may be present for no longer than 5 years, we would like to see the likely effects of de-commission phase more thoroughly understood as the general assumption has been that this phase would be re-assessed in the future, post end of life of the plant. The end of life and dismantling/disassembly of the engines requires further consideration as there may be other options available to transport the whole Abnormal Indivisible Loads (AILs) away using the same methods they arrived (i.e. via improved road network).	The Applicant has now committed to decommissioning the causeway at the end of the project lifetime (35 years), or sooner if an alternative road option for delivery of AILs to the FGP becomes available. The effects of the decommissioning work for the causeway have been assessed.	ES Addendum on causeway decommissioning Updated ES Chapter 17: Marine Environment Draft DCO Requirement on decommissioning the causeway Documents circulated for comment on 16/11/20
		1k	In addition, the removal of mud will have likely effects on local hydrodynamics/sediment regime and adjoining intertidal habitats and supported features need to be understood. As mentioned above we wish to see hydrodynamic modelling and sediment regime information that set out what the changes will mean for the habitats and the birds etc. We note that some of this information has been submitted, and we are giving further consideration to this assessment.	Noted	
		1m	Once the Tilbury to Southend on Sea stretch of the England Coast Path is opened, Coastal Access rights will apply to all land (that is not within excepted land categories) and the causeway will become accessible. Our strong steer is that the causeway should not become accessible to the public and therefore suitable 'informal' management (fencing etc.) or other 'formal' (legal Direction), as described in Coastal Access Approved Scheme, to exclude public access on the causeway at all times and to ensure that it does not develop a secondary purpose (such as leisure or recreation). Therefore management methods should be guaranteed for the lifetime of the causeway. Please note that proposals for exclusion of non-project users will need to be submitted as part of the DCO so that they can be secure in an appropriately enforceable way.	The causeway will be privately owned by the Applicant and will not be legally accessible to members of the public notwithstanding any coast path changes. We agree that the causeway should be fenced and unauthorised access should be prevented. A document detailing this has been circulated on 05/11/20 for comment.	Causeway public access restrictions document, circulated on 05/11/20
		1n	We have undertaken a more detailed assessment based upon the bird survey data collected by your team. Please note that we have not assessed ES vol. 6 Appendix 9.1 Ecological Desk Study & Surveys, but will follow up with further comments in due course. There are limitations to the survey methodology, notably only one non-breeding period (Sep 2019 – March 2020) was surveyed,	ES vol 6 Appendix 9.1 includes a review of previous winter bird surveys, and surveys carried out for RWE are included in ES Vol 6 Appendix 9.2. Table 6.2 of the HRAR summarises these surveys and the surveys undertaken for the TFGP in 2019-20. There are four surveys covered in this table: 2016-17 and 2017-18 (Tilbury2), 2017-18 (RWE) and 2019-20 (TFGP). Table 6.2	ES Vol 6 Appendix 9.1 ES Vol 6 Appendix 9.2 ES Vol 6 Appendix

Responses to Natural England DAS letter

Date: 23 November 2020
 Regarding: Thurrock Flexible Generation Plant

Subject		Number	Comment in NE DAS 21/10/20 ref 321560 / 12766	TFGP response	Where addressed
			<p>which limits the capacity to make judgments about the survey count data. We advise that a consideration of the Peak over a 5 year period and the Mean of Peak counts for individual species would enable an appropriate consideration of the peaks and natural fluctuations in species populations.</p> <p>For example, the value of inner Thames Estuary areas is the more sheltered intertidal habitats it provides to non-breeding birds during severe weather winters and the survey period of September 2019 – March 2020 was an exceptionally mild winter. Ensuring that an adequate extent and quality of suitable conditions exists during the harshest periods is an important role for the SPA to achieve and maintain favourable conservation status, so understanding the actual 'value' of localities supporting this habitat is very important within EIA/HRA to enable robust sustainable development solutions to be achieved. The limited submitted bird survey data therefore requires a suitably precautionary approach when assessing and drawing conclusions, and it is within this context that we advise from the survey data submitted (Table 3.1).</p>	<p>indicates that higher peak counts of Avocet, Dunlin and Ringed Plover were obtained during the 2019-20 survey than in previous years, and the Applicant has assessed the potential impacts of the causeway using these higher numbers. Therefore the assessment is considered to be suitably robust and precautionary in terms of assessing the potential impacts of causeway construction and use.</p> <p>The 2019-20 winter was the fifth warmest on record but it should be noted that the winters of 2006-07, 2013-14, 2015-16, 2016-17 and 2018-19 were all in the top 10 warmest winters in the UK (Met Office) and therefore the 2019-20 winter survey period is not considered to be a significant outlier given that the climate trend is clearly towards wetter and milder winters, and this trend is expected to continue.</p>	9.4 HRAR Table 6.2
Impact of the development on Over Wintering Birds	Bird survey methodology	2a	<p>Avocet – peak count (Sep – March) is 44 (49 if Area 2 added) – SPA feature 100% favourable conservation status threshold is 283 and 50% SSSI favourable condition threshold is 142, so the peak survey count in Area 1 alone accounts for over 15% of the entire (Essex & Kent) SPA 100% favourable conservation status threshold and over 30% of the 50% SSSI favourable condition threshold. This is highly significant from a SPA perspective.</p> <p>Ringed Plover – peak count (Sep – March) is 23 (48 if Area 2 added) – SPA feature (Essex side) 100% favourable conservation status threshold is 133 and 50% SSSI favourable condition threshold is 67, so the peak survey count in Area 1 alone accounts for over 17.3% of the SPA 100% favourable conservation status threshold and nearly 35% of the 50% SSSI favourable condition threshold. The potential effect on the Essex SPA population is highly significant from a SPA perspective. If one considers the effect on the full SPA populations covering both Essex & Kent areas the 100% favourable conservation status threshold is 1,324 so the peak survey count for Area 1 alone is 1.74% of this figure and for Area1 & 2 is 3.6%, which is also significant from an entire (Essex & Kent) SPA perspective. This is significant from a SPA perspective so the effect on this local aggregation should be considered and counts should be considered in light of any other survey information available for reference, before screening out likely significant effects.</p> <p>Dunlin – peak count (Sep – March) is 124 (165 if Area 2 added) – SPA feature (Essex side) 100% threshold is 6,333 and 50% threshold is 3,167, so the peak survey count in Area 1 & 2 accounts for 2.6% of the 100% SPA favourable condition</p>	<p>The applicant disputes the validity of splitting the SPA designation threshold into the Essex side and the Kent side, which is implied by the mentions of Essex side FCS thresholds for Redshank, Ringed Plover and Dunlin.</p> <p>As set out in the definitions of European sites, it is the SPA which requires to be assessed as it is that designation which is the 'European site' under the habitat regulations, it is not open to the applicant or Natural England to sub-divide that designation up and treat sections of it differently under those regulations. It is considered that to do so would not only depart from the regulations, but would introduce uncertainty and unnecessary subjectivity into the assessment. The extent of the SPA has been set through the classification and designation process which required its own evidence base, consultation and consideration under the statutory framework. TPL must work with that designation as made. If Natural England considers that this particular SPA should be re-classified as two sites that is a position which should be addressed through the designation review process. Such an approach cannot be imposed on developers in the DCO process as it would be contrary to the regulations which requires consideration of the conservation objectives of the whole SPA as designated</p> <p>The updated HRAR has, on a precautionary basis, assumed LSE for Avocet, Dunlin, Redshank and Ringed Plover, and assessed the impacts of causeway construction and use on these species</p>	HRA Section 6.4

Responses to Natural England DAS letter

Date: 23 November 2020
 Regarding: Thurrock Flexible Generation Plant

Subject	Number	Comment in NE DAS 21/10/20 ref 321560 / 12766	TFGP response	Where addressed
		<p>threshold and over 5% of the 50% SSSI favourable condition threshold. The potential effect on the Essex SPA population is significant from a SPA perspective however, if one considers the effect on the full SPA populations covering both Essex & Kent areas the 100% favourable conservation status threshold is 29,646 so the peak survey count for Area 1 & 2 is less than 0.6% of this figure, which is not significant from an entire (Essex & Kent) SPA perspective. In this situation, the effect on this local Essex aggregation should be considered in an SPA context, and counts should be considered in light of any other survey information available for reference, before screening out likely significant effects.</p> <p>Redshank – peak count (Sep – March) is 3 (7 if Area 2 added) - SPA feature (Essex side) 100% threshold is 273 and 50% threshold is 137, so the peak survey count in Area 1 & 2 accounts for over 2.5% of the 100% SPA favourable condition threshold and over 5% of the 50% SSSI favourable condition threshold. The potential effect on the Essex SPA population is significant from a SPA perspective however, if one considers the effect on the full SPA populations covering both Essex & Kent areas the 100% favourable conservation status threshold is 3,251 so the peak survey count for Area 1& 2 is 0.2% of this figure, which is not significant from an entire (Essex & Kent) SPA perspective. In this situation, the effect on the local Essex aggregation should be considered in an SPA context, and counts should be considered in light of any other survey information available for reference, before screening out likely significant effects.</p>	<p>with respect to the conservation objectives of the Thames Estuary and Marshes SPA.</p>	
Impact pathways -	2b	<p>We note that some further analysis has been presented at our recent meeting (25th September), and we are waiting on some further commentary from you about the 'bird days' method and will comment on this in due course.</p>	<p>This is now presented in the updated HRAR.</p>	<p>HRA Sections 6.4-6.5</p>
	2c	<p>The degree of concern linked to noise and lighting impact pathways requires further consideration for the scenarios that were scoped out when the original intention was to avoid construction in the winter months (i.e. that construction may take place in the winter months overlapping with the presence of overwintering birds, including avocet).</p> <p>The intention to avoid construction during the winter months led to a number of impacts being scoped out but since the construction period may now take place during those months appropriate consideration should be made of those impacts arising from the construction activities. The HRA should therefore be revised to include this assessment.</p> <p>We acknowledge that a 500m impact zone has been examined recently for noise impacts and add that lighting at night may also be an issue (this may be helpfully secured as a Requirement of the DCO). Instantaneous sound levels above 70db are an issue, while above 50db (instantaneous) will elicit responses and any</p>	<p>Night working on the causeway will not be undertaken. The assessment of causeway construction is included in the amended HRAR. With regards to noise levels, an assessment of construction noise is included in the amended HRAR. A threshold of +3dB is not an appropriate level to assume LSE. Firstly, it is known that the auditory threshold for birds is lower than that for humans (Dooling & Popper, 2016) – humans hear sound at twice the distance that birds would hear the same sound. Secondly, a change of +3 dB or less above background noise levels during construction is defined by detectability, rather than potential impact. Thresholds for assessing potential noise impacts from piling are presented in the HRAR (Table 5.2). Potential impact zones for the four species for which LSEs were assessed were derived with reference to the Waterbird Disturbance Mitigation Toolkit for Dunlin, Redshank</p>	<p>HRAR Table 5.2 HRAR Sections 6.4.5-6.4.10</p>

Responses to Natural England DAS letter

Date: 23 November 2020
 Regarding: Thurrock Flexible Generation Plant

Subject		Number	Comment in NE DAS 21/10/20 ref 321560 / 12766	TFGP response	Where addressed
			increase over 3db (average over time) wants investigation (3db is the minimum change in background noise that we can reliably detect, and we advise this is used as the threshold for likely significant effects).	and Ringed Plover, and with reference to the predicted noise levels associated with causeway construction, and this is set out in the HRAR. Threshold potential disturbance zone for Avocet was considered to the works area + 500m in the absence of guidance on this species in the WBMT. It is considered that the assessment thresholds in the HRAR are sufficient to assess potential impacts of noise and visual disturbance on the four species for which an LSE was identified.	
	In combination Issues	2d	The following should also be included in this assessment, as there may be additional disturbance effects to functionally linked land in the area of the Tilbury Fort. - London Resort (Essex side) NSIP	The London Resort application has not been submitted and its PEIR does not provide sufficient information to further assess cumulative impacts. Any significant cumulative effect would be expected to be assessed and mitigated by the London Resort in due course if it does submit a DCO application.	
		2e	Consistent with the approach taken by other development in the area, we advise that bird monitoring is built into the construction phase of the project. This should ideally align with the approach taken by other projects, and should seek to identify when significant aggregations of birds are present during especially severe weather conditions, so as to provide trigger points for works to pause temporarily. It should also seek to monitor the effects of the project on target species throughout the construction period, to better understand the displacement effects of the construction of the causeway. We will be happy to discuss this further with you in due course.	A Bird Monitoring Plan would be produced prior to commencement, and the Applicant welcomes the opportunity to consult on the content of this Plan.	BMP to be produced prior to commencement.
Marine Environment	Deemed Marine Licence	3a	This will be progressed as part of the DCO and Natural England will respond via the MMO consultation.	Noted	
	Dredging	3b	is not clear how long the maintenance dredging will continue in the marine ES. It says '4.1.18 The rates of accumulation indicate that maintenance dredging of the vessel grounding pocket is likely to be 2,000 – 6,000 m ³ /yr.' however it also says 'The habitat loss/disturbance related to dredging activities and impact on marine ecology receptors is temporary and reversible, being limited to the construction phase only, with sediments expected to infill the vessel grounding pocket within months to a few years following the construction phase (see paragraph 4.1.18).' If the maintenance dredging is continuing beyond the construction period, then we would not agree that it is temporary habitat loss as maintenance dredging would stop any natural processes that would result in the area being infilled. Natural England prefers dredging to be carried out using Water Injection Dredging (WID) in order to keep the sediment within the system and would not consider this a worst case scenario unless the sediment is too contaminated. We recommend that WID is carried out only on an ebb tide.	Maintenance dredging (effectively re-dredging) the barge pocket would only be required if the causeway were to be needed again during the operating life of the facility. Routine maintenance dredging to keep the barge pocket open is not proposed. Should it need to be re-used at some point during the operating lifetime, the impacts of dredging would be as assessed in the ES for the initial use. We agree that WID is the preferred technique for dredging in this location and have confirmed this as being the proposed approach in the updated documents circulated for comment on 16/11/20.	Documents circulated for comment on 16/11/20

Responses to Natural England DAS letter

Date: 23 November 2020
 Regarding: Thurrock Flexible Generation Plant

Subject		Number	Comment in NE DAS 21/10/20 ref 321560 / 12766	TFGP response	Where addressed
	Zone of Influence from Sediment Plume	3c	Natural England would like to see the Zone of Influence (ZOI) for the sediment plume created by the proposed works mapped for a full range of tidal conditions before we can consider the ES to be complete. We would like to see evidence that the plume will not settle in the MCZ and effect potential sites for Tentacled Lagoon Worm outside the MCZ.	<p>Full details of the plume dispersion assessment are set out in Section 5 of Appendix 17.2 of the Environmental Statement, with a summary of this provided in paragraph 4.1.40 of Chapter 17: Marine Environment of the Environmental Statement. While it is possible that sediment may move in the water column up to 20 km from the dredge site (see Figure 5.1 of Appendix 17.2 of the Environmental Statement), SSCs are unlikely to exceed 10mg/l beyond 1 km from the dredge location.</p> <p>Chapter 17: Marine Environment now includes specific reference to effects on tentacled lagoon worm, with a particular focus on the Swanscombe MCZ (MCZ screening is included in section 4.4 of this chapter)..</p>	<p>Appendix 17.2: plume dispersion assessment. Paragraph 4.1.40 of Chapter 17: Marine Environment: assessment of plume effects on marine ecology receptors. Section 4.4 of Chapter 17: Marine Environment: MCZ Screening</p>
	Swanscombe MCZ	3d	Further assessment of the anticipated impact the works are likely to have on Swanscombe MCZ are needed. Although there may be not impact it should be appropriately screened out if that is the case in the Main [sic] ES.	<p>Screening of potential impacts on the Swanscombe MCZ has been added to ES Chapter 17: Marine Environment, in the updated document circulated on 16/11/20.</p> <p>The Applicant notes the comments from the ExA in the letter of 02 November 2020 regarding the inclusion of the MCZ in the HRAR. The Applicant does not consider that this is necessary.</p> <p>The Conservation of Offshore Marine Habitats and Species Regulations 2017 Regulation 6 provides that “<i>any competent authority having functions relevant to marine conservation must exercise those functions so as to secure compliance with the requirements of the Habitats Directive and the Wild Birds Directive</i>”. The Habitats assessment information provided by the applicant is intended to assist the Secretary of State as the competent authority for the DCO determination decision in discharging that duty. The habitats information therefore considers only the designations relevant to the Habitats Directive and the Wild Birds Directive and does not assess other forms of designation as that is not the function or proper scope of such an assessment. The assessment of impacts on any receptors listed in other designations, including ecological designations, is set out in the Environmental Statement.</p> <p>The Conservation of Offshore Marine Habitats and Species Regulations 2017 and the Conservation of Habitats and Species Regulations 2017 both require that the impacts of project are assessed for European sites only, not any national, regional or local designation. Onshore, “European site” has the meaning given by regulation 8 of the Conservation of Habitats and Species Regulations 2017 and includes special areas of conservation (SACs); sites of Community importance listed under the Habitats Directive; special protection areas protected under the Wild Birds Directive (SPAs) and sites which have reached defined stages of</p>	<p>Chapter 17: Marine Environment</p>

Responses to Natural England DAS letter

Date: 23 November 2020
 Regarding: Thurrock Flexible Generation Plant

Subject	Number	Comment in NE DAS 21/10/20 ref 321560 / 12766	TFGP response	Where addressed
			<p>the relevant processes to be added to one of these categories. The Conservation of Offshore Marine Habitats and Species Regulations 2017 defines 'offshore European sites' in regulation 18 and 'European sites' in regulation 27 in the same terms as the onshore regulations, being SACs, sites of Community importance listed under the Habitats Directive, SPAs and those in the process to be so designated. MCZs are not included in any definition of European sites.</p> <p>It is UK government policy to include other internationally (not nationally) designated sites within the scope of European sites. As stated in PINS advice note 19 at paragraph 1.4 "As a matter of policy, the Government also applies the procedures described below to possible SACs (pSACs), potential SPAs (pSPAs), Ramsar sites and (in England) proposed Ramsar sites and sites identified, or required, as compensatory measures for adverse effects on any of the above sites". Ramsar sites are Wetlands of International Importance designated or proposed for their wetland features under the Convention of Wetlands of International Importance, and compensatory sites are those identified for Natura 2000 compensatory measures. Natura 2000 sites are a network of sites across the European Union identified as being important to ensuring the long-term survival of Europe's threatened species and habitats as listed under the Birds Directive and the Habitats Directive. Both Ramsar and Natura 2000 sites are therefore also international designations, and Natura 2000 designations link directly to the species and habitats protected by the Habitats and Wild Bird Directives.</p> <p>MCZs are classified under the Marine and Coastal Access Act 2009 by the UK Government. They are national, not international, designations and do not fall within the scope of the habitats regulations as they are not European sites. Had the Government intended these to be included within Habitats assessments it was open to it to amend the regulations to include MCZs or to give these European site status as has been done for Ramsar sites; the Government has not done so.</p>	
Tentacled Lagoon Worm	3e	<p>Tentacled lagoon worm is a schedule 5 species. Therefore the proposal will need to show that taken all reasonable precautions have been taken to avoid harming the species. If it was found during the dredge and the documents do not show that surveys have found that they are not in the area then tis may constitute an offence.</p> <p>There is no mention of TLW within Chapter 6.6 - Appendix 17.1 - Phase 1 Intertidal Survey Report and Benthic Ecology Desktop Review. Wide ranging ecological surveys do not usually pick up their presence and so species specific survey data will be needed to show that the applicant has taken all reasonable precaution.</p>	<p>As set out in response to Number 3e above, Chapter 17: Marine Environment has now been updated to include specific consideration of tentacled lagoon worm. This includes information from baseline surveys, including core and grab sampling from the area which showed no evidence of this species in this area. This appears to be in line with comments from Natural England on the low risk of this species occurring in this part of the Thames Estuary.</p> <p>Chapter 17: Marine Environment now also includes MCZ Screening, with specific consideration of tentacled lagoon worm</p>	<p>Section 3.1 of Chapter 17: Marine Environment (baseline updated to include tentacled lagoon worm) Section 4.4 of Chapter 17: Marine Environment: MCZ Screening</p>

Responses to Natural England DAS letter

Date: 23 November 2020
Regarding: Thurrock Flexible Generation Plant

Subject		Number	Comment in NE DAS 21/10/20 ref 321560 / 12766	TFGP response	Where addressed
			<p>The suitability of the environment i.e. salinity and substrate testing as well as historic recording could be used to show the absence of the species within the works area.</p> <p>Due to the lack of Conservation Advice package for Swanscombe MCZ, the Medway Conservation Advice package that also has TLW as a feature can be used to assess the impacts of dredging on the species.</p> <p>A review of the sediment data for the Swanscombe MCZ shows that the worm can live on this coarser habitat and it is likely that the worm (being only several millimetres in length) can exist in pockets of mud within or on top of a coarser sediment which traditional sediment cores or grab samples will not pick up in analysis. Therefore, the assessment that the sediment is suboptimal is could be questioned. However, when considering the invertebrate data gathered from across the Thames Estuary, TLW have not been found downriver of Gravesend. This is the most compelling evidence to support the assessment that TLW will not be present at the project site and that they will not be found within the main channel below Gravesend unless there are localised conditions where there is reduced salinity water entering via a creek or channel that could provide refuge for this species. This would likely be within a creek or saline pond environment, neither of which habitat type is at risk from the dredge.</p>	and effects of increases of suspended sediments and sediment deposition on this feature of the MCZ.	
	Visual Disturbance to Seals	3f	<p>Underwater noise disturbance from dredging works have been assessed for mobile marine receptors however we would like to see an assessment of visual disturbance to seals, especially at haul out sites from the construction works in general.</p> <p>The ZSL Thames marine mammal survey website would suggest that there are seals found in this area.</p>	<p>It is acknowledged in Chapter 17: Marine Environment that seals occur throughout the Thames Estuary and have the potential to be affected by the marine works. However, we are not aware of any seal haul out sites in the vicinity of the project (i.e. close to Gravesend), with the main haul out sites for seals being in the outer Thames Estuary. The closest of these, as reported by ZSL (Barker et al, 2014) was close to Southend on Sea. Due to the large distance between the nearest haul out site and the project, there is no potential for visual disturbance to seals at haul out sites from the proposed marine works.</p> <p>Barker, J, Seymour, A., Mowat, S. and Denby, A (2014) Thames Harbour Seal conservation Project. Zoological Society of London, June 2014. Available at: https://www.researchgate.net/publication/317052739_Thames_Harbour_Seal_Conservation_Project_Report</p>	
Common Land	S16 Commons deregistration and exchange and DCO relationship	4	<p>We have raised a query with the Planning Inspectorate as whether to the S16 Commons deregistration and exchange should proceed separately from, or be incorporated into the DCO. Whilst we have not had an answer yet, Andrew Troup explained that he has already made enquiries and due to the complex steps relating to land ownerships, freeholds and leases it makes better sense for the two to progress separately. Please note that Natural</p>	Noted	

Responses to Natural England DAS letter

Date: 23 November 2020
 Regarding: Thurrock Flexible Generation Plant

Subject		Number	Comment in NE DAS 21/10/20 ref 321560 / 12766	TFGP response	Where addressed
			England will shortly issue its formal s16 response letter, which we will be happy to discuss further with you in due course.		
Water Voles	Letter Of No Impediment	5a	further information is required to provide certainty that there will be a net gain for Water Voles, through the provision of suitable reception sites, and relocation of any water voles if required, prior to works commencement to ensure that not water vole are taken into captivity, before a LONI would be issued.	The assessment of impacts on Water Voles as presented in the ES indicates that there will be an overall net gain in terms of the lengths of new / enhanced ditches compared to losses. The revised OEMP includes mitigation proposals involving enhancement of Zone A boundary ditches in 2020/21 which would enable translocation of water voles (if required) into these ditches in spring 2022 without the requirement for taking voles into captivity.	ES Vol 3 Chapter 9 APP-147 (A8.3 OEMP) update circulated on 16/11/20
	Ditches	5b	we understand that the intention is for the ditches that may support water voles to be filled in, but since ditches cannot be dug on the new common land (since there is at least a year before the examination starts) other options may be needed such as creating new ditches on other sites as a temporary measure. There may be some value in exploring the approaches used for the ditches created for the Tilbury 2 site.	See above	OEMP
Invertebrates		6	As you will be aware, the Tilbury area is a node for nationally important invertebrate assemblages and Natural England has commenced an exercise to review this interest across the Thames Gateway. Whilst we note that the development site is not thought to hold significant terrestrial invertebrate interest, it presents an opportunity to contribute additional high quality habitats and we welcome the comments presented on this in the submission. In particular we note the 'F' zones – in particular what looks to be F4 – is in a strategically important location, and habitat creation here is to be welcomed in particular (although the current focus is on reptiles). Natural England would like to engage further in its design, management and monitoring. In particular, we would like to understand how DCO Requirements could help secure further steps in the design and implementation of these habitat creation area.	The applicant will be requesting a non-material change to remove the current Zone F4 and instead provide further habitat creation in a new Zone F4 to the north of Zone A, in what is currently arable land south of the railway line. Details of this and the biodiversity net gain have been circulated for comment on 16/11/20. The OEMP has been amended to reflect this. The final OEMP (in the form of a combined Landscape and Ecological Management Plan) with details of the habitat creation will be subject to approval under DCO Requirement 13.	Updated OEMP, application plans and biodiversity net gain assessment circulated on 16/11/20
Statement of Common Ground (SoCG)		7	Thank you for providing a first draft Statement of Common Ground. Natural England will be pleased to work with you on this document in due course.	Noted	

Historic England



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Our ref: PL00490033
Your ref: EN010092

Date: 12 November 2020

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BY EMAIL

Dear Mr Dearing

Planning Inspectorate Ref: EN010092

Thank you for your letter of 9 November requesting advice about this project. This follows the Examining Authority's (ExA's) S89 procedural decision letter of 2 November 2020 in which the ExA has, on the advice of Historic England, required the Applicant to undertake 'further field surveys to fully characterise the historic environment baseline'. The ExA states, 'the baseline should include the setting of heritage assets and below ground archaeological deposits, including their extent and significance, and following this, the assessment of significant effects should be updated to assess against the new baseline conditions.

Your letter of 9 November proposes further geophysical survey of the site, to cover the proposed gas pipeline route, access road, habitat creation land and exchange common land. We welcome this additional survey work. However, we believe this additional survey will not, by itself, adequately address our concerns raised in our S56 letter of 18 August, specifically relating to the lack of fully detailed assessment (evaluation), and also concerns about the assessment of the impact on the setting of designated heritage assets.

I am therefore, pleased to provide further information about our concerns, set out below in terms of buried archaeology and setting of designated heritage assets. We recommend that these concerns are addressed to ensure that the submission provides adequate information for the balance to be weighed by the ExA.

Survey of buried archaeological deposits

The extent of the geophysical survey submitted in the ES covers only part of the red-line boundary, principally Area A and a small strip of Area C. Other parts of the application site have not been the subject of any geophysical survey. Therefore, we welcome the proposal to undertake further geophysical survey at this stage. We would also recommend the use of GPR survey.

The techniques selected for each area should be discussed with a specialist to ensure that they will address the questions and deposits relevant to each area/zone. For example, waterlogged environments may not allow the GPR signal to penetrate below



the water table, while highly conducive media, such as salt water, will appear mostly opaque to the GPR signal (Schmidt et al. 2016, EAC Guidelines for the Use of Geophysics in Archaeology):

<https://historicengland.org.uk/images-books/publications/eac-guidelines-for-use-of-geophysics-in-archaeology/>

More significantly, the potential archaeological features in Area A, identified by geophysical survey already carried out, have not been ground-truthed. There has been no further archaeological evaluation (trial-trenching) to establish the significance of these, and other, (potential) archaeological remains within this area (not detected by the geophysical survey) – or across the rest of the proposed red-line boundary. Following NPS EN-1 paragraph 5.8.10, it is best practice to establish the significance, and level of harm to the significance of those remains, and to submit that information in the ES. Consequently, we would recommend this work is undertaken at this stage, and across the entire proposed development area, to ensure the historic environment baseline is fully characterised.

We are pleased that some geoarchaeological assessment and deposit modelling has been undertaken and the results are presented in the ES (Vol. 6, Appendix 7.2). However, as with the geophysical survey, this is too limited in scope and restricted to Area A. We advise that further specialist geoarchaeological assessment should be undertaken across the rest of the site at the pre-consent stage, to establish the significance of these remains across the entire site, and to provide a complete deposit model for the site.

Assessment of setting of designated heritage assets

We also raised concerns in our letter of 18 August to the ExA about the assessment of impact of the proposed development on the setting of heritage assets, specifically that the ES does not fully address the impact upon the significance of heritage assets through a development within their setting.

We are disappointed that the ES does not provide a specific section, in terms of visual resources, on the historic environment (either in Vol. 3 Chap. 6 or Chap. 7), to assess the visual impact of the proposed development on the setting of designated heritage assets. We are also disappointed with the key viewpoints, and visual resources, that have been presented and would recommend that further assessment work is carried out to ensure the historic environment baseline is fully characterised.

Of the key viewpoints that are presented in the ES, we believe eight viewpoints are applicable to designated heritage assets (ES Vol. 3 Chap. 6):

Viewpoints 13-14 for Tilbury Fort, which is a scheduled monument (NHLE no. 1021092) and the Grade II* Listed Officers Barracks, Tilbury Fort (NHLE no. 1375568), Nos. 17, 30-2 for Coalhouse battery and artillery defences, which is a scheduled monument (NHLE no. 1013943), No. 7 for Earthworks near Church, West Tilbury, which is also a scheduled monument (NHLE no. 1002199) and Nos. 4 and 7 for West Tilbury Conservation Area (Vol. 3 Chap. 6, Fig. 2.3).



The Second World War anti-aircraft battery at Bowaters Farm (NHLE no. 1012185), has not been identified as a key viewpoint in the ES, and there are no visual resources to assess the impact of the proposed development, yet it is only c.250m southwest of Zone D3 (gas connection compound). This is a significant omission and needs to be assessed as a key viewpoint.

The ES provides visual resources (photowirelines and photomontages) for only three of the eight key viewpoints identified above. In our opinion, the production of visual resources for only three of the key viewpoints is insufficient for a project of this scale and complexity – and the does not enable the impacts to be fully assessed.

Visual assessments should be carried out at all the eight key viewpoints above, and also at The Second World War anti-aircraft battery at Bowaters Farm, and without vegetation, as this could potentially change in the future, to enable the impact of the proposed development on the setting of the designated heritage assets to be adequately assessed. Without exception, the photowirelines and photomontages presented in Vol. 3 Chap. 6 have been produced using photographs taken in the summer with maximum foliage. These should be reproduced using the winter photographs, when the proposed development will be most visible, to model the greatest impact of the proposed development, i.e. worst-case scenario.

No visualisations are provided in the ES to show the impact of the proposed development on the intervisibility of the designated heritage assets, nor the effect of the potential cumulative developments on the intervisibility of the designated heritage assets. Specifically, the impact on views between Tilbury Fort (NHLE no. 1021092) and Coalhouse battery and artillery defences (NHLE no. 1013943), and also Second World War anti-aircraft battery at Bowaters Farm (NHLE no. 1012185), should be assessed. These are strategic military heritage assets and there is an important spatial and visible relationship between them; the significance of this relationship needs to be identified in the ES and the impact of the proposed development must be considered.

In terms of visual resources (photowirelines and photomontages), there is only one relevant photowireline (there are no photomontages) provided to assess the cumulative impacts for designated heritage assets. This relates to Viewpoint 7 for Earthworks near Church, West Tilbury (NHLE no. 1002199) (Vol. 4 Chap. 19, Fig. 1.2). No other visual resources are provided to assess the cumulative effects relating to other designated heritage assets and, consequently, we also believe that the evidence presented in the ES does not enable the cumulative effects to be adequately assessed, and further assessment is required.

I would be pleased to provide further clarification and information about this advice relating to the further field surveys to ensure the historic environment baseline is fully characterised.

Yours sincerely,

Dr Jess Tipper MCIfA FSA

Inspector of Ancient Monuments (Essex and Hertfordshire)

Email: Jess.Tipper@HistoricEngland.org.uk

From: [Tom Dearing](#)
To: [Tipper, Jess](#)
Cc: [Stephanie Boswall](#); [atroup](#); [Nikki Cook](#); [Paula McGeady](#); [Fletcher, Will](#); [Purvis, Chris](#); alison.down@planninginspectorate.gov.uk
Subject: RE: EN010092 - Thurrock FGP - consultation on further field surveys
Date: 13 November 2020 17:02:00
Attachments: image009.png
image001.png

Dear Jess,

Thank you for your response to the further consultation and agreement with the scope of further geophysical survey. That survey will start on Monday 16th November.

With regard to your recommendation to discuss the geophysical survey techniques to be used with a specialist and the suggested use of GPR, we confirm that a qualified and well-recognised specialist (Wessex Archaeology) has been engaged for this work and has advised on the appropriate approach. For the extent of area that is being surveyed, GPR is not appropriate or practical and gradiometer techniques will be used. Use of GPR in specific, targeted locations may be suitable for further pre-construction investigation (under the Written Scheme of Investigation) should the geophysical survey identify any features of potential interest that could be affected by the proposed development and further investigated by GPR.

I note that you have reiterated the recommendation for trial trenching in Zone A, the main development site, and also recommended this across “the entire proposed development area”. With regard to Zone A, we have explained the protected status of this land and the legal prohibition of trial trenching within it. Please refer to page 2 of our letter and to previous discussions. With regard to trial trenching “the entire proposed development area”, I am unclear as to whether this refers to all land within the Order Limits, and what the justification for that recommendation may be, bearing in mind the nature of proposed development in each area. Clearly, trial trenching all land within the order limits could never be a reasonable or proportionate strategy, and indeed would be impossible in areas such as Zone B within Tilbury Substation. We have set out the nature of development and further field investigation that is justified and possible before Procedural Deadline C on pages 3 and 4 of our consultation letter.

Thank you for acknowledging the geoarchaeological assessment and deposit modelling and the fact that this was already presented in the ES. Again however I am unclear as to whether the recommendation now made to undertake this deposit modelling “across the rest of the site” refers to all land within the Order Limits. This would be contrary to the recommendations made by the author of the geoarchaeological deposit model report, Dr Batchelor (QUEST, University of Reading). The recommended scope of further pre-construction investigation made by the author is specific to: (a) boreholes within the main development site (Zone A), which would form part of the pre-construction investigation under the Written Scheme of Investigation; and (b) obtaining borehole records from the Lower Thames Crossing investigations, when available in due course, in order to complete a broader deposit model for this stretch of the Thames (not limited to the area of development for Thurrock Flexible Generation Plant) encompassing the Tilbury2 site, the Thurrock Flexible Generation Plant main development site and the Lower Thames Crossing site.

We will write separately next week with further information in response to the points raised about the settings and views of above ground heritage assets.

Regards,
Tom

Tom Dearing

Associate, Climate and EIA
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From: Tipper, Jess <Jess.Tipper@HistoricEngland.org.uk>

Sent: 12 November 2020 12:10

To: Tom Dearing <tom.dearing@rpsgroup.com>

Cc: Stephanie Boswall <SBoswall@stateraenergy.co.uk>; atroup <atroup@stateraenergy.co.uk>; Nikki Cook <nikki.cook@rpsgroup.com>; Paula McGeady <Paula.McGeady@burges-salmon.com>; Fletcher, Will <Will.Fletcher@HistoricEngland.org.uk>; Purvis, Chris <CPurvis@thurrock.gov.uk>; alison.down@planninginspectorate.gov.uk

Subject: RE: EN010092 - Thurrock FGP - consultation on further field surveys

CAUTION: This email originated from outside of RPS.

Dear Tom,

Thank you for your email and letter of 9 November concerning the requirement for further archaeological surveys and request for a response by 13th November.

Please find attached our response to your letter.

Kind regards,

Jess

Dr Jess Tipper MCIfA FSA
Inspector of Ancient Monuments
Tel: 01223 582769
Mob: 07786 126177

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www.historicengland.org.uk

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[What's new in the East of England?](#)

Environment Agency

Flood risk



Tom Dearing
RPS Group via e-mail

Our ref: AE/2020/125634/01-L01
Your ref: *

Date: 17 November 2020

Dear Mr. Dearing

**CONSULTATION ON AMENDED DRAINAGE AND FLOOD RISK DOCUMENTS,
THURROCK FLEXIBLE GENERATION PLANT.**

LAND NORTH OF FORMER TILBURY POWER STATION, TILBURY, ESSEX

Thank you for the opportunity to comment on the amended drainage and flood risk documents for the Thurrock Flexible Generation Plant. Our comments are included below and advice is provided in relation to Breach Issues, H++ Scenario, Flood Compensation, Flood Evacuation Plan, Surface Water and Drainage and the Flood Storage Area.

Breach issues

The Flood Risk Assessment (FRA) has been updated to ensure it covers the flood risk scenario covered by the Strategic Flood Risk Assessment (SFRA) for a breach at TIL03 (Tilbury flood barrier) in addition to TIL05. Section 4.2.13 of the FRA confirms that the flood level associated with a failure at TIL03 would be 3.24mAOD (2.85mAOD + 0.39m for climate change). It then confirms then these depths 'will be accounted for within proposed flood resilience and resistance measures and associated development design', but does not explain how. This should be confirmed.

Section 6 discusses flood management and the mitigation options being designed to 2.84m (required for a breach at TIL05), and states in section 6.1.4 that 'the design also includes a degree of flexibility to account for...the potential risk from a passive failure of the Tilbury Tidal Barrier (TIL03)'. There do not appear to be any proposals for designing the development to be resilient/resilient to the impacts of flooding from this source, with the mitigation seemingly being design up to the level of 2.81mAOD (TIL05 flood level) rather than 3.24mAOD (TIL03 flood level).

Further discussion should be had on how the mitigation can be developed to protect from a failure at TIL03 as well. Ideally this mitigation would be built in to the design of the development but if the proposals are for additional adaptive measures, which

as additional flood barriers on top of the permanent flood mitigation proposals, then this should be discussed further. We note section 4.2.13 of the FRA considers that there may be additional warning time before flooding from the barrier would occur at the site, so if the mitigation for this scenario is reliant upon a lead in time, this should be further discussed within the flood plan for the site, so that site operatives are aware of any additional measures, and also how they would be expected to be enacted.

H++

We note that the value for the additional flood risk for the H++ scenario is detailed in section 2.1.17 of the FRA. However, this value is not put in to context when discussing mitigation options for the H++ scenario further in the document. Section 6.4 states that 'Long-term flood resilience planning to achieve flood resilience/resistance to the H++ scenario has also been accounted for, with critical equipment already protected against flood depths of 1.14 m by virtue of design or flexibility for raising in the future', but does not make clear what flood level (in mAOD) this mitigation would need to be provided at in order to protect against this H++ scenario. As discussed at our meeting, we will not expect the detailed design to show that this scenario will be protected for at the time of building, but the FRA should provide details of what level future mitigation measures may need to be increased to, to show that the development is sustainable in the longer term, with the capability of adapting to the future, higher risk climate change scenarios, if required in the future, to allow for the ongoing resilience of the development. The FRA should therefore provide details of the flood level that would be required to protect against, should this future, high risk scenario need to be adapted to.

Section 6.2.2 proposed raised design to 2mAOD – but does not explain how is this being achieved. If the raising of ground levels is proposed the FRA should consider any knock on impact.

Flood compensation

In order to reduce the flood risk to the development it is proposed to raise ground levels slightly across parts of the site, to minimise flood depths. When considering ground level raising, it is imperative that it can be demonstrated that flood risk both on and off site can be managed, and that risks off-site are not increased as result of the works. We note the comments relating to the size of the flood cell in relation to the area of land proposed to be raised, and accept that this is likely to have a minimal impact on flood depths across the entire flood cell (section 6.5). However, whilst we agree, based on the above, that detailed modelling of this impact may not be necessary, we do consider that further discussion should be made as to the local impacts of land raising. This assessment should look at the ground levels around the site and where land raising is proposed to take place. It should then consider whether there will be any areas upon the site where water may be routed should a flood occur. This may be through lower areas designed to aid drainage of the site, or simply areas of the site, which may not need to be raised to the same level. This desk-based assessment should discuss whether there are any areas of the site which may serve as conduits for flood water, which may result in parts of the site flooding sooner than others in the event of a breach. This information can be used

to inform the emergency plan to, for example, ensure that an evacuation route for people from the site, isn't through an area of the site which would be likely to flood first, to greater depths, and/or with faster flowing water, as a result of the ground reprofiling works. Additionally, the assessment of ground levels as proposed across the site, should be compared to ground levels off-site, to ensure that the same negative impacts would not be seen on neighbouring land, not within the ownership of the Applicant.

Flood evacuation plan

We welcome the addition of information to the plan which details the possible rates of onset of flooding of the site and discussion of the risk associated following a breach at TIL03 and TIL05. The flood evacuation route is not provided within Appendix A. as discussed above, when considering the on and off site flood risk as part of the flood compensation discussion, it should be ensured that the evacuation route follows pathways on the site which would not be expected to suffer from increased risk as a result of the on-site flood protection measures installed. If anything changes following consideration of our points made in the 'flood compensation' section, the evacuation route should be re-visited to ensure it is still considered the most suitable route to take. As with all emergency plans, these are iterative documents, which should be updated and reviewed periodically.

Surface Water and Drainage

Drawing A2.10, indicative drainage layout, has been updated to show the sites flow pathways. The discharge of surface water from the proposed development is proposed to flow to either Bowater's Sluice or Worlds End Pumping station (or both). It should be noted that Bowater's Sluice does not function at its design standard and its design life is considered limited. This means that the site may not be able to rely upon this structure for the ultimate discharge of surface water from the site to the Thames Estuary in the future. It is therefore imperative that the scheme is designed to ensure that no additional flows enter this catchment than those that do currently. Extra consideration will need to be given to the design of the site when raising ground levels across it to demonstrate that additional flows will not be directed to the West Tilbury Main catchment, as it cannot accommodate additional flows to its system without work to the outfall sluice, which may require partnership funding in the future.

The site will be subject to an Environmental Permit which will contain conditions relating to any proposed water discharges. These proposals will need to be assessed when we determine the permit application. We can't pre judge the permit determination by agreeing to a strategy. Parallel tracking of both applications is something the applicant may wish to consider.

Flood storage area

No further information has been provided regarding the works to be undertaken with the Flood Storage Area at this stage. We would welcome the opportunity to consider proposals for works within the FSA at the earliest opportunity so that we may provide advice as to what may/may not be permitted within it, and whether any of the

proposals may require a flood risk activity permit.

Other matters

We welcome the decision to revise the design to include use of a temporary span bridge for construction plant access across West Tilbury Main River during gas pipeline construction instead of a temporary culverted crossing.

We trust this information is useful.

Yours Sincerely

A handwritten signature in black ink, appearing to read 'Pat Abbott', is centered within a light gray rectangular box.

Mr. Pat Abbott
Planning Advisor

Direct dial 0208 4748011

Direct e-mail pat.abbott@environment-agency.gov.uk

From: [Tom Dearing](#)
To: [Abbott, Pat](#)
Cc: [Stephanie Boswall](#); [Andrew Troup](#); [Paula McGeady](#)
Bcc: [Jonathan Morley](#)
Subject: RE: EN010092 - Thurrock FGP - consultation on revised flood risk and drainage documents
Date: 26 November 2020 17:30:00
Attachments: image004.png
APP-141_A8.5_Flood_Evacuation_Plan_tracked_26.11.20.pdf
APP-122_A6_Vol6_Appendix_15.1_FRA_tracked_26.11.pdf
EN010092_Flood_Risk_Consultation_Comments_Response_26.11.pdf
image003.png

Hi Pat,

Thank you for those comments. We have taken them on board with some further edits to the FRA, flood evac plan and a proposed edit to the drainage DCO requirement. Further details are in the attached letter. I hope that we are at or pretty close to agreement on the flood risk and drainage issues now. The next step will be the wider consultation exercise that runs from the ExA's Procedural Deadline C to Procedural Deadline D on 25th January.

Regards,

Tom

Tom Dearing

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From: Abbott, Pat <Pat.Abbott@environment-agency.gov.uk>
Sent: 17 November 2020 11:00
To: Tom Dearing <tom.dearing@rpsgroup.com>
Subject: RE: EN010092 - Thurrock FGP - consultation on revised flood risk and drainage documents

CAUTION: This email originated from outside of RPS.

Morning Tom

Please find attached our response to the flood risk and drainage documents.

Pat

From: Tom Dearing [<mailto:tom.dearing@rpsgroup.com>]
Sent: 06 November 2020 15:26
To: Purvis, Chris <CPurvis@thurrock.gov.uk>; Abbott, Pat <Pat.Abbott@environment-agency.gov.uk>
Cc: Stephanie Boswall <SBoswall@stateraenergy.co.uk>; atroup <atroup@stateraenergy.co.uk>; Jonathan Morley <jonathan.morley@rpsgroup.com>; Paula McGeady <Paula.McGeady@burgess-

Environment Agency
Pat Abbott
Planning Advisor

26 November 2020

EN010092 – Thurrock Flexible Generation Plant – Flood Risk Consultation Comments Response

Dear Pat,

Thank you for the further comments in letter reference AE/2020/125634/01-L01 dated 17 November 2020. We've taken these on board as follows (responses are grouped under the headings from your letter).

1. **Breach issues (TIL03):** We have further amended the FRA (paragraphs 4.2.12 and 4.2.13, and the depths and protection measures specified in Sections 6.1, 6.2 and 6.3) to incorporate the risk posed by a flood defence failure at TIL03. This results in a potential flood level with climate change of 3.24 m AOD or 1.24 m flood depth taking into account proposed ground profiling. The designed-in mitigation measures for this now specified are based on electrical industry accepted flood resilience and resistance techniques detailed in ENA ETR138. These include a low permeable/waterproof membrane being adhered to the external walls of gas engine housing, with access points sealed with a water door and/or bund with stair access. These measure also have the ability to be altered in the future to account for a potential H++ scenario. Containerised units and external equipment will be raised appropriately by design.

It is worth saying that we continue to consider a TIL03 breach that goes on to lead to the full extent of modelled flooding at the Thurrock Flexible Generation Plant site to be an extremely improbable scenario, requiring as it does not just the initial mechanical or human-error failure of the flood gates, but for that situation not to be rectified during the 16 to 20 hours that it would take for flood water from this breach to reach and flood the Thurrock Flexible Generation Plant site to the 3.24 m AOD depth (during which time flooding would first reach Tilbury town, the port and other key assets, prompting an emergency response). However, the measures set out in the FRA, consistent with ENA ETR138 guidance, would provide resilience to this scenario.

2. **H++:** The specific flood level that may need to be protected against in a future H++ scenario of 3.54 m AOD (TIL03 at 2.85 m AOD plus 0.39 m to UKCP18 and an additional 0.3m to H++) has now been added to the FRA in paragraph 4.2.14.

The raising of ground levels to 2 m AOD was set out in the Conceptual Drainage Strategy.

3. **Flood compensation; evacuation route:** We agree that the Flood Evacuation Plan should be a living document to be reviewed and updated periodically during the development's lifetime. We have modified paragraph 6.7.1 in the FRA to make clear that details of the evacuation route pathway(s) within the site should be specified when the site layout and ground raising is confirmed in detailed design, and likewise highlighted this in Section 3.4 of the Flood Evacuation Plan itself. Appendix A to the Flood Evacuation Plan has been amended to specify that flooding may come from the west, i.e. in the event of a TIL03 breach.

With regard to the points about specific location of ground raising, the routing of flood waters within the site and the on-site evacuation route for personnel, we consider that these are issues that can only be fully specified at detailed design stage. Although illustrative site layout options and a conceptual drainage strategy have been presented, these do remain illustrative at this stage (within the overall design envelope defined by the DCO, Works Plans and assessed in the EIA) and subject to change. It would be appropriate to consider the design of precisely where ground is raised within

the site, and the resulting drainage/flood water and evacuation routings, when discharging the DCO requirements on detailed design.

We propose to amend the wording of DCO Requirement 10 to secure that (new wording below).

4. **Surface water drainage:** We acknowledge the issues with Bowater's Sluice and agree that the drainage proposals will also need to be considered during the Environmental Permitting process, meaning the final drainage strategy cannot be approved by the EA at this stage. When developing the detailed drainage design to discharge DCO Requirement 10, based on the final site layout, further consideration can be given to the specific location of connection points into the ditch network and to directing drainage away from the West Tilbury Main catchment. We propose amending the wording of DCO Requirement 10 accordingly (new wording below).
5. **Flood storage area:** All works proposed as part of the DCO application are shown on the Works Plans/DCO Schedule 1 and described in the ES Project Description. We are happy to provide clarifications if there is a specific question about the nature of those works.
6. **Other matters:** agreement about the temporary span bridge proposal for West Tilbury Main is welcomed.

Proposed amendments to DCO Requirement 10 wording:

Edits are shown in **red text**.

10.—(1) No part of the authorised development can be commenced until written details of the surface and foul water drainage system ~~(including means of pollution control, and connection points to existing drainage network)~~ for that part have been submitted to and approved by the relevant planning authority.

(2) These details must include:

- (a) the means of pollution control;
- (b) connection points to existing drainage network with consideration to directing drainage away from the West Tilbury Main catchment; and
- (c) ground raising and effects on the routing of flood waters.
- (d) where applicable, an updated flood evacuation plan taking into account the details provided in (c).

(3) The surface and foul water drainage system for the relevant part of the authorised development must be constructed in accordance with the approved details unless otherwise agreed in writing by the relevant planning authority.

Yours sincerely,
for RPS



Tom Dearing

Environment Agency

Saltmarsh creation

Impact of the causeway and its maintenance beyond the lifetime of the Proposed Development

From: [Abbott, Pat](#)
To: [Tom Dearing](#)
Subject: RE: EN010092 - Thurrock FGP - consultation on revised plans and documents
Date: 27 November 2020 13:33:44
Attachments: image001.png

CAUTION: This email originated from outside of RPS.

Thanks for the clarification Tom

From: Tom Dearing [<mailto:tom.dearing@rpsgroup.com>]
Sent: 27 November 2020 10:37
To: Abbott, Pat <Pat.Abbott@environment-agency.gov.uk>
Cc: Stephanie Boswall <SBoswall@stateraenergy.co.uk>; atroup <atroup@stateraenergy.co.uk>; Paula McGeady <Paula.McGeady@burges-salmon.com>
Subject: Re: EN010092 - Thurrock FGP - consultation on revised plans and documents

Hi Pat, thanks for this response. One thing to clarify: your ecology advisor has commented that the need for the causeway would be reviewed at year five and considers it is unlikely the situation will have changed in the first five years to enable alternative access. However, just to be clear, the DCO requirement is for that to be an ongoing review process at five yearly intervals, if the initial review does not find that the causeway could be removed at that point.

Regards,
Tom

From: Abbott, Pat <Pat.Abbott@environment-agency.gov.uk>
Sent: 26 November 2020 09:49
To: Tom Dearing <tom.dearing@rpsgroup.com>
Subject: RE: EN010092 - Thurrock FGP - consultation on revised plans and documents

CAUTION: This email originated from outside of RPS.

Hi Tom

Once again sorry for the slight delay in responding to you on this one.

Pat

From: Tom Dearing [<mailto:tom.dearing@rpsgroup.com>]
Sent: 16 November 2020 16:49
To: Abbott, Pat <Pat.Abbott@environment-agency.gov.uk>; Purvis, Chris <CPurvis@thurrock.gov.uk>; Michael Atkins <Michael.Atkins@pla.co.uk>; Errington, Sarah <Sarah.Errington@marinemangement.org.uk>; Bustard, Jonathan <Jonathan.Bustard@naturalengland.org.uk>; john.speakman@potll.com
Cc: Stephanie Boswall <SBoswall@stateraenergy.co.uk>; atroup <atroup@stateraenergy.co.uk>; Paula McGeady <Paula.McGeady@burges-salmon.com>
Subject: EN010092 - Thurrock FGP - consultation on revised plans and documents

Dear all,



Tom Deering
RPS Group – via e-mail

Our ref: AE/2020/125664/01-L01
Your ref: *

Date: 26 November 2020

Dear Mr. Deering

CONSULTATION ON AMENDED SALTMARSH HABITAT CREATION AND CAUSEWAY.

LAND NORTH OF FORMER TILBURY POWER STATION, TILBURY, ESSEX

Thank you for the opportunity to comment on the revised documents regarding the saltmarsh habitat Creation and the Causeway, which form part of the development for the Thurrock Flexible Generation Plant. We have reviewed the documents that were submitted and have the following comments.

It is noted that the saltmarsh creation proposal has been removed, following our advice that this would have an adverse impact on the environment at the site.

The main change detailed in the documents is to have a period of review at year 5, to consider alternative transport options other than the causeway. It is highly unlikely that the current situation would change during the 5 year period. It remains unclear what alternatives would be available and we feel such a review would be very unlikely to recommend a change and subsequent removal of the causeway.

Whilst we do still argue that the causeway should be removed as soon as it is no longer required by this development, it must be assumed (based on the submitted information) that it will be in place for the lifetime of the development. On this basis it is a permanent structure, that the EIA acknowledges, causes a local adverse impact, due to the loss of intertidal habitats, which are a priority for protection.

The Environment Agency has always advised, that where developments damage or destroy priority inter-tidal habitats, that they should compensate by providing additional areas of saltmarsh or mud flats. We recognise that this presents a significant challenge with this particular development, and that there is currently an absence of local offsetting sites that could help achieve this within the vicinity as an alternative.

It is noted that the BNG calculator looks at all the habitats and doesn't consider the inter-tidal in isolation, despite the impacts being to different species associated with

the estuary. Natural England should advise whether this loss is significant to an area of habitat that is functionally linked to the nearby SPA.

The proposed capital dredge will also have a significant impact on the inter-tidal mud habitat, which will recover over time, between dredging operations. However monitoring would have to provide the evidence of how long this recovery takes.

Yours Sincerely

A handwritten signature in black ink, appearing to read 'Pat Abbott', is centered below the closing. The signature is written in a cursive style with a horizontal line underneath.

Mr. Pat Abbott
Planning Advisor

Direct dial 0208 4748011

Direct e-mail pat.abbott@environment-agency.gov.uk

Thurrock Council

No response has been received from Thurrock Council.

Marine Management Organisation

No response has been received from the Marine Management Organisation.

Port of London Authority

Full copies of the Port of London Authority’s consultation responses are provided after the table.

Subject		No.	Comment	TFGP response	Reference
Dredging	Sediment sampling	1a	The letter makes specific comment on paragraph 6.1 of the PLA’s relevant representation and to the existing samples that have been taken at this area. It is important to note that the sampling plan on which the PLA provided written comments on the 20 August 2019 set out the proposals for the construction of the causeway only, and not the proposed dredge pocket or the saltmarsh mitigation. This sample plan refers to approximately 836 m3 of sediments which may be removed during the preparation of the riverbed and does not refer to the proposed total of 16,100m3 dredge material with 13,000 m3 assumed to be removed by water injection dredging (WID) and the remainder by land - based plant. It is on this aspect of the proposed development that further information will be required with regard to dredging, as without adequate sampling it is not clear on what basis the existing assessments have been completed in terms of a worst-case scenario. Without the appropriate sampling to assess that the proposed dredging method is acceptable and to show the proposed dispersive methods would not put contaminated sediment back into the water there is a possibility that the PLA would not be able to agree with the proposed dredging methods. For a typical dredge assessment, the PLA would expect 6 samples with surface, mid and depth levels for a representative sediment assessment under PLA guidance which has been applied across the Thames in agreement with other regulators. the locations of the 6 dredge samples would be agreed between the PLA and MMO in the standard dredge sample plan process.	<p>We consider that the local sediment chemistry is well understood from the sampling for the Tilbury2 application together with this application, and that the sediment samples taken for this application remain representative of the area in which the causeway would be constructed even though the dredge volume has changed since the Sampling Plan was approved.</p> <p>However, we have drafted a DCO requirement to undertake further sediment sampling prior to construction for approval by the PLA and MMO of the material disposal. The further sampling would be in accordance with an updated Sampling Plan to be approved.</p> <p>In the unlikely event that further sampling were to identify unexpected contamination preventing material disposal as proposed, the material could be disposed of to a licensed onshore landfill. The road transport movements required for this, in a worst case, would be well within the construction traffic that has been assessed in the Environmental Statement.</p>	New DCO requirement 12(3)
	Licenses	1b	It should be noted that the PLA’s 20 August 2019 email also stated that there was no reference to the need for a PLA dredge licence, in addition to an MMO Marine Licence in the document which are both required. As mentioned previously further information on the PLA’s requirements with regard to the dredge can be found at http://pla.co.uk/Environment/Applying-for-a-Licence-to-undertake-dredging-in-the-Tidal-Thames .	<p>The Applicant will not be making a separate Dredging License or River Works license application.</p> <p>Article 10 of the draft DCO disapplies sections 66 to 75 of the Port of London Act 1968, removing the requirement for licences under that Act for construction.</p> <p>Schedule 8 (Deemed Marine License) of the DCO authorises construction of the causeway and barge berthing pocket including dredging.</p> <p>The Applicant has always included dredging in the description of Work no.10 as it is necessary for the construction of that work. The dredging and volumes of material to be dredged are also set out in the deemed marine licence in schedule 8 of the Order. However, noting the PLA’s submission that it did not consider the power to dredge to be explicit, the Applicant has proposed a new article 37, power to dredge, based on the equivalent powers granted in the Port of Tilbury Expansion DCO, that would be of assistance in removing any dubiety.</p>	DCO Articles 10 and 37 DCO Schedule 8

CONSULTEE COMMENTS AND RESPONSES

Saltmarsh creation	Balance of material	2a	<p>The letter also raises queries with the PLA's comments on the saltmarsh creation which the letter states are dealt with in paragraph 2.10.6 of APP-045 (ES Chapter 2: Project Description) by stating that the material to create the saltmarsh would come from the balance of sediment to be dredged during the causeway excavation. However, whilst this was noted it was not clear how this would be achieved. To confirm:</p> <p>The Outline Saltmarsh Enhancement and Maintenance Plan document (A8.10) states that the new saltmarsh would beneficially use circa 11,000 m³ of the 16,000 m³ of the maximum dredge volume taken from the dredge pocket. (page 6: Hydrodynamic modelling and opportunities.).</p> <p>However, for the dredge pocket, of the 16,000m³ of material to be dredged, 11,000m³ – 13,000m³ is proposed by water injection dredging (WID) with the remaining 3,000m³ by grab or 'land based grab'. Therefore it is not clear how the 11,000m³ – 13,000m³ WID material would be used to create the saltmarsh habitat through this method, and this is why as noted above there is a need to go through the PLA and MMO licencing process with regard to this element of the proposed development. In addition, if it was proposed that the 3,000m³ of material dredged by grab would be used for the saltmarsh mitigation then there is also a question on whether additional material is required for the saltmarsh area, and then where this material was going to come from.</p> <p>This is relevant both for the dredge pocket works and the saltmarsh mitigation, to ensure the dredged material proposed to be re-suspended for the saltmarsh area was suitable material.</p>	<p>The assessment of material disposal by WID or excavation was an 'up to' volume as a worst-case design envelope parameter for the environmental impacts of this activity.</p> <p>Where a proportion of the material would be used for saltmarsh creation (under a proposal that the Applicant now intends to withdraw), then less would be disposed of than in the worst-case assessment for disposal. This is not a shortfall in material.</p>	n/a
	Material import	2b	<p>It is on these points that the PLA requested further detail on the saltmarsh enhancement design and assumptions made about the creation, retention and long-term monitoring of the saltmarsh and on the insufficient ground investigations and the uncertainty on whether any material will need to be imported to create the saltmarsh, as raised in the PLA's relevant representation response. These issues do not appear to have been addressed in these amended documents as requested by the ExA in the letter of 2 November.</p>	<p>For the avoidance of doubt, we confirm that there is no proposal to import material for the saltmarsh creation.</p> <p>As set out in the consultation letter the Applicant intends to in any case to withdraw the saltmarsh creation proposal on the advice of several consultees.</p>	n/a
Causeway decommissioning	Causeway Decommissioning Plan DCO requirement	3a	<p>Whilst this clarity on the removal of the causeway is welcomed, including the confirmation of the production of a Causeway Decommissioning Plan, it is important that the PLA must also be kept involved in this process, and not just the planning authority. The draft new Requirements will need to be amended to reflect this. It is considered that there may be other elements of drafting of the Requirements which will need clarifying and amending once the full amended DCO has been considered. It is also expected that there will need to be amendments to the PLA Protective Provisions in the DCO to address this change.</p>	<p>This is noted. We expect to continue to engage with the PLA and other consultees on DCO Requirement and Protective Provision drafting during the examination process.</p>	n/a
	Principle of alternative access	3b	<p>In addition, it is noted that the letter states that under the review of access for abnormal indivisible loads, the principle condition on the case for an alternative is on whether such an alternative is permanent, feasible and economically beneficial. The PLA would suggest that such an alternative must also be more environmentally sustainable as</p>	<p>This is noted and the in-principle support for use of the Thames for transportation of materials is welcomed.</p> <p>With regard to a test of environmental sustainability for an alternative access for AILs, as you note the causeway has the benefit of reducing</p>	n/a

CONSULTEE COMMENTS AND RESPONSES

			well. As highlighted through previous responses the PLA is supportive of the appropriate use of the River Thames for the transportation of materials, which will help to reduce road movements in the local area and provide a more sustainable alternative to road use. The PLA's comments raised in its Relevant Representation on the causeway were on the details of construction, operation and ongoing maintenance and responsibility of the structure and not the principle of utilising the use of River Thames which the PLA fully supports.	road movements but there is a tension between this benefit and the environmental impact that some consultees have highlighted of retaining the causeway in the long term. We do not consider that an environmental sustainability test in the DCO requirement could resolve that tension. As set out in the DCO requirement, any alternative access would be subject to obtaining consents at the time, which as a matter of course includes appropriate environmental assessment and controls.	
Decommissioning phase assessment	Dredging	4a	It is noted that paragraph 4.3.4 [of revised ES Chapter 17] states it is likely that decommissioning of the causeway will result in some removal/disturbance of intertidal habitat. Under section 73 of the Port of London Act 1968, this would be classified as a dredging activity. This must be referenced as part of the amended documents and confirmed whether the volume of this removal been included in the current dredge volume and relevant assessments.	Clarification now included in section 4.3.4 on what intertidal habitat will be removed, i.e. intertidal habitats on the causeway structure itself and potential minor disturbance of sediments accumulated on/within it. This would not involve additional dredging of sediment.	Paragraph 4.3.4 of ES Chapter 17: Marine Environment
	Scour/accretion	4b	In addition it does not appear that the impact of potential scour/accretion once the causeway is removed due to hydrodynamic changes within the Hydrology, Flood Risk and Climate Change heading has currently been considered.	Further detailed hydrological assessment has not been undertaken because the decommissioning will result in a reversal of those changes to hydrodynamic processes outlined in the construction phase. As outlined in section 4.3.4, accretion of sediments into the former causeway footprint following decommissioning will occur at similar timescales to those for the adjacent dredge pocket, i.e. months to a few years.	Paragraph 4.3.4 of ES Chapter 17: Marine Environment
Intertidal habitat loss	Habitat changes	5a	ES chapter 17: Marine environment states a maximum of 11,000m ² of saltmarsh will be created naturally due to accretion allowing colonisation by pioneer species. In 4.2.6 this change from mudflat to saltmarsh is described as “of local spatial extent, long term duration, continuous and not reversible”. Paragraph 4.3.5 then states that removal of the causeway is “expected to cause some alteration between the boundaries of the mudflat and any saltmarsh habitats which may have developed in the lee of the causeway” and that “following decommissioning a new equilibrium between the mudflat and saltmarsh would be reached”. This statement appears to be in contradiction of paragraph 4.2.6. 4.2.7 describes impacts on saltmarsh that will result in a long-term loss but 4.2.6 describes a gain in saltmarsh. This should be clarified.	Clarifications now included in paragraphs 4.2.6 and 4.2.7. The impact is not reversible while the causeway remains in place. The loss described in 4.2.7 is beneath the causeway structure.	Paragraphs 4.2.6 and 4.2.7 of ES Chapter 17: Marine Environment
	Biodiversity net gain	5b	Noted that the Biodiversity net gain assessment demonstrates a loss of 1.05 value of coastal saltmarsh and 8.13 of intertidal sediment-littoral mud/sand and muddy sand. With no compensation there is expected to be a net loss of intertidal habitats.	Noted. This would not be a permanent loss with the commitment now made to decommission the causeway.	n/a
Causeway decommissioning Plan	Monitoring	6a	The area previously covered by the causeway is expected to infill within months to years, can it confirmed if the monitoring period will cover the entire potential infill time to ensure the foreshore has been reinstated. In addition, there should be confirmation on whether the monitoring is limited to the immediate area of the previous causeway or will it monitor a larger area to determine any other potential impacts of the change in hydrodynamics.	These points are noted and would be addressed at the time of preparing the Causeway Decommissioning Plan.	n/a

CONSULTEE COMMENTS AND RESPONSES



			Furthermore, will the plan incorporate an alternative plan if the area does not naturally infill as expected to ensure the foreshore is reinstated following decommissioning?		
OEMP	Monitoring	7a	It is noted in paragraph 9.1.16 that post-construction monitoring will be undertaken on the mudflat to observe the extent of possible saltmarsh colonisation on accreted mudflat and condition of the habitats. This information should be provided to the PLA as landowner of the riverbed in addition to Natural England.	Agreed; paragraph 9.1.6 of the OEMP has been edited accordingly.	Paragraph 9.1.6 of the Outline Ecological Management Plan

From: [Michael Atkins](#)
To: [Tom Dearing](#)
Cc: [Stephanie Boswall](#); [atroup](#); [Paula McGeady](#); [James Trimmer](#); [Hazel Anderson](#); [Samantha Woods](#)
Subject: EN010092 - Thurrock FGP - consultation on revised plans and documents: PLA response
Date: 24 November 2020 16:49:49
Attachments: 1.png

CAUTION: This email originated from outside of RPS.

Dear Tom

Thank you for consulting the Port of London Authority (PLA) on the revised plans and documents with regard to the Thurrock Flexible Generation Plant DCO application. In the short time available, the PLA has had an initial review of the additional documents and has set out initial comments below.

Firstly, the PLA consider that it is unclear exactly what you are seeking views on at this stage with regard to Procedural Deadline C as set out by the ExA in Annex A of the 2 November 2020 letter. The documents sent through by you seem to relate to two different timescales in the application process:

1. The further environmental information which has been requested by the ExA in the 2 November letter, on impacts on navigation, further environmental information on the saltmarsh mitigation and the causeway detailed in Annex A and required to be submitted to the ExA by 14 December.
2. The proposed change request on the removal of the saltmarsh mitigation which it is stated that the Applicant intends to submit once the Examination starts which would not, therefore, be required to be submitted until February 2021.

It seems to the PLA that many of the amended documents provided relate to the second timeframe on the removal of the saltmarsh mitigation from the scheme, including the withdrawal of document APP-146 (A8.10 Outline Saltmarsh Enhancement and Maintenance Plan).

In the time available, the PLA has set out initial informal comments in relation to both sets of issues below. However, it reserves the right to respond formally on each at the appropriate deadline as set out above and once the full context has been provided, for example an amended version of the draft DCO in relation to the change request.

- **EN010092 Causeway, Saltmarsh and onshore Habitat Further consultation letter.**

Saltmarsh creation and dredge pocket

The first section of your letter (headed Existing Assessments) sets out that the ExA has requested further environmental information assessing the impact of saltmarsh creation, maintenance and monitoring and that although the Applicant intends to withdraw the saltmarsh creation proposal based on recent stakeholder feedback, this change request has not yet been made, so a response based on the existing position is provided. However, the letter then sets out the existing assessments to address relevant representation comments, with some amendments

made to more clearly set out the area of mudflat that could be lost to saltmarsh colonisation and the impact of that change in habitat.

The letter makes specific comment on paragraph 6.1 of the PLA's relevant representation and to the existing samples that have been taken at this area. It is important to note that the sampling plan on which the PLA provided written comments on the 20 August 2019 set out the proposals for the construction of the causeway only, and not the proposed dredge pocket or the saltmarsh mitigation. This sample plan refers to approximately 836 m³ of sediments which may be removed during the preparation of the riverbed and does not refer to the proposed total of 16,100m³ dredge material with 13,000 m³ assumed to be removed by water injection dredging (WID) and the remainder by land - based plant. It is on this aspect of the proposed development that further information will be required with regard to dredging, as without adequate sampling it is not clear on what basis the existing assessments have been completed in terms of a worst-case scenario. Without the appropriate sampling to assess that the proposed dredging method is acceptable and to show the proposed dispersive methods would not put contaminated sediment back into the water there is a possibility that the PLA would not be able to agree with the proposed dredging methods. For a typical dredge assessment, the PLA would expect 6 samples with surface, mid and depth levels for a representative sediment assessment under PLA guidance which has been applied across the Thames in agreement with other regulators. The locations of the 6 dredge samples would be agreed between the PLA and MMO in the standard dredge sample plan process. It should be noted that the PLA's 20 August 2019 email also stated that there was no reference to the need for a PLA dredge licence, in addition to an MMO Marine Licence in the document which are both required. As mentioned previously further information on the PLA's requirements with regard to the dredge can be found at <http://pla.co.uk/Environment/Applying-for-a-Licence-to-undertake-dredging-in-the-Tidal-Thames>.

The letter also raises queries with the PLA's comments on the saltmarsh creation which the letter states are dealt with in paragraph 2.10.6 of APP-045 (ES Chapter 2: Project Description) by stating that the material to create the saltmarsh would come from the balance of sediment to be dredged during the causeway excavation. However, whilst this was noted it was not clear how this would be achieved. To confirm:

- The Outline Saltmarsh Enhancement and Maintenance Plan document (A8.10) states that the new saltmarsh would beneficially use circa 11,000 m³ of the 16,000 m³ of the maximum dredge volume taken from the dredge pocket. (page 6: Hydrodynamic modelling and opportunities.).
- However, for the dredge pocket, of the 16,000m³ of material to be dredged, 11,000m³ – 13,000m³ is proposed by water injection dredging (WID) with the remaining 3,000m³ by grab or 'land based grab'. Therefore it is not clear how the 11,000m³ – 13,000m³ WID material would be used to create the saltmarsh habitat through this method, and this is why as noted above there is a need to go through the PLA and MMO licencing process with regard to this element of the proposed development. In addition, if it was proposed that the 3,000m³ of material dredged by grab would be used for the saltmarsh mitigation then there is also a question on whether additional material is required for the saltmarsh area, and then where this material was going to come from.

This is relevant both for the dredge pocket works and the saltmarsh mitigation, to ensure the dredged material proposed to be re-suspended for the saltmarsh area was suitable material.

It is on these points that the PLA requested further detail on the saltmarsh enhancement design and assumptions made about the creation, retention and long-term monitoring of the saltmarsh and on the insufficient ground investigations and the uncertainty on whether any material will need to be imported to create the saltmarsh, as raised in the PLA's relevant representation response. These issues do not appear to have been addressed in these amended documents as requested by the ExA in the letter of 2 November.

Causeway Decommissioning.

As explained above, the documents relating to the causeway decommissioning appear to the PLA to be in relation to the future change request, rather than dealing with the matters upon which the ExA sought additional information, on the basis that the causeway was being kept permanently to provide protection to the saltmarsh. However, in the time available, the PLA has had a very initial review of the documents and provided some comments below.

From the letter it can be seen that there are a number of new proposals set out with regard to the ongoing use of the causeway over the lifetime of the project, including that:

- Within five years from the date of final commissioning of the flexible generation plant, the undertaker must submit a report of the review of access options for transportation of abnormal indivisible loads (AIL) to or from Work 1 in writing to the relevant planning authority, and if required undertake further reviews at each five year interval.
- Either at the end of the lifetime of the project, or during the lifetime of the project if a more suitable alternative means of transporting AILs is sourced, then the applicant must submit a Causeway Decommissioning Plan to the relevant planning authority for approval. This now confirms that the causeway will not be a permanent structure but will remain in place for at most the 35 year lifespan for the overall scheme.

Whilst this clarity on the removal of the causeway is welcomed, including the confirmation of the production of a Causeway Decommissioning Plan, it is important that the PLA must also be kept involved in this process, and not just the planning authority. The draft new Requirements will need to be amended to reflect this. It is considered that there may be other elements of drafting of the Requirements which will need clarifying and amending once the full amended DCO has been considered. It is also expected that there will need to be amendments to the PLA Protective Provisions in the DCO to address this change.

In addition, it is noted that the letter states that under the review of access for abnormal indivisible loads, the principle condition on the case for an alternative is on whether such an alternative is permanent, feasible and economically beneficial. The PLA would suggest that such an alternative must also be more environmentally sustainable as well. As highlighted through previous responses the PLA is supportive of the appropriate use of the River Thames for the transportation of materials, which will help to reduce road movements in the local area and provide a more sustainable alternative to road use. The PLA's comments raised in its Relevant

Representation on the causeway were on the details of construction, operation and ongoing maintenance and responsibility of the structure and not the principle of utilising the use of River Thames which the PLA fully supports.

Onshore habitat creation:

To confirm the PLA has no comments to make on the proposed changes to onshore habitat creation.

Navigational Risk Assessment

Although not mentioned in the email and accompanying letter, as one of the key topics highlighted within Annex A of the ExA 2 November 2020 letter, the PLA would like to confirm that it is involved in constructive discussions on the preparation of the required Navigational Risk Assessment by Procedural Deadline C.

I hope these comments are of assistance. If the PLA has any further comments on the amended documents to provide before the end of November, I will send them through.

Regards

Michael

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Senior Planning Officer

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From: [Michael Atkins](#)
To: [Tom Dearing](#)
Cc: [Stephanie Boswall](#); [atroup](#); [Paula McGeady](#); [James Trimmer](#); [Hazel Anderson](#); [Samantha Woods](#)
Subject: RE: EN010092 - Thurrock FGP - consultation on revised plans and documents: PLA response
Date: 30 November 2020 16:23:43
Attachments: 1.png

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Dear Tom

As noted in the PLA's response dated 24th November, below are some further comments on the amended documents provided as part of the Thurrock Flexible Generation Plant DCO application. As noted in our previous response, the PLA reserves the right to respond formally on the amended application documents at the appropriate deadlines as set out by the ExA.

Decommissioning Phase within the ES Chapter 17: Marine Environment

- It is noted that paragraph 4.3.4 states it is likely that decommissioning of the causeway will result in some removal/disturbance of intertidal habitat. Under section 73 of the Port of London Act 1968, this would be classified as a dredging activity. This must be referenced as part of the amended documents and confirmed whether the volume of this removal been included in the current dredge volume and relevant assessments. In addition it does not appear that the impact of potential scour/accretion once the causeway is removed due to hydrodynamic changes within the Hydrology, Flood Risk and Climate Change heading has currently been considered.

Intertidal Habitat Loss

- ES chapter 17: Marine environment states a maximum of 11,000m² of saltmarsh will be created naturally due to accretion allowing colonisation by pioneer species. In 4.2.6 this change from mudflat to saltmarsh is described as "of local spatial extent, long term duration, continuous and not reversible".
 - Paragraph 4.3.5 then states that removal of the causeway is "expected to cause some alteration between the boundaries of the mudflat and any saltmarsh habitats which may have developed in the lee of the causeway" and that "following decommissioning a new equilibrium between the mudflat and saltmarsh would be reached". This statement appears to be in contradiction of paragraph 4.2.6.
- 4.2.7 describes impacts on saltmarsh that will result in a long-term loss but 4.2.6 describes a gain in saltmarsh. This should be clarified.
- Noted that the Biodiversity net gain assessment demonstrates a loss of 1.05 value of coastal saltmarsh and 8.13 of intertidal sediment- littoral mud/sand and muddy sand. With no compensation there is expected to be a net loss of intertidal habitats.

Causeway Decommissioning Plan

- Monitoring:
 - The area previously covered by the causeway is expected to infill within months to years, can it be confirmed if the monitoring period will cover the entire potential infill time to ensure the foreshore has been reinstated.
 - In addition, there should be confirmation on whether the monitoring is limited to the immediate area of the previous causeway or will it monitor a larger area to

- determine any other potential impacts of the change in hydrodynamics.
- Furthermore, will the plan incorporate an alternative plan if the area does not naturally infill as expected to ensure the foreshore is reinstated following decommissioning?

Outline Ecological Management Plan: Ecological Monitoring

- It is noted in paragraph 9.1.16 that post-construction monitoring will be undertaken on the mudflat to observe the extent of possible saltmarsh colonisation on accreted mudflat and condition of the habitats. This information should be provided to the PLA as landowner of the riverbed in addition to Natural England.

Regards

Michael

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From: Michael Atkins
Sent: 24 November 2020 16:50
To: Tom Dearing <tom.dearing@rpsgroup.com>
Cc: Stephanie Boswall <SBoswall@stateraenergy.co.uk>; Andrew Troup <atroup@stateraenergy.co.uk>; Paula McGeady <Paula.McGeady@burgess-salmon.com>; James Trimmer <james.trimmer@pla.co.uk>; Hazel Anderson <handerson@wslaw.co.uk>; Samantha Woods <swoods@wslaw.co.uk>

Port of Tilbury London Ltd

The full copy of the Port of Tilbury London Ltd’s consultation response is provided after the table.

Subject		No.	Comment	TFGP response	Reference
Requirements		1a	We intend to write to Burges Salmon, shortly, in respect of the draft DCO and the draft Protective Provisions, which will include consideration of these proposed additional requirements.	Noted	n/a
Intertidal mudflat and saltmarsh impacts	Scour modelling and impacts upstream	2a	There is a focus on the habitat creation potential of any increased local accretion of sediment downstream of this feature, but little or no attention appears to be given the potential for a countervailing scour impact on saltmarsh and mudflat upstream and to the west of the proposed causeway, and potentially extending along the Tilbury2 frontage. In particular, by reference to the revised Marine Environment ES chapter [APP-066], this potential impact does not appear to have been explored or fully modelled.	As set out in Chapter 17 of the ES, the changes in hydrodynamics from the causeway and presence of the vessel will have negligible morphological effect other than shoreward of the structure. As the morphological effect (i.e. upstream scour) would be negligible, there is no potential for impact leading to a significant effect on habitat along the Tilbury2 frontage or further west/upstream of the causeway. For details of the hydrodynamic modelling supporting this conclusion, see Section 3 of ES Appendix 17.2.	Paragraph 4.1.15 of Chapter 17: Marine Environment. Section 3 of Appendix 17.2: Hydrodynamic Modelling and Sediment Assessment.
		2b	Appendix 17.2 Hydrodynamic Modelling and Sediment Assessment [APP-120] remains as per the original submission and does not appear to include long-term modelling of projected sediment accretion/scour on which conclusions about the likely success or otherwise of the mitigation proposals can be made.	Appendix 17 remains as per the original submission because the hydrodynamic impact of the causeway has not changed. Sediment scour upstream has been assessed as set out above. Sediment accretion in the lee downstream is not a mitigation proposal (see response on this below).	n/a
		2c	Naturally, reassurance and safeguards are sought that construction of the proposed causeway will not result in changes to local hydrodynamics that could generate negative impacts on Priority intertidal habitats within the Tilbury2 DCO limits and operational port frontage, which the Port has worked to conserve. We are aware, for example, of features such as the nationally scarce plant species (e.g. <i>Inula crithmoides</i>) being present in the saltmarsh immediately upstream of the proposed causeway footprint, on which the causeway proposals could generate impacts.	The purpose of Environmental Impact Assessment is to identify significant effects that are likely to occur and to set out mitigation measures for these where possible, not to provide reassurance and safeguards that a development will have no impacts (which would never be the case). As set out above and in the ES, the impact of changes in hydrodynamics and potential for effects at sensitive receptors including Tilbury2 has been fully assessed. No significant adverse effects at Tilbury2 or the habitats along its frontage are predicted.	Chapter 17: Marine Environment. Appendix 17.2: Hydrodynamic Modelling and Sediment Assessment.
	Impact of saltmarsh creation	3a	We understand that the Applicant now intends to withdraw its previous saltmarsh creation proposal, in response to concerns raised by other parties over potential consequences of using material dredged during causeway construction to promote establishment of saltmarsh on the mudflat.	This is a mischaracterisation of the position. The saltmarsh creation proposal is being withdrawn because the gain in saltmarsh habitat value is not, in the recent advice of consultees, considered to outweigh the value of mudflat that would transition to saltmarsh.	n/a
	Compensatory habitat	3b	Accordingly, there is to be no like-for-like compensatory habitat provided to directly offset these losses. However, by reference to the Marine Environment ES chapter [APP-066] p.46 para 4.2.4, the compensatory provision is now claimed to be in the form of a possible maximum 1.1ha (11,000 sqm) new saltmarsh, which may naturally develop over time if saltmarsh vegetation successfully colonises substrates that accrete in the lee of the causeway.	The likely minor accretion of sediment and subsequent possible natural saltmarsh colonisation in the causeway lee is not a mitigation or compensatory proposal and will not be secured. It is assessed as an impact of the causeway’s presence. The impact is negligible and the effect, in terms of any transition of mudflat to saltmarsh habitat that does occur, is not significant .	Paragraphs 4.2.1 to 4.2.10 of Chapter 17: Marine Environment.

CONSULTEE COMMENTS AND RESPONSES

			<p>However, this ambitious figure of 1.1ha replacement saltmarsh habitat does not appear to have been based on specific modelling, and no assessment is provided as to the likelihood of this being achieved or how monitoring and compensatory measures would apply and over what timescale should this not actually occur.</p> <p>In order that compensatory proposals of this magnitude (1.1ha), and with the potential for impacts upon the Port of Tilbury's landholdings, can be properly assessed, it needs to be shown and evidenced that the proposed mitigation is deliverable, secured and described as such, and that negative impacts have been duly assessed and factored into the Biodiversity Net Gain Assessment.</p>	<p>The saltmarsh creation proposal using dredged material, which would have been a secured enhancement measure, will be withdrawn on the relevant consultees' advice as described previously.</p> <p>As the effects of temporary and permanent intertidal habitat loss are assessed in the ES to be negligible and non-significant, no mitigation of this effect is required. The project will provide biodiversity net gain overall through the provision of onshore habitat enhancement.</p>	
		3c	<p>Furthermore, the cited figure of 1.1ha does not appear to have taken into account the possible balance of corresponding negative scour effects upstream and resulting potential habitat losses, including from areas within the Tilbury2 DCO limits.</p>	<p>See response above – no significant adverse effect from scour is predicted.</p>	n/a
	Causeway construction	4a	<p>By reference to the revised Marine Environment ES chapter [APP-066], we also note that there is a lack of clarity as to whether the projected losses relate to the footprint of the causeway alone, or whether there is likely to be an additional working zone where further temporary impacts on saltmarsh are predicted (due to, for example, ground-level manoeuvring and trampling, machinery working width, etc), including whether such temporary impacts would be remediated and the damaged habitat restored.</p>	<p>The causeway construction will work outwards from the shore within the causeway footprint.</p>	n/a
Biodiversity net gain assessment	Onshore habitat calculations	5a	<p>Firstly, we note that whilst a Biodiversity Net Gain Assessment [APP-093] has been prepared, the Biodiversity Metric spreadsheet itself has not been made available. This makes it unnecessarily difficult for an interested and/or affected party to interrogate and verify the information provided. In addition, transcription from the original metric over to the written report format has resulted in various errors. (For example: by reference to Table 2.1 [APP-093], for 'Heathland and shrub - Mixed scrub' the calculations don't tally if the area of retained habitat is 1.18ha as stated; this figure is deduced by us to be only 0.18ha. Similarly, for 'Lakes - Ditches' the baseline area and/or biodiversity units presented in the report do not tally as set out in the Biodiversity Net Gain Assessment) It is therefore requested that the metric spreadsheet itself is made freely available, including (on request) a completed and unprotected Excel version.</p>	<p>The draft Biodiversity Net Gain Assessment circulated for comment has since been updated further for the project changes, during which process the typographical error (not affecting the totals) has been corrected.</p> <p>With regard to the measurements of intertidal mudflat, the two habitat categories 'Littoral mud' and 'Littoral sand and muddy sand' are now separated in the BNG report.</p> <p>With regard to the measurements of mudflats, estimates were made using two different methods: either using only the Defra mapped dataset for this habitat type or supplementing it with the results of a project-specific survey. The latter approach has been chosen for the final BNG calculations.</p>	Appendix 9.3: Biodiversity Net Gain Report
	Intertidal habitat calculations	5b	<p>Coming to the specifics of the causeway and losses of intertidal habitats, we note that the revised baseline assessment calculations [Table 2.1, APP-093] offer the following figures for intertidal habitats:</p> <ul style="list-style-type: none"> Coastal saltmarsh: 0.5954ha within redline, of which 0.06ha will be lost; Intertidal mudflat (Intertidal sediment - littoral mud): 4.7112ha within redline3, of which 0.47ha will be lost. <p>Some clarity would be welcome in respect of the baseline area of intertidal mudflat within the Order Limits, which was previously given within the Biodiversity Net Gain Assessment [APP-093] as 5.3042ha (2.0438ha + 3.1693ha + 0.0911ha), but now appears to have been reduced to 4.7112ha without there being any reported change in the seaward Order Limits. Note too that the classification 'Intertidal sediment - Littoral mud/ sand and muddy sand' appears to refer to an amalgamation of categories given in the metric, and should also be rectified.</p>	<p>We would be happy to share the BNG calculation sheet, on request, with Natural England as the relevant organisation and developer of the tool.</p>	Appendix 9.3: Biodiversity Net Gain Report

CONSULTEE COMMENTS AND RESPONSES

	Habitat provision	5c	<p>However, the calculations now fail to reflect the mitigation proposed, i.e. saltmarsh creation via natural accretion; and the whole concept of habitat provision via altered natural processes (which is relied on in reaching conclusions of negligible to minor significance in the ES) appears to have been stripped out of the metric calculations, despite it being a fundamental requirement for use of the metric that it should be applied wholesale across all affected habitat. Further work is required here in order to ensure that the Applicant's use of the metric is completely transparent, and can be properly interrogated by others, particularly in respect of claims that it demonstrates net positive change in biodiversity without detriment to biodiversity in adjoining areas</p>	<p>The likely minor accretion of sediment and subsequent possible natural saltmarsh colonisation in the causeway lee is not mitigation. It is not relied upon, in the sense of being mitigation, in the conclusion regarding significance of effect – rather, it is one impact of the causeway's presence and has been assessed as such.</p> <p>We have tested the suitability of applying of the BNG calculator approach to this potential graduate habitat succession. For completeness this is reported in a supplemental section to the BNG report, but as described in that section, we do not consider that it offers a meaningful result.</p> <p>For the avoidance of doubt, the environmental effect of this potential habitat succession has been assessed in Chapter 17.</p>	Paragraphs 4.2.1 to 4.4.2.10 of Chapter 17: Marine Environment.
Habitats Regulations Assessment Report (HRAR)	Updates to HRAR	6a	<p>We note that the Habitats Regulations Assessment Report (the HRAR, APP-040) has not yet been revised to reflect the changes proposed, and this delay is due to ongoing discussion with Natural England. The Applicant asserts that "For the reasons set out above with regard to habitat loss/gain and the impact of causeway decommissioning rather than permanence, we do not consider that there will be any change to the HRA conclusions due to these matters" [RPS letter of 16 November 2020, p5]. However, in view of the large and manifold uncertainties (arising from lack of modelling, questions over practical and secured deliverability, and reliance on a future 'Causeway Decommissioning Plan' which would leave all the detail to be delivered at an unknown future date without the scrutiny of an Examination), we concur with the advice of the Examining Authority (PD-006, p.4-5) that this should be fully updated.</p>	<p>The HRAR has been revised and Natural England has been consulted.</p> <p>We do not accept that there are large and manifold uncertainties, any lack of modelling, or any substantive uncertainty over practicality or deliverability.</p>	HRAR
	PoTLL bird monitoring	6b	<p>In respect of bird use of the affected area of mudflat and shoreline, we assume that the Applicant's HRA will have full regard to the recent (2019-20) data collected by Bioscan UK Ltd in the discharge of PoTLL's obligations under the Bird Monitoring and Action Plan and which is in the possession of Natural England, the MMO and the EA.</p>	<p>The Applicant has previously requested the results of these surveys from PoTLL and from Natural England, but the surveys have not been made available.</p> <p>Surveys during this period commissioned by the Applicant have been presented.</p>	n/a
Planning application 20/01257/FUL			<p>Finally, we note that the Applicant has now submitted an application to Thurrock Council for provision of temporary off-site car parking (for 200 vehicles) and welfare facilities, under planning application number 20/01257/FUL, on a site located to the north of Lakeside shopping centre in the green belt. The parking and welfare provision are intended to service the TFGP application, and would generate flows traversing the Asda Roundabout.</p> <p>PoTLL has already drawn attention to the 'light touch' given to preparation of this related planning application and has raised questions over suitability and deliverability (these submission are not repeated here). Whilst specifically commenting on ecological matters it is therefore germane to highlight that no ecological assessment has been provided in support of that application, or included as a consequential assessment and impact taken into account in the DCO application and submissions and as such the application is deficient.</p> <p>Note too that the application form contains misleading information: it states that there are no designated wildlife sites or even trees/hedges adjacent, yet the site is located in proximity to the 'Th11 Mar Dyke' Local Wildlife Site (LoWS), and is itself part-enclosed by a bank of trees/shrubs</p>	<p>As stated in the Applicant's letter of 30 October 2020 (Procedural Deadline B submission), if PoTLL wishes to comment on the car park planning application (20/01257/FUL) to the local planning authority there is a process in place for them to do so. Comments on that application made in the forum of the Thurrock Flexible Generation Plant DCO Examination continue to be unhelpful and unnecessary.</p>	n/a

Tom Dearing
RPS
By Email

24 November 2020

Our Ref: PoTLL/TFGP/EX/3

Dear Mr Dearing,

Planning Act 2008

Application for the Thurrock Flexible Generation Plant Development Consent Order

Response to letter of 16 November 2020

I write in response to your letter of 16 November 2020 in respect of Thurrock Power Ltd's proposals in respect of the proposed Causeway and associated Saltmarsh and Onshore Habitat proposals, which form part of the Thurrock Flexible Generation Plan project ('the Project').

Annexed to this letter is PoTLL's response to the ecological matters that arise as a consequence of the saltmarsh and habitat matters set out in your letter - I trust that the issues raised here are self-explanatory and I look forward to your response on these matters.

PoTLL also notes the additional proposed DCO requirements that are set out in your letter. As you will be aware, PoTLL has raised concerns in our submissions to date about the content of the draft DCO more generally; and we have also recently received draft Protective Provisions for PoTLL's benefit from your client's legal advisers Burges Salmon.

In this context we intend to write to Burges Salmon, shortly, in respect of the draft DCO and the draft Protective Provisions, which will include consideration of these proposed additional requirements.

However, PoTLL would make the following general comments on the proposed requirements in the meantime:

- generally, the wording will need to be revised to fit with established statutory instrument drafting; for example, spelling out acronyms and not using 'and/or';
- some, at least, of the issues covered by the requirements may be more appropriately contained in Protective Provisions instead, as they relate to protection of PoTLL's statutory undertaking - we are giving this further consideration;
- PoTLL would expect to be consulted on both the access options review and the Causeway Decommissioning Plan that are proposed;
- any access review submitted would need to show how the options do or do not meet the tests for an alternative access that you have suggested in (5);
- the requirement for consents already being place cannot be a test of whether an alternative is feasible, if obtaining consent for a feasible alternative is a step the requirement tells your client to undertake; and



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- any judgement of cost needs to be against a fixed point in time stated in the Requirement.

Finally, PoTLL notes that the Examining Authority's Procedural Decision did not relate solely to the issues set out in your letter. As such, I should be grateful if you would provide an update on your client's progress in dealing with the other matters raised in the Procedural Decision, in advance of Procedural Deadline C.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Peter Ward', written in a cursive style.

PETER WARD
COMMERCIAL DIRECTOR
PORT OF TILBURY LONDON LIMITED

Annex

Comments on updated documents and correspondence in respect of the proposed TFGP causeway and associated ecological mitigation

Prepared by Bioscan UK Limited, on behalf of Port of Tilbury London Limited (POTLL)
24 November 2020

1. The Applicant's proposals for the Thurrock Flexible Generation Plant (TFGP) project include the construction of a causeway and berthing structure in the River Thames. A summary of changes in approach to the mitigation of resulting losses of intertidal habitat were set out in a letter, seeking consultation responses from key stakeholders, prepared on behalf of the Applicant by RPS, and dated 16 November 2020.
2. This note responds to the specifics of that letter on the matter of ecology and follows on from previous submissions by Port of Tilbury London Limited ('PoTLL') dated 26 October 2020 [AS-009].

Impacts on Intertidal Mudflat and Coastal Saltmarsh (Priority Habitats)

3. The new causeway is likely to generate a sheltering effect on the coastline behind it, which is anticipated by the Applicant to create "a new equilibrium with regard to saltmarsh habitat and local hydrodynamics" [RPS letter of 16 November 2020, p3]. There is a focus on the habitat creation potential of any increased local accretion of sediment downstream of this feature, but little or no attention appears to be given the potential for a countervailing scour impact on saltmarsh and mudflat upstream and to the west of the proposed causeway, and potentially extending along the Tilbury2 frontage. In particular, by reference to the revised Marine Environment ES chapter [APP-066], this potential impact does not appear to have been explored or fully modelled. Appendix 17.2 Hydrodynamic Modelling and Sediment Assessment [APP-120] remains as per the original submission and does not appear to include long-term modelling of projected sediment accretion/scour on which conclusions about the likely success or otherwise of the mitigation proposals can be made.
4. During the Tilbury2 examination The Port of Tilbury developed options for mitigating potential small-scale impacts on saltmarsh, and was ultimately able to develop an 'up-and-over' design for the scheme's drainage outfall that results in no discernible impacts upon this habitat. Naturally, reassurance and safeguards are sought that construction of the proposed causeway will not result in changes to local hydrodynamics that could generate negative impacts on Priority intertidal habitats within the Tilbury2 DCO limits and operational port frontage, which the Port has worked to conserve. We are aware, for example, of features such as the nationally scarce plant species (e.g. *Inula crithmoides*) being present in the saltmarsh immediately upstream of the proposed causeway footprint¹, on which the causeway proposals could generate impacts.

Proposal to withdraw saltmarsh creation

¹ For details of which please refer to, *inter alia*, the Tilbury2 ES Chapter 11 [APP-31] and Tilbury2 HRA report [REP5-032].

5. As a consequence of the causeway construction, a permanent loss of 0.06ha (610sqm) of coastal saltmarsh and 0.47ha (4,700sqm) intertidal mudflat has been calculated by the Applicant².
6. We understand that the Applicant now intends to withdraw its previous saltmarsh creation proposal, in response to concerns raised by other parties over potential consequences of using material dredged during causeway construction to promote establishment of saltmarsh on the mudflat. Accordingly, there is to be no like-for-like compensatory habitat provided to directly offset these losses. However, by reference to the Marine Environment ES chapter [APP-066] p.46 para 4.2.4, the compensatory provision is now claimed to be in the form of a possible maximum 1.1ha (11,000 sqm) new saltmarsh, which may naturally develop over time if saltmarsh vegetation successfully colonises substrates that accrete in the lee of the causeway.
7. However, this ambitious figure of 1.1ha replacement saltmarsh habitat does not appear to have been based on specific modelling, and no assessment is provided as to the likelihood of this being achieved or how monitoring and compensatory measures would apply and over what timescale should this not actually occur. Furthermore, the cited figure of 1.1ha does not appear to have taken into account the possible balance of corresponding negative scour effects upstream and resulting potential habitat losses, including from areas within the Tilbury2 DCO limits.
8. In order that compensatory proposals of this magnitude (1.1ha), and with the potential for impacts upon the Port of Tilbury's landholdings, can be properly assessed, it needs to be shown and evidenced that the proposed mitigation is deliverable, secured and described as such, and that negative impacts have been duly assessed and factored into the Biodiversity Net Gain Assessment.

Biodiversity Net Gain Assessment

9. Firstly, we note that whilst a Biodiversity Net Gain Assessment [APP-093] has been prepared, the Biodiversity Metric spreadsheet itself has not been made available. This makes it unnecessarily difficult for an interested and/or affected party to interrogate and verify the information provided. In addition, transcription from the original metric over to the written report format has resulted in various errors. (For example: by reference to Table 2.1 [APP-093], for '*Heathland and shrub - Mixed scrub*' the calculations don't tally if the area of retained habitat is 1.18ha as stated; this figure is deduced by us to be only 0.18ha. Similarly, for '*Lakes - Ditches*' the baseline area and/or biodiversity units presented in the report do not tally as set out in the Biodiversity Net Gain Assessment) It is therefore requested that the metric spreadsheet itself is made freely available, including (on request) a completed and unprotected Excel version.
10. Coming to the specifics of the causeway and losses of intertidal habitats, we note that the revised baseline assessment calculations [Table 2.1, APP-093] offer the following figures for intertidal habitats:
 - **Coastal saltmarsh:** 0.5954ha within redline, of which 0.06ha will be lost;
 - **Intertidal mudflat (Intertidal sediment - littoral mud):** 4.7112ha within redline³, of which 0.47ha will be lost.

² By reference to the revised Marine Environment ES chapter [APP-066], we also note that there is a lack of clarity as to whether the projected losses relate to the footprint of the causeway alone, or whether there is likely to be an additional working zone where further temporary impacts on saltmarsh are predicted (due to, for example, ground-level manoeuvring and trampling, machinery working width, etc), including whether such temporary impacts would be remediated and the damaged habitat restored.

³ Some clarity would be welcome in respect of the baseline area of intertidal mudflat within the Order Limits, which was previously given within the Biodiversity Net Gain Assessment [APP-093] as **5.3042ha** (2.0438ha + 3.1693ha + 0.0911ha), but now appears to have been reduced to **4.7112ha** without there being any reported change in the seaward Order Limits. Note too that the classification '*Intertidal sediment - Littoral mud/ sand and muddy sand*' appears to refer to an amalgamation of categories given in the metric, and should also be rectified.

11. However, the calculations now fail to reflect the mitigation proposed, i.e. saltmarsh creation via natural accretion; and the whole concept of habitat provision via altered natural processes (which is relied on in reaching conclusions of negligible to minor significance in the ES) appears to have been stripped out of the metric calculations, despite it being a fundamental requirement for use of the metric that it should be applied wholesale across all affected habitat. Further work is required here in order to ensure that the Applicant's use of the metric is completely transparent, and can be properly interrogated by others, particularly in respect of claims that it demonstrates net positive change in biodiversity without detriment to biodiversity in adjoining areas.

Habitats Regulations Assessment

12. We note that the Habitats Regulations Assessment Report (the HRAR, APP-040) has not yet been revised to reflect the changes proposed, and this delay is due to ongoing discussion with Natural England. The Applicant asserts that *"For the reasons set out above with regard to habitat loss/gain and the impact of causeway decommissioning rather than permanence, we do not consider that there will be any change to the HRA conclusions due to these matters"* [RPS letter of 16 November 2020, p5]. However, in view of the large and manifold uncertainties (arising from lack of modelling, questions over practical and secured deliverability, and reliance on a future 'Causeway Decommissioning Plan' which would leave all the detail to be delivered at an unknown future date without the scrutiny of an Examination), we concur with the advice of the Examining Authority (PD-006, p.4-5) that this should be fully updated.
13. In respect of bird use of the affected area of mudflat and shoreline, we assume that the Applicant's HRA will have full regard to the recent (2019-20) data collected by Bioscan UK Ltd in the discharge of PoTLL's obligations under the Bird Monitoring and Action Plan and which is in the possession of Natural England, the MMO and the EA.

Public highways

14. Finally, we note that the Applicant has now submitted an application to Thurrock Council for provision of temporary off-site car parking (for 200 vehicles) and welfare facilities, under planning application number 20/01257/FUL, on a site located to the north of Lakeside shopping centre in the green belt. The parking and welfare provision are intended to service the TFGP application, and would generate flows traversing the Asda Roundabout.
15. PoTLL has already drawn attention to the 'light touch' given to preparation of this related planning application and has raised questions over suitability and deliverability (these submissions are not repeated here). Whilst specifically commenting on ecological matters it is therefore germane to highlight that no ecological assessment has been provided in support of that application, or included as a consequential assessment and impact taken into account in the DCO application and submissions and as such the application is deficient⁴.

Summary

16. PoTLL made the submission within its recent letter of 26 October 2020 [AS-009], that whilst general shortcomings of the ES have already been raised by other parties, there are additionally a series of specific matters that directly affect the Port's interests and operations. PoTLL is not yet satisfied that in relation to ecology, the scope for such effects to be detrimental to those interests has been duly assessed and where necessary avoided, mitigated or compensated for. This note should therefore be read as an extension to that letter, serving to identify where further or new gaps and deficiencies have been identified

⁴ Note too that the application form contains misleading information: it states that there are no designated wildlife sites or even trees/hedges adjacent, yet the site is located in proximity to the 'Th11 Mar Dyke' Local Wildlife Site (LoWS), and is itself part-enclosed by a bank of trees/shrubs.

related specifically to the ecology of the causeway proposals (which are further to those ecological matters highlighted at the scoping stage, by reference to the letter from PoTLL's planning consultants dated 12 November 2018). PoTLL remains concerned that there continues to be a less than thorough assessment of potential ecological impacts and that certain information is not presented in an accessible, clear and transparent manner.

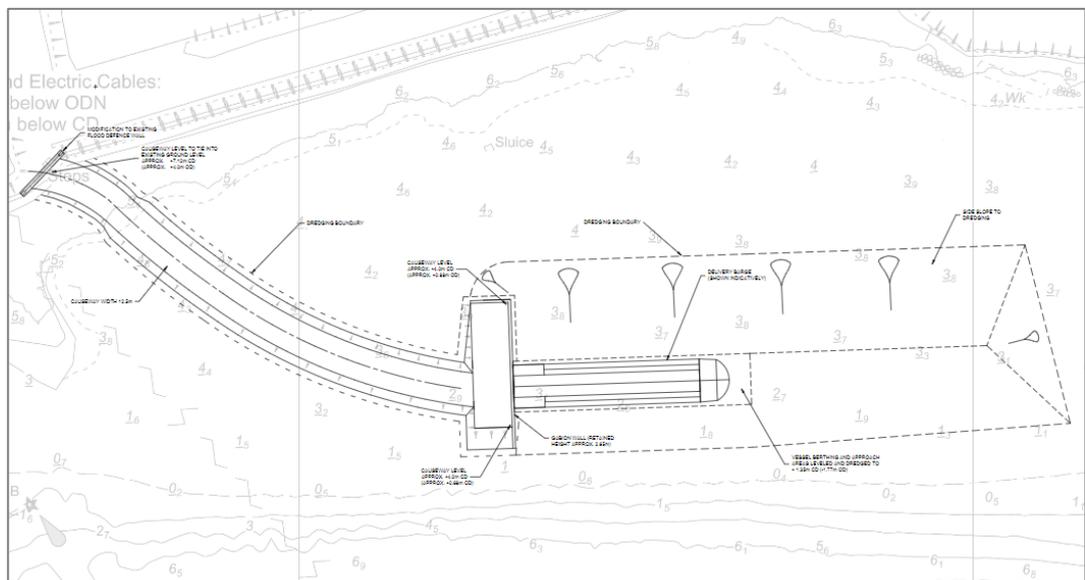
CONSULTEE COMMENTS AND RESPONSES



Port of London Authority and Port of Tilbury London Ltd

Consultation and responses for the Shipping and Navigation Risk Assessment are enclosed.

CONSULTATION SUMMARY REPORT: PRELIMINARY NAVIGATIONAL RISK ASSESSMENT - THURROCK FLEXIBLE POWER GENERATION PLANT CAUSEWAY



02-Dec-2020

Statera Energy Ltd

Ref: 20-NASH-100

Author(s): Sam Anderson-Brown

Checked: Ed Rogers

Issue R01-00

Consultation Summary Report: Preliminary Navigational Risk Assessment - Thurrock Flexible Power Generation Plant Causeway R01-00

REPORT TITLE: CONSULTATION SUMMARY REPORT: PRELIMINARY NAVIGATIONAL RISK ASSESSMENT - THURROCK FLEXIBLE POWER GENERATION PLANT CAUSEWAY

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TABLE OF CONTENTS

1. INTRODUCTION.....	2
2. CONSULTATION SUMMARY	3

TABLE OF TABLES

Table 1: Summary of Consultation Carried out with the PLA.....	4
Table 2: Summary of Consultation with the PLA.....	6

TABLE OF ANNEXES

ANNEX A - MF AGREES BROAD SCOPE OF ASSESSMENT	
ANNEX B - ISSUES DRAFT MINUTES TO MF	
ANNEX C - MEETING MINUTES FROM PLA CONSULTATION MEETING, 8-OCT-2020	
ANNEX D - MF AGREES MINUTES	
ANNEX E - SAB ISSUES DRAFT REPORT TO MF	
ANNEX F - CS COMMENTS ON DRAFT REPORT	
ANNEX G - ER CONFIRMS UNDERSTANDING OF PLA CONCERNS	
ANNEX H- ER SHARES SLIDES AND MINUTES WITH CS	
ANNEX I - MEETING MINUTES FROM PLA CONSULTATION MEETING, 9-NOV-2020	
ANNEX J - PRESENTATION SLIDES, 9-NOV-2020	
ANNEX K - SAB SHARES HAZARD LOGS	
ANNEX L - SAB ISSUES DRAFT REPORT TO CS	
ANNEX M - ER OUTLINES NRA SCOPE TO GH	
ANNEX N - ER OUTLINES NRA SCOPE TO NE	
ANNEX O - NE AGREES PROJECT SCOPE	
ANNEX P- MEETING MINUTES FROM POTLL CONSULTATION MEETING, 02-OCT-2020	
ANNEX Q - SAB ISSUES DRAFT REPORT TO NE	
ANNEX R - NE RAISES POTLL CONCERNS WITH DRAFT REPORT	
ANNEX S - SAB CONFIRMS THAT FURTHER WORK WILL BE CARRIED OUT	
ANNEX T - SLIDES FROM POTLL CONSULTATION MEETING, 20-NOV-2020	
ANNEX U - SAB ISSUES MINUTES FROM 20-NOV-2020 AND DRAFT REPORT.	
ANNEX V - MEETING MINUTES FROM POTLL CONSULTATION MEETING, 20-NOV-2020	

1. INTRODUCTION

The Applicant instructed NASH Maritime Ltd, a specialist Shipping and Navigation consultancy to conduct a Preliminary Navigation Risk Assessment (NRA) for the proposed Thurrock Flexible Power Generation Plant Causeway in September 2020 prior to commencement of the examination hearings. The objective of the assessment was to assess and quantify the navigation risk posed by the Causeway itself, the Causeway marine operation and the passage of heavy lift barges navigating to and from the Causeway, particularly with regards to vessels arriving and departing Tilbury 2.

The assessment also aimed to address and satisfy navigation risk concerns raised by the Port of London Authority (PLA) and Port of Tilbury (POT). Fundamentally, the Pre. NRA considers the need for additional risk control measures to ensure any risk posed by the operation and location of the Causeway remain tolerable and acceptable to the navigation regulator (PLA) and navigation stakeholders (POT).

The Preliminary NRA was based on:

1. Quantitative vessel data (both in terms of the disposition of vessel activity and historical incidents)
2. Consultation with stakeholders to elicit local expert regulator / stakeholder knowledge, and
3. The technical experience and expertise of project consultants

These inputs were used to complete a structured PLA IMO Formal Safety Assessment (FSA) style risk assessment, which determined navigation hazard risk, and identified fit for purpose and practical mitigation measures to ensure navigation risk remains acceptable / tolerable.

2. CONSULTATION SUMMARY

The applicant's navigation consultants consulted throughout the development and drafting of the Preliminary NRA with the PLA and POT over five stages of the NRA process:

- **Pre. Award** - Prior to project commencement consultation with PLA and TOL was undertaken to define a suitable scope that would satisfy their requirements.
- **Hazard Identification and Scoring** – As part of identifying and scoring hazard risk consultation was undertaken present the study methodology, early analysis, initial hazards and indicative risk control measures.
- **Draft report** – The draft Pre. NRA report was issued to consultees for comment and subsequent discussions were had on clarifying those responses.
- **Updated Hazard Identification and Scoring** – based on comments received on the draft report, additional hazard identification, scoring and a further risk control review was undertaken.
- **Final Draft** - Issue of the final draft report to present the additional work carried out and to check this met with expectations.

Table 1 and **Table 2** present a chronological summary of the consultation undertaken with both the PLA and POT respectively. Email correspondence, presentation slides, and meeting minutes can be viewed in **Annexes A** and **U**.

PLA personnel involved in consultation included:

- Mile Featherstone - Deputy Harbour Master
- Cathryn Spain - Senior Harbour Master

POT personnel involved in consultation included:

- Nick Evans (NE) - Asset Manager Marine

Project consultants (from Nash Maritime) undertaking consultation included:

- Dr Ed Rogers (ER) - Director
- Sam Anderson-Brown (SAB) - Senior Consultant

Table 1: Summary of Consultation Carried out with the PLA

Date	Type of interaction	Present	Focus of Discussion	Outcome / Actions	Document Reference
28-Aug-2020	Email	Ed Rogers (ER) to Miles Featherstone (MF)	ER outlined scope of assessment	01-Sep-2020 Miles Featherstone responded to confirm it was his belief that the scope provided “would be sufficient for the PLA’s requirements.”	Annex A - MF Agrees Broad Scope of Assessment
8-Oct-2020	Web Meeting	Ed Rogers Miles Featherstone Sam Anderson-Brown (SAB) Raffi Gracie (RG)	Presentation of Study scope and methodology, initial swept path analysis, hazards and risk control mitigations identified.	Meeting notes circulated for comment confirming MF had no issues with scope of study, approach, hazards identified - 13-Oct-2020 MF responded confirming acceptance of minutes.	Annex B - Issues Draft Minutes to MF Annex C - Meeting Minutes Annex D - MF Agrees Minutes
14-Oct-2020	Draft report sent to PLA	Sam Anderson-Brown to Miles Featherstone	Draft report forwarded for comment	<ul style="list-style-type: none"> - 16-Oct-2020 – MF responded he had no comments and that the report had been forwarded to Cathryn Spain (CS) for review. - 19-Oct-2020 CS responded with detailed comments requesting the scope of the study be include passage of the heavy lift barge on the River Thames as well as the operation in the immediate vicinity of the causeway. 	Annex E - SAB Issues Draft report to MF Annex F - CS Comments on Draft Report

Consultation Summary Report: Preliminary Navigational Risk Assessment - Thurrock Flexible Power Generation Plant Causeway R01-00

Date	Type of interaction	Present	Focus of Discussion	Outcome / Actions	Document Reference
21-Oct-2020	Phone Call	Ed Rogers Sam Anderson-Brown Cathryn Spain (CS)	Discussion to better understand PLA concerns in order to set out way forward.	PLA Concerns - PLA seeking confirmation of how NRA relates to DCO process. - Passage plan should be developed and expanded to include passage of heavy lift barge on the River Thames. - Validity of Data due to Covid-19 - Risk controls need to be agreed with PLA in advance of final report being issued. - Minor textual changes	Annex G- ER Confirms understanding of PLA Concerns
9-Nov-2020	Web Meeting	Ed Rogers Sam Anderson-Brown Cathryn Spain	Meeting to discuss, additional data analysis passage plan and operation detail as well as risk control measures, hazards, and hazard scoring in detail.	CS agreed points had been addressed and a further meeting was necessary to review the revised Hazards and Risk Controls. 18-Nov-2020 - SAB shared Hazard Logs and Risk Assessment Matrix in advance of 20-Nov-2020 meeting.	Annex H- ER Shares slides and Minutes with CS Annex I - Meeting Minutes Annex J - Presentation Slides PLA 9-Nov-20 Annex K – SAB Shares Hazard Logs
20-Nov-2020	Web Meeting	Ed Rogers Sam Anderson-Brown Cathryn Spain	Meeting to give detailed overview of Hazard Logs and Risk Matrix produced.	CS agreed verbally that she was happy with additional work done and risk assessment matrix. It was agreed that CS would review the draft report and issue any further comments.	No meeting minutes issued.
29-Nov-2020	Email	Sam Anderson-Brown to Cathryn Spain	Draft report issued for comment	Awaiting comments	Annex L- SAB issues Draft Report to CS

Table 2: Summary of Consultation with the PLA

Date	Type of interaction	Present	Focus of Discussion	Outcome / Actions	Document Reference
28-Aug-2020	Email	Ed Rogers (ER) to Geoff Holland (GH)	ER outlined scope of assessment	ER telephoned GH to follow up who notified was no longer in the roll and to speak with his deputy – Nick Evans.	Annex M - ER Outlines NRA Scope to GH
02-Sep-2020	Email	Ed Rogers to Nick Evans (NE)	ER outlined scope of assessment	NE responded that he was “in agreement with the proposed scope”	Annex N - ER Outlines NRA Scope to NE Annex O - NE Agrees Project Scope
02-Oct-2020	Web Meeting	Ed Rogers Nick Evans Sam Anderson-Brown Raffi Gracie	Presentation of Study scope and methodology, initial swept path analysis, hazards and risk mitigations identified.	NE noted that location of causeway was not of immediate concern. NE raised some minor issues that are covered in the minutes. 14-Oct-2020 NE requested amendment to minutes. 16 – Oct -2020 SAB accepted amendment and re-issued minutes on	Annex P - Agreed Minutes from 02-Oct-2020
14-Oct-2020	Email	Sam Anderson-Brown to Nick Evans	Issue of Draft report for comment	26-10-2020 - NE summarised POTLL comments on draft report: <ul style="list-style-type: none"> - HAZ ID 3 was too wide and needed breaking down into different hazards - Further detail was required in regard to the causeway operation and passage of heavy lift barge on the Thames. - September was not a representative month, so data was not valid. Also, impact of COVID-19 had not been considered. - Concern that risk control relating to a Marine Operations Plan with POTLL will have adverse impacts on the future operation of the CMAT berth. 	Annex Q - SAB Issues Draft Report to NE Annex R - NE Raises POTLL Concerns with Draft Report

Consultation Summary Report: Preliminary Navigational Risk Assessment - Thurrock Flexible Power Generation Plant Causeway R01-00

Date	Type of interaction	Present	Focus of Discussion	Outcome / Actions	Document Reference
5-Nov-2020	Web Meeting	Ed Rogers Nick Evans Sam Anderson-Brown	Informal call to better understand comments raised by POTLL.	Agreed that NASH would carry out further work to address concerns raised.	Annex S - SAB Confirms that further work will be carried out/
20-Nov-2020	Web Meeting	Ed Rogers Nick Evans Sam Anderson-Brown	Meeting to discuss passage plan, additional data analysis and operation detail as well as risk control measures, hazards, and hazard scoring in detail.	NE agreed that work carried out satisfied POTLL concerns in regard to risk associated with shipping and navigation.	Annex T - Slides from 20-Nov-2020
29-Nov-2020	Email	Sam Anderson-Brown to Nick Evans	Draft report issued for comment as well as minutes from 20-Nov-2020	Awaiting comments	Annex U - SAB Issues Minutes from 20-Nov-2020 and Draft report. Annex V – Minutes from 20-Nov-2020

ANNEX A - MF AGREES BROAD SCOPE OF ASSESSMENT

Edward Rogers

From: Miles Featherstone <Miles.Featherstone@pla.co.uk>
Sent: 01 September 2020 15:11
To: Edward Rogers
Cc: Michael Atkins
Subject: RE: Thurrock Flexible Generation Plant DCO Navigation Assessment

Good Afternoon Ed,

It was good to speak with you last week.

I believe that the broad scope which you have described would be sufficient for the PLA's requirements.

I would be happy to discuss further the particular hazards which the PLA would like to see captured during the stakeholder consultation stage.

Regards,
Miles

Miles Featherstone

Deputy Harbour Master (Lower)

Port of London Authority

T: +44 1474 562248 | M: +44 7734 778614

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From: Edward Rogers <e.rogers@nashmaritime.com>
Sent: 28 August 2020 16:42
To: Miles Featherstone <Miles.Featherstone@pla.co.uk>
Cc: Michael Atkins <Michael.Atkins@pla.co.uk>; Andrew Troup <atroup@stateraenergy.co.uk>; Jamie Holmes <j.holmes@nashmaritime.com>
Subject: Thurrock Flexible Generation Plant DCO Navigation Assessment

This message originated from outside your organisation

Good Afternoon Miles,

Thank you for speaking with me just now. As discussed, then please find attached an outline plot of the Thurrock Flexible Generation Plant DCO Causeway and accompanying Concept Design Report which provides an overview of the propose causeway construction and marine operation.

As discussed the project has been asked to undertake a navigation assessment by Port of Tilbury London Ltd (POTLL) – focused around possible impacts to Tilbury 2 operations. I am also aware of correspondence from PLA (Michael Atkins) where navigation safety was briefly discussed, and note the causeway itself is located within the PLA SHA area.

Nash Maritime has been asked to prepare a scope of works to undertake a navigation assessment and as such I have advised sharing this scope with you first, to ensure it meets the PLA (and also POTLL requirements).

The scope of the assessment is as follows (which we consider to be a fairly light touch approach to reflect the low level risk profile – e.g. as identified by Michael by email dated 20 April 2020 10:09):

1. Review project details / drawings, documents and parameters – e.g. causeway construction / operation
2. Vessel traffic analysis of passing vessels (particularly those bound to/from Tilbury 2) – e.g. track analysis, swept path analysis
3. Stakeholder consultation with PLA and POTLL
4. Navigation assessment to:
 1. Determine navigation risk to passing vessels and proposed marine operation
 2. Identify mitigation measures if required (e.g. lighting of the causeway, barge arrival deconflictions with Tilbury 2 vessels, towage requirements, mooring requirements etc.)
5. Draft and issue short technical report

I would be very grateful if you can advise whether this scope would meet PLA requirements – it is envisaged that in due course the report would form part of the DCO submissions. The assessment will likely be undertaken in September. Please don't hesitate to give me a call if you have any questions or clarifications.

Kind Regards

Ed

Dr Ed Rogers | Director

t: +44 (0) 7906 580 921 | e: e.rogers@nashmaritime.com | w: nashmaritime.com



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ANNEX B - ISSUES DRAFT MINUTES TO MF

Edward Rogers

From: Sam Anderson-Brown
Sent: 27 October 2020 17:24
To: Edward Rogers
Subject: FW: Minutes from yesterdays consultation meeting
Attachments: 20-NASH-0100_PLA_Meeting_201008.docx

Sam Anderson-Brown | Senior Consultant

t: +44 (0) 7515 903 789 | e: s.andersonbrown@nashmaritime.com | w: nashmaritime.com

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From: Sam Anderson-Brown
Sent: 09 October 2020 16:50
To: Miles Featherstone <Miles.Featherstone@pla.co.uk>
Subject: Minutes from yesterdays consultation meeting

Evening Miles,

Thank you for your time yesterday really good to meet you (virtually at least). We really appreciated hearing your thoughts on the preliminary Hazards identified as well as the Risk Control measures that you consider to be of importance and will incorporate your comments and feedback in to the NRA.

Please find attached the minutes from yesterday's meeting. If you have any comments or suggested amendments then please do let me know.

Have a great weekend.

Kind regards,
Sam

Sam Anderson-Brown | Senior Consultant

t: +44 (0) 7515 903 789 | e: s.andersonbrown@nashmaritime.com | w: nashmaritime.com



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ANNEX C - MEETING MINUTES FROM PLA CONSULTATION MEETING, 8- OCT-2020

Notes of Meeting

Thurrock Power Station Causeway (20-NASH-0100)

Client:
 Project: Thurrock Power Station Causeway
 Venue: Video/telecon (MS Teams)
 Date of Meeting: 08-Oct-2020 (1400– 1500)

Present:
 Port of London Authority (PLA) Miles Featherstone - MF
 NASH Maritime Ed Rogers - ER
 NASH Maritime Sam Anderson-Brown - SAB
 NASH Maritime Raffi Gracie - RG

1.	Introductions and Meeting Objectives
	<p>SAB welcomed all and shared screen to show the PowerPoint presentation that has been circulated.</p> <p>SAB introduced the scheme and provided an agenda and objectives for the meeting:</p> <ul style="list-style-type: none"> • Development of causeway and berthing area for vessels associated with the development of Thurrock Power Station. NASH Maritime are providing navigational risk assessment and consultation. • Consultation with the PLA to identify any concerns or considerations that have not yet been identified.
2.	Presentation
	<p>Assessment Methodology</p> <p>SAB outlined the study area, assessment methodology and presented the risk matrix used. MF confirmed that the methodology presented is suitable.</p> <ul style="list-style-type: none"> - It is noted that the Terra Marique is the current design vessel, but this is subject to change. - ER noted that the assessment maybe reviewed in the future if there are any design changes. - MF confirmed that the CMAT berth will become operational in the future, with vessels such as the Yeoman Bridge. ER aware of this and this will be considered within the assessment. <p>AIS Data Analysis</p> <p>SAB presents vessel tracks, traffic density and gate analysis using AIS data collecting between the 22nd September – 5th October 2020.</p>

	<ul style="list-style-type: none"> - ER and MF agree that it should be considered that traffic may be reduced during this period due to COVID-19 pandemic. - MF confirms that this data is suitable given that Tilbury 2 has only recently become operational - SAB highlighted the arrival and departure of commercial vessels at Tilbury 2, namely NORSKY and NORSTREAM. These vessels have fixed AM and PM arrival and departure schedules, regardless of tide. - The closest commercial vessel tracks are 183m from the proposed causeway location. <p>ER highlighted that the AIS data presented may not record recreational vessels. SAB and ER query the presence of recreational vessels north of the groynes.</p> <ul style="list-style-type: none"> - MF agreed that recreational vessels need to be considered. - MF confirmed that recreational vessels are advised against using the area north of the groynes. Recreational vessels will not go closer to the causeway than the NORSKY and NORSTREAM. <p>Preliminary Hazard Identification</p> <p>SAB presented the eight hazards currently identified.</p> <ul style="list-style-type: none"> - MF confirms that all hazards are valid and that no hazards represented a particular concern. - Suggests separating out collision of Terra Marique with a vessel approaching or manoeuvring at Tilbury 2 berths. <p>Preliminary Risk Control Measures</p> <p>SAB presented risk control measures. Discussion regarding whether AtoN around the causeway are required.</p> <ul style="list-style-type: none"> - It was agreed that the need for AtoNs will depend on the final plans for the causeway, considering that lights will require additional structures and therefore could present additional navigational hazards in themselves. - If significant infrastructure such as piles are built, then AtoN (lights) will be required. - MF notes the importance of a Marine Operations Plan with Port of Tilbury.
3.	AOB
	<p>MF queried the need for any speed reductions for passing vessels for when the Terra Marique is maneuvering onto to causeway. Previous wash incidents were noted at Gravesend. ER noted that this will be considered moving forward.</p> <p>MF identified the proximity of the first groyne to the causeway as a potential hazard to conventional tug and tows.</p> <ul style="list-style-type: none"> - Stern tows will be a higher risk because of the increased swinging room required. - This risk could be mitigation by use of a self-propelled vessel or using two tugs.
4.	Actions
	<p>SAB to issue draft NRA to MF next week.</p> <p>MF to review and provide ahead of the DCO hearing on the 20th October.</p>

ANNEX D - MF AGREES MINUTES

Edward Rogers

From: Sam Anderson-Brown
Sent: 27 October 2020 17:16
To: Edward Rogers
Subject: FW: Minutes from yesterdays consultation meeting

Sam Anderson-Brown | Senior Consultant

t: +44 (0) 7515 903 789 | **e:** s.andersonbrown@nashmaritime.com | **w:** nashmaritime.com

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From: Miles Featherstone <Miles.Featherstone@pla.co.uk>
Sent: 13 October 2020 15:17
To: Sam Anderson-Brown <S.AndersonBrown@nashmaritime.com>
Subject: RE: Minutes from yesterdays consultation meeting

Afternoon Sam,

Apologies for the delay.

It was interesting to see your work and I am happy with the minutes, I don't feel any amendments are required.

Kind Regards,
Miles

Miles Featherstone

Deputy Harbour Master (Lower)

Port of London Authority

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From: Sam Anderson-Brown <S.AndersonBrown@nashmaritime.com>

Sent: 09 October 2020 16:50

To: Miles Featherstone <Miles.Featherstone@pla.co.uk>

Subject: Minutes from yesterdays consultation meeting

This message originated from outside your organisation

Evening Miles,

Thank you for your time yesterday really good to meet you (virtually at least). We really appreciated hearing your thoughts on the preliminary Hazards identified as well as the Risk Control measures that you consider to be of importance and will incorporate your comments and feedback in to the NRA.

Please find attached the minutes from yesterday's meeting. If you have any comments or suggested amendments then please do let me know.

Have a great weekend.

Kind regards,
Sam

Sam Anderson-Brown | Senior Consultant

t: +44 (0) 7515 903 789 | e: s.andersonbrown@nashmaritime.com | w: nashmaritime.com



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ANNEX E - SAB ISSUES DRAFT REPORT TO MF

Edward Rogers

From: Sam Anderson-Brown
Sent: 14 October 2020 17:27
To: Miles Featherstone
Subject: Thurrock Causeway Draft Report for comment
Attachments: 20-NASH-0100_100_R01-00.pdf

Good Evening Miles,

Please find attached a copy of the draft report for the Thurrock Flexible Power Generation Plant Causeway. We hope the report is of interest and would welcome any comments or suggested revisions you may have.

Kind regards,
Sam

Sam Anderson-Brown | [Senior Consultant](#)
t: +44 (0) 7515 903 789 | e: s.andersonbrown@nashmaritime.com | w: nashmaritime.com



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ANNEX F - CS COMMENTS ON DRAFT REPORT

Edward Rogers

From: Cathryn Spain <Cathryn.Spain@pla.co.uk>
Sent: 19 October 2020 16:31
To: Sam Anderson-Brown
Cc: Miles Featherstone; Ed Rogers
Subject: RE: Thurrock Causeway Draft Report for comment

Hello Sam,

I have a few comments, as follows:

As the causeway would be subject to a RWL, it is assumed that a full NRA will still be required for this purpose. I am unsure whether the scope of this study only relates to the impact to T2, or whether it has wider considerations. The location of the causeway itself does not pose any major concerns, but there are a number of issues around navigation of the Terra Marique which do not appear to be fully addressed by this study.

Section 1.3.1 states that the recommended track for recreational vessels is to the northern side of the Authorised Channel. this is not the case in this area.

It is unclear how the navigation of the Terra Marique to and from the berth may impact on vessels to and from T2. There is no understanding of her swept path.

The data used to inform the NRA was for a period when both commercial and recreational shipping was down on usual numbers for the time of year, due to the pandemic.

The scored assessment contains a number of mitigation measures which, as far as I am aware, have not been agreed at this point. These include mooring infrastructure, speed easement, navigational aids, MOP with Tilbury etc. The RA also makes reference to the TM possibly having to hold station, yet this does not appear to have been previously mentioned as part of the assessment.

The risk assessment should only be scored with mitigation that has been agreed. If further mitigation is required, but is not in place or agreed, the final scores should not take this into account. Instead, this additional mitigation should be proposed for consideration.

Kind regards,
Cathryn

Cathryn Spain

Harbour Master (Lower)

Port of London Authority

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From: Sam Anderson-Brown <S.AndersonBrown@nashmaritime.com>
Sent: 19 October 2020 15:20
To: Miles Featherstone <Miles.Featherstone@pla.co.uk>; Cathryn Spain <Cathryn.Spain@pla.co.uk>
Cc: Edward Rogers <e.rogers@nashmaritime.com>
Subject: RE: Thurrock Causeway Draft Report for comment

This message originated from outside your organisation

Afternoon Cathryn and Miles,

Were there any comments on the report from a PLA perspective? We are looking to finalise the report by close of play today so if you have any comments then please do let us know.

Kind regards,
Sam

Sam Anderson-Brown | Senior Consultant
t: +44 (0) 7515 903 789 | e: s.andersonbrown@nashmaritime.com | w: nashmaritime.com

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From: Sam Anderson-Brown
Sent: 16 October 2020 15:31
To: Miles Featherstone <Miles.Featherstone@pla.co.uk>
Cc: Edward Rogers <e.rogers@nashmaritime.com>; Cathryn Spain <Cathryn.Spain@pla.co.uk>
Subject: RE: Thurrock Causeway Draft Report for comment

Thanks Miles,

Cathryn, please let me know if you have any questions /comments regarding the report. Very happy to discuss on the phone.

Kind regards,
Sam

Sam Anderson-Brown | Senior Consultant
t: +44 (0) 7515 903 789 | e: s.andersonbrown@nashmaritime.com | w: nashmaritime.com

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From: Miles Featherstone <Miles.Featherstone@pla.co.uk>
Sent: 16 October 2020 15:16

To: Sam Anderson-Brown <S.AndersonBrown@nashmaritime.com>
Cc: Edward Rogers <e.rogers@nashmaritime.com>; Cathryn Spain <Cathryn.Spain@pla.co.uk>
Subject: RE: Thurrock Causeway Draft Report for comment

Afternoon Sam,

I don't have any comments so far. I have passed a copy to Cathryn who is now Senior HM and will be dealing with DCO projects in the future.

Regards,
Miles

Miles Featherstone

Deputy Harbour Master (Lower)

Port of London Authority

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From: Sam Anderson-Brown <S.AndersonBrown@nashmaritime.com>
Sent: 16 October 2020 15:05
To: Miles Featherstone <Miles.Featherstone@pla.co.uk>
Cc: Edward Rogers <e.rogers@nashmaritime.com>
Subject: RE: Thurrock Causeway Draft Report for comment

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Afternoon Miles,

Just wondering if you had any comments regarding the report, appreciate it is a tight turnaround. If you do have any comments it would be great to receive these by close of play on Monday. Happy to have a conversation on the phone if that is easier.

Kind regards,
Sam

Sam Anderson-Brown | Senior Consultant

t: +44 (0) 7515 903 789 | e: s.andersonbrown@nashmaritime.com | w: nashmaritime.com

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From: Sam Anderson-Brown

Sent: 14 October 2020 17:27

To: Miles Featherstone <Miles.Featherstone@pla.co.uk>

Subject: Thurrock Causeway Draft Report for comment

Good Evening Miles,

Please find attached a copy of the draft report for the Thurrock Flexible Power Generation Plant Causeway. We hope the report is of interest and would welcome any comments or suggested revisions you may have.

Kind regards,

Sam

Sam Anderson-Brown | Senior Consultant

t: +44 (0) 7515 903 789 | e: s.andersonbrown@nashmaritime.com | w: nashmaritime.com



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ANNEX G - ER CONFIRMS UNDERSTANDING OF PLA CONCERNS

Edward Rogers

From: Edward Rogers
Sent: 21 October 2020 16:48
To: Sam Anderson-Brown; Cathryn Spain
Cc: Andrew Troup
Subject: RE: Thurrock Causeway Draft Report for comment

Good Afternoon Cathryn,

Many thanks for your time earlier to discuss the Thurrock Causeway Draft Report.

To summarise our discussions then:

1. PLA are not sure how this NRA relates to the DCO and would like the requirement to update the NRA for a PLA River Works License prior to construction – I suggested it may be useful to refer to this NRA as a Preliminary NRA – making it clear it will be updated for the PLA RWL nearer the time as finalised details are available. This has precedence from other DCO's on the Thames and trust this meets with your approval?
2. Your main area of concern was not around the causeway itself, but around the passage on the Thames, to and from the causeway of the *Terra Marique* (noting that the operation of the actual causeway is adequately covered in the risk assessment). You would like the NRA to include determination of how the *Terra Marique* will transit out of Tilbury, cross the PLA channel and transit to site, and how it will cross the channel again and arrive at the causeway and at what states of tide / timings. This necessarily expands the scope of the assessment more widely than just the causeway and its immediate operation which is as currently presented. Essentially your concern is the non-routine nature of the operation and the requirement to ensure there are adequate controls in place to address any heightened risk.
3. Data validity – you have some minor concerns that because of the impact of COVID transit numbers are lower than would be necessarily expected when the operation will take place. I asked whether benchmarking to older data – prior to COVID would help this and you agreed it would be useful.
4. We discussed the need to agree Risk Control Measures with the PLA prior to finalisation of the report and I suggested that it would be possible to set up a meeting to agree controls once we had addressed the points above with a final summary meeting and inclusion of an agreed / adopted risk control measure table in the final NRA report.
5. Other points you raised can be addressed as clarifications / minor textual changes to the existing report?

In terms of the way ahead we propose to widen the scope of the assessment to address your concerns, with the inclusion of an outline/indicative passage plan for the *Terra Marique* and an associated risk assessment update, to re-consult with the PLA, update the report, and finally agree risk controls with the PLA before closing out the final report. I hope this meets with your approval and would appreciate your confirmation in this regard (if you have any further comments please do let me know)? If so, then we will develop a passage plan and hope to arrange a meeting to consult with you on this in the next couple of weeks.

Kind Regards

Ed

Dr Ed Rogers | Director
t: +44 (0) 7906 580 921 | **e:** e.rogers@nashmaritime.com | **w:** nashmaritime.com

From: Sam Anderson-Brown <S.AndersonBrown@nashmaritime.com>
Sent: 21 October 2020 12:31
To: Cathryn Spain <Cathryn.Spain@pla.co.uk>

Cc: Edward Rogers <e.rogers@nashmaritime.com>
Subject: RE: Thurrock Causeway Draft Report for comment

Hi Cathryn,

That's great, we will give you a call at 1400.

Kind regards,
Sam

Sam Anderson-Brown | Senior Consultant
t: +44 (0) 7515 903 789 | **e:** s.andersonbrown@nashmaritime.com | **w:** nashmaritime.com

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From: Cathryn Spain <Cathryn.Spain@pla.co.uk>
Sent: 21 October 2020 10:44
To: Sam Anderson-Brown <S.AndersonBrown@nashmaritime.com>
Subject: RE: Thurrock Causeway Draft Report for comment

Hi Sam,

I will be available between 2 and 3 this afternoon, on my mobile.

Kind regards,
Cathryn

Cathryn Spain
Harbour Master (Lower)

Port of London Authority
T: +44 1474 562212 | M: +44 7715 812692

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From: Sam Anderson-Brown <S.AndersonBrown@nashmaritime.com>
Sent: 20 October 2020 17:32
To: Cathryn Spain <Cathryn.Spain@pla.co.uk>
Cc: Miles Featherstone <Miles.Featherstone@pla.co.uk>; Edward Rogers <e.rogers@nashmaritime.com>
Subject: RE: Thurrock Causeway Draft Report for comment

This message originated from outside your organisation

Hi Cathryn,

I have just noticed that the address for Ed in the original email and my follow up email to you just now went to the wrong address. Ed's current email address is e.rogers@nashmaritime.com. Please could you use this for all correspondence?

Kind regards,

Sam

Sam Anderson-Brown | Senior Consultant
t: +44 (0) 7515 903 789 | e: s.andersonbrown@nashmaritime.com | w: nashmaritime.com

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From: Sam Anderson-Brown
Sent: 20 October 2020 17:08
To: Cathryn Spain <Cathryn.Spain@pla.co.uk>
Cc: Miles Featherstone <Miles.Featherstone@pla.co.uk>; Ed Rogers <ed.rogers@marico.co.uk>
Subject: RE: Thurrock Causeway Draft Report for comment

Hi Cathryn,

Thanks for the comments, we recognise the turnaround for this was quite tight so have extended the deadline for incorporating comments to the 28th October. Would you be available for a call tomorrow so we can review the below with you?

Kind regards,

Sam

Sam Anderson-Brown | Senior Consultant
t: +44 (0) 7515 903 789 | e: s.andersonbrown@nashmaritime.com | w: nashmaritime.com

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From: Cathryn Spain <Cathryn.Spain@pla.co.uk>
Sent: 19 October 2020 16:31
To: Sam Anderson-Brown <S.AndersonBrown@nashmaritime.com>
Cc: Miles Featherstone <Miles.Featherstone@pla.co.uk>; Ed Rogers <ed.rogers@marico.co.uk>
Subject: RE: Thurrock Causeway Draft Report for comment

Hello Sam,

I have a few comments, as follows:

As the causeway would be subject to a RWL, it is assumed that a full NRA will still be required for this purpose. I am unsure whether the scope of this study only relates to the impact to T2, or whether it has wider considerations. The location of the causeway itself does not pose any major concerns, but there are a number of issues around navigation of the Terra Marique which do not appear to be fully addressed by this study.

Section 1.3.1 states that the recommended track for recreational vessels is to the northern side of the Authorised Channel. this is not the case in this area.

It is unclear how the navigation of the Terra Marique to and from the berth may impact on vessels to and from T2. There is no understanding of her swept path.

The data used to inform the NRA was for a period when both commercial and recreational shipping was down on usual numbers for the time of year, due to the pandemic.

The scored assessment contains a number of mitigation measures which, as far as I am aware, have not been agreed at this point. These include mooring infrastructure, speed easement, navigational aids, MOP with Tilbury etc. The RA also makes reference to the TM possibly having to hold station, yet this does not appear to have been previously mentioned as part of the assessment.

The risk assessment should only be scored with mitigation that has been agreed. If further mitigation is required, but is not in place or agreed, the final scores should not take this into account. Instead, this additional mitigation should be proposed for consideration.

Kind regards,
Cathryn

Cathryn Spain
Harbour Master (Lower)

Port of London Authority
T: +44 1474 562212 | M: +44 7715 812692

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From: Sam Anderson-Brown <S.AndersonBrown@nashmaritime.com>
Sent: 19 October 2020 15:20
To: Miles Featherstone <Miles.Featherstone@pla.co.uk>; Cathryn Spain <Cathryn.Spain@pla.co.uk>
Cc: Edward Rogers <e.rogers@nashmaritime.com>
Subject: RE: Thurrock Causeway Draft Report for comment

This message originated from outside your organisation

Afternoon Cathryn and Miles,

Were there any comments on the report from a PLA perspective? We are looking to finalise the report by close of play today so if you have any comments then please do let us know.

Kind regards,
Sam

Sam Anderson-Brown | Senior Consultant
t: +44 (0) 7515 903 789 | e: s.andersonbrown@nashmaritime.com | w: nashmaritime.com

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From: Sam Anderson-Brown
Sent: 16 October 2020 15:31
To: Miles Featherstone <Miles.Featherstone@pla.co.uk>
Cc: Edward Rogers <e.rogers@nashmaritime.com>; Cathryn Spain <Cathryn.Spain@pla.co.uk>
Subject: RE: Thurrock Causeway Draft Report for comment

Thanks Miles,

Cathryn, please let me know if you have any questions /comments regarding the report. Very happy to discuss on the phone.

Kind regards,
Sam

Sam Anderson-Brown | Senior Consultant
t: +44 (0) 7515 903 789 | e: s.andersonbrown@nashmaritime.com | w: nashmaritime.com

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From: Miles Featherstone <Miles.Featherstone@pla.co.uk>
Sent: 16 October 2020 15:16
To: Sam Anderson-Brown <S.AndersonBrown@nashmaritime.com>
Cc: Edward Rogers <e.rogers@nashmaritime.com>; Cathryn Spain <Cathryn.Spain@pla.co.uk>
Subject: RE: Thurrock Causeway Draft Report for comment

Afternoon Sam,

I don't have any comments so far. I have passed a copy to Cathryn who is now Senior HM and will be dealing with DCO projects in the future.

Regards,
Miles

Miles Featherstone

Deputy Harbour Master (Lower)

Port of London Authority

T: +44 1474 562248 | M: +44 7734 778614

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From: Sam Anderson-Brown <S.AndersonBrown@nashmaritime.com>

Sent: 16 October 2020 15:05

To: Miles Featherstone <Miles.Featherstone@pla.co.uk>

Cc: Edward Rogers <e.rogers@nashmaritime.com>

Subject: RE: Thurrock Causeway Draft Report for comment

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Afternoon Miles,

Just wondering if you had any comments regarding the report, appreciate it is a tight turnaround. If you do have any comments it would be great to receive these by close of play on Monday. Happy to have a conversation on the phone if that is easier.

Kind regards,
Sam

Sam Anderson-Brown | Senior Consultant

t: +44 (0) 7515 903 789 | e: s.andersonbrown@nashmaritime.com | w: nashmaritime.com

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From: Sam Anderson-Brown
Sent: 14 October 2020 17:27
To: Miles Featherstone <Miles.Featherstone@pla.co.uk>
Subject: Thurrock Causeway Draft Report for comment

Good Evening Miles,

Please find attached a copy of the draft report for the Thurrock Flexible Power Generation Plant Causeway. We hope the report is of interest and would welcome any comments or suggested revisions you may have.

Kind regards,
Sam

Sam Anderson-Brown | Senior Consultant
t: +44 (0) 7515 903 789 | e: s.andersonbrown@nashmaritime.com | w: nashmaritime.com



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ANNEX H- ER SHARES SLIDES AND MINUTES WITH CS

Edward Rogers

From: Edward Rogers
Sent: 10 November 2020 12:05
To: Cathryn Spain; Sam Anderson-Brown
Cc: Andrew Troup; James Trimmer; Michael Atkins
Subject: RE: Thurrock Causeway Draft Report for comment
Attachments: 20-NASH-0100_PLA_Meeting_09112020.docx; 20-NASH-0100_Thurrock_PLA_Meeting_09112020_R01-00.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Good Afternoon Cathryn,

Many thanks for your time yesterday running through the Thurrock Causeway Marine Operation.

As discussed please find attached draft meeting notes for your review and also a pdf of the presentation we went through.

The outstanding operational issue we discussed associated with the causeway marine operation was the extent of any ease down requirements for passing vessels. I spoke to Peter Wynn this morning (who owns the Terra Marique) and he advised that they typically work to a wave height limit of up to 0.5m for operations and as such I will add this into the weather limits. He therefore advised that he wasn't overly worried by passing vessel wash and that a speed easement (if necessary) should be limited to the transition period whilst the TM takes the ground.

He envisaged the request for a speed easement be made by the pilot on board (or PEC B), via notifying the PLA VTS, around 10 minutes or so prior to the transition occurring. He also advised that in other situations they had simply waited for vessels to pass before transitioning to being aground (e.g. in Dover). Clearly there will be failing tide (on arrival and a rising tide on departure) so the extent of any delay would be limited, but he envisaged being able to time it to minimise any impact on passing vessels (perhaps with liaison between the pilot and PLA VTS). Once safety aground and with a falling tide and de-ballasting, he envisaged the speed easement to be no longer than 30 minutes in total and the pilot could notify PLA VTS once safety aground. I have added in a slide in the presentation largely covering this, and also undertook some analysis on PLA Tilbury tidal data to show the time it would take for the TM to transition from +0.5m UKC (safely afloat) to -0.5m UKC (safely aground) – which (as Peter identified) is between 20-30 minutes depending on whether it is a spring vs neap tide. It is envisaged that the same duration would be applicable for re-floating as well.

As discussed we will update the risk assessment sheets in excel and share these with you for review prior to updating and finalising the draft report (which we will also share in due course).

If anything comes to mind that we didn't cover yesterday then please let me know and we can address as necessary.

Many thanks

Ed

Dr Ed Rogers | Director
t: +44 (0) 7906 580 921 | **e:** e.rogers@nashmaritime.com | **w:** nashmaritime.com

From: Cathryn Spain <Cathryn.Spain@pla.co.uk>
Sent: 23 October 2020 16:12
To: Sam Anderson-Brown <S.AndersonBrown@nashmaritime.com>
Cc: Andrew Troup <atroup@stateraenergy.co.uk>; Edward Rogers <e.rogers@nashmaritime.com>; James Trimmer

<james.trimmer@pla.co.uk>; Michael Atkins <Michael.Atkins@pla.co.uk>

Subject: RE: Thurrock Causeway Draft Report for comment

Hi Sam,

I will be on leave all next week and on a training course on the 2nd, so will not be available until 3rd November.

Responses to Ed's points as follows:

1. PLA are not sure how this NRA relates to the DCO and would like the requirement to update the NRA for a PLA River Works License prior to construction – I suggested it may be useful to refer to this NRA as a Preliminary NRA – making it clear it will be updated for the PLA RWL nearer the time as finalised details are available. This has precedence from other DCO's on the Thames and trust this meets with your approval?

[It has not yet been determined whether future works will be subject to a PLA RWL. If they will not then the NRA needs to adequately cover all of our concerns at this stage.](#)

2. Your main area of concern was not around the causeway itself, but around the passage on the Thames, to and from the causeway of the Terra Marique (noting that the operation of the actual causeway is adequately covered in the risk assessment). You would like the NRA to include determination of how the Terra Marique will transit out of Tilbury, cross the PLA channel and transit to site, and how it will cross the channel again and arrive at the causeway and at what states of tide / timings. This necessarily expands the scope of the assessment more widely than just the causeway and its immediate operation which is as currently presented. Essentially your concern is the non-routine nature of the operation and the requirement to ensure there are adequate controls in place to address any heightened risk.

[I do not agree that the operation of the causeway is adequately covered in the RA. The causeway is being constructed specifically for the operation of the Terra Marique, or similar vessel and understanding how the vessel will arrival and depart the causeway is an integral part of its operation. I do not believe this has been sufficiently addressed. In addition, the passage of the vessel to and from the causeway also needs to be addressed to understand how her operation may impact on other traffic.](#)

3. Data validity – you have some minor concerns that because of the impact of COVID transit numbers are lower than would be necessarily expected when the operation will take place. I asked whether benchmarking to older data – prior to COVID would help this and you agreed it would be useful.

[I agree that combining suitable pre-COVID data with the data for T2 should be sufficient.](#)

4. We discussed the need to agree Risk Control Measures with the PLA prior to finalisation of the report and I suggested that it would possible to set up a meeting to agree controls once we had addressed the points above with a final summary meeting and inclusion of an agreed / adopted risk control measure table in the final NRA report.

[Any risk control measures that have not been agreed should not be included in the NRA.](#)

5. Other points you raised can be addressed as clarifications / minor textual changes to the existing report?

Agreed

Kind regards,
Cathryn

Cathryn Spain
Senior Harbour Master

Port of London Authority
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From: Sam Anderson-Brown <S.AndersonBrown@nashmaritime.com>
Sent: 23 October 2020 10:30
To: Edward Rogers <e.rogers@nashmaritime.com>; Cathryn Spain <Cathryn.Spain@pla.co.uk>
Cc: Andrew Troup <atroup@stateraenergy.co.uk>
Subject: RE: Thurrock Causeway Draft Report for comment

This message originated from outside your organisation

Morning Cathryn,

Just following up on Ed's email earlier this week. We are now working to widen the scope of our assessment in order to address the concerns you raised in our call on 21st October. As Ed outlines below we will include an indicative passage plan for the Terra Marique and update the risk assessment accordingly. I would be grateful if you could confirm whether the actions outlined by Ed below meet with your approval.

As previously discussed we would like to arrange a further consultation meeting with you once the passage plan has been drafted and the associated risk assessment updated. We anticipate completing the work next week. Would you be available for a call next Friday, 30th November?

Kind regards,
Sam

Sam Anderson-Brown | Senior Consultant
t: +44 (0) 7515 903 789 | e: s.andersonbrown@nashmaritime.com | w: nashmaritime.com

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**ANNEX I - MEETING MINUTES FROM PLA CONSULTATION MEETING, 9-
NOV-2020**

Notes of Meeting

Thurrock Power Station Causeway (20-NASH-0100)

Client: Statera Energy
 Project: Thurrock Power Station Causeway
 Venue: Video/telecon (MS Teams)
 Date of Meeting: 09-Nov-2020 (1200– 1415)

Present:

Port of London Authority (PLA) Cathryn Spain - CS
 NASH Maritime Ed Rogers - ER
 NASH Maritime Sam Anderson-Brown - SAB
 Statera Energy Andrew Troup - AT

1.	Introductions and Meeting Objectives
	<ul style="list-style-type: none"> - AT introduced himself to CS and gave some background to his involvement with consultation discussions with the PLA thus far. AT queried whether all new operations in PLA waters were required to submit indicative passage plans. CS clarified that this was the case and all operations are subject to full NRA's. - AT thanked CS for her time and for giving reassurance on this point. - AT left the call. - ER summarised those individuals who had contributed to the indicative passage plan so far in order to give wider context. - ER outlined the topics to be covered during the call.
2.	Review of NRA to date
	<ul style="list-style-type: none"> - ER outlined a timeframe for the work conducted on the NRA to date and gave a summary of the consultations conducted so far.
3.	Recap of PLA Comments on draft Navigation Risk Assessment
	<ul style="list-style-type: none"> - Discussion regarding how the current NRA relates to the DCO application process – it was agreed that the NRA report would include some wording that made it clear the PLA would require a further review of an enhanced NRA prior to construction, there should be a protected provision within the DCO allowing for this review. - CS clarified that embedded risk controls should be included when scoring inherent risk. - ER explained that additional work had been carried out in order to give detail of the indicative passage plan for the operation and that further data sets had been analysed to reflect the fact that the vessel transits could possibly be down due to Covid-19.
4.	Project Scheme
	<p>A) Concept Design</p> <ul style="list-style-type: none"> - ER gave an overview of the Causeway Concept Design. <p>B) Operation Passage</p> <ul style="list-style-type: none"> - ER advised that NASH feel that the passage of the Terra Marique (TM) from Tilbury (or another port) to the Causeway site and her subsequent berthing and unloading should

	<p>be addressed in the NRA report. The report will not address the arrival of the seagoing Heavy Lift Ship, the offload of the AIL's at Tilbury or their transfer from the seagoing Heavy Lift Ship to the TM. CS agreed that this was appropriate and noted that the key element of the passage that would need to be addressed was the passage the TM undertakes whilst laden.</p> <ul style="list-style-type: none"> - ER outlined suggested project vessels – It was noted that whilst the Tugs mentioned are interchangeable the TM is fairly unique and if not available for the operation further work may be required to address operational impacts that this may have e.g. berthing. - ER presented plans for passage including: <ul style="list-style-type: none"> • Tow configuration • Indicative passage plan and MTS indicative plan. • Waiting area and layby area options • Berthing options • Berthing operation • Weather limitations - It was agreed that a channel closure would not be required whilst the TM transited. - CS queried whether TM would remain stable at all levels of tide once ballasted down – ER and SAB to check. - CS confirmed she saw no issue with applying a short temporary speed easement whilst the TM ballasted down but advised such a measure would not be appropriate for the duration of the time the TM is berthed at the Causeway. - CS explained she felt the passage plan detail provided was sufficient to satisfy concerns.
†	<p>Vessel Traffic Analysis</p>
	<ul style="list-style-type: none"> - ER presented Vessel Traffic Analysis for the 2018 and 2020 data sets examined. - The main differences highlighted were the commercial traffic utilising Tilbury 2, the tug and tow activity around East Tilbury Jetty and the decrease in leisure craft due to Covid – 19. - It was agreed that an examination of the 2018 data set satisfied previous concerns that the 2020 data was not a representative sample. - CS felt that possible future increases in intra-port trade due to the London Resort DCO were unlikely to impact the Causeway operation because the developments are unlikely to coincide. - ER explained that NASH are conducting further analysis of data to ascertain vessel transit numbers at varying states of tide – this will be included in the final NRA report.
6.	<p>Navigation Risk Assessment</p>
	<ul style="list-style-type: none"> - ER shared an excel sheet documenting the NRA matrix used so far. - CS confirmed the methodology used was appropriate. <p>A) Hazard Identification</p> <ul style="list-style-type: none"> - The identified hazards were reviewed, and all agreed they were appropriate, CS was happy that no additional hazards were necessary, although it was agreed to share the excel sheet so CS could undertake a more thorough review once an updated draft hazard log was completed. - CS noted that recreational craft are discouraged from navigating north of the groynes to the west of the proposed causeway site. <p>B) Hazard Scoring</p> <ul style="list-style-type: none"> - CS reiterated that inherent risk should be scored based on embedded risk control measures in place. <p>C) Risk Controls</p> <ul style="list-style-type: none"> - The risk control measures were reviewed, and it was agreed: <ul style="list-style-type: none"> • CS would confirm PLA requirements for Aids to Navigation - could just be day marks

	<ul style="list-style-type: none"> • A requirement to navigate with due care and attention could be included as an embedded risk control but a temporary speed easement would be added as an additional risk control measure. • Pilotage was compulsory and therefore an embedded risk control, there is no requirement for local knowledge being an additional risk control measure as PEC holders /pilots will require training as the Causeway is a new berth. A discussion was had on ensuring this local knowledge was suitable to causeway operations (given the berth would be new – and it was agreed this would be reviewed prior to commencement of works – possibly through simulation. • A notice to mariners would be a sensible risk control measure and should include details of any temporary speed easement and be regularly updated. • The PLA should be included in any Marine Operations Plans between the Causeway Operator and POTLL. This was due to the fact that the causeway is located in PLA SHA waters and as such it was necessary for PLA to approve any traffic management plans to ensure they were appropriate, did not impact passing vessel traffic and did not contradict a detailed passage plan, required prior to commencement of operations.. • CS felt there was no requirement for a safety / Guard Boat as an additional risk control measure and that she was satisfied the passage of the TM could be dealt with by PLA VTS within normal operating parameters. • Expert Local Knowledge should be removed as an additional control measure as it is covered with pilotage as an embedded control.
7.	Actions
	<ul style="list-style-type: none"> - ER / SAB to update Risk Assessment and share with CS - ER / SAB to organise further consultation meeting once CS has had a chance to review updated risk assessment to confirm hazard scoring and determination of agreed risk control measures. - CS to provide clarification on PLA's view regarding appropriate aids to navigation. - ER / SAB to send presentation slides for review. - ER / SAB to provide clarification on whether TM will remain secure at all levels of tide when ballasted down.

ANNEX J - PRESENTATION SLIDES, 9-NOV-2020

Thurrock Causeway Navigation Risk Assessment



Contents



1. Introductions & Project Team
2. Review of NRA work to date
3. PLA Concerns / Comments on draft Navigation Risk Assessment
4. Project / Scheme
 - a. Concept Design
 - b. Operation / Passage
5. Vessel Traffic Analysis
6. Navigation Risk Assessment
 - a. Hazard Identification
 - b. Risk Controls
7. Summary

Client:



Introductions & Project Team



Introductions and Project Team



1. PLA

a. Cathryn Spain – PLA Senior HM

2. Project

a. Thurrock Flexible Power Generation (Andrew Troup)

b. Nash Maritime (Ed Rogers & Sam Anderson Brown)

c. Peter Wynn - Terra Marique (available by telephone as necessary)

d. Chris Livett – Thames towage specialist (available by telephone as necessary)

e. Chris Evan- MTS (available by telephone as necessary)

Client:



Review of NRA work to date

1. NRA commenced mid / Sept
2. Scope review and confirmation with POTLL and PLA
3. Vessel traffic data collection (to cover operation of T2) – Sept 22nd - Oct 5th
4. Consultation with POTLL and PLA
5. Draft NRA Report
 - a. Assessed risk for 9 hazards
 - b. Identified risk controls options

Hazard ID	Hazards
Haz Id #:1	Contact of "Terra Marique" with Causeway, Tilbury 2 or other structures
Haz Id #:2	Contact with Causeway by passing vessels (All types)
Haz Id #:3	Collision of "Terra Marique" with vessels arriving and departing Tilbury 2 and other Commercial vessels outside the Authorised Channel
Haz Id #:4	Collision of "Terra Marique" with passing vessel Commercial (All types)
Haz Id #:5	Collision of "Terra Marique" with passing Recreational vessels
Haz Id #:6	Collision of "Terra Marique" with passing Tug and Tow
Haz Id #:7	Grounding of "Terra Marique" as a result of Causeway operation
Haz Id #:8	Grounding of non-project vessels as a result of Causeway operations (All types)
Haz Id #:9	Breakout of "Terra Marique" during berthing / coming alongside

PLA comment on Draft RNA report

PLA Comment / Concern	Action
1. Unclear how the NRA relates to the DCO application?	Specify the requirement to update the NRA prior to construction and for PLA to review and approve prior to construction?
2. NRA needs to include more details on the operation of the causeway and passage on the Thames, to and from the causeway, of the Terra Marique.	Present more details on the passage and operation of the causeway and add in additional hazards to cover this. Purpose of this presentation
3. Data validity – PLA have some minor concerns that because of the impact of COVID transit numbers are lower than would be necessarily expected when the operation will take place.	Provide further vessel traffic analysis based on pre-COVID data and relate sample AIS vessel traffic analysis to commercial vessel seasonality.
4. Risk Control Measures - PLA require that only agreed risk control measures are included in the final report.	Prior to finalisation of the report then set up a meeting to agree adopted risk control measures. Include table of agreed / adopted risk control measures table in the final NRA report.
5. Other minor points.	Addressed as clarifications / minor textual changes to the existing report

Project / Scheme

Concept Design

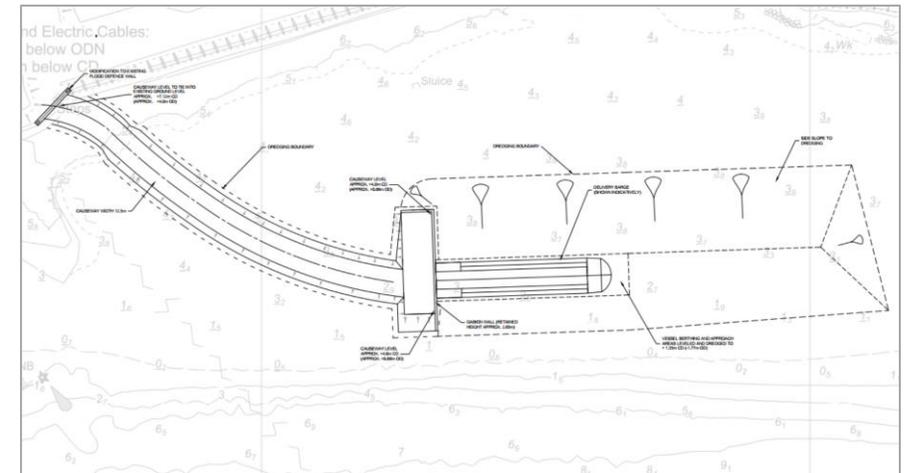
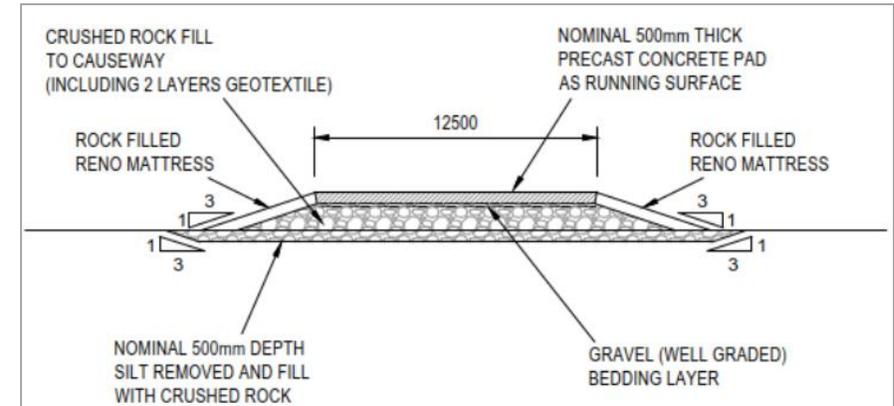
Operation

Passage Plan



Causeway Concept Design

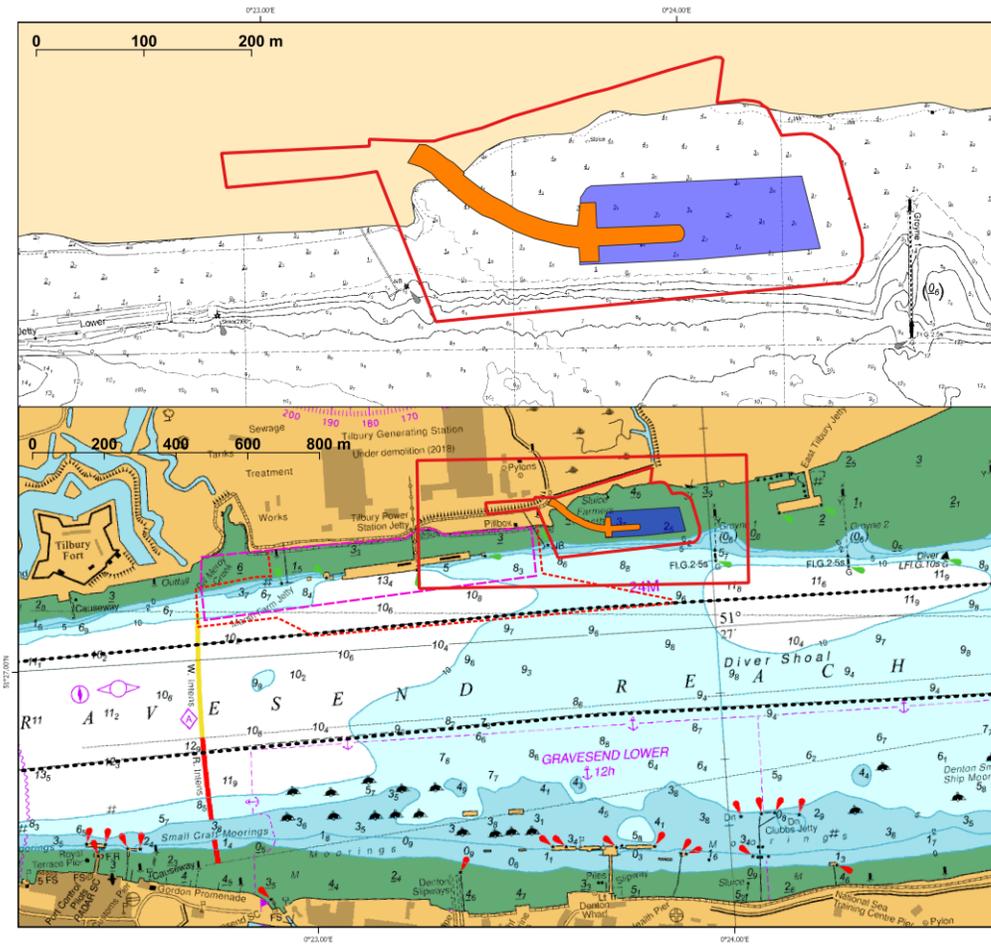
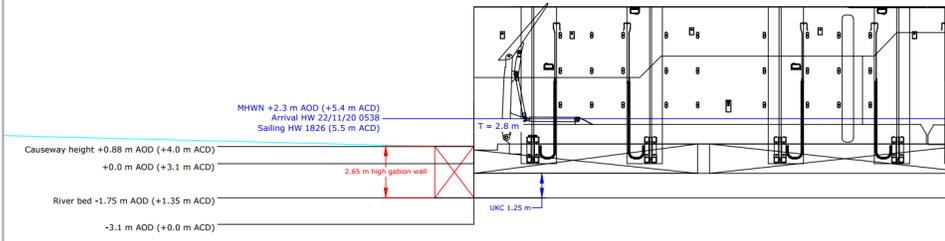
- Development of a causeway for the delivery of Abnormal Indivisible Loads (AILs) for the construction of the proposed Thurrock Flexible Power Generation Plant.
- The causeway will be serviced by specialist heavy lift barges (e.g. *Terra Marique*)
- Terra Marique will deliver multiple AILs per visit of approximately 350T each (e.g. up to 3 AILs), which will be transported off the barge to the construction site.
- Total of up to 60 AILs – so anticipate 20 – 40 movements – possibly over 6 month period.
- It is envisaged that the causeway will remain post construction of the power plant to aid any maintenance or decommissioning requirements



Concept Design

- Causeway depths
 - Berth dredged to +1.35m CD
 - Approaches dredged to +1.35m CD
- Causeway Level
 - +4.0m CD
- Operational Parameters
 - HW (Springs and Neaps)

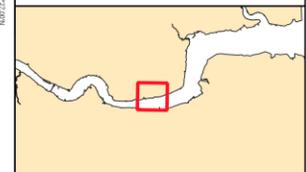
Arrival/sailing condition



Thurrock Flexible Generation Plant, Illustrative General Arrangement Plans.

- Legend**
- Orange square: Causeway
 - Blue square: Barge Berthing Pocket
 - Red outline: Red Line Boundary
 - Dashed line: Authorised Channel
 - Dotted line: Tilbury 2 DCO Boundary
 - Pink outline: Tilbury 2 Harbour Limits

Data Sources:
 PLA Chart 336/337/339
 Admiralty Chart 1186-2



Coordinate System: EPSG:32630
 Created by: RG Checked by: ER Date: 13/10/2020
 Ref: NASH0100_Thurrock_site_overview_v1_20201006



Operation & Passage Plan

- Operation & Passage Plan Scope
 - Heavy Lift Ship transit to AIL transshipment site – **considered generic**
 - TM Mobilisation to AIL transshipment site – **considered generic**
 - Offload of AIL from heavy lift vessel to TM – **considered generic**
 - Focus of NRA “*Passage of TM from AIL Transshipment site (e.g. Tilbury) to Causeway and back to AIL Transshipment site*”
 - Departure from AIL Transshipment Site
 - Passage of River Thames to Causeway
 - Berthing at causeway & unloading of AIL at causeway
 - Un-berthing at causeway (Assumed reverse of above)
 - Passage of River Thames to Causeway (Assumed reverse of above)
 - Arrival at AIL transshipment Site (Assumed reverse of above)

Vessels

<ul style="list-style-type: none"> • Terra Marique (Motorised Barge) 	<ul style="list-style-type: none"> • Motorised heavy lift barge (100AT) (Cat D waters) • LOA 80m / Beam 16.5m / Draught (loaded) 2.8m • Speed Forwards 4.75 kn / Transverse 1.5kn • Mooring – 2 x spud poles and 4 point Mooring system • Crew: Boat Master Tier 1/2 (1 Barge Master, 2 Engineers, 2 AB and Load Master) • Cat D Waters 	 
<ul style="list-style-type: none"> • MTS Valour or similar (Primary Tug) 	<ul style="list-style-type: none"> • BV - Tug Coastal Area / MCA Cat 1 • LOA 23m / Beam 9.65m / Draught 2.99m • Bollard pull 23 ton • Crew: Boat Master 	
<ul style="list-style-type: none"> • Thames Vixen or similar (Berthing Tug) 	<ul style="list-style-type: none"> • Ship & Craft towage (MCA Cat 2) • LOA 16.5m / Beam 5.18m / Draught 2.3m • Bollard pull 10ton • Crew: Boat Master 	

MTS Passage Plan includes

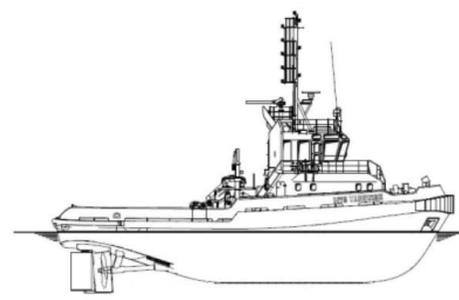
- Waypoints
- Lat / Long
- Course
- Remarks
- VHF CH
- Extract provided

WPT	WPT NAME	LAT	LONG	COURSE /LEG	DISTANCE	REMARKS
0	Tilbury Basin	51° 27.274 N	000° 20.798 E			Keep Look out for outbound / inbound vessels to/from Lock & movements in basin Call Tilbury Dock VHF CH 17/ CH 04
1	Enter Tilbury Lock	51° 27.270 N	000° 20.653 E	267.5° 0.08 NM	0.08 NM	Keep Look out for outbound / inbound vessels to/from Lock Call Tilbury Dock VHF CH 17/ CH 04
2	Exit Tilbury Lock	51° 27.295 N	000° 20.322 E	276.9° 0.21 NM	0.30 NM	Keep Look out for outbound / inbound vessels to/from Lock Call Tilbury Dock VHF CH 17/ CH 04
3	Start Crossing Channel	51° 27.332 N	000° 20.000 E	280.4° 0.16 NM	0.46 NM	Keep Look out for outbound / inbound vessels ,Vessels approaching to Tilbury Call LONDON VTS VHF CH 68
4	WP No4	51° 27.238 N	000° 19.806 E	232.5° 0.10 NM	0.56 NM	Keep Look out for outbound / inbound vessels Keep watch VHF CH 68/ CH 16
5	Bevans Wharf	51° 27.086 N	000° 19.976 E	145.0° 0.22 NM	0.78 NM	Keep Look out for outbound / inbound vessels Keep watch VHF CH 68/ CH 16



MTS TOWING MANUAL

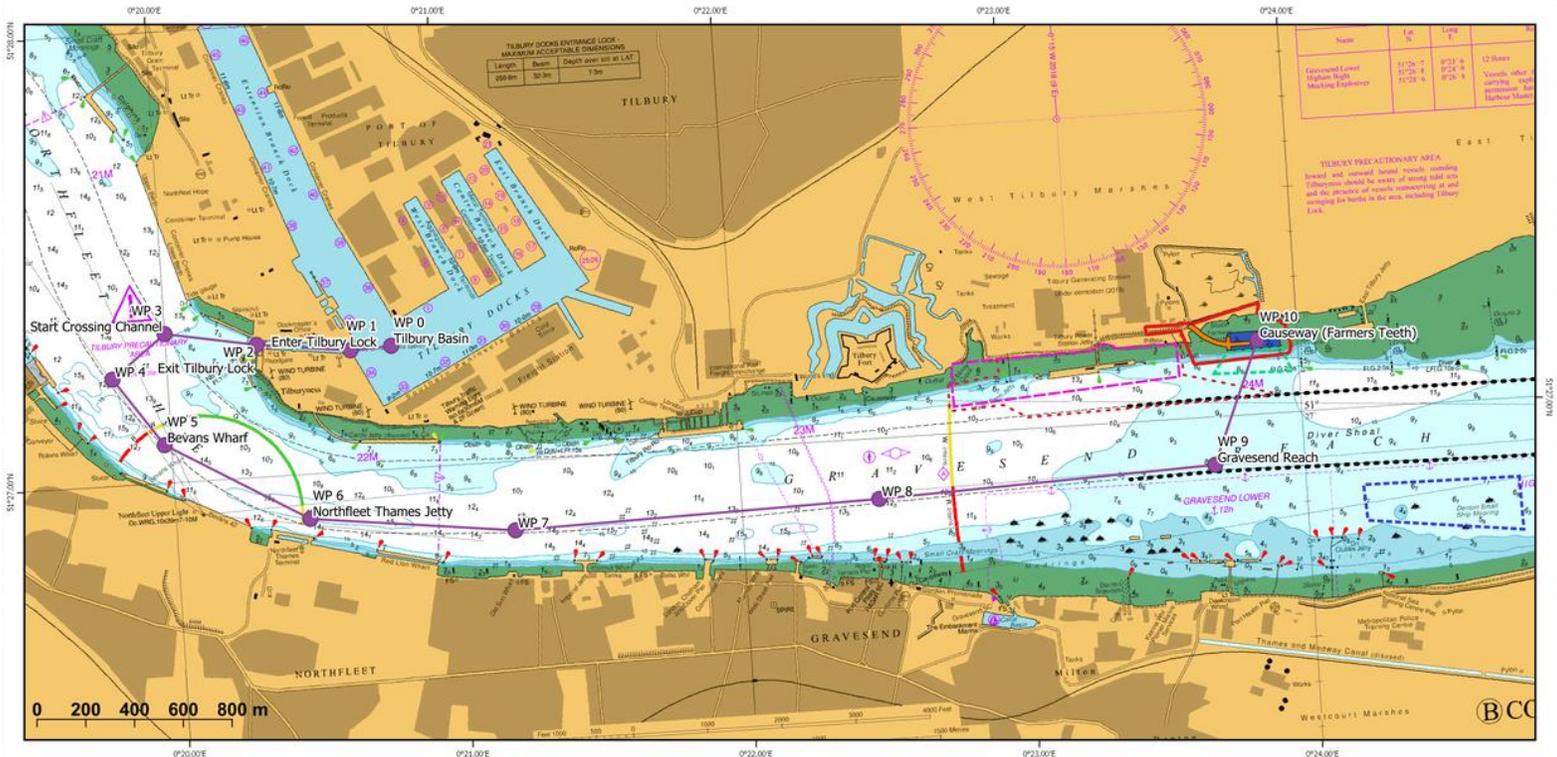
VESSEL:	MTS VANQUISH	TOWING:	SKYLIFT 23
DATE:	10 th JULY 2020	VERSION:	00-01
FROM:	THAMES (UK)	TO:	ROTTERDAM (NETHERLANDS)



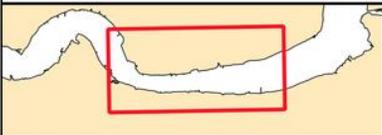
AUTHOR:	Chris Evans	SIGNATURE:	<i>C. Evans</i>	RANK:	Marine Superintendent
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Approved By:	CE	MTS TOWING MANUAL	Page 1
Date:	JAN 2020		

Passage Plan Overview – Tilbury to Causeway site



Thurrock Flexible Generation Plant, Tilbury to Causeway Passage Plan.



Tidal Information

Level of Chart Datum below Ordnance Survey: 3.12 m

Mean Low Water Springs (MLWS): 0.6 m
Mean Low Water Neaps (MLWN): 1.5 m

Mean High Water Springs (MHWS): 6.6 m
Mean High Water Neaps (MHWN): 5.4 m

Highest Astronomical Tide (HAT): 7.0 m

Legend

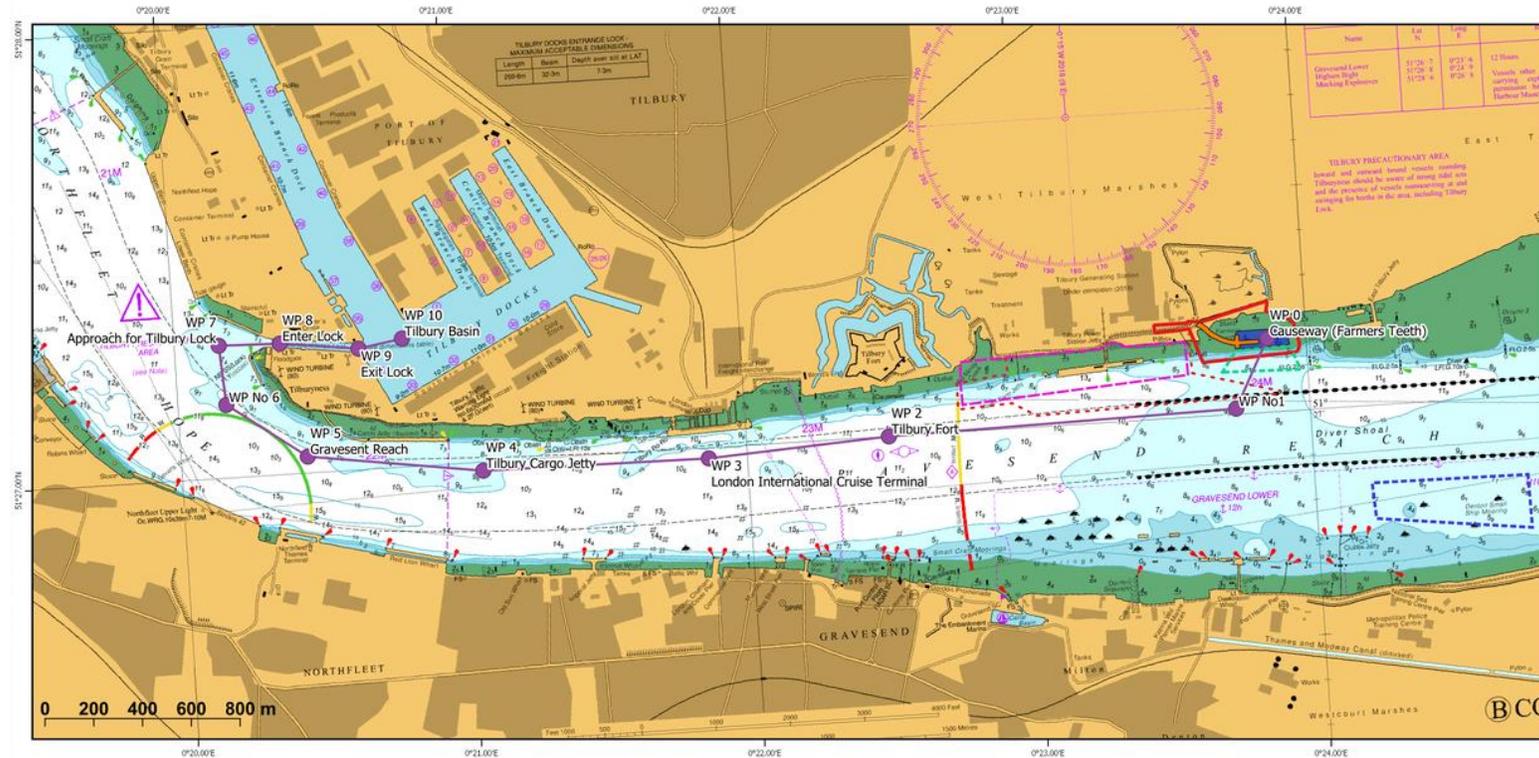
- Waypoint
- Leg
- Causeway
- Barge Berthing Pocket
- RLB
- Authorised Channel
- - - Tilbury 2 DCO Boundary
- Tilbury 2 Harbour Limits
- Potential Waiting Area
- Potential Layby Area

Data Sources:
Admiralty Chart 1186-2
MTS Passage Plan Tilbury Dock to Causeway

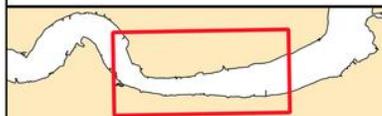
Coordinate System: EPSG:32630
Created by: RG Checked by: SAB Date: 3/11/2020
Ref: NASH0100_Thurrock_1_Tilbury_to_Causeway



Passage Plan Overview– Causeway site to Tilbury



Thurrock Flexible Generation Plant, Causeway to Tilbury Passage Plan.



Tidal Information

Level of Chart Datum below Ordnance Survey: 3.12 m
 Mean Low Water Springs (MLWS): 0.6 m
 Mean Low Water Neaps (MLWN): 1.5 m
 Mean High Water Springs (MHWS): 6.6 m
 Mean High Water Neaps (MHWN): 5.4 m
 Highest Astronomical Tide (HAT): 7.0 m

Legend

- Waypoint
- Leg
- Causeway
- Barge Berthing Pocket
- RLB
- Authorised Channel
- - - Tilbury 2 DCO Boundary
- Tilbury 2 Harbour Limits
- Potential Waiting Area
- Potential Layby Area

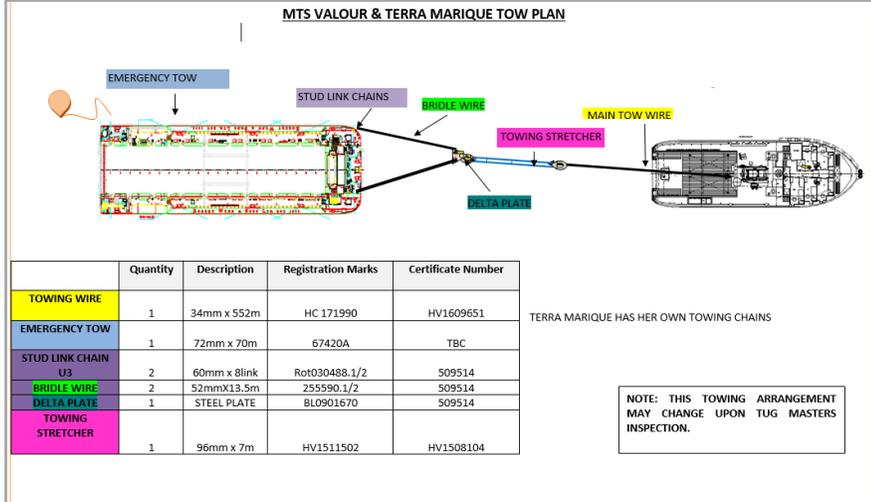
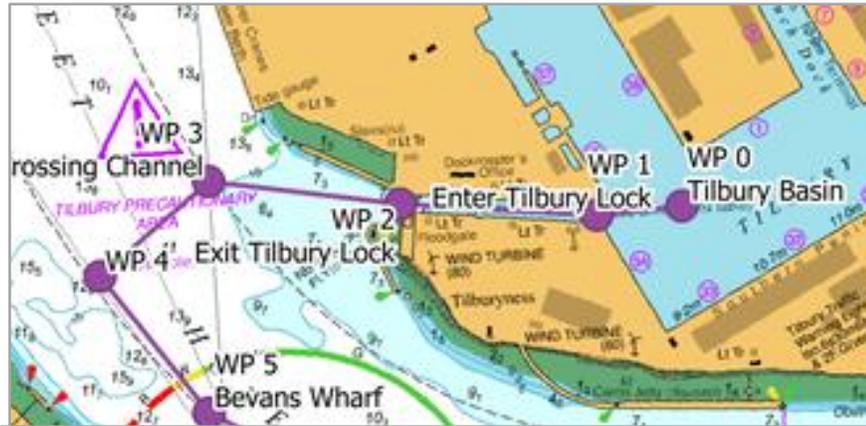
Data Sources:
 Admiralty Chart 1186-2
 MTS Passage Plan Causeway to Tilbury Dock

Coordinate System: EPSG:32630
 Created by: RG Checked by: SAB Date: 3/11/2020
 Ref: NASH0100_Thurrock_2_Causeway_to_Tilbury



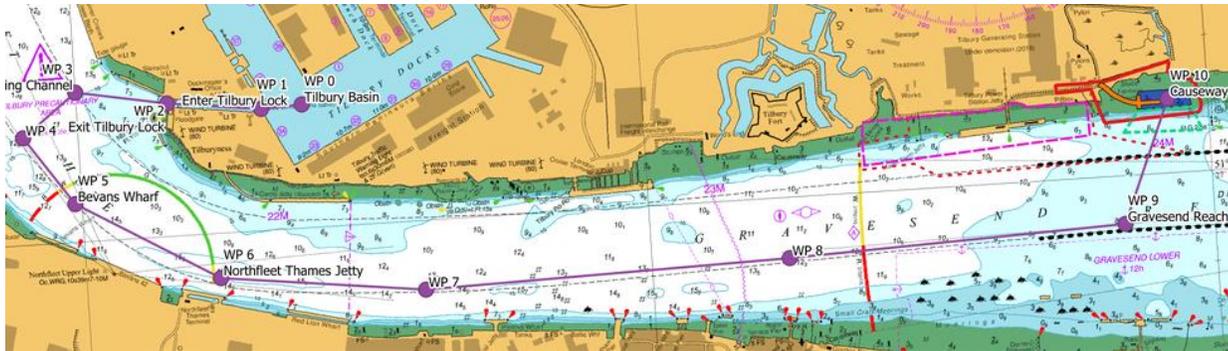
Departure from AIL Transhipment Site

1. Terra Marique (crewed / engines available)
2. MTS Valour (primary tow tug)
3. Thames Vixen (attendance tug)



Departure from AIL Transhipment Site	
Required for Passage Plan Element	Required
Lat and Long positioning	
AtoN names	
Passage Distance	
POTLL Lockage requirements	✓
Headings on each leg	
VHF Procedures	✓
Safe operating tidal window relevant to state of tide and tide times	✓
Vessel Specification Tug & Barge	✓
Tow Configuration	✓
Tug / TM crew - Roles, Responsibilities, qualifications	✓
Written Directions / Special notes / Hazards to Navigation	
Emergency requirements defined	✓
Breakdown contingency plan	✓
Risk Assessment	✓
Relevant Chart number referenced	
Berthing plan	
Utilisation of Layby Area by Tug or TM	
Utilisation of Waiting Area by Tug or TM	

Passage of River Thames to Causeway



1. Terra Marique (crewed / engines available)
2. MTS Valour (primary tow tug)
3. Thames Vixen (work boat in attendance)

Passage of River Thames to Causeway	
Required for Passage Plan Element	Required
Lat and Long positioning	✓
AtoN names	✓
Passage Distance	✓
POTLL Lockage requirements	
Headings on each leg	✓
VHF Procedures	✓
Safe operating tidal window relevant to state of tide and tide times	
Vessel Specification Tug & Barge	✓
Tow Configuration	✓
Tug / TM crew - Roles, Responsibilities, qualifications	✓
Written Directions / Special notes / Hazards to Navigation	✓
Emergency requirements defined	✓
Breakdown contingency plan	✓
Risk Assessment	✓
Relevant Chart number referenced	✓
Berthing plan	
Utilisation of Layby Area by Tug or TM	✓
Utilisation of Waiting Area by Tug or TM	✓

Berthing at the Causeway



Vessels

1. Terra Marique – under command (Crewed / Engines and steering Engaged)
2. MTS Valour (Attending)
3. Thames Vixen (Berthing assistance tug)

Operation

1. Conventional stern tow to waiting area off berth (arrive at waiting area HW-1/-0.5hr)
2. Engage TM Engines / Steering
3. 2 x Options

Tow Configuration & Utilisation of waiting / layby area



Terra Marique

MTS Valour



Thames Vixen



Client:

Tow Configuration & Utilisation of waiting / layby area – Option 1



Terra Marique

MTS Valour



Thames Vixen

Client:

Tow Configuration & Utilisation of waiting / layby area – Option 2



Terra Marique

MTS Valour



Thames Vixen

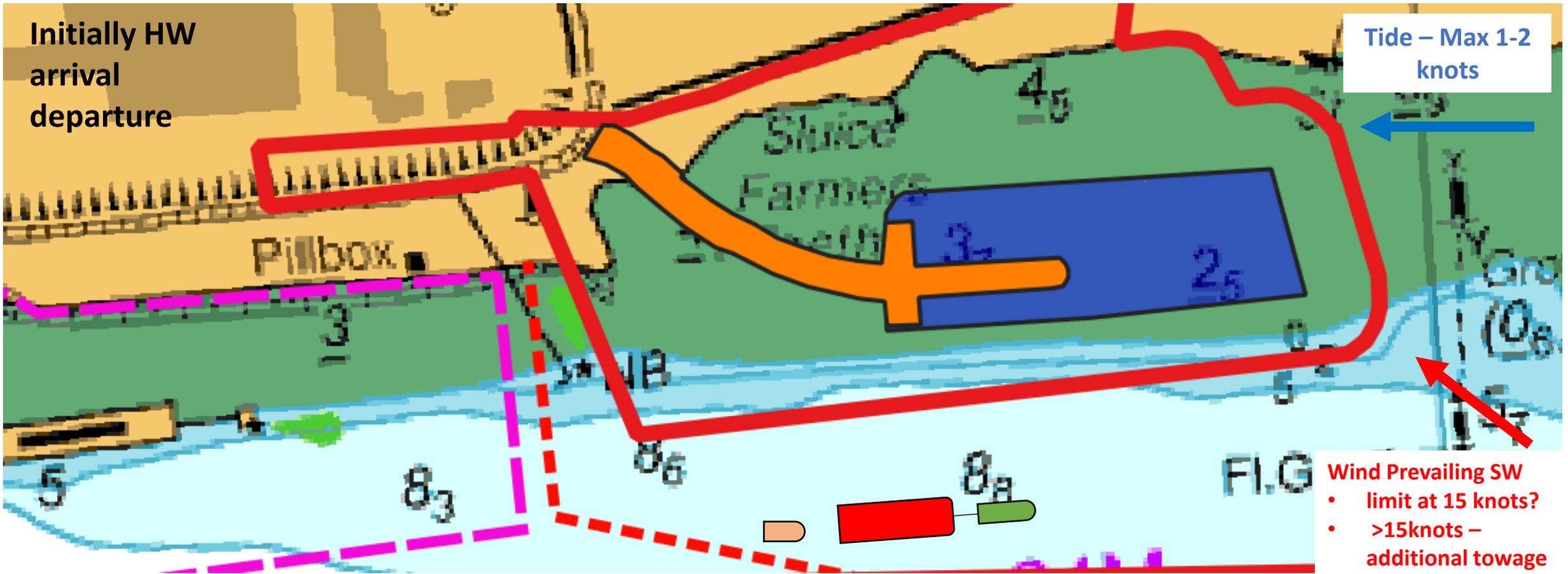
Client:

Berthing at the Causeway

Operation – Option 1

1. Conventional stern tow to waiting area off berth (arrive at waiting area HW-1/-0.5hr)
2. Engage TM Engines / Steering
3. Thames Vixen berthing assistance tug – attach to stern starboard aft quarter
4. Decouple MTS Valour from stern tow standby
5. TM manoeuvres to (against) causeway berth (use of temporary poles to mark berth / causeway gabion) when under keel clearance greater than 0.5m. Thames Vixen assists with positioning.
6. Load master lines up TM with temporary markers and spuds dropped once in position
7. TM ballast down (13t / cm @ 40t/min) to take the ground
8. Thames Vixen and MTS Valour standby till TM Safety Around

Tow Configuration & Utilisation of waiting / layby area – Option 1



Terra Marique



MTS Valour

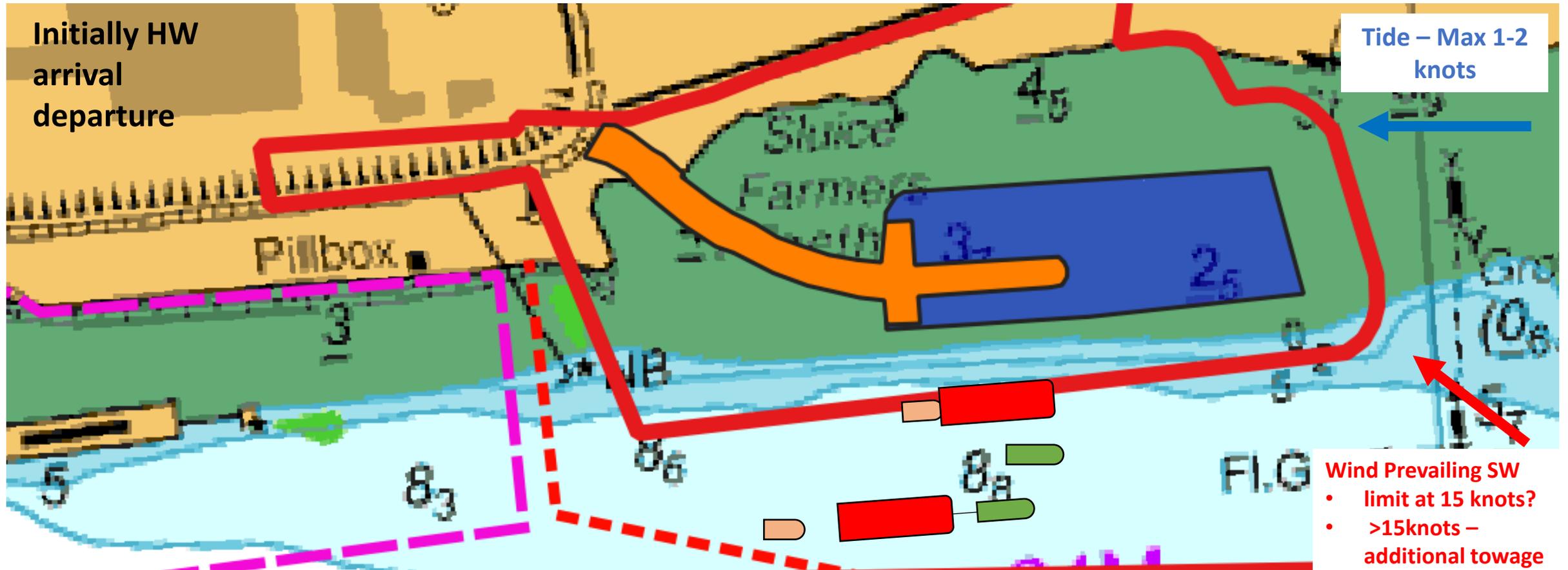


Thames Vixen

Client:

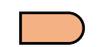


Tow Configuration & Utilisation of waiting / layby area – Option 1



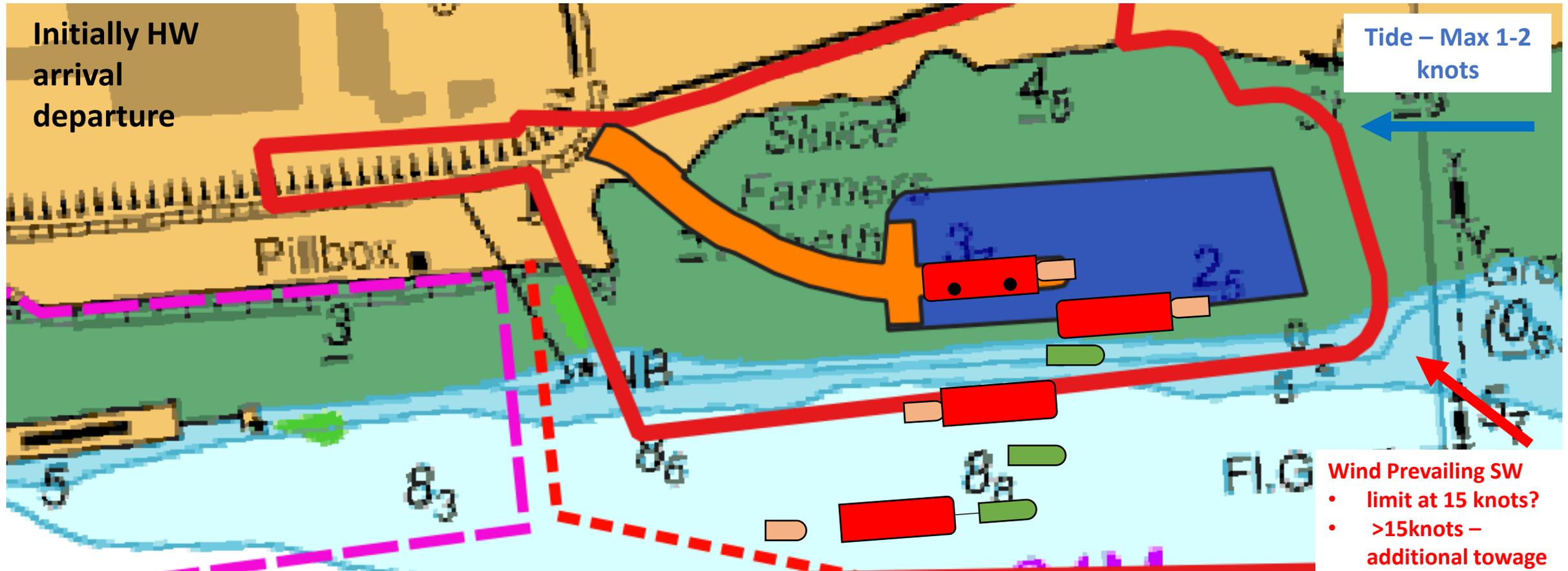
 Terra Marique

 MTS Valour

 Thames Vixen

Client:

Tow Configuration & Utilisation of waiting / layby area – Option 1



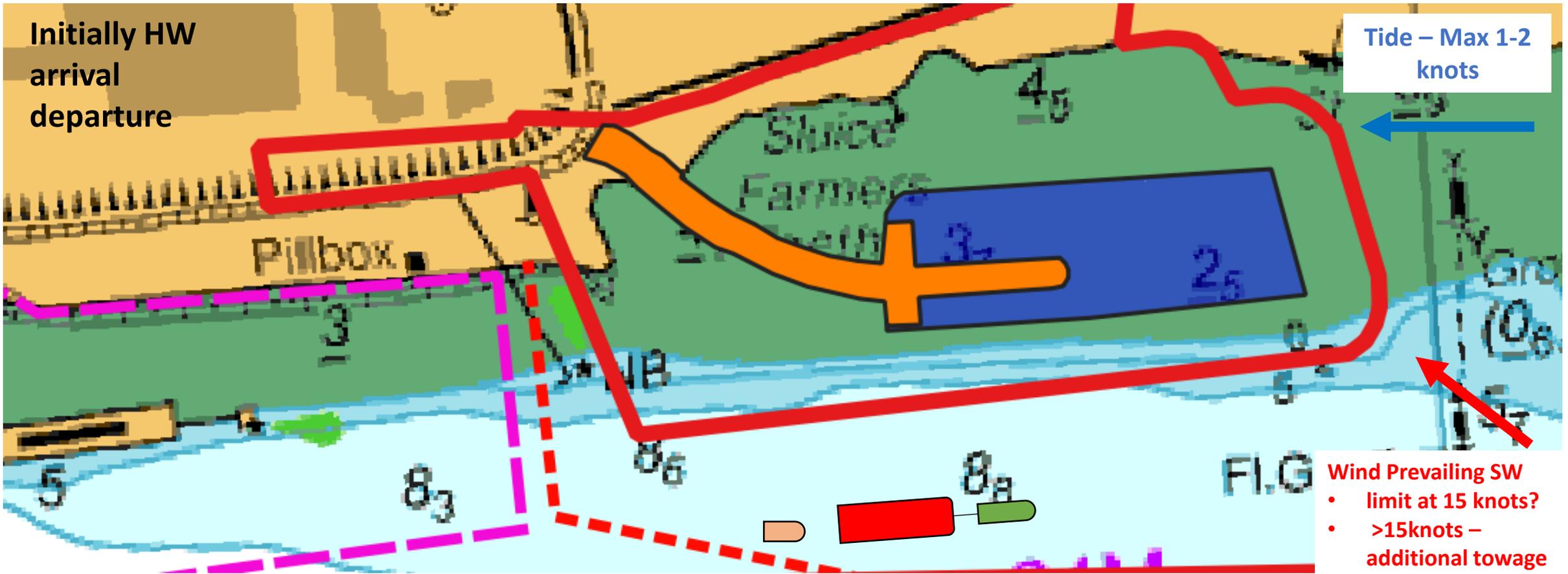
 Terra Marique  MTS Valour  Thames Vixen

Berthing at the Causeway

Operation – Option 2

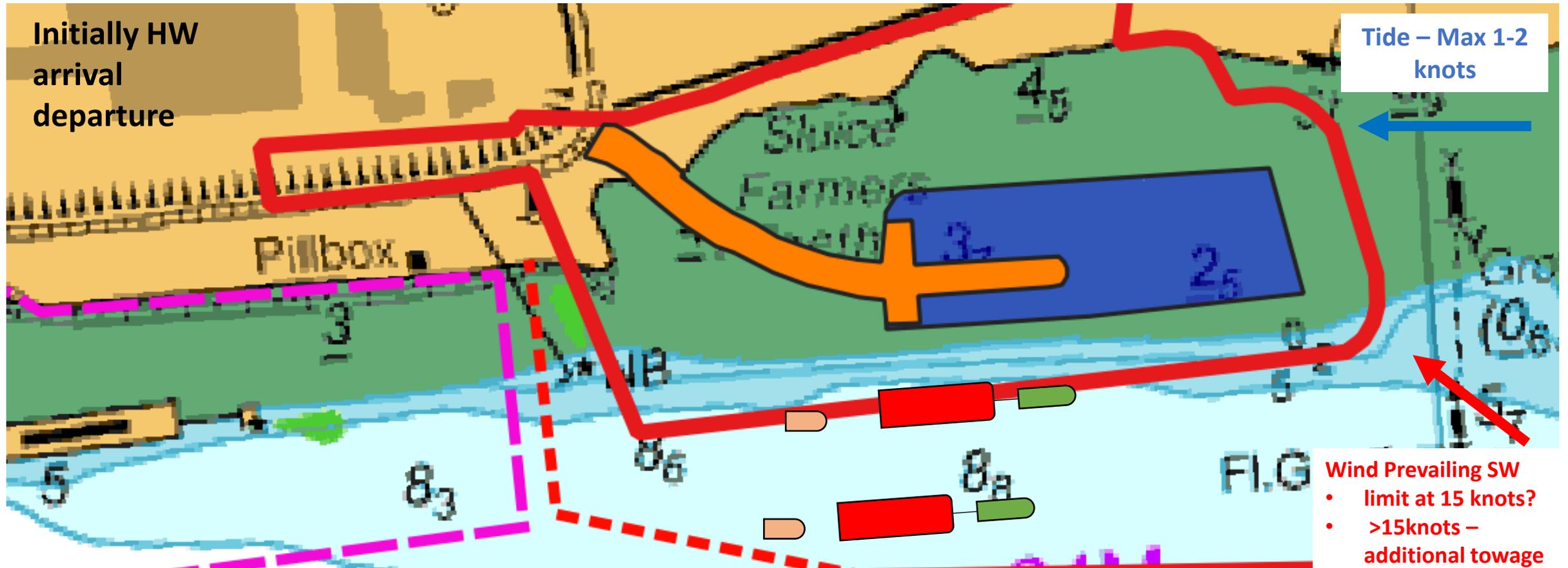
1. Conventional stern tow to waiting area off berth (arrive at waiting area HW-1/-0.5hr)
2. Engage TM Engines / Steering
3. MTS Valour to manoeuvre over causeway
4. Thames Vixen berthing assistance tug
5. MTS Valour and Thames Vixen with TM, manoeuvres to (against) causeway berth (use of temporary poles to mark berth / causeway gabion) when under keel clearance greater than 0.5m. Thames Vixen assists with positioning.
6. Load master lines up TM with temporary markers and spuds dropped once in position.
7. TM ballast down (13t / cm @ 40t/min) to take the ground.
8. Thames Vixen and MTS Valour standby till TM Safety Around .

Tow Configuration & Utilisation of waiting / layby area – Option 2



 Terra Marique  MTS Valour  Thames Vixen

Tow Configuration & Utilisation of waiting / layby area – Option 2



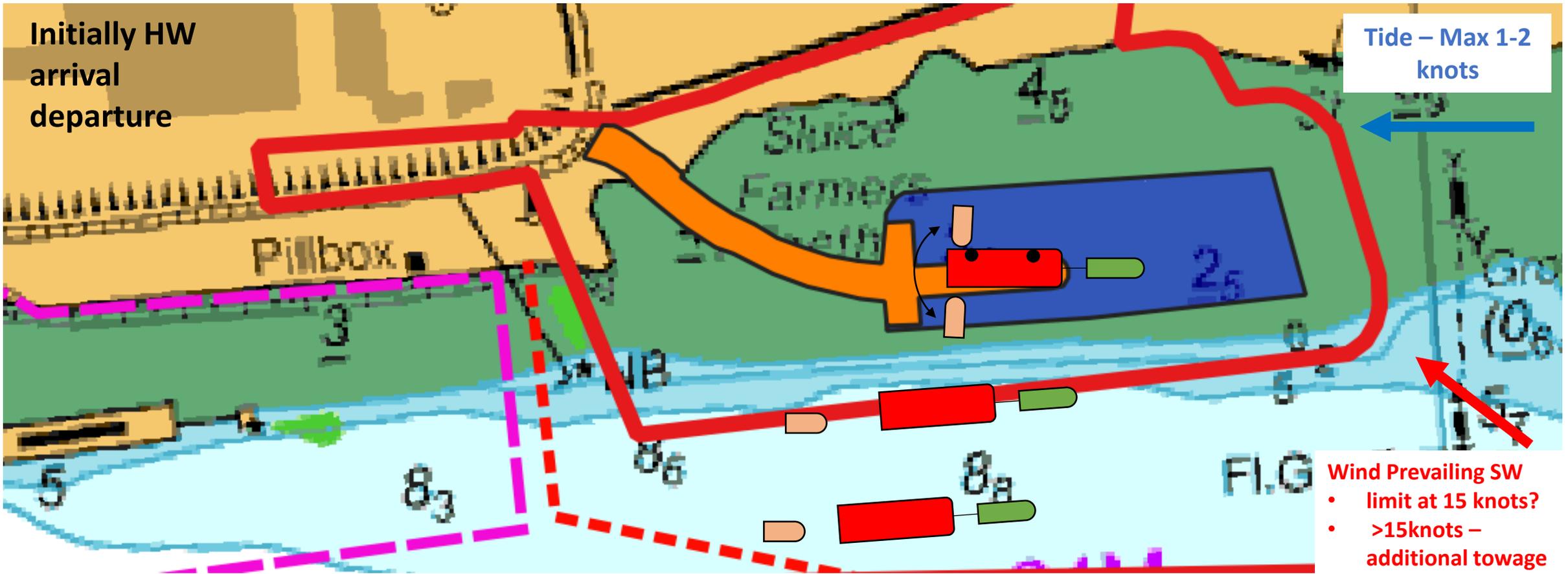
 Terra Marique

 MTS Valour

 Thames Vixen

Client:

Tow Configuration & Utilisation of waiting / layby area – Option 2



Terra Marique



MTS Valour



Thames Vixen

Client:



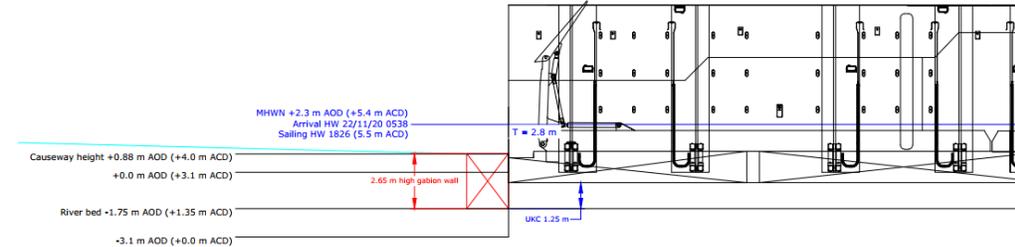
Terra Marique Transition to Safely Aground

- Assumes arrival at HW
- TM
 - TM Draught 2.8m
 - Ballasting capability 13t / cm @ 40t/min = ~3cm / min.
 - Typical wave height limit for operations of 0.5m
 - Transition
 - Floating to safely grounding ~20-30 minutes
 - UKC +0.5m to -0.5m
 - Speed easement via PLA (TM transition as notified by Pilot / PEC B onboard)
- Neap Arrival at HW
 - Tidal drop based on Neap tide (17:57 09/11/20 – HW @ 5.47m)
- Spring Arrival at HW
 - Tidal drop based on Spring tide (23:41 30/10/2020 – HW @ 6.47m)

Operation	Neap Arrival		Spring Arrival		
	UKC [m]	Neaps	Duration [mins]	UKC [m]	Duration [mins]
Positioned above berth (spuds dropped)	+1.25		0	+2.25	0
Transition commenced	+0.5		25	+0.5	46
Transition - aground	0		39	0	57
Transition completed - safely aground	-0.5		52	-0.5	68

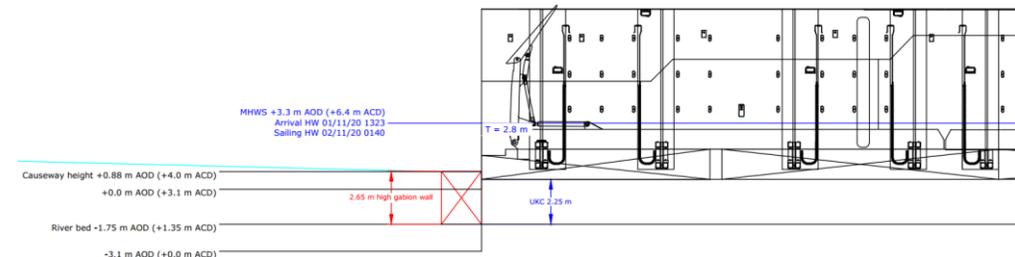
Neaps

Arrival/sailing condition



Springs

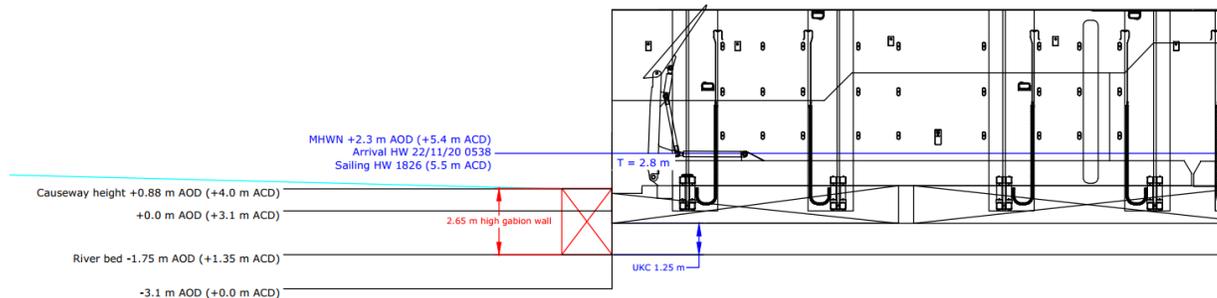
Arrival/sailing condition



Unloading of AIL at Causeway

- Tugs depart once safety aground
- AIL unloaded once TM Safety around and causeway prepared for operation.

Arrival/sailing condition

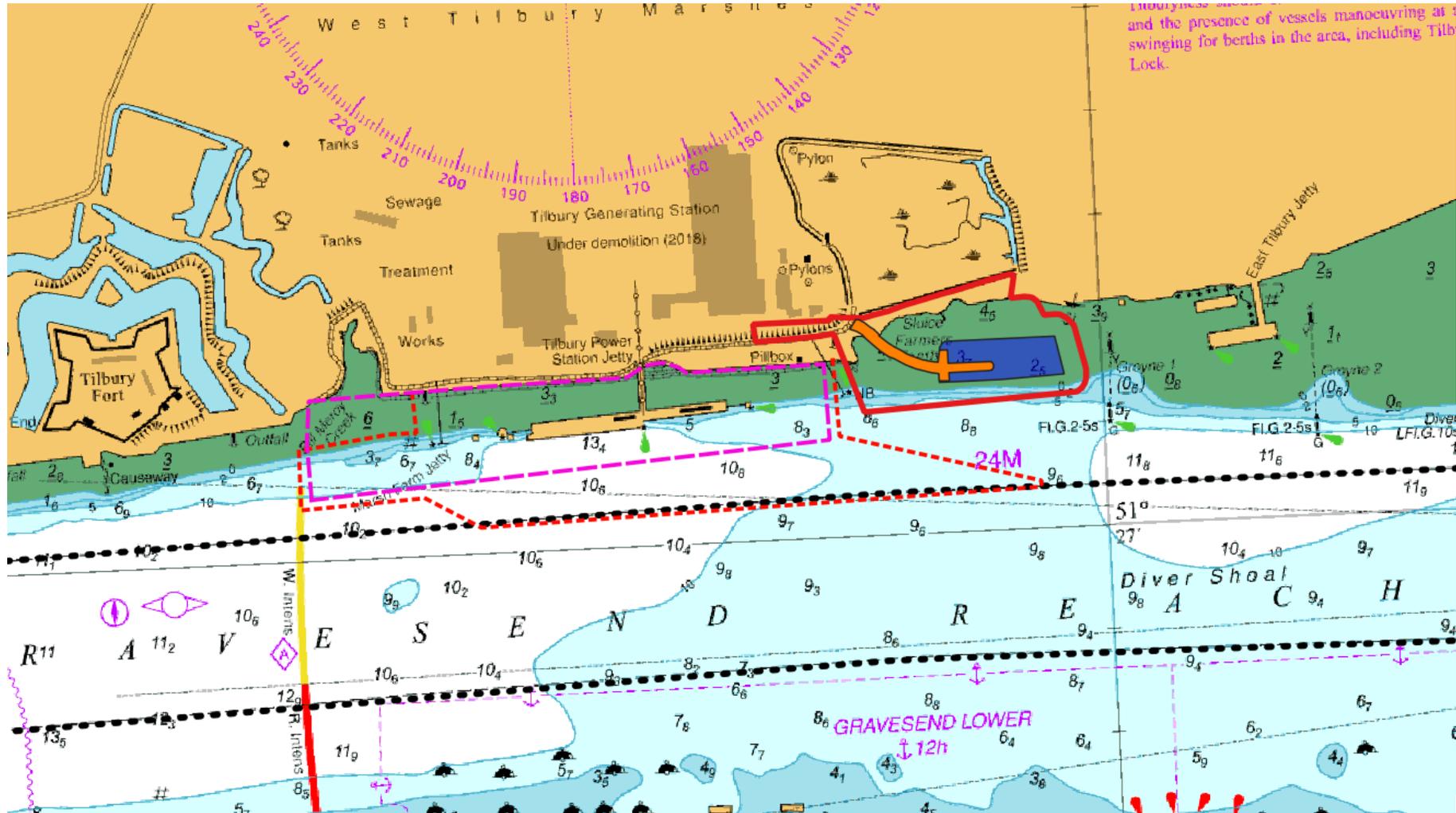


Unloading of AIL at Causeway	
Required for Passage Plan Element	Required
Lat and Long positioning	
AtoN names	
Passage Distance	
POTLL Lockage requirements	
Headings on each leg	
VHF Procedures	✓
Safe operating tidal window relevant to state of tide and tide times	✓
Vessel Specification Tug & Barge	✓
Tow Configuration	
Tug / TM crew - Roles, Responsibilities, qualifications	✓
Written Directions / Special notes / Hazards to Navigation	
Emergency requirements defined	✓
Breakdown contingency plan	✓
Risk Assessment	✓
Relevant Chart number referenced	
Berthing plan	✓
Utilisation of Layby Area by Tug or TM	✓
Utilisation of Waiting Area by Tug or TM	✓

Vessel Traffic Analysis

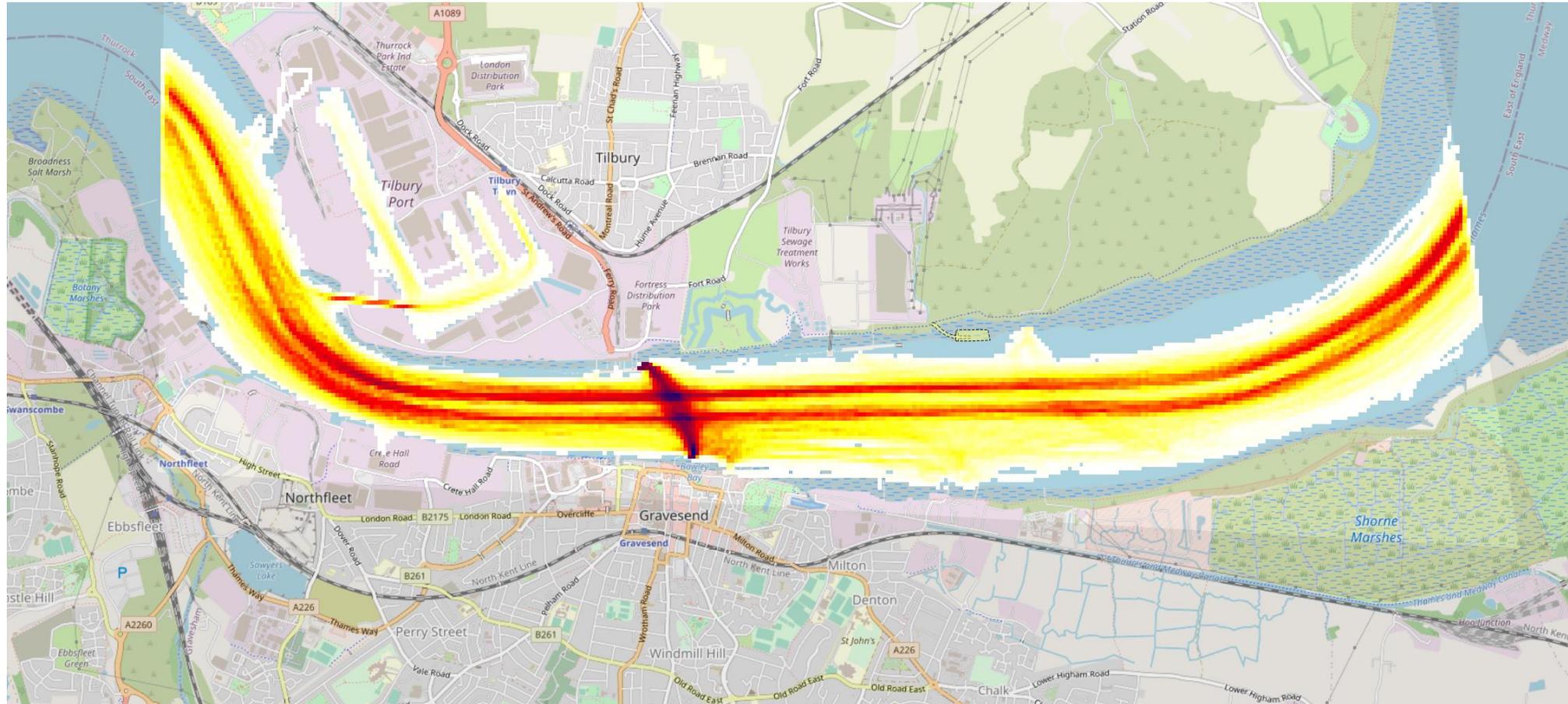


Tilbury 2 & Causeway

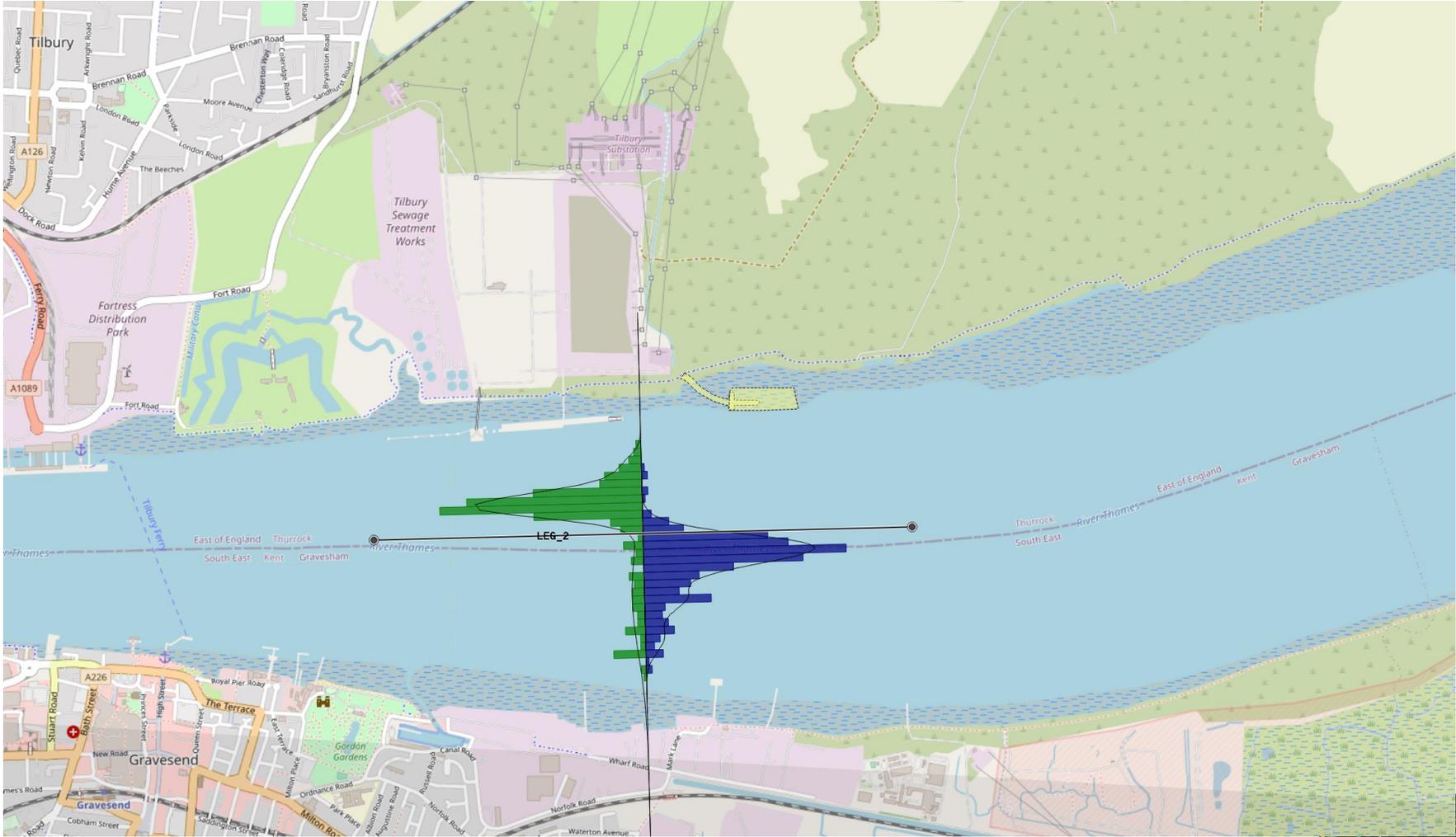


and the presence of vessels manoeuvring at the lock and swinging for berths in the area, including Tilbury Lock.

Traffic Density Plot

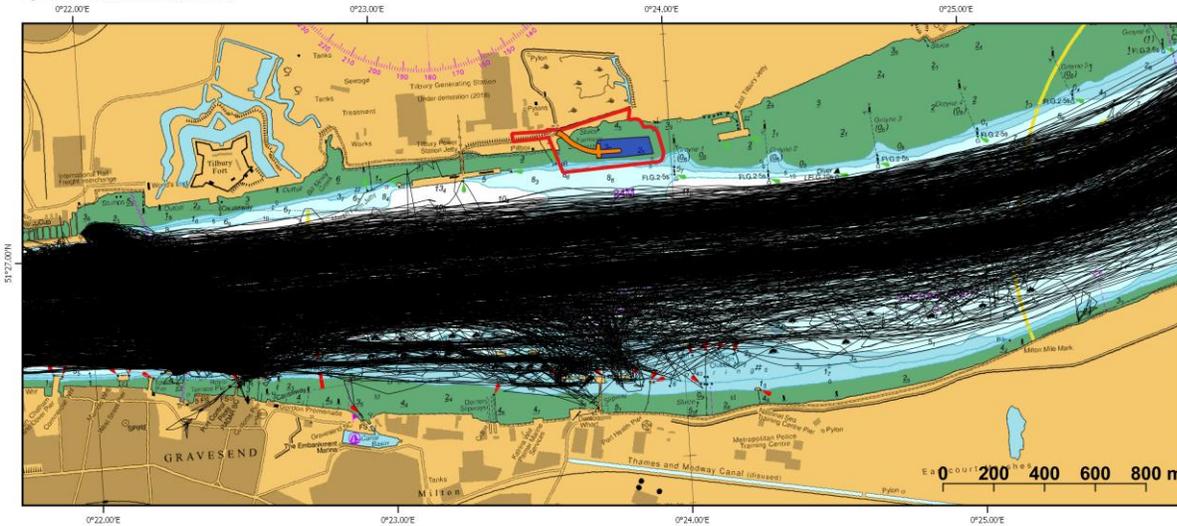


Gate Analysis

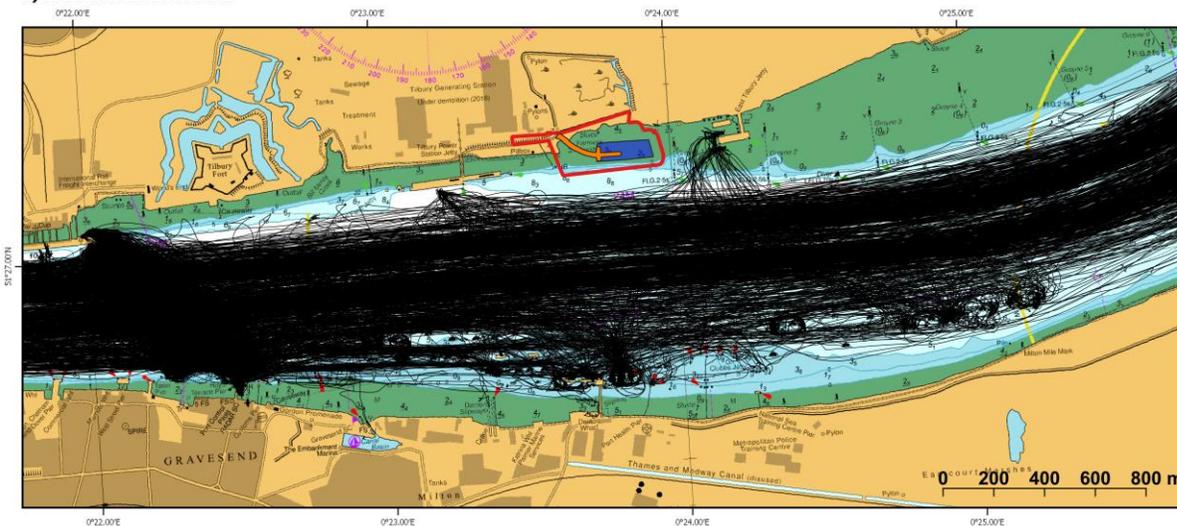


Vessel tracks – All vessels

a) 2018 Vessel Track Data



b) 2020 Vessel Track Data



Thurrock Flexible Generation Plant, All Vessels.

Legend

- All Vessels
- ▭ Red Line Boundary
- ▭ Barge Berthing Pocket
- ▭ Causeway
- AuthorisedChannel

Data Sources:

Admiralty Chart 1186-2

AIS data purchased from PLA between 10-Sept-18 and 23-Sept-18

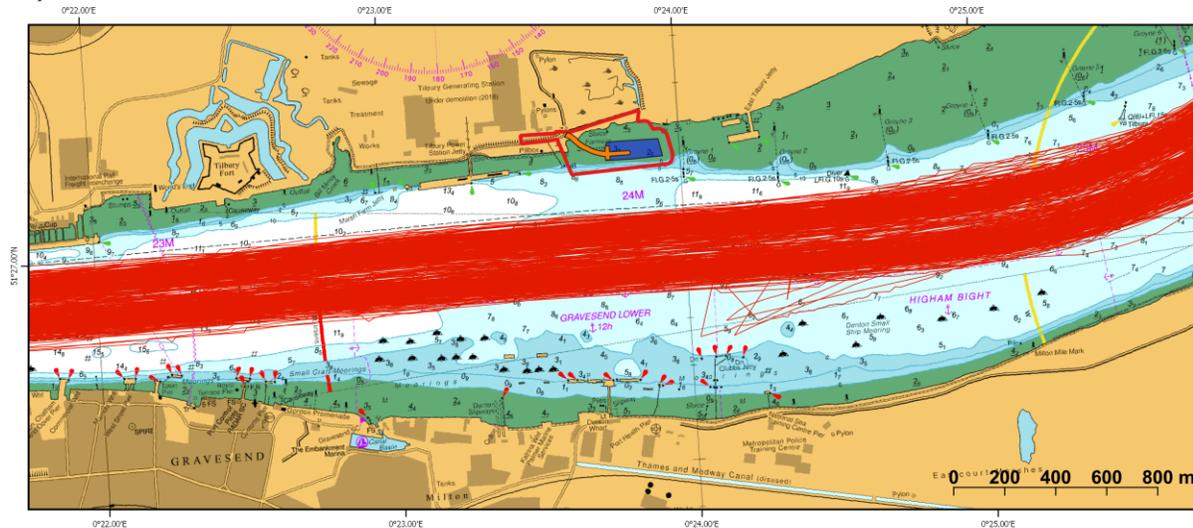
AIS data collected from Tilbury AIS Station between 22-Sept-20 and 05-Oct-20



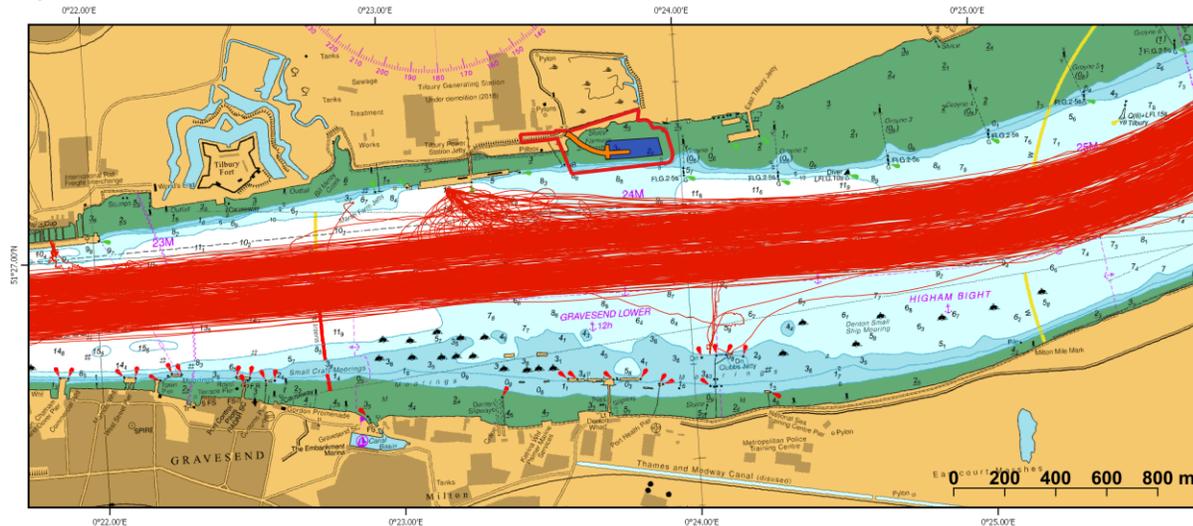
Coordinate System: EPSG:32630
 Created by: RG Checked by: ER Date: 4/11/2020
 Ref: NASH0100_2018-2020_Thurrock_all_tracks_v1_20201104

Vessel tracks – Commercial

a) 2018 Vessel Track Data



b) 2020 Vessel Track Data



Thurrock Flexible Generation Plant, Commercial Seagoing Vessels.

Legend

- Commercial Seagoing Vessels
- Red Line Boundary
- Barge Berthing Pocket
- Causeway
- Authorised Channel

Data Sources:

Admiralty Chart 1186-2

AIS data purchased from PLA between 10-Sept-18 and 23-Sept-18

AIS data collected from Tilbury AIS Station between 22-Sept-20 and 05-Oct-20



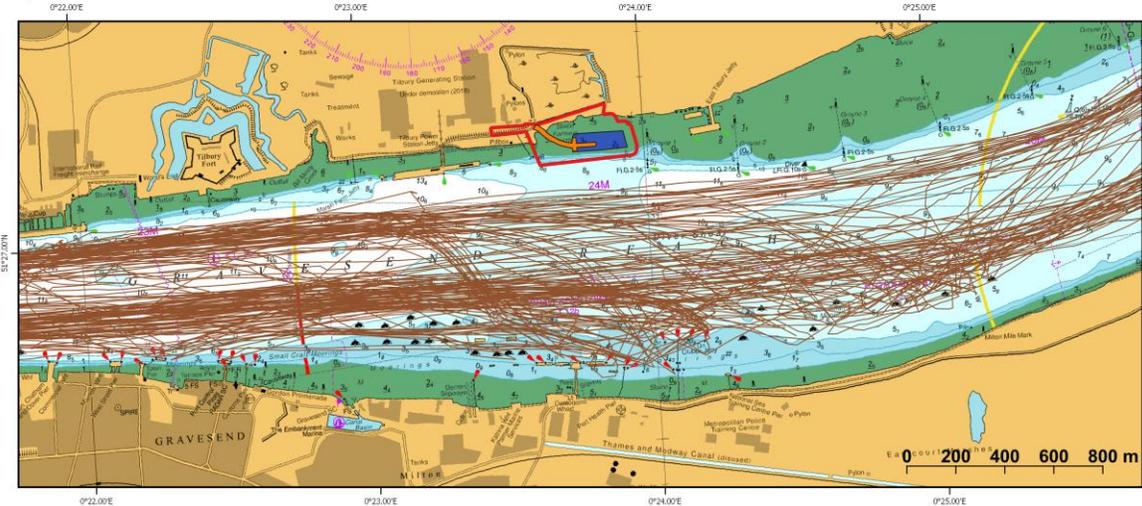
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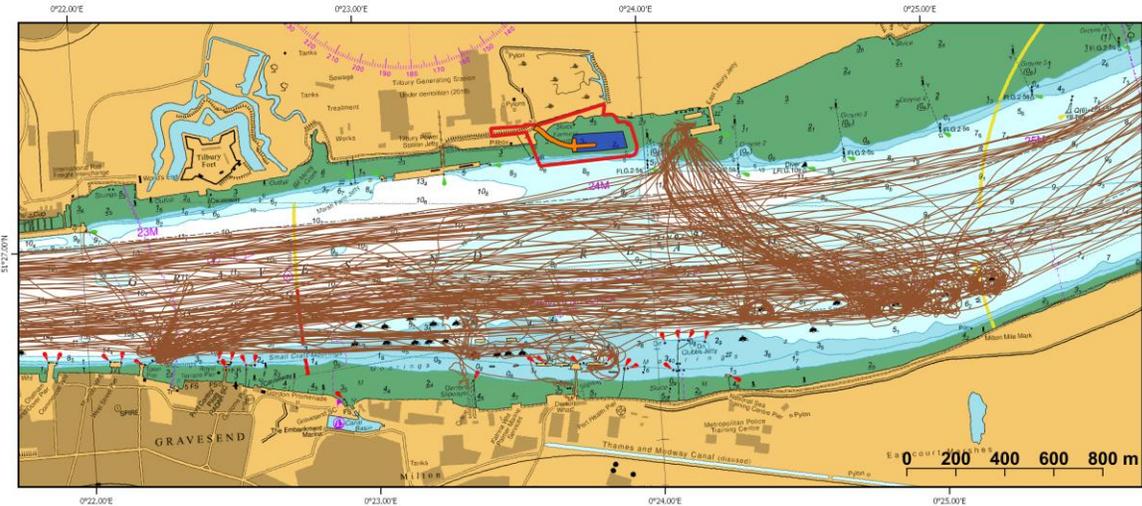
Ref: NASH0100_2018-2020_Thurrock_commercial_seagoing_v1_

Intra Port Trade

a) 2018 Vessel Track Data



b) 2020 Vessel Track Data



Thurrock Flexible Generation Plant, Intra-Port Trade Vessels.

Legend

- Intra-Port Trade Vessels
- Red Line Boundary
- Barge Berthing Pocket
- Causeway
- AuthorisedChannel

Data Sources:

Admiralty Chart 1186-2
 AIS data purchased from PLA between 10-Sept-18 and 23-Sept-18
 AIS data collected from Tilbury AIS Station between 22-Sept-20 and 05-Oct-20

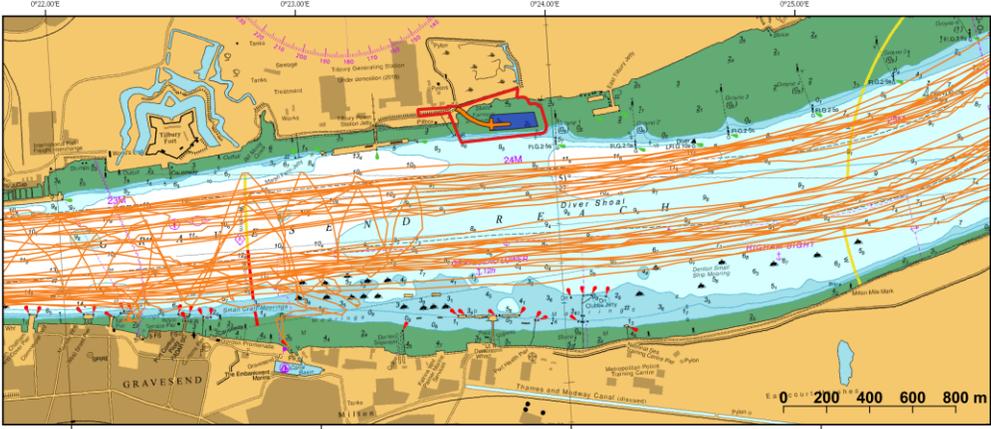


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 Created by: RG Checked by: ER Date: 4/11/2020
 Ref: NASH0100_2018-2020_Thurrock_intraport_trade_v1_20201

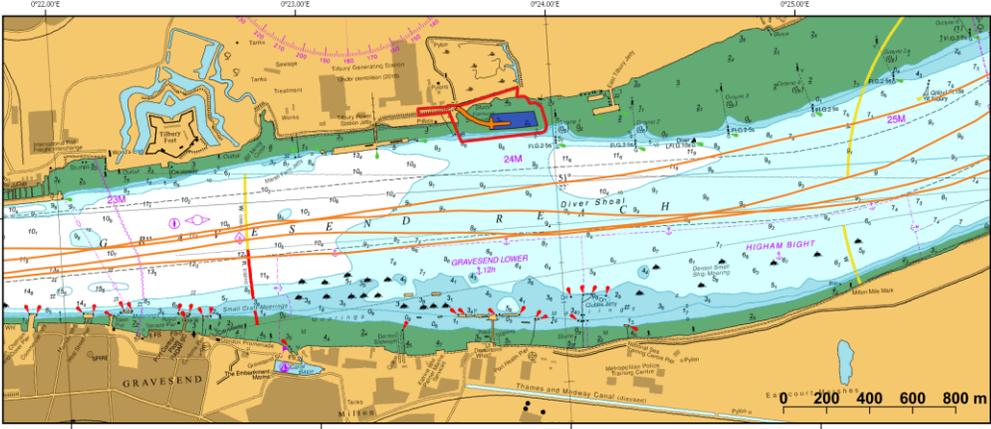


Recreational

a) 2018 Vessel Track Data



b) 2020 Vessel Track Data



Thurrock Flexible Generation Plant, Recreational Vessels.

Legend

- Recreational Vessels
- Red Line Boundary
- Barge Berthing Pocket
- Causeway
- AuthorisedChannel

Data Sources:
 Admiralty Chart 1186-2
 AIS data purchased from PLA between 10-Sept-18 and 23-Sept-18
 AIS data collected from Tilbury AIS Station between 22-Sept-20 and 05-Oct-20



Coordinate System: EPSG 32630
 Created by: RG Checked by: ER Date: 4/11/2020
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Recreational Craft

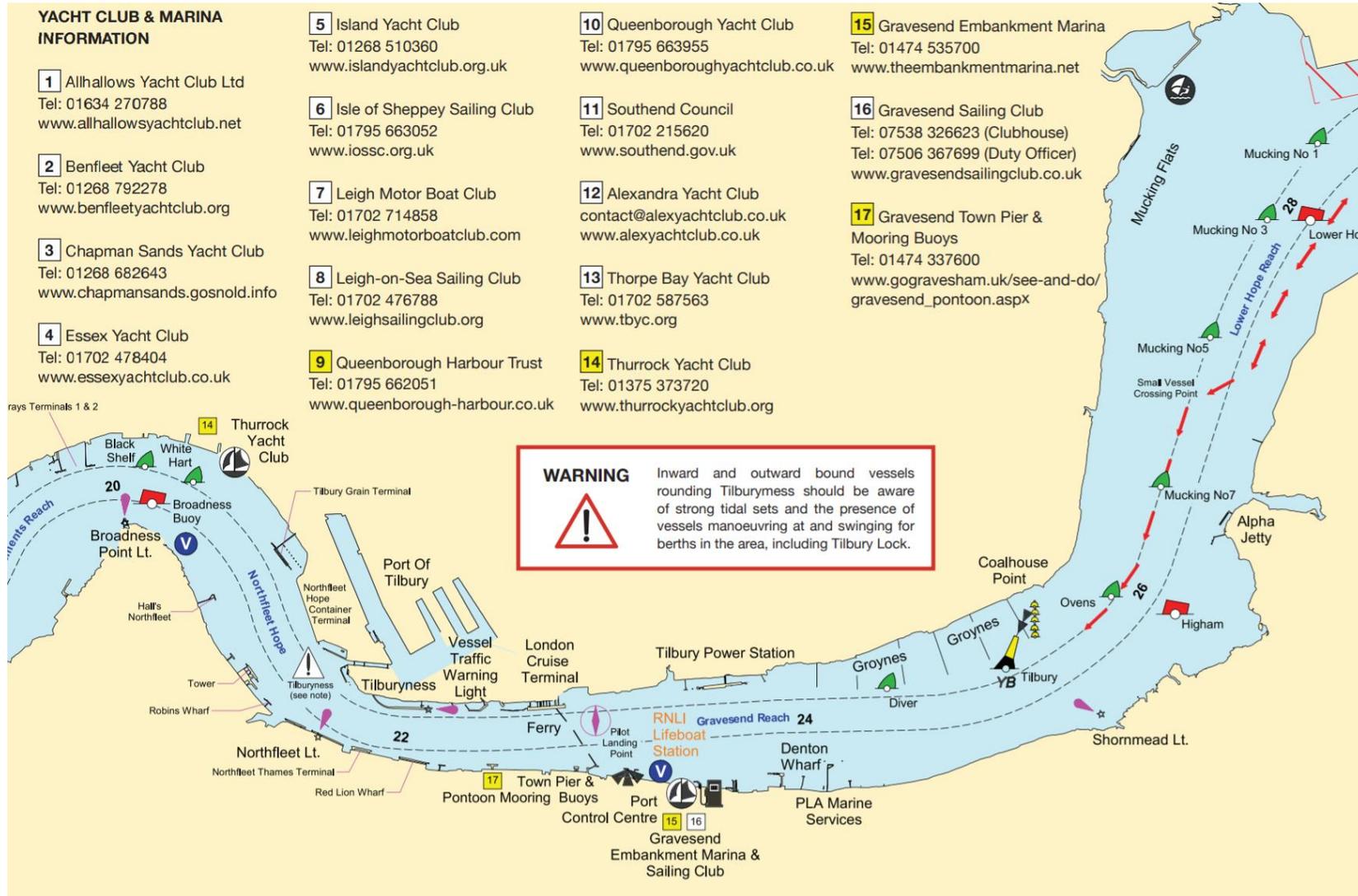
YACHT CLUB & MARINA INFORMATION

- 1** Allhallows Yacht Club Ltd
Tel: 01634 270788
www.allhallowsyachtclub.net
- 2** Benfleet Yacht Club
Tel: 01268 792278
www.benfleetyachtclub.org
- 3** Chapman Sands Yacht Club
Tel: 01268 682643
www.chapmansands.gosnold.info
- 4** Essex Yacht Club
Tel: 01702 478404
www.essexyachtclub.co.uk

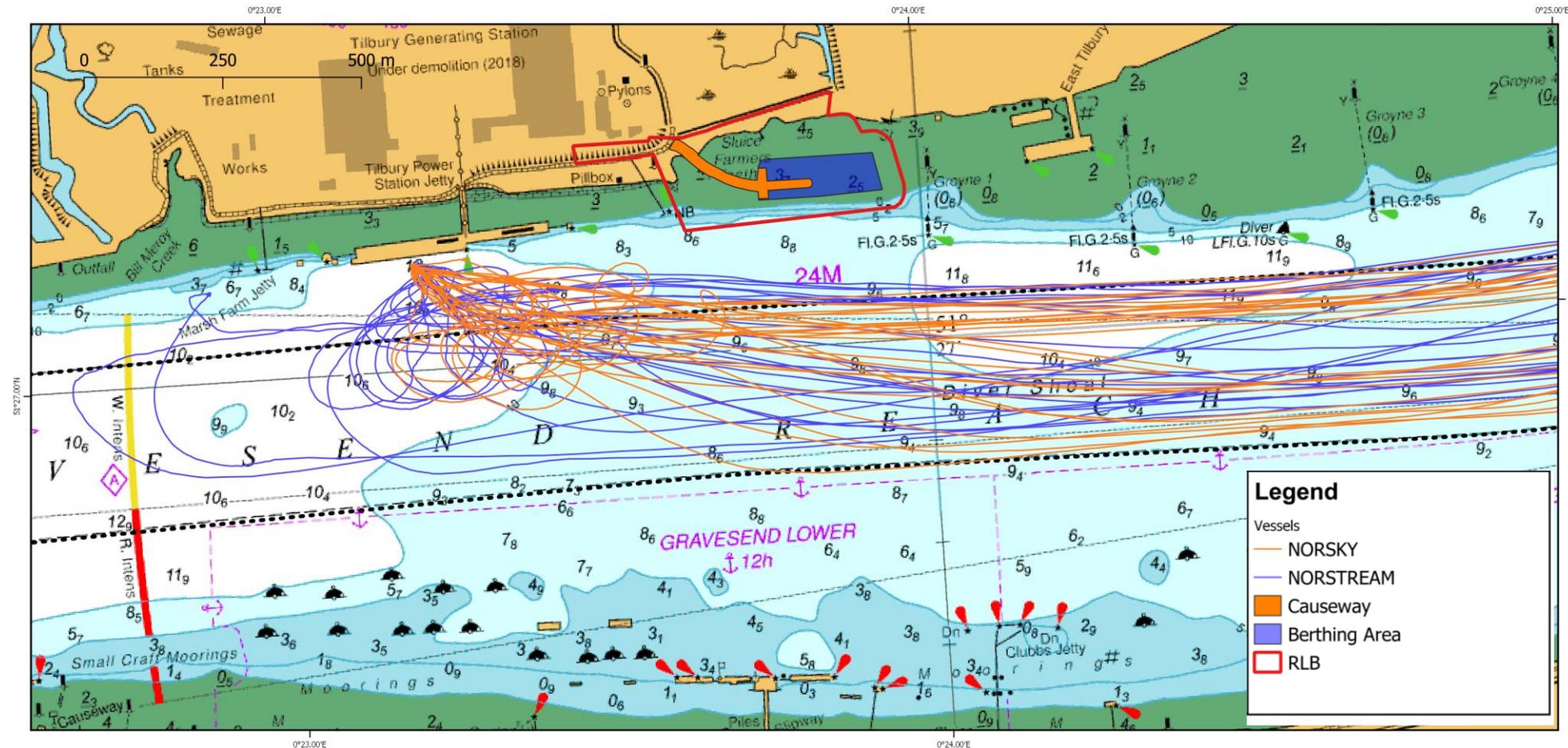
- 5** Island Yacht Club
Tel: 01268 510360
www.islandyachtclub.org.uk
- 6** Isle of Sheppey Sailing Club
Tel: 01795 663052
www.iossc.org.uk
- 7** Leigh Motor Boat Club
Tel: 01702 714858
www.leighmotorboatclub.com
- 8** Leigh-on-Sea Sailing Club
Tel: 01702 476788
www.leighsailingclub.org
- 9** Queenborough Harbour Trust
Tel: 01795 662051
www.queenborough-harbour.co.uk

- 10** Queenborough Yacht Club
Tel: 01795 663955
www.queenboroughyachtclub.co.uk
- 11** Southend Council
Tel: 01702 215620
www.southend.gov.uk
- 12** Alexandra Yacht Club
contact@alexayachtclub.co.uk
www.alexayachtclub.co.uk
- 13** Thorpe Bay Yacht Club
Tel: 01702 587563
www.tbyc.org
- 14** Thurrock Yacht Club
Tel: 01375 373720
www.thurrockyachtclub.org

- 15** Gravesend Embankment Marina
Tel: 01474 535700
www.theembankmentmarina.net
- 16** Gravesend Sailing Club
Tel: 07538 326623 (Clubhouse)
Tel: 07506 367699 (Duty Officer)
www.gravesendsailingclub.co.uk
- 17** Gravesend Town Pier & Mooring Buoys
Tel: 01474 337600
www.gogravesham.uk/see-and-do/gravesend_pontoon.aspx



Vessel tracks – Norstream and Norsky (Vessels arriving at Tilbury 2)



Norsky

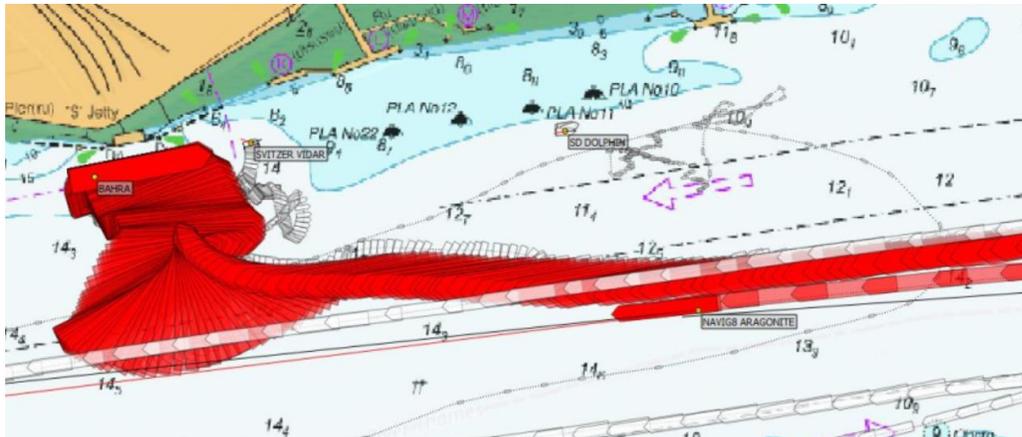


Norstream



Tilbury 2 Yeoman Bridge

- Yeoman Bridge
- Arrivals – possibly 1 / per week



Consultation

1. POTLL

- a. Define scope (email 4th Sept)
- b. Consult on Risk Assessment (5th Oct)
- c. Consult on draft report comments (5th Nov)
- d. Review passage plan / operations (TBA)
- e. Finalise risk control measures (TBA)

2. PLA

- a. Define scope (email 4th Sept)
- b. Consult on Risk Assessment (8th Oct)
- c. Consult on draft report comments (21st Oct)
- d. Review passage plan / operations (today)
- e. Finalise risk control measures (TBA)

Navigation Risk Assessment



Navigation Risk Assessment Methodology



- Provided by PLA (03/03/2020 from M Towens / Paul Evans)
 - Identify hazards
 - Identify Risk Controls
 - Score inherent Risk
 - Apply relevant Risk Controls
 - Score Residual Risk
- Question – risk control measures (Nash given concept report that has no control measures)

Total Risk Score	
Minor	1-3.9
Moderate	4-8.9
Serious	9-14.9
Very Serious	15-19.9
Severe	20-25

Almost Certain	5	10	15	20	25
Likely	4	8	12	16	20
Possible	3	6	9	12	15
Unlikely	2	4	6	8	10
Rare	1	2	3	4	5
	Minor	Moderate	Serious	Very Serious	Severe

Updated Risk Assessment

- Review risk assessment in Excel focusing on:
 - Review Hazard Identification
 - Review Risk Controls
 - Identification
 - Embedded / Additional status
 - Wording and applicability

Actions going forward?



- A.O.B.

ANNEX K - SAB SHARES HAZARD LOGS

Edward Rogers

From: Sam Anderson-Brown
Sent: 18 November 2020 13:19
To: Cathryn Spain
Cc: Edward Rogers; James Trimmer; Andrew Troup
Subject: RE: Thurrock Causeway Draft Report for comment
Attachments: 20-0100_ThurrockPowerStationCauseway_NRA_Ops_R01-00.xlsx

Hi Cathryn,

Thanks for confirming your availability, I will send an invitation for 11:30 on Friday so we can run through the risk assessment. I have attached the latest draft risk assessment matrix for your review as agreed last Monday and in advance of our meeting on Friday.

Kind regards,
Sam

Sam Anderson-Brown | Senior Consultant
t: +44 (0) 7515 903 789 | **e:** s.andersonbrown@nashmaritime.com | **w:** nashmaritime.com

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From: Cathryn Spain <Cathryn.Spain@pla.co.uk>
Sent: 17 November 2020 17:06
To: Sam Anderson-Brown <S.AndersonBrown@nashmaritime.com>
Cc: Edward Rogers <e.rogers@nashmaritime.com>; James Trimmer <james.trimmer@pla.co.uk>; Andrew Troup <atroup@stateraenergy.co.uk>
Subject: RE: Thurrock Causeway Draft Report for comment

Hi Sam,

I have only had a brief read through, but they look ok. I'm available between 11:30 and 1400 on Friday.

Kind regards,
Cathryn

Cathryn Spain
Senior Harbour Master

Port of London Authority
T: +44 1474 562212 | M: +44 7715 812692

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From: Sam Anderson-Brown <S.AndersonBrown@nashmaritime.com>
Sent: 16 November 2020 12:47
To: Edward Rogers <e.rogers@nashmaritime.com>; Cathryn Spain <Cathryn.Spain@pla.co.uk>
Cc: Andrew Troup <atroup@stateraenergy.co.uk>; James Trimmer <james.trimmer@pla.co.uk>; Michael Atkins <Michael.Atkins@pla.co.uk>
Subject: RE: Thurrock Causeway Draft Report for comment

This message originated from outside your organisation

Afternoon Cathryn,

Trust all is well?

I'm just following up on Ed's email below to see if you had any comments on the minutes we shared last week?

Also, there is an action for us to update the risk assessment excel sheets we shared with you last Monday, I think it would be good for us to take you through the revised sheet once completed, are you available towards the end of the week so we can talk you through the amendments?

Kind regards,
Sam

Sam Anderson-Brown | Senior Consultant
t: +44 (0) 7515 903 789 | **e:** s.andersonbrown@nashmaritime.com | **w:** nashmaritime.com

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From: Edward Rogers <e.rogers@nashmaritime.com>
Sent: 10 November 2020 12:05
To: Cathryn Spain <Cathryn.Spain@pla.co.uk>; Sam Anderson-Brown <S.AndersonBrown@nashmaritime.com>
Cc: Andrew Troup <atroup@stateraenergy.co.uk>; James Trimmer <james.trimmer@pla.co.uk>; Michael Atkins <Michael.Atkins@pla.co.uk>
Subject: RE: Thurrock Causeway Draft Report for comment

Good Afternoon Cathryn,

Many thanks for your time yesterday running through the Thurrock Causeway Marine Operation.

As discussed please find attached draft meeting notes for your review and also a pdf of the presentation we went through.

The outstanding operational issue we discussed associated with the causeway marine operation was the extent of any ease down requirements for passing vessels. I spoke to Peter Wynn this morning (who owns the Terra Marique) and he advised that they typically work to a wave height limit of up to 0.5m for operations and as such I will add this into the weather limits. He therefore advised that he wasn't overly worried by passing vessel wash and that a speed easement (if necessary) should be limited to the transition period whilst the TM takes the ground.

He envisaged the request for a speed easement be made by the pilot on board (or PEC B), via notifying the PLA VTS, around 10 minutes or so prior to the transition occurring. He also advised that in other situations they had simply waited for vessels to pass before transitioning to being aground (e.g. in Dover). Clearly there will be failing tide (on arrival and a rising tide on departure) so the extent of any delay would be limited, but he envisaged being able to time it to minimise any impact on passing vessels (perhaps with liaison between the pilot and PLA VTS). Once safety aground and with a falling tide and de-ballasting, he envisaged the speed easement to be no longer than 30 minutes in total and the pilot could notify PLA VTS once safety aground. I have added in a slide in the presentation largely covering this, and also undertook some analysis on PLA Tilbury tidal data to show the time it would take for the TM to transition from +0.5m UKC (safely afloat) to -0.5m UKC (safely aground) – which (as Peter identified) is between 20-30 minutes depending on whether it is a spring vs neap tide. It is envisaged that the same duration would be applicable for re-floating as well.

As discussed we will update the risk assessment sheets in excel and share these with you for review prior to updating and finalising the draft report (which we will also share in due course).

If anything comes to mind that we didn't cover yesterday then please let me know and we can address as necessary.

Many thanks

Ed

Dr Ed Rogers | Director

t: +44 (0) 7906 580 921 | e: e.rogers@nashmaritime.com | w: nashmaritime.com

From: Cathryn Spain <Cathryn.Spain@pla.co.uk>

Sent: 23 October 2020 16:12

To: Sam Anderson-Brown <S.AndersonBrown@nashmaritime.com>

Cc: Andrew Troup <atroup@stateraenergy.co.uk>; Edward Rogers <e.rogers@nashmaritime.com>; James Trimmer <james.trimmer@pla.co.uk>; Michael Atkins <Michael.Atkins@pla.co.uk>

Subject: RE: Thurrock Causeway Draft Report for comment

Hi Sam,

I will be on leave all next week and on a training course on the 2nd, so will not be available until 3rd November.

Responses to Ed's points as follows:

1. PLA are not sure how this NRA relates to the DCO and would like the requirement to update the NRA for a PLA River Works License prior to construction – I suggested it may be useful to refer to this NRA as a Preliminary NRA – making it clear it will be updated for the PLA RWL nearer the time as finalised details are available. This has precedence from other DCO's on the Thames and trust this meets with your approval?

It has not yet been determined whether future works will be subject to a PLA RWL. If they will not then the NRA needs to adequately cover all of our concerns at this stage.

2. Your main area of concern was not around the causeway itself, but around the passage on the Thames, to and from the causeway of the Terra Marique (noting that the operation of the actual causeway is adequately covered in the risk assessment). You would like the NRA to include determination of how the Terra Marique will transit out of Tilbury, cross the PLA channel and transit to site, and how it will cross the channel again and arrive at the causeway and at what states of tide / timings. This necessarily expands the scope of the assessment more widely than just the causeway and its immediate operation which is as currently presented. Essentially your concern is the non-routine nature of the operation and the requirement to ensure there are adequate controls in place to address any heightened risk.

I do not agree that the operation of the causeway is adequately covered in the RA. The causeway is being constructed specifically for the operation of the Terra Marique, or similar vessel and understanding how the vessel will arrival and depart the causeway is an integral part of its operation. I do not believe this has been sufficiently addressed. In addition, the passage of the vessel to and from the causeway also needs to be addressed to understand how her operation may impact on other traffic.

3. Data validity – you have some minor concerns that because of the impact of COVID transit numbers are lower than would be necessarily expected when the operation will take place. I asked whether benchmarking to older data – prior to COVID would help this and you agreed it would be useful.

I agree that combining suitable pre-COVID data with the data for T2 should be sufficient.

4. We discussed the need to agree Risk Control Measures with the PLA prior to finalisation of the report and I suggested that it would possible to set up a meeting to agree controls once we had addressed the points above with a final summary meeting and inclusion of an agreed / adopted risk control measure table in the final NRA report.

Any risk control measures that have not been agreed should not be included in the NRA.

5. Other points you raised can be addressed as clarifications / minor textual changes to the existing report?

Agreed

Kind regards,
Cathryn

Cathryn Spain

Senior Harbour Master

Port of London Authority

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From: Sam Anderson-Brown <S.AndersonBrown@nashmaritime.com>
Sent: 23 October 2020 10:30
To: Edward Rogers <e.rogers@nashmaritime.com>; Cathryn Spain <Cathryn.Spain@pla.co.uk>
Cc: Andrew Troup <atroup@stateraenergy.co.uk>
Subject: RE: Thurrock Causeway Draft Report for comment

This message originated from outside your organisation

Morning Cathryn,

Just following up on Ed's email earlier this week. We are now working to widen the scope of our assessment in order to address the concerns you raised in our call on 21st October. As Ed outlines below we will include an indicative passage plan for the Terra Marique and update the risk assessment accordingly. I would be grateful if you could confirm whether the actions outlined by Ed below meet with your approval.

As previously discussed we would like to arrange a further consultation meeting with you once the passage plan has been drafted and the associated risk assessment updated. We anticipate completing the work next week. Would you be available for a call next Friday, 30th November?

Kind regards,
Sam

Sam Anderson-Brown | Senior Consultant
t: +44 (0) 7515 903 789 | e: s.andersonbrown@nashmaritime.com | w: nashmaritime.com

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ANNEX L - SAB ISSUES DRAFT REPORT TO CS

Edward Rogers

From: Sam Anderson-Brown
Sent: 30 November 2020 18:38
To: Cathryn Spain
Cc: Edward Rogers; Andrew Troup
Subject: Draft Preliminary Navigational Risk Assessment - Thurrock Causeway
Attachments: 20-NASH-0100__100_R02-00.pdf

Good evening Cathryn,

Thank you for your time and input during the development of this report, Ed and I have appreciated the informative and productive discussions we have had with you in recent weeks. As discussed when we met a week or so ago please find attached a revised draft of the report addressing the comments and concerns the PLA raised after reviewing the original NRA.

You will notice that Annexes have not been included in this draft, these will be added in due course.

Please could we have any comments by close of play on Friday?

Kind regards,
Sam

Sam Anderson-Brown | Senior Consultant
t: +44 (0) 7515 903 789 | e: s.andersonbrown@nashmaritime.com | w: nashmaritime.com



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ANNEX M - ER OUTLINES NRA SCOPE TO GH

Edward Rogers

From: Edward Rogers
Sent: 28 August 2020 16:49
To: geoff.holland@potll.com
Cc: Andrew Troup; Jamie Holmes
Subject: Thurrock Flexible Generation Plant DCO Navigation Assessment
Attachments: EN20-NASH-0100_ThurrockPowerStationCausewayOverview1.pdf; 190709_Thurrock Causeway Concept Design Rev A.pdf

Good Afternoon Geoff,

Thank you for speaking with me yesterday and apologies for interrupting your leave. As discussed, then please find attached an outline plot of the Thurrock Flexible Generation Plant DCO Causeway and accompanying Concept Design Report which provides an overview of the propose causeway construction and marine operation.

As discussed the project has been asked to undertake a navigation assessment by Port of Tilbury London Ltd (POTLL) – focused around possible impacts to Tilbury 2 operations. I am also aware of correspondence from PLA where navigation safety was briefly discussed, and note the causeway itself is located within the PLA SHA area.

Nash Maritime has been asked to prepare a scope of works to undertake a navigation assessment and as such I have advised sharing this scope with you first, to ensure it meets POTLL requirements.

The scope of the assessment is as follows (which we consider to be a fairly light touch approach to reflect the low level risk):

1. Review project details / drawings, documents and parameters – e.g. causeway construction / operation
2. Vessel traffic analysis of passing vessels (particularly those bound to/from Tilbury 2) – e.g. track analysis, swept path analysis
3. Stakeholder consultation with PLA and POTLL
4. Navigation assessment to:
 1. Determine navigation risk to passing vessels and proposed marine operation
 2. Identify mitigation measures if required (e.g. lighting of the causeway, barge arrival deconflictions with Tilbury 2 vessels, towage requirements, mooring requirements etc.)
5. Draft and issue short technical report

I would be very grateful if you can advise whether this scope would meet your requirements – it is envisaged that in due course the report would form part of the DCO submissions. The assessment will likely be undertaken in September so I would envisage meeting with you in 2-3 weeks once we have the vessel traffic analysis to discuss the project (likely via video call).

Please don't hesitate to give me a call if you have any questions or clarifications.

Kind Regards

Ed

Dr Ed Rogers | Director

t: +44 (0) 7906 580 921 | e: e.rogers@nashmaritime.com | w: nashmaritime.com



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ANNEX N - ER OUTLINES NRA SCOPE TO NE

Edward Rogers

From: Edward Rogers
Sent: 02 September 2020 12:42
To: Nick.Evans@potll.com
Cc: Andrew Troup; Jamie Holmes
Subject: RE: Thurrock Flexible Generation Plant DCO Navigation Assessment

Hi Nick,

Trust you are well?

I've just got off the phone to Geoff, who advised I make contact with you on my request below.

Grateful if you can advise – I've just tried giving you a call, so if you'd like talk it through, please call on my mobile number below.

Kind Regards

Ed

Dr Ed Rogers | Director
t: +44 (0) 7906 580 921 | **e:** e.rogers@nashmaritime.com | **w:** nashmaritime.com

From: Edward Rogers
Sent: 28 August 2020 16:49
To: 'geoff.holland@potll.com' <geoff.holland@potll.com>
Cc: 'Andrew Troup' <atroup@stateraenergy.co.uk>; Jamie Holmes <j.holmes@nashmaritime.com>
Subject: Thurrock Flexible Generation Plant DCO Navigation Assessment

Good Afternoon Geoff,

Thank you for speaking with me yesterday and apologies for interrupting your leave. As discussed, then please find attached an outline plot of the Thurrock Flexible Generation Plant DCO Causeway and accompanying Concept Design Report which provides an overview of the propose causeway construction and marine operation.

As discussed the project has been asked to undertake a navigation assessment by Port of Tilbury London Ltd (POTLL) – focused around possible impacts to Tilbury 2 operations. I am also aware of correspondence from PLA where navigation safety was briefly discussed, and note the causeway itself is located within the PLA SHA area.

Nash Maritime has been asked to prepare a scope of works to undertake a navigation assessment and as such I have advised sharing this scope with you first, to ensure it meets POTLL requirements.

The scope of the assessment is as follows (which we consider to be a fairly light touch approach to reflect the low level risk):

1. Review project details / drawings, documents and parameters – e.g. causeway construction / operation
2. Vessel traffic analysis of passing vessels (particularly those bound to/from Tilbury 2) – e.g. track analysis, swept path analysis
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5. Draft and issue short technical report

I would be very grateful if you can advise whether this scope would meet your requirements – it is envisaged that in due course the report would form part of the DCO submissions. The assessment will likely be undertaken in September so I would envisage meeting with you in 2-3 weeks once we have the vessel traffic analysis to discuss the project (likely via video call).

Please don't hesitate to give me a call if you have any questions or clarifications.

Kind Regards

Ed

Dr Ed Rogers | Director

t: +44 (0) 7906 580 921 | e: e.rogers@nashmaritime.com | w: nashmaritime.com



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ANNEX O - NE AGREES PROJECT SCOPE

Edward Rogers

From: Nick Evans <Nick.Evans@potll.com>
Sent: 02 September 2020 15:44
To: Edward Rogers
Cc: Andrew Troup; Jamie Holmes
Subject: RE: Thurrock Flexible Generation Plant DCO Navigation Assessment

Afternoon Ed,

Very good thank you, trust all is well with you.

Thanks for sending this over and appreciate your time to discuss further. I am in agreement with the proposed scope of the project, we would like the proposed vessel/s alongside the causeway to be included.

This may well fall outside of the scope of the NRA but it is a piece of work we will require, given the proximity of the proposed causeway to Tilbury 2 we will require hydrodynamic modelling of the new structure to determine any impact on our berth depths and required maintenance dredging.

Kind Regards,
Nick.

Nick Evans | Deputy Harbour Master | Port of Tilbury London Limited

Marine Department | Tilbury | Essex | RM18 7EH

Dir: 01375 852217 | Mob: 07583 082328 | <https://forthports.co.uk>

From: Edward Rogers [mailto:e.rogers@nashmaritime.com]
Sent: 02 September 2020 12:42
To: Nick Evans
Cc: Andrew Troup; Jamie Holmes
Subject: RE: Thurrock Flexible Generation Plant DCO Navigation Assessment

Hi Nick,

Trust you are well?

I've just got off the phone to Geoff, who advised I make contact with you on my request below.

Grateful if you can advise – I've just tried giving you a call, so if you'd like talk it through, please call on my mobile number below.

Kind Regards

Ed

Dr Ed Rogers | Director
t: +44 (0) 7906 580 921 | **e:** e.rogers@nashmaritime.com | **w:** nashmaritime.com

From: Edward Rogers
Sent: 28 August 2020 16:49
To: 'geoff.holland@potll.com' <geoff.holland@potll.com>
Cc: 'Andrew Troup' <atroup@stateraenergy.co.uk>; Jamie Holmes <j.holmes@nashmaritime.com>
Subject: Thurrock Flexible Generation Plant DCO Navigation Assessment

Good Afternoon Geoff,

Thank you for speaking with me yesterday and apologies for interrupting your leave. As discussed, then please find attached an outline plot of the Thurrock Flexible Generation Plant DCO Causeway and accompanying Concept Design Report which provides an overview of the propose causeway construction and marine operation.

As discussed the project has been asked to undertake a navigation assessment by Port of Tilbury London Ltd (POTLL) – focused around possible impacts to Tilbury 2 operations. I am also aware of correspondence from PLA where navigation safety was briefly discussed, and note the causeway itself is located within the PLA SHA area.

Nash Maritime has been asked to prepare a scope of works to undertake a navigation assessment and as such I have advised sharing this scope with you first, to ensure it meets POTLL requirements.

The scope of the assessment is as follows (which we consider to be a fairly light touch approach to reflect the low level risk):

1. Review project details / drawings, documents and parameters – e.g. causeway construction / operation
2. Vessel traffic analysis of passing vessels (particularly those bound to/from Tilbury 2) – e.g. track analysis, swept path analysis
3. Stakeholder consultation with PLA and POTLL
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 1. Determine navigation risk to passing vessels and proposed marine operation
 2. Identify mitigation measures if required (e.g. lighting of the causeway, barge arrival deconflictions with Tilbury 2 vessels, towage requirements, mooring requirements etc.)
5. Draft and issue short technical report

I would be very grateful if you can advise whether this scope would meet your requirements – it is envisaged that in due course the report would form part of the DCO submissions. The assessment will likely be undertaken in September so I would envisage meeting with you in 2-3 weeks once we have the vessel traffic analysis to discuss the project (likely via video call).

Please don't hesitate to give me a call if you have any questions or clarifications.

Kind Regards

Ed

Dr Ed Rogers | Director
t: +44 (0) 7906 580 921 | e: e.rogers@nashmaritime.com | w: nashmaritime.com



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**ANNEX P- MEETING MINUTES FROM POTLL CONSULTATION MEETING,
02-OCT-2020**

Notes of Meeting

Thurrock Power Station Causeway (20-NASH-0100)

Client:
 Project: Thurrock Power Station Causeway
 Venue: Video/telecon (MS Teams)
 Date of Meeting: 08-Oct-2020 (1400– 1500)

Present:

Deputy Harbour Master Port of Tilbury	Nick Evans - NE
NASH Maritime	Ed Rogers - ER
NASH Maritime	Sam Anderson-Brown - SAB
NASH Maritime	Raffi Gracie - RG

1.	Introductions and Meeting Objectives
	<p>SAB welcomed all and shared screen to show the PowerPoint.</p> <p>SAB introduced the scheme and provided an agenda and objectives for the meeting:</p> <ul style="list-style-type: none"> • Development of causeway and berthing area for a vessel associated with the development of Thurrock Power Station. NASH Maritime are providing navigational risk assessment and consultation. • Consultation with the POTLL to identify any concerns or considerations that have not yet been identified.
2.	Presentation
	<p><i>Lock restrictions on entry and exit to Tilbury.</i></p> <ul style="list-style-type: none"> - Discussed promoters plans for seagoing heavy lift vessel to transfer cargo to heavy lift barge (similar to Terra Marique) utilising Port of Tilbury infrastructure. - There are 60-75 movements a week in and out of Tilbury. - Terra Marique or other similar design vessel will have to fit around current shipping schedules and services (existing contracts) - 4m draught is unrestricted at all states of tide - 16m+ beam requires second tug to go through lock - Tug and tow over 80m has to be assessed individually – (independent risk assessment similar to passage plan risk assessment developed for PLA should be sufficient) <p><i>Dredging and DCO boundaries</i></p> <ul style="list-style-type: none"> - 14.48 - 14.98m depths in CMAT berth dredge pocket only, the approach to the CMAT has not been dredged - NE to confirm bed levelling and dredging was complete

	<ul style="list-style-type: none"> - Going through DCO dredge application currently - It was agreed that the dashed red (Tilbury 2 DCO boundary) is the northernmost limit of vessels approaching the berth and NE did not expect CMAT vessels to transit to the north. <p><i>Norstream and Norsky (Ro-RO vessels): current regularly running vessels to Tilbury 2</i></p> <ul style="list-style-type: none"> - These vessel make 2 arrivals a day to either the upstream dolphin berth or downstream berth. During the study period, the downstream berth (located closest to the proposed causeway) was utilised but NE explained that previously Master's preference was to utilise upstream berth. However Masters have choice about this. - The vessel arrivals at prescheduled times, which are represent an accurate baseline for current use of Tilbury 2. - It was noted that there was 183m distance between proposed causeway location and the closest Norstream and Norsky vessel tracks. - It was noted that there were variable approaches between the Norstream and Norsky to the berth, with the Norstream more likely to swing upstream and approach the Tilbury 2 from the west. <p>CMAT Berth</p> <ul style="list-style-type: none"> - CMAT berth expects only a few trips a month when active, much less activity than for the RoRo berth (a ship a week at CMAT?) - CMAT berth – uncertain how far discussions are with berth usage but NE anticipates large aggregate vessels to Tilbury and possibility for transshipment to smaller vessels for upriver delivery - It is understood that any vessel bound for the CMAT berth will require a minimum of two tugs and will have a draught of 13.5-14m draught. - <i>Yeoman Bridge</i> identified as design vessel for CMAT berth. <p><i>Preliminary Hazard Identification</i></p> <ul style="list-style-type: none"> - NE notes regular recreational traffic to the north of the main navigation channel. - NE notes many clubs in area (eg Gravesend Yacht Club) that are well aware of restrictions. - NE: noted many large projects upcoming, and there may be an increase in intra port tugs and barges, e.g. DHL – although is was noted that tug and tows currently don't transit the causeway location - NE: had no concerns regarding the identified hazards for the risk assessment.
<p>3.</p>	<p>Navigation Safety comments</p>
	<ul style="list-style-type: none"> - NE: Based on the arrival and departure in AM and PM from different RoRo berths – berth choice of captain, as trade picks up this will change, can moor on series of dolphins, currently using lower berth because of conditions, plan to extend and have bigger vessels (RoRo vessels of up to 240m and possibly up to 260m) - NE: Volumes are currently down everywhere (COVID) – and NE noted that two weeks data might not be reflective baseline conditions – risk regarding recreational traffic is hard to judge due to non-carriage of AIS equipment, and he asked whether 2 weeks was sufficient. ER responded that this represents a reasonable baseline providing good understanding of use of the river, and that through this consultation an gaps can be filled in. - NE: Noted the structure in the charted location would be unlikely to impact current use of T2 RoRo berths.

	<ul style="list-style-type: none"> - With use of operational procedures between Tilbury 2 and the causeway operation then any conflicts on and off the causeway area is not anticipated to be an issue.
4.	Actions
	<ul style="list-style-type: none"> - NE to confirm what information can be given regarding vessel movements, vessel size etc. at CMAT - NE to confirm dredged area and any plans for dredging of approaches within DCO area. - SAB to share draft report with NE once complete.

ANNEX Q - SAB ISSUES DRAFT REPORT TO NE

Edward Rogers

From: Sam Anderson-Brown
Sent: 14 October 2020 17:24
To: Nick Evans
Cc: Raffi Gracie; Edward Rogers
Subject: RE: Thurrock Causeway - Consultation POTL
Attachments: 20-NASH-0100_100_R01-00.pdf

Hi Nick,

Thanks for the response and comments.

Happy for you to suggest some alternate wording.

We have just completed the draft report and I have attached a copy for your consideration, perhaps you could review and see if any of your wider navigational safety issues you have are addressed in the report? You will note that minutes of the meeting are not included in the Annexes, we have removed these and will put them back in once we agree the wording below.

In regard to the shifting parameters concerning the Causeway operation we were asked by our client to base our report on what is outlined in the Thurrock Causeway Concept Design report produced by Aecom.

Regarding the EIA this is not something we will be involved with or have site of.

Kind regards,
Sam

Sam Anderson-Brown | Senior Consultant
t: +44 (0) 7515 903 789 | e: s.andersonbrown@nashmaritime.com | w: nashmaritime.com

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From: Nick Evans <Nick.Evans@potll.com>
Sent: 14 October 2020 16:56
To: Sam Anderson-Brown <S.AndersonBrown@nashmaritime.com>
Cc: Raffi Gracie <r.gracie@nashmaritime.com>; Edward Rogers <e.rogers@nashmaritime.com>
Subject: RE: Thurrock Causeway - Consultation POTL

Hi Sam,

Very good thank you, trust all is well your end.

#I have had a look through an

My only comment would be on this: NE: noted that the current location does not create any immediate navigation safety concerns, but that there may be other concerns related to impact on future expansion options for Tilbury 2.

To me this implies I have no navigational safety concerns about the whole proposal. While I did agree with causeway on the drying line there would likely be limited navigational impact of the standalone structure, notwithstanding any

concerns about the EIA. I would not want to state at this stage there are no immediate navigational safety concerns about the project. I think we covered this off at the beginning in my comments about the very limited and ever changing elements of the proposal and the lack of any detail on the proposed operation.

I would prefer this line to be removed entirely. Happy to look at a reword to reflect the above if you'd prefer.

Kind Regards,
Nick.

Nick Evans | Asset Manager Marine | Port of Tilbury London Limited

Marine Department | Tilbury | Essex | RM18 7EH

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From: Sam Anderson-Brown [<mailto:S.AndersonBrown@nashmaritime.com>]

Sent: 13 October 2020 16:08

To: Nick Evans

Cc: Raffi Gracie; Edward Rogers

Subject: RE: Thurrock Causeway - Consultation POTL

Hi Nick,

Hope all is well?

Just wanted to check you were happy with the minutes we sent over the other day? I have now had a chance to put them in to a proper template so thought I would share this with you now. Let me know if you have any comments. We are expecting to have the report complete in the coming days so I will ensure you get a copy.

Kind regards
Sam

Sam Anderson-Brown | Senior Consultant

t: +44 (0) 7515 903 789 | **e:** s.andersonbrown@nashmaritime.com | **w:** nashmaritime.com

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From: Sam Anderson-Brown

Sent: 05 October 2020 15:46

To: 'Nick Evans' <Nick.Evans@potll.com>

Cc: Raffi Gracie <r.gracie@nashmaritime.com>; Edward Rogers <e.rogers@nashmaritime.com>

Subject: Thurrock Causeway - Consultation POTL

Hi Nick ,

Good to catch up with you earlier and thanks for your time, really constructive and great to get your perspective on this project. Please let me know if you have any comments in relation to the below meeting notes

Thurrock Causeway Consultation - Meeting Minutes 14:00 5-Oct-20

Present Nick Evans, Sam Anderson-Brown, Edward Rogers, Raffi Gracie

Lock restrictions on entry and exit to Tilbury.

- Discussed promoters plans for seagoing heavy lift vessel to transfer cargo to heavy lift barge (similar to Terra Marique) utilising Port of Tilbury infrastructure.
- There are 60-75 movements a week in and out of Tilbury.
- Terra Marique or other similar design vessel will have to fit around current shipping schedules and services (existing contracts)
- 4m draught is unrestricted at all states of tide
- 16m+ beam requires second tug to go through lock
- Tug and tow over 80m has to be assessed separately – (independent risk assessment similar to passage plan developed for PLA should be sufficient)

Dredging and DCO boundaries

- 14.48 - 14.98m depths in CMAT dredge pocket – berth only, approach hasn't been dredged
- NE to confirm bed levelling and dredging
- Going through DCO dredge application currently
- Dashed red is northernmost boundary of vessels approaching – don't expect vessels to transit to the north.

Norstream and Norsky: current regularly running vessels

- 2 arrivals a day to either upstream dolphin berth or downstream berth. During study period downstream berth was utilised but NE explained that previously Master's preference was to utilise upstream berth. Masters have choice.
- 2 Ro-Ro arrivals a day at prescheduled times is an accurate baseline for current use of Tilbury 2.
- 183m distance between causeway and closest vessel tracks.
- Variable approaches between Norstream and Norsky to berth, Norstream more likely to come upstream and approach from the west.

Preliminary Hazard Identification

- NE notes regular recreational traffic to the north of the main navigation channel.
- NE notes many clubs in area (eg Gravesend Yacht Club) that are well aware of restrictions
- NE: many large projects upcoming, number of intraport tugs and barges will increase, e.g DHL
- CMAT berth – uncertain how far discussions are with use of barge and aggregates etc, large aggregate vessel to tilbury and smaller vessels onward
- CMAT vessel will require minimum of two tugs, 13.5-14m draught
- NE: no concerns re identified hazards.

Other comments

- NE: Arrival and departure in AM and PM from different berths – berth choice of captain, as trade picks up this will change, can moor on series of dolphins, currently using lower berth because of conditions, plan to extend and have bigger vessels (roro up to 240m? maybe 260m)
- NE: Volumes are down everywhere (COVID) – two weeks data might not be reflective of the navigational risk in total – risk re recreational traffic is hard to judge due to insufficient data, is the data set sufficient?
- NE: current location doesn't create immediate concerns, but concerns for future expansion, conflicts on and off, causeway area not really used
- CMAT berth expects only a few trips a month, much less activity than roro (a ship a week at CMAT?)
- Yeoman Bridge identified as design vessel for CMAT berth.

Actions

- Nick to confirm what information can be given regarding vessel movements, vessel size etc. at CMAT
- Nick to confirm dredged area and any plans for dredging of approaches within DCO area.
- SAB to share draft report with NE once complete.

Kind regards,
Sam

Sam Anderson-Brown | Senior Consultant

t: +44 (0) 7515 903 789 | e: s.andersonbrown@nashmaritime.com | w: nashmaritime.com



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ANNEX R - NE RAISES POTLL CONCERNS WITH DRAFT REPORT

Edward Rogers

From: Nick Evans <Nick.Evans@potll.com>
Sent: 26 October 2020 14:55
To: Sam Anderson-Brown
Cc: Edward Rogers
Subject: RE: Thurrock Causeway - Consultation POTL

Hi Sam,

I certainly did thank you, I'd like to say refreshed and relaxed but that lasted about 30mins...

I do have a number of comments on the report, I have some broad concerns about the NRA and a number of specific points. I will start with the broader points and bullet point the specifics below.

I do not believe the NRA in its current form contains adequate detail on the proposed operation of the causeway to allow adequate assessment of navigational risk. Additionally, I do not believe the 2 weeks AIS data is sufficient to assess navigational risk, particularly as the report is based on a period in time when commercial river traffic is reduced and recreational traffic is non-existent.

The draft NRA report contains a greater level of detail than I had at the initial consultation meeting. Detail within the draft report requires much greater analysis, such as the proposed arrival and departure of the Terra Marique. While it is fair to say the Port of Tilbury were consulted, I do not accept the scope of the NRA was agreed. My comments during the consultation meeting highlighted the lack of detail on the proposed operation of the causeway and concerns about the assessment of navigational risk.

Finally, I believe the report focuses on the navigational risk attached to the location of the causeway and does not adequately assess the risk of the operation of the causeway. The operation of the causeway will change traffic flows and affect berth operation both in the vicinity of the causeway and along the intended route from T1 lock to T2. I do not think this is adequately addressed.

- While I largely agree with the identified hazards, Haz ID3 is far too broad. I believe this needs to form a minimum of 3 hazards and consider collision with vessels arriving/departing T2 RoRo, T2 Cmat and East Tilbury as separate hazards. I would expect further detail on the proposed arrival procedure in order to adequately assess navigational risk, including, holding position, any assist vessels and the duration of this procedure.
- Detail of the Terra Marique contained in the draft report raise concerns about the transit from T1 to T2 and I believe should be assessed. For example, a vessel capable of 4.75 knots proceeding outbound against the flood tide and crossing the river twice in 1.62NM is not routine and has the potential to impact all current operational berths between Northfleet Hope Container Terminal and East Tilbury Jetty, particularly if that vessel needs 'right of way' to facilitate the operation.
- The hazards all include a reduction in scoring due to mitigation that has not been discussed or agreed. Some of this mitigation is likely to have significant impact on existing operations and create an increase in risk elsewhere
- Risk Control 7 – MOP with Tilbury. Given there is limited flexibility in the Thurrock operation arrivals, this would suggest the MOP would adversely affect Port of Tilbury operations. I don't think it is appropriate to consider this agreed mitigation and use to reduce scoring
- I cannot make any meaningful comment on the operation of the causeway without further detail, including but not limited to; proposed passage plan, approach and departure to/from causeway (swept path ideally), holding position of Terra Marique and supporting vessels + duration
- 1.3.6 – tug requirements will be determined through independent risk assessment as highlighted in section 3.1. Best guess is minimum of 2 tugs but this is not a given

- 1.5.2 – CMAT berth ‘confirmed’ as being limited to a few arrivals per month is a bit strong. This was discussed and while frequency certainly much less than the RORO berths, it is impossible to confirm numbers at this time
- 2.1.1.1 The P&O vessels layby on a weekly basis so they can ‘swap shifts’. We have had no operational issues at T2 causing vessels to remain alongside.
- 2.1.1.1 Figure 14 shows approach for upstream berth north of the navigational channel. Without holding position of Terra Marique, the report cannot state there will be no conflict
- Figure 11-16. Swept path analysis is a very useful tool but without an example of the Terra Marique swept path and the proposed holding position with tugs, all figures 11-16 show is there is limited risk attached to the structure. I don’t believe this assesses the Navigational Risk of causeway operation
- 2.1.2 There is no expectation a large CMAT bound vessel would pass north at low tide due to CD water levels, it is likely the approach will be at high water so CD depths will not be a ruling depth.
- 2.1.2 Deep drafted arrivals tend to be programmed at or around high water, this could conflict with arrival of Terra Marique. Without holding positions, approach and departure detailed, conflict cannot be assessed
- 2.2 Intraport freight is currently down. Have increased traffic levels from the London Resort and Lower Thames Crossing been considered?
- 2.3 Assertions on leisure traffic not quantified by data
- 2.4 would appear to contradict comments made in 2.3. Incident data demonstrates a seasonal spike attributed to leisure users. Holding position of the Terra Marique would likely push recreational traffic into the authorised channel. Thurrock operation would introduce a new navigational risk and remove one of the existing mitigations namely, the small craft route passing the location north of the authorised channel
- 2.4 How are the navigational incidents classified; if there is an incident between a recreational and commercial vessel, is it recorded as recreational or commercial? Without understanding this, it is very difficult to do any meaningful trend analysis
- AIS data is taken from last week in Sept and first week in Oct. October shows incident levels at 50% less than peak months. Do number of incidents per vessel increase during peak months?
- 2.5 Limited dataset has driven the summary. Would a 2 week period in August 2019 provide the same conclusions?
- 2.5 strongly disagree with comment on recreational activity. Reasoning already provided.
- 4.5.3 T2 RoRo is on a fixed schedule regardless of tides, this would suggest a weekly conflict between high water arrival at the causeway and a high water arrival/departure at T2 – I don’t believe it is correct to state exposure to risk is minimal

Apologies for the rather lengthy response.

Kind regards,
Nick.

Nick Evans | Asset Manager Marine | Port of Tilbury London Limited

Marine Department | Tilbury | Essex | RM18 7EH

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From: Sam Anderson-Brown [mailto:S.AndersonBrown@nashmaritime.com]
Sent: 20 October 2020 16:40
To: Nick Evans
Cc: Edward Rogers
Subject: RE: Thurrock Causeway - Consultation POTL

Afternoon Nick,

Hope you enjoyed your time off?

No problem regarding the delay, we appreciate the turnaround was tight and have therefore decided to delay finalising the report until 28th October. This should give time for any comments to be incorporated in to the report so if you do have any substantive comments you would like to make then it would be good to receive these as soon as possible.

Kind regards,
Sam

Sam Anderson-Brown | Senior Consultant
t: +44 (0) 7515 903 789 | e: s.andersonbrown@nashmaritime.com | w: nashmaritime.com

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From: Nick Evans <Nick.Evans@potll.com>
Sent: 20 October 2020 14:14
To: Sam Anderson-Brown <S.AndersonBrown@nashmaritime.com>
Cc: Edward Rogers <e.rogers@nashmaritime.com>
Subject: RE: Thurrock Causeway - Consultation POTL

Hi Sam,

Thank you for sending through. Apologies for the delay, I took a couple of days leave. I do have some comments but probably better to submit via our legal representation in the DCO process now your report has been finalised.

Kind Regards,
Nick.

Nick Evans | Asset Manager Marine | Port of Tilbury London Limited

Marine Department | Tilbury | Essex | RM18 7EH

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From: Sam Anderson-Brown [<mailto:S.AndersonBrown@nashmaritime.com>]
Sent: 16 October 2020 15:03
To: Nick Evans
Cc: Edward Rogers
Subject: RE: Thurrock Causeway - Consultation POTL

Afternoon Nick,

Thanks for that, we will incorporate the wording below I to the minutes.

Did you have a chance to review the draft report? If you have any comments it would be great to receive these by close of play on Monday so we can incorporate them in to the final report.

Kind regards,
Sam

Sam Anderson-Brown | Senior Consultant
t: +44 (0) 7515 903 789 | e: s.andersonbrown@nashmaritime.com | w: nashmaritime.com

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From: Nick Evans <Nick.Evans@potll.com>
Sent: 15 October 2020 09:57
To: Sam Anderson-Brown <S.AndersonBrown@nashmaritime.com>
Cc: Raffi Gracie <r.gracie@nashmaritime.com>; Edward Rogers <e.rogers@nashmaritime.com>
Subject: RE: Thurrock Causeway - Consultation POTL

Hi Sam,

Many thanks. I have included a reword below.

I would be happy with: NE noted the structure in the charted location would be unlikely to impact current use of T2 RoRo berths. I think that's a fair reflection of the conversation.

I will take a look through the report and revert, I will aim to go through this today. I completely agree, you can only assess the navigational risk under the parameters you were given. Those were more general comments and for the wider DCO consultation, not in relation to the work you have undertaken. When reviewing your report I will comment only on the content of the NRA with consideration to the parameters under which it has been produced. The other points are for the lawyers.

For your info, the PC you supplied seems to have developed an error with the hard drive, when we attempt to boot it doesn't make it past the bios screen.

Kind Regards,
Nick.

Nick Evans | Asset Manager Marine | Port of Tilbury London Limited

Marine Department | Tilbury | Essex | RM18 7EH

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From: Sam Anderson-Brown [<mailto:S.AndersonBrown@nashmaritime.com>]
Sent: 14 October 2020 17:24
To: Nick Evans
Cc: Raffi Gracie; Edward Rogers
Subject: RE: Thurrock Causeway - Consultation POTL

Hi Nick,

Thanks for the response and comments.

Happy for you to suggest some alternate wording.

We have just completed the draft report and I have attached a copy for your consideration, perhaps you could review and see if any of your wider navigational safety issues you have are addressed in the report? You will note that minutes of the meeting are not included in the Annexes, we have removed these and will put them back in once we agree the wording below.

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Kind regards,
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Hi Sam,

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#I have had a look through an

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I would prefer this line to be removed entirely. Happy to look at a reword to reflect the above if you'd prefer.

Kind Regards,
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Sent: 13 October 2020 16:08
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Cc: Raffi Gracie; Edward Rogers
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Kind regards
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Sam Anderson-Brown | Senior Consultant
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Cc: Raffi Gracie <r.gracie@nashmaritime.com>; Edward Rogers <e.rogers@nashmaritime.com>
Subject: Thurrock Causeway - Consultation POTL

Hi Nick ,

Good to catch up with you earlier and thanks for your time, really constructive and great to get your perspective on this project. Please let me know if you have any comments in relation to the below meeting notes

Thurrock Causeway Consultation - Meeting Minutes 14:00 5-Oct-20

Present Nick Evans, Sam Anderson-Brown, Edward Rogers, Raffi Gracie

Lock restrictions on entry and exit to Tilbury.

- Discussed promoters plans for seagoing heavy lift vessel to transfer cargo to heavy lift barge (similar to Terra Marique) utilising Port of Tilbury infrastructure.
- There are 60-75 movements a week in and out of Tilbury.
- Terra Marique or other similar design vessel will have to fit around current shipping schedules and services (existing contracts)
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- Going through DCO dredge application currently
- Dashed red is northernmost boundary of vessels approaching – don't expect vessels to transit to the north.

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- 2 arrivals a day to either upstream dolphin berth or downstream berth. During study period downstream berth was utilised but NE explained that previously Master's preference was to utilise upstream berth. Masters have choice.
- 2 Ro-Ro arrivals a day at prescheduled times is an accurate baseline for current use of Tilbury 2.
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- Variable approaches between Norstream and Norsky to berth, Norstream more likely to come upstream and approach from the west.

Preliminary Hazard Identification

- NE notes regular recreational traffic to the north of the main navigation channel.
- NE notes many clubs in area (eg Gravesend Yacht Club) that are well aware of restrictions
- NE: many large projects upcoming, number of intraport tugs and barges will increase, e.g DHL
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- CMAT vessel will require minimum of two tugs, 13.5-14m draught
- NE: no concerns re identified hazards.

Other comments

- NE: Arrival and departure in AM and PM from different berths – berth choice of captain, as trade picks up this will change, can moor on series of dolphins, currently using lower berth because of conditions, plan to extend and have bigger vessels (roro up to 240m? maybe 260m)
- NE: Volumes are down everywhere (COVID) – two weeks data might not be reflective of the navigational risk in total – risk re recreational traffic is hard to judge due to insufficient data, is the data set sufficient?
- NE: current location doesn't create immediate concerns, but concerns for future expansion, conflicts on and off, causeway area not really used
- CMAT berth expects only a few trips a month, much less activity than roro (a ship a week at CMAT?)
- Yeoman Bridge identified as design vessel for CMAT berth.

Actions

- Nick to confirm what information can be given regarding vessel movements, vessel size etc. at CMAT
- Nick to confirm dredged area and any plans for dredging of approaches within DCO area.
- SAB to share draft report with NE once complete.

Kind regards,
Sam

Sam Anderson-Brown | Senior Consultant

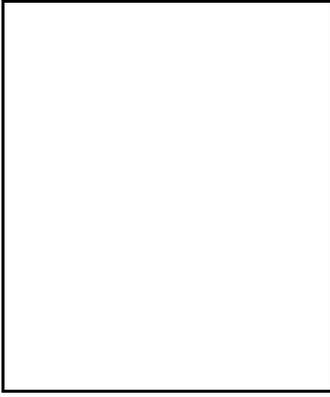
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**ANNEX S - SAB CONFIRMS THAT FURTHER WORK WILL BE CARRIED
OUT**

Edward Rogers

From: Sam Anderson-Brown
Sent: 06 November 2020 13:26
To: Nick Evans
Cc: Edward Rogers
Subject: RE: Thurrock Causeway - Consultation POTL

Afternoon Nick,

Good to catch up with you yesterday and thanks again for the detailed feedback. It was good to talk around the comments you gave us and understand your concerns in greater detail. As discussed, we will progress some further work to address the concerns you have raised and will consult with you again once this work has been completed.

Thanks again for your time Nick and have a good weekend.

Kind regards,
Sam

Sam Anderson-Brown | Senior Consultant
t: +44 (0) 7515 903 789 | **e:** s.andersonbrown@nashmaritime.com | **w:** nashmaritime.com

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From: Nick Evans <Nick.Evans@potll.com>
Sent: 03 November 2020 13:41
To: Sam Anderson-Brown <S.AndersonBrown@nashmaritime.com>
Cc: Edward Rogers <e.rogers@nashmaritime.com>
Subject: RE: Thurrock Causeway - Consultation POTL

Works for me Sam, see you then.

Nick

From: Sam Anderson-Brown [<mailto:S.AndersonBrown@nashmaritime.com>]
Sent: 03 November 2020 13:40
To: Nick Evans
Cc: Edward Rogers
Subject: RE: Thurrock Causeway - Consultation POTL

Thanks Nick,

Can we for Thursday at 11:30? I will send an appointment.

Kind regards,
Sam

Sam Anderson-Brown | Senior Consultant
t: +44 (0) 7515 903 789 | **e:** s.andersonbrown@nashmaritime.com | **w:** nashmaritime.com

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From: Nick Evans <Nick.Evans@potll.com>
Sent: 03 November 2020 09:08
To: Sam Anderson-Brown <S.AndersonBrown@nashmaritime.com>
Cc: Edward Rogers <e.rogers@nashmaritime.com>
Subject: RE: Thurrock Causeway - Consultation POTL

Hi Sam,

Anytime today or Thursday would work for me.

Kind regards
Nick.

Nick Evans | Asset Manager Marine | Port of Tilbury London Limited

Marine Department | Tilbury | Essex | RM18 7EH

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From: Sam Anderson-Brown [<mailto:S.AndersonBrown@nashmaritime.com>]
Sent: 02 November 2020 14:49
To: Nick Evans
Cc: Edward Rogers
Subject: RE: Thurrock Causeway - Consultation POTL

Afternoon Nick,

Just wondering if there is a good time this week for us to discuss the feedback you had on the report?

Kind regards,
Sam

Sam Anderson-Brown | Senior Consultant
t: +44 (0) 7515 903 789 | **e:** s.andersonbrown@nashmaritime.com | **w:** nashmaritime.com

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From: Sam Anderson-Brown
Sent: 28 October 2020 13:12
To: Nick Evans <Nick.Evans@potll.com>
Cc: Edward Rogers <e.rogers@nashmaritime.com>
Subject: RE: Thurrock Causeway - Consultation POTL

Afternoon Nick,

Thanks again for the detailed feedback, I think it might be best for us to discuss your points on a call. Would there be a good time for you to tomorrow or on Friday? If not, do you have any availability early next week?

Kind regards,
Sam

Sam Anderson-Brown | Senior Consultant

t: +44 (0) 7515 903 789 | e: s.andersonbrown@nashmaritime.com | w: nashmaritime.com

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From: Nick Evans <Nick.Evans@potll.com>
Sent: 26 October 2020 14:55
To: Sam Anderson-Brown <S.AndersonBrown@nashmaritime.com>
Cc: Edward Rogers <e.rogers@nashmaritime.com>
Subject: RE: Thurrock Causeway - Consultation POTL

Hi Sam,

I certainly did thank you, I'd like to say refreshed and relaxed but that lasted about 30mins...

I do have a number of comments on the report, I have some broad concerns about the NRA and a number of specific points. I will start with the broader points and bullet point the specifics below.

I do not believe the NRA in its current form contains adequate detail on the proposed operation of the causeway to allow adequate assessment of navigational risk. Additionally, I do not believe the 2 weeks AIS data is sufficient to assess navigational risk, particularly as the report is based on a period in time when commercial river traffic is reduced and recreational traffic is non-existent.

The draft NRA report contains a greater level of detail than I had at the initial consultation meeting. Detail within the draft report requires much greater analysis, such as the proposed arrival and departure of the Terra Marique. While it is fair to say the Port of Tilbury were consulted, I do not accept the scope of the NRA was agreed. My comments during the consultation meeting highlighted the lack of detail on the proposed operation of the causeway and concerns about the assessment of navigational risk.

Finally, I believe the report focuses on the navigational risk attached to the location of the causeway and does not adequately assess the risk of the operation of the causeway. The operation of the causeway will change traffic flows and affect berth operation both in the vicinity of the causeway and along the intended route from T1 lock to T2. I do not think this is adequately addressed.

- While I largely agree with the identified hazards, Haz ID3 is far too broad. I believe this needs to form a minimum of 3 hazards and consider collision with vessels arriving/departing T2 RoRo, T2 Cmat and East Tilbury as separate hazards. I would expect further detail on the proposed arrival procedure in order to adequately assess navigational risk, including, holding position, any assist vessels and the duration of this procedure.
- Detail of the Terra Marique contained in the draft report raise concerns about the transit from T1 to T2 and I believe should be assessed. For example, a vessel capable of 4.75 knots proceeding outbound against the flood tide and crossing the river twice in 1.62NM is not routine and has the potential to impact all current operational berths between Northfleet Hope Container Terminal and East Tilbury Jetty, particularly if that vessel needs 'right of way' to facilitate the operation.

- The hazards all include a reduction in scoring due to mitigation that has not been discussed or agreed. Some of this mitigation is likely to have significant impact on existing operations and create an increase in risk elsewhere
- Risk Control 7 – MOP with Tilbury. Given there is limited flexibility in the Thurrock operation arrivals, this would suggest the MOP would adversely affect Port of Tilbury operations. I don't think it is appropriate to consider this agreed mitigation and use to reduce scoring
- I cannot make any meaningful comment on the operation of the causeway without further detail, including but not limited to; proposed passage plan, approach and departure to/from causeway (swept path ideally), holding position of Terra Marique and supporting vessels + duration
- 1.3.6 – tug requirements will be determined through independent risk assessment as highlighted in section 3.1. Best guess is minimum of 2 tugs but this is not a given
- 1.5.2 – CMAT berth 'confirmed' as being limited to a few arrivals per month is a bit strong. This was discussed and while frequency certainly much less than the RORO berths, it is impossible to confirm numbers at this time
- 2.1.1.1 The P&O vessels layby on a weekly basis so they can 'swap shifts'. We have had no operational issues at T2 causing vessels to remain alongside.
- 2.1.1.1 Figure 14 shows approach for upstream berth north of the navigational channel. Without holding position of Terra Marique, the report cannot state there will be no conflict
- Figure 11-16. Swept path analysis is a very useful tool but without an example of the Terra Marique swept path and the proposed holding position with tugs, all figures 11-16 show is there is limited risk attached to the structure. I don't believe this assesses the Navigational Risk of causeway operation
- 2.1.2 There is no expectation a large CMAT bound vessel would pass north at low tide due to CD water levels, it is likely the approach will be at high water so CD depths will not be a ruling depth.
- 2.1.2 Deep drafted arrivals tend to be programmed at or around high water, this could conflict with arrival of Terra Marique. Without holding positions, approach and departure detailed, conflict cannot be assessed
- 2.2 Intraport freight is currently down. Have increased traffic levels from the London Resort and Lower Thames Crossing been considered?
- 2.3 Assertions on leisure traffic not quantified by data
- 2.4 would appear to contradict comments made in 2.3. Incident data demonstrates a seasonal spike attributed to leisure users. Holding position of the Terra Marique would likely push recreational traffic into the authorised channel. Thurrock operation would introduce a new navigational risk and remove one of the existing mitigations namely, the small craft route passing the location north of the authorised channel
- 2.4 How are the navigational incidents classified; if there is an incident between a recreational and commercial vessel, is it recorded as recreational or commercial? Without understanding this, it is very difficult to do any meaningful trend analysis
- AIS data is taken from last week in Sept and first week in Oct. October shows incident levels at 50% less than peak months. Do number of incidents per vessel increase during peak months?
- 2.5 Limited dataset has driven the summary. Would a 2 week period in August 2019 provide the same conclusions?
- 2.5 strongly disagree with comment on recreational activity. Reasoning already provided.
- 4.5.3 T2 RoRo is on a fixed schedule regardless of tides, this would suggest a weekly conflict between high water arrival at the causeway and a high water arrival/departure at T2 – I don't believe it is correct to state exposure to risk is minimal

Apologies for the rather lengthy response.

Kind regards,
Nick.

Nick Evans | Asset Manager Marine | Port of Tilbury London Limited

Marine Department | Tilbury | Essex | RM18 7EH

From: Sam Anderson-Brown [<mailto:S.AndersonBrown@nashmaritime.com>]
Sent: 20 October 2020 16:40
To: Nick Evans
Cc: Edward Rogers
Subject: RE: Thurrock Causeway - Consultation POTL

Afternoon Nick,

Hope you enjoyed your time off?

No problem regarding the delay, we appreciate the turnaround was tight and have therefore decided to delay finalising the report until 28th October. This should give time for any comments to be incorporated in to the report so if you do have any substantive comments you would like to make then it would be good to receive these as soon as possible.

Kind regards,
Sam

Sam Anderson-Brown | Senior Consultant
t: +44 (0) 7515 903 789 | **e:** s.andersonbrown@nashmaritime.com | **w:** nashmaritime.com

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From: Nick Evans <Nick.Evans@potll.com>
Sent: 20 October 2020 14:14
To: Sam Anderson-Brown <S.AndersonBrown@nashmaritime.com>
Cc: Edward Rogers <e.rogers@nashmaritime.com>
Subject: RE: Thurrock Causeway - Consultation POTL

Hi Sam,

Thank you for sending through. Apologies for the delay, I took a couple of days leave. I do have some comments but probably better to submit via our legal representation in the DCO process now your report has been finalised.

Kind Regards,
Nick.

Nick Evans | Asset Manager Marine | Port of Tilbury London Limited

Marine Department | Tilbury | Essex | RM18 7EH

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From: Sam Anderson-Brown [<mailto:S.AndersonBrown@nashmaritime.com>]
Sent: 16 October 2020 15:03
To: Nick Evans
Cc: Edward Rogers
Subject: RE: Thurrock Causeway - Consultation POTL

Afternoon Nick,

Thanks for that, we will incorporate the wording below I to the minutes.

Did you have a chance to review the draft report? If you have any comments it would be great to receive these by close of play on Monday so we can incorporate them in to the final report.

Kind regards,
Sam

Sam Anderson-Brown | Senior Consultant
t: +44 (0) 7515 903 789 | e: s.andersonbrown@nashmaritime.com | w: nashmaritime.com

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From: Nick Evans <Nick.Evans@potll.com>
Sent: 15 October 2020 09:57
To: Sam Anderson-Brown <S.AndersonBrown@nashmaritime.com>
Cc: Raffi Gracie <r.gracie@nashmaritime.com>; Edward Rogers <e.rogers@nashmaritime.com>
Subject: RE: Thurrock Causeway - Consultation POTL

Hi Sam,

Many thanks. I have included a reword below.

I would be happy with: NE noted the structure in the charted location would be unlikely to impact current use of T2 RoRo berths. I think that's a fair reflection of the conversation.

I will take a look through the report and revert, I will aim to go through this today. I completely agree, you can only assess the navigational risk under the parameters you were given. Those were more general comments and for the wider DCO consultation, not in relation to the work you have undertaken. When reviewing your report I will comment only on the content of the NRA with consideration to the parameters under which it has been produced. The other points are for the lawyers.

For your info, the PC you supplied seems to have developed an error with the hard drive, when we attempt to boot it doesn't make it past the bios screen.

Kind Regards,
Nick.

Nick Evans | Asset Manager Marine | Port of Tilbury London Limited

Marine Department | Tilbury | Essex | RM18 7EH

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From: Sam Anderson-Brown [<mailto:S.AndersonBrown@nashmaritime.com>]
Sent: 14 October 2020 17:24
To: Nick Evans
Cc: Raffi Gracie; Edward Rogers
Subject: RE: Thurrock Causeway - Consultation POTL

Hi Nick,

Thanks for the response and comments.

Happy for you to suggest some alternate wording.

We have just completed the draft report and I have attached a copy for your consideration, perhaps you could review and see if any of your wider navigational safety issues you have are addressed in the report? You will note that minutes of the meeting are not included in the Annexes, we have removed these and will put them back in once we agree the wording below.

In regard to the shifting parameters concerning the Causeway operation we were asked by our client to base our report on what is outlined in the Thurrock Causeway Concept Design report produced by Aecom.

Regarding the EIA this is not something we will be involved with or have site of.

Kind regards,
Sam

Sam Anderson-Brown | Senior Consultant

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From: Nick Evans <Nick.Evans@potll.com>

Sent: 14 October 2020 16:56

To: Sam Anderson-Brown <S.AndersonBrown@nashmaritime.com>

Cc: Raffi Gracie <r.gracie@nashmaritime.com>; Edward Rogers <e.rogers@nashmaritime.com>

Subject: RE: Thurrock Causeway - Consultation POTL

Hi Sam,

Very good thank you, trust all is well your end.

#I have had a look through an

My only comment would be on this: NE: noted that the current location does not create any immediate navigation safety concerns, but that there may be other concerns related to impact on future expansion options for Tilbury 2.

To me this implies I have no navigational safety concerns about the whole proposal. While I did agree with causeway on the drying line there would likely be limited navigational impact of the standalone structure, notwithstanding any concerns about the EIA. I would not want to state at this stage there are no immediate navigational safety concerns about the project. I think we covered this off at the beginning in my comments about the very limited and ever changing elements of the proposal and the lack of any detail on the proposed operation.

I would prefer this line to be removed entirely. Happy to look at a reword to reflect the above if you'd prefer.

Kind Regards,
Nick.

Nick Evans | Asset Manager Marine | Port of Tilbury London Limited

Marine Department | Tilbury | Essex | RM18 7EH

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From: Sam Anderson-Brown [<mailto:S.AndersonBrown@nashmaritime.com>]

Sent: 13 October 2020 16:08

To: Nick Evans

Cc: Raffi Gracie; Edward Rogers

Subject: RE: Thurrock Causeway - Consultation POTL

Hi Nick,

Hope all is well?

Just wanted to check you were happy with the minutes we sent over the other day? I have now had a chance to put them in to a proper template so thought I would share this with you now. Let me know if you have any comments. We are expecting to have the report complete in the coming days so I will ensure you get a copy.

Kind regards

Sam

Sam Anderson-Brown | Senior Consultant

t: +44 (0) 7515 903 789 | e: s.andersonbrown@nashmaritime.com | w: nashmaritime.com

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From: Sam Anderson-Brown

Sent: 05 October 2020 15:46

To: 'Nick Evans' <Nick.Evans@potll.com>

Cc: Raffi Gracie <r.gracie@nashmaritime.com>; Edward Rogers <e.rogers@nashmaritime.com>

Subject: Thurrock Causeway - Consultation POTL

Hi Nick ,

Good to catch up with you earlier and thanks for your time, really constructive and great to get your perspective on this project. Please let me know if you have any comments in relation to the below meeting notes

Thurrock Causeway Consultation - Meeting Minutes 14:00 5-Oct-20

Present Nick Evans, Sam Anderson-Brown, Edward Rogers, Raffi Gracie

Lock restrictions on entry and exit to Tilbury.

- Discussed promoters plans for seagoing heavy lift vessel to transfer cargo to heavy lift barge (similar to Terra Marique) utilising Port of Tilbury infrastructure.
- There are 60-75 movements a week in and out of Tilbury.
- Terra Marique or other similar design vessel will have to fit around current shipping schedules and services (existing contracts)
- 4m draught is unrestricted at all states of tide
- 16m+ beam requires second tug to go through lock
- Tug and tow over 80m has to be assessed separately – (independent risk assessment similar to passage plan developed for PLA should be sufficient)

Dredging and DCO boundaries

- 14.48 - 14.98m depths in CMAT dredge pocket – berth only, approach hasn't been dredged
- NE to confirm bed levelling and dredging
- Going through DCO dredge application currently
- Dashed red is northernmost boundary of vessels approaching – don't expect vessels to transit to the north.

Norstream and Norsky: current regularly running vessels

- 2 arrivals a day to either upstream dolphin berth or downstream berth. During study period downstream berth was utilised but NE explained that previously Master's preference was to utilise upstream berth. Masters have choice.
- 2 Ro-Ro arrivals a day at prescheduled times is an accurate baseline for current use of Tilbury 2.
- 183m distance between causeway and closest vessel tracks.
- Variable approaches between Norstream and Norsky to berth, Norstream more likely to come upstream and approach from the west.

Preliminary Hazard Identification

- NE notes regular recreational traffic to the north of the main navigation channel.
- NE notes many clubs in area (eg Gravesend Yacht Club) that are well aware of restrictions
- NE: many large projects upcoming, number of intraport tugs and barges will increase, e.g DHL
- CMAT berth – uncertain how far discussions are with use of barge and aggregates etc, large aggregate vessel to tilbury and smaller vessels onward
- CMAT vessel will require minimum of two tugs, 13.5-14m draught
- NE: no concerns re identified hazards.

Other comments

- NE: Arrival and departure in AM and PM from different berths – berth choice of captain, as trade picks up this will change, can moor on series of dolphins, currently using lower berth because of conditions, plan to extend and have bigger vessels (roro up to 240m? maybe 260m)
- NE: Volumes are down everywhere (COVID) – two weeks data might not be reflective of the navigational risk in total – risk re recreational traffic is hard to judge due to insufficient data, is the data set sufficient?
- NE: current location doesn't create immediate concerns, but concerns for future expansion, conflicts on and off, causeway area not really used
- CMAT berth expects only a few trips a month, much less activity than roro (a ship a week at CMAT?)
- Yeoman Bridge identified as design vessel for CMAT berth.

Actions

- Nick to confirm what information can be given regarding vessel movements, vessel size etc. at CMAT
- Nick to confirm dredged area and any plans for dredging of approaches within DCO area.
- SAB to share draft report with NE once complete.

Kind regards,
Sam

Sam Anderson-Brown | Senior Consultant

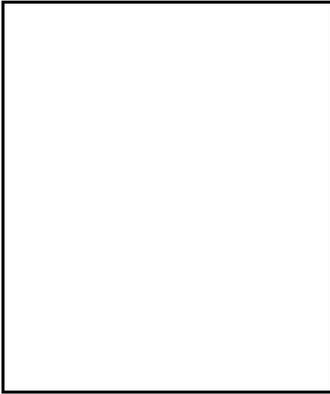
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**ANNEX T - SLIDES FROM POTLL CONSULTATION MEETING, 20-NOV-
2020**

Thurrock Causeway Navigation Risk Assessment



Contents



1. Review of NRA work to date
2. POTLL Concerns / Comments on draft Navigation Risk Assessment
3. AIS Data Benchmarking
4. Project / Scheme
 - a. Concept Design
 - b. Operation / Passage
5. Vessel Traffic Analysis – 2018 and 2020 Data
6. Navigation Risk Assessment
 - a. Hazard Identification

Client:



Review of NRA Work to Date



Review of NRA work to date



1. NRA commenced mid / Sept
2. Scope review with POTLL and PLA
3. Vessel traffic data collection (to cover operation of T2) – Sept 22nd - Oct 5th
4. Consultation with POTLL and PLA
5. Draft NRA Report
 - a. Assessed risk for 9 hazards
 - b. Identified risk controls options

Hazard ID	Hazards
Haz Id #:1	Contact of "Terra Marique" with Causeway, Tilbury 2 or other structures
Haz Id #:2	Contact with Causeway by passing vessels (All types)
Haz Id #:3	Collision of "Terra Marique" with vessels arriving and departing Tilbury 2 and other Commercial vessels outside the Authorised Channel
Haz Id #:4	Collision of "Terra Marique" with passing vessel Commercial (All types)
Haz Id #:5	Collision of "Terra Marique" with passing Recreational vessels
Haz Id #:6	Collision of "Terra Marique" with passing Tug and Tow
Haz Id #:7	Grounding of "Terra Marique" as a result of Causeway operation
Haz Id #:8	Grounding of non-project vessels as a result of Causeway operations (All types)
Haz Id #:9	Breakout of "Terra Marique" during berthing / coming alongside



POTLL Comments on Draft NRA Report

Client:



POTLL Comments on Draft NRA Report

POTLL Comment / Concern	Action
1. POTLL concerns that 2 weeks data in September is not sufficient to assess navigation risk.	Benchmarking exercise conducted to assess September as a representative month.
2. Data validity – POTLL have concerns that because of the impact of COVID transit numbers are lower than would be necessarily expected when the operation will take place.	Provide further vessel traffic analysis based on pre-COVID data and relate sample AIS vessel traffic analysis to commercial vessel seasonality.
3. NRA needs to include more details on the operation of the causeway and passage on the Thames, to and from the causeway, of the Terra Marique.	Present more details on the passage and operation of the causeway and add in additional hazards to cover this.
4. Concern that risk control relating to a Marine Operations Plan with POTLL will have adverse impacts on the future operation of the CMAT berth.	Clarification provided in report that causeway operation should not be timetabled to conflict with the arrival of a large Panamax type vessel.
5. Hazard ID#3 is too broad	Hazard split down into separate hazards for Tilbury 2 ro-ro and CMAT berths.
6. Other minor points.	Addressed as clarifications / minor textual changes to the existing report

AIS Data Benchmarking



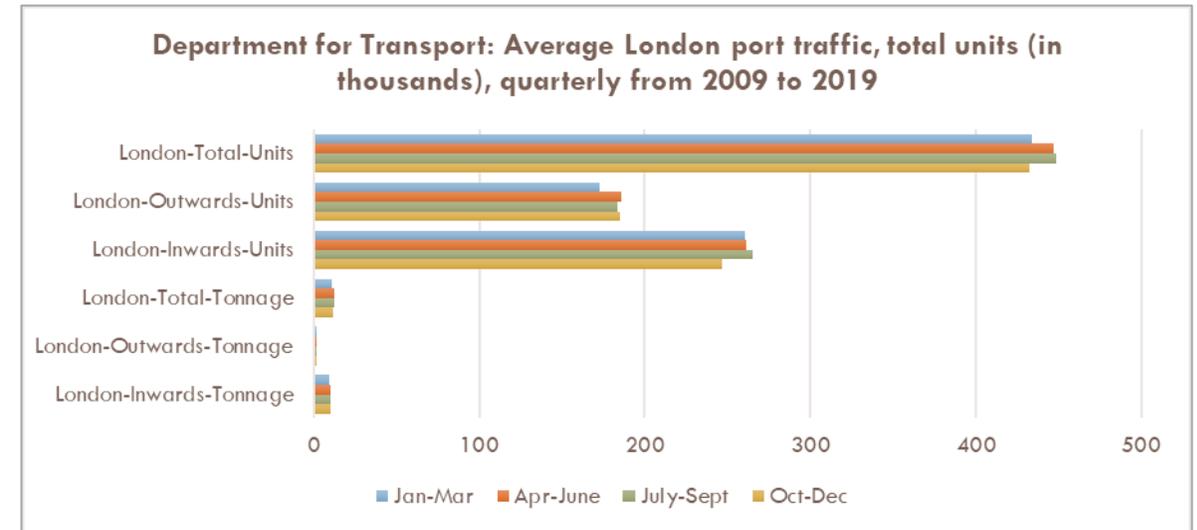
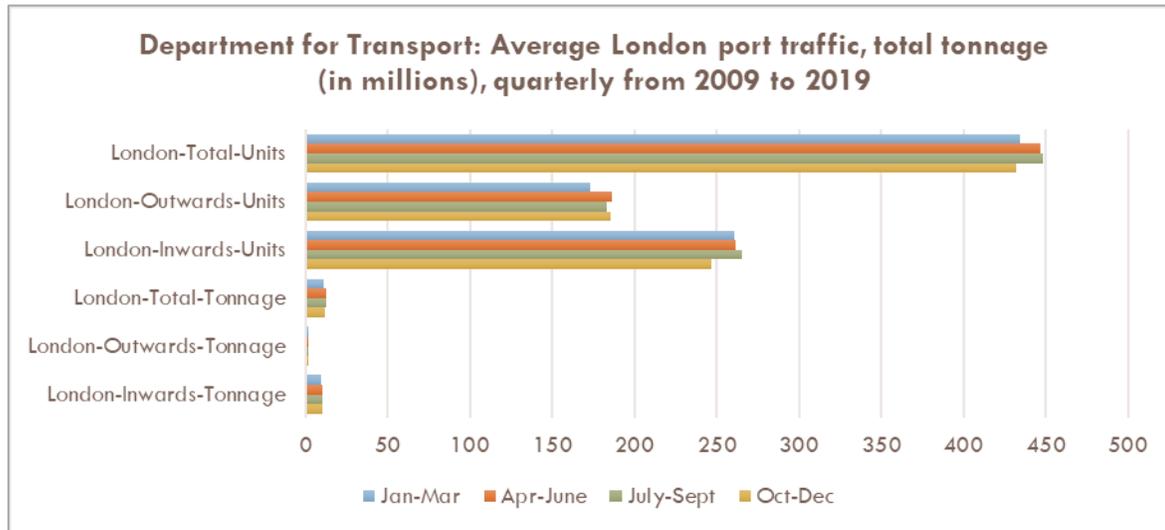
AIS Data Benchmarking



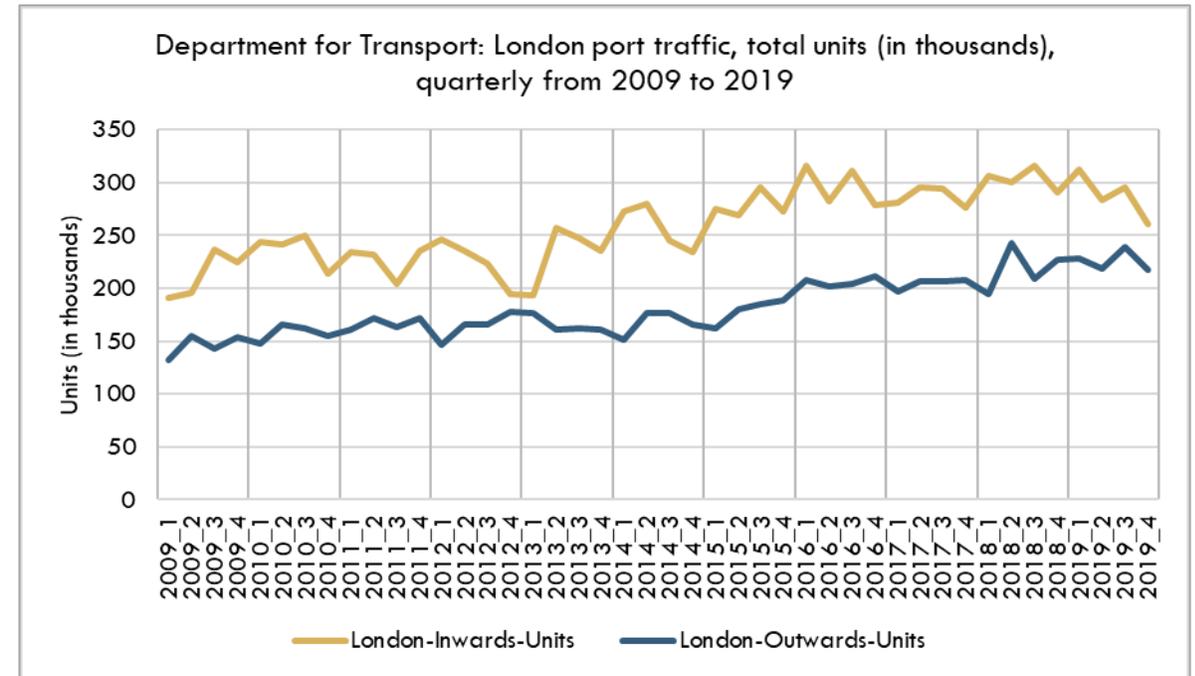
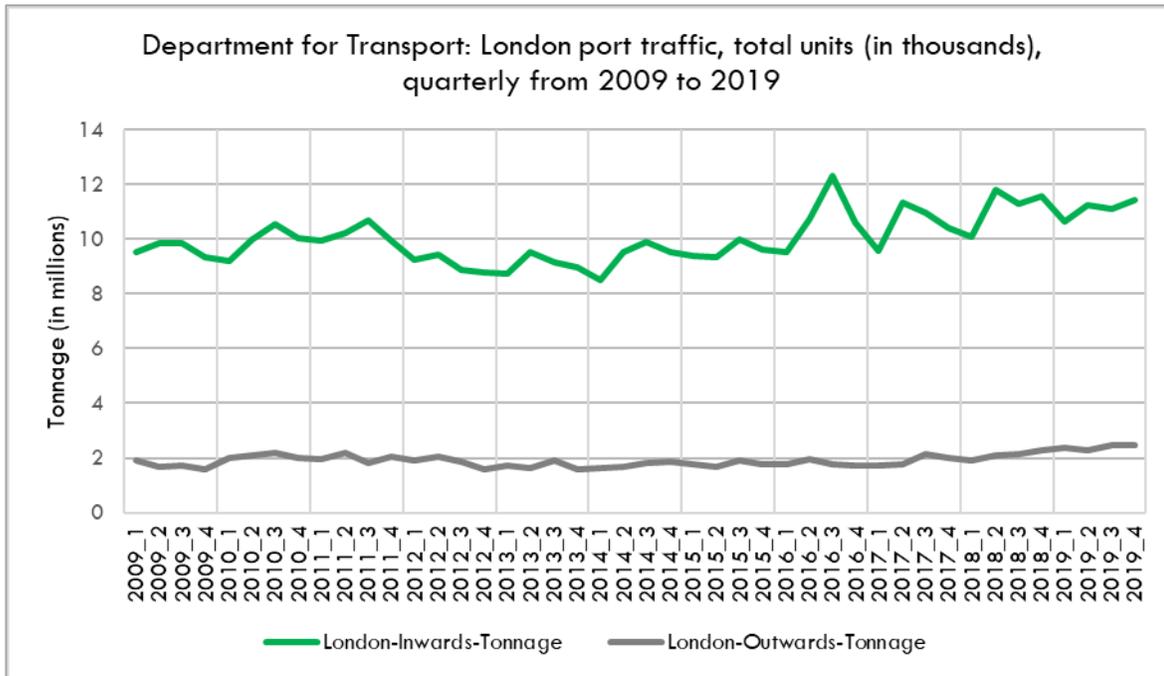
It is considered that September represents a good approximation of commercial vessel traffic. Whilst detailed seasonal and historical statistics of vessel traffic transits past the causeway site are not available, it is possible to compare the AIS data collected and analysed for 2018 and 2020 with:

- Department for Transport: Average London port traffic, total tonnage and units, quarterly from 2009 to 2019 – to determine that September provides a reasonable proxy for commercial vessel movements through the year.
- Department for Transport: London port traffic, by total tonnage and units, quarterly from 2009 to 2019 – to determine that September 2018 provides a reasonable proxy for commercial vessel movements.

AIS Data Benchmarking 2



AIS Data Benchmarking 3

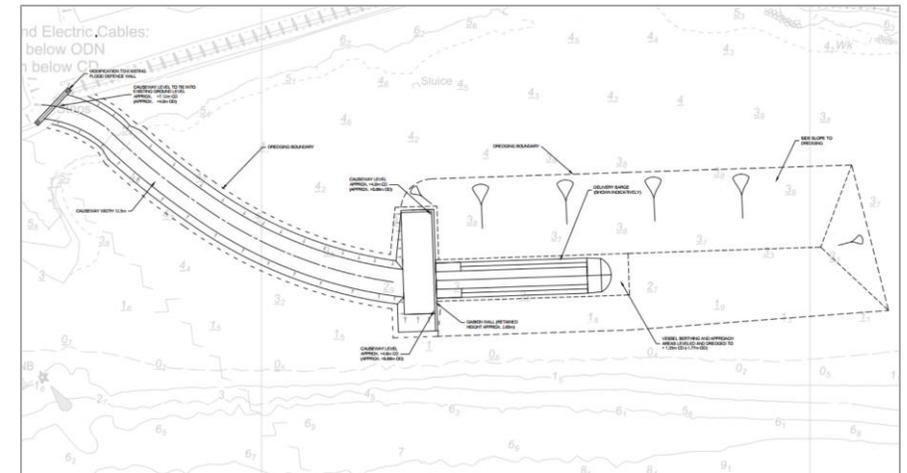
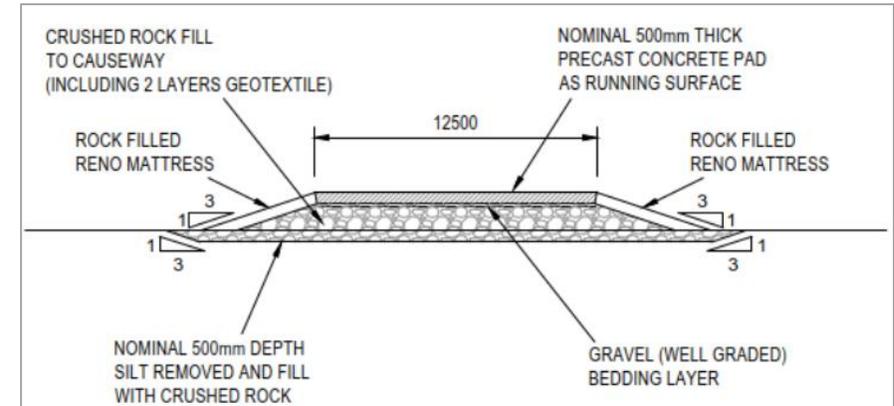


Project / Scheme
Concept Design
Operation
Passage Plan



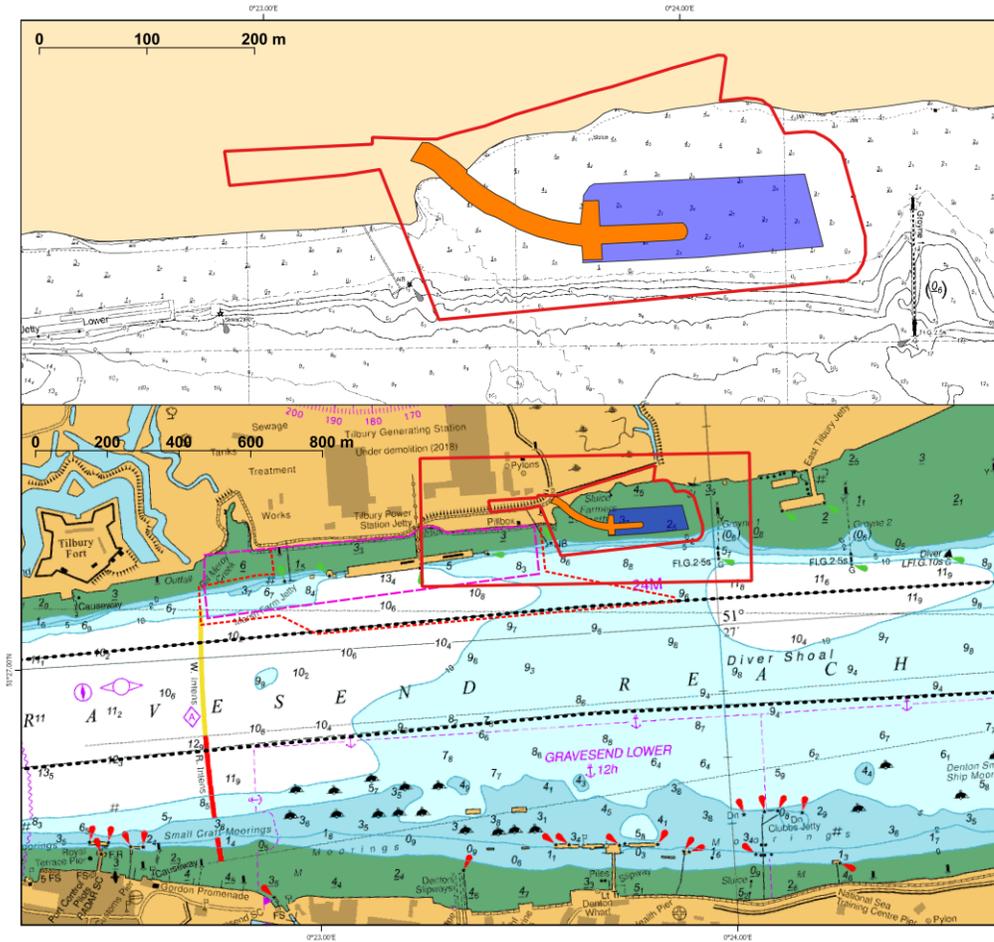
Causeway Concept Design

- Development of a causeway for the delivery of Abnormal Indivisible Loads (AILs) for the construction of the proposed Thurrock Flexible Power Generation Plant.
- The causeway will be serviced by specialist heavy lift barges (e.g. *Terra Marique*)
- Terra Marique will deliver multiple AILs per visit of approximately 350T each (e.g. up to 3 AILs), which will be transported off the barge to the construction site.
- Total of up to 60 AILs – so anticipate 20 – 40 movements – possibly over 6 month period.
- It is envisaged that the causeway will remain post construction of the power plant to aid any maintenance or decommissioning requirements



Concept Design

- Causeway depths
 - Berth dredged to +1.35m CD
 - Approaches dredged to +1.35m CD
- Causeway Level
 - +4.0m CD
- Operational Parameters
 - HW (Springs and Neaps)



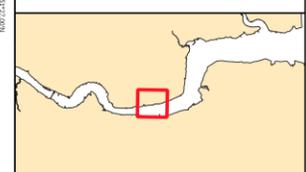
Thurrock Flexible Generation Plant, Illustrative General Arrangement Plans.

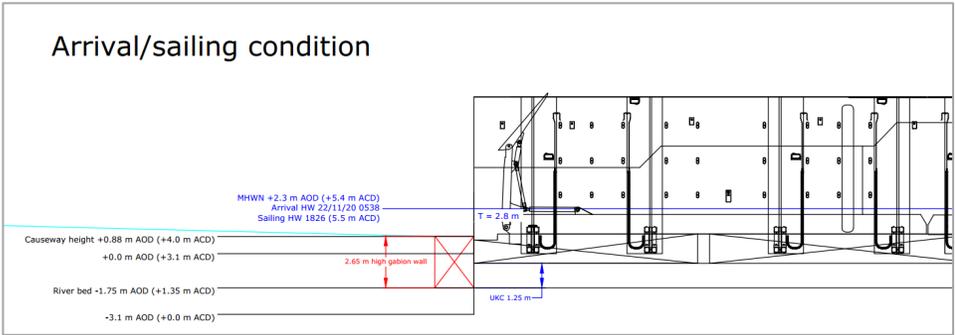
Legend

- Orange square: Causeway
- Blue square: Barge Berthing Pocket
- Red outline: Red Line Boundary
- Dashed line: Authorised Channel
- Dotted line: Tilbury 2 DCO Boundary
- Pink outline: Tilbury 2 Harbour Limits

Data Sources:
PLA Chart 336/337/339
Admiralty Chart 1186-2

Coordinate System: EPSG:32630
Created by: RG Checked by: ER Date: 13/10/2020
Ref: NASH0100_Thurrock_site_overview_v1_20201006





Operation & Passage Plan

- Operation & Passage Plan Scope
 - Heavy Lift Ship transit to ALL transshipment site – **considered generic**
 - TM Mobilisation to ALL transshipment site – **considered generic**
 - Offload of ALL from heavy lift vessel to TM – **considered generic**
 - Focus of NRA *“Passage of TM from ALL Transshipment site (e.g. Tilbury) to Causeway and back to ALL Transshipment site”*
 - Departure from ALL Transshipment Site
 - Passage of River Thames to Causeway
 - Berthing at causeway & unloading of ALL at causeway
 - Un-berthing at causeway (Assumed reverse of above)
 - Passage of River Thames to Causeway (Assumed reverse of above)
 - Arrival at ALL transshipment Site (Assumed reverse of above)

Vessels

<ul style="list-style-type: none"> • Terra Marique (Motorised Barge) 	<ul style="list-style-type: none"> • Motorised heavy lift barge (100AT) (Cat D waters) • LOA 80m / Beam 16.5m / Draught (loaded) 2.8m • Speed Forwards 4.75 kn / Transverse 1.5kn • Mooring – 2 x spud poles and 4 point Mooring system • Crew: Boat Master Tier 1/2 (1 Barge Master, 2 Engineers, 2 AB and Load Master) • Cat D Waters 	 
<ul style="list-style-type: none"> • MTS Valour or similar (Primary Tug) 	<ul style="list-style-type: none"> • BV - Tug Coastal Area / MCA Cat 1 • LOA 23m / Beam 9.65m / Draught 2.99m • Bollard pull 23 ton • Crew: Boat Master 	
<ul style="list-style-type: none"> • Thames Vixen or similar (Berthing Tug) 	<ul style="list-style-type: none"> • Ship & Craft towage (MCA Cat 2) • LOA 16.5m / Beam 5.18m / Draught 2.3m • Bollard pull 10ton • Crew: Boat Master 	

MTS Passage Plan includes

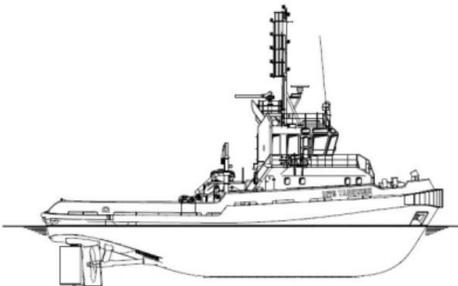
- Waypoints
- Lat / Long
- Course
- Remarks
- VHF CH
- Extract provided

WPT	WPT NAME	LAT	LONG	COURSE /LEG	DISTANCE	REMARKS
0	Tilbury Basin	51° 27.274 N	000° 20.798 E			Keep Look out for outbound / inbound vessels to/from Lock & movements in basin Call Tilbury Dock VHF CH 17/ CH 04
1	Enter Tilbury Lock	51° 27.270 N	000° 20.653 E	267.5° 0.08 NM	0.08 NM	Keep Look out for outbound / inbound vessels to/from Lock Call Tilbury Dock VHF CH 17/ CH 04
2	Exit Tilbury Lock	51° 27.295 N	000° 20.322 E	276.9° 0.21 NM	0.30 NM	Keep Look out for outbound / inbound vessels to/from Lock Call Tilbury Dock VHF CH 17/ CH 04
3	Start Crossing Channel	51° 27.332 N	000° 20.000 E	280.4° 0.16 NM	0.46 NM	Keep Look out for outbound / inbound vessels ,Vessels approaching to Tilbury Call LONDON VTS VHF CH 68
4	WP No4	51° 27.238 N	000° 19.806 E	232.5° 0.10 NM	0.56 NM	Keep Look out for outbound / inbound vessels Keep watch VHF CH 68/ CH 16
5	Bevans Wharf	51° 27.086 N	000° 19.976 E	145.0° 0.22 NM	0.78 NM	Keep Look out for outbound / inbound vessels Keep watch VHF CH 68/ CH 16



MTS TOWING MANUAL

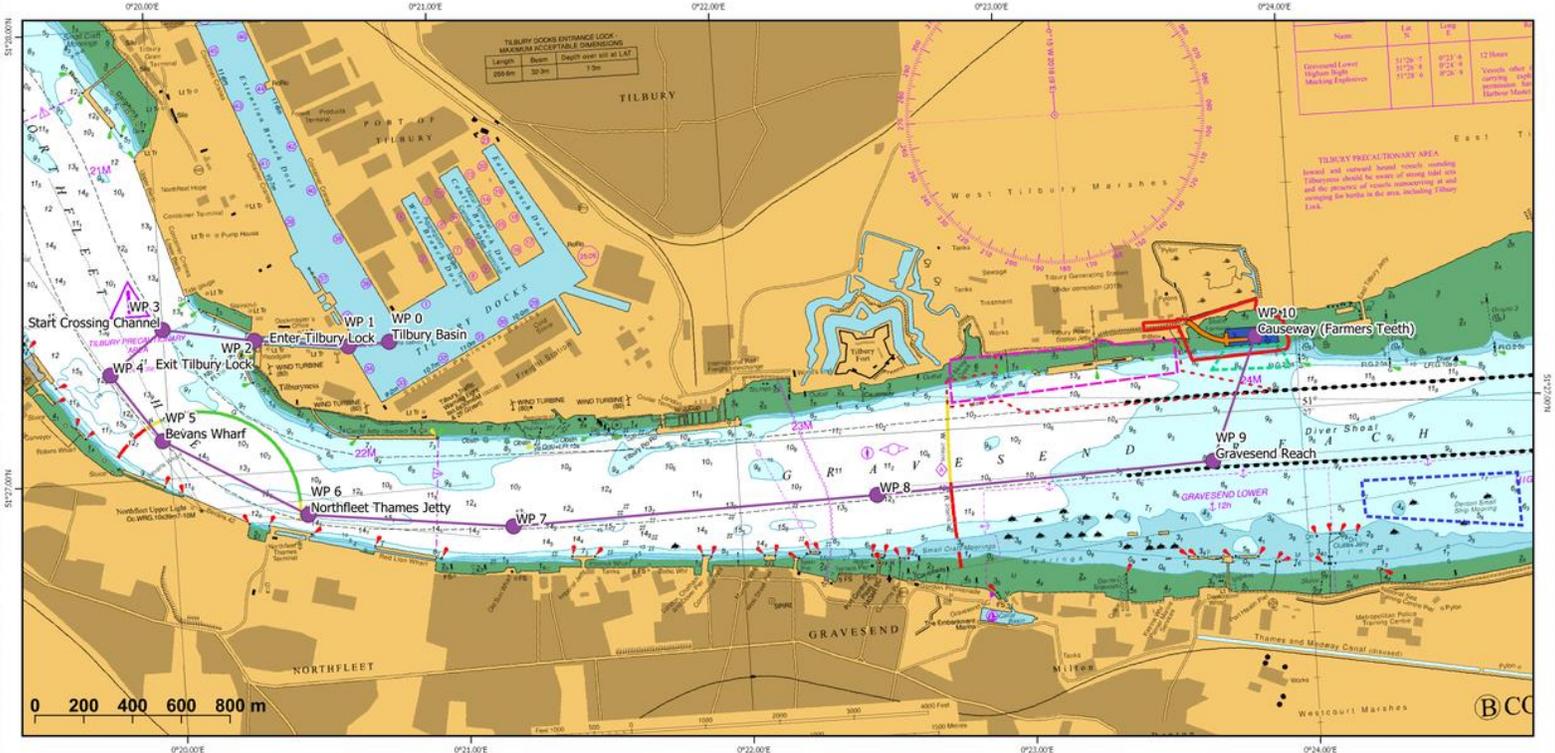
VESSEL:	MTS VANQUISH	TOWING:	SKYLIFT 23
DATE:	10 th JULY 2020	VERSION:	00-01
FROM:	THAMES (UK)	TO:	ROTTERDAM (NETHERLANDS)



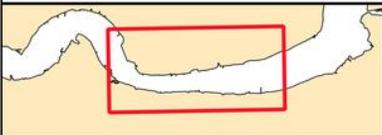
AUTHOR:	Chris Evans	SIGNATURE:	<i>C. Evans</i>	RANK:	Marine Superintendent
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Approved By:	CE	MTS TOWING MANUAL	Page 1
Date:	JAN 2020		

Passage Plan Overview – Tilbury to Causeway site



Thurrock Flexible Generation Plant, Tilbury to Causeway Passage Plan.



Tidal Information
 Level of Chart Datum below Ordnance Survey: 3.12 m
 Mean Low Water Springs (MLWS): 0.6 m
 Mean Low Water Neaps (MLWN): 1.5 m
 Mean High Water Springs (MHWS): 6.6 m
 Mean High Water Neaps (MHWN): 5.4 m
 Highest Astronomical Tide (HAT): 7.0 m

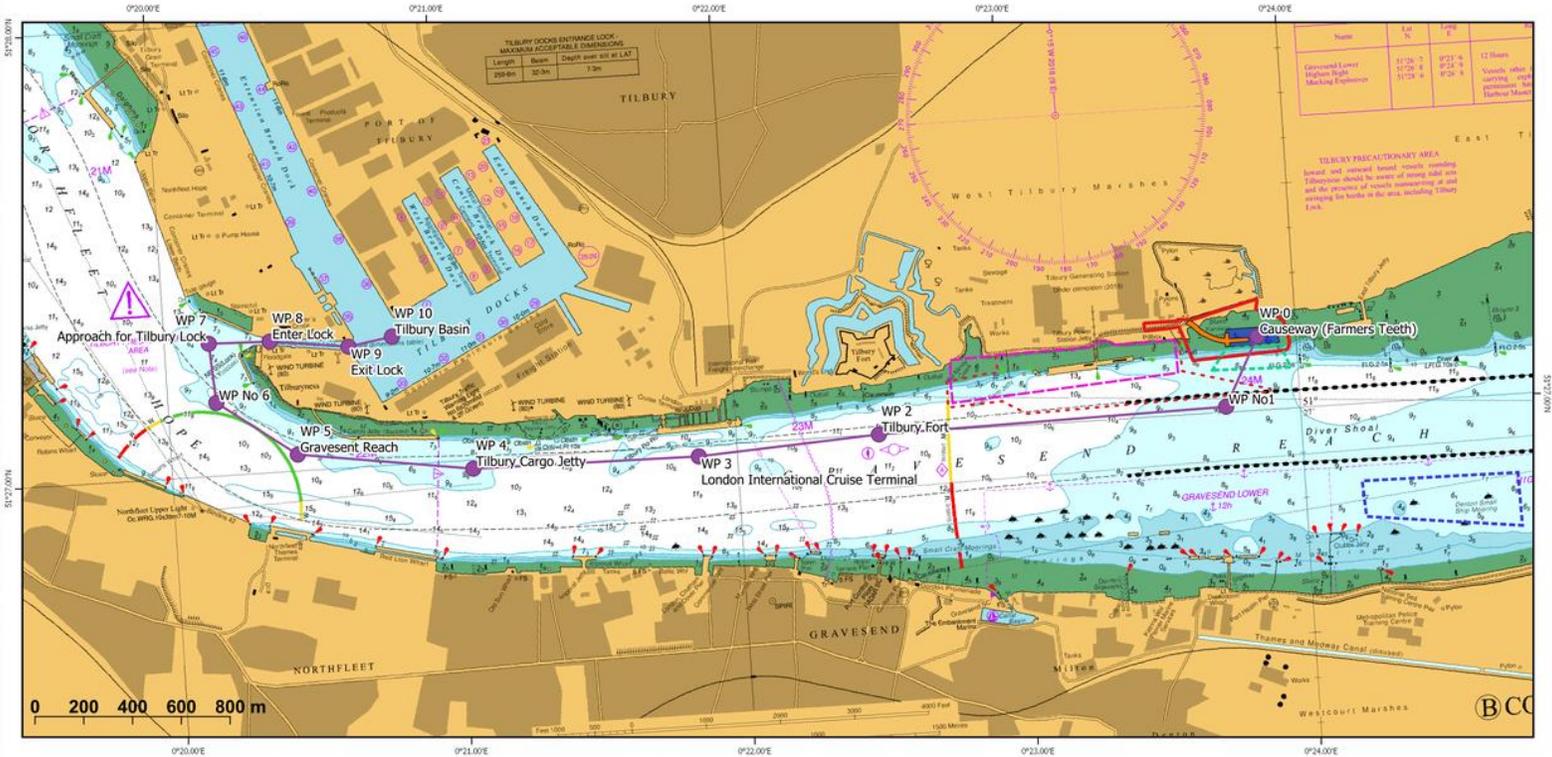
- Legend**
- Waypoint
 - Leg
 - Causeway
 - Barge Berthing Pocket
 - RLB
 - Authorised Channel
 - - - Tilbury 2 DCO Boundary
 - Tilbury 2 Harbour Limits
 - Potential Waiting Area
 - Potential Layby Area

Data Sources:
 Admiralty Chart 1186-2
 MTS Passage Plan Tilbury Dock to Causeway

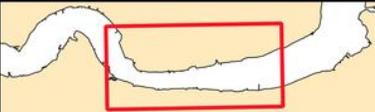
Coordinate System: EPSG:32630
 Created by: RG Checked by: SAB Date: 3/11/2020
 Ref: NASH0100_Thurrock_1_Tilbury_to_Causeway



Passage Plan Overview— Causeway site to Tilbury



Thurrock Flexible Generation Plant, Causeway to Tilbury Passage Plan.



Tidal Information

Level of Chart Datum below Ordnance Survey: 3.12 m
 Mean Low Water Springs (MLWS): 0.6 m
 Mean Low Water Neaps (MLWN): 1.5 m
 Mean High Water Springs (MHWS): 6.6 m
 Mean High Water Neaps (MHWN): 5.4 m
 Highest Astronomical Tide (HAT): 7.0 m

Legend

- Waypoint
- Leg
- Causeway
- Barge Berthing Pocket
- RLB
- Authorised Channel
- Tilbury 2 DCO Boundary
- Tilbury 2 Harbour Limits
- Potential Waiting Area
- Potential Layby Area

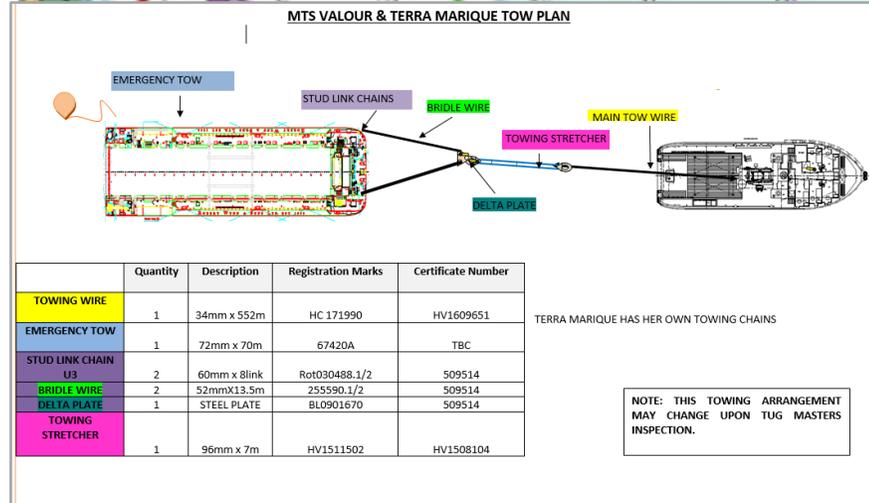
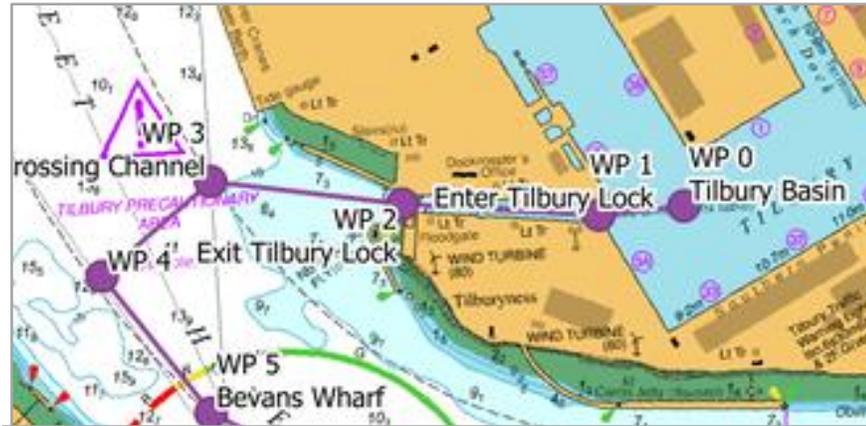
Data Sources:
 Admiralty Chart 1186-2
 MTS Passage Plan Causeway to Tilbury Dock

Coordinate System: EPSG:32630
 Created by: RG Checked by: SAB Date: 3/11/2020
 Ref: NASH0100_Thurrock_2_Causeway_to_Tilbury



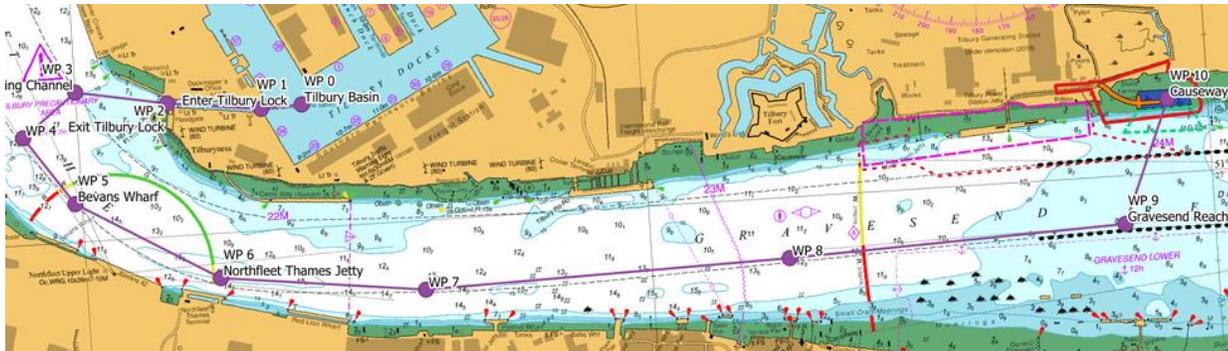
Departure from ALL Transhipment Site

1. Terra Marique (crewed / engines available)
2. MTS Valour (primary tow tug)
3. Thames Vixen (attendance tug)



Departure from ALL Transhipment Site	
Required for Passage Plan Element	Required
Lat and Long positioning	
AtoN names	
Passage Distance	
POTLL Lockage requirements	✓
Headings on each leg	
VHF Procedures	✓
Safe operating tidal window relevant to state of tide and tide times	✓
Vessel Specification Tug & Barge	✓
Tow Configuration	✓
Tug / TM crew - Roles, Responsibilities, qualifications	✓
Written Directions / Special notes / Hazards to Navigation	
Emergency requirements defined	✓
Breakdown contingency plan	✓
Risk Assessment	✓
Relevant Chart number referenced	
Berthing plan	
Utilisation of Layby Area by Tug or TM	
Utilisation of Waiting Area by Tug or TM	

Passage of River Thames to Causeway



1. Terra Marique (crewed / engines available)
2. MTS Valour (primary tow tug)
3. Thames Vixen (work boat in attendance)

Passage of River Thames to Causeway	
Required for Passage Plan Element	Required
Lat and Long positioning	✓
AtoN names	✓
Passage Distance	✓
POTLL Lockage requirements	
Headings on each leg	✓
VHF Procedures	✓
Safe operating tidal window relevant to state of tide and tide times	
Vessel Specification Tug & Barge	✓
Tow Configuration	✓
Tug / TM crew - Roles, Responsibilities, qualifications	✓
Written Directions / Special notes / Hazards to Navigation	✓
Emergency requirements defined	✓
Breakdown contingency plan	✓
Risk Assessment	✓
Relevant Chart number referenced	✓
Berthing plan	
Utilisation of Layby Area by Tug or TM	✓
Utilisation of Waiting Area by Tug or TM	✓

Berthing at the Causeway

Vessels

1. Terra Marique – under command (Crewed / Engines and steering Engaged)
2. MTS Valour (Attending)
3. Thames Vixen (Berthing assistance tug)

Operation

1. Conventional stern tow to waiting area off berth (arrive at waiting area HW-1 /- 0.5hr)
2. Engage TM Engines / Steering
3. 2 x Options

Tow Configuration & Utilisation of waiting / layby area



Terra Marique

MTS Valour



Thames Vixen

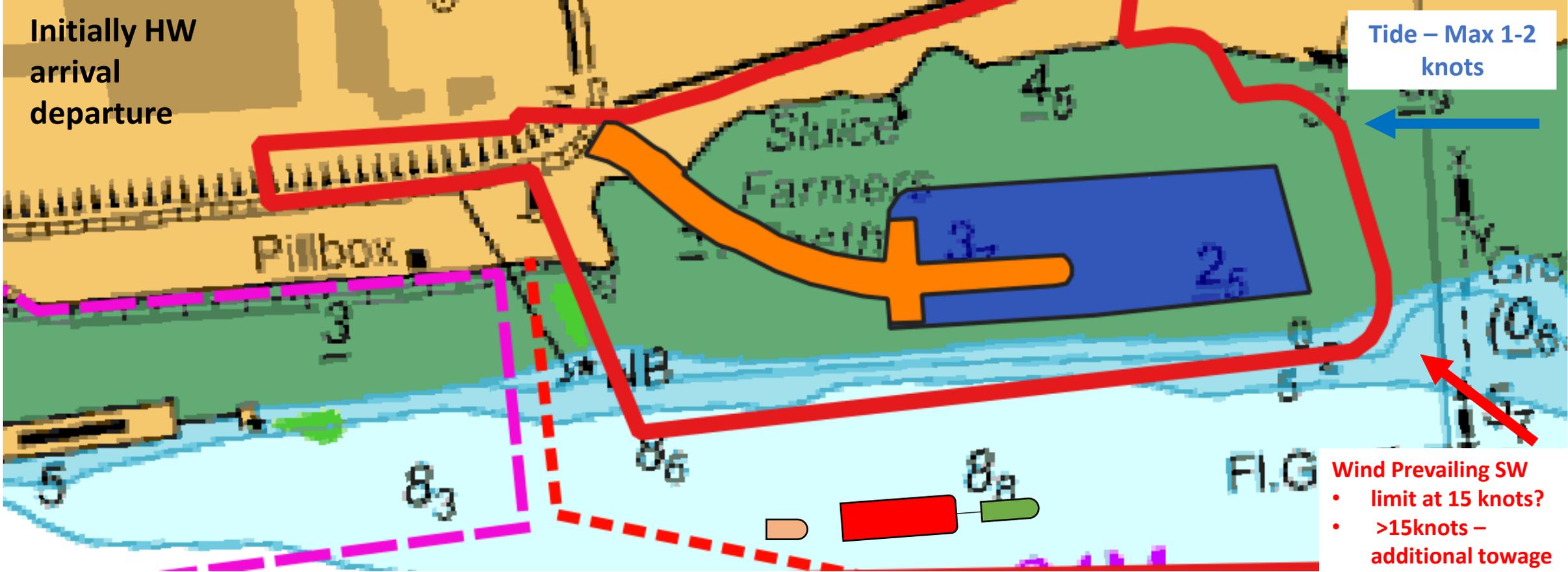
Client:

Berthing at the Causeway

Operation – Option 1

1. Conventional stern tow to waiting area off berth (arrive at waiting area HW-1 / -0.5hr)
2. Engage TM Engines / Steering
3. Thames Vixen berthing assistance tug – attach to stern starboard aft quarter
4. Decouple MTS Valour from stern tow standby
5. TM manoeuvres to (against) causeway berth (use of temporary poles to mark berth / causeway gabion) when under keel clearance greater than 0.5m. Thames Vixen assists with positioning.
6. Load master lines up TM with temporary markers and spuds dropped once in position
7. TM ballast down (13t / cm @ 40t/min) to take the ground
8. Thames Vixen and MTS Valour standby till TM Safety Around

Tow Configuration & Utilisation of waiting / layby area – Option 1



Terra Marique



MTS Valour

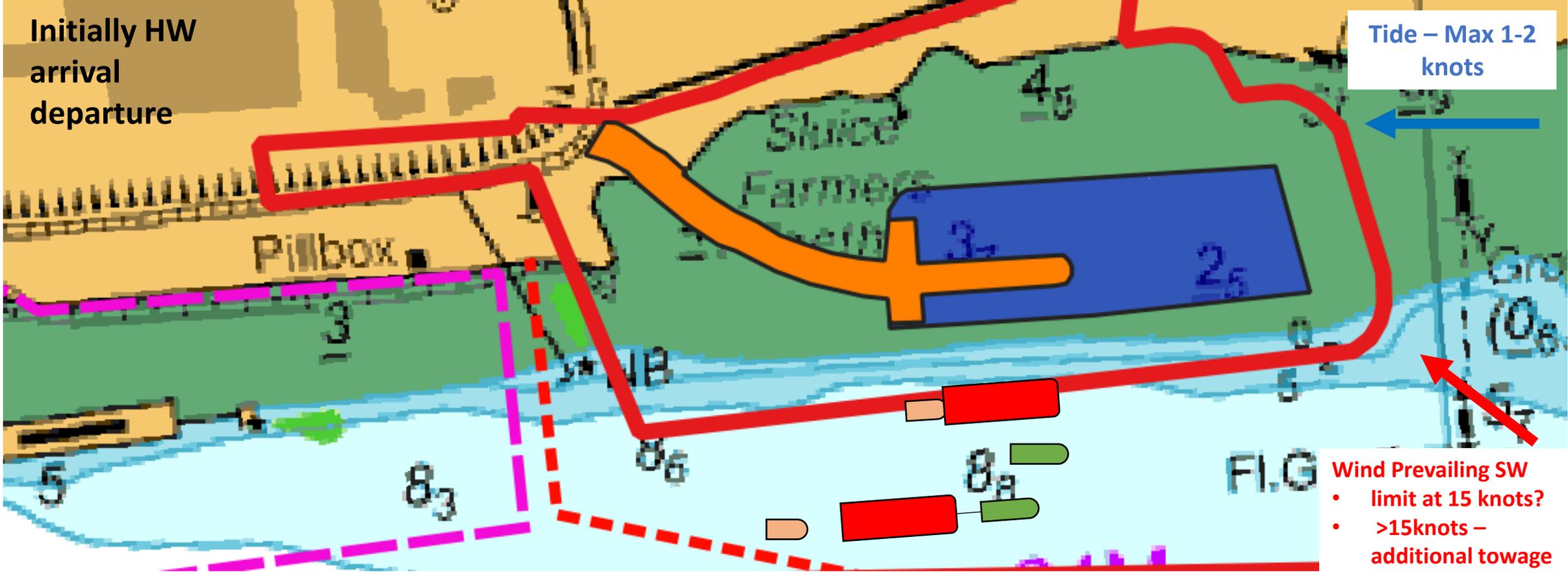


Thames Vixen

Client:



Tow Configuration & Utilisation of waiting / layby area – Option 1



Terra Marique



MTS Valour

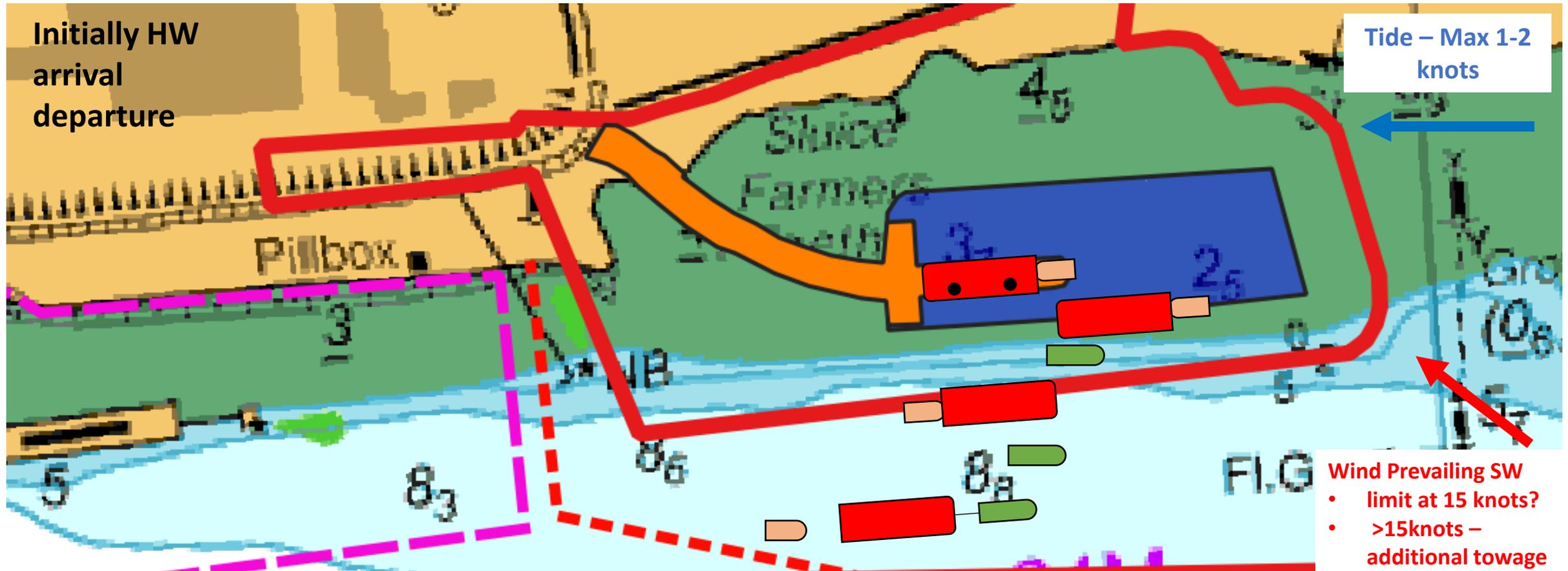


Thames Vixen

Client:



Tow Configuration & Utilisation of waiting / layby area – Option 1



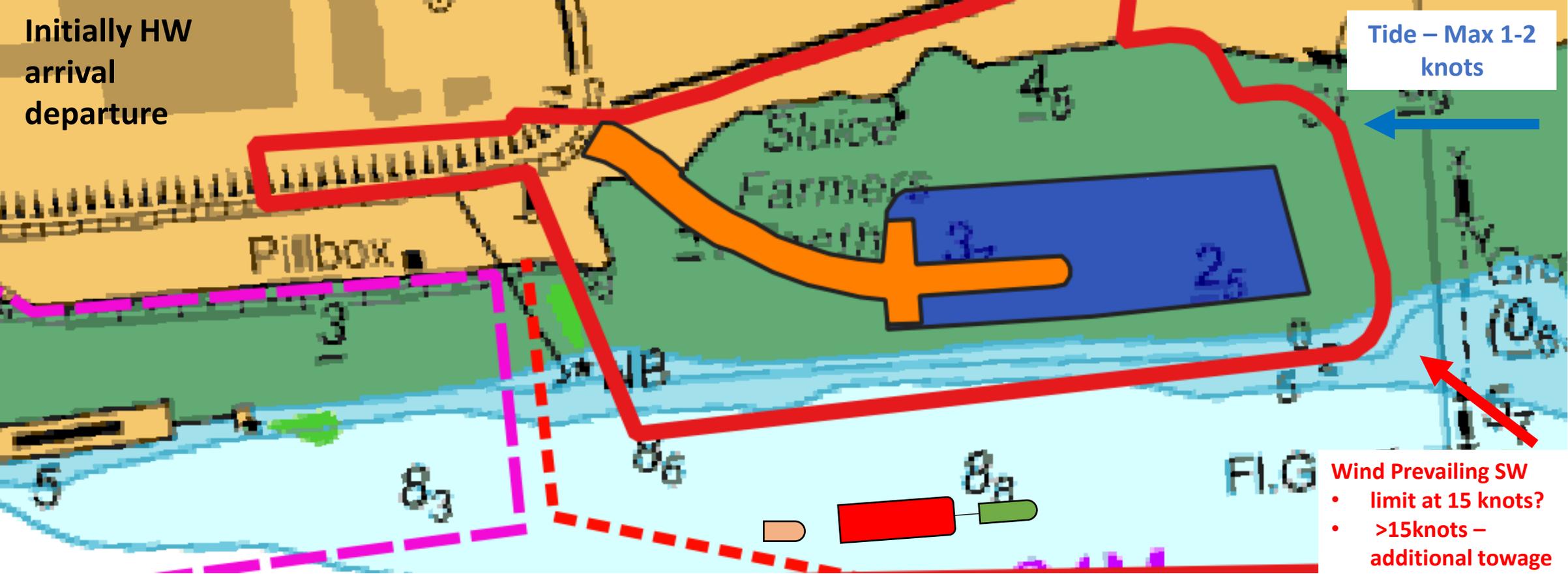
 Terra Marique  MTS Valour  Thames Vixen

Berthing at the Causeway

Operation – Option 2

1. Conventional stern tow to waiting area off berth (arrive at waiting area HW-1/-0.5hr)
2. Engage TM Engines / Steering
3. MTS Valour to manoeuvre over causeway
4. Thames Vixen berthing assistance tug
5. MTS Valour and Thames Vixen with TM, manoeuvres to (against) causeway berth (use of temporary poles to mark berth / causeway gabion) when under keel clearance greater than 0.5m. Thames Vixen assists with positioning.
6. Load master lines up TM with temporary markers and spuds dropped once in position.
7. TM ballast down (13t / cm @ 40t/min) to take the ground.
8. Thames Vixen and MTS Valour standby till TM Safety Around .

Tow Configuration & Utilisation of waiting / layby area – Option 2



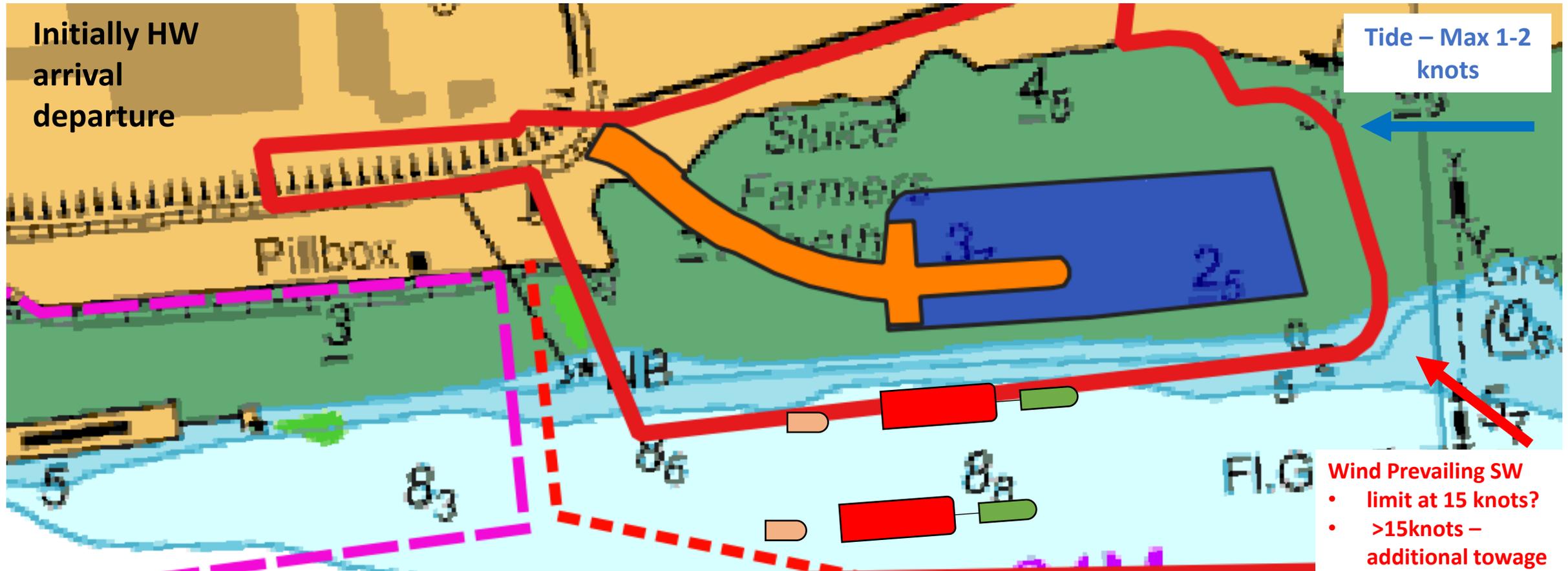
 Terra Marique

 MTS Valour

 Thames Vixen

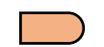
Client:

Tow Configuration & Utilisation of waiting / layby area – Option 2



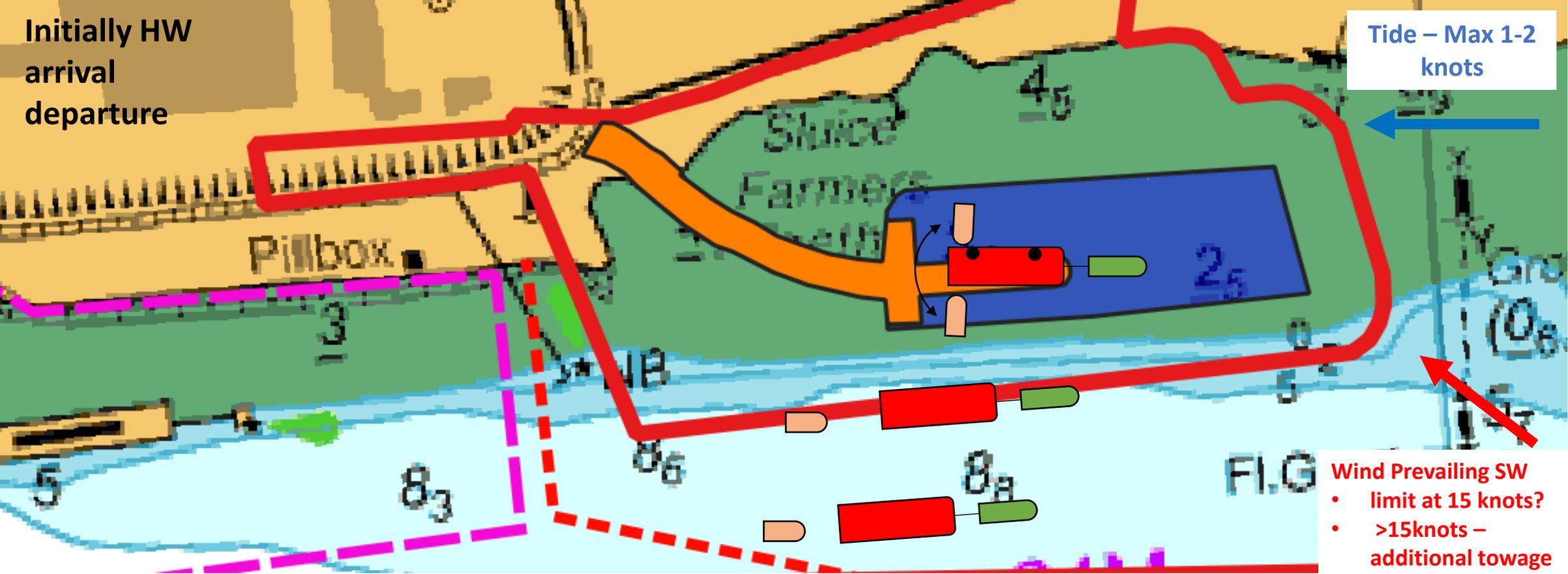
 Terra Marique

 MTS Valour

 Thames Vixen

Client:

Tow Configuration & Utilisation of waiting / layby area – Option 2



 Terra Marique  MTS Valour  Thames Vixen

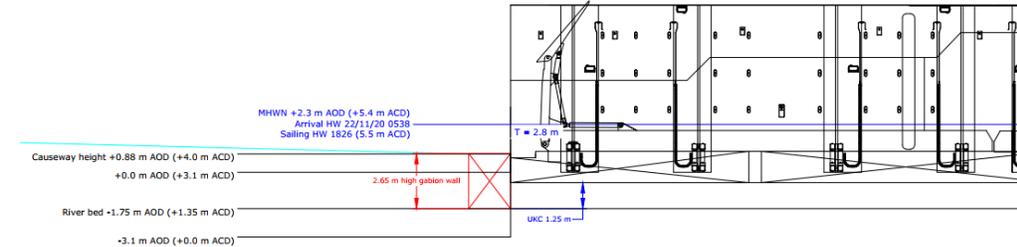
Terra Marique Transition to Safely Aground

- Assumes arrival at HW
- TM
 - TM Draught 2.8m
 - Ballasting capability 13t / cm @ 40t/min = ~3cm / min.
 - Typical wave height limit for operations of 0.5m
 - Transition
 - Floating to safely grounding ~20-30 minutes
 - UKC +0.5m to -0.5m
 - Speed easement via PLA (TM transition as notified by Pilot / PEC B onboard)
- Neap Arrival at HW
 - Tidal drop based on Neap tide (17:57 09/11/20 – HW @ 5.47m)
- Spring Arrival at HW
 - Tidal drop based on Spring tide (23:41 30/10/2020 – HW @ 6.47m)

Operation	Neap Arrival		Spring Arrival		
	UKC [m]	Neaps	Duration [mins]	UKC [m]	Duration [mins]
Positioned above berth (spuds dropped)	+1.25		0	+2.25	0
Transition commenced	+0.5		25	+0.5	46
Transition - aground	0		39	0	57
Transition completed - safely aground	-0.5		52	-0.5	68

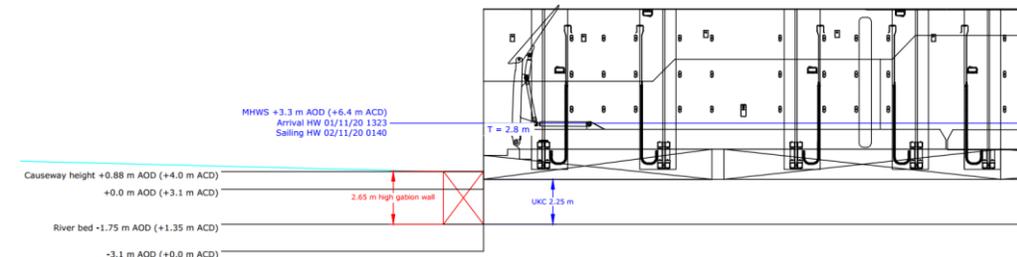
Neaps

Arrival/sailing condition



Springs

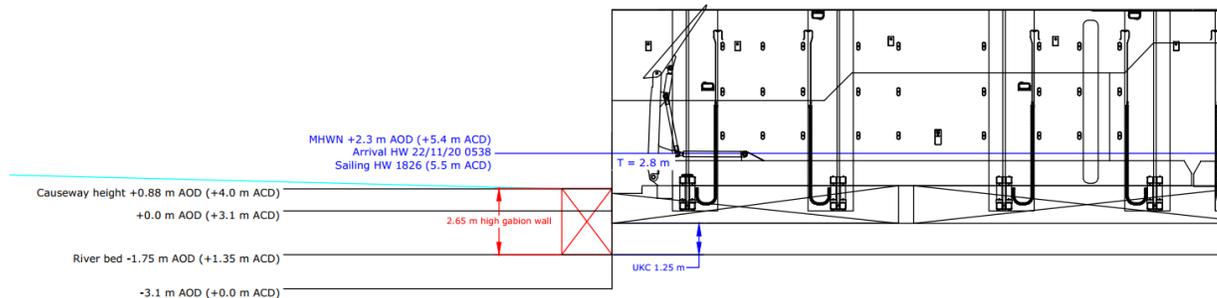
Arrival/sailing condition



Unloading of AIL at Causeway

- Tugs depart once safety aground
- AIL unloaded once TM Safety around and causeway prepared for operation.

Arrival/sailing condition



Unloading of AIL at Causeway	
Required for Passage Plan Element	Required
Lat and Long positioning	
AtoN names	
Passage Distance	
POTLL Lockage requirements	
Headings on each leg	
VHF Procedures	✓
Safe operating tidal window relevant to state of tide and tide times	✓
Vessel Specification Tug & Barge	✓
Tow Configuration	
Tug / TM crew - Roles, Responsibilities, qualifications	✓
Written Directions / Special notes / Hazards to Navigation	
Emergency requirements defined	✓
Breakdown contingency plan	✓
Risk Assessment	✓
Relevant Chart number referenced	
Berthing plan	✓
Utilisation of Layby Area by Tug or TM	✓
Utilisation of Waiting Area by Tug or TM	✓

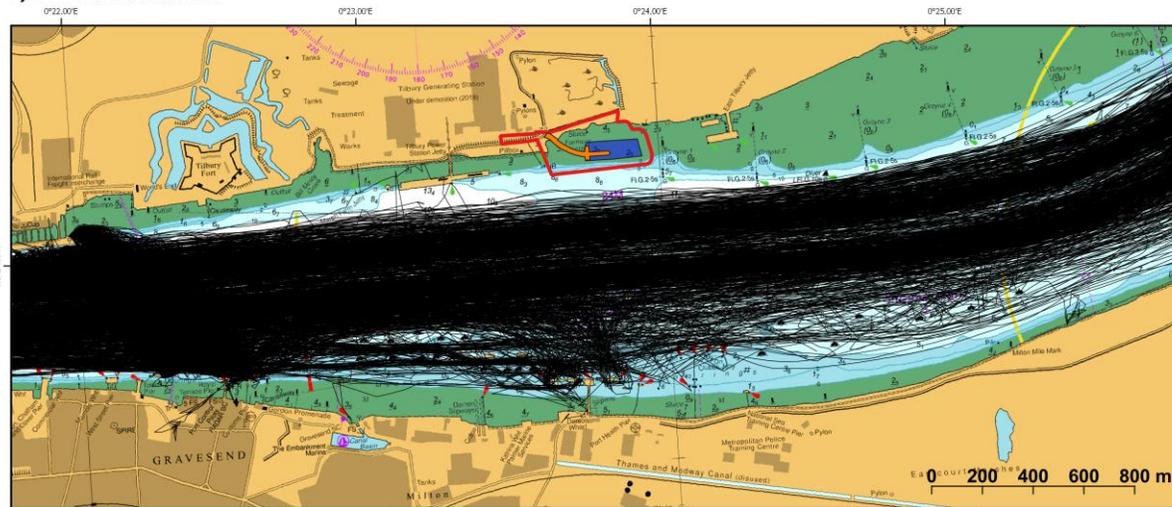
Vessel Traffic Analysis

2018 and 2020 Data used

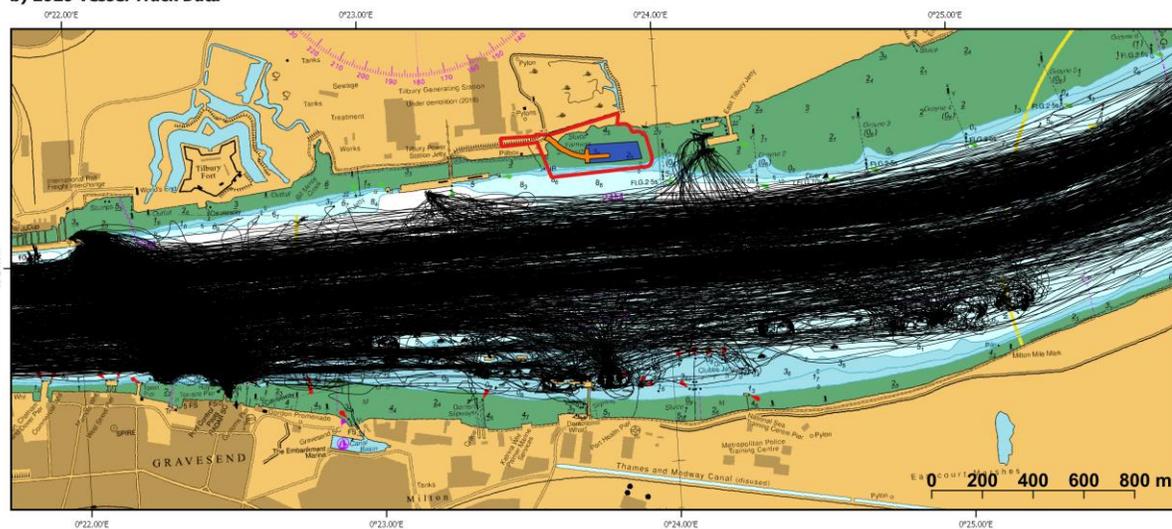


Vessel tracks – All vessels

a) 2018 Vessel Track Data



b) 2020 Vessel Track Data



Thurrock Flexible Generation Plant, All Vessels.

Legend

- All Vessels
- Red Line Boundary
- Blue Barge Berthing Pocket
- Orange Causeway
- ... AuthorisedChannel

Data Sources:

Admiralty Chart 1186-2
 AIS data purchased from PLA between 10-Sept-18 and 23-Sept-18
 AIS data collected from Tilbury AIS Station between 22-Sept-20 and 05-Oct-20



Coordinate System: EPSG:32630
 Created by: RG Checked by: ER Date: 4/11/2020
 Ref: NASH0100_2018-2020_Thurrock_all_tracks_v1_20201104



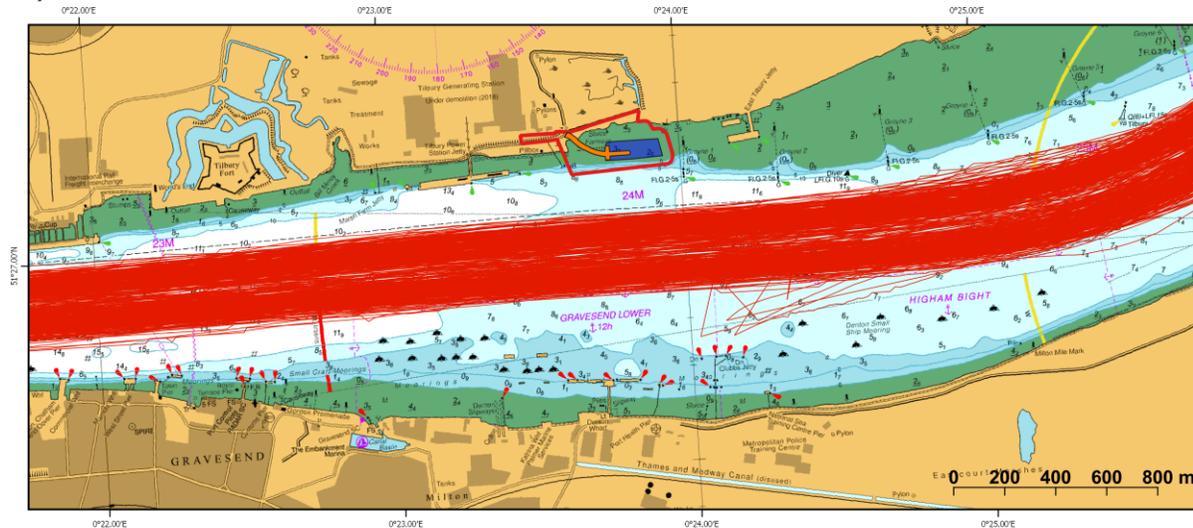
- 10% reduction in vessel transits between 2018 and 2020 data.
- Impact of Covid-19.
- 2018 vessel transits number are more in keeping with numbers expected when causeway is in operation.

Client:

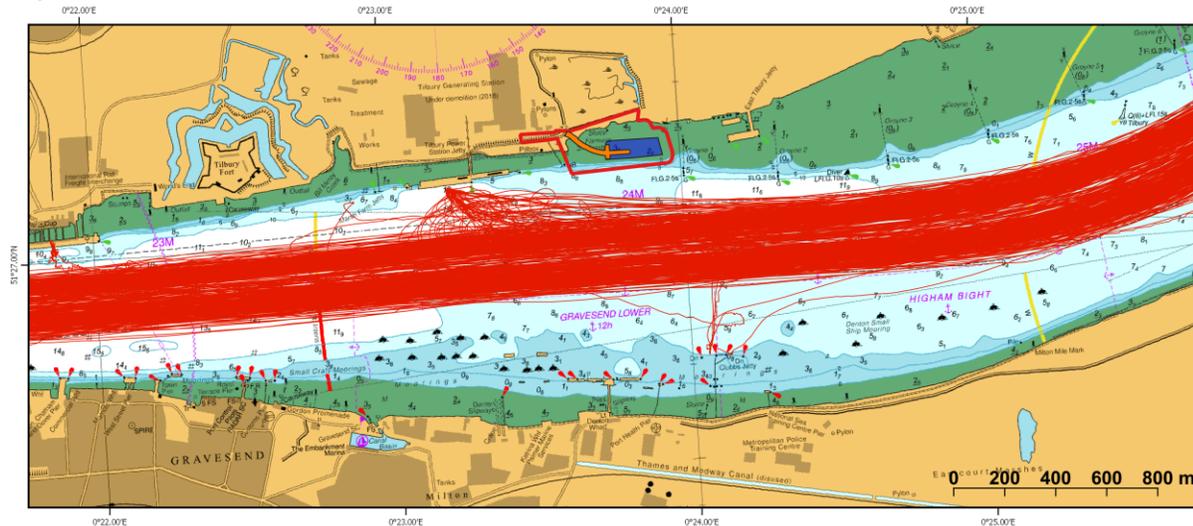


Vessel tracks – Commercial

a) 2018 Vessel Track Data



b) 2020 Vessel Track Data



Thurrock Flexible Generation Plant, Commercial Seagoing Vessels.

Legend

- Commercial Seagoing Vessels
- Red Line Boundary
- Barge Berthing Pocket
- Causeway
- Authorised Channel

Data Sources:

Admiralty Chart 1186-2

AIS data purchased from PLA between 10-Sept-18 and 23-Sept-18

AIS data collected from Tilbury AIS Station between 22-Sept-20 and 05-Oct-20



Coordinate System: EPSG:32630

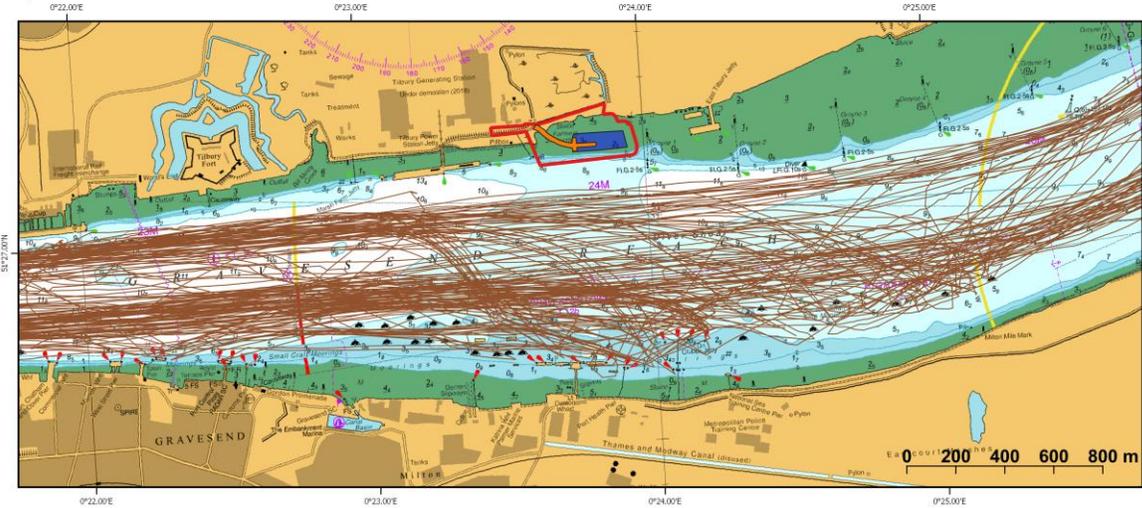
Created by: RG Checked by: ER Date: 4/11/2020

Ref:

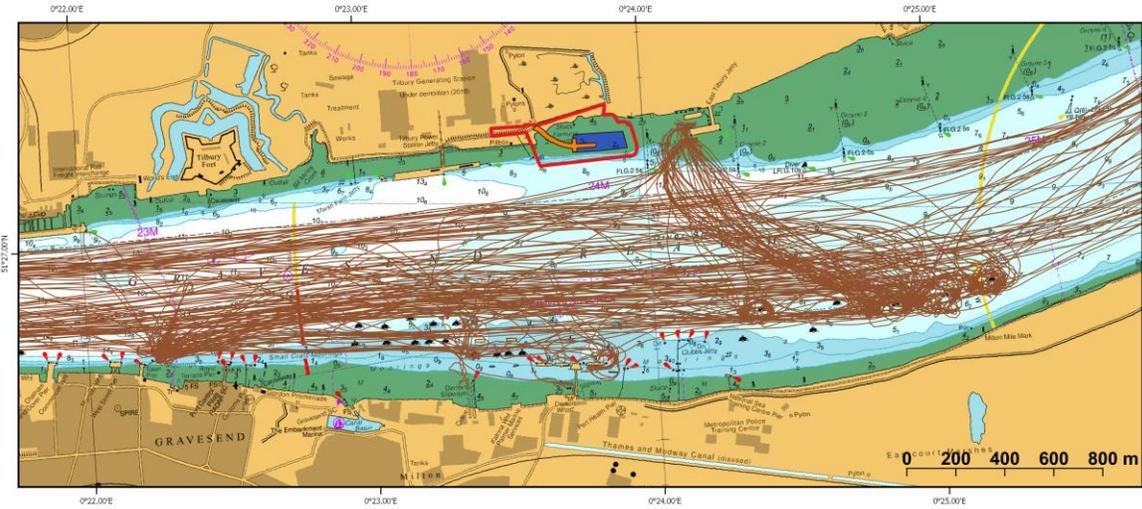
NASH0100_2018-2020_Thurrock_commercial_seagoing_v1_

Intra Port Trade

a) 2018 Vessel Track Data



b) 2020 Vessel Track Data



Thurrock Flexible Generation Plant, Intra-Port Trade Vessels.

Legend

- Intra-Port Trade Vessels
- Red Line Boundary
- Barge Berthing Pocket
- Causeway
- AuthorisedChannel

Data Sources:

Admiralty Chart 1186-2
 AIS data purchased from PLA between 10-Sept-18 and 23-Sept-18
 AIS data collected from Tilbury AIS Station between 22-Sept-20 and 05-Oct-20

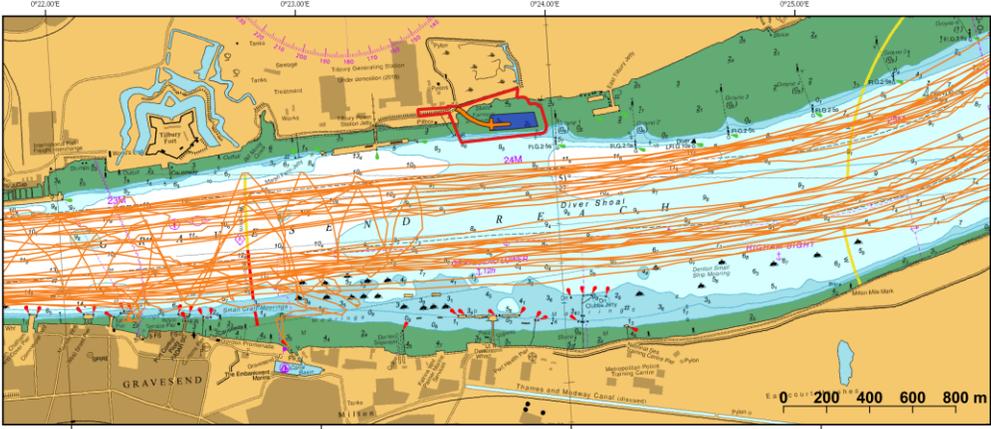


Coordinate System: EPSG:32630
 Created by: RG Checked by: ER Date: 4/11/2020
 Ref: NASH0100_2018-2020_Thurrock_intraport_trade_v1_20201

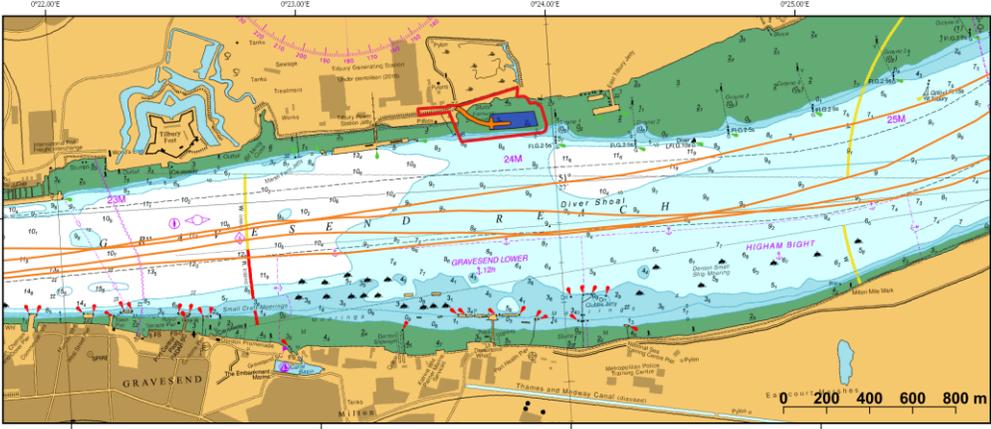


Recreational

a) 2018 Vessel Track Data



b) 2020 Vessel Track Data



Thurrock Flexible Generation Plant, Recreational Vessels.

Legend

- Recreational Vessels
- Red Line Boundary
- Barge Berthing Pocket
- Causeway
- AuthorisedChannel

Data Sources:
 Admiralty Chart 1186-2
 AIS data purchased from PLA between 10-Sept-18 and 23-Sept-18
 AIS data collected from Tilbury AIS Station between 22-Sept-20 and 05-Oct-20



Coordinate System: EPSG 32630
 Created by: RG Checked by: ER Date: 4/11/2020
 Ref: NASH0100_2018-2020_Thurrock_recreational_v1_20201104



Consultation



1. POTLL

- a. Define scope (email 4th Sept)
- b. Consult on Risk Assessment (5th Oct)
- c. Consult on draft report comments (5th Nov)
- d. Review passage plan / operations (Today)

2. PLA

- a. Define scope (email 4th Sept)
- b. Consult on Risk Assessment (8th Oct)
- c. Consult on draft report comments (21st Oct)
- d. Review passage plan / operations (9th Nov)

Navigation Risk Assessment



Hazard Identification

Hazard ID	Operation	Hazards
Haz Id #:1	Causeway	Contact of Terra Marique (including project vessels) with causeway, Tilbury 2 or other structures.
Haz Id #:2	Causeway	Contact with causeway by passing vessels (All types).
Haz Id #:3	Causeway	Collision of Terra Marique (including project vessels) with vessels arriving and departing Tilbury 2 Ro-Ro Berth.
Haz Id #:4	Causeway	Collision of Terra Marique (including project vessels) with vessels arriving and departing CMAT berth.
Haz Id #:5	Causeway	Collision of Terra Marique (including project vessels) with passing commercial vessels (All types).
Haz Id #:6	Causeway	Collision of Terra Marique (including project vessels) with passing recreational vessels.
Haz Id #:7	Causeway	Collision of Terra Marique (including project vessels) with passing tug and tow.
Haz Id #:8	Causeway	Collision caused as a result of avoiding Terra Marique (including project vessels) transiting during causeway operation.
Haz Id #:9	Causeway	Grounding of Terra Marique (including project vessels) as a result of causeway operation.
Haz Id #:10	Causeway	Grounding of non project vessels as a result of causeway operations (All types).
Haz Id #:11	Causeway	Breakout of Terra Marique during berthing / alongside.
Haz Id #:12	Passage	Contact of Terra Marique (including project vessels) with infrastructure whilst on passage outside causeway operation area.
Haz Id #:13	Passage	Collision of Terra Marique (including project vessels) with passing commercial vessels outside the defined causeway operation area.
Haz Id #:14	Passage	Collision of Terra Marique (including project vessels) with passing recreational vessels outside the defined causeway operation area.
Haz Id #:15	Passage	Collision of Terra Marique (including project vessels) with passing Tug and Tow outside the defined causeway operation area.
Haz Id #:16	Passage	Collision caused as a result of avoiding Terra Marique (including project vessels) during passage (All vessels)
Haz Id #:17	Passage	Grounding of Terra Marique (including project vessels) whilst on passage to causeway outside the defined causeway operation area.
Haz Id #:18	Passage	Grounding of non-project vessels as a result of Terra Marique Passage (All types).

**ANNEX U - SAB ISSUES MINUTES FROM 20-NOV-2020 AND DRAFT
REPORT.**

Edward Rogers

From: Sam Anderson-Brown
Sent: 30 November 2020 18:42
To: Nick Evans
Cc: Edward Rogers; Andrew Troup
Subject: Draft Preliminary Navigational Risk Assessment - Thurrock Causeway
Attachments: 20-NASH-0100__100_R02-00.pdf; 20-NASH-0100_POTLL_Meeting_20112020.docx

Good Evening Nick,

Thank you for your time and input during the development of this report, Ed and I have appreciated the informative and productive discussions we have had with you in recent weeks. As discussed when we met a week or so ago please find attached a revised draft of the report addressing the comments and concerns the POTLL raised after reviewing the original NRA.

You will notice that Annexes have not been included in this draft, these will be added in due course. I have also include the minutes from our conversation a week or so ago, please could you review and let us have any comments?

Please could we have any comments by close of play on Friday?

Kind regards,
Sam

Sam Anderson-Brown | Senior Consultant
t: +44 (0) 7515 903 789 | e: s.andersonbrown@nashmaritime.com | w: nashmaritime.com



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**ANNEX V - MEETING MINUTES FROM POTLL CONSULTATION MEETING,
20-NOV-2020**

Notes of Meeting

Thurrock Power Station Causeway (20-NASH-0100)

Client: Statera Energy
 Project: Thurrock Power Station Causeway
 Venue: Video/telecon (MS Teams)
 Date of Meeting: 20-Nov-2020 (1400-1530)

Present:

Port of Tilbury London Ltd Nick Evans - NE
 NASH Maritime Ed Rogers - ER
 NASH Maritime Sam Anderson-Brown - SAB

1.	Introductions and Meeting Objectives
	- SAB introduced topics to be covered and shared Power Point presentation.
2.	Review of NRA to date
	- SAB outlined a timeframe for the work conducted on the NRA to date and gave a summary of the consultation meetings conducted so far. - NE commented that engagement was positive and that he was pleased to see further work had been undertaken to mitigate the POTLL's concerns.
3.	Recap of POTLL Comments on draft Navigation Risk Assessment
	- SAB outlined a summary of POTLL concerns and the measures that had been taken to address them. - NE agreed concerns were as presented and commented that concerns relating to a requirement for more detail around the passage plan element of the NRA and the risk control measure relating to a Marine Operations Plan with the POTLL were the most important from a POTLL perspective.
4	AIS Data Benchmarking
	- SAB presented Department for Transport figures for port traffic between 2009 to 2019. - NE agreed that data showed September to be a representative month.
4.	Project Scheme
	A) Concept Design - SAB gave an overview of the Causeway Concept Design, noting updated berthing pocket design. B) Operation Passage - SAB advised that NASH feel that the passage of the Terra Marique (TM) from Tilbury (or another port) to the Causeway site and her subsequent berthing and unloading should be addressed in the NRA report. The report will not address the arrival of the

	<p>seagoing Heavy Lift Ship, the offload of the ALL's at Tilbury or their transfer from the seagoing Heavy Lift Ship to the TM. - NE agreed this was appropriate.</p> <ul style="list-style-type: none"> - SAB outlined suggested project vessels – It was noted that whilst the Tugs mentioned are interchangeable the TM is fairly unique and if not available for the operation further work may be required to address operational impacts that this may have e.g. berthing – NE agreed. - SAB presented plans for passage including: <ul style="list-style-type: none"> • Tow configuration • Indicative passage plan and MTS indicative plan. • Waiting area and layby area options • Berthing options • Berthing operation • Weather limitations - NE agreed that Primary and Secondary Tug in attendance during departure of ALL transshipment terminal and passage was appropriate. - NE requested that NASH clarify that proposed temporary speed reduction in immediate vicinity of causeway will not adversely impact Tilbury 2 operations – NASH to confirm in draft report. - NE felt that sufficient additional information had been provided in order to satisfy POTLL concerns relating to passage plan and causeway operation.
f	Vessel Traffic Analysis
	<ul style="list-style-type: none"> - SAB presented Vessel Traffic Analysis for the 2018 and 2020 data sets examined. - The main differences highlighted were the commercial traffic utilising Tilbury 2, the tug and tow activity around East Tilbury Jetty and the decrease in leisure and intra port trade due to Covid – 19. - It was agreed that an examination of the 2018 data set satisfied previous concerns that the 2020 data was not a representative sample.
6.	Navigation Risk Assessment
	<p>A) Hazard Identification</p> <ul style="list-style-type: none"> - The identified hazards were reviewed, and all agreed they were appropriate. - NE agreed that the addition of hazards relating specifically to a collision with the TM and vessels arriving / departing the Tilbury 2 ro-ro berth as well as a separate hazard for the CMAT berth satisfied previous concerns. <p>B) Risk Controls</p> <ul style="list-style-type: none"> - The risk control measures were reviewed. - SAB gave overview of Embedded risk control measures and Additional risk control measures. - It was noted that the draft NRA did not include Embedded risk control measures in inherent risk scores. Revised inherent risk scores will include Embedded risk controls and therefore will be reduced when compared to the draft NRA. - ER left the call <p>C) Risk Assessment Scoring Matrix</p> <ul style="list-style-type: none"> - SAB and NE jointly reviewed risk scoring for Hazards relating to T2 ro-ro and CMAT berths and NE commented that he was happy with Hazards identified and additional risk control measures recommended.
7.	Actions
	<ul style="list-style-type: none"> - SAB to share slides from meeting. - SAB to issue minutes for review and comment. - NASH to issue revised report to NE for comment.