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Cory Decarbonisation Project

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**TECHNICAL APPENDIX 19-1:
PRELIMINARY NAVIGATION
HAZARD ANALYSIS**

Cory Decarbonisation Project



NASH

MARITIME

Cory Decarbonisation Project

Preliminary Navigation Hazard Analysis

WSP

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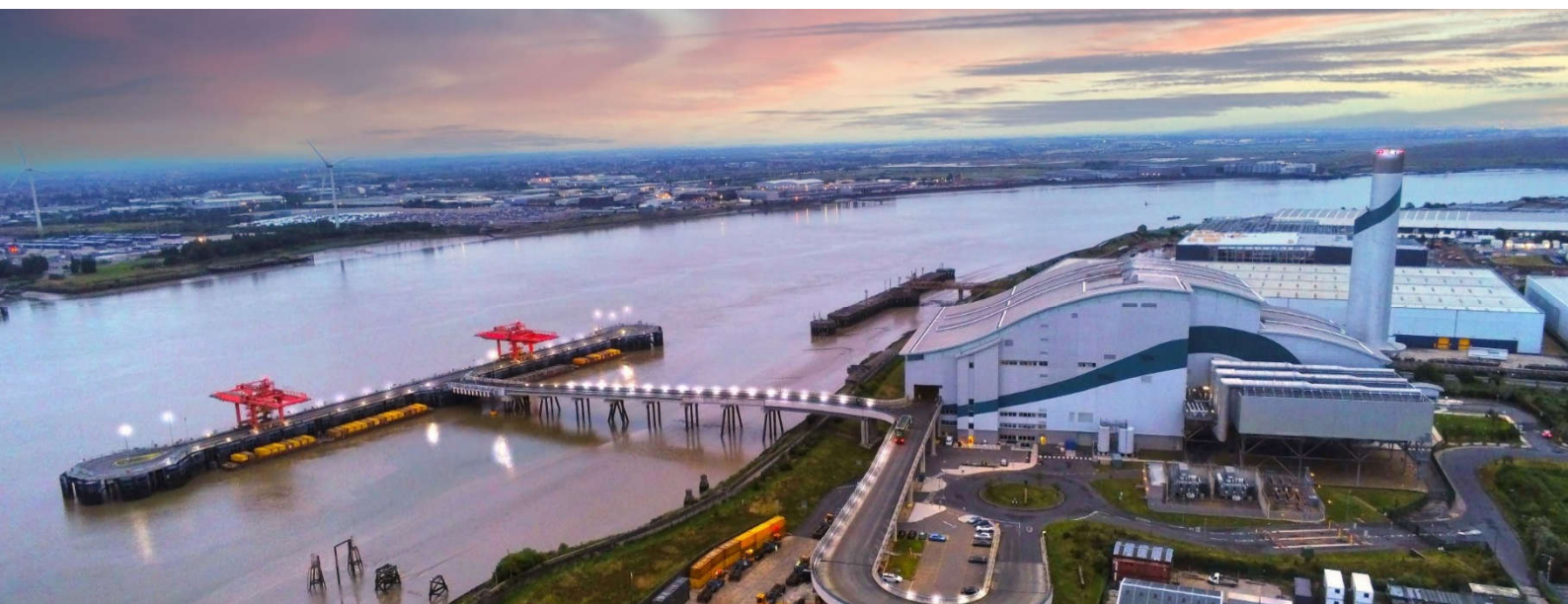
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EXECUTIVE SUMMARY

The PLA requested that NASH Maritime revise an initial Preliminary Navigation Hazard Analysis (PNHA) (ref: 22-NASH-0235_CoryCarbonCaptureDCO_PNHA_R02-00) for the planned CCS jetty and associated marine operation undertaken in Sep-22. The purpose of the pNHA revision was to give due consideration to potential changes in the navigation risk profile of the project arising as a result of design revisions, and to incorporate the findings of ship bridge simulations into an updated pNHA.

This revised pNHA assessed at a provisional level, the navigation impact of constructing a jetty located adjacent to the existing Middleton Jetty and on the inside (south shore) of Jenningtree Point bend on the river Thames. A review of the proposed jetty and associated marine operation; consultation with the PLA and Cory, analysis of vessel track data, swept path analysis and ship bridge simulations were undertaken to provide an evidence basis for the conclusions.

The study conclusions are outlined below:

- The vessels that most commonly frequent Halfway Reach are river trading non-passenger vessels, such as tugs and barges travelling to the various local wharfs and jetties, as well as commercial shipping from and to inner London.
- There is no significant recreational vessel activity within Halfway Reach.
- Vessel tracks within Halfway Reach are focused within the authorised channel, with the exception of vessels arriving and departing jetties.
- The majority of transits of both cargo and tanker vessels are within the Authorised Channel with the exception of vessels departing the Authorised Channel to the north to arrive / depart Ford's jetty or Thunderer jetty. There are also a limited number of transits just south of the Authorised Channel in close proximity to the CCS Jetty.
- Swept path Analysis showed:
 - Vessels departing from Ford's jetty swing across the Authorised Channel before passing downriver on the southern limit of the channel approximately 50m north of the CCS Jetty. These vessels then align to pass north of the Jenningtree channel buoy.
 - Outbound passing cargo vessels navigate toward the south side of the Authorised Channel clear of the CCS Jetty before aligning with to pass north of the Jenningtree channel buoy.
 - Tanker vessels bound for the Thunderer jetty navigate north of the Jenningtree channel buoy before navigating toward the north of the Authorised Channel, utilising the central portion of the channel when passing the CCS jetty.
 - Representative Cory tug and barge manoeuvres will remain well clear of the CCS jetty structure, this finding was further backed up during stakeholder consultation.
- Traffic within the study area is highly controlled and regulated with the PLA administering a suite of baseline risk controls;
- The Ship Bridge Simulations exercise found:
 - The alignment and positioning of the proposed CCS does not create adverse conditions for project vessels conducting berthing operations.

- Project vessel departures will likely be limited to be no later than HW +1.5 hours taking in to account the time to swing the vessel on an ebb tide port side departure, the effects of the Ebb tide flow and the UKC required on passage (due to limiting depth of 6.8m in Erith Reach and further to seaward);
 - There was adequate navigable width with the jetty in position for berthing vessels to safely manoeuvre with appropriate towage in place for on jetty and off jetty winds up to a speed of 25 knots. Wind direction is therefore not considered to be a limiting operational factor; and
 - No significant ship handling issues were identified.
- 17 preliminary navigation hazards were identified; and

Six key navigational issues were identified during the initial pNHA and one additional navigational issue was identified during this pNHA revision.

The study recommendations are summarised below along with the key recommendations from the ship bridge simulations report.

- Consultation with the Ford's jetty vessel operator should be expedited (possibly prior to undertaking the pNRA) to understand the full impact of the proposed jetty location on the Ford's jetty Ro-Ro operation.
- Cory tug and barge trials should be undertaken, through the placement of several pellet buoys should be installed to simulate the location of the proposed jetty / brow and to enable further analysis on the extent to which the proposed jetty location would constitute a contact hazard for Cory's existing lighterage operations. Data collected from the trials should be included in the pNRA.
- Due to the close proximity of outward passing traffic and rapidly shallowing depths inshore of the berth draw off / interaction damage and / or suction off berth is a possibility. It is therefore recommended that a dynamic mooring analysis is undertaken to determine the hydrodynamic effect of close passing large ships on moored vessels. If following the study the effect is deemed to be significant then further consideration will need to be given to identification of risk control measures within the pNRA, such as the application of appropriate speed limitations in the vicinity of the jetty.
- The dynamic mooring analysis will also assist in determining the location and design of berthing infrastructure including, fenders, bollards, gangways and shore connections (especially LCO₂ hard arm) to mitigate the consequences of the project vessel ranging and resulting contact occurrences.
- The pNRA for the proposed jetty should give due consideration to the installation of a (lateral/south cardinal) navigation mark to the north of the authorised channel, in line with the proposed jetty, to indicate the boundary of navigable water available during swinging;
- Due consideration should be given to vessels taking a shallow approach when arriving and departing the jetty to ensure the berthing angle at the east and west extremities of the dredged berth pocket are appropriate.
- Due to the tidal range it was suggested a shore gangway be included within the jetty design to ensure safe access and to avoid lengthy delays to turnaround time due to time taken to rig/de-rig ship's gangway;
- Sufficient lateral offset of the dolphins should be provided to ensure that breast and stern lines can be of sufficient length to take into account the rise and fall of tide; and

- It should be ensured that mooring hooks are designed to enable springing on/off and the jetty.
- It is understood that as well as the construction of the CCS jetty the following marine works will be required:
 - Installation of the new Cory barge moorings. Note, the barge moorings are not part of the proposed CCS scheme but do need to be considered from a navigation risk perspective;
 - Decommissioning of the now disused Belvedere Power Station jetty. Note, once the extent to which the jetty is to be decommissioned is known the decommissioning works and impact of any infrastructure remaining in situ following decommissioning will need to be considered from a navigation risk perspective; and:
 - Inflow / outflow structures for water required for CO₂ production.
- It should be noted that any marine construction and / or marine operation associated with the aforementioned construction projects will require a specific Navigation Risk Assessment.

In addition, a full pNRA scope has been developed and agreed with the PLA (as part of the initial pNHA), it is recommended that:

- The pNRA will assume a worst-case scenario in terms of vessel size and number of vessel movements, (assuming further work to refine the project vessel is not undertaken).
- Quantitative risk modelling is undertaken as part of the pNRA scope to determine any changes in future collision hazard occurrence likelihood, resulting principally from an increase in passenger traffic within Halfway Reach.

The findings of the pNHA will inform the basis of the pNRA.

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ABBREVIATIONS

Abbreviation	Detail
AIS	Automatic Identification System
ALARP	As Low as Reasonably Practicable
pNHA	preliminary Navigation Hazard Analysis
CCS	Carbon Capture and Storage
pNRA	preliminary Navigation Risk Assessment
DCO	Development Consent Order
EIA	Environmental Impact Assessment
EfW	Energy from Waste
RRRF	Riverside Resource Recovery Facility
LCO2	Liquid Carbon Dioxide
PLA	Port of London Authority
HW	High Water
HoT	Height of Tide
UKC	Under Keel Clearance
MHW	Mean High Water
cbm	Cubic Meters
NM	Nautical Mile
m	metre
CD	Chart Datum
Ro-Ro	Roll on - Roll off
UK	United Kingdom
Loa	Length overall
AOD	Above Ordnance Datum
OD	Ordnance Datum
AtoN	Aids to Navigation

1. INTRODUCTION

This report comprises an updated preliminary Navigation Hazard Analysis (pNHA) for a Proposed Jetty and associated marine operation that together facilitate the export of Liquid Carbon Dioxide (LCO₂) from the Proposed Scheme, located on the Thames in London. The report has been prepared to accompany a Preliminary Environmental Information Report (PEIR). **Chapter 2: Site and Proposed Scheme Description (Volume 1)** provides further information on the Proposed Scheme. The pNHA precedes a preliminary Navigation Risk Assessment (pNRA) to support an Environmental Impact Assessment (EIA) as part of a Development Consent Order (DCO) application under the Planning Act 2008. The aim of the pNHA is to:

- Assesses key navigational issues;
- Identify preliminary navigation hazards; and
- Proposes possible risk controls that could be used to mitigate navigation risk.

The findings of this report will be used to inform a PEIR and to refine the jetty design and marine operation to mitigate any perceived increase in navigation risk, prior to preparation of the pNRA.

The extent of the study area (the study area) is illustrated in **Figure 1** by the blue dashed line.

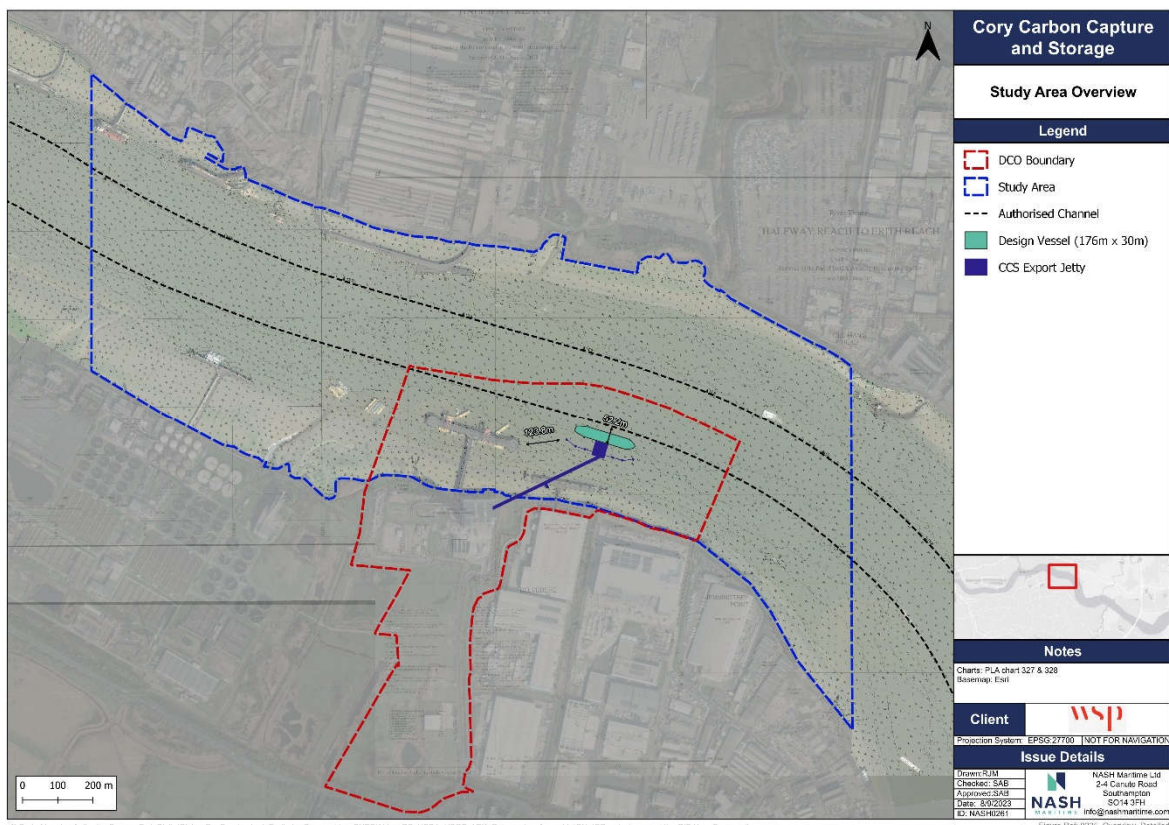


Figure 1: CCS Jetty and Study Area.

1.1 REQUIREMENT FOR AN UPDATED PNHA

NASH Maritime undertook a pNHA assessment (ref: 22-NASH-0235_CoryCarbonCaptureDCO_PNHA_R02-00) for the planned CCS jetty and associated marine operation in Sep-22.

Drawing on the conclusions of the initial pNHA and additional constraints identified by WSP during concept design development, a number of jetty design iterations were produced. Following the issue of the initial pNHA report WSP undertook a series of workshops in order to identify optimum placement of the jetty, this included work by NASH Maritime to consider the impact of the revised jetty designs on the existing baseline navigational environment and undertook consultation with the Port of London Authority (PLA). The jetty design presented in this report reflects the most up to date design iteration.

Additionally, the initial pNHA identified that the impact of the tidal stream alongside the proposed jetty, combined with local metocean conditions, could make berthing project vessels challenging in some conditions. Therefore a key recommendation of the initial pNHA was that the project undertake ship bridge simulations to better understand ship handling issues and optimise alignment of the proposed jetty.

Following the design revisions and in accordance with the recommendation set out in the initial pNHA ship bridge simulations were undertaken.

The PLA requested that NASH Maritime revise the initial pNHA in order to give due consideration to potential changes in navigation risk profile arising as a result of the revised design and to incorporate the findings of the ship bridge simulations. Note, a summary of the ship bridge simulations exercise is included in **Section 5**, the full findings of the ship bridge simulations, as well as a detailed breakdown of each simulation run are presented in 22-NASH-0235_Cory_Decarb_Project_R01-00.

1.2 PROJECT OVERVIEW

Since 2011 Cory has operated an Energy from Waste (EfW) facility known as Riverside 1, situated at Norman Road in Belvedere. In addition to Riverside 1, Cory has permission to construct and operate an additional EfW facility, known as Riverside 2, immediately adjacent to Riverside 1 and due for completion in 2026. The site occupied by the two EfW facilities is known as the Riverside Campus.

Riverside 2 will process up to 655,000 tonnes of waste per annum in addition to the 782,000 tonnes per annum processed by Riverside 1 (in 2021). The Riverside Campus will maximise the use of Cory's existing river infrastructure including its operational jetty, tugs and barges, and will necessitate an increase in Cory freight operations on the river Thames, (see **Section 3.5** for further detail).

The Cory Decarbonisation Project will involve the installation of technology to capture a minimum 95% of the emissions from Riverside 1 and Riverside 2. The project intends to use marine shipment to transport LCO₂ to an offshore storage site. **Chapter 2 Site and Proposed Scheme Description (Volume 1)** provides further information on the Proposed Scheme

1.2.1 Concept Jetty Design

Figure 1 shows the concept Proposed jetty design, referred to throughout this report as the CCS jetty. The CCS jetty will consist of a main loading platform, connected to land by an access trestle.

Dredging of a berthed pocket will be necessary to accommodate LCO₂ tankers alongside at all states of tide. The volume of material to be dredged will depend on the design vessel draught, which is yet to be determined, however WSP estimate that the pocket will need to be dredged to 10.5 m below Chart Datum (CD) alongside the berth.

1.2.2 Design Vessels

As of May-2023 the specification of the intended design vessel is not known. However, WSP have provided details of a number of indicative vessels that could be utilised to facilitate LCO₂ export operations.

Table 1 shows the design specifications and anticipated number of vessel arrivals for design vessels with a capacity of 7500 cbm³ and 15000 cbm³.

The vessel with a capacity of 7500 cbm³ is based on a LCO₂ tanker, it is possible that a vessel of this capacity will be utilised during the initial phase, (see **Figure 2**). The design vessel size may increase as CO₂ production intensifies. Several CO₂ storage providers are currently developing design vessel specifications, a vessel of 15000 cbm³ would likely be the largest vessel that may operate from the CCS jetty.

This pNRA takes a precautionary approach and assumes a scenario whereby the largest design vessel (15000 cbm³) will be utilised for the export operation. The pNRA also assumes the maximum number of vessels movements are realised, (see **Table 1**).

Note that the size of the design vessel impacts the extent to which dredging of the berthing pocket is required and influences the number of vessel movements necessary.

Table 1: Indicative Design Specification

Design Vessel Capacity (cbm ³)	Length Overall (m)	Draught (m)	Arrivals per annum	Arrivals per week
			(Phase 1 / Phase 2)	Phase 1 / Phase 2)
7500	130	8.0	112 / 211	2.16 / 4.05
12000	143	9.0	71 / 132	1.35 / 2.53
15000	178	8.4	55 / 106	1.08 / 2.02

**Figure 2: LCO2 Vessel (7500cbm³).**

1.3 STUDY EXECUTION

This report comprises five key elements, including:

- Baseline Navigation Characterisation (**Section 2**) – an overview of the baseline navigational environment within the study area (as depicted by the blue dashed line in **Figure 1**);
- Vessel Traffic Analysis (**Section 3**) – a summary of baseline vessel traffic movements within the study area including a commentary on possible future vessel traffic scenarios;
- Stakeholder Consultation (**Section 4**) – a review of the stakeholder consultation element of the pNHA including a summary of the key points and navigational issues raised during consultation meetings;
- Ship Bridge Simulations (**Section 5**) – a summary of the findings of the simulations.
- Preliminary Navigation Hazard Analysis (**Section 6**) – a summary of the key navigational issues and potential risk control measures that could be introduced to address navigational risk; and
- Study findings (**Section 7**) – pNHA concluding statements and recommendations.

2. BASELINE NAVIGATION CHARACTERISATION

This section gives an overview of the study area baseline navigational environment. The study area falls within Halfway Reach. The reach leads 1.5NM west-north-west from Jenningsree Point (51°30'20N, 0°08' 06E) to Crossness Light. Dagenham lies to the North of the Reach and is fronted by several jetties (Dagenham Docks). The proposed CCS jetty is located approximately 500m west of Jenningsree Point on the southern bank of the river Thames.

2.1 KEY NAVIGATIONAL FEATURES

Key navigational features within the study area and are highlighted in **Figure 3** and described in this section. The key navigational features shown in **Figure 3** are named in **Table 2**.

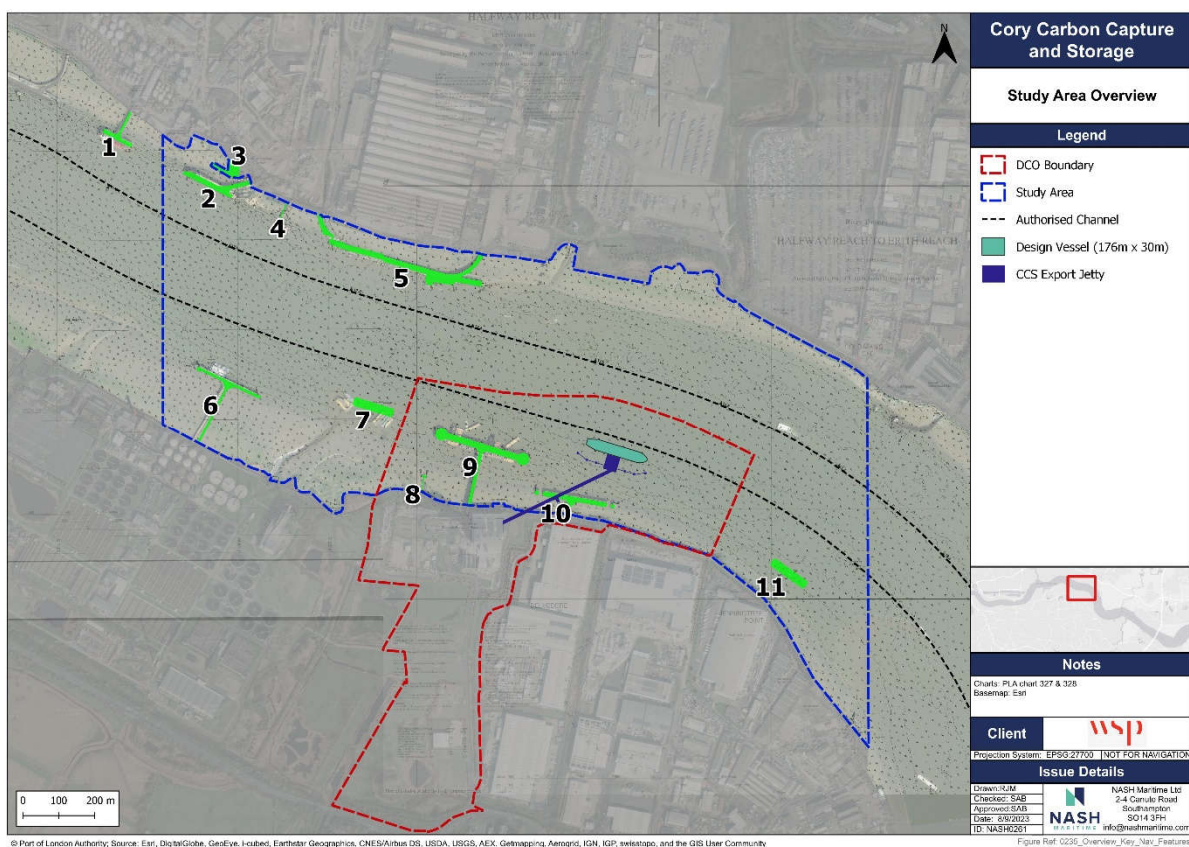


Figure 3: Key Navigational Features

Table 2: Key Navigational Features Summary Table.

Key	Navigational Feature
1	Thunderer jetty
2	No 4 Jetty
3	East Jetty
4	Amey's Jetty
5	Fords Jetty

6	Crossness Sewage Treatment Works Jetty
7	Cory Environmental Barge Moorings
8	Fords Landing Stage
9	Middleton Jetty
10	Belvedere Power Station Jetty (Disused)
11	Thames Water Utilities Limited Barge Moorings

2.1.1 Infrastructure

- **Disused Belvedere Power Station Jetty**

- The jetty, now in a state of disrepair, served as a transshipment station for vessels supplying fuel to the former Belvedere Power Station. Fuel to Belvedere, as with many other Thames power stations at that time, was transhipped black oil from Shellhaven or Coryton refineries (lower Thames Canvey Island area) or from storage at Littlebrook power station (immediately above what is now the M25 Dartford QE2 Bridge). The jetty lies within the intertidal zone approximately 2.1m above Chart Datum (CD) and therefore presents a limited hazard to navigation as it is only possible for vessels of shallow draught to navigate in the vicinity of the jetty near HW. In order for the proposed CCS jetty to be most efficiently constructed, the disused power station jetty may need to be fully or partially removed, though this is not essential given the structure may remain in place, subject to pending decisions.

- **Middleton Jetty**

- The Middleton Jetty, (see **Figure 4**) serves as a transshipment facility for Cory tugs and barges delivering waste to the Riverside Campus. The tugs and barges collect waste from waste transfer stations located between Wandsworth (Smugglers Way) and Tilbury. Ash produced as a by-product is also shipped from the jetty to a IBA processing facility at the Port of Tilbury. There are around five tug and barge arrivals and departures a day. Eights barges can be moored (utilising the river and shore facing sides of the jetty) alongside the jetty at any one time. The least depth on the river facing side of the jetty is 1.4m with the least depth on the inshore side 0.7m. Vessel traffic associated with the Cory operation at the Middleton Jetty can be seen in **Figure 16**.

- **Fords Landing Stage**

- Fords landing stage is located inshore and west of the Middleton Jetty, the landing stage is disused and is located within the intertidal zone approximately 3.1m above CD.

- **Cory Environmental Barge Moorings**

- The barge moorings are utilised by Cory as a temporary location to moor either full or laden barges waiting to be transferred to the Middleton Jetty or on to waste transfer stations along the river. There are frequent vessel movements by Cory tug and barges between the barge moorings and Middleton Jetty. Cory plan to increase the number of moorings in proximity to the Middleton Jetty to accommodate the additional barges required to support the operation of Riverside 2. As yet, the location of these moorings is yet to be determined, proposed locations (currently under consideration by PLA) include a site west

and in line with the current Cory barge moorings or north of the Authorised Channel downstream of Ford's jetty.

- **Crossness Sewage Treatment Works Jetty (Thames Water Utilities Ltd)**
 - Crossness Sewage Treatment Works jetty serves as an operational base for the vessels *Thames Bubbler* and *Thames Vitality*. These vessels pump oxygen in to the Thames at times when oxygen levels within the river decrease as a result of heavy surface / storm pipe run off. A number of smaller anti-pollution craft are also operated from the jetty.
- **Fords Jetty**
 - Ford's jetty is located on the north side of the river (Dagenham) and is an important export facility for the Ford motor company's UK operation. Roll on – Roll off (Ro-Ro) cargo vessels such as *Wilhelmine* (152m Length overall (loa)) run a continuous loop between Dagenham and similar Ford facilities in Vlissingen, Holland, with 290,000 vehicles making the trip across the North Sea per year. There is on average one arrival and one departure a day;
 - Dagenham-made diesel engines, plus eco-boost engines from Bridgend are exported out while completed cars are imported for sale in the UK; and
 - Chartered depths alongside the berth vary between 3.5m to 5.9m
- **Amey's Jetty**
 - Amey's jetty is serviced by GPS Marine tug and barges operating an intra port aggregate transportation service. Arrivals and departure occur on a daily basis.
- **East Jetty**
 - Connected to the Van Dalen scrap yard and situated inshore of No 4 jetty, for multiple cargo types.
- **No 4 Jetty:**
 - Is linked to the Hanson Packed Products site, which stores and supplies construction materials. No 4 jetty is linked to land via a bridge and also a conveyor structure. The jetty is serviced by GPS Marine tug and barges but is also used as a facility to unload Hanson Aggregates dredgers that operate in the Thames Estuary (e.g. *Arco Avon* 98.4m Loa). Dredger vessels call approx. once a week with tug and barge arrivals occurring on a more regular basis.
- **Thunderer Jetty**
 - The jetty takes its name from HMS *Thunderer*, the last Royal Navy vessel to be fitted out on the Thames at the jetty site. Today the jetty is operated by Stolthaven terminals as a bulk liquid storage terminal.
- **Thames Water Utilities Ltd Barge Mooring**
 - Two mooring buoys situated south of the Jenningtree channel marker and marked with a yellow light, flashing twice every 5 seconds.

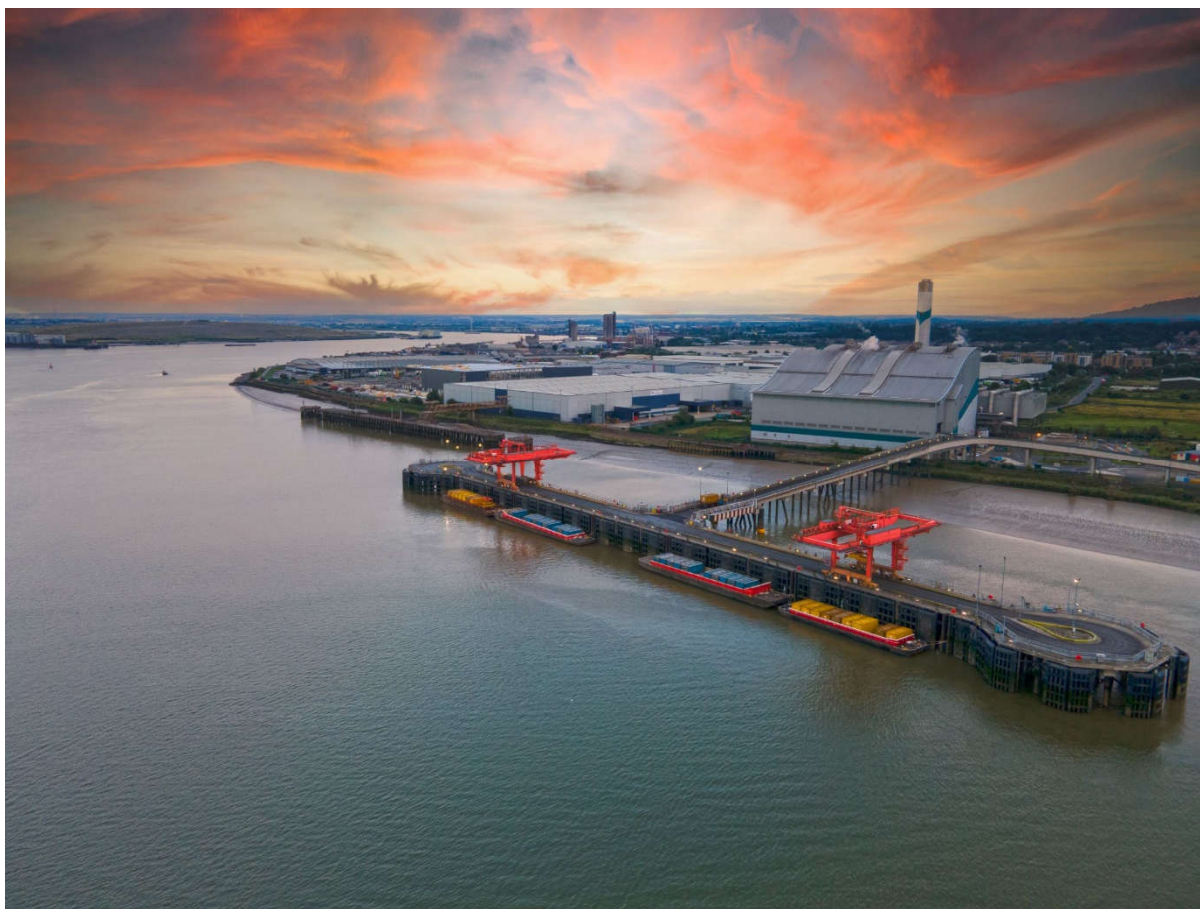


Figure 4: Middleton Jetty (near) Disused Belvedere Power Station Jetty (far).

2.1.2 Bathymetry and Charted depths

Between Crayford Ness and Dagenham depths of less than -7.0m (CD) lie on the edges of both sides of the channel east-north-east and north east of Jenningsree Point.

Figure 5 shows a visual representation of the latest PLA bathymetric survey data for Halfway Reach, measurements are in metres CD. The area within the Authorised Channel is shown as the area of greatest depth with the river bed measuring more than -9m CD. Dredged pockets can be observed under and around the Middleton Jetty, Ford's jetty and Jetty No 4.

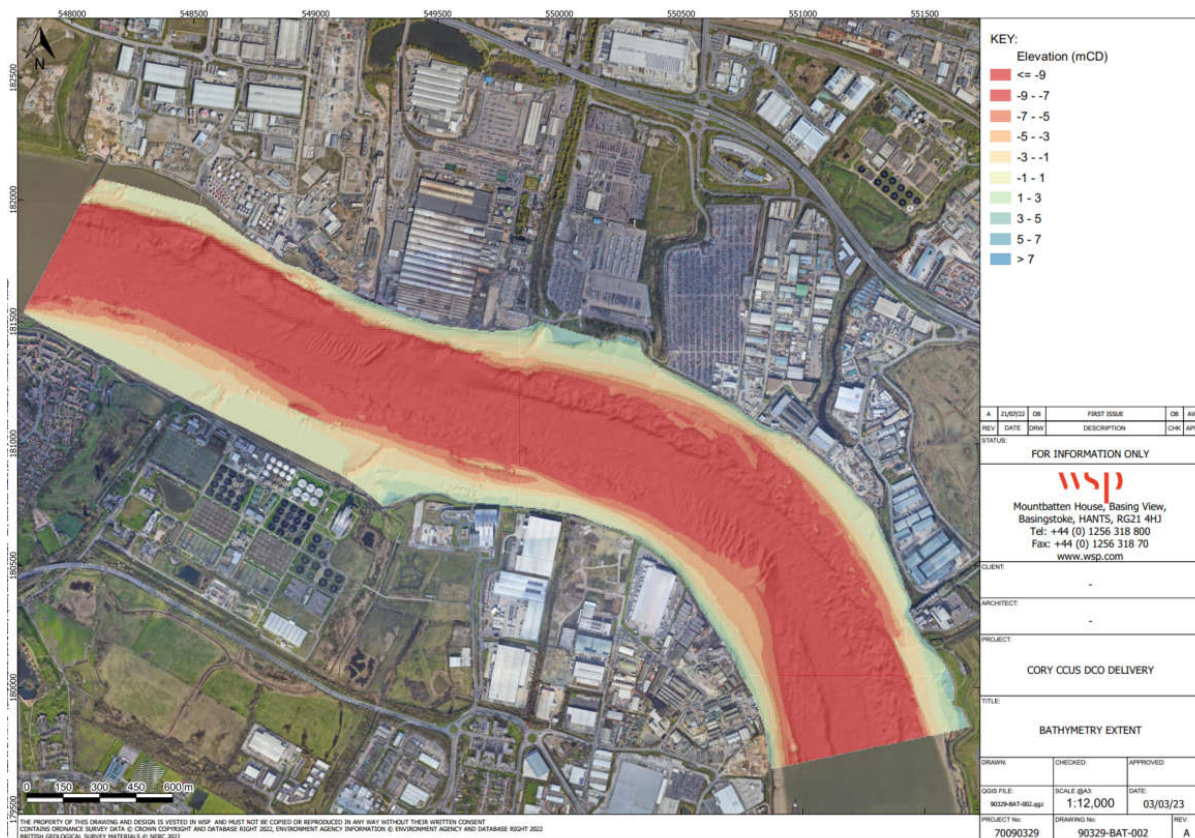


Figure 5: Bathymetric Survey (mCD).

2.1.3 Aids to Navigation (AtoN)

The below lights and AtoN alert the mariners attention to dangers within the study area:

- Jenningtree Port Channel Buoy: flashing red every five seconds;
- Jenningtree barge moorings: flashing yellow every two and a half seconds;
- Jetties on the north side of the river are lit by green fixed lights, one downstream and one upstream; and
- Jetties on the south side of the river are lit by red fixed lights, one downstream and one upstream.

There are several unlit barge moorings within Halfway Reach including the Cory barge mooring within the study area. A note on Admiralty Chart 3337 warns “Moorings and moored barges, lit and unlit, are moored frequently and may not be as charted”.

2.2 WIND

Halfway Reach is relatively exposed, with low topography along the banks of the river and therefore wind, particularly cross winds, are an important consideration for navigation in this area.

The prevailing wind is from the south west.

Annual constant winds speeds average 2 knots with gusts averaging 6 knots.

2.3 WAVES

Locally wind generated and fetch limited waves occur within the reach. These do not affect large vessel operations although smaller craft operations can be impacted.

2.4 TIDAL CHARACTERISTICS

Tidal flow velocities can exceed 3.5 knots with the ebb (outgoing tide) although typical ebb speeds are in the region of 2 knots. Velocities are often affected by fluvial flows from non-tidal inputs (e.g. heavy rainfall) which can significantly alter river flow velocities and water levels. The bends of the river cause tidal set, generally resulting in flows 'setting' to the outside of a bend.

The tidal set in the vicinity of the proposed jetty is to the north and will push vessels attempting to moor away from the jetty berth. Vessels leaving Erith Reach (the section of river to seaward of Jenningtree Point) and berthing on a flood tide, would likely stay on the north side of Halfway Reach and swing to port once safe to approach the berth. The flood tide will set off the berth, especially at the downstream end.

For an ebb tide berthing the set will push on to the vessels port bow when leaving Erith Reach, then as the vessel manoeuvres on to the berth the tide will push on the starboard bow.

2.4.1 Tidal Heights

Table 3 shows tidal heights in Halfway Reach, the information presented in the table is taken from a PLA tide station located at Ford's jetty, approximately 1.5NM upstream of the CCS jetty.

Table 3: Tidal Heights: Halfway Reach

Tidal State	Tidal height from CD (m)
Highest Recorded High Water	8.40
Mean High Water Springs	6.85
Mean High Water Neaps	5.72
Mean Low Water Neaps	1.43
Mean Low Water Springs	0.50

2.5 INCIDENT ANALYSIS

The PLA incident database was provided and reviewed to gain an understanding of historic incidents within the vicinity of the project area. Analysis of historic incident data helps the identification of:

- Hazard type;
- Hazard likelihood; and
- Hazard consequence.

All incidents that have occurred between 2010 and 2020 within Halfway Reach were extracted as part of the analysis. In total 47 unique incidents were identified. The incident types identified are summarised in **Figure 7** which presents the number of incidents by type and vessel category. The following vessel categorisation definitions apply:

- **Commercial Shipping** – Commercial seagoing vessels such as tanker, cargo and sea going passenger vessels;
- **Inland Waterways** – Commercial vessels operating within port limits, including Tug and service vessels, intra-port trade vessels and inland passenger vessels; and
- **Recreational** – Recreational vessels of all types.

Figure 6 shows the number of incident occurrences by Thames reach. Of the 28 reaches where incident data is available Halfway Reach ranks 19th in terms of the number of incident occurrences. Vessel traffic in Halfway Reach is less dense than in many other Thames reaches. Further downstream commercial shipping is more pronounced than in Halfway Reach where as further upstream recreational and inland passenger vessel traffic is more prevalent. This is reflected in an examination of incident occurrence. For example, downstream of Halfway Reach in Gravesend Reach there were 280 incidents identified, 175 of these incidents involved commercial shipping vessels. In contrast, in Barn Elms Reach, upstream of Halfway Reach, there were 82 incident occurrences, of these 51 involved recreational vessels.

Of the 47 incidents identified in Halfway Reach, 24 incidents involved commercial shipping vessels, 19 involved inland waterways vessels and 4 involved recreational vessels.

Contact incidents were the most frequently occurring incident type.

2.5.1 Notable Incidents

One incident of particular note occurred on 14-Mar-2017 when heavy contact was made between the barges *Corwen* and *Corness* as a Cory tug attempted to take both barges under tow. The incident took place during the flood tide as the tug, with the *Corness* in tow, navigated between the *Corwen* and the Middleton Jetty, the *Corwen* being secured with one bow line only. The tidal steam swung the *Corness* to the north, away from the jetty and in to the moored *Corwen*.

Note, the tidal set impacted the manoeuvre by setting the tug and barge off the berth. The Middleton Jetty is located to the west of the proposed CO₂ export jetty and further upstream of Jennings Point. The impact of the tidal set will be more keenly felt at the export jetty due to its proximity to the bend and alignment of the berth with the tidal stream.

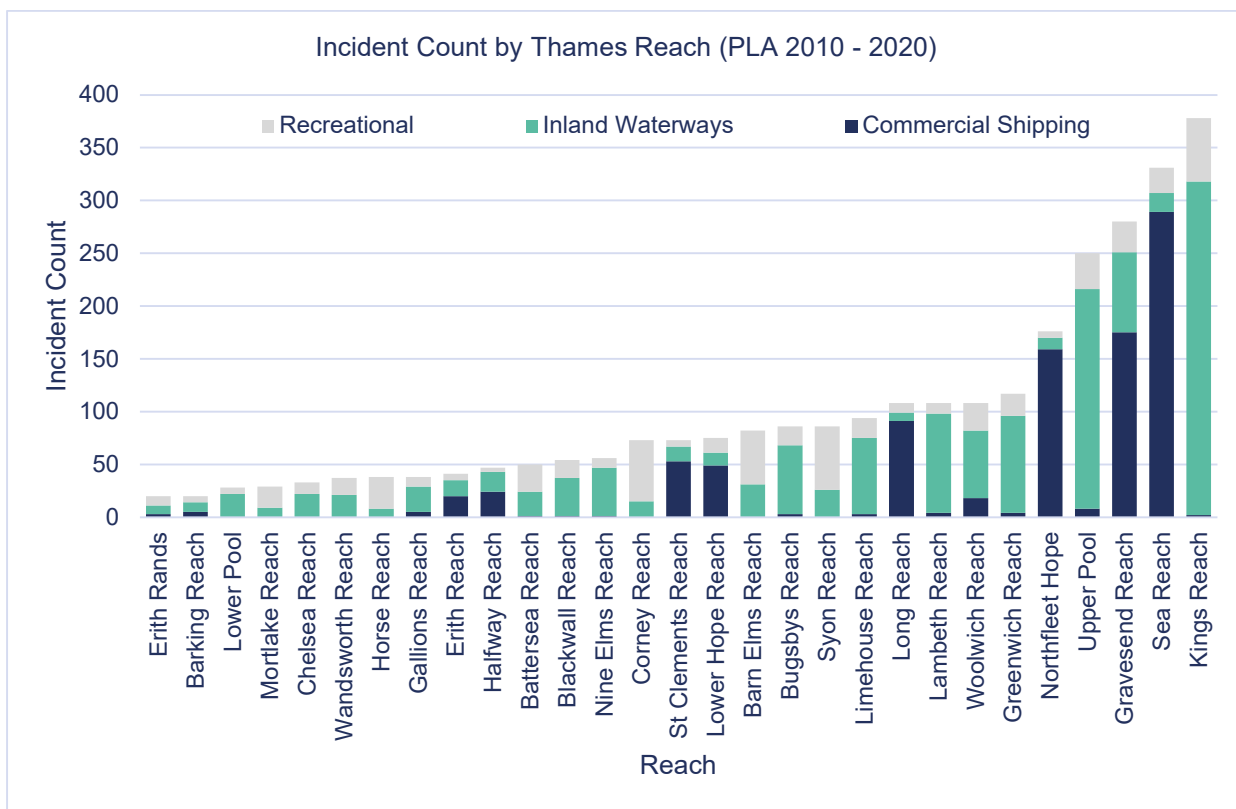


Figure 6: Incident Count by Thames Reach (PLA 2010 -2020).

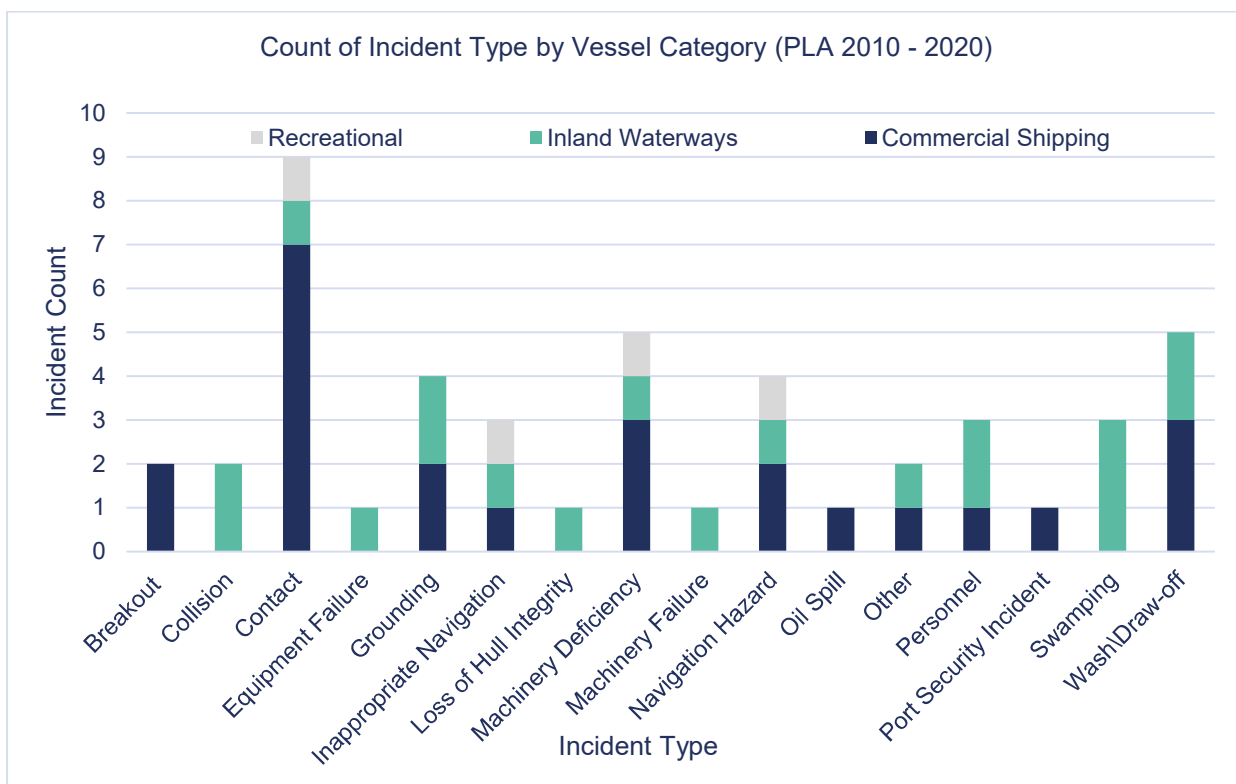


Figure 7: Count of Incident Type by Vessel Category, Halfway Reach (PLA 2010 -2020)

2.6 PORT OF LONDON AUTHORITY

The PLA is the Statutory Harbour Authority (SHA) and Competent Harbour Authority (CHA) for the River Thames, responsible for “defining and enforcing the regulations needed to support and manage the safety of navigation on the 95 miles of the tidal River Thames”.

The PLA Harbour Master’s team is responsible for the management of navigation safety on the River Thames and implementing regulation, guidance and administering risk control measures aimed at managing navigation risk and safety within the study area.

The PLA publish their regulations, codes of practice and other general guidance on their website (www.pla.co.uk) which includes the following:

- Port of London Act 1968;
- Port of London Thames Byelaws 2012;
- General Directions for Navigation in the Port of London 2016; and
- Pilotage Directions 2017:
 - Note, Pilotage is compulsory for the design vessel.
- Code of Practice for Craft Towing Operations on the Thames;
- Code of Practice for Rowing & Paddling on the Tidal Thames;
- Recreational Users Guide;
- Other codes of practice for mooring, berth operators etc; and
- The PLA also provide other measures to maintain safety of navigation which include:
 - Vessel Traffic Services including vessel traffic management and navigational assistance;
 - Promulgation of information such as Notice to Mariners and Navigation Warnings;
 - Provision and maintenance of Aids to Navigation;
 - Hydrographic Services;
 - Harbour Service Launches and patrols; and
 - Emergency preparedness and response.

3. VESSEL TRAFFIC ANALYSIS

In general, Halfway Reach sees lower vessel traffic than much of the rest of the tidal Thames, with the reaches upstream being dominated by in-land passenger and recreational vessels and the reaches downstream more frequented by commercial shipping associated with Tilbury and London Gateway ports, amongst other facilities. The vessels that most commonly frequent Halfway Reach are in-land non-passenger vessels, such as barges travelling to the various local wharfs and jetties, as well as commercial shipping from and to central London.

The vessel traffic activity in the project area can be classified into two major groups:

- Group 1: Powered commercial vessels which make up the larger vessels and include cargo vessels, tankers, passenger vessels, tugs and port service vessels; and
- Group 2: Recreational vessels made up of powered (e.g. cabin cruisers) and unpowered craft (e.g. rowing sculls, canoes, paddle boarders and sailing dinghies).

Analysis of group 1 (powered commercial vessels) was undertaken using Thames Automatic Identification System (AIS) transponder data (commercial vessels are mandated to transmit by VHF various vessel characteristics, such as position, speed, size and name at prescribed intervals, which can be converted to create vessel tracks).

As AIS is not required on small recreational vessels (although some larger recreational craft voluntarily carry AIS). Analysis of group 2 vessels (powered and unpowered recreational craft) is more qualitative in nature. Whilst information is available in publications, consultation with river users is necessary to ascertain detailed information on how they utilise the river. The pNRA will therefore include widespread consultation with river users.

This section provides an overview of vessel traffic in the vicinity of the proposed pier and includes:

- Analysis of Thames AIS data from September 2022, (September is considered seasonally representative month in terms of vessel traffic); and
- A qualitative review of guidance documents to establish the nature of recreational vessel activity.

3.1 ALL VESSEL TRACKS

A gate analysis plot (see **Figure 8**) shows the lateral distribution at two transects across the river Thames for all vessel carrying AIS (Sep-2022) through an upstream (west) and downstream (east) gate. The total number of east / west transits, occurring in Sep-2022 through each of the gates is summarised in **Table 4**, the monthly transit totals were multiplied to give an estimation of the number of annual east / west transits through each of the gates.

The gates positioned identify all transits of the Authorised Channel and do not include movements made by Cory barges between the Middleton Jetty and barge moorings.

Vessel traffic activity is generally focused within the authorised channel, with vessels transiting to the key jetties and moorings sites outside the Authorised Channel in the area being the exception.

Table 4: Summary of Total Vessel Transits

Direction of Transit	Total Transits Sep 22	Total Annualised Transits
Downstream Gate		
East Transits	819	9,828
West Transits	790	9,480
Upstream Gate		
East Transits	974	11,688
West Transits	974	11,688

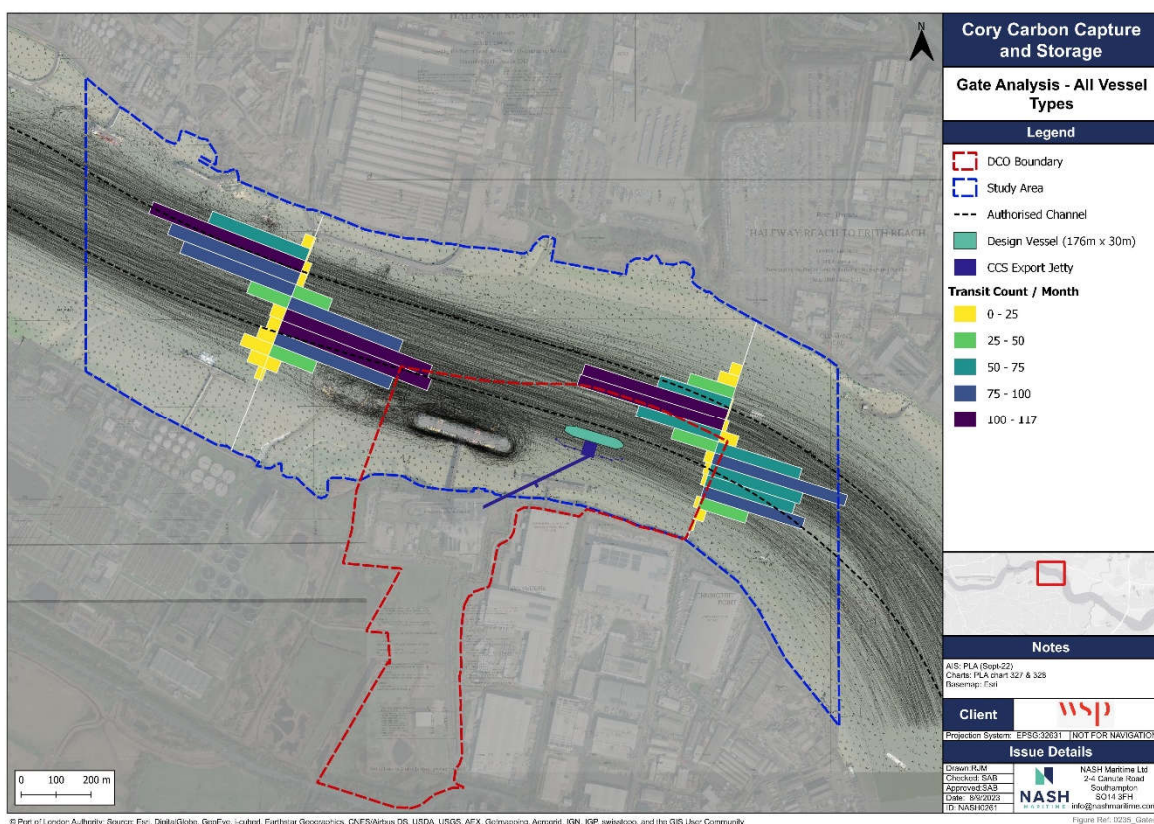


Figure 8: Gate Analysis, All Vessel Traffic (AIS Sep- 2021).

Figure 9 shows a vessel traffic density plot, where it can be seen that the majority of vessel traffic activity is focused around the Authorised Channel and Middleton Jetty. There are a limited number of transits to the north and south of the authorised channel, likely associated with shallow draft vessels and vessels departing the channel to approach jetty and mooring locations.

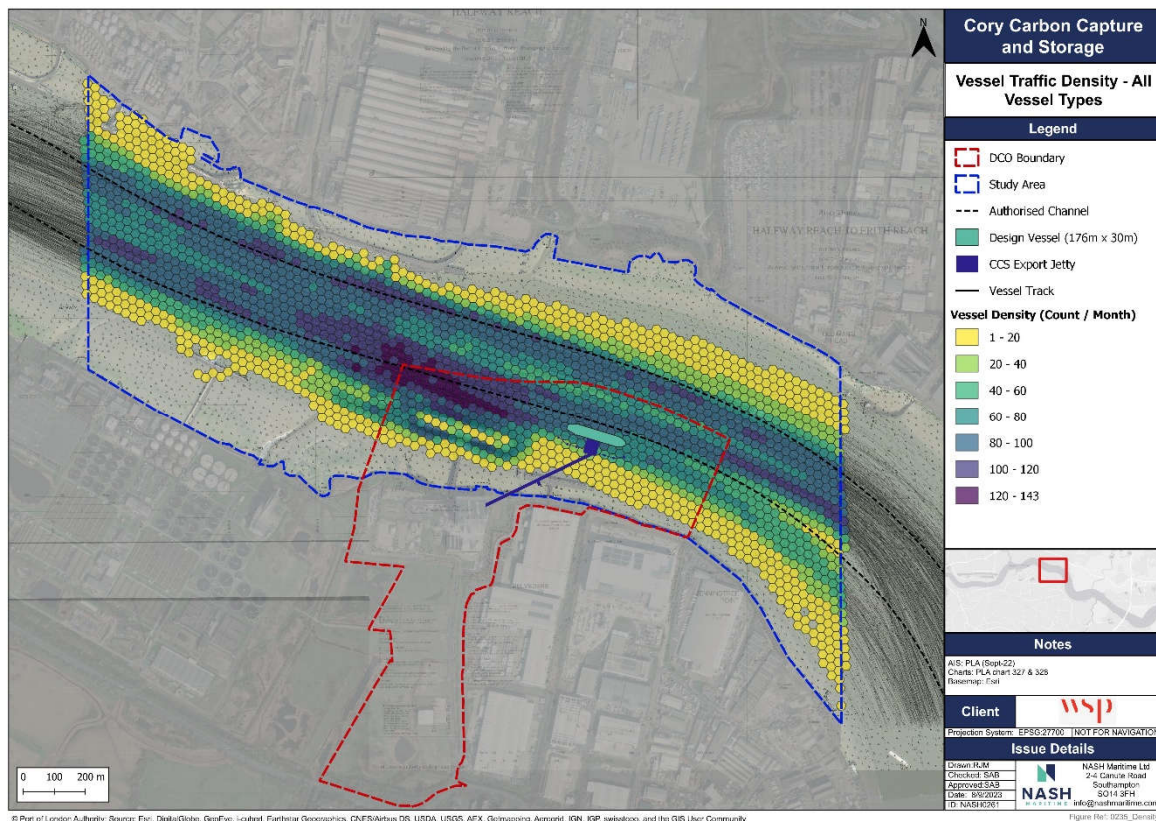


Figure 9: Vessel Traffic Density Plot, (AIS Sep- 2022).

3.2 GROUP 1: VESSEL TRACK ANALYSIS

3.2.1 Commercial Vessel Tracks

Commercial vessel tracks (comprising cargo and tanker vessel tracks) are presented in **Figure 10**. Cargo vessels are shown navigating to and from Ford’s jetty and White Mountain jetty whilst tanker vessels can be observed transiting to and from the Thunderer jetty on the north bank of the River. Ford’s jetty, on the opposite side of the river to the proposed CCS jetty, is the closest facility serviced by large commercial vessels, typically Ro-Ro vessel such as *Wilhelmine*, (see **Figure 11**) operate from the jetty, with approximately one arrival and departure a day. Arrivals and departures from Ford’s Jetty are not tidally constrained, vessels approaching / departing the jetty follow similar lines of approach regardless as to whether manoeuvring on a flood or ebb tide, (see **Figure 12**).

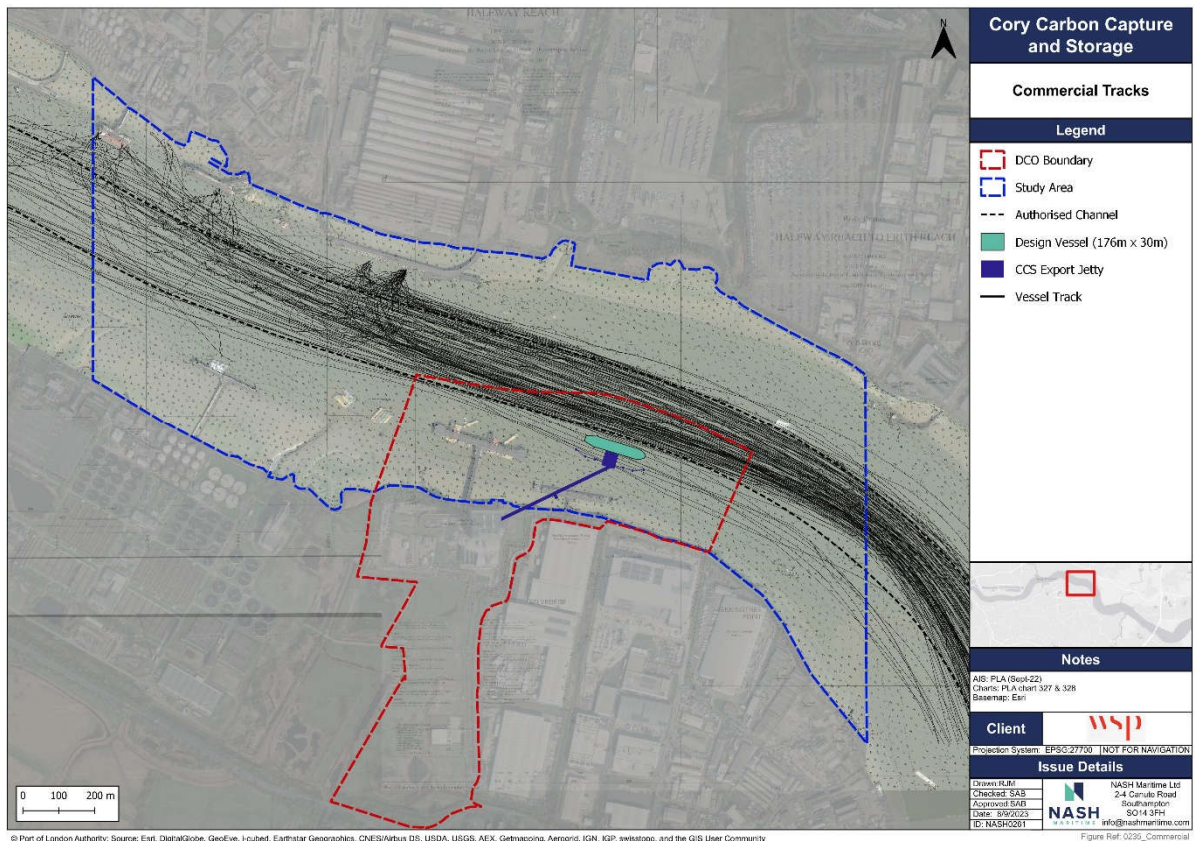


Figure 10: Commercial Vessel Tracks (AIS Sep-22).



Figure 11: *Wilhelmine*

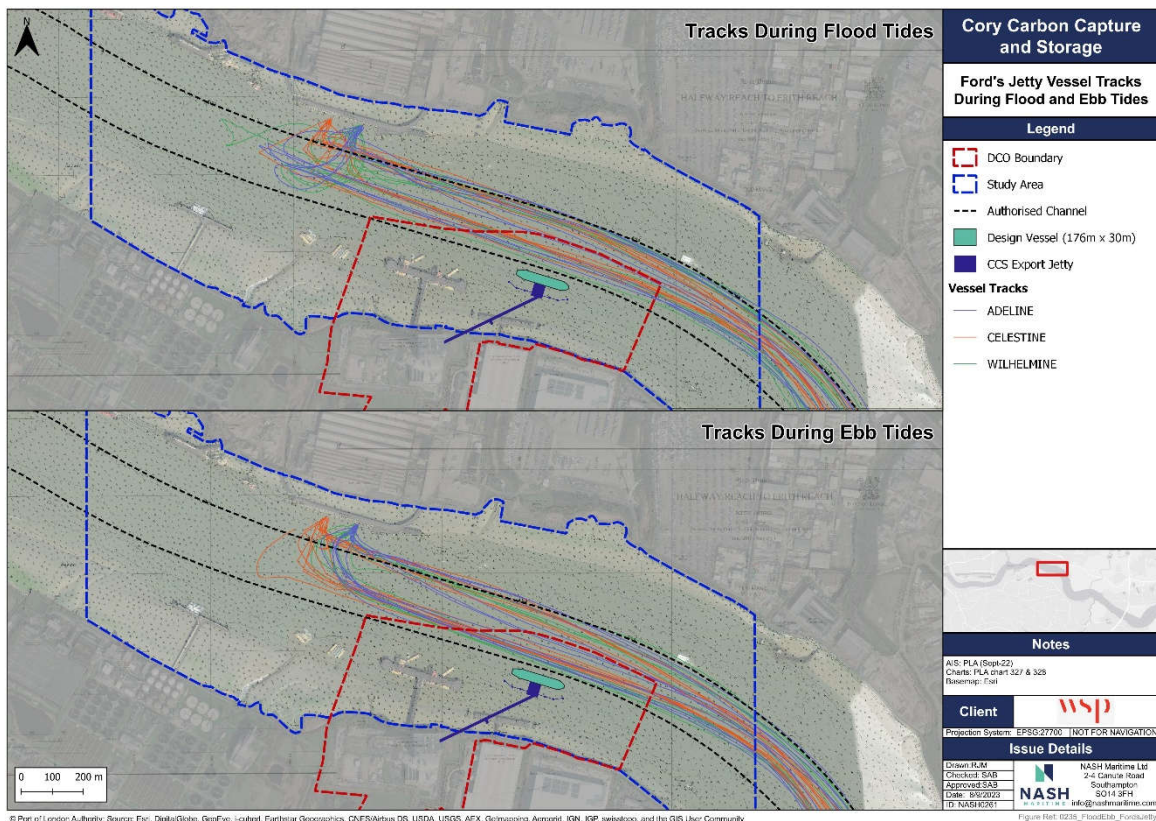


Figure 12: Arrivals and Departures, Ford's Jetty by Ebb and Flood Tide.

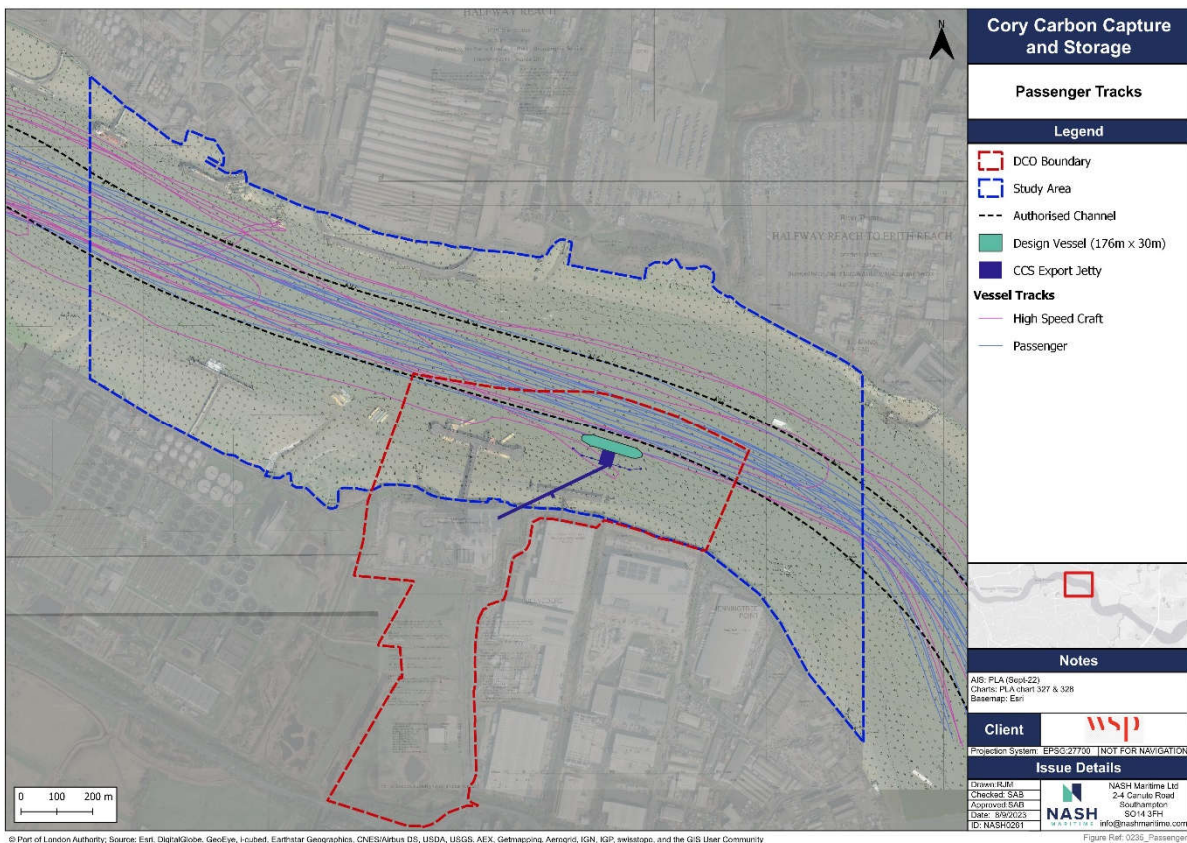


Figure 13: Passenger Vessel Tracks (AIS Sep-21).

3.2.2 Passenger and High-Speed Craft Vessel Tracks

Passenger vessel tracks are shown in **Figure 13**, passenger vessel movements within the study area are limited and are mainly within the Authorised Channel passing clear of the proposed CCS jetty. These are either sea going cruise vessels transiting to upriver berths or smaller intra port passenger vessels and High-Speed Craft operating sightseeing or regular passenger services.

3.2.3 Tug and Service Vessel Tracks

Tug and service vessel tracks are shown in **Figure 15**, and include:

- Port service vessels;
- Military and law enforcement vessels;
- Vessel engaged in dredging and underwater operations (including commercial dredging vessels);
- Tugs (including Cory tugs); and
- Other non-port service craft.

The majority of vessel tracks are within the authorised channel, notable exceptions include:

- Cory vessels transiting to and from the Middleton Jetty as well as between the jetty and barge moorings;
- GPS Marine tugs transiting to and from Amey's jetty; and
- Commercial dredging vessels such as *Sand Falcon*, (see **Figure 14**) arriving and departing the Hanson Aggregates jetty.



Figure 14: Sand Falcon.

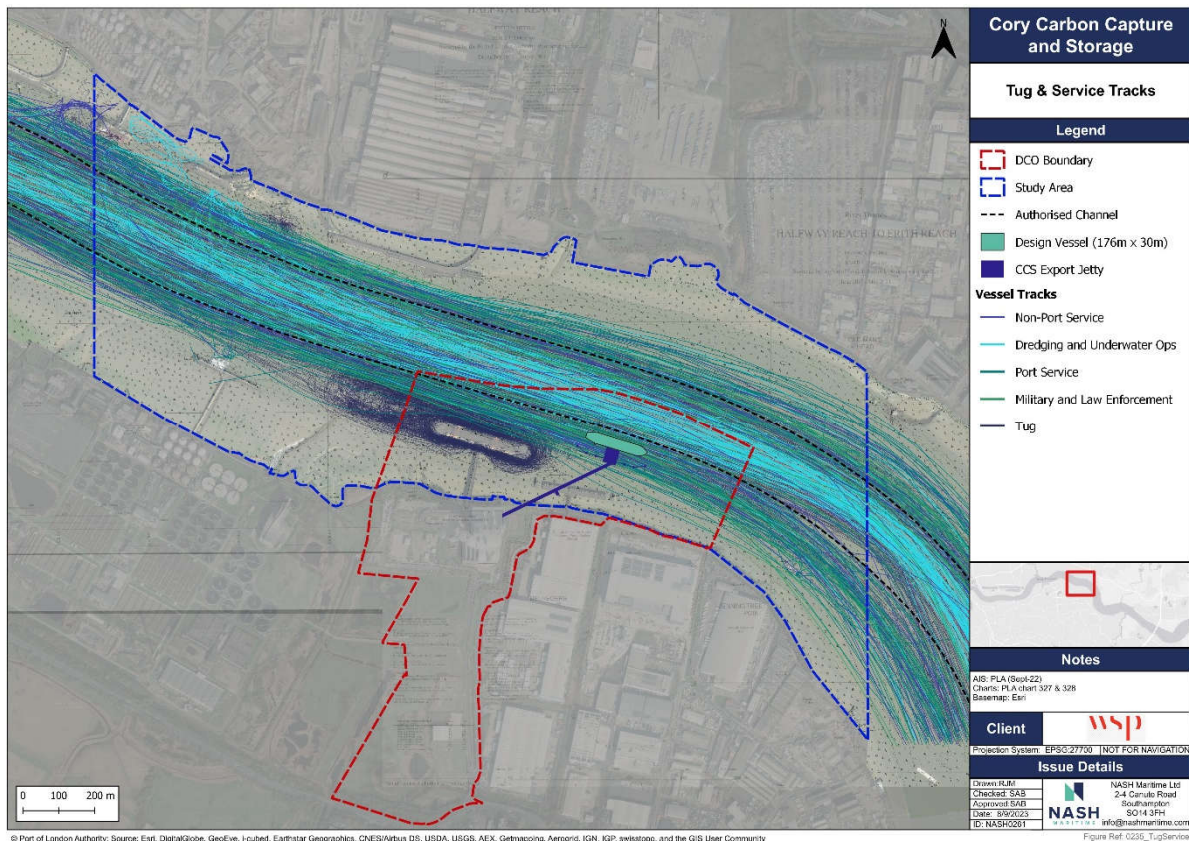


Figure 15: Tug and Service Vessel Tracks (AIS Sep-21).

3.2.4 Cory Tug Vessel Tracks

Figure 16, shows vessel tracks made by Cory tugs only; details of the tugs in the Cory fleet are summarised in Table 5, an image of Resource is shown in Figure 17.

Barge sizes within the fleet range from 33.5m LOA to 49.7m LOA, the tug and barge configuration depends on the route taken (length restrictions are in place in central london) and at waste transfer stations which the barges are based (some waste transfer stations are only able to accommodate the smaller barges).

Table 5: Cory Tug Fleet

Tug Name	Length (Metres)	Breadth (metres)	Gross Tonnage
Regain	25.95	8.98	125.65
Recovery	22.65	8.00	86.69
Resource	22.65	8.00	86.69
Reclaim	22.65	8.00	86.69
Redoubt	22.65	8.00	86.69
Merit	22.98	6.12	82.66

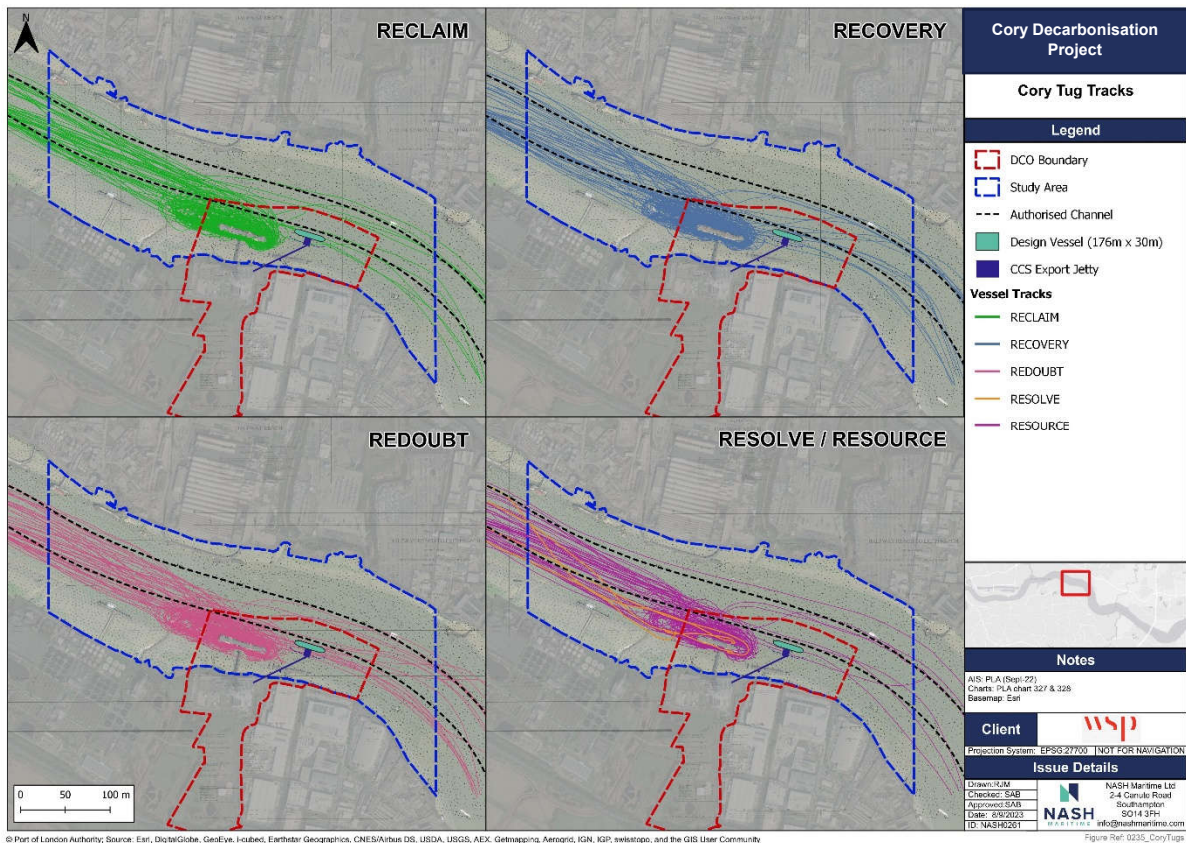


Figure 16: Vessel Tracks, Cory Tugs (PLA AIS 22)



Figure 17: Resource.

Figure 18, is a schematic produced to explain the daily process of arrivals and departures by Cory tugs at the Middleton Jetty.

In summary:

- There are on average ten arrivals and departures at the Middleton Jetty a day;
- Four arrivals are from an upstream direction, with one arrival from a downstream direction;
- The downstream arrival and departures represent the movement of ash barges, a biproduct of the EfW facility to a disposal facility at Tilbury Docks; and
- The upstream arrivals and departures represent the movement of waste from various waste transfer stations in central London to the Middleton Jetty.

The current Cory operation occurs over one day time tide per day with operations taking place 6 days (Monday-Saturday) a week.

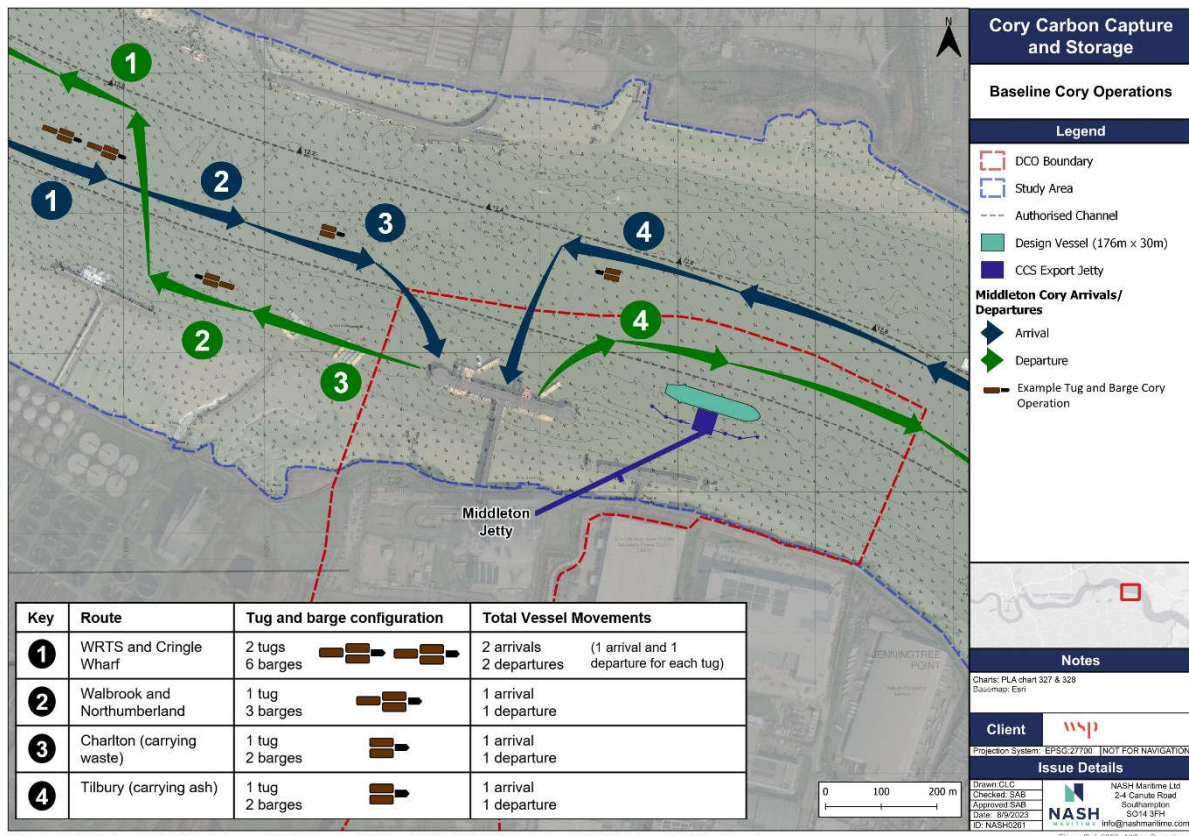


Figure 18: Baseline Cory Operation

3.3 GROUP 2: VESSEL TRAFFIC ANALYSIS

As mentioned in **Section 3**, very few recreational vessels carry AIS equipment and therefore AIS tracks likely underestimate the volume of recreational traffic passing through the study area. Therefore, a more qualitative approach is required.

3.3.1 Recreational Vessel Traffic Analysis

Recreational vessel tracks are shown in **Figure 19**, as with most other vessel types, transits are focused within the authorised channel. However, a number of recreational vessels can be seen navigating south of the Jenningsree channel buoy and rounding Jenningsree bend south of the Authorised Channel.

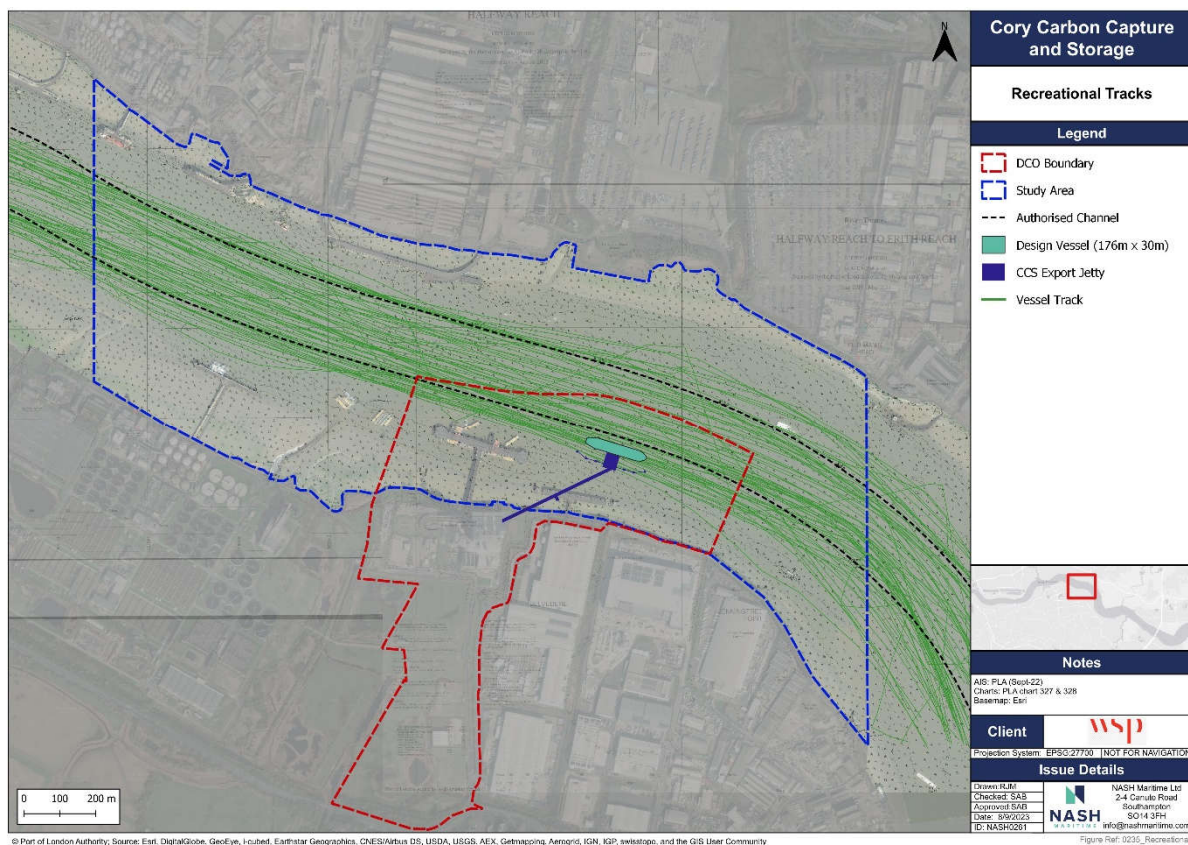


Figure 19: Recreational Vessel Tracks (AIS Sep-22).

The PLA have a number of **'key rules'** for boating on the tidal Thames that they recommend recreational users follow in order to navigate as safely as possible. These rules can be found at: <https://boatingonthames.co.uk/>. The rules cover the following themes:

- Navigating in the Authorised Channel e.g. *'vessels must keep as near to the starboard side of the fairway at all times, as is safe and practicable;'*
- Crossing the authorised channel;
- Awareness of / interactions with other users on the river;
- Navigation regarding bridges, piers and other infrastructure on the river;
- Navigation in strong tidal conditions or poor weather conditions;
- The effect of wash and how to manage it;
- VHF marine radio;
- Moorings;

- Recommend safety equipment onboard vessels; and
- Licensing and certification.

The PLA also publishes a **Recreational Users Guide**¹ that highlights key points of interest and regulations for recreational users on the Thames. **Figure 20** shows the Halfway Reach section of the river which highlights:

- Middleton Wharf (referred to in this report as the Middleton Jetty);
- Southern Outfall (to in this report as Crossness Sewage Treatment Works jetty referred);
- Fords jetty;
- No 4 jetty (Hanson Aggregates);
- Jenningtree Port channel buoy; and
- Crossness Light.

No recreational clubs or facilities are located within the study area.

During consultation the PLA Harbour Master and Marine Manager confirmed that there was very limited recreational vessel activity within Halfway Reach.

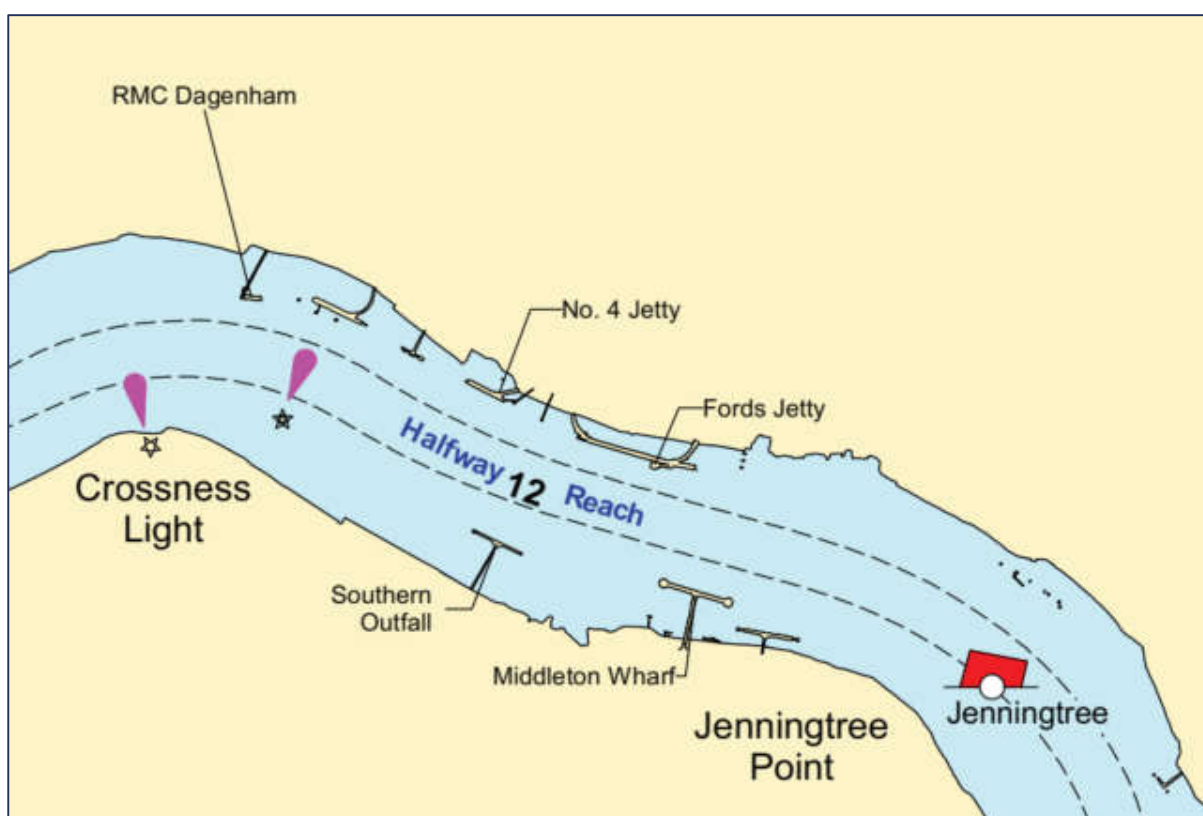


Figure 20: PLA Recreational River User Guide – Halfway Reach Section Screenshot.

¹ <https://server1.pla.co.uk/assets/newouterrugweb.pdf> - accessed Jul-22

3.4 SWEPT PATH ANALYSIS

In order to further understand the proximity between passing commercial vessels and the CCS jetty, swept path analysis was undertaken. Before conducting the swept path analysis all vessel tracks identified in the Sep-2022 data set were filtered to only incorporate vessels that are subject to compulsory pilotage. This exercise was undertaken to ensure that only vessels that are likely to be limited in their ability to manoeuvre were considered within the analysis.

Whilst smaller shallow draught vessels navigate south of the Authorised Channel and would in theory collide with the CCS jetty if following the same course, in practice these vessels, not being limited by draught, size or ability to manoeuvre, will likely divert north avoiding the CCS jetty entirely. In other words, such vessels likely only navigate outside the limits of the Authorised Channel because there is adequate navigable width to do so, rather than there being a particular operational parameter which forces navigation in this manner.

The PLA pilotage directions 2017 state that compulsory pilotage applies:

“To the west of Sea Reach No.1 Buoy for vessels of:

- a) 80 metres or more in Length Overall;*
- b) 50 metres or more in Length Overall which are:
 - i) Specified Vessels,*
 - ii) Passenger Vessels,*
 - iii) Vessels carrying Marine Pollutants in Bulk, or*
 - iv) Vessels with an Operating Draught of 5 metres or more; or**
- c) 50 metres or more in Length Overall with an Operating Draught of 4 metres or more when Restricted Visibility exists within that part of the London Pilotage District to the West of Sea Reach No. 1 Buoy where the vessel is planning to navigate.”*

All cargo vessel greater than or equal to 80m LOA and all tanker vessels greater than or equal to 50m LOA were therefore extracted from the data set. The extracted tracks are presented in **Figure 21**, which shows:

- Many of the passing cargo vessel transits are associated with the Ford’s Jetty Ro-Ro operation;
- Cargo vessel transits are more numerous than tanker vessel transits;
- Most tanker vessel tracks show vessels arriving and departing the Thunderer jetty;
- The majority of transits of both cargo and tanker vessels are within the Authorised Channel with the exception of vessels departing the Authorised Channel to the north to arrive / depart Ford’s Jetty or Thunderer Jetty. There are also a limited number of transits just south of the Authorised Channel in close proximity to the proposed CCS jetty.

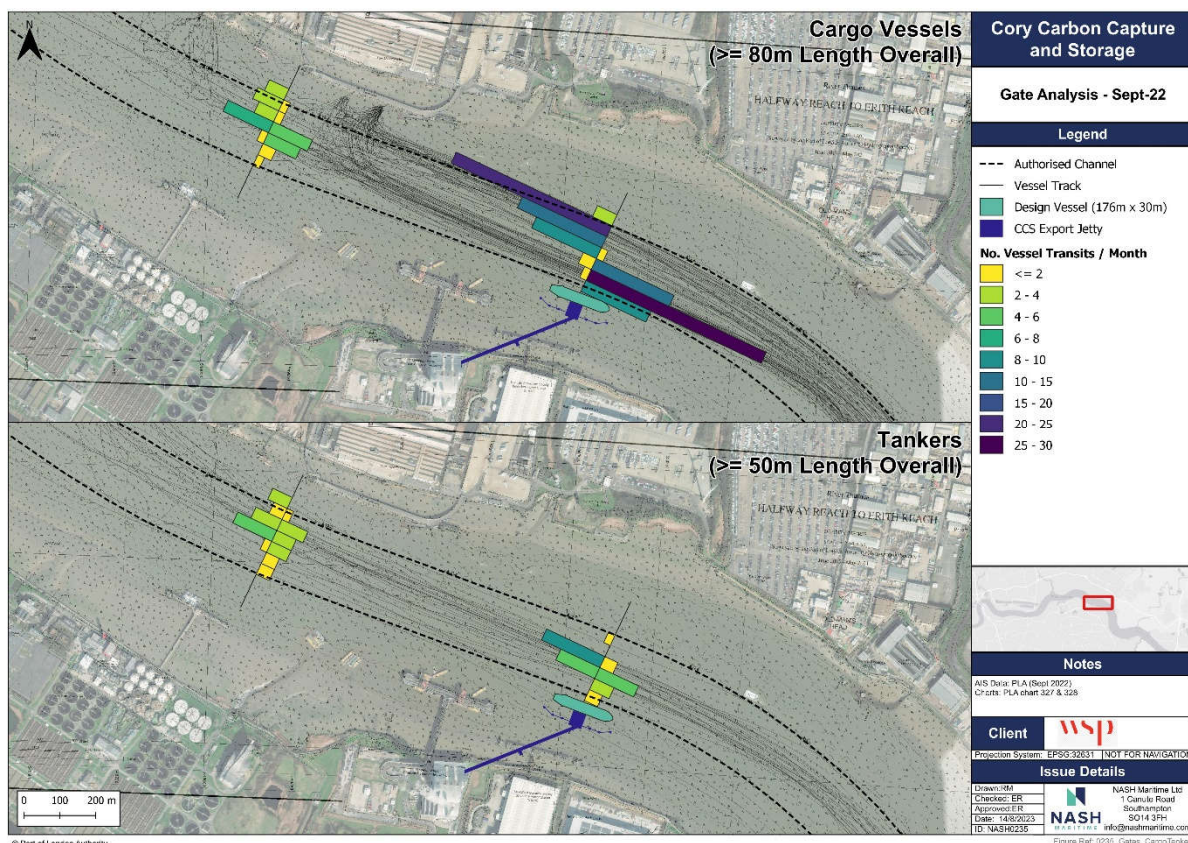


Figure 21: Gate Analysis: Commercial vessels subject to Compulsory Pilotage.

3.4.1 Cargo Vessel Swept Path Analysis

Individual swept paths were created for each of the unique cargo vessel tracks identified in **Figure 21**. Examples of the individual swept paths for cargo vessels are shown in the following figures:

- **Figure 22:** Swept path Ford's Jetty Departure (*Adeline*).
- **Figure 23:** Swept Path, Ford's Jetty Departure (*Wilhelmine*).
- **Figure 24:** Swept Path Ford's Jetty Departure (*Celestine*).
- **Figure 25:** Swept Path Cargo Vessel, Passing Transit, *Chintana Naree*, (Outbound).
- **Figure 26:** Swept Path Cargo Vessel, Passing Transit, *Eco Anglebay*, (Outbound).

The swept paths show that:

- Vessels departing from Ford's Jetty swing across the Authorised Channel before passing downriver on the southern limit of the channel approximately 50m north of the CCS jetty. These vessels then align to pass north of the Jenningsree channel buoy.
- Outbound passing cargo vessels navigate toward the south side of the Authorised Channel clear of the CCS jetty before aligning with to pass north of the Jenningsree channel buoy.

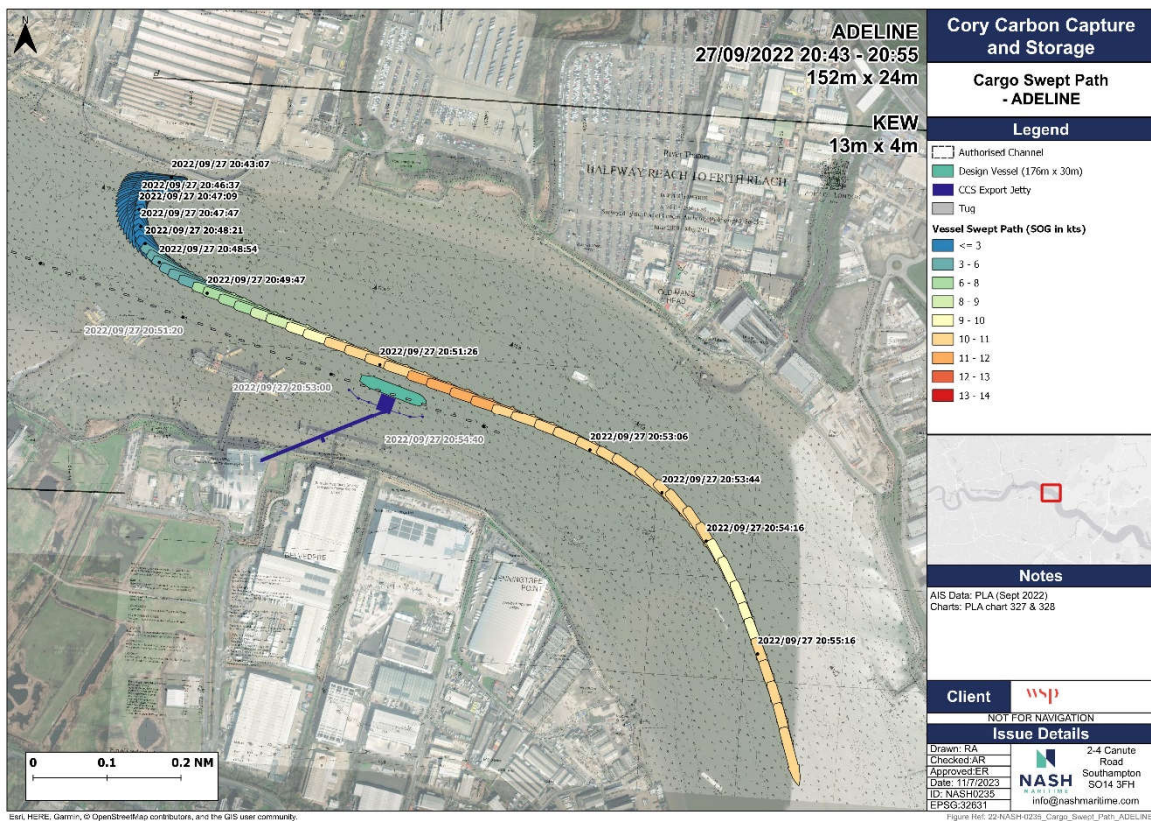


Figure 22: Swept path Ford's Jetty Departure (Adeline).

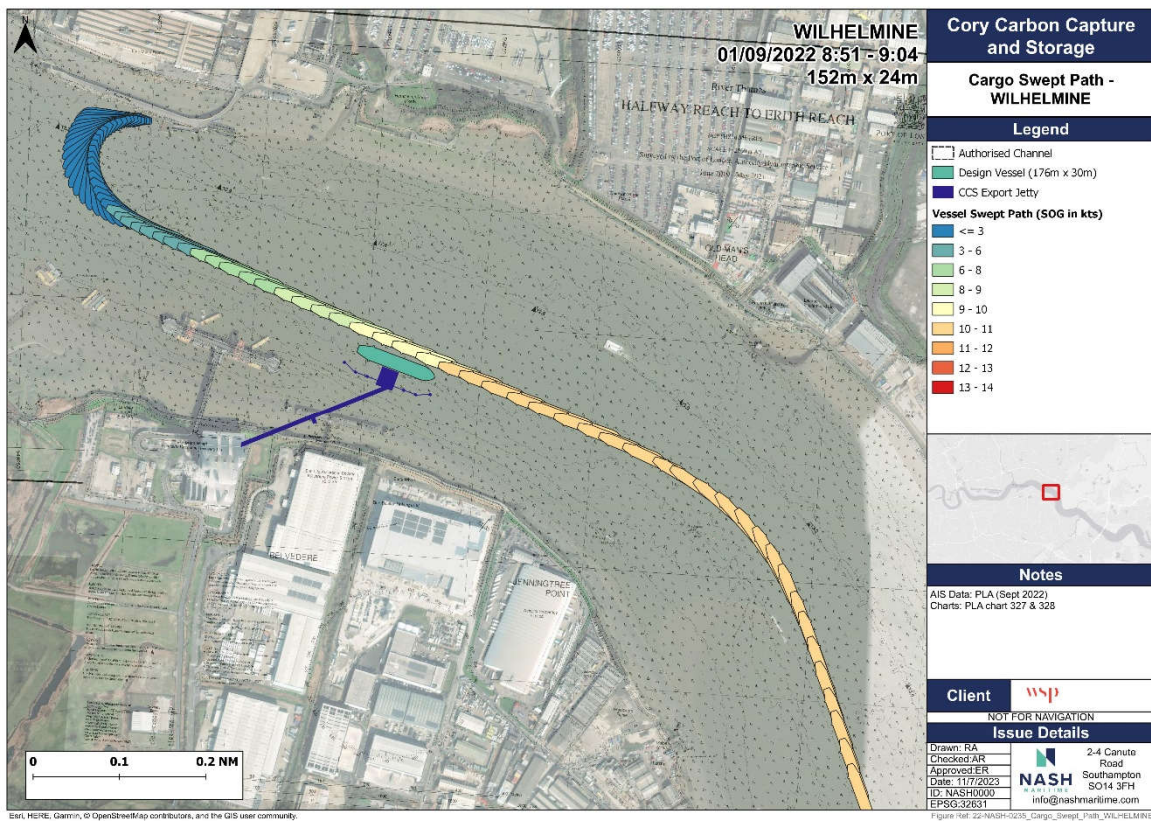


Figure 23: Swept Path, Ford's Jetty Departure (Wilhelmine).

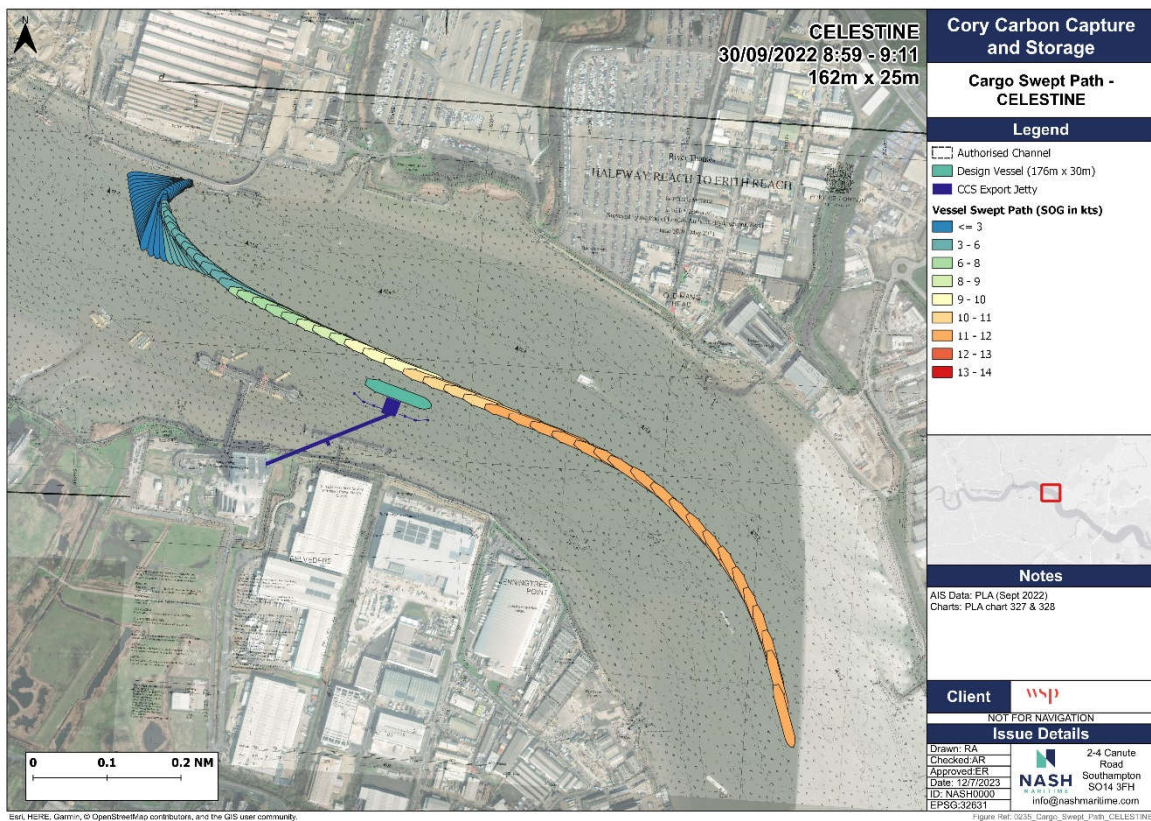


Figure 24: Swept Path Ford's Jetty Departure (*Celestine*).

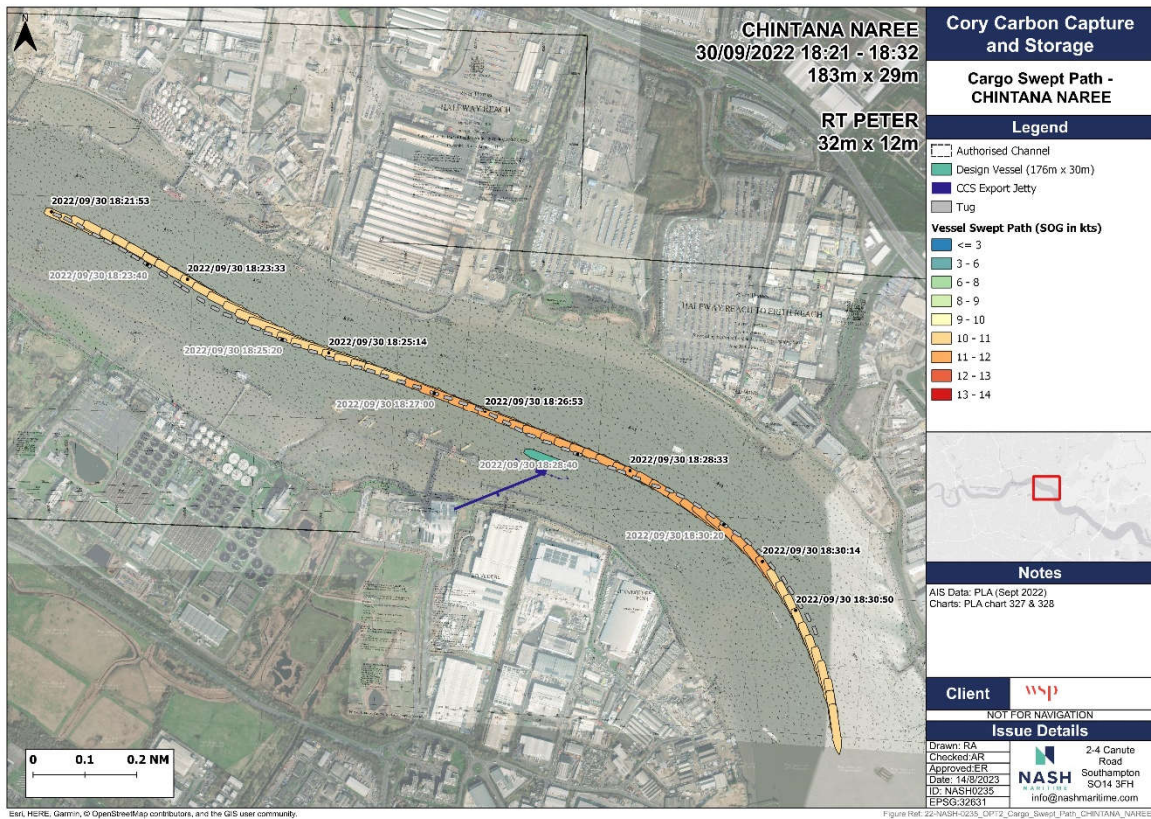


Figure 25: Swept Path Cargo Vessel, Passing Transit, *Chintana Naree*, (Outbound).

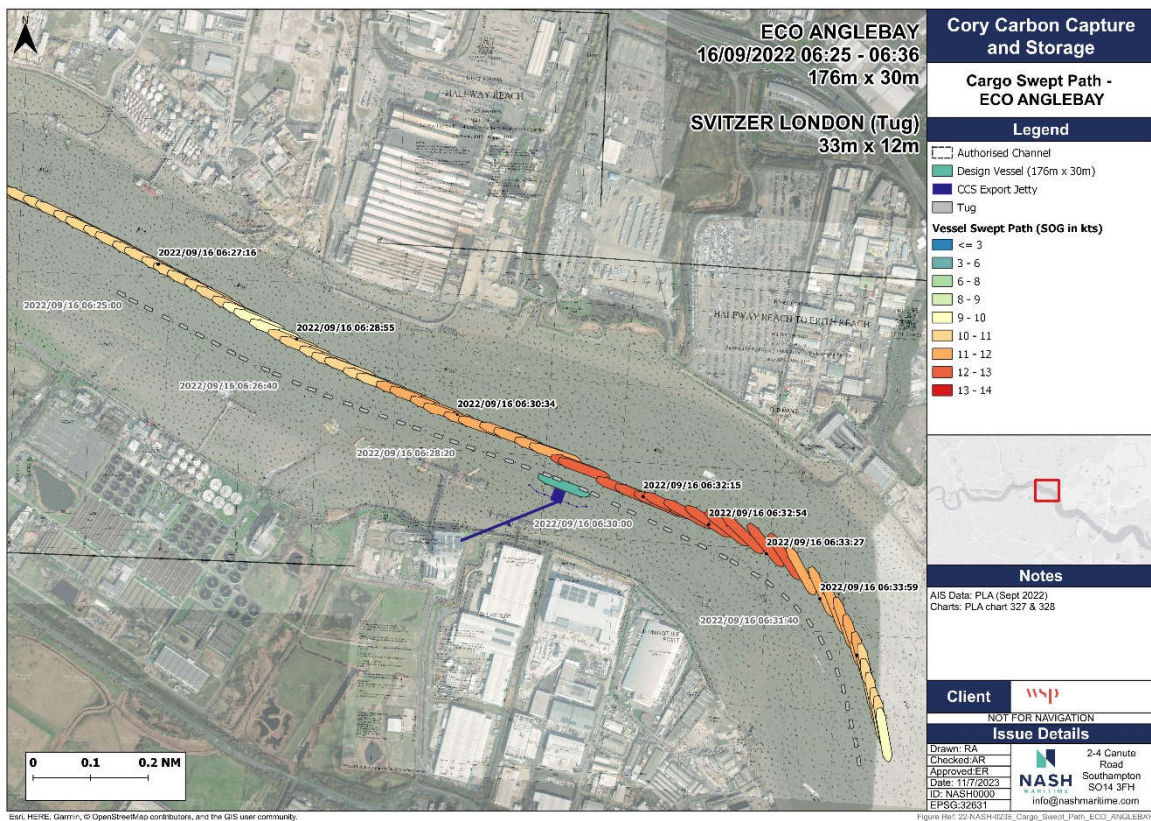


Figure 26: Swept Path Cargo Vessel, Passing Transit, *Eco Anglebay*, (Outbound).

The individual cargo vessel swept path transits were then overlaid to create a swept path density plot, (see **Figure 27**). **Figure 27** shows the number of minutes navigated by any part of a cargo vessel within individual 10m x 10m grid cells. The most frequently transited area is around the Ford’s Jetty berth as vessels manoeuvre on to and away from the berth. The areas of medium exposure show transits either side of the Authorised Channel as Ro-Ro vessel make passage to and from the Ford’s Jetty berth. Grid cells in proximity to the CCS jetty were navigated by cargo vessels for less than five minutes during September 2022.

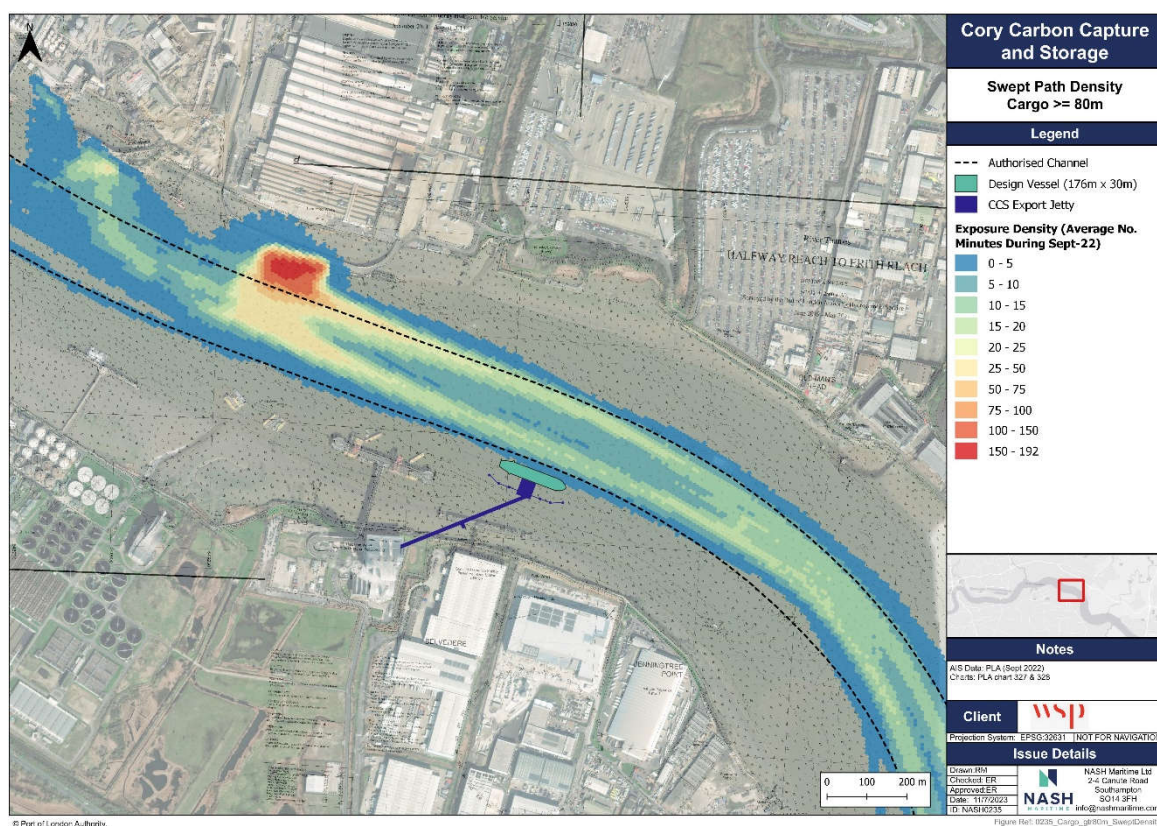


Figure 27: Cargo Swept Path Density Plot.

3.4.2 Tanker Swept Path Analysis

Individual swept paths were created for each of the unique tanker tracks identified in **Figure 18**. Examples of the individual swept paths for tankers are shown in the following figures:

- **Figure 28:** Tanker Swept Path Thunderer Jetty Arrival (*Caroline Essberger*).
- **Figure 29:** Tanker Swept Path Thunderer Jetty Departure (*Preveze 1*).
- **Figure 30:** Swept Path Thunderer Jetty Departure (*Sten Moster*).
- **Figure 31:** Swept Path Thunderer Jetty Departure (*Palanca Cadiz*).

The swept paths show that on arrival vessels bound for the Thunderer Jetty navigate north of the Jenningsree channel buoy before navigating toward the north of the Authorised Channel, utilising the central portion of the channel when passing the CCS jetty.

On departing the Thunderer Jetty vessels navigate toward the southern extent of the Authorised Channel passing north of the CCS jetty before aligning with the Jenningsree channel buoy.

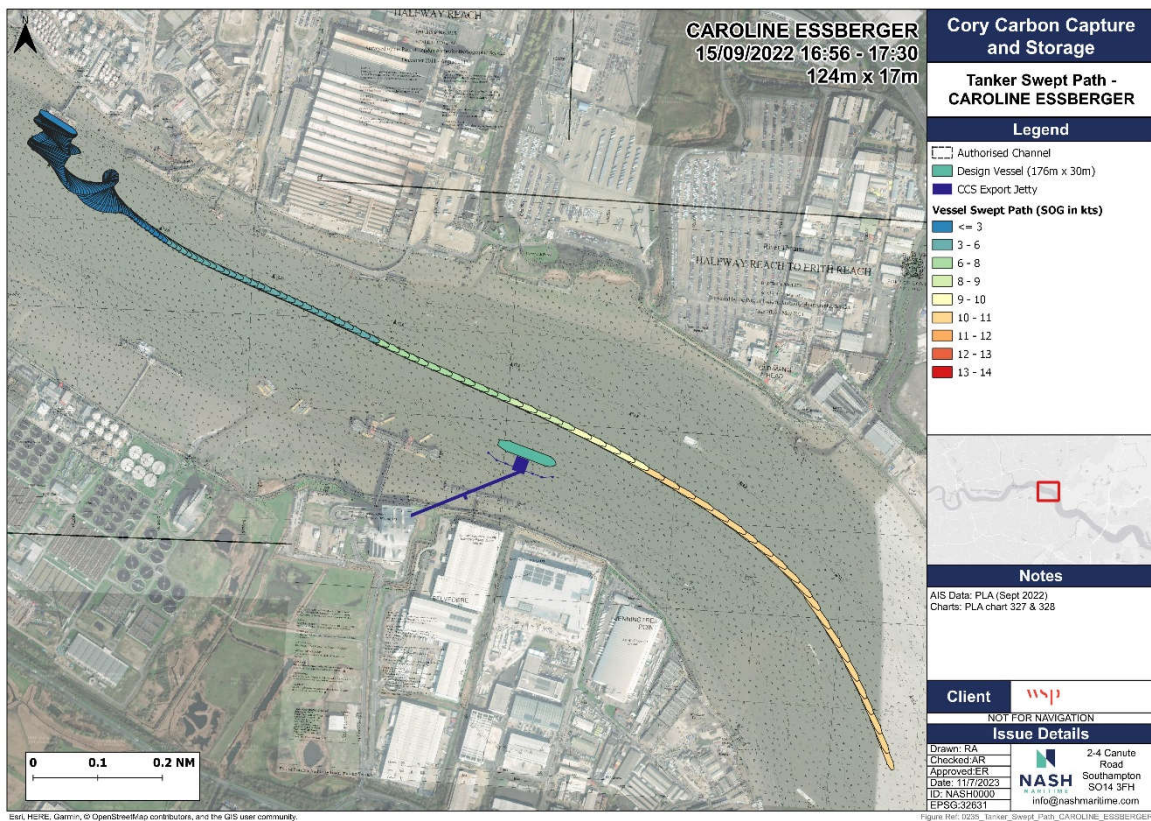


Figure 28: Tanker Swept Path Thunderer Jetty Arrival (Caroline Essberger).

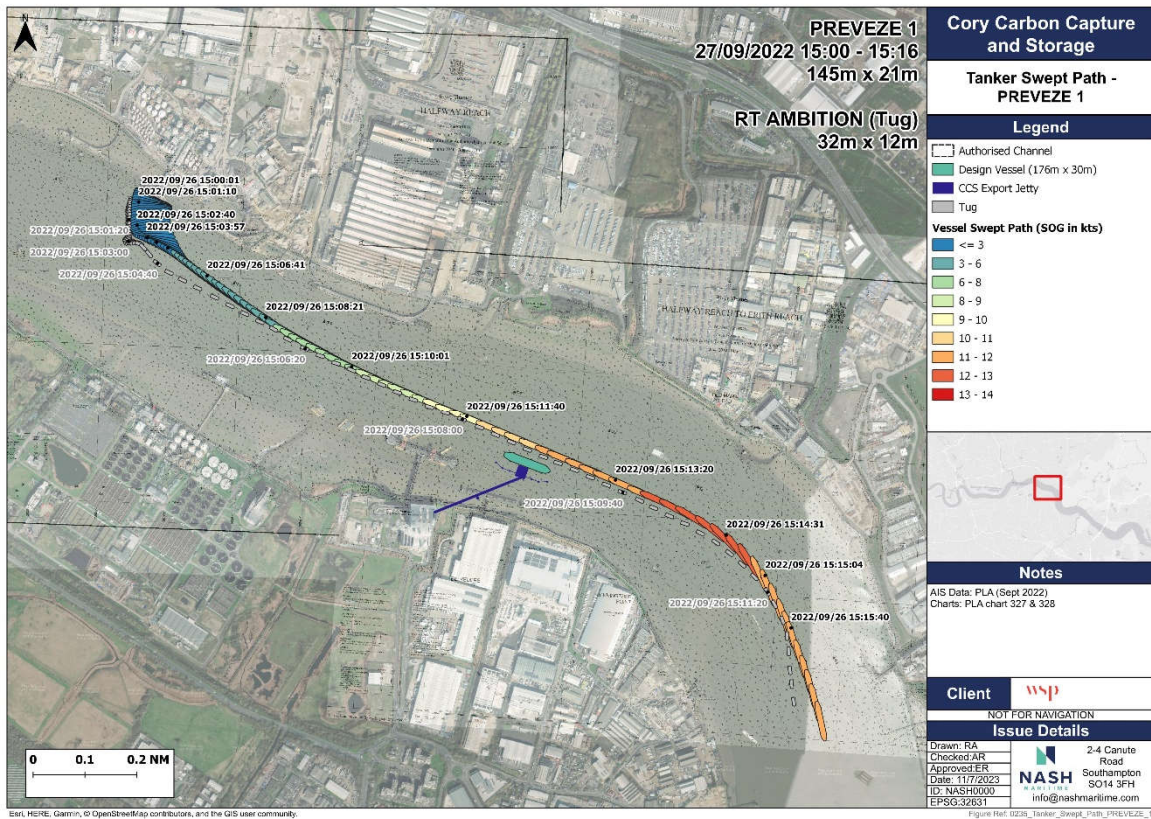


Figure 29: Tanker Swept Path Thunderer Jetty Departure (Preveze 1).

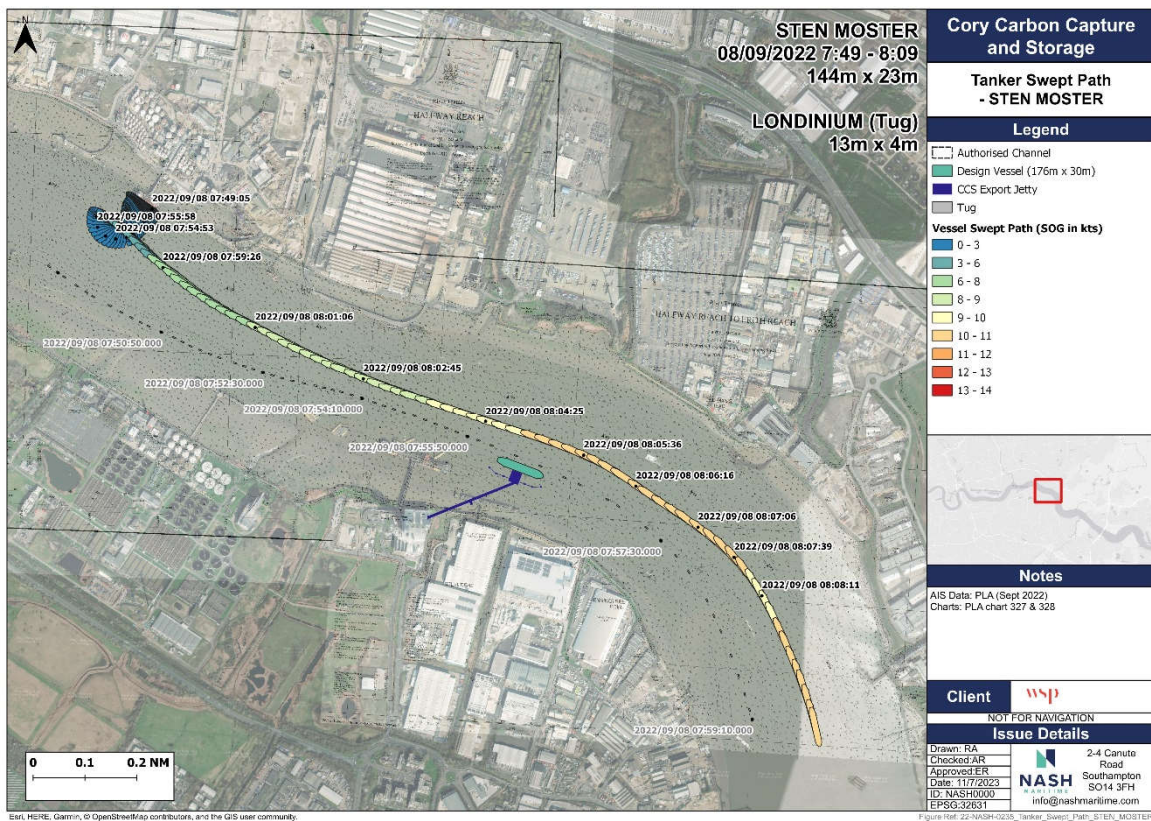


Figure 30: Swept Path Thunderer Jetty Departure (Sten Moster).

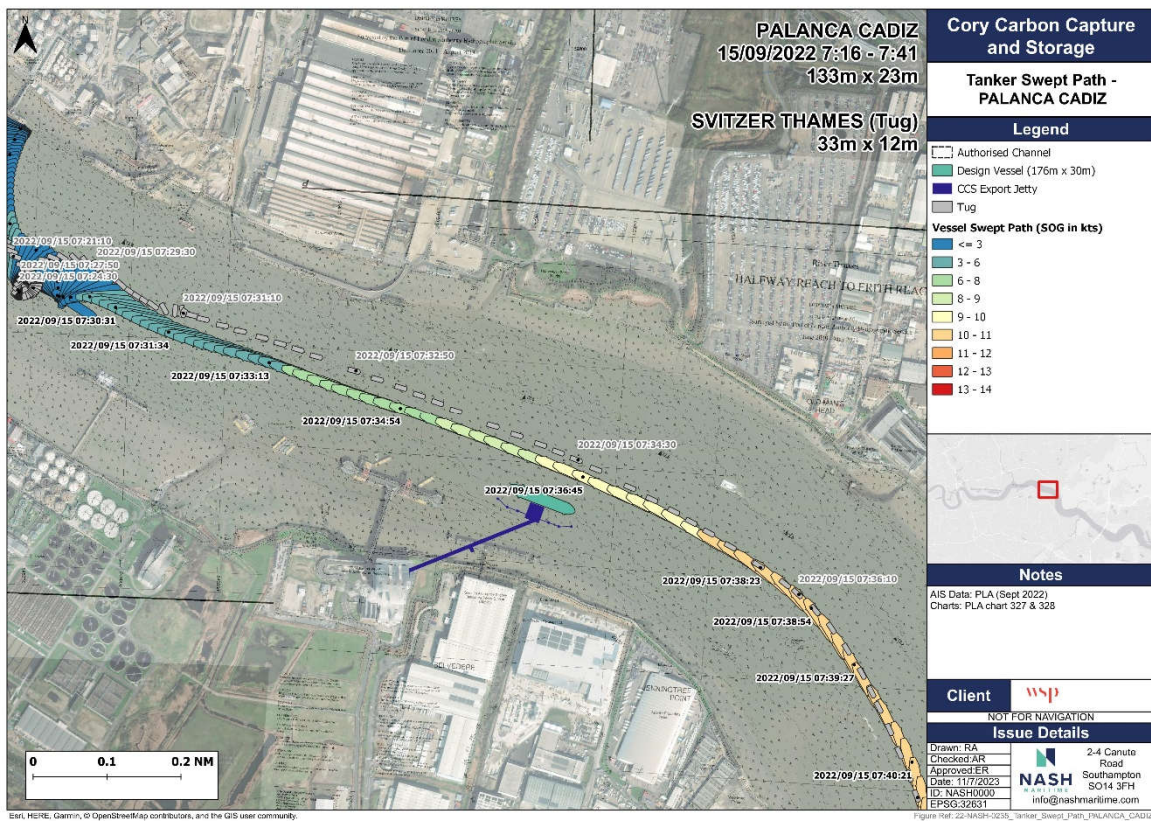


Figure 31: Swept Path Thunderer Jetty Departure (Palanca Cadiz).

The individual tanker swept path transits were then overlaid to create a swept path density plot, (see **Figure 32**). As for cargo vessels, **Figure 32** shows the number of minutes navigated by any part of a tanker vessel within individual 10m x 10m grid cells. Tanker vessel activity is greatest within the approaches to the Thunderer Jetty. Grid cells within the southern portion of the Authorised Channel and in proximity to the Thunderer Jetty where navigated by tanker vessels for less than five minutes within Sep -2022.

There are three distinct areas of vessel exposure south of the Authorised Channel, these areas show movements attributed to the coaster tanker *Distributor* (58m LOA), (see **Figure 33**). It is understood that this vessel operates with a Pilotage Exception Certificate and it is unclear as to why the vessel is shown to be navigating outside the Authorised Channel and south of the Jenningtree channel buoy. During consultation the PLA confirmed that the vessel should not be navigating in this manner.

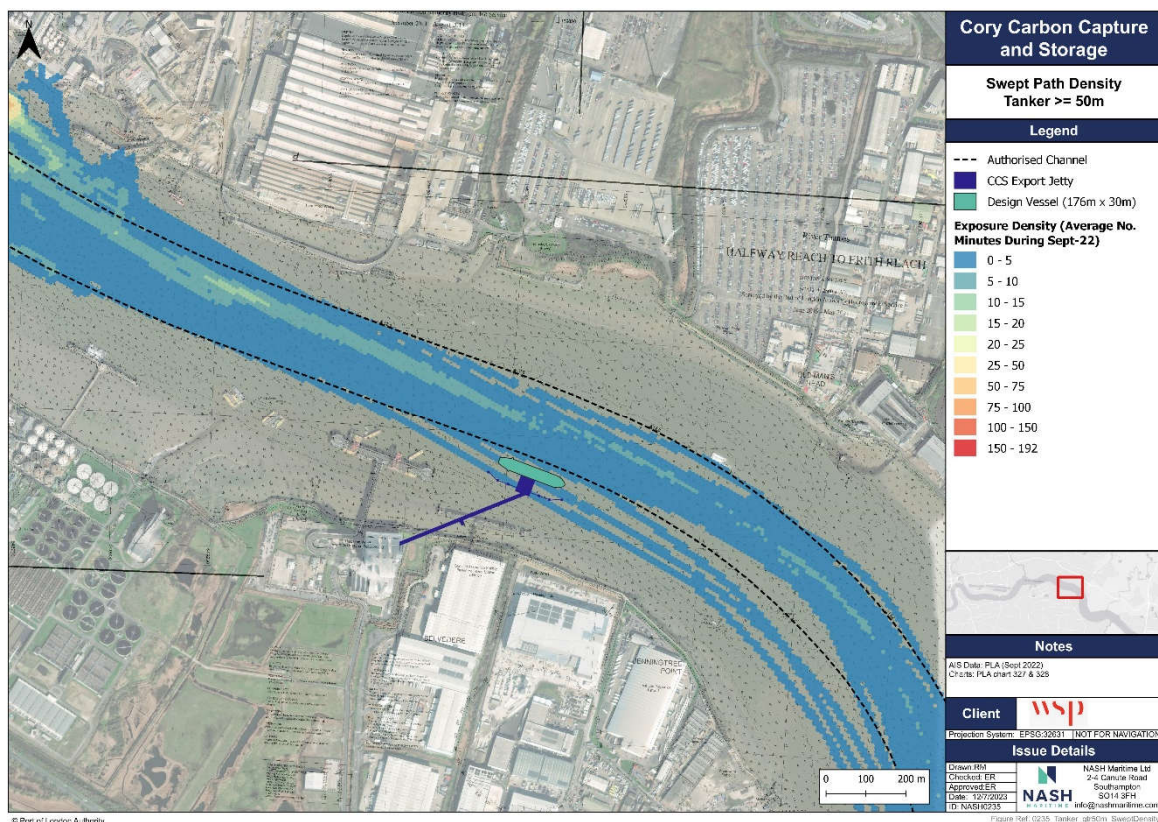


Figure 32: Tanker Swept Path Density Plot.

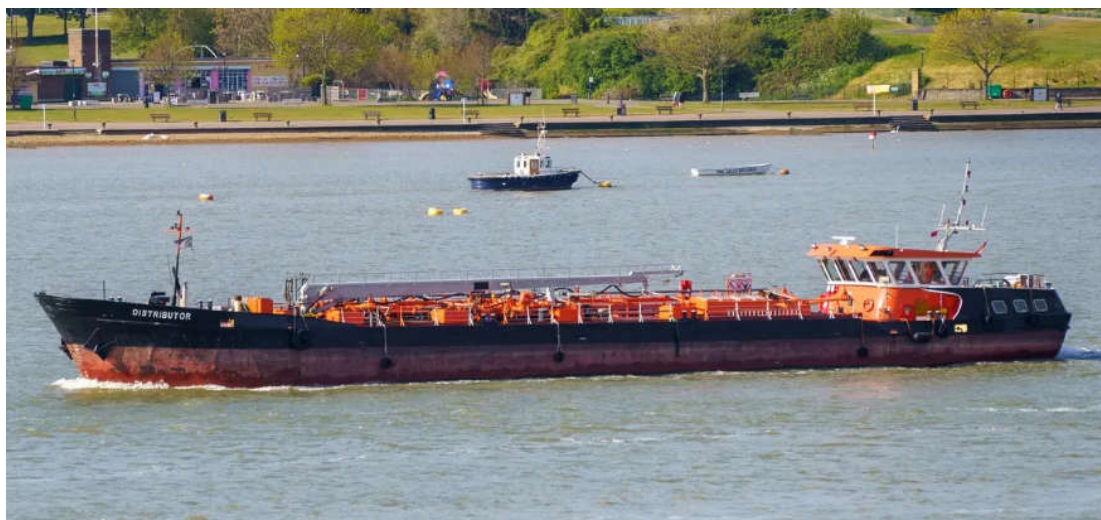


Figure 33: Distributor

3.4.3 Passenger Vessel Swept Path Analysis

In comparison to tanker and cargo vessels, sea going passenger vessel transits are comparatively infrequent. However, passenger vessels operating within Halfway Reach are subject to compulsory pilotage. A representative passenger swept path is shown in **Figure 34**. *Viking Mars* is shown in **Figure 35**.

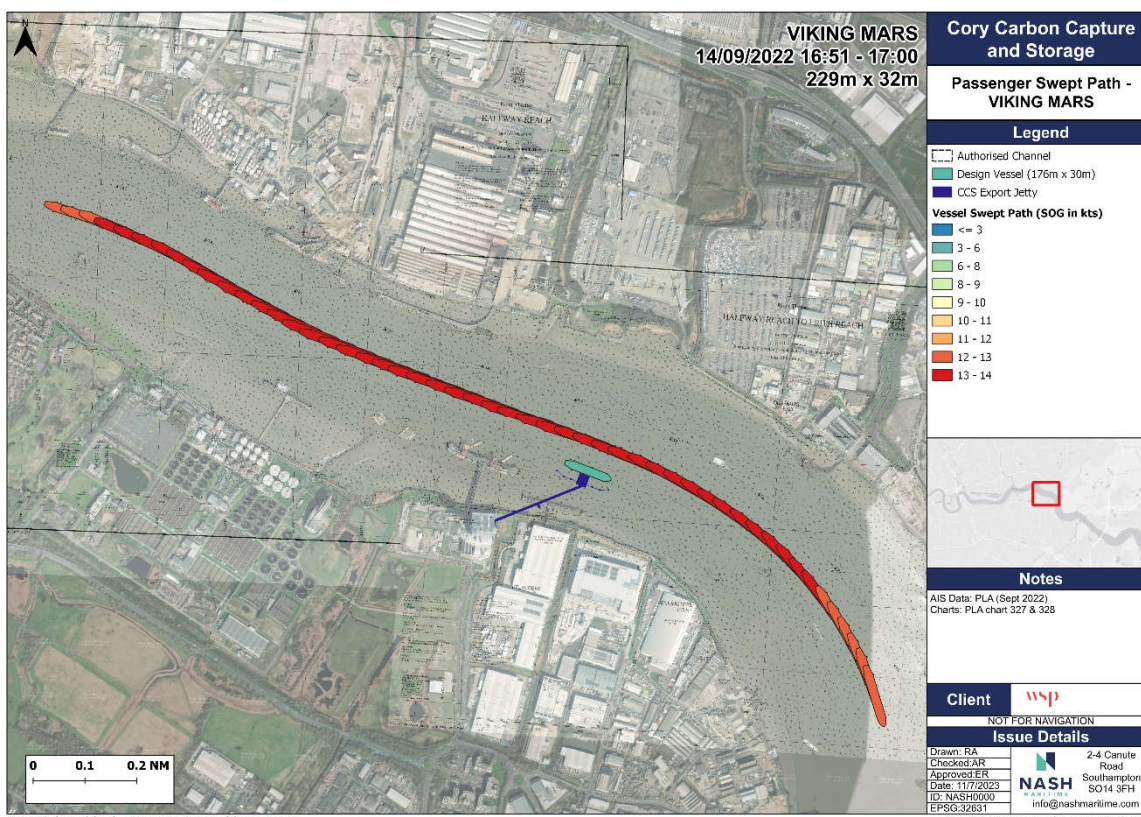


Figure 34: Swept Path, Passenger Vessel Outbound (*Viking Mars*)



Figure 35: *Viking Mars*.

3.4.4 Cory Tug and Barge Swept Path Analysis

In addition to the passing vessel swept path analysis, swept path analysis was also undertaken to examine the interaction between Cory tug and barge operations and the proposed CCS jetty. Indicative swept paths were produced combining AIS tracks from the Sep 2022 dataset, tracks produced from AIS data collected by NASH Maritime during tripping with the Cory lighterage team and drone footage of Cory vessels navigating in the vicinity of the Middleton Jetty.

Indicative swept paths were produced showing Cory tug and barges navigating to the east and inshore of the Middleton Jetty on an ebb tide (see, **Figure 36**) and flood tide (see, **Figure 37**). The swept paths show two extreme manoeuvres, **Figure 36** shows a very tight ebb tide manoeuvre in close proximity to the Middleton Jetty whilst **Figure 37** shows a very wide flood tide manoeuvre which with the CCS jetty in place, would result in the barge making contact.

Note, the flood tide indicative swept path was derived from AIS data collected by NASH Maritime whilst tripping onboard the Cory vessel *Resource*. The Tug master was instructed to undertake a worst-case scenario manoeuvre. In reality, it is highly unlikely that the Tug master would choose to swing round the eastern end of the Middleton Jetty on a strong flood tide. Instead, on a strong flood tide, rather than attempting to swing the barge around the eastern end of the Middleton Jetty (as shown in the swept paths) Cory tugs are more likely to position head to tide and crab across before falling back on to the jetty and mooring the barge — or alternatively navigate through the “link span” under the brow of the main Middleton jetty to remove the need for navigating around the lower end.

Following discussion with the Cory lighterage team and an experienced tug master it was agreed that a representative manoeuvre would likely (spatially) fall between the two presented examples (**Figure 36** and **Figure 37**) and would therefore mean the barges passed well clear of the proposed CCS jetty structure.

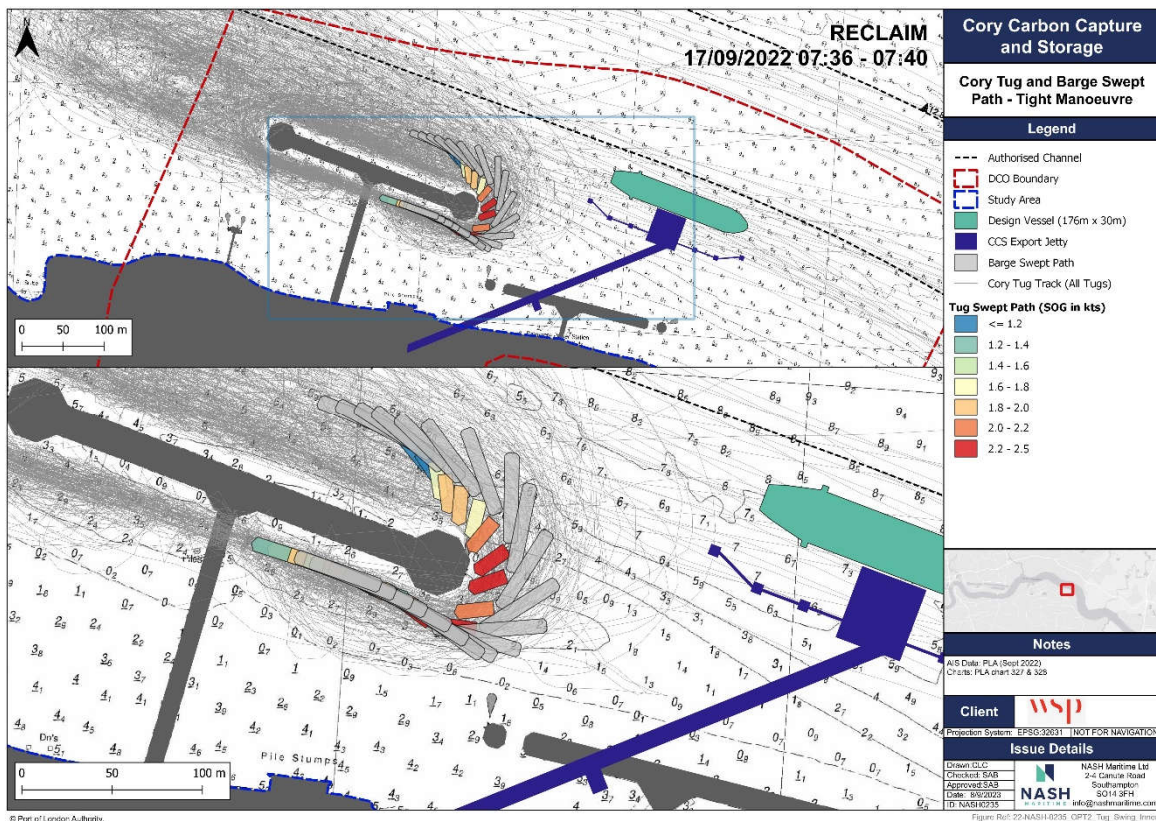


Figure 36: Cory Tug and Barge Ebb tide Berthing.

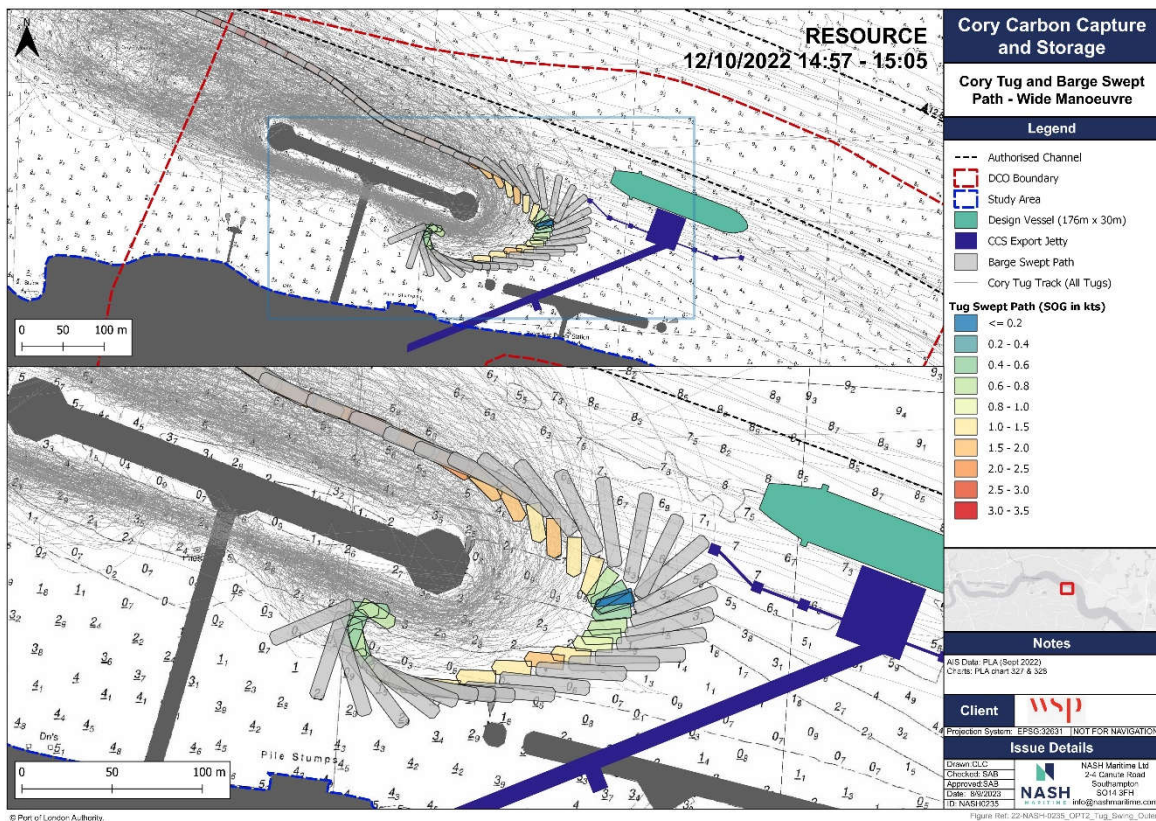


Figure 37: Cory Tug and Barge Flood Tide Berthing.

3.5 NRA VESSEL TRAFFIC BASELINE

It should be noted that for the pNRA, the vessel traffic baseline will differ from that presented above because as the historic data does not account for:

- General increases in vessel traffic likely to come into fruition by 2028, (when the initial phase of the Cory Decarbonisation Project is planned to commence).
- Increases in movements by Cory tug and barges to facilitate supply to Riverside 2.
- Increases in vessel movements resulting from the CCS export operation; and
- Anticipated increases in passenger vessel traffic resulting from several planned developments down and upriver of the CCS jetty site.

3.5.1 General Future Increases in Vessel Traffic

The “Thames Vision 2050 (PLA, 2022)” was launched by the PLA in 2022 and includes goals to:

- Handle 60–80 million tonnes of cargo each year within the Port of London;
- Double inland waterways freight carried on the river from 2 million to 4 million tonnes per year;
- Double the number of people travelling by river to reach 20 million trips per year; and
- Increase participation in sport and recreational activities on and alongside the water.

The Port of London Economic Impact Study (Spring PLA, 2020) showed that the port handled 54 million tonnes of freight in 2019 and handled 9.8 million passenger journeys during April 2018 to March 2019 (9.2 million for April 2019 to Feb 2020; March 2020 data is not available and may be impacted by COVID-19). This study did not report on inland freight or recreational use of the river Thames.

The Thames Vision Progress Review 2016 – 2020 (PLA, 2021d) noted the 2019 peak in port trade at 54 million tonnes and 3.4 million tonnes of (non-project) inland waterways freight. It also reported around 10 million passenger trips per year from 2015 to 2019 and various initiatives which had led to giving more people access to the river Thames for recreation.

The “Future Trade through the Port of London, Alternative Decarbonisation and Growth Pathways (Oxford Economics, 2021)” report published in May 2021 forecasts (under its central/base case scenario) a total of 77 million tonnes of cargo passing through the Port of London by 2050. This is driven by a big increase in inter-port trade in unitised cargo and forest products (timber for construction) offset somewhat by a decrease in liquid bulks (petroleum products) by 2050. Intra-port trade (cargo moving between terminals on the River Thames and cargo from Medway and Brightlingsea) is forecast to remain static out to 2050.

All of the Thames Vision 2050 goals and the Future Trade through the Port of London forecasts will add to the river traffic but are unlikely to materially change the type of vessels transiting the study area or their typical use of that area. The projected increase in vessels carrying unitised cargo and decrease in liquid bulk vessels will likely mainly impact on terminals downstream of the study area and will thus not impact the Project navigation risks.

3.5.2 Increases in Movements by Cory Tug and Barges to Facilitate Supply to Riverside 2

Figure 38 is a schematic that summarises the number of arrivals and departures at the Middleton Jetty, once Riverside 2 is operational. In order to supply both EfW facilities the Cory marine operation will expand to include:

- 16 vessel movements per day (includes arrivals and departures)
- Six upstream arrivals and departures;
- Two downstream arrivals and departures;
- All tug and barge vessel movements will occur over one (daytime) tide other than Tilbury ash movement (downstream) which is over two tides.
- 6 day a week operation;
- This will generate approximately 4,990 tug and barge movements per annum to Middleton Jetty; and
- There will be an increase of approximately 1,870 tug and barge movements to Middleton Jetty as opposed to the current scenario outlined in **Section 3.2.4**.

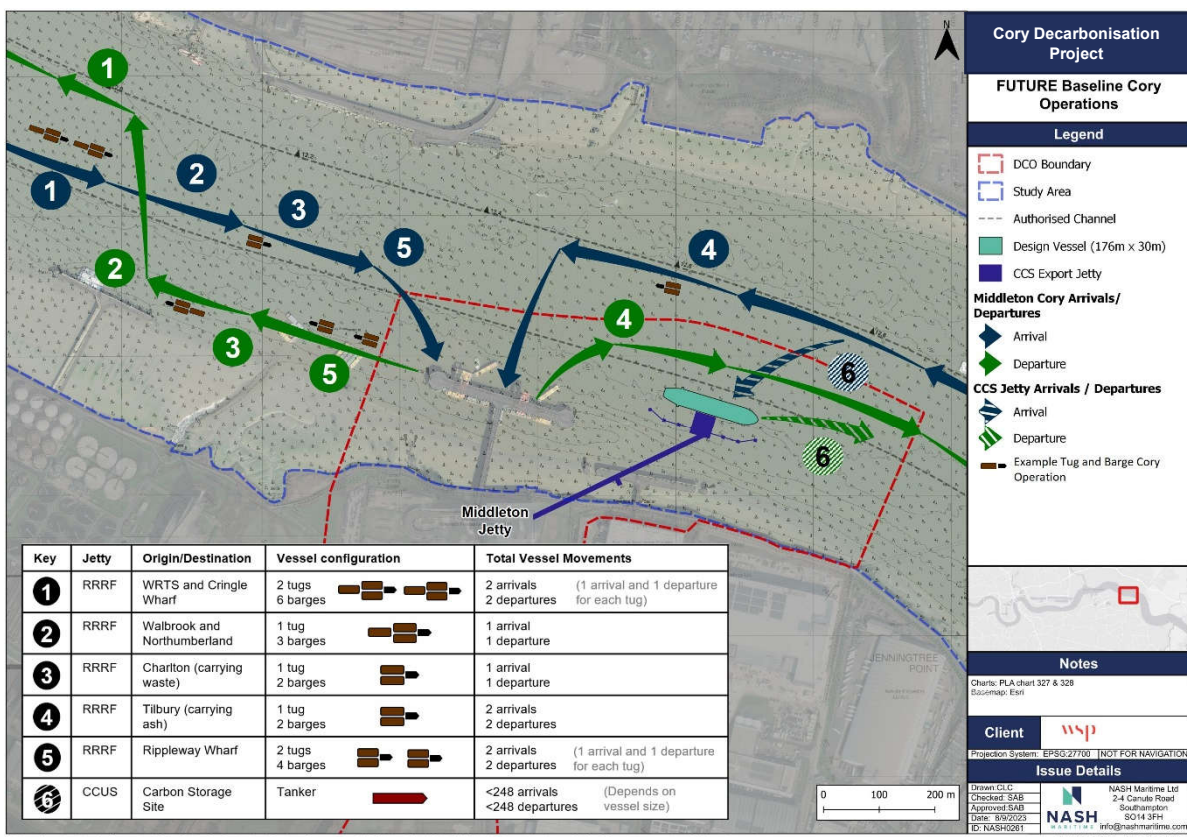


Figure 38: Future NRA Baseline Cory Operation.

The marine operation outlined in this section has already been the subject of an NRA, approved by the PLA. The NRA was conducted by Marico Marine and formed an annex to

the Riverside 2 EIA submission². The NRA concluded that “*additional movements associated with the Riverside Campus would have a Negligible impact upon navigational safety on the River Thames with all hazards remaining inside ALARP with existing risk controls in place*”.

The marine operation outlined in this section and illustrated in **Figure 38** will form the basis for the pNRA assessment for the CCS jetty.

3.5.3 Increases in Vessel Movements Resulting From the CCS Export Operation.

The CCS LCO₂ export operation will result in an increase in vessel movements. The maximum estimate increase in vessel movements is likely to be 496 per annum, including arrivals and departures. This is based on the project utilising a vessel with a cbm³ of 7500.

3.5.4 Anticipated Increases in Passenger Vessel Traffic Resulting From Several Planned Developments Down and Up River of the CCS Jetty Site.

The PLA have mandated that the pNRA should give due to consideration to a planned future increase in intra-port and inter-port passenger vessel activity within Halfway reach. Examples mentioned during consultation included:

- Passenger activity associated with the opening of London Resort;
- Increased Uber Boat by Thames Clipper (UBTC) activity, particularly services to Gravesend and possibly Thurrock; and
- Increases in the number of cruise vessels arriving and departing Greenwich cruise terminal.

At present, the extent to which these perceived future increases in passenger vessel activity will materialise is unknown. Consultation will be undertaken during the pNRA to help inform assumptions around future passenger vessel traffic and collision modelling will be undertaken to inform an understanding of any resulting risk in hazard likelihood and severity.

² <https://infrastructure.planninginspectorate.gov.uk/wp-content/uploads/projects/EN010093/EN010093-000245-6.3%20ES%20Technical%20Appendices%20B.2%20Navigational%20Risk%20Assessment.pdf> – Accessed Aug 2022

4. STAKEHOLDER CONSULTATION

This section summarises the key consultation meetings undertaken to inform this pNHA but for fullness also includes summaries of the consultation meetings undertaken to inform the initial pNHA.

The purpose of the consultation was to:

- Identify any key navigation issues/hazards and potential risk control mitigation measures for incorporation into the CCS Jetty design and operation;
- Validate the baseline navigational environment; and
- Review the scope and requirement for the pNRA.

Consultation meetings were held with the Cory lighterage team and PLA.

Summaries of the various consultation meetings are presented in chronological order.

4.1 PLA SCOPE CONSULTATION (INITIAL PNHA)

An introductory meeting, hosted by WSP was held with the PLA. The purpose of the meeting was to review the NRA scope and methodology in order to incorporate regulator feedback.

The meeting was held on 22-Jul between 10am and 11am and was attended by:

- **PLA**
 - Lucy Owens (LO) – Deputy Director of Planning and Development;
 - Michael Atkins (MA) - Senior Planning Officer; and
 - Darren Knight (DK) - Deputy Harbour Master.
- **Cory**
 - Ross Brown (RB) – Project Lead, Carbon Capture and Storage; and
 - James Andrews (JA) – Head of Lighterage and Ship Repair.
- **WSP**
 - Jonathan Pierre (JP) – Associate Director; and
 - Jane Templeton (JT) – Principal Engineer, Maritime.
- **Hendeca**
 - Kirsten Berry (KB) – Consultant working on behalf of Cory development team.
- **NASH Maritime Ltd**
 - Ed Rogers (ER) – Project Director;
 - Nigel Basset (NB) – Mariner and Subject Matter Expert;
 - Sam Anderson-Brown (SAB) - Principal Consultant; and
 - Adam Fitzpatrick (AF) – Senior Consultant.

Key points of discussion, relating to the NRA scope, are summarised below:

- NRA should give due consideration to future vessel traffic baseline resulting from increased passenger vessel traffic in proximity to the proposed jetty.
- It was suggested that Lydia Hutchinson (PLA Marine Manager) and David Allsop (Assistant Harbour Master) should be included in future consultation meetings.³
- There were no further comments on the NRA scope which was felt to be appropriate to the assessment.

4.2 CORY CONSULTATION (INITIAL PNHA)

A consultation meeting was held on 02-Aug-22 between 12:30 and 13:30 to discuss current and future baseline Cory lighterage operations. The specific aims of the consultation meeting were to:

- Validate understanding of the current Cory lighterage operations at the Middleton Jetty and more broadly between Tilbury and the Western Riverside Transfer Site.
- Refine understanding of the uplift in tug and barge movements required to support the increase in supply of refuse material to the Middleton Jetty once Riverside 2 is operational.
- Identify any navigational issues associated with interaction between the lighterage operation at the Middleton Jetty (giving due consideration to the increased vessel movements required to support Riverside 2) and the LCO₂ export operation and planned infrastructure.

The meeting was attended by:

- **Cory:**
 - James Andrews (JA) – Head of Lighterage and Boat Maintenance.
- **WSP:**
 - Jane Templeton (JT) – Principal Engineer, Maritime.
- **NASH Maritime Ltd:**
 - Sam Anderson-Brown (SAB) – Principal Consultant; and
 - Adam Fitzpatrick (AF) – Senior Consultant.

A summary of the key discussion points is outlined below:

- JA suggested some minor amendments to vessel movement schematics produced by NASH.
- JA explained that the positioning of the proposed CCS jetty means that additional barge moorings which are being consulted on with the PLA can now no longer be installed directly downstream from the Middleton Jetty. Additional barge moorings are required and will need to be positioned either upstream of the existing barge moorings and in line with the Thames Water jetty or to the north of the Authorised Channel. Positioning of the additional barge moorings will bring differing operational and navigational risk challenges. JA would prefer the moorings were located upstream of

³ Following conversation between NASH and the PLA it was agreed that Lydia Hutchinson and Cathryn Spain (Senior Harbour Master) would represent the PLA in consultation meetings.

the existing moorings. JA to keep SAB informed of progress regarding installation of additional barge moorings.

- Adequate navigable width will be required between the berthed tanker / CCS jetty and the Middleton Jetty to enable Cory tugs to manoeuvre barges on to the inshore side of the jetty. JA anticipates that adequate navigable width would be no less than 125m. NASH to produce scale drawing to review navigable width and report findings back.
- JA noted that there would potentially be logistical challenges in servicing the additional barges at Middleton Jetty with the available mooring space, infrastructure and equipment.

4.3 FORMAL PNHA CONSULTATION (INITIAL PNHA)

A consultation meeting we held with the PLA on 09-Aug-2022 between 11:00 and 12:00 via videoconference. The stated aims of the meeting were to:

- Validate the baseline navigational environment;
- Review the identified preliminary hazards and key navigational issues; and
- Discuss next steps including ship bridge simulations and the Preliminary Navigation Risk Assessment.

The meeting was attended by:

- **PLA:**
 - Lydia Hutchinson (LH) – Marine Manager; and
 - Adam Layer (AL) - Harbour Master.
- **Cory:**
 - Ross Brown (RB) – Project Lead, Carbon Capture and Storage; and
 - James Andrews (JA) – Head of Lighterage and Boat Maintenance.
- **WSP:**
 - Jane Templeton (JT) – Principal Engineer, Maritime
- **NASH Maritime Ltd:**
 - Sam Anderson-Brown (SAB) - Principal Consultant; and
 - Adam Fitzpatrick (AF) Senior Consultant.

The following key points were discussed:

- SAB noted that the pNRA will take a precautionary approach regarding the design vessels, with the largest vessel and maximum number of vessels moves used to inform pNRA assumptions;
- SAB commented that the project design vessel will likely be tidally restricted and asked whether there are any other tidally restricted vessels arriving / departing berths or on passage through Halfway Reach. AL to provide data for this;
- AL and LH agreed that the baseline characterisation presented was representative of current river activity;

- LH asked about the AIS data being used as some of the slides in the section indicated 2018 data was used. SAB explained that the information presented on the slides in question was taken directly from the NRA for Riverside 2, hence the reference to 2018 data. Analysis for the pNHA has been undertaken using 2021 data. AL commented that there has been a significant increase in activity in 2022 so the most recent data should be used where possible;
- SAB presented the preliminary hazards to vessel navigation associated with the CCS project which comprise 16 hazards in the following 4 categories:
 - Collision;
 - Contact;
 - Grounding; and
 - Breakout.
- SAB noted that the limited visibility at Jenningtree Point was a potential issue and the tidal set may affect berthing at the proposed jetty location. AL agreed;
- LH said that the interactions with passenger vessels in the area given the future increase in movements is potentially significant. SAB asked whether traffic risk modelling will be required. LH confirmed that it will and the PLA would expect to see this in the pNRA. LH and AL confirmed that no other significant impacts or hazards in addition to those identified and outlined in the presentation were envisaged at this stage; and
- SAB discussed the ship bridge simulations that will be conducted to test the viability of the jetty and any ship handling issues that may arise. SAB asked AL whether the PLA simulator could be used. AL said that the PLA simulator may not be appropriate for this, given current limitations / capability. SAB and AL to discuss further.
- SAB introduced the scope for the pNRA to support the DCO application and asked about other stakeholder consultees for the area. LH noted Ford's Ro-Ro berth regularly have vessels swinging in the area, GPS Marine regularly transit and that a River Pilot should be consulted. LH to confirm if any further stakeholders need to be consulted.
- SAB agreed to carryout high-level consultation with Erith Yacht club to ascertain the geographic boundary of the clubs sailing area⁴.

4.4 CONSULTATION REGARDING THE USE OF THE PLA SIMULATOR (INITIAL PNHA)

As per an action to further discuss the option for the project to utilise the PLA simulator (see **Section 4.2**) a call between Sam Anderson – Brown (SAB), Principal Consultant, NASH Maritime Ltd and Adam Layer (AL) Harbour Master, PLA was arranged. The call took place via video conference, the key discussion points are summarised below:

- PLA simulator does not have the capability to model new infrastructure;

⁴ Following further discussion with the PLA and amongst the NASH Project it was determined that consultation at this stage would be premature. Erith Yacht Club will be consulted in full as part of the pNRA consultation exercise.

- It is unlikely that the PLA simulator will be able to model a number of design vessels and or differing metocean conditions;
- PLA do not want to offer the simulator for consultancy work at this time because of limited capability;
- Support from external provider has been withdrawn so PLA lack the ability to model various design vessels;
- PLA river pilots could be made available for simulations (charge of £600 per day plus expenses); and
- PLA would like to understand operational limitations for berthing, this will form a key risk control and should be explored in detail.

4.5 PNHA FINDINGS WORKSHOP (INITIAL PLA)

A pNHA consultation meeting we held with the PLA on 22-Sep-2022 between 16:00 and 17:00 via videoconference. The aim of the workshop was to present the key findings of the pNHA report and to give the PLA a chance to comment on the findings prior to issue of the pNHA report.

The workshop was attended by:

- **PLA:**
 - Lydia Hutchinson (LH) – Marine Manager; and
 - Adam Layer (AL) - Harbour Master.
- **WSP:**
 - Jane Templeton (JT) – Principal Engineer, Maritime
- **NASH Maritime Ltd:**
 - Sam Anderson-Brown (SAB) - Principal Consultant;
 - Adam Fitzpatrick (AF) Senior Consultant; and
 - Nigel Basset (NB) – Associate Consultant.

The key discussion points are summarised below:

- LH and AL observed that they felt the key navigational issues had been identified.
- AL commented that he saw the definition of appropriate operational limitations as a key risk control measure.
- In relation to the recommendation that navigational modelling be undertaken AL said that the project team needs to show that the project and its operations do not significantly affect safety of navigation and, given the key issues that have been identified, he didn't see how this could be achieved without ship bridge simulation.

4.6 PLA CONSULTATION (PNHA REVISION)

A pNHA consultation meeting we held with the PLA on 29-Mar-2023 between 15:00 and 16:00 via videoconference. The meeting had three stated aims and objectives, namely to:

- Recap the findings of the initial pNHA, including the preliminary hazard identification exercise;
- Discuss the revised CCS jetty layouts; and
- Discuss the next steps for navigation safety work including the ship bridge simulations and Scope of the pNRA.

The workshop was attended by:

- **Cory Environmental:**
 - Richard Wilkinson (RW) – Project Director
- **PLA:**
 - Lydia Hutchinson (LH) – Marine Manager; and
 - Adam Layer (AL) - Harbour Master.
- **WSP:**
 - Jane Templeton (JT) – Principal Engineer, Maritime
- **NASH Maritime Ltd:**
 - Ed Rogers (ER) - Director
 - Sam Anderson-Brown (SAB) - Principal Consultant;

The key discussion points are summarised below:

- SAB outlined the key drivers for the change in jetty location:
 - Original location was closer to the shore and dredging would have been required in the intertidal zone with serious environmental consequences, which the project team are aiming to avoid;
 - Interaction between the existing Cory tug and barge operation and the LCO₂ tanker operation. Project team consulted with Cory Tug master and conducted swept path analysis which showed the proposed revised location is preferred as the offset between the existing Middleton Jetty and proposed LCO₂ jetty gives adequate navigable width for barge movements (particularly on a strong flood tide);
 - Greater clarity on design vessel and subsequent dredging requirements; and
 - Aiming to futureproof the structure for potential hydrogen bunkering facilities in the future.
- SAB explained that NASH are revising the pNHA to take account any perceived changes in navigational risk profile resulting for the change in jetty location.
- NASH summarised key findings from the preliminary hazard analysis. PLA confirmed this was an accurate summary of previous works.
- The revised CCS Jetty design was presented and analysis was shown illustrating passing cargo and tanker transits in proximity to the revised CCS Jetty location. This analysis was developed to understand spatially how much searoom passing vessels need to navigate, rather than just looking at vessel tracks:

- NASH noted that passing transits in close proximity to the proposed jetty are largely associated with the Ford's jetty Ro-Ro operation. It was also noted that vessels associated with this operation passed the proposed jetty location at relative low speed.
- It was agreed that consultation with the vessel operator should be expedited to understand the full impact of the proposed jetty location on the Ford's jetty Ro-Ro operation.
- An examination of passing cargo and passenger swept paths as well as a review of swept paths showing tanker vessel arrivals / departures at Thunderer jetty revealed that vessels are passing to the north of the proposed jetty location, well within the authorised channel.
- The bunker barge *Distributor* was the exception to this as was noted navigating well outside (south) of the authorised channel.
- PLA stated they are currently not unhappy with the proposals, subject to further consultation to understand what is causing Ford's jetty vessels to transit at the edge of the Authorised channel.
- It was noted by the PLA that the structure is on the south side of the river, therefore approaching vessels have long line of sight to see the infrastructure. It is likely that traffic will habituate to take in to account the location of the jetty once in situ as there is adequate navigational width in this location.
- PLA further noted that only vessels with a PEC are navigating the southern limit of the authorised channel. Those vessels that have a PLA pilot onboard pass well north. It may be an option to test the PEC holders with ship simulation to assess impact of infrastructure.
- The scope of the ship bridge simulations was discussed and the PLA noted that the specification was sufficiently broad.

4.7 CORY CONSULTATION (PNHA REVISION)

A pNHA consultation meeting was held with the James Andrew's (Head of Lighterage and Ship Repair) at Cory Environmental on 19-Apr-2023 between 13:00 and 13:30 via videoconference. The purpose of the meeting was to understand the possible impact of each CCS design iteration on the existing Cory lighterage operation at Belvedere. Note, the Cory lighterage team had already been consulted by WSP and had input in to the revised design selection process. The lighterage team had therefore already confirmed they were comfortable with the design iteration presented to the PLA on 29-Mar-23 and within this pNHA report. However, for the purposes of the pNHA it was considered important to fully examine any navigational considerations arising from the various design iterations and any associated impact these may have on the Cory Lighterage team.

Two design iterations were presented in the meeting:

- **Option 2:** Located approx. 50m south of the Authorised Channel (this is the option presented in this pNHA and discussed during consultation with the PLA); and
- **Option 3:** Located approx. 80m south of the Authorised Channel.

The meeting was attended by:

- **Cory Environmental:**

- James Andrews – (JA) – Head of Lighterage and Ship Repair.
- **NASH Maritime Ltd:**
 - Sam Anderson-Brown (SAB) - Principal Consultant;

The key discussion points are summarised below:

- SAB explained that the purpose of the meeting was to understand the possible variances in impact of two design iterations on the existing Cory lighterage operation at Belvedere.
- JA felt that neither Jetty design would have an adverse impact on Cory's existing lighterage operation and that the lighterage team would be able to continue their operation should either option be taken forward. JA based his judgement on his own first-hand experience of operating in the area and knowledge of previous incidents and existing operational obstructions.
- JA mentioned that the western dolphin of the now disused Belvedere power station jetty (potentially to be demolished as part of this proposal)⁵ is located in closer proximity to the Middleton Jetty than the proposed access brows for both proposed jetty options, this dolphin has never been hit by a Cory tug and barge. Equally, the navigable width between the western end of the Middleton Jetty and the existing Cory barge moorings is less than the proposed navigable width between the Middleton Jetty and proposed jetty.
- JA suggested that several pellet buoys be put down to simulate the location of the proposed jetty and brow and to enable further decision making on the extent to which the proposed jetty location would constitute a contact hazard.

4.8 ADDITIONAL CONSULTATION WITH THE CORY LIGHTERAGE TEAM

Further to the consultation meeting conducted on 19-Apr-23, (see **Section 4.7**). James Andrews and Tom Jones (TJ (Cory Tugmaster)) attended ship bridge simulations, at HR Wallingford on 24 and 25 Apr 2023. The purpose of the simulations was to model the arrival of the LCO₂ tanker at the proposed Jetty location.

JA and TJ were present to comment on the impact of the tanker approach / departure on Cory's lighterage operation. However, as part of the simulations there was also an opportunity (facilitated by HR Wallingford) for TJ to undertake simulation runs utilising a Cory Tug ship model with the Middleton Jetty and Option 2 / Option 3 of the proposed Jetty design modelled. TJ undertook runs to the shore side downstream berth.

Following the simulation runs undertaken by TJ and a review of the plots SAB had previously provided to JA, TJ concluded that that neither Jetty design would have an adverse impact on Cory's existing lighterage operation and that the lighterage team would be able to continue their operation should either option be taken forward.

As a precautionary measure TJ concluded that the placement of pellet buoys (as previously suggested by JA) would be a worthwhile exercise and would prove that the positioning of proposed jetty (Option 2 or 3) would have no impact on the existing lighterage operation.

⁵ It is possible at this stage that the Applicant may choose to retain the Belvedere Power Station Jetty (disused jetty), a decision on this will be determined as part of the ongoing design development.

5. SHIP BRIDGE SIMULATIONS

The initial pNHA work identified key navigational issues associated with the project and recommended the requirement for ship bridge simulations to inform further iterations of the jetty design.

In order to fulfil this recommendation NASH Maritime instructed HR Wallingford to undertake ship bridge simulations, which took place on 24 / 25 April 2023. The findings of the ship bridge simulations are reported in full in 22-NASH-0235_Cory_Decarb_Project_R01-00

The aims and objectives of the ship bridge simulations were to inform:

- Operational limitations for berthing (a requirement endorsed by the PLA during pNHA consultation);
- Optimum alignment and positioning of the jetty to mitigate as much as possible the effects of the tidal stream;
- Identification of ship handling issues; and
- Future baseline berthing operations, for inclusion into further studies on navigation safety.

In total 23 simulation runs were undertaken, with Port of London Authority Pilots manning the simulated vessels and of the 23 runs undertaken one run was scored as Fail (Run 6) and one run as Marginal (Run 4). Two Jetty Options were considered during the simulations Jetty Option A (Option 2) and Jetty Option B (Option 3).

Following a review of the simulation runs the following conclusions were made:

- It was agreed that the alignment and positioning of both Jetty Option A and Jetty Option B were satisfactory and that no further work was required to alter the jetty alignment and positioning;
- The simulations illustrated that vessel departures will likely be limited to be no later than HW +1.5 hours taking in to account the time to swing the vessel on an ebb tide port side departure, the effects of the Ebb tide flow and the UKC required on passage (due to limiting depth of 6.8m in Erith Reach and further to seaward);
- Simulations showed that there was adequate navigable width with the jetty in position for berthing vessels to safely manoeuvre with appropriate towage in place for on jetty and off jetty winds up to a speed of 25 knots. Wind direction is therefore not considered to be a limiting operational factor;
- An upper wind speed limit of 20 knots, gusting 25 knots is deemed a suitable wind speed limitation. This limit was set on the basis that the jetty is situated in a relatively sheltered location and if wind speeds at the jetty location were to reach 25 knots it would in all likelihood reach substantially higher speeds in more exposed areas further to seaward. This being the case, it is unlikely that the river passage would be commenced for reasons of ship control;
- No significant ship handling issues were identified during the simulations, and in all instances, vessels were able to swing off the berth in ebb and flood tide conditions. In certain adverse weather conditions during the spring ebb tide it may be considered appropriate for vessels to swing further upstream between Ford's jetty and Thunderer jetty to give more time and navigable width to manoeuvre;

- Sight lines on approach to the proposed CCS jetty were not felt to be an issue during simulations and therefore are unlikely to have a bearing on ship handling issues; and

The following recommendations are made:

- The navigation risk assessment for the proposed jetty should give due consideration to the installation of a (lateral/south cardinal) navigation mark to the north of the authorised channel, in line with the proposed jetty, to indicate the boundary of navigable water available during swinging; and
- Due consideration should be given to vessels taking a shallow approach when arriving and departing the jetty to ensure the berthing angle at the east and west extremities of the dredged berth pocket are appropriate.

During the simulations the following observations were also made by the PLA pilots:

- Due to the close proximity of outward passing traffic and rapidly shallowing depths inshore of the berth draw off / interaction damage and / or suction off the berth is a possibility, particularly in the case of Jetty Option A which is the closest option to the navigation channel. It is therefore recommended that a dynamic mooring analysis is undertaken to determine the hydrodynamic effect on moored tankers at the jetty when large ships (of the types and sizes currently using passing the proposed location) pass the proposed jetty locations, at the various states of tide that this happens. If following this study, the effect is deemed to be significant, then consideration will need to be given in the navigation risk assessment for the proposed jetty to require speed limitations for passing vessels in the vicinity of the proposed jetty when vessels are alongside;
- Due to the tidal range it was suggested a shore gangway be included within the jetty design to ensure safe access and to avoid lengthy delays to turnaround time due to time taken to rig/de-rig ship's gangway;
- Sufficient lateral offset of the dolphins should be provided to ensure that breast and stern lines can be of sufficient length to take into account the rise and fall of tide; and
- It should be ensured that mooring hooks are designed to enable springing on/off and the jetty.

These recommendations and observations will be further explained as part of the pNRA and will inform the design of the proposed jetty and the choice between the options under consideration discussed in Chapter 3: Consideration of Alternatives (Volume 1) of this PEIR.

6. PRELIMINARY NAVIGATION HAZARD REVIEW

The pNHA was conducted based on a review of the CCS jetty concept design and marine operation, vessel traffic analysis, consultation with the PLA and Cory, ship bridge simulation findings and the expertise of the project team.

The following section presents:

- A summary of the preliminary hazards identified, (see **Section 6.1**);
- A summary key navigational issues that will influence hazard risk scoring, (see **Section 6.2**); and
- A summary of the preliminary risk control measures identified, (see **Section 6.3**).

6.1 PRELIMINARY HAZARD IDENTIFICATION

The NASH project team undertook a hazard review to identify preliminary hazards associated with the proposed CCS jetty design and marine operation. Four hazard types were identified:

- **Collision** - when two vessels collide underway or the striking of an anchored or moored vessel by a vessel underway;
- **Contact** - a vessel making contact with a Fixed or Floating Object (FFO) (e.g. jetty, quay, pile, buoy);
- **Grounding** - a vessel coming in to contact with the river bed or shoreline; and
- **Breakout** - a vessel breaking away from a securely moored position (or anchorage) and may result in damage to the vessel and / or non-vessel objects (e.g. mooring buoy).

A review of the baseline vessel traffic analysis was also undertaken to define vessel types within the study area. The following vessel categories were identified:

- **Project vessel**- a LCO₂ tanker arriving, departing and berthed at the CCS jetty;
- **Cargo vessel** – seagoing vessels including general cargo vessels, bulk carriers, container ships and commercial dredging vessels;
- **Tankers** – seagoing vessels transporting liquid cargos;
- **Passenger vessel** - seagoing and inland waterway passenger carrying vessels, including cruise ships, ferries and High-Speed Passenger Craft;
- **Tug and Service vessel** – intra port tug and barges, Search and Rescue (SAR) vessels, port service and patrol vessels, vessels engaged in underwater operations and military vessels;
- **Cory tug and barge** – a vessel operated by the Cory lighterage team and undertaking activity in the vicinity of the Middleton Jetty; and
- **Recreational vessel** – vessel engaged in private pleasure activity including motorboats, yachts, unpowered craft (e.g. sailing dinghies) and Personal Water Craft (PWC).

The hazard types were then combined with the vessel categories to identify and define unique preliminary navigation hazards. The hazards identified are summarised in **Table 6**.

Table 6: Preliminary Navigation Hazards

Hazard Type	Preliminary Hazard Name
Collision	Project vessel in collision with cargo vessel
	Project vessel in collision with tanker
	Project vessel in collision with passenger vessel
	Project vessel in collision with recreational vessel
	Project vessel in collision with tug and service vessel
	Project vessel in collision with cory tug and barge
	Collision between third party vessels resulting from action taken to avoid project vessel
Contact	Project vessel makes contact with CCS jetty
	Project vessel makes contact with existing infrastructure (e.g. Middleton Jetty)
	Cory tug and barge makes contact with CCS jetty
	Third party vessel makes contact with CCS jetty
Grounding	Project vessel grounds
	Cory tug and barge grounds as a result of avoiding project vessel
	Third party vessel grounds as a result of avoiding project vessel.
Breakout	Project vessel breakout
	Cory tug and barge breakout as a result of CCS marine operation
	Third party vessel breakout as a result of CCS marine operation

6.2 KEY NAVIGATIONAL ISSUES

The following section summarises the key navigational issues identified during the initial pNHA exercise along with one new navigational issue identified during the pNHA revision. A high-level commentary on the varying impacts the key navigational issues are likely to have on hazard likelihood and consequence is included in this section. In some instances, further work has now been undertaken to address the issues raised in the initial pNHA. In such instances, the original commentary is included along with a summary paragraph giving further context as to how further work / operational and / or design development has either reduced the significance of the identified key navigational issue or altered the nature of the original identified navigational issue. **Table 7** summarises the status of each of the identified key navigational issues.

Table 7: Status of Identified Key Navigational Issues.

Identified key navigational issue	Revised pNHA status
Impact of tidal stream	Felt to be a less significant issue following ship bridge simulations
Sight lines	Not felt to be an issue following ship bridge simulations
Positioning of additional Cory barge moorings	Status unchanged
Future increase in vessel traffic	Status unchanged
Proximity of CCS jetty to Middleton Jetty	Concern largely addressed as a result of design alterations.
Tidal restrictions to operation	The nature of potential tidal restrictions is further understood but will remain a key navigational issue for the project
Proximity of moored tanker and CCS jetty to passing outbound vessels (including impact of draw off)	Additional navigational issue resulting from revised design

6.2.1 Impact of the tidal stream

The initial pNHA stated:

“Vessels approaching the proposed jetty from seaward and berthing on a flood tide, would likely stay on the north side of Halfway Reach and swing to port once safe to approach the berth.

*As outlined in **Section 2.4**, the orientation of the proposed jetty is potentially not aligned with the flood tidal set. The current flow in the vicinity of and through the proposed jetty may affect vessels as they are manoeuvring to berth. As these vessels are manoeuvring at slow speed, the resulting effect of variations in tidal flow may lead to a turning moment. This would add risk of jetty contact during the berthing manoeuvre and make it technically difficult to berth the vessel and maintain position alongside whilst mooring. Conversely for an ebb tide berthing there may be tidal set through the berth which would need to be taken into account. The effect of the tidal stream when combined with offshore wind and interaction from passing vessels could lead to vessel ranging or breakout on the CCS berth.*

Further analysis will need to be undertaken to ascertain the full impact of the tidal set throughout the full tidal cycle. This should include analysis of the tidal set and rate throughout the spring and neap tidal cycle, how this may affect manoeuvring vessels and the mooring arrangements required.”

The impact of the tidal stream is felt to be a less significant issue following the findings of the ship bridge simulations. No significant ship handling issues were identified during the simulations, in all instances vessels were able to swing off the berth in ebb and flood tide conditions. In certain adverse weather conditions during the spring ebb tide it may be considered appropriate for vessels to swing further upstream between Ford’s jetty and Thunderer jetty as previously described.

The ebb tidal flow at the proposed jetty is significantly stronger than the flood. The ebb tide generally flows at a faster rate in the river Thames than the flood, primarily due to fluvial flow being to seaward. The ebb flows in a direction aligned with the orientation of the jetty because of the geography of Halfway Reach. In contrast the flood tidal flow does not exactly follow the line of the jetty due to the proximity of Jenningtree bend, instead running several degrees

offset through the jetty from the southeast, particularly towards the eastern end. However, from data, simulations and as reported by river users (PLA Pilots and Cory tug skippers) highly experienced in this local area, the strength of flood tidal flow is comparatively very weak in the southern part of the river and close to the jetty. It is therefore of infinitely greater importance to the safety of moored tankers to align the jetty with the ebb flow direction rather than adjust orientation to mitigate the relatively minor effects of the flood direction.

Portside departures from the berth on an ebb tide were considered to be the most challenging manoeuvre by the PLA pilots, particularly when combined with a strong off jetty or on jetty wind (although it should be noted that all port side, ebb tide departure runs other than Run 4 were scored as a Success). The ebb tide gives little time for vessels to swing off the berth before they are required to align for Jennings Point bend. In order to give appropriate manoeuvring time vessels may turn upriver of Ford's jetty in order to give more room and time for manoeuvring.

During the simulation exercises the PLA pilots confirmed they were comfortable that the jetty alignment had been optimised sufficiently to mitigate as much as possible the adverse effects of the ebb tide.

6.2.2 Sight lines

The initial pNHA stated:

"The location of the CCS jetty on the inside of Jennings Point bend limits sight lines of project vessels and other vessels in the area. This affects the situational awareness of pilot/masters on the vessels which could lead to increased collision risk and reduced time in which to assimilate plans. This will have particular impact for inbound vessels berthing on the ebb tide, which will need to cross the authorised channel whilst rounding the bend in order to manoeuvre onto the jetty. This lack of time to assimilate and react to a developing traffic situation has the potential to increase the chances of collision, particularly between the project vessel and passing third party vessels".

Sight lines on approach to the proposed CCS jetty were not felt to be an issue during simulations and therefore are unlikely to have a bearing on ship handling issues. **Figure 39**, shows a view from the bridge of the vessel prior to rounding the Jennings Channel buoy, the CCS jetty and its approaches are clearly visible.

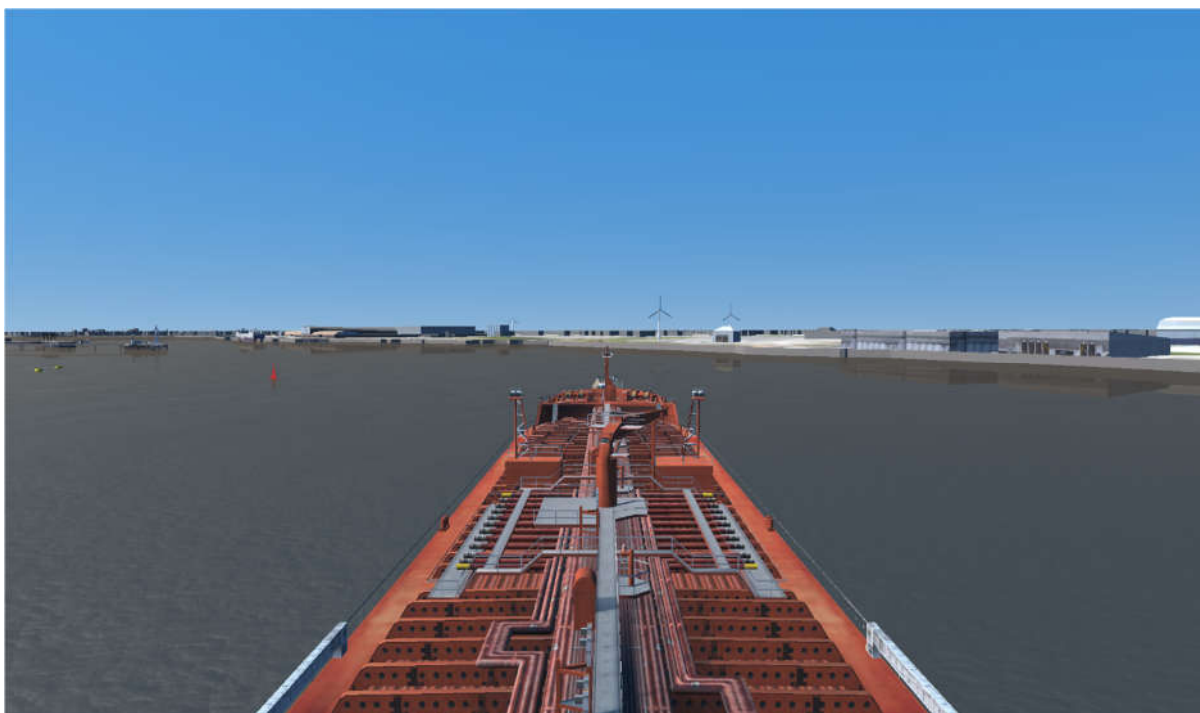


Figure 39: View from Bridge of Approaching Tanker Prior to Rounding Jennings Channel Buoy.

6.2.3 Positioning of Additional Cory barge moorings

The Cory Lighterage team have advised that additional barge moorings will be needed for the increased throughput at the Middleton Jetty as a result of Riverside 2. The moorings are likely to be installed either to the west of and in line with the current Cory barge moorings, or north of the Authorised Channel downstream of Ford's jetty. The positioning of these barge moorings and the movements associated to and from them will increase the potential for a collision with a tanker bound to/from the CCS jetty or a third-party vessel.

Positioning the barge moorings north of the Authorised Channel will result in frequent crossings of the Authorised Channel by Cory tugs and barges. Combined with the requirement for the project vessel to cross the authorised channel, this could increase the likelihood of a close quarters situation with third-party vessel and could result in a collision, grounding or contact event.

Cory are taking into account the results of this pNHA in bringing forward the barge moorings for approval to the PLA.

6.2.4 Future Increase in Vessel Traffic

Future perceived increases in passenger vessel activity within the study area would increase the frequency of vessels transiting through the study area. This increased density of traffic would increase the likelihood for a potential collision, principally between a third-party vessel and the project vessel.

As per the PLA's request the pNRA will need to incorporate quantitative risk modelling to ascertain the probability of increased collision hazard occurrence as a result of an increased

number of passenger or other vessel transits within the study area. The risk modelling will be informed by historic AIS data and analysis of wider national and localised shipping trends.

6.2.5 Proximity of CCS Jetty to Middleton Jetty

The original pNHA stated:

The eastern extremity of the Middleton Jetty is positioned approximately 115m upstream of the western extremity of the proposed CCS jetty. The proximity of the two jetties and the corresponding operations creates the potential for congestion, collision and contact occurrences.

During consultation the Cory Lighterage team indicated that, in order to provide adequate navigable width, the gap between the jetties should be at least 125m. Moving the CCS jetty downstream could help to mitigate the likelihood of a collision or contact occurrence, although this in turn may increase the navigational risks highlighted earlier in relation to CCS project vessels. Further qualitative analysis of tug and barge movements to the inshore downstream side of the Middleton Jetty using mariners and Cory Lighterage team input should be undertaken to inform the design and location of the CCS jetty.

Drawing on the conclusions of the initial pNHA and additional constraints identified by WSP during concept design development a number of jetty design iterations were produced, following the issue of the original pNHA report. WSP undertook a series of workshops in order to identify optimum placement of the jetty, this included consultation with the Cory Lighterage team an analytical input from NASH Maritime. Having reviewed the current CCS jetty design, the Cory Lighterage team have confirmed the proposed jetty design would not have an adverse impact on Cory's existing lighterage operation, (see **Section 4.7**).

As a precautionary measure it was agreed that placing several pellet buoys to simulate the location of the proposed jetty and brow to provide a visual cue for Tug masters to conduct trial passages. The results of this would enable further decision making on the extent to which the proposed jetty location would constitute a contact hazard.

6.2.6 Tidal Restrictions to Operation

The original PNHA stated:

It is likely that, without an element of dredging, tanker arrivals will be restricted to around High Water (HW) as charted depths outside the authorised channel are between 8.7m and 4.3m. The largest proposed design vessel has a draught of 9.0m, so whilst maintaining a Under Keel Clearance (UKC) of 1m, 10m of water would be required. PLA charts stipulate that Mean High Water Neap (MHWN) in Halfway Reach is 5.8m, therefore, the Height of Tide (HoT) necessary for sufficient depth to be available would be 5.7m. This assumes that no dredging takes place between the proposed berthing pocket and authorised channel.

A number of other operations within the Study Area are also likely subject to tidal restrictions when berthing, particularly tankers bound for Thunderer jetty. If several vessels, including the project vessel, are all trying to berth at jetties in the study area on the same high water, this could lead to congestion within the authorised channel. This could potentially increase the chances of the project vessel or a third-party vessel having to take avoiding action and may result in collision, contact or grounding.

The extent to which the approach channel and berthing pocket are dredged will impact directly on the operational window in which arrivals and departures can occur and the risk of the project vessel grounding.

Following the Jetty design revision, ship bridge simulations and confirmation that the berthing pocket will be dredged to -10.5m CD, tidal restrictions to the operation were revisited. Assuming that the final design vessel will have a laden draught of between 8m and 9m there will be adequate depth within the berthed pocket for the vessel to remain alongside at all states of tide.

Highest tide is at high water slack, but inward tankers will generally not be planned to arrive at the berth at this time due to the unpredictability of exactly what the tidal flow direction will be – which impacts ship handling. Tankers generally berth bow to tide. It is therefore envisaged that tankers will plan to arrive at / depart the berth one hour before / after high water in order to take advantage of predictable flow directions, reduced tidal velocities and greater available depth alongside the berth and its approaches.

The ship bridge simulations illustrated that departures will likely be limited to be no later than HW + 1.5 hours taking in to account the time to swing the vessel on an ebb tide port side departure, the effects of the ebb tide flow and the UKC required on passage (due to limiting depth of 6.8m in Erith Reach and further to seaward).

As originally highlighted in the initial pNHA, other operations in within Halfway Reach (e.g. tankers transiting to Thunderer jetty) will likely be subject to similar tidal restrictions. The potential for increased congestion around high water therefore remains.

6.2.7 Proximity of Moored Tanker and CCS jetty to passing outbound Ro-Ro Vessels Arriving / Departing Fords Jetty

The CCS jetty is located 50m south of the southern limit of the Authorised Channel, when moored alongside the distance between the largest design vessel and southern limit of the Authorised Channel would be approx. 30m.

Vessels passing in close proximity to the proposed jetty are likely to be associated with the Ford's jetty Ro-Ro operation (see **Section 3.4.1**). It was also noted that vessels associated with this operation passed the proposed jetty location at relative low speed. The proximity of these transits to the moored tanker and CCS jetty increases the likelihood of a collision or contact occurrence.

In addition, there are currently no speed limits in place and large bulk sugar, Ro-Ro, cruise, aggregate and tanker vessels passing the berth could create a substantial draw off effect due to the creation of low water pressure arising from increases in water flow between the passing vessel and moored tanker vessel (Bernoulli Effect).

The pNRA will explore this further and identify suitable control measures.

6.3 PRELIMINARY RISK CONTROL MEASURES

Preliminary risk control measures identified to mitigate navigational risk resulting from the operation of the CCS jetty were identified:

6.3.1 Define Operational Limitations

A key risk control measure will be the identification of suitable operational limitations at which project vessel berthing and unloading / loading operations must cease. A Dynamic Mooring Analysis will also be required. Operational limitations should include (but may not be limited to):

- Limiting parameters for:
 - Wind;
 - Height of tide
 - Tidal stream; and
 - Visibility.
- Minimum available UKC at which arrivals and departures can occur.
- Tug assistance required.
- Tidal state e.g. ebb and flood arrivals and departures

One of the objectives of the ship bridge simulations was to assist in defining operational limitations at the CCS jetty.

Recognising that the jetty design, positioning and design vessel specifications are yet to be determined, then defining the boundaries of the detailed operational parameters at this stage of the study is limited. However, the simulation exercise has illustrated that departures will likely be limited to be no later than HW +1.5 hours taking in to account the time to swing the vessel on an ebb tide port side departure, the effects of the Ebb tide flow and the UKC required on passage (due to limiting depth of 6.8m in Erith Reach and further to seaward, see **Figure 40**).

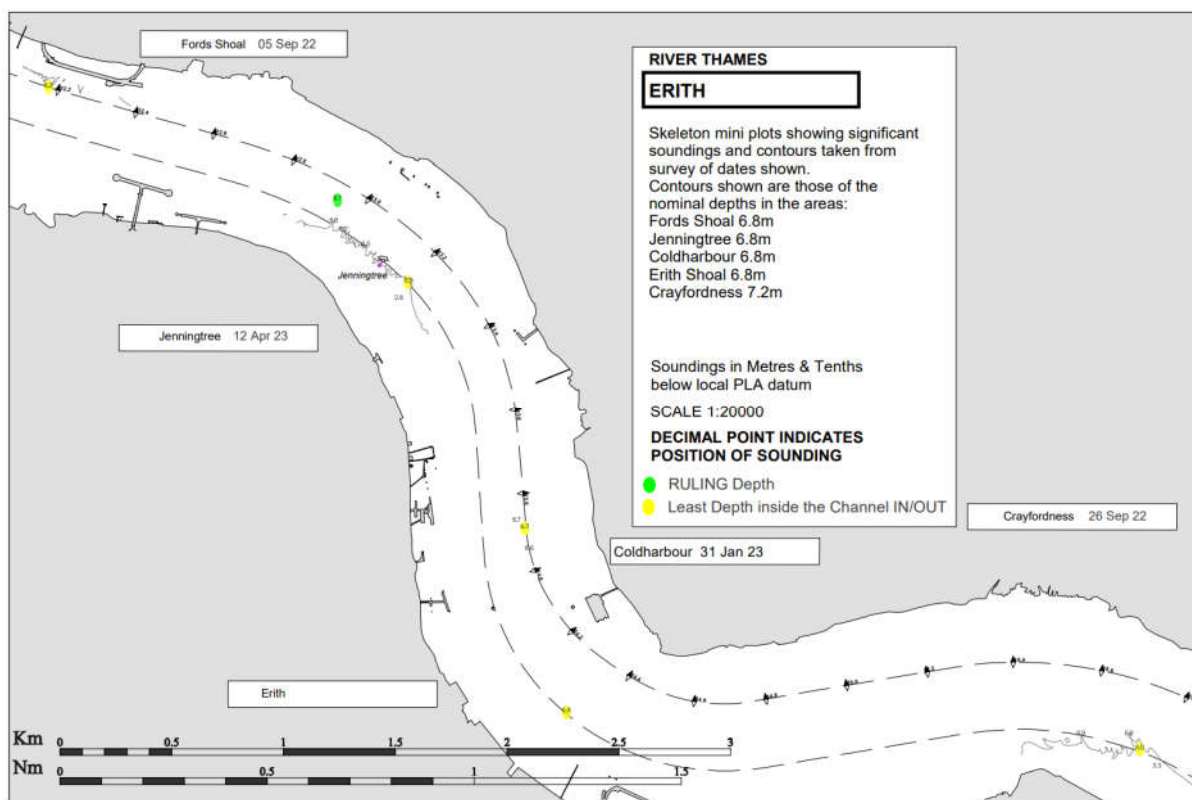


Figure 40: PLA Miniplot of Erith Reach, controlling depth 6.8m

Simulations showed that there was adequate navigable width with the jetty in position Option A for project vessels to safely manoeuvre with appropriate towage in place on jetty and off the jetty in wind speeds of up to 25 knots. Wind direction is therefore not considered to be a limiting operational factor for the jetty options.

An upper wind speed limit of 20 knots, gusting 25 is deemed a suitable wind speed limitation. This limit was set on the basis that the jetty is situated in a relatively sheltered location and if wind speeds were to reach 25 knots at the jetty location it would in all likelihood reach substantially higher speeds in more exposed reaches of the Thames further to seaward. This being the case, it is unlikely that the river passage would be commenced for reasons of ship control on passage.

6.3.2 Deconfliction of Operations

To avoid congestion within the Authorised Channel operations should be deconflicted as much as possible. Close communication will be required between the CCS jetty marine operators, third party operators and VTS to avoid multiple large vessels arriving on the same high water.

The option to hold Cory tug and barge operations at the eastern extremity of the Middleton Jetty should be considered whilst the project vessel arrives and/or departs the CCS jetty.

6.3.3 Abort points

Due consideration should be given to appropriate contingency anchorages and abort points that could be utilised should a tanker arriving at the CCS Jetty experience difficulties on passage to or whilst coming alongside.

6.3.4 Positioning of Berthing Infrastructure

Berthing infrastructure including, fenders, bollards, gangways and shore connections (especially LCO₂ hard arm) should be designed to mitigate the consequences of the project vessel ranging and resulting contact occurrences. This should be informed by conducting a Dynamic Mooring Analysis considering the local environmental conditions and the effect of passing vessels.

6.3.5 Location of Additional Cory Barge Moorings

Additional barge moorings should be positioned on the southern side of the river and west of the CCS jetty. This will lessen the impact of regular vessel movements by Cory vessels (between the additional moorings and Middleton Jetty) on passing vessels and the project vessel.

The impact of the additional barge moorings on the navigational risk profile will be considered as part of the pNRA.

7. STUDY FINDINGS

This revised pNHA has assessed at a provisional level, the navigation impact of constructing a jetty located adjacent to the existing Middleton Jetty and on the inside (south shore) of Jenningtree Point bend. A review of the proposed jetty and associated marine operation; consultation with the PLA and Cory, analysis of vessel track data, swept path analysis and ship bridge simulations were conducted to provide an evidence basis for the conclusions.

7.1 CONCLUSIONS

The study conclusions are outlined below:

- The vessels that most commonly frequent Halfway Reach are river trading non-passenger vessels, such as tugs and barges travelling to the various local wharfs and jetties, as well as commercial shipping transiting to and from central London.
- There is no significant recreational vessel activity within Halfway Reach.
- Vessel tracks within Halfway Reach are focused within the authorised channel, with the exception of vessels arriving and departing jetties.
- The majority of transits of both cargo and tanker vessels are within the Authorised Channel with the exception of vessels departing the Authorised Channel to the north to arrive / depart Ford's jetty or Thunderer jetty. There are also a limited number of transits just south of the Authorised Channel in close proximity to the CCS Jetty.
- Swept path Analysis showed:
 - Vessels departing from Ford's jetty swing across the Authorised Channel before passing downriver on the southern limit of the channel approximately 50m north of the CCS Jetty. These vessels then align to pass north of the Jenningtree channel buoy.
 - Outbound passing cargo vessels navigate toward the south side of the Authorised Channel clear of the CCS Jetty before aligning with to pass north of the Jenningtree channel buoy.
 - Tanker vessels bound for the Thunderer jetty navigate north of the Jenningtree channel buoy before navigating toward the north of the Authorised Channel, utilising the central portion of the channel when passing the CCS jetty.
 - Representative Cory tug and barge manoeuvres will remain well clear of the CCS jetty structure, this finding was further backed up during stakeholder consultation.
- Traffic within the study area is highly controlled and regulated with the PLA administering a suite of baseline risk controls;
- The ship bridge simulations exercise found:
 - The alignment and positioning of the proposed CCS does not create adverse conditions for project vessels conducting berthing operations.
 - Project vessel departures will likely be limited to be no later than HW +1.5 hours taking in to account the time to swing the vessel on an ebb tide port side departure, the effects of the Ebb tide flow and the UKC required on passage (due to limiting depth of 6.8m in Erith Reach and further to seaward);

- There was adequate navigable width with the jetty in position for berthing vessels to safely manoeuvre with appropriate towage in place for on jetty and off jetty winds up to a speed of 25 knots. Wind direction is therefore not considered to be a limiting operational factor; and
- No significant ship handling issues were identified.
- 17 preliminary navigation hazards were identified; and
- Six key navigational issues were identified during the initial pNHA and one additional navigational issue was identified during this pNHA revision. **Table 7** summarises the status of each of the identified key navigational issues, taking into account further work / operational and / or design development undertaken since the initial pNHA that either reduced the significance of the identified key navigational issues or alters the nature of the original identified navigational issue.

7.2 RECOMMENDATIONS

Study recommendations are summarised in this section along with the key recommendations from the ship bridge simulations report.

- Consultation with the Ford's jetty vessel operator should be expedited (possibly prior to undertaking the pNRA) to understand the full impact of the proposed jetty location on the Ford's jetty Ro-Ro operation.
- Cory tug and barge trials should be undertaken, through the placement of several pellet buoys should be installed to simulate the location of the proposed jetty / brow and to enable further analysis on the extent to which the proposed jetty location would constitute a contact hazard for Cory's existing lighterage operations. Data collected from the trials should be included in the pNRA.
- Due to the close proximity of outward passing traffic and rapidly shallowing depths inshore of the berth draw off / interaction damage and / or suction off berth is a possibility. It is therefore recommended that a dynamic mooring analysis is undertaken to determine the hydrodynamic effect of close passing large ships on moored vessels. If following the study the effect is deemed to be significant then further consideration will need to be given to identification of risk control measures within the pNRA, such as the application of appropriate speed limitations in the vicinity of the jetty.
- The dynamic mooring analysis will also assist in determining the location and design of berthing infrastructure including, fenders, bollards, gangways and shore connections (especially LCO₂ hard arm) to mitigate the consequences of the project vessel ranging and resulting contact occurrences.
- The pNRA for the proposed jetty should give due consideration to the installation of a (lateral/south cardinal) navigation mark to the north of the authorised channel, in line with the proposed jetty, to indicate the boundary of navigable water available during swinging;
- Due consideration should be given to vessels taking a shallow approach when arriving and departing the jetty to ensure the berthing angle at the east and west extremities of the dredged berth pocket are appropriate.
- Due to the tidal range it was suggested a shore gangway be included within the jetty design to ensure safe access and to avoid lengthy delays to turnaround time due to time taken to rig/de-rig ship's gangway;

- Sufficient lateral offset of the dolphins should be provided to ensure that breast and stern lines can be of sufficient length to take into account the rise and fall of tide;
- It should be ensured that mooring hooks are designed to enable springing on/off and the jetty; and
- It is understood that as well as the construction of the CCS jetty the following marine works will be required:
 - Installation of the new Cory barge moorings. Note, the barge moorings are not part of the proposed CCS scheme but do need to be considered from a navigation risk perspective;
 - Decommissioning of the now disused Belvedere Power Station jetty. Note, once the extent to which the jetty is to be decommissioned is known the decommissioning works and impact of any infrastructure remaining in situ following decommissioning will need to be considered from a navigation risk perspective; and:
 - Inflow / outflow structures for water required for CO₂ production.
- It should be noted that any marine construction and / or marine operation associated with the aforementioned construction projects will require a specific Navigation Risk Assessment.

7.2.1 pNRA Scope

A full pNRA scope has been developed and agreed with the PLA (this scope was agreed during the initial pNHA in Sep-22), it is recommended that:

- The pNRA will assume a worst-case scenario in terms of vessel size and number of vessel movements, (assuming further work to refine the project vessel is not undertaken).
- Quantitative risk modelling is undertaken as part of the pNRA scope to determine any changes in future collision hazard occurrence likelihood, resulting principally from an increase in passenger traffic within Halfway Reach.

Appendix A

Consultation Minutes



AGENDA & MEETING NOTES

PROJECT NUMBER	70090329	MEETING DATE	22 July 2022
PROJECT NAME	Cory CCUS DCO	VENUE	Virtual – Microsoft Teams
CLIENT	Cory	RECORDED BY	JT
MEETING SUBJECT	Various		

PRESENT	PLA: Lucy Owen, Michael Atkins, Darren Knight WSP: Luke Jiggins, Jonathan Pierre, Jane Templeton Cory: James Andrews, Kirsten Berry Nash: Ed Rogers, Sam Anderson-Brown, Adam Fitzpatrick, Nigel Bassett
APOLOGIES	Chris Girdham Ross Brwn
DISTRIBUTION	As above plus: Click to type
CONFIDENTIALITY	Public

ITEM	SUBJECT	ACTION
1		
1.1	All parties talked through Cory's decarbonisation plan: Heat, waste, electricity & transport	
1.2	Riverside 2 targeted date for operation is 2026. Currently discharged all but one condition on DCO. Construction to start early next year, and a number of integrated programmes going on to contribute to decarbonisation programme.	
1.3	Discussion on the potential for producing hydrogen from EfW facilities; feasibility discussions ongoing.	
2		
2.1		
2.1.1	Discussion around Carbon Capture: 1.5Mt per annum for export, split into the 2 phases for the development. Reasons for 2 phases: lessons learnt, and financial spreading investment profile. Unsure at this stage whether the existing facility or new facility would be used in the process first.	
2.1.2	Description of the capture process at a high level.	
2.2		

MEETING NOTES

2.2.1	Discussion around storage in the North Sea, currently space is quite limited so they have phase 2 and phase 3 planned for expansion.	
2.2.2	Discussions are also taking place with UK based storage sites, but all currently at different level of process, related to everything with BEIS. Need to make sure that the storage sites will be ready for when Cory is ready to export, so PLA noted that we're keeping all the options open. Cory also considering the implications that storage location may have for funding.	
2.2.3	Discussion around the capacities of the site and other projects looking to use those sites. PLA: Do you have timescales for when we have to commit to the sites? WSP: Yes, discussion we're having with storage in the North Sea etc. Their initial capacity only 2M per annum. Trying to understand phasing , how they're planning to expand etc., at some point need to enter into contract.	
2.3		
2.3.1	Aim for negative CO2 emissions on everything done, so storing Hydrogen prior to usage. WSP right at the start of the feasibility study so don't have a lot of information, but all linked to decarbonisation plan.	WSP to engage with PLA regarding 'Hydrogen Highway' WSP to research market, appetite, who is doing what?
2.3.2	Focus of hydrogen is on mobility	
2.3.3	Talks of looking at bigger vessels and technology not really there so targeting smaller vessels.	
2.4		
2.4.1	Discussion around the access trestle and pipework passing over the Thames Path.	
2.4.2	Layout of jetty structure decided on bathymetry and Cory operations, amongst other things	
2.4.3	PLA requests drawings be provided on PLA charts	WSP to overlay all future drawings onto a PLA chart and share with the PLA.
2.5		
2.5.1	Discussion around vessel calls, 2-3 vessels per week for 10k cubic metre vessel	

MEETING NOTES

2.5.2	PLA requested to know the dredging requirements	WSP to provide the PLA with indicative dredging volumes for range of vessel sizes
2.5.3	PLA asked WSP to confirm distance to Navigation Channel	WSP to confirm distance to navigation channel to PLA
2.5.4	PLA asked whether jetty's sole use is for carbon capture. WSP responded yes, currently focus is to have this jetty for sole CO ₂ export	
3		
3.1	Future plans to include Thames Clippers transiting the area, confirmed by PLA. Clippers acquiring pier at Gravesend.	
3.2	Lydia Hutchinson should be involved in the project/consultation at this stage.	NASH to include Lydia Hutchinson in project meetings
3.3	PLA request Cory/WSP ensure futureproofing for commercial vessels	PLA request Cory/WSP ensure futureproofing for commercial vessels
3.4	PLA confirmed they don't know exactly what's happening with London Resort. Going to resubmit by the end of the year. Large vessel numbers compared to what currently happens. Keep David Allsop in the loop too.	David Allsop to be added to periodical emails and/or meetings by NASH
4		
4.1	Project currently heading down DCO route - s.14 of 2008 Planning Act forms extension of existing facility, plus volumes associated with carbon and hydrogen. s.35 Act - s.35 application being drafted in parallel with optioneering process. To be submitted to PINS	
4.2	Project sits wholly within London Borough of Bexley - sought initial support already and feedback is broadly supportive	
4.3	PLA asked if the project would have/use 1 or 2 DCOs? Cory: Currently working this through but frontrunner at the moment is one DCO to cover both. S.35 should've been in by now but held it back to make sure we get the right strategy.	

MEETING NOTES

4.4	Discussion of Feedback from REP2: Need to identify ways Cory and PLA can work better together and speed things up. Big thing is what to do about 66-73 of PLA act. If we can keep those clauses in the DCO that would be great so we don't end up with Protective Provisions that need negotiation. PLA Act not being disapplied.	
4.5	WSP to organise another catch up with PLA and Cory to discuss lessons learnt etc. (Luke Jiggins).	Luke Jiggins (WSP) to organise another meeting with the PLA and Cory on DCO lessons learned.

NEXT MEETING

An invitation will be issued if an additional meeting is required.

CCUS NRA / RIPPLEWAY WHARF NRA

Project Title	CCUS NRA / Rippleway Wharf NRA
Project Number	22-NASH-0235
Meeting subject / purpose	Lighterage Consultation
Revision	R01-00
Date of meeting	02-Aug-2022
Start time	12:30:mm GMT
Finish time	13::45 GMT
Client	WSP / Cory
Location	Meeting Location

DOCUMENT CONTROL

Revision	Date of Issue	Description	Approved
R01-00	02-Aug-2022	Issued to attendees for comment	SAB
R02-00	09-Aug-2022	JA comments incorporated	SAB

ATTENDEES

Organisation	Attendee	Role	Initial
NASH Maritime	Sam Anderson-Brown	Principal Consultant	SAB
	Adam Fitzpatrick	Senior Consultant	AF
Cory	James Andrews	Head of Lighterage and Ship Repair	JA
WSP	Jane Templeton	Principal Engineer	JT

AGENDA

1. Introductions
2. Scope of work (SAB)
3. Baseline operation (SAB)
4. Future baseline (increased capacity for Riverside 2) (SAB)
5. CCUS export operation (SAB)
6. Rippleway Wharf marine operation (AF)
7. Rippleway Wharf tug and barge trials (AF)
8. AOB

NOTES OF MEETING

1	Introductions	Action
1.1	Introductions made.	
2	Scope of work	
2.1	SAB presented the current NRA scope of works for both the CCUS and Rippleway Wharf NRAs	
3	Baseline operation	
3.1	SAB presented a schematic illustrating NASH's current understanding of the baseline (current as of today) operation. JA made the following comments outlined in 3.2 and 3.3.	
3.2	There should be 3 barges coming from Walbrook and Northumberland Wharfs.	
3.3	Tugs starts at Charlton and heads to Middelton Jetty with two loaded waste barges, services Middelton Jetty, Leaves to Tilbury with loaded ash, returns from Tilbury with empty ash barges, services Middelton Jetty and then returns to Charlton with empty waste barges.	
4	Future baseline operation	
4.0	SAB presented a schematic illustrating NASH's current understanding of the future baseline operation (required to increase tonnage for Riverside 2). JA made the following comments outlined in 4.1, 4.2, 4.3, 4.4 and 4.5.	
4.1	Arrivals / departures from WRTS, Cringle Wharf, Northumberland Wharf and Walbrook Wharf remain the same as baseline operation (totalling 3 tugs and 9 barges).	
4.2	2 tugs and 4 barges will arrive from Rippleway Wharf resulting in two additional arrivals and two additional departures.	
4.3	A second ash barge movement will be required between Middelton Jetty and Tilbury, resulting in 3 arrivals and 3 departures from the Middelton Jetty (1 additional arrival and 1 additional departure in comparison to the Baseline operation). This would result in ash movements on two tides a day.	
4.4	JA noted that there would potentially be logistical challenges in servicing the additional barges at Middelton Jetty with the available mooring space, infrastructure and equipment.	
4.5	There should be 2 ash barges per passage between Middelton Jetty and Tilbury	
4.6	No waste transfer operation from Tilbury.	
4.7	SAB to update schematics for JA review.	SAB
5	CCUS export operation	
5.1	JA explained that the positioning of the proposed CCUS Jetty means that additional barge moorings which are being consulted on with the PLA can now no longer be installed directly downstream from the Middelton Jetty. Additional barge moorings are required and will need to be positioned either upstream of the existing barge moorings and in line with the Thames Water jetty or to the north of the Authorised Channel. Positioning of the additional barge moorings will bring differing operational and navigational risk challenges. JA would prefer the moorings were located upstream of the existing moorings. JA to keep SAB informed of progress regarding installation of additional barge moorings.	JA
5.2	Adequate navigable width will be required between the berthed tanker / CCUS Jetty and the Middelton Jetty to enable Cory tugs to manoeuvre barges on to the inshore	SAB

	side of the Jetty. JA anticipates that adequate navigable width would be no less than 125m. NASH to produce scale drawing to review navigable width and report findings back.	
5.3	JA had no other navigation risk related concerns.	
6	Rippleway Wharf marine operation	
6.1	AF outlined marine operation as per NASH understanding	
6.2	<p>JA commented that it was likely 2 tugs towing two barges each would be utilised.</p> <ul style="list-style-type: none"> • Tug towing two empty barges enters Barking Creek • Empty barges are loaded • Tug exits Barking Creek and proceeds to Middleton Jetty. • Second tug repeats operation with remaining barges. • Gallions moorings remains as a fallback should only one tug be utilised. • One hour either side of HW on the lowest neap tide of the year was requested to provide enough time for operations and for potential 3rd party vessel moves. • Closure of Barking Creek flood barrier was raised as a potential issue for operations. 	
7	Rippleway Wharf tug and barge trials	
7.1	<p>AF outlined plan for trials:</p> <ul style="list-style-type: none"> • To be undertaken to understand how the tugs will manoeuvre barges into Rippleway Wharf and the timing of operations <p>Plan for trials:</p> <ul style="list-style-type: none"> • HW on a spring tide • Use drone footage and AIS to record passage • Board at Charlton to include passage past Belvedere • Invitation extended to the PLA 	
7.2	JA happy with proposed trials and PLA inclusion but suggested that trials be undertaken on either 12 or 13 Sep to better coincide with tug and staff availability. <i>(AF reviewed NRA programme post meeting and confirmed 13 Sep fitted within current schedule)</i>	AF
7.3	JA noted capacity on tug was limited to 12 persons so PLA launch may be required	AF
8	AOB	
8.1	Agreed that JA would provide copies of generic passage plan and also third-party risk assessment.	

MEETING ACTIONS

Number	Owner	Action	Status
1	SAB	Update schematics as per discussion and issue to JA for validation prior to further consultation.	03-Aug-2022
2	JA	To confirm status of additional mooring application and likely timescales / Site	08-Aug-2022

3	SAB	SAB to arrange for scale drawing illustrating current navigable width between Middleton Jetty and CCS jetty to be prepared for review.	12-Aug-2022
4	AF	Confirm feasibility of conducting trials during Sep -22	Complete
5	AF	Confirm trial arrangements, interface with PLA etc.	31-Aug-2022

CCUS PRELIMINARY NAVIGATION HAZARD ANALYSIS

Project Title	CCUS Preliminary Navigation Hazard Analysis
Project Number	22-NASH-0235
Meeting subject / purpose	PLA Consultation
Revision	R01-00
Date of meeting	09-Aug-2022
Start time	11:00 BST
Finish time	12:00 BST
Client	WSP / Cory
Location	Microsoft Teams

DOCUMENT CONTROL

Revision	Date of Issue	Description	Approved
R01-00	10-Aug-2022	Issued to attendees for comment	SAB

ATTENDEES

Organisation	Attendee	Role	Initial
NASH Maritime	Sam Anderson-Brown	Principal Consultant	SAB
	Adam Fitzpatrick	Senior Consultant	AF
PLA	Adam Layer	Harbour Master	AL
	Lydia Hutchinson	Marine Manager	LH
Cory	Ross Brown	Project Manager	RB
	James Andrews	Head of Lighterage and Ship Repair	JA
WSP	Jane Templeton	Principal Engineer	JT

AGENDA

1. Introductions;
2. Meeting aims and objectives;
3. Scope of work;
4. Project overview;
5. Baseline navigation characterisation;
6. Vessel traffic analysis;
7. Preliminary navigation hazards and key navigational issues;

8. Task 3: Ship bridge simulations;
9. Task: 4 Preliminary Navigation Risk Assessment;
10. Next steps; and
11. AOB.

NOTES OF MEETING

1	Introductions	Action
1.1	Introductions between attendees.	
2	Meeting Aims and Objectives	
2.1	SAB presented the aims and objectives for the meeting.	
3	Scope of Work	
3.1	SAB presented the work that will be undertaken to inform the NRA.	
4	Project Overview	
4.1	SAB gave a description of the proposed jetty location and the design vessels currently under consideration. The two vessels represent the largest and smallest currently under consideration	
4.2	SAB noted that the Preliminary Navigation Risk Assessment (PNRA) will take a precautionary approach regarding the design vessels, with the largest vessel and maximum number of vessel moves used to inform PNRA assumptions.	
5	Baseline Navigation Characterisation	
5.1	<p>SAB presented the following:</p> <ul style="list-style-type: none"> • Key navigational features, including potential additional Cory barge moorings – it was noted that the navigation risk profile would differ depending on the location of the barge moorings; • Summary of the NRA completed for the Riverside 2 DCO; • Incident count by vessel per reach; and • Baseline risk controls. 	
5.2	AL and LH agreed that the baseline characterisation was representative of current river activity.	
6	Vessel Traffic Analysis	
6.1	<p>The vessel traffic analysis focused on the following areas:</p> <ul style="list-style-type: none"> • Vessel traffic density; • Largest vessels identified transiting the area; • Vessels using the jetties in the study area; • Passenger vessel tracks; • Tug and service vessel tracks; • Recreational vessel tracks; • Current Cory operations; and • Future Cory operations. 	
6.2	LH asked about the AIS data being used as some of the slides in the section indicated 2018 data was used. SAB explained that the information presented on	

	the slides in question was taken directly from the NRA for Riverside 2, hence the reference to 2018 data. Analysis for the PNHA has been undertaken using 2021 data. AL commented that there has been a significant increase in activity in 2022 so the most recent data should be used where possible.	
6.3	SAB highlighted that the NRA for Riverside 2 concluded that additional barge operations for Cory would have a negligible impact on vessel navigation on the Thames.	
6.4	SAB commented that the project design vessel will likely be tidally restricted and asked whether there are any other tidally restricted vessels arriving / departing berths or on passage through Halfway Reach. AL to provide data for this.	AL
6.5	LH noted that there is a trend toward increased cruise ship activity through the study area and that a predicted increase in UBTC activity would need to be considered.	
6.6	SAB noted that there is limited recreational activity in the study area and no yacht clubs located within Halfway Reach. SAB asked if there were any recreational stakeholders that should be consulted during the PNRA. LH said that the Erith Yacht Club is the closest but they may not sail in the study area. SAB agreed to carryout high level consultation with Erith Yacht club to ascertain the geographic boundary of the clubs sailing area.	
7	Preliminary Navigation Hazards and Key Navigational Issues	
7.1	SAB presented the hazards to vessel navigation associated with the CCUS project which comprise 16 hazards in the following 4 categories: <ul style="list-style-type: none"> • Collision; • Contact; • Grounding; and • Breakout. 	
7.2	SAB noted that the limited visibility at Jenningtree Point was a potential issue and the tidal set may affect berthing at the proposed jetty location. AL agreed.	
7.3	SAB asked whether there were any other hazards or key issues that need consideration. Responses provided in 7.4 and 7.5.	
7.4	LH said that the interactions with passenger vessels in the area given the future increase in movements is potentially significant. SAB asked whether traffic risk modelling will be required. LH confirmed that it will and the PLA would expect to see this in the PNRA.	
7.5	JA noted that there may be impacts related to the maintenance dredging operations at the Middelton Jetty berth interacting with tanker movements.	
7.6	LH and AL confirmed that no other significant impacts were envisaged at this stage.	
8	Bridge Simulations	
8.1	SAB discussed the ship bridge simulations that will be conducted to test the viability of the jetty and any ship handling issues that may arise. SAB asked AL whether the PLA simulator could be used. AL said that the PLA simulator may not be appropriate for this, given current limitations / capability. SAB and AL to discuss further.	SAB / AL
9	Preliminary Navigation Risk Assessment	
9.1	SAB introduced the scope for the PNRA to support the DCO application and asked about other stakeholder consultees for the area. LH noted Ford's RoRo berth regularly have vessels swinging in the area, GPS Marine regularly transit and that	LH

	a River Pilot should be consulted. LH to confirm if any further stakeholders need to be consulted with.	
9.2	SAB asked whether a commercial shipping assessment would be required as part of this process. AL and LH commented that given the level of certainty around future operations, it would be difficult to appropriately assess and this would provide limited value. LH confirmed that the PLA would ne expect to see such an assessment included in the PNRA.	
9.3	LH confirmed that the proposed PNRA scope was suitable.	
10	Next Steps	
10.1	SAB listed the steps that will be taken to complete the PNHA.	
11	AOB	
11.1	JA asked whether the masters for LCO ₂ tanker will be likely to attain PECs. AL confirmed that with the proposed 496 movements per year, it is likely they would and that the River Pilots would otherwise be limited by available resource.	

MEETING ACTIONS

Number	Owner	Action	Status
1	AL	Provide information on tidally restricted vessels transiting Halfway Reach.	Ongoing
2	SAB AL	Discuss the potential to use the PLA simulator for the bridge simulations.	Ongoing
3	LH	Advise on appropriate commercial stakeholders to be consulted during PNRA.	Ongoing
4	SAB	Undertake high level consultation with Erith Yacht club to ascertain the geographic boundary of the clubs sailing area.	To be programmed in to PNRA programme.

CORY CCUS NRA

Project Title	Cory CCUS NRA
Project Number	22-NASH-0235
Meeting subject / purpose	PLA pNHA findings
Revision	R01-00
Date of meeting	22-Sep-2022
Start time	16:00 BST
Finish time	17:00 BST
Client	WSP / Cory
Location	Microsoft Teams

DOCUMENT CONTROL

Revision	Date of Issue	Description	Approved
R01-00	27-Sep-2022	Issued to attendees for comment	SAB

ATTENDEES

Organisation	Attendee	Role	Initial
NASH Maritime	Sam Anderson-Brown	Principal Consultant	SAB
	Nigel Bassett	Associate Consultant	NB
	Adam Fitzpatrick	Senior Consultant	AF
PLA	Adam Layer	Harbour Master	AL
	Lydia Hutchinson	Marine Manager	LH
WSP	Jane Templeton	Associate	JT

AGENDA

- Scope of work
- Project overview
 - Concept jetty design
 - Marine operation
- Preliminary navigation hazards
- Key navigational issues
- Preliminary risk controls
- Study recommendations

- Task 4: Preliminary Navigation Risk Assessment
- Next steps
- AOB

NOTES OF MEETING

1	Scope of Work	
1.1	SAB presented the work that will be undertaken to inform the NRA.	
2	Project Overview	
2.1	SAB provided a recap of the project including the current jetty design and an overview of the proposed operations.	
3	Preliminary Navigation Hazards	
3.1	SAB described the process used to identify the navigation hazards associated with the project and presented a list of hazards.	
4	Key Navigational Issues	
4.1	<p>SAB gave an overview of the key navigational issues that have been identified, these are:</p> <ul style="list-style-type: none"> • Impact of the tidal stream • Sight lines • Positioning of additional Cory barge moorings • The future increase in vessel traffic • The proximity of the CCUS jetty to the Middleton Jetty • Tidal restrictions to operations 	
4.2	LH and AL observed that they felt the key navigational issues had been identified.	
5	Preliminary Risk Controls	
5.1	<p>SAB outlined the preliminary risk control measures identified; these are:</p> <ul style="list-style-type: none"> • Operational limitations • Deconfliction of operations • Location and alignment of the CCUS jetty • Positioning of berthing infrastructure • Positioning of the additional Cory barge moorings to lessen the impact on project vessel movements 	
5.2	AL commented that he saw the definition of appropriate operational limitations as a key risk control measure.	
5.3	AL is in the process of collating data on tidally restricted vessels and will provide this to NASH in due course.	
6	Study Recommendations	
6.1	SAB summarised the study recommendations (see slide 25 and 26) of the accompanying presentation.	
6.2	In relation to the recommendation that navigational modelling be undertaken AL said that the project team needs to show that the project and its operations do not significantly affect safety of navigation and, given the key issues that have been identified, he didn't see how this could be achieved without ship bridge simulation.	

6.2	NB commented that he was of the opinion that Ship Bridge Simulations would be the only means of accurately determining the best swing location when berthing on a flood tide given the close proximity of the Middleton Jetty. AL concurred with this and reiterated that given the variables of the berth it's difficult to envisage how other forms of navigational modelling would produce satisfactory outputs.
7	Preliminary Navigation Risk Assessment
7.1	SAB recapped the scope of the pNRA (see slide 28 and 29)
8.	Next steps
8.1	SAB outlined next steps (see slide 30)



MEETING MINUTES

PROJECT NUMBER	70090329	MEETING DATE	29 March 2023
PROJECT NAME	Cory Decarbonisation Project	VENUE	MS Teams
CLIENT	Cory	RECORDED BY	JT
MEETING SUBJECT	PLA Consultation		

PRESENT	Sam Anderson Brown & Ed Rogers (NASH), Richard Wilkinson (Cory), Lydia Hutchinson & Adam Layer (PLA), Jane Templeton (WSP)
APOLOGIES	James Andrews (Cory)
DISTRIBUTION	As above plus: Click to type
CONFIDENTIALITY	Public

ITEM	SUBJECT
1	NASH outlined the navigation scope of work both in terms of work done, and what is yet to be completed.
2	NASH outlined the key drivers for change in jetty location as: <ul style="list-style-type: none">- Original location was closer to the shore and dredging would have been required in the intertidal zone with serious environmental consequences, which the project team are aiming to avoid.- Interaction between the existing Cory tug and barge operation and the CO2 tanker operation. Project team consulted with Cory Tugmaster and conducted swept path analysis proposed revised location is preferred as the offset between the existing Middleton Jetty facility and proposed CO2 jetty gives adequate navigable width for the barge movements (particularly on a strong flood tide).- Greater clarity on design vessel and subsequent dredging requirements.- Aiming to futureproof the structure for potential hydrogen bunkering facilities in the future
3	NASH is currently revisiting preliminary Navigation Hazard Analysis; once complete, the next step is to go through ship simulations and NRA.
4	NASH summarised key findings from the preliminary hazard analysis. PLA confirmed this was an accurate summary of previous works.
5	Regarding the updated jetty location: <ul style="list-style-type: none">- Width between authorised channel and outside point of vessel is 20m

- WSP noted : Jetty head and dolphin positions/dimensions are still under review during the design; these are likely to shrink down to some extent
- NASH presented AIS tracks and indicative swept paths showing Cory's existing barge movements with the proposed new jetty location.
 - o Flood tide option was performed with no infrastructure in place so the tugmaster somewhat exaggerated this manoeuvre
 - o Does show a difference between the flood and ebb tide manoeuvres
 - o Distance between the two structures considered acceptable by Cory, subject to reviewing the final infrastructure location on a chart showing new moorings upstream of the existing jetty too. WSP to prepare once the jetty dimensions are finalised.
- Discussed putting pellet buoys down to simulate location of proposed jetty and to enable Cory tugmaster's to make an informed decision on the extent to which the proposed jetty location would constitute a contact hazard.

NASH presented detailed swept path analysis plots (including swept path density plots) for passing cargo and tanker transits. These were developed to understand spatially how much room passing vessels need, rather than just looking at vessel tracks:

- NASH noted that passing transits in close proximity to the proposed jetty are largely associated with the Ford's Jetty Ro-Ro operation. It was also noted that vessels associated with this operation passed the proposed jetty location at relative low speed.
- On initial review it is unclear as to why these vessels navigate in such close proximity to the southern limit of the authorised channel (and therefore in close proximity to the proposed jetty location).
- NASH asked PLA whether they have any insight into why the vessels would be navigating in this manner.
- PLA commented that the vessels may be aligning for Jennings tree bend, relative low speeds may also be due to third party traffic in the area
 - o If vessels have more headway, they'll be less affected by tide
 - o If vessels are still building speed, they'll be more affected by tide
- It was agreed that consultation with the vessel operator should be expedited to understand the full impact of the proposed jetty location on the Ford's Jetty Ro-Ro operation.
- An examination of passing cargo and passenger swept paths as well as a review of swept paths showing tanker vessel arrivals / departures at Thunderer jetty revealed that vessels are passing to the north of the proposed jetty location, well within the authorised channel.
- The bunker barge *Distributor* was the exception to this as was noted navigating well outside (south) of the authorised channel.

MEETING NOTES

	<p>Further consideration is needed to establish what will impact be with infrastructure in place. NASH noted that this will be part of the formal pNRA process and can be brought forward in the programme.</p> <p>NASH to undertake further swept path analysis on a tidal basis during pNRA analysis as per PLA request.</p> <p>PLA considering being on board on a tanker to Thunderer Jetty to observe movements</p> <p>PLA stated they are currently not unhappy with the proposals, subject to further consultation to understand what is causing vessels to transit at the edge of the channel.</p> <p>It was noted by the PLA that the structure is on the south side of the river, therefore approaching vessels have long line of sight to see the infrastructure. It is likely that traffic will habituate to take in to account the location of the jetty once in situ as there is adequate navigational width in this location.</p> <p>PLA further noted that only vessels with a PEC are navigating the southern limit of the authorised channel. Those vessels that have a PLA pilot onboard pass well north. It may be an option to test the PEC holders with ship simulation to assess impact of infrastructure.</p>
6	<p>: Ship Bridge Simulations</p> <p>PLA noted that the specification is sufficiently broad; it is expected the pilots will learn a lot from trying to achieve the specified aims and had no further comments to add.</p> <p>Simulations to be held on 24th and 25th April. LH to attend from PLA with 2no. PLA pilots (TBC).</p>

Next meeting: TBC following ship simulations.

CORY DECARBONISATION PROJECT: PNHA REVIEW

Project Title	Cory Decarbonisation Project: PNHA Review
Project Number	0235
Meeting subject / purpose	Cory Lighterage Consultation
Revision	R01-00
Date of meeting	19-Apr-2023
Start time	13:00 GMT
Finish time	13:30 GMT
Client	WSP / Cory Environmental
Location	Meeting Location

DOCUMENT CONTROL

Revision	Date of Issue	Description	Approved
R01-00	19-Apr-2023	Issued to attendees for comment	SAB

ATTENDEES

Organisation	Attendee	Role	Initial
NASH Maritime	Sam Anderson-Brown	Principal Consultant	SAB
Cory Environmental	James Andrews	Head of Lighterage and Ship Repair	JA

NOTES OF MEETING

1	Meeting Purpose	Action
1.1	SAB explained that since the last consultation meeting with the Cory Lighterage team (02-Aug-2022) the jetty design had been further developed and two design iterations were being considered. SAB went on to clarify that the purpose of the meeting was to understand the possible impact of each design on the existing Cory lighterage operation at Belvedere.	
2	Design Options	
2.1	SAB presented the two design options, Option 2 (closest to the Authorised Channel) and Option 3 (in line with the existing Middelton Jetty facility nearest to the shore)	
2.2	SAB presented a number of indicative swept paths showing Cory vessels navigating to the downstream shoreside berth of the Middelton Jetty. These swept paths had been overlaid with the Option 2 and 3 Jetty designs to illustrate the potential spatial impact on the swept paths arising from each Jetty design. JA commented that the swept paths showed two extremes, one being a very tight (ebb tide) manoeuvre in close proximity to the Middelton Jetty and the other being a very wide (flood tide) manoeuvre, which in a real-world scenario would result in	

	<p>the barge making contact with the most westerly jetty dolphin. JA emphasised that in all reality a representative manoeuvre would likely (spatially) fall between the two presented examples and would therefore mean the barges passed well clear of both pier structures</p> <p>JA added that on a strong flood tide, rather than attempting to swing the barge around the eastern end of the Middelton Jetty (as shown in the swept paths) Cory tugs were more likely to position head to tide and crab across before falling back on to the Jetty and mooring the barge — or alternatively navigate through the “link span” under the brow of the main Middelton Jetty to remove the need for navigating around the lower end.</p>	
2.3	<p>JA made the following comments in relation to each Jetty Option:</p> <p>Option 2:</p> <ul style="list-style-type: none"> • Gave a greater offset between Middelton Jetty and proposed jetty, allowing for Cory Tug vessels to go head to tide with ease when manoeuvring barges to the downstream shoreside berth. • Positioning of brow is closer to Middelton Jetty berth giving (relative) more concern over contact than with Option 3. • Although there is a greater offset, extreme eastern end of Middelton Jetty is slightly closer to most westerly jetty dolphin. SAB confirmed this. <p>Option 3:</p> <ul style="list-style-type: none"> • Reduced offset between Middelton Jetty and proposed jetty, making head to flood tide manoeuvre more challenging (in relative terms) • Positioning of brow is further away from Middelton Jetty berth giving (relative) less concern over contact than with Option 2. • Extreme eastern end of Middelton Jetty is slightly further from most westerly jetty dolphin. 	
2.4	<p>JA felt that neither Jetty design would have an adverse impact on Cory’s existing lighterage operation and that the lighterage team would be able to continue their operation should either option be taken forward. JA based his judgement on his own first-hand experience of operating in the area and knowledge of previous incidents and existing operational obstructions.</p> <p>JA mentioned that the western dolphin of the now disused Belvedere power station jetty (to be demolished as part of this proposal) is located in closer proximity to the Middelton Jetty than the proposed access brows for both proposed jetty options, this dolphin has never been hit by a Cory tug and barge. Equally, the navigable width between the western end of the Middelton Jetty and the existing Cory barge moorings is less than the proposed navigable width between the Middelton Jetty and proposed jetty.</p> <p>JA suggested that several pellet buoys be put down to simulate the location of the proposed jetty and brow and to enable further decision making on the extent to which the proposed jetty location would constitute a contact hazard.</p>	
2.5	<p>JA asked SAB to provide plots presented so that he could undertake consultation with Tug master’s within the lighterage team</p>	
3	Additional Consultation and informal simulations	
3.1	<p>Further to the consultation meeting conducted on 19-Apr-23 (see Section 1 and 2 of this document). James Andrews and Tom Jones (TJ (Cory Tugmaster)) attended Ship Bridge Simulations, at HR Wallingford on 24 and 25 Apr. The purpose of the simulations was to model the arrival of the CO₂ tanker at the proposed Jetty location.</p> <p>JA and TJ were present to comment on the impact of the tanker approach / departure on Cory’s lighterage operation. However, as part of the simulations there</p>	

was also an opportunity (facilitated by HR Wallingford) for TJ to undertake simulation runs utilising a Cory Tug ship model with the Middleton Jetty and Option 2 / Option 3 of the proposed Jetty design modelled. TJ undertook runs to the shore side downstream berth.

3.2 Following the simulation runs undertaken by TJ and a review of the plots SAB had previously provided to JA, TJ concluded that that neither Jetty design would have an adverse impact on Cory’s existing lighterage operation and that the lighterage team would be able to continue their operation should either option be taken forward.

As a precautionary measure TJ concluded that the placement of pellet buoys (as previously suggested by JA) would be a worthwhile exercise and would prove that the positioning of proposed jetty (Option 2 or 3) would have no impact on the existing lighterage operation.



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**TECHNICAL APPENDIX 20-1:
MAJOR ACCIDENTS AND
DISASTERS LONG LIST**

Cory Decarbonisation Project

APPENDIX 20-1: MAJOR ACCIDENTS AND DISASTERS LONG LIST

Table 1 shows the potential vulnerability of the Proposed Scheme to the risk of a MA&D at the type of level. The table presents the MA&D types which require further assessment in the ES. The phases are indicated in the table as “C” for construction and “O” for operation. Justification is provided for those MA&D types that do not require further assessment in the ES.

Table 1: Major Accidents and Disasters – Scoped In or Out of Further Assessment

MA&D Group	MA&D Category	MA&D Type	Basis of Decision (for consideration in assessment)	Considered in Assessment and Phase
Natural Hazards	Geophysical	Earthquakes	<p>Do not occur in Britain of a sufficient intensity owing to the motion of the Earth’s tectonic plates causing regional compression. Uplift from the melting of the ice sheets that covered many parts of Britain thousands of years ago can cause movement.</p> <p>The BGS¹ acknowledges that, on average, a magnitude 4 earthquake happens in Britain roughly every two years and a magnitude 5 earthquake occurs around every 10 to 20 years.</p> <p>As such the Cabinet Office National Risk Register of Civil Emergencies states that “<i>Earthquakes in the UK are moderately frequent but rarely result in large amounts of damage. An earthquake of sufficient intensity (determined on the basis of the earthquake’s local effect on people and the environment) to inflict severe damage is unlikely</i>”².</p> <p>The Proposed Scheme is not located in, or close to, an active area. Therefore, further consideration of this risk is not required in the assessment.</p>	X

MA&D Group	MA&D Category	MA&D Type	Basis of Decision (for consideration in assessment)	Considered in Assessment and Phase
Natural Hazards	Geophysical	Volcanic Activity	The Proposed Scheme is not located in, or close to, an active area. It is highly unlikely that an ash cloud could significantly impact on any aspect of the Proposed Scheme. Therefore, further consideration of this risk is not required in the assessment.	X
Natural Hazards	Geophysical	Landslides	The Proposed Scheme is surrounded by flat topography. There are no records of historical landslides in the area. No steep slopes or embankments are expected to be constructed as part of the Proposed Scheme. Therefore, further consideration of this risk is not required in the assessment.	X
Natural Hazards	Geophysical	Sinkholes	Natural sinkholes have been recorded in Greater London however, these have not been in the vicinity of the Proposed Scheme. The geotechnical design of the Proposed Scheme will take into consideration the underlying geology and any potential ground stability issues. Therefore, further consideration of this risk is not required in the assessment.	X
Natural Hazards	Geophysical	Tsunamis	The Proposed Scheme is located in London, within (Proposed Jetty) and adjacent to the River Thames. Tsunami risk in England is considered to be low, although potential meteotsunamis (caused by weather conditions rather than seismic activity) have been recorded on several occasions in the UK. Meteotsunamis commonly strike the coasts of the UK, damaging harbours, boats and very rarely, causing fatalities. There are no records of historical meteotsunamis affecting the River Thames. Flood defences in the River Thames would likely	X

MA&D Group	MA&D Category	MA&D Type	Basis of Decision (for consideration in assessment)	Considered in Assessment and Phase
			<p>offer some protection in such an eventuality, although it is a possibility that these defences could be overwhelmed.</p> <p>This risk event type is not considered to require further assessment on the basis that any risks will be captured under the coastal flooding and flood defence failure MA&D types.</p>	
Natural Hazards	Hydrological	Coastal Flooding	<p>The Proposed Scheme is located on the River Thames, which is a tidally influenced river. The Environment Agency Flood Map for Planning³ shows that the Proposed Scheme is located within Flood Zone 3. This indicates that the Proposed Scheme is located within the possible tidal flood extent of the 1 in 200-year event (0.5% Annual Probability of Exceedance event), excluding the presence of flood defences. However, there are Environment Agency maintained flood defences located along the River Thames, parts of which are within the Site. These will provide the Proposed Scheme with a reduction in local flood risk. Therefore, it is proposed to further consider this MA&D type in the assessment.</p>	<p>✓ C, O</p>
Natural Hazards	Hydrological	Fluvial Flooding	<p>The primary sensitive surface water feature within the Site is the River Thames. There are records of fifteen minor sensitive surface water features onsite comprising underground and surface level inland rivers. Environment Agency Flood Map for Planning (Rivers and Sea) indicates that the Proposed Scheme is located in the high-risk Flood Zone 3, where the annual risk of flooding from fluvial sources is more than 1 in 100 (1%), not accounting for engineered flood protection schemes. High levels of precipitation (i.e. in winter)</p>	<p>✓ C, O</p>

MA&D Group	MA&D Category	MA&D Type	Basis of Decision (for consideration in assessment)	Considered in Assessment and Phase
			could result in the flooding of the Proposed Scheme. Therefore, it is proposed to further consider this MA&D type in the assessment.	
Natural Hazards	Hydrological	Pluvial Flooding	<p>The London Regional Flood Risk Appraisal (2018)⁴ indicates that flooding is a major issue for Greater London and increasing due to climate change. Although the Study Area is significantly drier than the national average in both summer and winter, extreme events do occur. A recent, notable extreme rainfall event for the region was flash flooding in October 2022, where some areas saw a month's worth of rain in a day.</p> <p>With regard to future projections, UKCP18⁵ suggests that climate change is projected to lead to wetter winters and drier summers although natural variation, including extreme events such as storms, heavy downpours and heatwaves, will continue to punctuate these trends. Under a high emission scenario (RCP8.5) it is estimated that by the 2030s, precipitation in winter is likely to increase by 6.5% at the 50th percentile.</p> <p>The increase in impermeable surfaces as a result of the Proposed Scheme along with the likely increase in rainfall as a result of climate change over the lifetime of the Proposed Scheme would increase flood risk if not mitigated. However, mitigation against future flood risk is considered in Chapter 11: Water Environment and Flood Risk (Volume 1) and Chapter 12: Climate Resilience (Volume 1) and therefore does not require further consideration as part of the MA&D assessment.</p>	X

MA&D Group	MA&D Category	MA&D Type	Basis of Decision (for consideration in assessment)	Considered in Assessment and Phase
Natural Hazards	Hydrological	Groundwater Flooding	<p>The Study Area is not located within a Drinking Water Safeguard Zone for either surface or groundwater or a Groundwater Source Protection Zone.</p> <p>Several aquifers are present in the Study Area, including a Secondary Undifferentiated aquifer (superficial alluvium), three Secondary A aquifers (the Blackheath Member (Harwich Formation), Lambeth Group, and Thanet Formation) and a Principal aquifer (Upper Chalk Formation). Groundwater emergence is therefore possible. Groundwater may also be present as discontinuous pockets of perched water within the Made Ground within the Site.</p> <p>Chapter 11: Water Environment and Flood Risk (Volume 1) identifies that the risk of groundwater flooding across the Site is categorised as being moderate.</p> <p>The construction and operation of the Proposed Scheme is not expected to elevate groundwater flooding risk. There is not a high risk of groundwater flooding within the area of the Proposed Scheme, and no significant excavations are proposed. Therefore, further consideration of groundwater flooding is not required as part of the MA&D assessment.</p>	X
Natural Hazards	Hydrological	Avalanches	<p>The Proposed Scheme's topography is relatively flat and therefore an avalanche will not occur. Therefore, further consideration of this risk is not required as part of the assessment.</p>	X

MA&D Group	MA&D Category	MA&D Type	Basis of Decision (for consideration in assessment)	Considered in Assessment and Phase
Natural Hazards	Climatological and Meteorological	Cyclones, hurricanes, typhoons, storms and gales	<p>Cyclones, hurricanes and typhoons do not occur in the UK. South-East England is more sheltered than other parts of the UK, with less rainfall and fewer incidences of strong winds overall. However, extreme events have been known to occur. The most recent notable gale affecting the region was in February 2022 where Storm Eunice led to wind speeds reaching over 50mph in the area of the Proposed Scheme, resulting in damage to some buildings. Storms and gales could result in damage to new site infrastructure, property and works onsite. However, it is anticipated that the risk of vulnerability to a MA&D for the Proposed Scheme would be comparable to that for Riverside 1 and Riverside 2 and design standards would take into account these weather conditions. Specific measures are therefore not considered to be required as part of the Proposed Scheme.</p>	X
Natural Hazards	Climatological and Meteorological	Thunderstorms	<p>This type of event could result in lightning strikes to temporary elevated structures during construction (e.g. tower cranes) and new elevated structures (such as stacks) introduced as part of the Proposed Scheme; however, the risk is no different to similar elevated structures for Riverside 1 and Riverside 2. New elevated structures will be designed considering historical site experience and current design standards that consider climate change resilience. Specific measures are therefore not considered to be required as part of the Proposed Scheme.</p>	X

MA&D Group	MA&D Category	MA&D Type	Basis of Decision (for consideration in assessment)	Considered in Assessment and Phase
Natural Hazards	Climatological and Meteorological	Wave surges	The Proposed Scheme is located sufficiently inland, and therefore is not subject to wave surges.	X
Natural Hazards	Climatological and Meteorological	Extreme temperatures: Heatwaves Low (sub-zero) temperatures and heavy snow	<p>High temperature records are being broken with increasing frequency. On 3rd August 1990, a record high of 37.1°C was reached in Cheltenham. This was broken in 2003, when 38.5°C was reached in Faversham, Kent, then again in 2019, when Cambridge reached 38.7°C, and most recently on 19th July 2022, when the current record of 40.3°C was recorded in Coningsby, Lincolnshire and the Met Office declared its first ever red alert for heat and declared a national emergency. Widespread transport disruption occurred, and the increased electricity demand almost led to a blackout in London, which was averted by the emergency purchase of electricity.</p> <p>The most widespread and prolonged low temperatures and heavy snow in recent years occurred from December 2009 to January 2010. Daytime temperatures were mostly sub-zero across the UK. At night, temperatures in England regularly fell to -5°C to -10°C. Snowfall across the UK lasted for some time, allowing 20cm to 30cm of snow to build up, closing schools and making it very difficult to travel.</p> <p>At the Site:</p>	X

MA&D Group	MA&D Category	MA&D Type	Basis of Decision (for consideration in assessment)	Considered in Assessment and Phase
			<ul style="list-style-type: none"> Between 1981 and 2010, there were 12 occurrences in which summer mean temperatures exceeded 27.5°C on five or more consecutive days. Between 1981 and 2010, there have been 31 days with a maximum minimum temperature below zero degrees Celsius. Between 1981 and 2010, there were 160 days with snow lying at 0900 however, there are no records from the Met Office of the depth of snow. <p>The Proposed Scheme will be vulnerable to extreme temperatures and this will be considered in Chapter 12: Climate Resilience (Volume 1). However, the Proposed Scheme itself is not expected to increase risks associated with extreme weather in the area. Therefore, specific measures are not considered to be required as part of the Proposed Scheme.</p>	
Natural Hazards	Climatological and Meteorological	Droughts	<p>Over the past 40 years or so England has experienced five long-duration droughts and two shorter periods of drought. Southern England is prone to drought. The Kent and South London Environment Agency Area was declared as in-drought in August 2022. Potable water in the area surrounding the Site Boundary is supplied by Thames Water, which sources 80% of its supplies from river abstraction.</p> <p>Aquifers are present in the Site and an active licenced surface water abstraction point located 15m to the west of the Site abstracts from the River Thames. It is not anticipated that the Proposed Scheme</p>	X

MA&D Group	MA&D Category	MA&D Type	Basis of Decision (for consideration in assessment)	Considered in Assessment and Phase
			<p>will significantly impact abstraction points, but it is possible that dewatering during construction may have an impact on nearby water courses with a groundwater baseflow component.</p> <p>The River Thames has been identified as experiencing some water resource availability issues, notably when its source dried out completely during the 2022 heatwave.</p> <p>Prolonged periods of drought can also impact infrastructure as drying out and cracking of soils may affect structural stability, and prolonged dry periods can lead to cracking of surfaces and more rapid deterioration of materials. Decreased rainfall combined with an increase in the average temperature can also increase subsidence, affecting the stability of the foundations and structures.</p> <p>The design of the sub-structure of the Proposed Scheme will be resilient to ground shrinkage and this risk would be considered in the development of the design for the Proposed Scheme.</p>	
Natural Hazards	Climatological and Meteorological	Severe Space Weather: Solar Flares	<p>Solar flare events are known to interrupt radio and other electronic communications. Records from solar storms in 1921 and 1960 describe widespread radio disruption and impacts on railway signalling and switching systems.</p> <p>There will be the use of technology to control processes and plant, however this will be appropriately protected, therefore the Proposed Scheme is no more vulnerable than the current baseline.</p>	X

MA&D Group	MA&D Category	MA&D Type	Basis of Decision (for consideration in assessment)	Considered in Assessment and Phase
Natural Hazards	Climatological and Meteorological	Severe Space Weather: Solar Energetic Particles	Solar energetic particles cause solar radiation storms, but only in outer space. Therefore, further consideration of this risk is not required as part of the assessment.	X
Natural Hazards	Climatological and Meteorological	Severe Space Weather: Coronal Mass Ejections	Coronal mass ejections (CME) cause geomagnetic storms. The geomagnetic storm in 2003 caused the UK aviation sector to lose some Global Positioning System (GPS) functions for a day, however there were no known significant impact on road users or infrastructure.	X
Natural Hazards	Climatological and Meteorological	Fog	Fog is one of the most common weather conditions in the UK, particularly throughout autumn and winter. Severe disruption to transport occurs when the visibility falls below 50m over a wide area. However, the Proposed Scheme, as a stationary installation, will not be vulnerable to fog. The only risks would be to staff travelling to the Site, but this risk would not be significantly different from the baseline. The health and safety of staff is also managed by occupational health and safety legislation.	X
Natural Hazards	Climatological and Meteorological	Wildfires: Forest fire, Bush / brush, pasture	In April and May 2011 numerous wildfires broke out across the UK after unusually hot and dry weather. England received only 21% of its usual rainfall for April 2011. The Proposed Scheme is located in a heavily urbanised area. There is some vegetation in the surrounding area, but it does not have a potential high fuel load (e.g., gorse) and it is unlikely that a wildfire	X

MA&D Group	MA&D Category	MA&D Type	Basis of Decision (for consideration in assessment)	Considered in Assessment and Phase
			<p>would occur. Urban fires are assessed under manmade hazards elsewhere in this assessment.</p>	
Natural Hazards	Climatological and Meteorological	Poor Air Quality	<p>In 2006, the UK experienced two periods of extended hot weather with associated elevated ozone and harmful airborne particles. In the spring of 2015, two particle pollution episodes caused widespread poor air quality throughout the UK, with multiple areas measuring 'High' on the Daily Air Quality Index and resulted in around 1,100 deaths due to exacerbation of pre-existing ill-health conditions. The summer of 2015 also contained two elevated ozone episodes.</p> <p>Construction: Construction effects would be temporary for the duration of the construction phase. Increased dust emissions from construction activities and traffic could lead to potential loss of amenity at sensitive receptors. Traffic management measures may result in both positive and adverse changes to emissions from vehicle exhausts and roadside pollution concentrations.</p> <p>Operation: The Proposed Scheme is expected to result in additional emissions from increased road traffic and marine vessel movements. The Proposed Scheme will result in a change to the emissions of pollutants at Riverside Campus, with Riverside 1 currently regulated by the Environment Agency under an Environmental Permit and Riverside 2 to be regulated by Permit (when operating). The introduction of these new emission sources and pollutants (including amines and aldehydes) will require an Environmental Permit. In its determination of the Environmental Permit, the Environment Agency will set emission limits for the new pollutants to air together with the</p>	X

MA&D Group	MA&D Category	MA&D Type	Basis of Decision (for consideration in assessment)	Considered in Assessment and Phase
			<p>requirement to implement appropriate mitigation measures to prevent harm to the environmental receptors identified in Chapter 5: Air Quality (Volume 1) (if needed).</p> <p>Therefore, significant residual air quality effects which could result in a MA&D are not anticipated during construction and operation of the Proposed Scheme.</p>	
Natural Hazards	Biological	Disease epidemics: <ul style="list-style-type: none"> ● Viral ● Bacterial ● Parasitic ● Fungal ● Prion 	<p>The Proposed Scheme is located in a developed country where the population is in general good health. Disease epidemics in England are currently limited to COVID-19, the first cases of which were identified in February 2020. COVID-19 is currently a global pandemic, and the vulnerability of the Proposed Scheme to a MA&D caused by this pandemic during construction and operation should be mitigated by the occupational health and safety processes that are implemented by both the contractor and government rules and guidelines on the control of spread of COVID-19.</p> <p>The UK Health Security Agency (UKHSA) is the executive agency of the Department of Health responsible for protecting the nation from public health hazards and preparing for and responding to public health emergencies. One of the UKHSA's functions is to protect the public from infectious disease outbreaks and the Agency has produced a document providing operational guidance for the management of outbreaks of communicable disease, 'Communicable Disease Outbreak management: Operational Guidance'⁶.</p>	X

MA&D Group	MA&D Category	MA&D Type	Basis of Decision (for consideration in assessment)	Considered in Assessment and Phase
			<p>Risks from Weil's Disease (or leptospirosis) are considered to be of low likelihood, but not of high consequence as a low number of people contract this disease in the UK each year. It would be unlikely for any staff to contract Weil's Disease as appropriate PPE will be worn and any risks managed in the Outline Code of Construction Practice (OCoCP).</p> <p>The use of the Proposed Scheme is not going to give rise to any disease epidemics.</p>	
Natural Hazards	Biological	Animal Diseases: <ul style="list-style-type: none"> ● Avian influenza; ● West Nile virus; ● Rabies; ● Foot and mouth; and ● Swine fever. 	<p>Low and highly pathogenic avian influenza has been recorded in poultry in the UK several times in the last 10 years, most recently in the autumn and winter of 2021/22 and 2022/23, although with no human cases reported.</p> <p>There was a devastating foot and mouth outbreak in 2001. There are no known foot and mouth burial pits in the area, and it is considered unlikely that they will be present in the project area due to its highly urbanised location.</p> <p>The use of the Proposed Scheme is not going to be the source of any disease epidemics and spread would be controlled through containment of infected animals including prohibition of transportation.</p>	X
Natural Hazards	Biological	Plants	<p>Chapter 7: Terrestrial Biodiversity (Volume 1) and Chapter 8: Marine Biodiversity (Volume 1) identify that a survey of Invasive Non-Native Species will be undertaken within the Site.</p>	X

MA&D Group	MA&D Category	MA&D Type	Basis of Decision (for consideration in assessment)	Considered in Assessment and Phase
			Standard control measures would be implemented by the appointed contractor during construction to handle and dispose of any diseased plants and/or injurious weeds and prevent their spread.	
Technological or Manmade Hazards	Societal	Extensive public demonstrations which could lead to violence and loss of life.	The Proposed Scheme is located in a developed country that has steady, yet small population growth. England is politically stable with no direct border with countries experiencing conflicts. The Proposed Scheme should not lead to high profile public demonstrations or disorder.	X
Technological or Manmade Hazards	Societal	Widespread damage to societies and economies.	The Proposed Scheme is located in a developed country that has steady, yet small population growth. England is politically stable with no direct border with countries experiencing conflicts. It is proposed to address positively key policy priorities for climate change.	X
Technological or Manmade Hazards	Societal	The need for large-scale multi-faceted humanitarian assistance.	The Proposed Scheme is located in a developed country that has steady, yet small population growth. England is politically stable with no direct border with countries experiencing conflicts.	X
Technological or Manmade Hazards	Societal	The hindrance or prevention of humanitarian assistance by	The Proposed Scheme is located in a developed country that has steady, yet small population growth. England is politically stable with no direct border with countries experiencing conflicts.	X

MA&D Group	MA&D Category	MA&D Type	Basis of Decision (for consideration in assessment)	Considered in Assessment and Phase
		political and military constraints.		
Technological or Manmade Hazards	Societal	Significant security risks for humanitarian relief workers in some areas.	The Proposed Scheme is located in a developed country that has steady, yet small population growth. England is politically stable with no direct border with countries experiencing conflicts.	X
Technological or Manmade Hazards	Societal	Famine	The Proposed Scheme is located in a developed country that produces its own crops and imports food. It is politically stable and not subject to hyperinflation and therefore food is available, whether produced within the UK or imported. Famine is also not relevant to the use of the Proposed Scheme.	X
Technological or Manmade Hazards	Societal	Displaced population	There will be no significant displacement of populations as part of the Proposed Scheme.	X
Technological or Manmade Hazards	Industrial and Urban Accidents	Major Accident Hazard Chemical sites	There are four Control of Major Accident Hazard (COMAH) sites within a 5km radius of the Proposed Scheme: <ul style="list-style-type: none"> • Crossness Sewage Treatment Works, Thames Water Utilities Limited (Lower Tier) (adjacent to the Site Boundary); 	✓ C, O

MA&D Group	MA&D Category	MA&D Type	Basis of Decision (for consideration in assessment)	Considered in Assessment and Phase
			<ul style="list-style-type: none"> • Dagenham, Stolthaven Dagenham Limited (Chemical installations - distribution, Fuel storage/distribution) (Upper Tier) (approximately 750m from the Site Boundary); • Rainham, Flogas Britain Limited (Fuel storage/distribution) (Upper Tier) (approximately 815m from the Site Boundary); and • Riverside Sewage Treatment Works, Thames Water Utilities Limited (Lower Tier) (approximately 1.8km from the Site Boundary). <p>Therefore, it is proposed to further consider this MA&D type in the assessment.</p>	
Technological or Manmade Hazards	Industrial and Urban Accidents	Major Accident Hazard Pipelines	<p>The HSE's Land Use Planning tool does not identify the presence of any major accident hazard pipelines within 1km of the Proposed Scheme.</p> <p>However, the consultation response to the EIA Scoping Report⁷ from Northern Gas Networks indicates that there may be gas infrastructure in the vicinity of the Proposed Scheme. Consultation will be undertaken with Northern Gas Networks to identify whether any of the gas infrastructure is present within the Study Area.</p> <p>Therefore, it is proposed to further consider this MA&D type in the ES once the location of the gas infrastructure has been determined.</p>	✓ C, O
Technological or Manmade Hazards	Industrial and Urban Accidents	Nuclear	<p>Nuclear sites are designed, built and operated so that the chance of accidental releases of radiological material in the UK is extremely low. Last historical major accident in the UK was Windscale in 1957.</p>	X

MA&D Group	MA&D Category	MA&D Type	Basis of Decision (for consideration in assessment)	Considered in Assessment and Phase
			<p>There are no nuclear sites within 5km of the Site Boundary. The closest nuclear site is Bradwell Nuclear Power Station, located approximately 80km to the east.</p>	
Technological or Manmade Hazards	Industrial and Urban Accidents	Fuel storage	<p>In December 2005, Europe's largest peacetime fire occurred at the Buncefield Oil Storage Terminal in Hemel Hempstead, England. The surrounding area was temporarily evacuated and some local businesses experienced long term disruption to operations.</p> <p>There are two COMAH regulated fuel storage sites within the Study Area, which have been considered under the Major Accident Hazards Chemical Sites MA&D type above.</p> <p>There are also several commercial fuel stations, including a BP station at Abbey Wood approximately 2km to the south west, a Morrisons petrol station approximately 2.5km to the south-east, and a Morrisons petrol station approximately 3km to the west from the Site Boundary. The inventory of fuel held at the fuel station sites is relatively small (i.e. below COMAH thresholds) and the hazardous area classification zones will not extend beyond the petrol station boundary. Therefore, further assessment is not required.</p>	X
Technological or Manmade Hazards	Industrial and Urban Accidents	Dam breaches	<p>Dam breaches in the UK are rare; the last major breach was at the Cwm Eigiau dam in 1925, which caused 17 fatalities and widespread flooding. No dam has been identified within 5km of the Proposed Scheme.</p>	X

MA&D Group	MA&D Category	MA&D Type	Basis of Decision (for consideration in assessment)	Considered in Assessment and Phase
Technological or Manmade Hazards	Industrial and Urban Accidents	Mines and storage caverns	Coal Authority records state that there are no areas of coal workings in the area of the Proposed Scheme. No active or historic mining activity has been identified in the area.	X
Technological or Manmade Hazards	Industrial and Urban Accidents	Fires	<p>Fires could be initiated by construction related activities which impact areas adjacent to the construction activities. During construction, standard control measures would be implemented by the appointed contractor to manage the risk of fire. Therefore, further consideration is not considered necessary.</p> <p>London City Airport is located approximately 8km east of the Proposed Scheme, as well as numerous fuel storage sites as identified above (under fuel storage and major accident hazard chemical sites).</p> <p>The Proposed Scheme is located in a predominantly industrial area with the nearest residential area being approximately 170m south of the Site Boundary. The Site contains nature conservation sites, Metropolitan Open Land and PRow.</p> <p>An OEPRP will be prepared for the Proposed Scheme which will consider the risks associated with fires impacting the Proposed Scheme and the potential for the Proposed Scheme to be an ignition source for a fire. In addition, the design of the Proposed Scheme will incorporate fire suppression systems as required.</p>	X
Technological or Manmade Hazards	Transport accidents	Road	Significant transport accidents occur across the UK on a daily basis, mainly on roads, and involving private and/or commercial vehicles.	X

MA&D Group	MA&D Category	MA&D Type	Basis of Decision (for consideration in assessment)	Considered in Assessment and Phase
			<p>Construction: During construction there will be an increase in heavy construction plant and equipment on local road network which may increase the risk of accidents (Chapter 18: Landside Transport (Volume 1)). It is not envisaged that the construction of the Proposed Scheme would generate or attract any hazardous loads.</p> <p>Operation: Chapter 18: Landside Transport (Volume 1) assesses the potential impacts of hazardous loads.</p> <p>On this basis, it is proposed that further assessment is not required.</p>	
Technological or Manmade Hazards	Transport accidents	Rail	The closest railway line to the Proposed Scheme passes through Belvedere Station, approximately 600m to the south. Therefore, further assessment is not required.	X
Technological or Manmade Hazards	Transport accidents	Waterways	<p>The Proposed Scheme is located immediately adjacent to the River Thames, which carries significant water traffic and will also be used by the Proposed Scheme to transport liquified carbon dioxide.</p> <p>Chapter 19: Marine Navigation (Volume 1) assesses the potential impacts associated with the collision of a Proposed Scheme vessel. It is also proposed to explore the potential use of the River Thames to transport some construction materials if practicable. Therefore, it is proposed to further consider this MA&D type in the assessment.</p>	<p>✓</p> <p>C, O</p>
Technological or Manmade Hazards	Transport accidents	Aviation	<p>There have been no major air accidents in the UK since the Kegworth incident in 1989.</p> <p>London City Airport is located approximately 8km to the west of the Proposed Scheme.</p>	X

MA&D Group	MA&D Category	MA&D Type	Basis of Decision (for consideration in assessment)	Considered in Assessment and Phase
			<p>Public Safety Zones (PSZ) are areas at either end of the runway and development is restricted within these zones to minimise the risk of death or injury in the event of an aircraft accident on take-off or landing. The runway at London City Airport runs west to east and the PSZ extends approximately 2km either end of the runway. Therefore, the PSZ associated with the airfield will not interact or be in close proximity to the Proposed Scheme. Therefore, further consideration is not required.</p>	
Technological or Manmade Hazards	Pollution accidents	Air	<p>Construction: Construction impacts would be temporary for the duration of the construction phase. Increased dust emissions from construction activities and traffic could lead to potential loss of amenity at sensitive receptors. Traffic management measures may result in both positive and adverse changes to emissions from vehicle exhausts and roadside pollution concentrations. Emissions from mobile plant and equipment are covered under H&S and environmental legislation.</p> <p>Operation: The Proposed Scheme will result in a change to the emissions of pollutants at Riverside Campus, with Riverside 1 currently regulated by the Environment Agency under an Environmental Permit and Riverside 2 to be regulated by Permit (when operating). The introduction of new emission sources and pollutants associated with the Carbon Capture Facility will require an Environmental Permit. In the determination of the Environmental Permit, the Environment Agency will set emission limits for the new pollutants to air together with the requirement to implement</p>	X

MA&D Group	MA&D Category	MA&D Type	Basis of Decision (for consideration in assessment)	Considered in Assessment and Phase
			<p>appropriate mitigation measures to prevent harm to human health and environmental receptors (if needed). Therefore, significant residual air quality effects which could result in a MA&D are not anticipated during construction and operation of the Proposed Scheme. Therefore, further consideration is not required.</p>	
Technological or Manmade Hazards	Pollution accidents	Land	<p>During construction there may be an increased risk of leaks and spillages of hazardous materials associated with the construction activities. During construction, standard control measures would be implemented by the appointed contractor and identified in the OCoCP to manage the risk of spillages and leaks. It is therefore proposed not to evaluate this further for the construction phase. During operation, it is understood that a range of new hazardous wastes may be generated and stored onsite before going offsite for treatment, however quantities and characteristics are not fully known at this time. Therefore, this MA&D type requires further evaluation when more information is known.</p>	<p>✓ ○</p>
Technological or Manmade Hazards	Pollution accidents	Water	<p>As outlined in Chapter 11: Water Environment and Flood Risk (Volume 1), there are several main rivers located within the Site and Study Area. These include a network of watercourses classified as main rivers within the Site and the River Thames located immediately north of the Site Boundary. There are also ordinary watercourses and ponds located in the Study Area. In addition, several aquifers are present in the project area, including a Secondary Undifferentiated aquifer (superficial Alluvium), three</p>	<p>✓ ○</p>

MA&D Group	MA&D Category	MA&D Type	Basis of Decision (for consideration in assessment)	Considered in Assessment and Phase
			<p>Secondary A aquifers (the Blackheath Member (Harwich Formation), Lambeth Group, and Thanet Formation) and a Principal aquifer (Upper Chalk Formation). It is important that these water resources are protected.</p> <p>During construction there may increase the risk of leaks and spillages of hazardous materials associated with the construction activities. During construction, standard control measures would be implemented by the appointed contractor and identified in the OCoCP to manage the risk of spillages and leaks. It is therefore proposed not to evaluate this further for the construction phase.</p> <p>During operation, it is understood that a range of new hazardous materials may be stored onsite, however quantities and characteristics are not fully known at this time. Therefore, this MA&D type requires further evaluation when more information is known.</p>	
Technological or Manmade Hazards	Utilities failures	Electricity	<p>Instances of electricity failure (also referred to as power loss or blackout) can be caused by a number of things, such as severe weather (e.g. very strong winds, lightning and flooding) which damage the distribution network. These tend to be mainly specific place, local (e.g. metropolitan area) and less frequently regional (e.g. North East) as a result of severe winter storms and consequent damage to the distribution overhead line network.</p> <p>Riverside 1 includes infrastructure to deliver electricity to the national grid. Riverside 2 will also include similar infrastructure. The Proposed Scheme will include the installation of electrical</p>	X

MA&D Group	MA&D Category	MA&D Type	Basis of Decision (for consideration in assessment)	Considered in Assessment and Phase
			<p>infrastructure, including new switch rooms, transformers and backup power generators. The responsibility for any diversion works and the installation of new electrical infrastructure will lie with the relevant local operator or company. Information regarding diversion works will be considered in the assessment, however the potential risk of construction-related incidents when undertaking diversion works as part of the Proposed Scheme would be covered by existing legislation and as such does not require further consideration in the MA&D assessment.</p>	
Technological or Manmade Hazards	Utilities failures	Gas	<p>An intermediate pressure gas mains runs through the eastern part of the Site Boundary, the responsibility for which lies with the relevant local operator or company should this infrastructure fail.</p> <p>The potential risk of construction-related incidents when undertaking diversion works as part of the Proposed Scheme would be covered by existing legislation and as such does not require further consideration in the MA&D assessment.</p> <p>No natural gas use is associated with the Proposed Scheme.</p>	X
Technological or Manmade Hazards	Utilities failures	Water supply	<p>The London Water Resource Zone (WRZ) serves the vast majority of London, which is supplied primarily by the Rivers Thames and Lee. Some water scarcity has occurred in the River Thames. A small amount of water would be required during construction and a constant supply will be required during operation. However, in the event of water scarcity, additional supplies could be brought in by</p>	X

MA&D Group	MA&D Category	MA&D Type	Basis of Decision (for consideration in assessment)	Considered in Assessment and Phase
			tanker, or the facility could be safely shut down until supplies are restored.	
Technological or Manmade Hazards	Utilities failures	Sewage system	The only use of the sewage system will be facilities for use by construction and operational staff, which will be covered by H&S welfare requirements. During the construction phase temporary portable systems will be in place.	X
Technological or Manmade Hazards	Malicious Attacks	Unexploded Ordnance	<p>A low potential exists for encountering unexploded ordnance (UXO)⁸ during construction of the Proposed Scheme.</p> <p>London was bombed heavily during WW1 and WW2. However, the majority of UXO was cleared after the war. As much of the land is brownfield land which has already been developed, the discovery of previously unidentified UXO is unlikely.</p> <p>Measures would be undertaken during construction to brief staff to raise awareness of this issue, and to define appropriate response strategies such this be discovered during the works.</p> <p>There would be a limited risk of unexploded ordnance affecting the Proposed Scheme, once operational but no greater than similar schemes in the vicinity.</p>	X
Technological or Manmade Hazards	Malicious Attacks	Attacks Chemical Biological Radiological Nuclear	Terrorists remain interested in Chemical, Biological, Radiological and Nuclear (CBRN) materials, however alternative methods of attack such as employing firearms or conventional explosive devices remain far more likely.	X

MA&D Group	MA&D Category	MA&D Type	Basis of Decision (for consideration in assessment)	Considered in Assessment and Phase
			Historical use has been in closed densely occupied structures (underground, buildings) or targeted at specific individuals. The Proposed Scheme is unlikely to be a target for this type of event due to the low number of exposed targets.	
Technological or Manmade Hazards	Malicious Attacks	Transport systems	Potential systems would include (but are not limited to) railways, buses, passenger ferries, cargo vessels and aircraft. The Proposed Scheme does not fall within the definition of a transport system.	X
Technological or Manmade Hazards	Malicious Attacks	Crowded places	The Proposed Scheme does not fall within the definition of a crowded place, i.e. pedestrian routes and other thoroughfares as well as sports arenas, retail outlets and entertainment spaces. The Proposed Scheme is unlikely to be a target for this type of event due to the low number of exposed targets.	X
Technological or Manmade Hazards	Malicious Attacks	Cyber	Cyber-attacks occur almost constantly on key national and commercial electronic information, control systems and digital industries. The increasing reliance on technology to control the Proposed Scheme could render the Proposed Scheme more vulnerable to a cyber-attack. Notwithstanding this, it is not considered to be more vulnerable to attack than the existing baseline and similar infrastructure installed and running in the UK.	X
Technological or Manmade Hazards	Malicious Attacks	Infrastructure	Terrorists in the UK have previously attacked, or planned to attack, national infrastructure. Attempts were made to attack electricity substations in the 1990s. Bishopsgate, in the City of London, was	X

MA&D Group	MA&D Category	MA&D Type	Basis of Decision (for consideration in assessment)	Considered in Assessment and Phase
			<p>attacked in 1993 and South Quay in London's Docklands in 1996. These attacks resulted in significant damage and disruption but relatively few casualties.</p> <p>The Proposed Scheme would have minimal impact on local infrastructure and is unlikely to be considered a high-profile target. In addition, it is not considered to be more vulnerable to attack than other similar infrastructure in the UK.</p>	
Technological or Manmade Hazards	Engineering accidents and failures	Bridge failure	Bridge works are not proposed as part of the Proposed Scheme.	X
Technological or Manmade Hazards	Engineering accidents and failures	Flood defence failure	<p>The Site benefits from flood defences, notably the Thames Barrier, which is designed to be resistant to a 1-in-1,000 year coastal flood. In addition, there are flood defences located along the River Thames, falling partially within the Site. However, failure or overwhelming of the Thames Barrier and/or the flood defences along the River Thames in an extreme event may occur.</p> <p>The design of the Proposed Scheme has been developed to include allowances for future climate change predictions that could result in flooding. Notwithstanding these factors, the potential risk of breach events will be considered in the assessment.</p>	✓ C, O
Technological or Manmade Hazards	Engineering accidents and failures	Mast and tower collapse	There are no towers or masts proximate to the Proposed Scheme or being built as part of the Proposed Scheme. However, the Proposed Scheme does involve the construction of two Absorber Columns	X

MA&D Group	MA&D Category	MA&D Type	Basis of Decision (for consideration in assessment)	Considered in Assessment and Phase
			<p>which will have a maximum height of 113m. These columns will be constructed to current engineering standards.</p> <p>The nearest towers/masts are two wind turbines: one is located approximately 500m north of the Site Boundary; and one is located approximately 655m west of the Site Boundary.</p>	
Technological or Manmade Hazards	Engineering accidents and failures	Property or bridge demolition accidents	<p>The Proposed Scheme will involve the demolition of a single industrial facility (Munster Joinery) which is located within the Site. The demolition of this industrial facility would be managed under the CDM Regulations and therefore further consideration is not required.</p>	X
Technological or Manmade Hazards	Engineering accidents and failures	Tunnel failure /fire	<p>There are no tunnel structures proposed as part of the Proposed Scheme or within the Study Area.</p>	X

Note: C = Construction, O = Operation.

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- ¹ British Geological Survey. (2020). 'Geo Index Onshore'. Available at: [REDACTED]
- ² HM Government. (2020). 'Guidance: National Risk Register 2020'. Available at: <https://www.gov.uk/government/publications/national-risk-register-2020>
- ³ Environment Agency. (2023). 'Flood Map for Planning'. Available at: <https://flood-map-for-planning.service.gov.uk/>
- ⁴ Greater London Authority. (2018). 'London Regional Flood Risk Appraisal 2018.' Available at: https://www.london.gov.uk/sites/default/files/regional_flood_risk_appraisal_sept_2018.pdf
- ⁵ Met Office. (2023). 'UK Climate Projections'. Available at: <https://www.metoffice.gov.uk/research/approach/collaboration/ukcp>
- ⁶ Public Health England. (2014). 'Communicable Disease Outbreak Management: Operational guidance'. Available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/343723/12_8_2014_CD_Outbreak_Guidance_REandCT_2_2_.pdf
- ⁷ Cory Environmental Holdings Limited. (2023). 'Environment Impact Assessment Scoping Report: Cory Decarbonisation Project'. Available at: <https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010128/EN010128-000021-EN010128%20-%20Scoping%20Report.pdf>
- ⁸ Zetica UXO. (2023). 'Risk Maps'. Available at: [REDACTED]



**TECHNICAL APPENDIX 20-2:
PEIR RISK RECORD**

Cory Decarbonisation Project

DECARBONISATION

APPENDIX 20-2: PEIR RISK RECORD

RISK RECORD FOR SCREENED IN MA&D EVENTS

Table 1 is a record of all potential MA&D events considered as part of the PEIR assessment process.

Table 1: Risk Record for Screening MA&D Events

Risk Record Entry Number	MA&D Category	Risk Event Type	Section of Proposed Scheme	Hazard Description	Applicable Phases (Construction, Operation, Maintenance)*	Risk Description (and identifies whether the MA&D event is from an external or internal influencing factor)	Hazard sources and/or pathways	Documentation in which the event is/will be addressed	Reasonable worst consequence if event did occur and receptor(s)	Air Quality	Climate	People and Communities	Biodiversity	Cultural Heritage	Geology and Soils	Landscape and Visual	Noise and Vibration	Transport	Material Resources	Road Drainage and the Water Environment	Mitigation	Could this constitute a major accident or disaster?	Justification	Is this ALARP with existing mitigation?	Clarification	
Construction																										
1	Hydrological	Extreme weather (coastal/fluvial flooding)	Carbon Capture Facility and Proposed Jetty	Flooding of the River Thames / other surface water features.	C	Flooding of the construction site (external influencing factor).	Overtopping of flood defences which inundates the construction site.	Flood Risk Assessment (which will be presented as a technical appendix to the ES). Outline Code of Construction Practice (OCoCP) (which will be presented as part of the application for development	Nuisance only as construction works would have to be temporarily suspended.			X								X	Flood defences along the River Thames.	N	The reasonable worst consequence of this event does not meet the criteria of a major accident. The only potential receptors of harm are construction workers.	N/A	Not identified as a potential major accident / disaster event.	

							consent) and the Construction Phase H&S Plan (which will be required by the OCoCP).																
2	Hydrological	Extreme weather (fluvial flooding)	Carbon Capture Facility	Flooding of onsite surface water features.	C	Flooding of the construction site (internal influencing factor).	Inundation of the construction site.	Flood Risk Assessment (which will be presented as a technical appendix to the ES), Outline Code of Construction Practice (OCoCP) (which will be presented as part of the application for development consent) and the Construction Phase H&S Plan (which will be required by the OCoCP).	Nuisance only as construction works would have to be temporarily suspended.									X	Additional mitigation measures will be identified as part of ongoing design development in relation to flood risk. Mitigation measures to be presented in the ES.	N	The reasonable worst consequence of this event does not meet the criteria of a major accident. The only potential receptors of harm are construction workers.	N/A	Not identified as a potential major accident / disaster event.

3	Industrial and urban accidents Fire and / or explosion or release of harmful gas	Proposed Jetty	Unexploded ordnance.	C	During construction encountering UXO (internal influencing factor).	Presence of unexploded ordnance.	OCoCP (which will be presented as part of the application for development consent), CDM Register and UXO Risk Assessment (which will be required by the OCoCP).	Fire and/or explosion affects neighbouring property and/or those people in the immediate area.			X	X	X						A desk based UXO assessment has been commissioned Proposed Scheme and identified no significant sources of UXO hazard. Provide possible procedures, protocols and training required during the construction phase.	N	The reasonable worst consequence of this event does not meet the criteria of a major accident. The likely potential receptors of harm are construction workers.	N/A	Not identified as a potential major accident / disaster event.
4	Transport accidents Collapse / damage to structures	Proposed Jetty	Damage to the Proposed Jetty.	C	Marine vessel containing construction materials collides with the Proposed Jetty or other jetties within the Site (internal influencing factor).	Incorrect vessel manoeuvre when approaching the Proposed Jetty or other jetties within the Site.	OCoCP (which will be presented as part of the application for development consent), Construction Phase H&S Plan (which will be required by the OCoCP) and the pNRA (which will be presented as a technical appendix to the ES).	Damage to the marine vessel/jetty/other vessel.			X						X		Mitigation measures to be confirmed and presented in the ES.	Y	Could cause loss of life or permanent injury which requires ongoing disability support.	TBD	The assessment will be presented within the ES once mitigation measures are confirmed as part of ongoing development.

5	Engineering accidents and failures	Flood defence failure	Carbon Capture Facility	Flooding of the River Thames.	C	Flooding of the construction site (external influencing factor).	Failure of flood defences which leads to inundation of the construction site.	OCoCP (which will be presented as part of the application for development consent), Flood Risk Assessment (which will be presented as a technical appendix to the ES) and the Construction Phase H&S Plan (which will be required by the OCoCP).	Nuisance only as construction works would have to be temporarily suspended.										X										X	Flood defences along the River Thames. Flood defences inspected and maintained by the flood defence owner.	N	The reasonable worst consequence of this event does not meet the criteria of a major accident. The only potential receptors of harm are construction workers.	N/A	Not identified as a potential major accident / disaster event.
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Operation

6	Hydrological	Extreme weather (coastal/fluvial flooding)	Carbon Capture Facility	Flooding of the River Thames / other surface water features.	O,M	Flooding of the Carbon Capture Facility initiating crash shutdown (external influencing factors).	Overtopping of flood defences which inundates the Carbon Capture Facility.	Operational Environmental Management Plan (OEMP) (which will be prepared prior to the Proposed Scheme commencing operation in accordance with the Register of Commitments), Flood Risk Assessment (which will be presented as a technical appendix to the ES) and the Outline	Controlled shutdown of the Carbon Capture Facility.																				X	Flood defences along the River Thames. Additional mitigation measures will be identified during ongoing design development in relation to flood risk and potential diversions of Public Rights of Ways (PRoW)	N	The potential receptors of harm are staff working at the Proposed Scheme.	N/A	Not identified as a potential major accident / disaster event.
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8	Industrial and urban accidents Fire and / or explosion or release of harmful gas	Carbon Capture Facility	Major release of solvent (e.g. amines) on the Carbon Capture Facility.	O,M	Unconfined vapour explosion on the Carbon Capture Facility (internal influencing factor) initiating a major event on the adjacent COMAH installation.	Loss of containment leading to a vapour cloud which reaches an ignition source.	OEPRP (which will be presented as part of the application for development consent), the HAZOP, Site Emergency Plan, Explosion protection documentation and Hazardous area classification zoning and maps (all of which will be required by the OEPRP).	Unconfined vapour explosion onsite leading to structural damage and harm to people onsite and users of PRoW.	X		X								As part of the final design hazardous area classification will take place and control measures implemented to manage ignition risks to ALARP. There is a current firewater system in place onsite which will be extended to contain and mitigate fires on the Carbon Capture Facility to minimise the risk of spread to the adjacent COMAH installation. Additional mitigation measures will be identified during ongoing design development in relation to potential diversions of	Y	The potential receptors of harm are staff working at the Proposed Scheme and the users of PRoW.	TBD	The assessment will be presented within the ES once mitigation measures are confirmed as part of ongoing design development.
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																			Carbon Capture Facility to minimise the risk of spread to the adjacent COMAH installation.				
10	Industrial and urban accidents	Fire and / or explosion or release of harmful gas	Carbon Capture Facility	Lack of fire water capacity.	O,M	Major fire on the Carbon Capture Facility (internal influencing factor) initiating a major event on the adjacent COMAH installation	Uncontained fire.	OEPRP (which will be presented as part of the application for development consent), the HAZOP, Fire strategy, Fire safety management plan, Major Accident Prevention Plan (MAPP). Site Emergency Plan (all of which will be required by the OEPRP).	Fire contained within the site with drift of airborne combustion products offsite.	X	X								There is a current firewater system in place onsite which is being extended to contain and mitigate fires on the Carbon Capture Facility to minimise the risk of spread to the adjacent COMAH installation.	Y	Could cause permanent or long-lasting damage to environmental receptor(s) that cannot be restored through minor clean-up and restoration efforts.	Y	Considered to be ALARP if all mitigation measures outlined are correctly implemented.

11	Industrial and urban accidents Fire and / or explosion or release of harmful gas	Carbon Capture Facility	Loss of containment event from the LCO ₂ storage tank or the LCO ₂ above ground pipeline.	O,M	Large scale release of CO ₂ resulting from a loss of containment event involving a pipeline and/or storage tank (internal influencing factor).	Pipeline/storage tank containing LCO ₂ , air dispersion of CO ₂ gas cloud.	Dedicated studies undertaken to assess the likelihood and consequences of a large CO ₂ release. HAZID studies during FEED and detailed design.	CO ₂ toxicity and fogging hazard affects neighbouring properties and/or those people in the immediate area ((including users of public rights of way and open spaces) .	X	X	X									Continuous monitoring of pressure and flow. On detection of a potential leak, the above ground pipelines will be shut down and isolated to minimise the volume of CO ₂ released. The storage tanks and pipeline will be constructed to appropriate design standards. Management systems will be in place for preventative maintenance including storage tank and pipeline inspection and integrity checks.	Y	Could cause loss of life or permanent injury which requires ongoing disability support.	Y	Considered to be ALARP if all mitigation measures outlined are correctly implemented.
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12	Industrial and urban accidents	Fire and / or explosion or release of harmful gas	Proposed Jetty	Loss of containment event from the LCO ₂ above ground pipeline, Elevated Process Pipe and Duct Bridge or Elevated Process Pipe Bridge on the Proposed Jetty / during loading of the marine vessel.	O,M	Large scale release of CO ₂ resulting from a loss of containment event involving a pipeline and/or connection to the marine vessel (internal influencing factor).	Pipeline containing LCO ₂ , air dispersion of CO ₂ gas cloud.	Dedicated studies undertaken to assess the likelihood and consequences of a large CO ₂ release. HAZID studies during FEED and detailed design.	CO ₂ toxicity and fogging hazard affects neighbouring properties and/or those people in the immediate area.	X	X	X									Continuous monitoring of pressure and flow. On detection of a potential leak, the pipeline will be shut down and isolated to minimise the volume of CO ₂ released. The pipeline will be constructed to appropriate design standards. Management systems will be in place for preventative maintenance including pipeline inspection and integrity checks.	Y	Could cause loss of life or permanent injury which requires ongoing disability support.	Y	Considered to be ALARP if all mitigation measures outlined are correctly implemented.
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13	Industrial and urban accidents Fire and / or explosion or release of harmful gas	Carbon Capture Facility	Fire at Riverside 1 and/or 2.	O,M	Major fire at the existing Riverside 1 and/or 2 facilities initiating a major event on the Carbon Capture Facility (internal influencing factor).	Uncontained fire.	OEPRP (which will be presented as part of the application for development consent), the HAZOP, Fire strategy, Fire safety management plan, Major Accident Prevention Plan (MAPP), Site Emergency Plan (all of which will be required by the OEPRP).	Fire contained within the Site with drift of airborne combustion products offsite.	X		X								There is a current firewater system in place onsite which will be extended to contain and mitigate fires on the Carbon Capture Facility.	Y	Could cause permanent or long-lasting damage to environmental receptor(s) that cannot be restored through minor clean-up and restoration efforts.	Y	Considered to be ALARP if all mitigation measures outlined are correctly implemented.
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14	Transport accidents	Fire and / or explosion or release of harmful gas	Proposed Jetty (vessels)	Loss of containment event from the marine vessel.	O,M	Large scale release of CO ₂ resulting from a loss of containment event involving the marine vessel (internal influencing factor).	Collision of marine vessel containing LCO ₂ .	OEPRP (which will be presented as part of the application for development consent) and the HAZOP, Major Accident Prevention Plan (MAPP). Site Emergency Plan (which will be required by the OEPRP).	CO ₂ toxicity and fogging hazard affects neighbouring properties and/or those people in the immediate area.	X	X	X							Mitigation measures to be confirmed and presented in the ES.	Y	Could cause loss of life or permanent injury which requires ongoing disability support.	TBD	The assessment will be presented within the ES once mitigation measures are confirmed as part of ongoing design development.	
15	Engineering accidents and failures	Flood defence failure	Carbon Capture Facility	Flooding of the River Thames.	O,M	Flooding of the Carbon Capture Facility initiating crash shutdown (external influencing factor).	Failure of flood defences which leads to inundation of the Carbon Capture Facility.	OEPRP (which will be presented as part of the application for development consent) and the Flood Risk Assessment (which will be presented as a technical appendix to the ES).	Controlled shutdown of the Carbon Capture Facility.			X							X	Flood defences along the River Thames. Flood defences inspected and maintained by the flood defence owner. Additional mitigation measures will be identified during ongoing	N	The potential receptors of harm are staff working at the Proposed Scheme.	N/A	Not identified as a potential major accident / disaster event.

17	Pollution accidents	Harm to ecological receptors	Carbon Capture Facility	Storage of hazardous raw materials / waste.	O,M	Loss of containment of hazardous materials / waste into surface water features (internal influencing factor).	Loss of containment of hazardous materials / waste.	OEMP (which will be prepared prior to the Proposed Scheme commencing operation in accordance with the Register of Commitments) and the OEPRP (which will be presented as part of the application for development consent).	Localised contamination of surface water features.			X	X		X				X	Hazardous materials / wastes will be stored in appropriate containers. The storage area will be provided with secondary containment (i.e. concrete hardstanding).	Y	Could cause permanent or long-lasting damage to environmental receptor(s) that cannot be restored through minor clean-up and restoration efforts.	Y	Considered to be ALARP if all mitigation measures outlined are correctly implemented.
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* Applicable phases:

- C = Construction
- O = Operation
- M = Maintenance



**TECHNICAL APPENDIX 21-1:
LONG LIST OF OTHER
DEVELOPMENTS**

Cory Decarbonisation Project

LONG LIST OF OTHER DEVELOPMENTS

Table 21-1 outlines the initial, draft long list of other development described in **Section 21.4 of Chapter 21: Cumulative Effects (Volume 1)**. The initial search has been completed within 10km of the Proposed Scheme (in accordance with **Paragraph 21.4.11 of Chapter 21: Cumulative Effects (Volume 1)**).

Reference IDs have been provided for each Determining Authority (e.g., NSIP 1) to allow for referencing of specific Other Developments in the assessment.

Table 21-1: Long List of Committed Developments

ID	Determining Authority	Application Reference* *Additional information on other developments under other application references are included in [], where relevant to the cumulative effects assessment.	Description	Distance from Site Boundary (km)	Development Status
NSIP 1	Planning Inspectorate	EN010093	Riverside Energy Park ‘Riverside 2’ An integrated energy park of over 50 megawatts generating capacity (predominantly energy from waste) and associated electrical connection.	Within the Site Boundary	Under construction (2026 completion forecast)
NSIP 2	Planning Inspectorate	TR010021	Silvertown Tunnel The project comprises a twin bore road tunnel under the River Thames between Silvertown and north Greenwich and related highway works. Its main purpose is to relieve traffic congestion and improve reliability at the existing Blackwall Tunnel by providing an alternative river crossing route between the Royal Docks and Lower Lea Valley area and Greenwich Peninsula. Silvertown Tunnel will connect the A1020 Silvertown Way/Lower Lea Crossing on the north side of the Thames with the A102 Blackwall Tunnel Approach on the south side.	9.3km	Under construction (2025 completion forecast)
NSIP 3	Planning Inspectorate	WW010001	Thames Tideway Tunnel A new tunnel for the transfer or storage of wastewater within London. The tunnel, and supporting connection tunnels, is spread from Acton in the west to Barking in the east.	4.8km	Under construction (2025 completion forecast)
LBBD 1	London Borough of Barking and Dagenham	23/01075/FULL	Construction of two logistics warehouse units (Flexible Use Class B2/B8) with associated offices, service yard, car parking and access.	3.4km	Awaiting Decision
LBBD 2	London Borough of Barking and Dagenham	23/01012/FULL	Erection of a new industrial unit to store, clean and filter waste cooking oils in preparation for onward shipment and further processing offsite, as well as associated office, amenity, and plant space.	1.3km	Awaiting Decision
LBBD 3	London Borough of Barking and Dagenham	23/00668/FULL	Installation of a freestanding brick built UKPN substation.	5km	Approved

ID	Determining Authority	Application Reference* *Additional information on other developments under other application references are included in [], where relevant to the cumulative effects assessment.	Description	Distance from Site Boundary (km)	Development Status
LBBD 4	London Borough of Barking and Dagenham	23/00558/FULL	Demolition of and rebuild of building located in the south part of the site (marked as building 3) to allow modernisation of the existing Waste Transfer Station site; installation of new plant and machinery internally alongside the demolition and replacement of Rippleway Wharf including upgrades to the existing river wall as well as dredging of the river site to support the use of River Roding for riverside transfer; together with associated works and development.	2km	Awaiting Decision
LBBD 5	London Borough of Barking and Dagenham	22/01701/FULL	Full Planning Application for the demolition of existing buildings and structures (Use Class B8 and Sui Generis) and the comprehensive redevelopment on the site to provide a mixed use development comprising 2360sqm of industrial floorspace (falling within flexible Use Classes E(g), B2, and/or B8), together with 249 residential units (Use Class C3) in a range of unit sizes within buildings of up to 14 floors; the provision of an area of new north-south public realm within the site and the facilitation of future pedestrian access across the Ripple; provision of car and cycle parking and revised access points, including access from and to adjoining sites; and the widening of the public realm to Thames Road.	4km	Awaiting Decision
LBBD 6	London Borough of Barking and Dagenham	22/01982/FULL	Construction of a Community Diagnostic Centre (Use Class E(e)) on the existing Barking Community Hospital site with associated landscaping and infrastructure, cycle parking and improvements to the wider site layout including alterations to car and cycle parking to facilitate pedestrian connections with the main hospital building and provide additional disabled car parking and EV charging.	5km	Approved
LBBD 7	London Borough of Barking and Dagenham	22/02201/FULL	Demolition of existing structures and construction of an industrial building (B2, B8) with associated plant equipment, silos, external yard storage; hard and soft landscaping; car, cycle and HGV parking; hardstanding and circulation areas; external lighting; infrastructure and all associated works.	1.9km	Awaiting Decision
LBBD 8	London Borough of Barking and Dagenham	22/01564/REM	Development Plots 5, 6 and 7 for the erection of buildings (2 to 11 storeys in height) providing 190 residential units with associated amenity space, public realm, car and cycle parking and other works, pursuant to planning permission 20/01686/FULL (variation of which is currently pending under planning application 22/01492/VAR).	8.3km	Awaiting Decision
LBBD 9	London Borough of Barking and Dagenham	22/01773/FULL	Development of a single speculative industrial building having mixed uses B2 & B8 with a gross internal floor area of 3,934sqm (42,340sqft) with ancillary offices, service area, together with car, motorcycle and bicycle parking.	3.5km	Awaiting Decision
LBBD 10	London Borough of Barking and Dagenham	22/00262/FULL	Demolition of the existing Tesco store and car park, and construction of new residential homes together with a replacement Tesco store and petrol filling station, flexible commercial/community floorspace (Use Class E/F2b), ancillary management and resident facilities, pedestrian and cycle footbridge, works to the River Roding wall, public realm enhancements including hard and soft landscaping and associated access, servicing, car and cycle parking, and refuse and recycling stores. The proposed development comprises the Erection of buildings between 5-29 storeys in	6.5km	Awaiting Decision

ID	Determining Authority	Application Reference* *Additional information on other developments under other application references are included in [], where relevant to the cumulative effects assessment.	Description	Distance from Site Boundary (km)	Development Status
			height, to provide 1,758 residential units, a new Tesco store of 5,660 sqm (GIA), petrol filling station of 83 sqm (GIA) and 663 sqm (GIA) of flexible commercial/community floorspace (Use Class E/F2b).		
LBBDD 11	London Borough of Barking and Dagenham	22/01757/FULL	Full planning application for the demolition of the existing buildings, and construction of a residential led mix-used scheme comprising new residential homes (C3 Use Class) together with public house (Public House- Sui Generis), public realm enhancements including hard and soft landscaping and associated access, servicing, cycle parking, and refuse and recycling stores.	7km	Pre-Application
LBBDD 12	London Borough of Barking and Dagenham	22/01424/FULL	Demolition of existing structures and construction of 3no. industrial buildings (Class B2/B8/E(g)(iii)), with ancillary offices and associated external yards; accesses from Selina's Lane; pedestrian and cycle access route; hard and soft landscaping; hardstanding and circulation areas; cycle, car and HGV parking; boundary treatment; external lighting; infrastructure and all associated works.	6.8km	Approved
LBBDD 13	London Borough of Barking and Dagenham	21/02176/FULL	Demolition of existing buildings and construction of 334 homes, car parking, cycle parking, new public streets, amenity space and ancillary works (in relation to Phase 3B).	5km	Approved
LBBDD 14	London Borough of Barking and Dagenham	21/00204/FULL	Construction of a temporary Tesco store with pharmacy on the southern part of the existing Tesco car park, comprising 1,369sqm GEA, car parking spaces, cycle parking spaces, service yard, associated cage marshalling and trolley bays.	6.1km	Approved
LBBDD 15	London Borough of Barking and Dagenham	21/02174/FULL	Relocation of existing cricket pitches and outfield in St Chads Park.	7.5km	Approved
LBBDD 16	London Borough of Barking and Dagenham	21/01449/FULL	Construction of a new research laboratory (Class E) and associated landscaping works and cycle storage.	4.7km	Approved
LBBDD 17	London Borough of Barking and Dagenham	21/01908/FULL	Redevelopment of site to provide a 5-8 storey building comprising up to 59 residential units (Use Class C3) with retail units (Use Class E) at ground and part first floors, with associated landscaping and highway works.	6.1km	Approved
LBBDD 18	London Borough of	21/01808/OUTALL	Outline planning application (all matters reserved) for the demolition of existing buildings and structures, the erection of buildings comprising residential homes and non-residential floorspace,	0.5km	Approved

ID	Determining Authority	Application Reference* *Additional information on other developments under other application references are included in [], where relevant to the cumulative effects assessment.	Description	Distance from Site Boundary (km)	Development Status
	Barking and Dagenham		including: flexible industrial workspace; flexible employment, retail, community and leisure uses; a school, and associated infrastructure; new streets, open spaces, landscaping and public realm; car, motorcycle and bicycle parking spaces and servicing, utilities and other works incidental to the proposed development. Further explanation (not forming part of the formal description of development set out above): Outline planning application (all matters reserved) for the demolition of existing buildings and structures and the redevelopment of the site to include the erection of buildings (ranging in heights from 1 to 19 storeys) to provide up to 3502 residential homes (Use Class C3), a secondary school, up to 4400sqm of flexible non-residential floorspace (Use Classes E and/or F1(f) and/or Sui Generis), up to 5000sqm of flexible industrial floorspace (Use Classes E(g) and/or B8 and/or B2) and associated infrastructure; new streets, open spaces, landscaping and public realm; car, motorcycle and bicycle parking spaces and servicing, utilities and other works incidental to the proposed development.		
LBBD 19	London Borough of Barking and Dagenham	21/01953/COM	Proposed upgrade to the existing rooftop telecommunications apparatus. Proposed EE 3no. single mode trunk & 3no. power only to be installed. proposed EE 1no. gps module at 30.38m. Proposed EE 3no. 5g antennas at 29.86m to be installed. Proposed EE 3no. 16-port antennas at 28.0m, to be installed. Proposed EE 9no. rru's to be installed. Proposed EE 2no. mk2 bob to be installed. Proposed EE airo cabinet to be installed. Proposed h3g & EE 3no. 2.5m & 3no. 3.5m long antenna support poles to replace 6no. 2.0m antenna support poles. H3g & EE 3no. 4-port antennas at 27.5m to be relocated to 28.0m. H3g & EE 3no. hybrid cables & 6no. ldf7-50 feeders to be re-used. H3g & EE 3no. mha's to be re-used. EE 1no. mk2 bob to be re-used. EE 1no. mk2 bob unit to be re-used. EE 2no. mk2 bob mounted on freestanding frame to be re-used. EE 6-port antenna at 27.5m to be removed. EE 6no. ava7-50 feeders to be removed. EE 3no. mha's to be removed. EE 2no. 6-port antennas at 27.5m to be removed. EE 3no. rru's to be removed. ee 3no. mk1 bob to be removed. EE 1no. mafi freestander to be removed. EE bts 3900a outdoor cabinet to be removed and associated ancillary works (for full details please refer to the enclosed drawings).	3km	Lawful (Certificate)
LBBD 20	London Borough of Barking and Dagenham	21/01232/FULL	Demolition of existing buildings and structures and the construction of a building ranging from part 6 storeys to part 14 storeys to provide 131 residential units and industrial space (Use classes E(g), B2 and B8 at ground and first floor. The proposals include the delivery of landscaping and public realm, play space, access, car parking and other associated and ancillary works.	3.8km	Awaiting Decision
LBBD 21	London Borough of Barking and Dagenham	21/01180/FULL	Full Planning Application for the demolition of existing buildings and structures, and the erection of buildings ranging from 2 storeys to 15 storeys to accommodate 233 residential units and 271 sqm non-residential floorspace (Use Class E). The proposals include the delivery of landscaping and public realm, play space, access, car parking and other associated and ancillary works.	3.5km	Awaiting Decision

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LBBDD 22	London Borough of Barking and Dagenham	21/00891/SCOPE	EIA Scoping Opinion Request in respect of the comprehensive development of the site to deliver up to 3,750 No. Residential Dwellings, up to 5,000sqm of Industrial Uses, up to 7,500sqm of Non-Residential Uses, a potential Secondary School, Open Space, and associated vehicular, cycle and pedestrian accesses, highway, utilities and landscaping works.	1.6km	Scoping Opinion Issued
LBBDD 23	London Borough of Barking and Dagenham	20/02552/REM [18/00940/FUL]	The proposed development comprises the erection of 229 residential dwellings (Use Class C3) and retail and restaurant floorspace (Use Class E), with associated parking, landscaping and tertiary roads. This application also seeks to partially discharge conditions 5 (Partial Discharge), 41 (Acoustics), 42 (Nature Conservation and Landscape), 43 (Parking and Servicing), 47 (Drainage), 48 (Access), 49 (Air Quality), 50 and 51 (Code of Construction Practice for Plots) of the Outline Planning Permission.	3km	Approved
LBBDD 24	London Borough of Barking and Dagenham	20/01866/REM [19/00310/FUL]	The development comprising 526 dwellings, up to 822 sqm of commercial floorspace (Use Classes A1, A2, A3, and B1) a public square, and associated access roads, car parking and landscaping.	5.6km	Approved
LBBDD 25	London Borough of Barking and Dagenham	20/01034/SCREEN	Demolition of existing buildings and structures; Construction of up to 400 residential dwellings; Up to 200 sqm of flexible floorspace; New Cycle Spaces for residents; and Associated means of access, landscaping and service infrastructure.	9km	Awaiting Decision
LBBDD 26	London Borough of Barking and Dagenham	20/01601/FULL	To install 3 No MUGA Courts, with all weather macadam surface, on the site of an existing sports field within the grounds of Eastbury Community School.	5km	Approved
LBBDD 27	London Borough of Barking and Dagenham	19/01511/REM [14/01196/OUT]	The second phase of development comprising 379 residential dwellings in buildings ranging in height between 3 and 9 storeys, landscaping, parking and associated works.	6.2km	Approved
LBBDD 28	London Borough of Barking and Dagenham	19/01321/REM [19/01320/OUT]	Demolition of existing buildings and structures and construction of a maximum of 850 residential dwellings (Use Class C3 (dwellinghouses)); up to 350 square metres of flexible commercial/community floorspace (Use Classes A1, A2, A3, D1, D2)(GEA); with associated means of access, car parking, landscaping, service infrastructure including an energy centre and associated works.	5.3km	Approved
LBBDD 29	London Borough of Barking and Dagenham	19/00028/REM [19/00310/OUT]	Construction of a 3 form entry primary school (Greatfields Primary School) on Development Parcel K comprising the erection of a two-storey teaching block containing 21 classrooms and related facilities; provision of external playground, hard and soft landscaping, parking and associated works	5.3km	Approved

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LBBD 30	London Borough of Barking and Dagenham	19/01450/REM [16/01325/OUT]	The erection of an 8-storey building to provide 26 dwellings, 666 sqm GIA of commercial spaces (Use Classes A1-A5) and 1,000 sqm GIA of leisure space (Use Class D2) and associated works.	5.9km	Approved
LBBD 31	London Borough of Barking and Dagenham	19/00855/FUL	Erection of a new building ranging in height from 9 to 22 storeys to provide up to 196 residential dwellings comprising a mix of studios, 1, 2 and 3 bedrooms, and associated private amenity space and 472 sqm (GEA) of ground floor flexible commercial floorspace (Use Class A1/A2/A3 /B1(a)/D1/D2) together with, ancillary residential management and residents facilities, plant and refuse storage areas car and cycle parking, public realm and other associated works.	6km	Approved
LBBD 32	London Borough of Barking and Dagenham	19/00095/FUL	Erection of 3 storey block of 39 one bedroom flats and associated landscaping to provide temporary accommodation (Sui Generis) on part of car park and former ball court to rear of main building.	6.5km	Approved
LBBD 33	London Borough of Barking and Dagenham	19/01543/FUL	Application for a Mercedes-Benz prestige used car dealership, with customer lounge, 22-bay workshop with specialist service bays, MOT testing, servicing and other car-related activities (wet/dry valet) and including demolition of existing warehouse and sales building, construction of new sales, after-sales and car storage deck building, construction of new main vehicular access/egress to the site from A13, substation and associated works.	3.2km	Approved
LBBD 34	London Borough of Barking and Dagenham	19/00624/FUL	Redevelopment of the site involving the construction of three x 7 storey buildings comprising a total of 95 residential units (58 x 1-bedroom units; and, 37 x 2-bedroom units); a 133sqm Class D1 community room; and ancillary works.	4.6km	Approved
LBBD 35	London Borough of Barking and Dagenham	19/00623/FUL	Construction of electricity sub-station.	4.6km	Approved
LBBD 36	London Borough of Barking and Dagenham	19/01917/FUL	Demolition of all existing buildings and structures; construction of 63 no. Class C3 residential units; and ancillary works.	4.7km	Approved
LBBD 37	London Borough of Barking and Dagenham	19/00407/FUL	Change of use of outdoor bowls pavilion and bowling green to an environmental and cultural education and community space, with associated food and drinks production and kitchen facilities.	4.5km	Approved

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LBBD 38	London Borough of Barking and Dagenham	19/01932/LBC	Application for listed building consent for the removal of an existing walkway connecting Jetty Number 4 to a ship-to-shore conveyor and the erection and operation of a marine aggregate discharge conveyor and ancillary development.	1km	Approved
LBBD 39	London Borough of Barking and Dagenham	19/01724/FUL	Erection of a 9-storey building to provide 90 residential units with associated access, parking and landscaping.	2.4km	Approved
LBBD 40	London Borough of Barking and Dagenham	19/00865/FUL	Demolition of existing buildings and erection of a 5 to 9 storey building to provide 75 residential units (40 x 1 bed flats, 20 x 2 bed flats and 15 x 3 bed flats) together with 285m ² (GEA) of flexible Use Class B1/D1 commercial floorspace, associated car parking, children's play space and communal amenity space.	3.4km	Approved
LBBD 41	London Borough of Barking and Dagenham	19/00264/OUT	Application for outline planning permission: redevelopment of site comprising demolition of existing buildings and erection of four 7 storey blocks to provide light industrial floor space (737m ²) (Use Class B1(c)) and 150 residential flats (36 x 1 bedroom, 56 x 2 bedroom, 52 x 3 bedroom, and 6 x 4 bedroom units) with associated ground level and basement car parking, landscaping, and creation of new vehicular access from Selinas Lane.	6.5km	Awaiting Decision
LBBD 42	London Borough of Barking and Dagenham	18/01972/FUL	Demolition of existing Crown House building and phased redevelopment of the site to provide 396 residential units and 430 sqm of flexible commercial floorspace (facilitating A1, A2, A3, B1, D1 and D2 uses) within two buildings (a part 9, 10, 16, 20 storey building and a part 10, 25, 29 storey building) with basements, associated highway works, servicing facilities, cycle parking, disabled car parking and public realm improvements.	6.3km	Approved
LBBD43	London Borough of Barking and Dagenham	18/01927/FUL	Demolition and redevelopment of existing building and car park site, erection of a part 4, 5, 23 and 28-storey building to provide 198 residential units, re-provision of the existing public house (Class A4) and new commercial floorspace at ground floor level (Use Class A3).	5.8km	Approved
LBBD 44	London Borough of Barking and Dagenham	18/01805/SCREEN	Erection of a building up to 22 storeys high comprising 188 residential units with ground floor commercial floorspace.	6km	Awaiting Decision
LBBD 45	London Borough of Barking and Dagenham	18/01601/SCREEN	Demolition of existing Crown House building and redevelopment of the site to provide 395 residential units and 431 square metres of flexible commercial floorspace (facilitating A1, A2, A3, B1, D1 and D2 uses) along with appropriate servicing facilities, cycle and disabled car parking and new public realm to improve the permeability between Cambridge Road and Linton Road.	6.3km	Awaiting Decision

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LBB D 46	London Borough of Barking and Dagenham	18/02013/FUL	Phased comprehensive redevelopment of the site via clearance of the remaining structures and the erection of new buildings ranging from 2 to 29-storeys in height to provide 1,089 residential dwellings comprising a mix of 1, 2 and 3 bedroom flats and associated private amenity space, 2,070 sqm flexible commercial floorspace (Use Classes A1/A2/A3/A4/D1), 1,071 sqm employment floorspace (Use Class B1(a), (c)), 637 sqm gymnasium (Use Class D2) and 470 sqm community facility (Use Class D1); together with ancillary management and residents facilities, plant rooms and refuse storage areas. Provision of new vehicular access points, car and cycle parking, public realm with hard and soft landscaping including riverside walk, and other associated works. (Application accompanied by an Environmental Impact Assessment).	6.3km	Approved
LBB D 47	London Borough of Barking and Dagenham	18/02129/FUL [18/00245/REM]	Erection of electricity substation building on existing car park to south of St. Marys to serve Zone 2A of Greatfields School (approved under ref. 18/00245/REM) and the proposed primary school on Development Parcel K of the Gascoigne Estate East Masterplan.	6.3km	Approved
LBB D 48	London Borough of Barking and Dagenham	18/02046/FUL	Demolition of existing structures associated with former weighbridge use and redevelopment of the site to provide 92 units (24 x 1-bedroom units, 36 x 2 bedroom units and 32 x 3-bedroom units) to provide temporary accommodation (Sui Generis) and associated works.	2.5km	Approved
LBB D 49	London Borough of Barking and Dagenham	18/01501/FUL [13/01134/FUL]	The erection of a building (8,925m ² internal area) incorporating 55 metre high stack and associated plant to be used as an energy generation facility to generate electricity from residual waste along with car parking, boundary treatment and landscaping.	2.1km	Approved
LBB 1	London Borough of Bexley	23/00338/SCREEN	The proposed construction of pipeline as part of the Thames Water AMP7 Capital Deliveries Framework.	3.1km	Awaiting Decision
LBB 2	London Borough of Bexley	22/01538/FUL	Construction of an adventure golf course.	4.1km	Approved
LBB 3	London Borough of Bexley	22/00467/FUL	Erection of scout hut with associated landscaping, access and other works.	3.8km	Awaiting Decision
LBB 4	London Borough of Bexley	21/01531/GPDO8 [20/02103/GPDO8]	The installation of 22.50 metre high lattice tower with 6 no antennas and 2no dishes, ground based equipment cabinets and ancillary development thereto.	4.1km	Approved

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LBB 5	London Borough of Bexley	18/03091/FULM	New building for flexible use within Use Classes B1c, B2 and/or B8 (including ancillary offices) for industrial/distribution purposes, with provision of associated access, vehicle and cycle parking, service yard areas, external plant, means of enclosure, drainage and hard and soft landscaping.	0.5km	Approved
LBB 6	London Borough of Bexley	19/02586/FULM	Erection of two buildings, Unit 1 for flexible use business, general industry, storage/distribution with ancillary office and trade counter (Use class café B1(c)/B2/B8). Unit 2 for a DVSA Testing Station and vehicle maintenance workshop with ancillary office and staff facilities. together with associated access, servicing, landscaping and means of enclosure.	0.2km	Approved
LBB 7	London Borough of Bexley	21/00932/OUTEA	Outline Planning Permission (All Matters Reserved) for the demolition of all existing buildings/structures and the comprehensive phased redevelopment of the site to provide: up to 1,250 dwellings (Use Class C3) up to 500 sqm (GIA) of flexible commercial/business/service floorspace (Use Class E); provision of associated car and cycle parking; public realm, open space, hard and soft landscape, highway, and all other associated ancillary works.	0.6km	Awaiting Decision
LBB 8	London Borough of Bexley	20/03209/FUL	Installation, operation and maintenance of private wire connection and associated electrical infrastructure on land at and immediately adjoining, Riverside Resource Recovery Facility, Norman Road, Belvedere.	0.4km	Approved
LBB 9	London Borough of Bexley	20/03208/FUL	Installation, operation and maintenance of a battery energy storage system on land at Riverside Resource Recovery Facility, Norman Road, Belvedere.	0.4km	Approved
LBB 10	London Borough of Bexley	20/03051/OUTM	Outline application for the erection two residential buildings arranged over 7 and 8 storeys, to provide 81 dwellings comprising, 19 x 1 bed apartments, 29 x 2 bed and 33 x 3 bed apartments and associated parking with landscaping reserved.	>0.1km	Approved
LBB 11	London Borough of Bexley	17/00029/OUTM	Demolition of the existing buildings and erection of new buildings for flexible light industrial (B1c), general industrial (B2), warehouse and distribution (B8) with ancillary offices (up to 49,700m ² floor space) and Bus Depot (sui generis) (up to 0.8 ha up to 700m ² of floor space) to create a maximum level of floor space of 50,400m ² in units ranging from 1000m ² to 45,528m ² in units between 8m to 21m to ridge, provision of car parking, plant, service areas, hard and soft landscaping and provision of vehicular and pedestrian accesses.	0.2km	Approved
LBB 12	London Borough of Bexley	20/02852/FULM	Erection of a 3/4 storey building comprising a 70 bed Care Home with associated ancillary care facilities, staff accommodation, landscaped gardens and undercroft parking.	1.2km	Approved
LBB 13	London Borough of Bexley	17/01016/FULM	Erection of a building to be used for light industrial (Use Cafés B1(c)); storage and distribution (Use Class B8) and/or Industrial (Use Class B2) purposes; with ancillary offices and associated landscaping, car parking, servicing and access arrangements.	0.4km	Approved

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LBB 14	London Borough of Bexley	20/00502/FULM	Erection of a building to be used for light industrial (Use Class B1(c)); storage and distribution (Use Class B8) and/or Industrial (Use Class B2) purposes; with ancillary offices and associated landscaping, car parking, servicing and access arrangements.	0.3km	Approved
LBB 15	London Borough of Bexley	19/01838/FULM	Construction of a 3 to 10-storey building to provide 66 apartments comprising 31 x 1 bed, 20 x 2 bed and 15 x 3 bed and 230 sqm of commercial space (use classes A1, A2, A3, B1, D1 and/or D2) along with amenity areas, access and servicing, disabled car parking, cycle parking and refuse/recycling stores.	2km	Awaiting Decision
LBB 17	London Borough of Bexley	17/01984/FUL	The erection of a drive-thru restaurant (Use Class A1, A3 and A5) with internal and external seating, associated parking and landscaping to allow revised waiting bay, rooftop alteration to structure supporting signage, roof alteration to building for improved drainage and an additional electric vehicle charging point.	0.1km	Approved
LBB 18	London Borough of Bexley	14/00271/FUL	The demolition of No. 57a the existing temple building and erection of a two storey building as a place of worship and an enhanced cultural and community facility with associated works together with alterations to the existing ancillary spaces.	1.4km	Approved
LBB 19	London Borough of Bexley	19/00214/FUL	The erection of two x two-storey and one x three-storey blocks of sheltered housing, with 44 x two-bed flats, wardens flat, ancillary facilities and 15 car parking spaces	1.5km	Approved
LBB 20	London Borough of Bexley	18/02918/FULM	Development of the land at the former Nufarm site at the Belvedere Industrial Estate to erect a Policing Facility (Sui Generis), including the erection of two buildings comprising storage, administration offices and workshops, together with the provision of a new vehicular access with associated landscaping, refuse facilities, car and cycle parking and a detached gatehouse.	0.3km	Approved
LBB 21	London Borough of Bexley	21/03790/FULM	Demolition of the existing building and the erection of a new regional distribution centre with ancillary offices (Class B8), a multi-storey car park, footbridge links, substations, access, HGV parking, landscaping and associated works.	0.8km	Approved
LBB 22	London Borough of Bexley	22/02072/FUL	Erection of a detached two-storey building, a single storey extension to existing single storey building and refurbishment and remodelling of all other existing school buildings to create a new 140 pupil SEN school with sixth form including access, parking and landscaping.	0.9km	Approved
LBB 23	London Borough of Bexley	22/00939/FUL [22/01006/HAZ]	Storage of Liquefied Natural Gas and Associated Works.	0.0km	Approved
LBB 24	London Borough of Bexley	22/00728/FUL	Hybrid application for a phased development comprising (Phase 1) full planning permission for the installation of a district heat network pipeline in Norman Road connecting to Riverside Resource Recovery Facility; and (Phase 2) outline planning permission (all matters reserved) for the provision of a bridge carrying a district heat network pipeline over the ditch to the south of Norman Road with a pedestrian walkway structure above the bridge, decked area and associated	0.7km	Approved

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			alterations and improvements around the existing pedestrian gate at the south west of Norman Road and associated works.		
LBB 25	London Borough of Bexley	17/02745/FULM	Demolition of existing structures and redevelopment of the site to provide 518 residential units including affordable housing (Use Class C3) and 3,150 sq m of flexible commercial floorspace comprising a mix of retail floorspace (Class A1 - A3); business (Class B1); leisure (Class D2) in new buildings ranging between 5 to 13 storeys in height, together with associated car parking and cycle storage, landscaping and associated infrastructure works including private and communal space together with public realm improvements.	4.7km	Approved
LBB 26	London Borough of Bexley	16/00560/FULM	Erection of a part one/two storey extension comprising improved school hall, 9 class rooms, ICT space, Library and resource area, group study space, associated WC, storage and admin provision, bicycle and scooter storage, link walkway to existing modular building associated landscaping, boundary treatment and additional staff parking.	3.3km	Approved
LBB 27	London Borough of Bexley	17/00577/OUTM	Development of the site to provide 60 residential dwellings comprising 30 houses and 30 flats with associated infrastructure and retention and enhancement of adjacent open space.	7.8km	Approved
LBB 28	London Borough of Bexley	19/02987/FULM [18/01214/FULM]	Application for a minor material amendment to allow changes to the approved scheme including new external plant and empties enclosure, 2 relocated trolley bays and an internal mezzanine level on the ground floor to parent permission. The parent permission being for the demolition of existing buildings and erection of a part 3, part 8, part 9 storey building, to provide retail (Class A1) at ground floor with 59 residential units above, comprising 1 x studio flat, 26 x 1 bed, 27 x 2 bed and 5 x 3 bed flats together with associated landscaping, parking and access improvements.	7.7km	Approved
LBB 29	London Borough of Bexley	19/01828/FULM	Demolition of the existing building and redevelopment to provide a part five, part four-storey building with a 1,239 sqm gym (Use Class D2) at ground floor level, undercroft parking, refuse/recycling and cycle stores and 27 residential dwellings on the upper floors comprising 4 x 3 bed, 20 x 2 bed and 3 x 1 bed flats.	7.7km	Approved
LBB 30	London Borough of Bexley	18/01214/FULM	Demolition of existing buildings and erection of a part 3, part 8, part 9 storey building, to provide retail (Class A1) at ground floor with 59 residential units above, comprising 1 x studio flat, 26 x 1 bed, 27 x 2 bed and 5 x 3 bed flats together with associated landscaping, parking and access improvements.	8km	Approved
LBB 31	London Borough of Bexley	19/00941/FULM	Demolition of existing buildings, rebuilding of the existing Barn to provide 35 residential units (Use Class C3) as Affordable Homes (Shared Ownership and Affordable Rent) comprising 22 x 2 bed flats, 1 x 2 bed house, 7 x 3 bed houses and 5 x 4 bed houses and provision of car parking, cycle parking, landscaping and associated infrastructure.	5.5km	Approved

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LBB 32	London Borough of Bexley	19/01949/FULM	Erection of model railway and clubhouse, children's play area, new bridge, new paths, new signage, covered seating area, human sundial, new window in visitor centre.	5.6km	Approved
LBB 33	London Borough of Bexley	09/01236/FULM	Partial demolition of existing Homebase and construction of extension to existing Sainsbury's store incorporating a mezzanine floor, together with external alterations and amendments to the car park layout resulting in an overall total of 716 car parking spaces.	5km	Approved
LBB 34	London Borough of Bexley	16/01415/FULM	Erection of a part 4/part 5 storey building to provide 33 residential dwellings, comprising 7 x 1 bed, 21 x 2 bed and 5 x 3 bed flats including new vehicular access with basement parking associated works and amenity space.	5.7km	Approved
LBB 35	London Borough of Bexley	17/01127/FULM	Replacement of existing disused Youth Centre with a two storey building providing 6 new classrooms, small hall, learning resource area and ancillary facilities. Single storey extension to the Nursery/Reception building consisting of 1 reception classroom and ancillary rooms with an extended playground area. Extension to the entrance of the main school. Landscaping works to the new block and expansion of the staff car park.	4.5km	Approved
LBB 36	London Borough of Bexley	22/01564/FULM	Phased planning permission for the demolition of the existing structures and erection of seven buildings comprising residential units (Use Class C3), with associated access and highways works, parking and landscaping, creation of a riverside walk and retention of open space, with ecological enhancements, on the area of the site forming part of the Crayford Rough.	5.5km	Approved
LBB 37	London Borough of Bexley	22/01478/GPDO8	Proposed telecommunications installation comprising the installation of a 30 metre telecommunications mast together with 12 antenna, 4 transmission dishes, 6 cabinets, security fencing, Remote Radio Units and associated ancillary equipment.	5.8km	Approved
LBB 38	London Borough of Bexley	21/00608/OUTM	Hybrid application for a phased development of the site to include demolition of all existing buildings and the provision of up to a total of 10,294 square metres of floor space across the site within classes E(g)(ii) (Research and development of products or processes) and E(g)(iii) (Industrial processes), B2 (General Industrial) and B8 (Storage and Distribution) of the Use Class Order and with detailed submission phase 1 and 2 for 4,134 square metres floorspace of the total floor space to provide 3 buildings (incorporating 6 no. units) for the above uses along with associated access, parking and landscaping.	5.4km	Awaiting Decision
LBB 39	London Borough of Bexley	14/02155/OUTM	Hybrid planning application for a phased development of; a 3 form Entry Primary School (4,300 sqm GEA); up to a total of 600 residential dwellings (use class C3) and for up to a maximum 540sqm GEA of ancillary non-residential floorspace with associated works including new access, informal and formal open space, pedestrian and cycle infrastructure, car and cycle parking (only access to be considered) and with detailed submission for Phase 1 for the proposed school and associated quantum of residential dwellings with associated works including informal and formal open space, pedestrian and cycle routes, parking and landscaping.	2.2km	Awaiting Decision

ID	Determining Authority	Application Reference* *Additional information on other developments under other application references are included in [], where relevant to the cumulative effects assessment.	Description	Distance from Site Boundary (km)	Development Status
LBB 40	London Borough of Bexley	21/01773/FULM	Demolition of existing buildings and erection of one building to provide four industrial units for industrial, storage and distribution (Classes B2 and B8) use with ancillary Class E(g), associated parking, access road and landscaping.	1.2km	Approved
LBB 41	London Borough of Bexley	08/11096/FULM	Re-development of site to provide 54 apartments comprising one two storey block and one six storey block of 15 x 1 bed, 28 x 2 bed and 11 x 3 bed apartments incorporating a raised podium containing 48 car parking spaces and plant room. Provision of one commercial retail unit and provision of 1625 square metres of amenity open space.	1.7km	Approved
LBB 42	London Borough of Bexley	18/01437/FULM	Construction of four storey building to provide 42 flats comprising 11 x 1 bed, 26 x 2 bed and 5 x 3 bed flats including vehicular access off St Francis Street, 24 parking spaces, cycle spaces, refuse storage and associated landscaping.	1.7km	Approved
LBB 43	London Borough of Bexley	04/04860/FULMM	Alterations and refurbishment of building currently under construction on the site with provision of training/resources at ground and mezzanine floor and the addition of one extra flat (to create a total of 23 units) and two car parking spaces. Erection of a 5/7 storey building comprising basement and undercroft car parking for 116 cars, 3 retail units, library, community space, a landscaped courtyard with 83 flats on the upper levels consisting 23 x 1 bedroom and 60 x 2 bedroom units (resulting in an overall site total of 26 x 1 bedroom, 79 x 2 bedroom, 1 x 3 bedroom units and 140 car spaces).	2.8km	Approved
LBB 44	London Borough of Bexley	19/01499/FULM	Erection of a warehouse and office extension including new canopies and loading bays with alterations to parking arrangements and associated works.	1km	Approved
LBB 45	London Borough of Bexley	20/00775/OUTM	Hybrid planning application for the phased development of up to a total of 249 residential dwellings (use class C3) with associated works including informal and formal open space, pedestrian and cycle infrastructure, car and cycle parking (only access to be considered) and with detailed submission for parcel 3a with associated works including parking and landscaping.	2.1km	Approved
LBB 46	London Borough of Bexley	18/03034/FUL	Alterations to existing building to provide 6 light industrial (Class B1) units at ground floor with provision of communal refuse and bike store and 31 live/work (Sui Generis) units to upper floors (comprising 20 x 1 bed and 11 x 2 bed units), including internal alterations, refuse storage area, alterations to fenestration including insertion of various new entrances, formation of terraces and insertion of rooflights to front and rear roof slopes.	2.1km	Awaiting Decision
LBB 47	London Borough of Bexley	19/02645/FULM	Erection of a part four/five storey building to provide 30 residential units comprising 18 x 2 bed and 12 x 1 bed flats together with associated car parking, refuse and cycle stores, landscaping and servicing.	2.1km	Approved
LBB 48	London Borough of Bexley	15/01084/FULM	Re-development of site to provide a mixed-use development comprising of 73 residential units (Class C3) consisting of 12 mews houses (up to 3-4 storeys), 61 apartments (up to 7 storeys) and 139 square metres of flexible retail/commercial floorspace (Class A1/A2/A3/B1/D1) together with	2.8km	Approved

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			associated access and egress from Erith High Street and Walnut Tree Road, 45 car parking spaces and 141 cycle parking spaces, a drop-off space, refuse stores, plant and relocated substation at ground floor level, a raised landscaped amenity area at first floor level and associated highway works. Demolition of existing electricity substation.		
LBB 49	London Borough of Bexley	14/02120/FULM	Demolition of the existing building and construction 6 blocks of flats and 23 houses to provide 244 residential units (Class C3), a community facility (Class D1), open space provision, public realm works, landscaping, car parking provision, cycle space provision and re-alignment of the existing vehicular access at the South Road/Northend Road and Larner Road junction.	3.1km	Approved
LBB 50	London Borough of Bexley	18/00769/FUL	Alterations to the internal layout of the existing building to provide 6 light industrial units (Class B1) and a cafe (Class A3) on ground floor. Formation of 8 live/work units above comprising 2 x 6 bed, 2 x 4 bed and 4 x 2 bed. External alterations to, and insertion of, windows and doors. Provision of additional roof lights and sunken roof terraces. Formation of a light tower.	2.1km	Approved
LBB 51	London Borough of Bexley	22/00622/FULM	Erection of 3 additional storeys together with alterations to existing building to provide 6 x light industrial units (Class E(g)(iii)) on the ground floor and the formation of 60 live/work units above with associated parking.	2.1km	Approved
LBB 52	London Borough of Bexley	20/00782/OUTM01 [20/00782/OUTM]	Details of reserved matters being access, appearance, landscaping, layout and scale for Parcel 1 to provide x145 dwellings and 540 sqm of commercial floorspace contained within 4 blocks and associated works including internal road network and associated highway works, landscaping, informal open space, car and cycle parking.	1.7km	Awaiting Decision
LBB 53	London Borough of Bexley	23/00254/FULM	Erection of a part 5/part 7-storey building to create 70 self-contained flats with associated landscaping and amenity space; creation of a commercial unit at lower ground floor level; provision of public open space.	2.4km	Awaiting Decision
LBB 54	London Borough of Bexley	21/02382/FULM	Demolition of existing building and construction of an industrial building for flexible use for light industrial (Class E(g)(iii)), general industrial (Class B2), and storage and distribution (Class B8) use with ancillary offices, provision of car parking, cycle storage, service yard, fencing and associated landscape planting and earthworks.	1.1km	Approved
LBB 55	London Borough of Bexley	22/00696/FULM	Demolition of existing structures, and erection of building of 2 to 5-storeys, comprising 47 residential and 2 commercial units, for use Classes E or F, along with associated landscaping, refuse storage, and cycle and car parking.	4.8km	Awaiting Decision
LBB 56	London Borough of Bexley	22/01790/FUL [22/01790/FUL01]	Erection of a detached sports hall building and provision of multi-use games area following the demolition of existing buildings on the site, two storey infill extension between nos. 1 and 3, Victoria Road, rearrangement of internal parking area, new driveway parking facility off Victoria Road, and external landscaping and boundary improvements.	8.6km	Approved

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LBB 57	London Borough of Bexley	23/00433/FULM	Provision of a 3 storey building providing 32 self contained dwellings with associated car parking, cycle parking, refuse storage and outdoor amenity space following the demolition of the existing building.	2.2km	Approved
LBB 58	London Borough of Bexley	18/01353/FULM	Erection of a two storey building to provide a Special Education Needs School (SEN) with associated car parking, relocated staff parking, informal and formal SEN play space, shared use performing arts centre and full sized artificial football pitch, access and servicing improvements.	8km	Approved
LBB 59	London Borough of Bexley	20/00657/PRIOR	Notification for Prior Approval for the proposed change of use from B1(a) Office to Class C3 Residential to provide 66 apartments comprising 49 x 1 bed, 16 x 2 bed and 1 studio flats with associated refuse and cycle storage areas.	9.2km	Approved
LBB 60	London Borough of Bexley	19/01372/FULM	Erection of a four storey building to provide a 3 screen cinema with an additional studio (Class D2), a library (Class D1), a cafe and bar (Class A3), provision of a Changing Places WC and 9 residential flats comprising 3 x 1 bed and 6 x 2 bed flats.	8.7km	Approved
LBB 61	London Borough of Bexley	18/00203/FULM	Redevelopment of site to provide 42 dwellings comprising 21 x 1 bed flats and 21 x 2 bed flats with associated landscaping, access and car parking, bin and bike storage areas.	8.8km	Approved
LBB 62	London Borough of Bexley	17/02106/FUL	Provision of a seasonal three-court Air Dome to Court No. 1 with associated outdoor lighting, landscaping and external works.	8.8km	Approved
LBB 63	London Borough of Bexley	19/00392/PRIOR	Notification for Prior Approval for a proposed change of use of a building from Office Use (Class B1(a)) to provide 56 flats (Class A.3) comprising 27 studio apartments, 28 x 1 bedroom and 1 x 2 bed flats with associated refuse and cycle storage areas.	9.2km	Approved
LBB 64	London Borough of Bexley	16/01518/FULMMIN	Erection of a three storey building comprising an 80 bed care home and a four storey building to provide 74 extra care apartments with associated access roads, provision of 65 parking spaces.	9.4km	Approved
LBB 65	London Borough of Bexley	21/02344/PRIOR	Notification for Prior Approval for a proposed change of use of building from Office Use (Class B1) to provide to 57 residential units comprising.	8.9km	Approved
LBB 66	London Borough of Bexley	18/00685/PRIOR	Prior Notification for change of use of building from Offices (Class B1(a)) to 27 x 1 bed, 1 x 2 bed and 2 studio flats.	9.2km	Approved
LBB 67	London Borough of Bexley	21/00668/FULM	Demolition of various buildings and erection of a new three storey accommodation and studio building, a three storey theatre and a two storey building, remodelling of the existing courtyard to provide an outdoor performance space with amphitheatre and a sheltered walkway with associated works.	8km	Awaiting Decision

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LBB 68	London Borough of Bexley	21/03340/FULM	Redevelopment of site to create a four storey building to provide 32 flats comprising 13 x 1 bed, 13 x 2 bed and 6 x 3 bed flats with vehicular access from St. Johns Road, associated parking and refuse/recycling storage.	8.6km	Approved
LBB 69	London Borough of Bexley	18/03154/FULM	Demolition of all existing buildings (excluding Warwick Court) and provision of 320 residential units in 5 blocks varying between three and nine storeys high, together with associated parking, cycle parking, hard and soft landscaping, play space, access and utilities. The scheme is subject to minor amendments as follows: Amendment to application site boundary; Minor changes to the public realm; Confirmation of temporary access arrangements for Warwick Court; Incorporation of bulky waste storage room within Block B; Inclusion of missing door to Block D plant room; Block B podium entrance pushed south to create a recessed entrance; Omissions of misplaced door swings on upper levels; Double door entry provision to all cycle stores; Removal of illustrative double stacker cycle storage equipment from each cycle store.	3.4km	Approved
LBB 70	London Borough of Bexley	15/00370/OUTM	Outline application for re-development of the former Linpac Site comprising of up to 336 residential units in a mix of one, two, three and four bed houses and flats, up to 500 sqm of flexible A1/D1 floorspace, public open space (including children's playspace), associated landscaping and car parking.	3.6km	Approved
LBB 71	London Borough of Bexley	19/00682/OUTM	Outline application for the demolition of 48 Howbury Lane and erection of 5 x five storey blocks providing up to 48 affordable housing apartments including creation of a new vehicular/pedestrian access.	4.4km	Approved
LBB 72	London Borough of Bexley	20/02454/FULM	Demolition of existing single storey building and erection of a part one/part two/part three storey building to provide 7 classrooms, kitchen/dining facilities, learning resource spaces with ancillary facilities and landscaping.	5.8km	Approved
LBB 73	London Borough of Bexley	16/01287/OUTM01 [16/01287/OUTM]	Details of all reserved matters being landscaping, access, appearance, layout and scale in respect of the proposed development to comprise 329 residential units, informal and formal open space, internal road network; landscaping, car and cycle parking and waste storage pursuant to conditions 1(Details of reserved matters), 7(crossing facilities), 11(Visibility), 15a-c(land contamination, site investigation and remediation strategy), 18 (Flood Risk Assessment), (22 Surface Water Management), 43(Carbon emissions), 45(Waste Management Plan), 46(External Lighting Strategy) and 50(Energy strategy assessing feasibility of a site wide network) pursuant to outline planning permission 16/01287/OUTM. The parent permission being an outline application for demolition of existing buildings and hard standing, residential development of up to 329 units and up to 1,050 sq metres of commercial floorspace (with flexible uses across classes A1 - A4 (retail, financial and professional services, café and restaurants) and B1a (office) and D1 (community uses) and D2 (Boat Club), with all matters reserved, and associated works including, informal and formal open space, internal road network; landscaping; car and cycle parking; waste storage.	2.1km	Approved

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LBB 74	London Borough of Bexley	16/01251/FULM	Demolition of existing buildings/hard standing, residential development of 525 units and 3691 sqm (GIA) of commercial floorspace with flexible uses across classes A1-A3 (retail, financial/professional services, café/restaurants), B1a (office), D1 (Non-residential institutions) and D2 (Assembly and leisure) and associated works including, informal and formal open space, internal road network; landscaping; car & cycle parking; and waste storage.	1.8km	Approved
LBB 75	London Borough of Bexley	20/01732/SCOPE [20/00733/SCOPE]	Request for a scoping opinion submitted under Regulation 15(1) of the EIA Regulations 2017 for the demolition of the existing buildings and construction of a series of new building at a range of heights up to a maximum of 55 m above ground level, providing up to 1,950 residential units (comprising a mix of private and affordable ownerships) and up to 3,100 sq.m (GIA) of commercial floorspace. The use classes under consideration for the commercial units include A1-A4, D1, D2, and B1a. The proposals also include access improvement works, car and cycle parking, public realm improvements and provision of new outdoor amenity space, and proposed enhancements to the Abbey Way public open space in the east of the site, including planting and pedestrian access improvements.	1.9km	Scoping Opinion Issued
LBB 76	London Borough of Bexley	20/01293/FULEA	Cross Boundary application for below and above ground works associated with decommissioning the former Barking Reach Power Station Site including below ground demolition; remediation of the site; decommissioning and demolition of the cooling water system comprising intake and outfall tunnels, associated pump station and outfall structure(s); decommissioning and demolition works associated with gas, fuel distillate and utility infrastructure (within the London Borough of Barking and Dagenham) and the decommissioning and demolition of the outfall structure within the River Thames channel.	1.2km	Approved
DBC 1	Dartford Borough Council	05/00246/FUL	Demolition of existing clubhouse & removal of temporary buildings and construction of turf football pitch with associated covered terraces, club house, community pitch, car parking, public plaza & gardens.	8.5km	Approved
DBC 2	Dartford Borough Council	21/01005/FUL	Industrial redevelopment of the site to provide a single storage and distribution (Use Class B8) unit with ancillary offices (use class E(g)(i)) within Phase 3; Class E(g)(iii)(industrial processes)/B2 (general industrial)/B8 (storage and distribution) uses and ancillary offices (use class E(g)(i)) within Phase 4; and associated access, drainage infrastructure, servicing, parking, landscaping, works to flood defence and riverside enhancements.	6.7km	Approved
DBC 3	Dartford Borough Council	18/00457/FUL	Redevelopment of the site to provide class B8 (storage and distribution) uses and ancillary class B1 uses with associated access, servicing, parking and landscaping and riverside enhancements.	6.7km	Approved
DBC 4	Dartford Borough Council	19/01515/FUL	Redevelopment of site to provide Class B8 (storage and distribution) uses and ancillary B1 uses with associated access, servicing, parking, landscaping, works to flood defence and riverside enhancements.	6.5km	Approved

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DBC 5	Dartford Borough Council	11/01207/OUT [20/00312/REM]	Erection of commercial units with flexible use B1(c)/B2/B8 with associated office space, parking and landscaping. Also, approval of details of Materials, Landscaping, Site Levels, Land Contamination, Tree Protection, Parking, Boundary Treatments and Refuse Storage.	6.7km	Approved
DBC 6	Dartford Borough Council	16/01022/REM	Erection of a Use Class B8 unit with associated parking and service yard.	7.3km	Approved
DBC 7	Dartford Borough Council	18/01017/FUL	Provision of a new 400kV substation including: <ul style="list-style-type: none"> • A GIS hall sited centrally, a lower annex sits along the eastern side of the main hall, two smaller-scale, single-storey amenity buildings, five Super Grid Transformers (SGT) and six gantries; A backup diesel generator with enhanced noise attenuation; • Laying out of a parking area for vehicles, with additional space reserved additional overflow parking; and • Earthworks and fencing. 	6.7km	Approved
DBC 8	Dartford Borough Council	15/01434/OUT	Outline application for erection of building for car dealership premises (Sui Generis use) comprising showroom, workshop, MoT and ancillary facilities, external parking areas, altered and new vehicular access points, new drainage infrastructure and enhanced retained ecological habitat.	7.3km	Approved
DBC 9	Dartford Borough Council	18/00419/FUL	Erection of two commercial buildings with a GEA of 4,211sqm with flexible permission for B1(c)/B2/B8 uses with associated access, service arrangements and landscaping	6.7km	Approved
DBC 10	Dartford Borough Council	19/00675/SCOPE	The development of Land at Littlebrook Power Station (Plot 2) for the construction of up to 61,152 sqm of storage & distribution uses (Use Class B8) and ancillary offices, with associated access, servicing, parking and landscaping and riverside enhancements.	6.7km	Approved
DBC 11	Dartford Borough Council	21/00681/FUL	Demolition of existing structures and redevelopment of the site for E(g)(iii), B2, and B8 Uses. Redevelopment to include servicing, access, landscaping and means of enclosure.	5.8km	Approved
DBC 12	Dartford Borough Council	21/00802/FUL	Demolition of existing workshop and storage buildings, and removal of storage containers and erection of block of 4 No. Use Class E (g)(iii), B2 or B8 commercial units with associated on-site parking and turning and use of existing vehicular access from St Vincents Road.	8.5km	Approved
DBC 13	Dartford Borough Council	18/01351/FUL	Demolition of the existing buildings and erection of a college building comprising 2,836 sqm of educational floor space and the provision of associated infrastructure including drainage works, open space, fencing and landscaping.	8.2km	Approved

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DBC 14	Dartford Borough Council	20/01202/FUL	Demolition of existing buildings and construction of buildings to provide flexible employment floorspace (Use Classes E(g)/ B2 / B8, with ancillary office accommodation within Use Class E (g)), together with the creation of a new vehicular access via Butterly Avenue, improvements to the existing vehicular access from Hawley Road, provision of car and cycle parking and service yards, drainage works, landscaping, installation of an acoustic fence and other associated works.	8.8km	Approved
DBC 15	Dartford Borough Council	16/00190/FUL	Hybrid planning application for the development of Plots 1, 2, 3B & 4, Questor Industrial Estate to provide: Full Application element - Erection of 5 business, industrial, storage & distribution use units (Use Classes B1c, B2, B8 with ancillary B1a offices), providing a total of 5,507 sqm, including ancillary office space, associated highway works, access, infrastructure, car parking and landscaping relating to Plot 1 only; and Outline Application element - Development, (with all matters reserved except for means of access) of business, industrial, storage & distribution uses (Use Classes B1c, B2, B8 with ancillary B1a offices) relating to Plots 2, 3B and 4.	8.6km	Approved
DBC 16	Dartford Borough Council	20/00043/FUL	Demolition of existing buildings and the erection of 258 flats (Use Class C3) with associated parking, cycle storage, landscaping and amenity space.	9.2km	Approved
DBC 17	Dartford Borough Council	18/01074/OUT	Outline application for erection of an 8 form entry secondary school, up to 140 residential dwellings in total across 2 sites and provision of 19ha of public open space (all matters reserved except access).	8.4km	Approved
DBC 18	Dartford Borough Council	17/02082/FUL	Erection of 3 No. apartment buildings comprising 70 No. residential units with associated access, parking amenity and landscaping.	8.9km	Approved
DBC 19	Dartford Borough Council	21/01349/FUL	Demolition of the existing buildings and redevelopment to provide three Class B8 (storage and distribution) buildings with associated access, servicing, parking and landscaping.	8.5km	Approved
DBC 20	Dartford Borough Council	18/01611/FUL	Erection of one and two storey buildings to provide a Neighbourhood Centre comprising of a mix of A1 (retail), A2 (financial and professional), A3 (restaurant/cafe), B1a (office) and D1 (medical centre/non-residential institution) uses with associated car parking, security fence and delivery space, provision of a Sports Club to comprise of football/sports pitches with clubhouse (use class D2) and associated car park, floodlights, enabling land level changes with retaining walls and security fencing, a new internal access road from London Road and the provision of recreational open space with accesses from London Road and Stone Place Road.	8.6km	Approved
DBC 21	Dartford Borough Council	21/00274/VCON [DA/19/01701/VCON]	Demolition of the existing building and redevelopment to provide three Class B8 (storage and distribution) buildings with associated access, servicing, parking and landscaping.	8.5km	Approved

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DBC 22	Dartford Borough Council	21/00949/SCREEN	Erection of three B8 storage and distribution buildings (unit 4 11,486sqm, unit 5 6,073 sqm, unit 6 11,784 sqm), plus areas for servicing, parking and landscaping. Accessed from Clipper Boulevard.	8.5km	Approved
DBC 23	Dartford Borough Council	21/00174/FUL	Hybrid application-Detailed development comprising: (1) Provision of new public toilet block and retention of temporary cafe for a further temporary period; (2) Amendments to internal access road from London Road, including additional parking provision and cycle storage; Outline development (consideration of siting, access and landscaping only) comprising: (3) The relocation of the multi-use games area; (4) Demolition of groundskeeper's house, toilets and workshop; (5) Erection of replacement grounds depot and workshop (including staff welfare facilities); (6) Replace existing temporary café with a new mixed use building containing a cafe and public community and exhibition space; (7) Erection of ancillary clubhouse building to include changing rooms, toilets and offices in connection with existing outdoor sport and recreation use.	9.7km	Approved
DBC 24	Dartford Borough Council	20/00282/OUT	Outline application (consideration of access only) for demolition of existing buildings and provision of a mixed use development comprising of up to 1096 sqm of commercial uses (Use Classes B1 & B8) and residential/gatehouse building up to 72 sqm (total development of up to 1,168sq.m) and associated highway alterations/improvements in Cotton Lane.	8.8km	Approved
DBC 25	Dartford Borough Council	05/00221/OUT	Development comprising or to provide development of up to 870 dwellings and in addition up to 1,200 sq metres of built floorspace (in total) for: business premises (B1(a) (b) and (c)); community and social facilities (D1 and D2); provision of a primary school site and supporting retail (A1, A2, A3, A4 and A5). Such development to include; vehicle parking; laying out open space (including open space, parkland, play spaces, pond and water features); landscaping; works to create ecological and natural reserves and refuge areas; provision and/or upgrade of services and related service media and apparatus; drainage works; pedestrian, cyclist and vehicular ways; and miscellaneous ancillary and associated engineering and other operations.	9.6km	Approved
DBC 26	Dartford Borough Council	17/02105/FUL	Provision of a sports facility (Rugby Club) including a two storey clubhouse, two rugby pitches with 18m high floodlights, car parking, security fence, 6m high catch net, relocated substation and associated landscaping	8.6km	Approved
DBC 27	Dartford Borough Council	19/01533/OHL	The removal of 132kV and 33kV circuits to aid development of rugby club and subsequent school and residential units. An underground route for cables to be installed along agreed service corridor adjacent to eastern boundary of site. A terminal tower on the north west boundary and temporary tower on southern boundary	8.6km	Approved
DBC 28	Dartford Borough Council	19/00991/FUL	Demolition of the existing building and redevelopment to provide three Class B8 (storage and distribution) buildings with associated access, servicing, parking and landscaping.	8.5km	Approved

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DBC 29	Dartford Borough Council	12/01150/FUL	Erection of 56 dwellings comprising 33 x 3 bedrooms and 11 x 4 bedroom houses and 12 x 2 bedroom flats together with associated landscaping works, parking and infrastructure works.	10km	Approved
DBC 30	Dartford Borough Council	18/01377/FUL	Site clearance, building operations and other operational works to the existing cliffs to enable the erection of an adventure centre comprising a reception building, aerial trekking course, 360 vertigo swings, skydiving machine, zip wire, zip wire start tower and landing platform, 'giant swing', adventure platform and external rock climbing wall, with associated hard and soft landscaping.	9.9km	Approved
DBC 31	Dartford Borough Council	23/00356/VCON [DA/21/00274/FUL]	Demolition of existing buildings and erection of 71 residential dwellings (Use Class C3), with associated landscaping, car parking, and infrastructure.	7.5km	Approved
DBC 32	Dartford Borough Council	19/00600/FUL	Detailed planning permission for the erection of 280 dwellings, including a detailed landscape strategy, car parking, new internal access roads, and associated infrastructure and earthworks.	7.5km	Approved
DBC 33	Dartford Borough Council	DA/16/1601/FUL	Erection of 6 blocks of between 3 and 6 storeys comprising 403 Dwellings together with basement and surface parking for 449 vehicles and 696 bicycles: plus amenity space, play area and public open space and associated infrastructure works at Abbot Murex site and Part Millpond Land to South, Lower Hythe Street, Dartford, Kent.	7.1km	Approved
DBC 34	Dartford Borough Council	21/01286/FUL	Demolition of existing buildings and erection of 84 residential dwellings (Use Class C3), with associated landscaping, car parking, and infrastructure.	7.4km	Approved
DBC 35	Dartford Borough Council	17/01477/FUL	Erection of a single building comprising 5 No B1 (business), B2 (general industrial) and B8 (storage or distribution) use units with ground and mezzanine floor levels (total floor space 6922 sqm) with associated new access road, landscaping and parking.	6.8km	Approved
DBC 36	Dartford Borough Council	15/00625/REM [16/00264/NONMAT]	154 x 1 bedroom, 192 x 2 bedroom and 54 x 3 bedroom apartments (400 units in total), with 2,582 sqm of non-residential uses comprising office uses (Class B1), retail, financial and professional services, restaurant, café and drinking establishment uses (Class A1/A2/A3/A4); and non-residential institutions/community and assembly and leisure uses (Class D1/D2), plus 359 car parking spaces, cycle parking and other associated infrastructure works.	7km	Approved
DBC 37	Dartford Borough Council	20/00218/VCON	Erection of a replacement warehouse building and ancillary offices (varied to remove requirement for soft landscaping).	7.5km	Approved

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DBC 38	Dartford Borough Council	20/00355/SCREEN	Mixed-use development of 1.06 hectares of land in Dartford Town Centre, which will comprise the following; Up to 2,778 sqm (GIA) of flexible commercial/retail space across the entire Site; Up to 2,686 sqm (GIA) of health/wellbeing space provided in a 'Life Hub' (D1 health facility); Up to 3,079 sqm (GIA) (85 units) of hotel space contained within a single building; Up to 125 residential dwellings across two buildings within the Site; Up to 2,800 sqm (GIA) of cinema space; and Up to 239 car parking spaces within a multi-storey car park (MSCP) and 3 disabled spaces on Hythe Street.	7.3km	Approved
DBC 39	Dartford Borough Council	17/01793/FUL	Erection of two employment units for B1c (light industrial), B2 (general industrial) and B8 (storage or distribution) Use Classes, of up to 15,939 SQ M (GIA) including ancillary offices and structures, servicing areas and access roads, car parking and landscaping.	6.7km	Approved
DBC 40	Dartford Borough Council	18/01557/VCON	Development comprising (a) detailed permission for the demolition of existing buildings, refurbishment of No. 26 Lowfield Street and the construction of 188 dwellings, retail units, office, café/micro-brewery, detailed landscape strategy, car parking, new internal access roads, sustainable urban drainage systems; and associated infrastructure and earthworks (b) outline permission, with all matters reserved except access, for the demolition of existing buildings and the erection of up to 360 dwellings, flexibility for the following Use Classes:- A1 (retail), A2 (financial and professional services), A3 (restaurants and cafes) and D1 (non-residential institutions) fronting Lowfield Street, new internal access roads, car parking, sustainable urban drainage systems; and associated landscaping, infrastructure and earthworks (as amended by variation of condition 2 to amend the layout and appearance of Phase 1).	7.5km	Approved
DBC 41	Dartford Borough Council	16/00499/FUL	Erection of a part three/part four/part five storey building to provide 75 bedroom care home and ancillary external works.	6.9km	Approved
RBG 1	Royal Borough of Greenwich	19/1081/F	Redevelopment of the site to provide a part 4/ part 5-storey building comprised of shared-workspace (Use Class B1), and 30 self-contained flats (16 x 1 bed, 9 x 2 bed, 5 x 3 bed) (Use Class C3) as well as three residential disabled off-street car parking spaces.	2.1km	Approved
RBG 2	Royal Borough of Greenwich	22/1026/F	Demolition of existing buildings, structures, and associated hardstanding; construction of two industrial buildings (Use Class B2, B8, E(g)(iii)), with ancillary offices, central yard space and other associated and enabling works.	9.8km	Approved
RBG 3	Royal Borough of Greenwich	21/4511/F	Demolition of existing building; erection of apartment building comprising 49 units (100% affordable) together with hard and soft landscaping, child playspace, parking and public realm improvements to Sowerby Close.	8.6km	Awaiting Decision
RBG 4	Royal Borough of Greenwich	20/2639/F	Demolition of existing building and construction of a building comprising ground floor commercial uses (Classes A1, A2 and B1) and residential units (use class C3) above, associated landscaping works, cycle parking, disabled car parking and other works incidental to the proposed development.	8.4km	Awaiting Decision

ID	Determining Authority	Application Reference* *Additional information on other developments under other application references are included in [], where relevant to the cumulative effects assessment.	Description	Distance from Site Boundary (km)	Development Status
			Proposed development: Construction of a 5-storey building comprising 450sqm ground floor commercial uses (Classes A1, A2 and B1) and 36 residential units (Class C3) above with associated landscaping works, cycle parking, disabled car parking and other works incidental to the proposed development.		
RBG 5	Royal Borough of Greenwich	20/1660/F	Demolition of existing (non-heritage) buildings and construction of a part 2/part 3- storey building including refurbishment of the retained listed buildings providing a 6 form entry Secondary School and Sixth Form, including a 2-storey detached sports hall and Multi Use Games Area, playing fields, car parking, boundary treatment and landscaping including works to protected trees and associated works.	5.9km	Approved
RBG 6	Royal Borough of Greenwich	18/3324/F	Construction of a part 1/part 2-storey building providing additional classrooms and a Multi-Function Hall for use by the local community for evening and weekend events. The extension would facilitate the school growing from a 4 form to 5 form entry school (an increase in 150 pupils).	8.1km	Approved
RBG 7	Royal Borough of Greenwich	22/2202/F	Redevelopment of the site and construction of a six storey building plus basement for hotel use (61 bedrooms) (Use Class C1), seven residential dwellings (Use Class C3), a flexible commercial unit for use as a workspace (Use Class E g(i), E g(ii), E g(iii)), retail or café uses (Use Class E(a) and E(b)) and associated servicing, cycle / accessible parking, refuse and recycling storage, plant, communal amenity space, with hard and soft landscaping (including improvements to the public realm).	8.3km	Awaiting Decision
RBG 8	Royal Borough of Greenwich	20/2330/F	The construction of buildings to provide residential accommodation together with the provision of a nursery, associated public realm, play space, accessible parking spaces and the re-provision of a substation.	9.3km	Approved
RBG 9	Royal Borough of Greenwich	19/3415/F [14/2607/F]	Demolition of existing buildings and erection of residential units, publicly accessible open space and associated access, car parking, cycle parking and landscaping, erection of a new pavilion building within the park.	9.2km	Approved
RBG 10	Royal Borough of Greenwich	19/1745/EIA	Residential development in Phase 3 (Blocks F & G) and Phase 5 (Blocks C, E & J) of the Kidbrooke Village Masterplan comprising an increase in the number of residential units by 305 dwellings, an increase in building heights up to a range of 4-17 storeys and revised landscaping proposals.	9.1km	Approved
RBG 11	Royal Borough of Greenwich	18/2904/F	Construction of a new 256sqm train station (Sui Generis).	9.1km	Approved
RBG 12	Royal Borough of Greenwich	21/0585/F	Demolition of existing buildings and structures and construction of a 5-storey college (Use Class F.1) building of 5,486sqm floorspace with student café and 6 blocks ranging from 5 to 13 storeys providing 294 residential dwellings (Use Class C3) and 325sqm flexible non-residential	4.9km	Approved

ID	Determining Authority	Application Reference* *Additional information on other developments under other application references are included in [], where relevant to the cumulative effects assessment.	Description	Distance from Site Boundary (km)	Development Status
			floorspace (Use Classes E/F.1/F.2) together with associated landscaping, play space, access, refuse and recycling storage, car and cycle parking, public realm improvements and associated works.		
RBG 13	Royal Borough of Greenwich	23/2150/F	Construction of a 36-storey building comprising Purpose Built Student Accommodation with ancillary amenity space (Sui Generis), with ground floor commercial/ retail floorspace (Use Class E), associated landscaping, plant, servicing, and cycle parking.	10km	Awaiting Decision
RBG 14	Royal Borough of Greenwich	23/1565/F	Residential development on Plot M0121, including provision of private and communal amenity space, car parking and cycle parking, servicing and access, public realm, hard and soft landscaping Further detailed explanation of the proposal (not forming part of the formal description of development set out above): The proposal includes the construction of the following: <ul style="list-style-type: none"> • C-shaped building being 7-storeys in height with tower element between 23 and 30 storeys in height. • Maximum building heights up to 103.60m AOD. • 300 residential dwellings (Use Class C3) Internal and external amenity spaces ancillary to the C3 use.	8.6km	Awaiting Decision
RBG 15	Royal Borough of Greenwich	22/0001/F	The construction of four buildings between 6 and 15 storeys to provide 322 residential units (100% London Affordable Rent) (Use Class C3) together with the provision of a commercial space (159.2 sqm) (Use Class E), associated public realm, play space, accessible parking spaces and additional substation).	9km	Approved
RBG 16	Royal Borough of Greenwich	18/4187/F	A comprehensive development comprising 619 residential dwellings (Class C3 use), retail use (Class A1/A3 uses), business use (Class B1 use), a nursery (Class D1 use), new bus station interchange and residential squares and other public realm, hard and soft landscaping, highways works including bus stop provision, parking, access and servicing arrangements, plant and associated works.	8.6km	Unknown
RBG 17	Royal Borough of Greenwich	19/3692/F	Demolition of existing warehouse and construction of a new double height warehouse (Use Class B8).	7km	Approved
RBG 18	Royal Borough of Greenwich	21/1189/F	Demolition of existing buildings and construction of residential dwellings (Use Class C3) and flexible light industrial, offices/workspace and retail floor space (Class E) plus associated car parking, cycle parking, refuse storage, hard and soft landscaping (including private gardens, communal open space and playspace) and other associated works.	4.3km	Awaiting Decision
RBG 19	Royal Borough of Greenwich	18/2899/F	Demolition of the existing commercial buildings and construction of a four-storey building, accommodating 61 units for student accommodation including the provision of 2 car parking spaces, bike stores, hard and soft landscaping and associated works.	9.3km	Approved

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HLB 1	Havering London Borough	Q0126.22	Demolition of existing structures and the phased redevelopment to provide 394 residential dwellings, car parking, bicycle parking, substation, public open space and pedestrian/cycle infrastructure, and other works and improvements (including de-culverting of Pooles Sewer, relocation of gas main, minor alterations to access from New Road and closure of existing secondary accesses, formation of emergency access onto Lamson Road and other associated works).	2.2km	All decisions issued
HLB 2	Havering London Borough	P1698.18	Partial demolition and redevelopment of school to provide a new three storey school building, activity studio, extension to existing changing rooms, three court Multi-Use Games Area, landscaping and parking improvements.	9.3km	Approved
HLB 3	Havering London Borough	Q0338.22	Outline planning application for the demolition of all buildings and structures on site, and redevelopment of the site providing up to 37 residential dwellings, creation of a new highway access, public open space and landscaping and related infrastructure.	8.8km	Awaiting Decision
HLB 4	Havering London Borough	P2200.21	Construction of new 3-court Sports Hall facility with multi-purpose teaching room, changing facilities, storage and ancillary accommodation and plant room enclosure including associated landscaping and services provision involving demolition of existing dilapidated Sports hall, modular classroom unit and Pavilion blocks.	8.8km	Awaiting Decision
HLB 5	Havering London Borough	P1917.18	Demolition of existing buildings, conversion of the former St George's Hospital Administrative Building and the erection of new buildings to provide 162 residential units (class C3) including car parking, cycle parking, landscaping and associated infrastructure along with the refurbishment of The Suttons Building for use as a Heritage Centre (Class D1).	6.4km	Approved
HLB 6	Havering London Borough	Q0312.18	Demolition of existing Use Class B2 / sui generis units and redevelopment of the site comprising 46 residential units (1-bed, 2-bed and 3-beds) two storeys in height with associated car parking and landscaping. This application seeks to discharge conditions 16 and condition 20.	3.36km	Approved
HLB 7	Havering London Borough	Q0034.20	The demolition of existing buildings and the construction of 57 homes comprising a mix of 22 houses and 35 apartments with associated access roads, parking, hard surfacing, landscaping, boundary treatments, refuse stores, an electrical substation and means of access to and from Broadway.	2.1km	Approved
HLB 8	Havering London Borough	P1039.19	Sitewide groundworks and construction of 717 residential units (Use Class C3), 1,000sqm (flexible retail/commercial floorspace (within Use Classes A1/A2/A3/A4), the creation of new publicly accessible open spaces and pedestrian routes together with associated access, servicing, car parking, cycle parking and landscaping	1.7km	Awaiting Decision
HLB 9	Havering London Borough	P0751.19	Demolition of existing buildings and redevelopment of site comprising a number of buildings ranging between 3-10 storeys, providing 197 residential dwellings (Class C3), public and private open space, formation of new accesses and alterations to existing accesses, associated car and cycle parking and associated works.	2.3km	Approved

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HLB 10	Havering London Borough	Q0175.18	Demolition of existing structures and the phased redevelopment to provide 394 residential dwellings, car parking, bicycle parking, substation, public open space and pedestrian/cycle infrastructure, and other works and improvements (including de-culverting of Pooles Sewer, relocation of gas main, minor alterations to access from New Road and closure of existing secondary accesses, formation of emergency access onto Lamson Road and other associated works).	2.4km	Approved
HLB 11	Havering London Borough	P1022.20	Demolition of existing buildings, groundworks and construction of a 10 storey building providing 54 new residential units (Use Class C3) with associated 345sqm of flexible retail/commercial floorspace (within Use Classes A1/A2/A3/A4/B1/D1/D2), the creation of bus loop and new pedestrian routes together with associated access, servicing, cycle parking and landscaping.	2.9km	Awaiting Decision
HLB 12	Havering London Borough	Q0281.19	The demolition of existing buildings and the construction of 57 homes comprising a mix of 22 houses and 35 apartments with associated access roads, parking, hard surfacing, landscaping, boundary treatments, refuse stores, an electrical substation and means of access to and from Broadway. P1701.17 Conditions(s) 41 (Bat Roost Survey & Methodology).	5.4km	Approved
HLB 13	Havering London Borough	Q0167.21	The demolition of all existing buildings and redevelopment of the site to provide 3 new buildings, ranging from 2-5 storeys. comprising 59no. self-contained flats (8 x 1 bedroom, 25 x 2 bedroom, 26 x 3 bedroom), a small commercial unit to ground floor and associated landscaping, vehicle access, cycle and car parking.	1.9km	Approved
HLB 14	Havering London Borough	P2072.22	Outline phased development incorporating details of access to the site with all other matters reserved for a comprehensive redevelopment comprising demolition of existing buildings and redevelopment of the site for a mix of uses built over 3-12 storeys to include up to 840 residential units (Class C3), 3,000sqm light industrial (Class E) and general industrial (Class B2) uses, retail / restaurant / cafe up to 200sqm, medical facility (Class E) up to 378sqm, associated landscaping, public realm, parking, refuse storage and other associated works.	7.1km	Awaiting Decision
HLB 15	Havering London Borough	P1809.19	Demolition of existing buildings, construction of five buildings built over 3-10 storeys comprising 175 residential units including ancillary communal facility (Class C3), associated car & cycle parking, landscaping and other associated works.	6.1km	Approved
HLB 16	Havering London Borough	P0995.23	Proposed engineering works to enable the re-profiling of a disused 30 acres paddock utilising imported inert material using existing access and haul road off Bramble Lane to enable the restoration of the site to create 16 football pitches of various sizes with ancillary facilities comprising up to 400 carpark spaces, storage, and catering facilities.	6.6km	Awaiting Decision
NL 1	Newham London	20/00327/FUL	Erection of 2 No units (B1c light industrial/B2 general industrial/B8 storage and distribution uses) with associated service yards, access, parking, cycle storage, refuse collection and landscaping works.	4.6km	Approved

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NL 4	Newham London	19/02851/FUL	Installation of a temporary theatre for a 5 year period together with other associated and enabling works to include an ancillary restaurant/bar, museum, back of house and support facilities, with external landscaping, lighting and vehicle access and parking arrangements.	7.2km	Approved
NL 5	Newham London	19/02768/FUL	Construction and operation of an extension to Activated Sludge Plant 4 (ASP4) and the provision of additional sludge plant at Beckton Sewage Treatment Works. This is a Major Planning Application. This application site affects the setting of a Grade II Listed Building "Chimney to Beckton Sewage Works". This application is accompanied by an Environmental Statement for the purposes of Environmental Impact Assessment under The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended).	5.6km	Approved
NL 6	Newham London	19/01931/FUL	Formation of ancillary laydown area to serve the adjoining Beckton Combined Heat and intelligent Power (CHiP) plant utilising vacant land directly to the southwest of the private access road and consisting of the provision of car parking (including disabled and fuel delivery tanker parking); 1 x modular building for use as a management/operations office; 2 x modular buildings for use as welfare facilities, 1 x modular building for use as toilet block; 1 x steel portal framed building for use as storage; 1 x electricity distribution board kiosk; external storage area together with installation of security fence, lighting and CCTV columns and main entrance gate. Entire site to be laid to gravel finish with part concrete slab area.	6.7km	Approved
NL 7	Newham London	19/00022/FUL	Construction of Lidl food store with green roof, associated car parking, cycle stands and advertisement signage. (The application is a Departure from the Development Plan).	6.6km	Approved
NL 8	Newham London	18/02698/TEL	Notification under the Electronic Communications Code Regulations 2003 (As Amended) to utilise permitted development rights, Proposed upgrade to existing 42m high DC170 tower on raised concrete base and associated works.	6.5km	Approved
NL 9	Newham London	18/02594/FUL	Use of site as an operational railway depot, modification of existing stabling to accommodate replacement rolling stock and additional trains, relocation and elongation of test track, demolition of the existing train wash facility and construction of a new facility in the northwest corner of the depot site serviced by new road access point via an un-adopted road to the northwest of the depot which is an extension of Hornet Way, extension of the existing maintenance shed to accommodate the new fleet and associated works.	5.4km	Approved
NL 10	Newham London	23/00840/FUL	Redevelopment of vacant brownfield land to provide 220 residential units (Class C3) in 4 blocks ranging from 5 to 9 storeys with new public open space to north and south, private residents courtyard, public realm improvements, blue badge car parking, servicing road with associated turning head and cycle parking. Open for comment icon.	5.7km	Registered
NL 11	Newham London	23/00576/FUL	Installation of one five-a-side football pitch and one seven-a-side football pitch with associated fencing, lighting and laying of hardstanding to form extended car parking area.	5.2km	Registered

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NL 12	Newham London	22/01594/SCREEN	Request for a Screening Opinion - Regulation 6 of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 for proposed development of up to 237 residential units with blocks of varying heights, the tallest being nine storeys.	5.7km	Awaiting Decision
NL 13	Newham London	22/01211/FUL	Provision of additional DLR rolling stock - change of use to operational railway land; temporary fit out shed (for three years); permanent sidings, train wash facility and plant room, new access from Armada Way; and associated works.	4.4km	Approved
NL 14	Newham London	22/00753/LA3	The erection of an extension to an existing school building to provide new kitchen facilities including relocation of the flue at roof level, WC's and lobby entrance, refurbishment of existing accommodation to provide a new staff room and WC's and part-demolition of an existing external covered walkway, light remodelling and refurbishment to existing PPA room and staff kitchens.	5.9km	Approved
NL 15	Newham London	21/03193/FUL	Demolition of existing buildings and redevelopment of the site to provide a total 19,990sqm (GEA) floorspace across four units for industrial and warehousing purposes (Use Class B2 and B8), along with ancillary office accommodation, access and service roads and paths, service yards, car parking and cycle parking, river wall works and other associated landscaping works.	5.1km	Approved
NL 16	Newham London	21/02571/VAR [18/00623/FUL]	Section 73 application to vary Condition 2 (Approved Drawings and Documents) to amend the consented tenure plan drawings, changing the tenure of 61 units, to increase the number of affordable units from 119 units (50%) to 180 units (76%) attached to planning permission 18/00623/FUL dated 6 November 2020 which granted full planning permission for: "Redevelopment of the site to provide for no.238 residential units (use class C3) contained within two distinct urban blocks. The proposals comprise a perimeter block with heights ranging from three up to twelve storeys as well as a separate building of part seven/part nine storeys, together with provision of vehicular access onto Magellan Boulevard, under-croft vehicle and cycle parking, hard and soft landscaping (including the provision of temporary landscaped open space), and all associated ancillary works and structures."	4.8km	Approved
NL 17	Newham London	21/01126/SCREEN	18,828sqm (GIA) of industrial and warehousing floorspace.	5.9km	Awaiting Decision
NL 18	Newham London	20/01864/FUL	Erection of a self-storage building (Use Class B8) (8,832sqm) and an industrial building to flexibly accommodate Use Classes E/B2/B8 (3,331sqm), with associated cycle/refuse storage, landscaping, car parking and new vehicular accesses.	6km	Approved
NL 19	Newham London	19/03053/FUL	Demolition of the existing buildings at 3-15 Barking Road and 1-2 Castle Street, and construction of new 5-8 storey building for mixed use comprising of replacement retail to Barking Road, replacement gym at ground floor level and 79 residential dwellings to upper floors with ancillary car parking, cycle parking, refuse storage and landscaping, and retention of existing retail uses and dwellings at 2a Castle Street and 567-571 Green Street.	8.2km	Approved

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NL 20	Newham London	18/03349/VAR	Section 73 Application to vary condition 2 to make internal and external alterations to Block F and G, amendments to site wide wheelchair locations, and time limited permission for the provision of a concierge office to one unit within Block F for a period of 2 years, the development attached to planning permission 14/02893/FUL dated 13th July 2016 which granted full planning permission for: Demolition of the West Ham United Football Ground and ancillary outbuildings to enable a comprehensive redevelopment of the site; including the erection of new buildings, rising to 3 to 13 storeys, (including a basement on part of the site), to deliver 842 new residential homes (use class C3), including affordable housing, in a mix of unit sizes and tenures, 559 sqm (Net Internal Area) of use class D1 floor space, 146.3 sqm (Net Internal Area) of flexible use class A1 and/or A2 and/or A3 and/or A4 and/or B1 and/or D1 and/or D2 floor space, together with associated cycle parking, car parking, highways, landscaping, and infrastructure works.	8.2km	Approved
NL 21	Newham London	18/03321/FUL	Demolition of existing building (Working Mens Club) and the erection of a five storey building comprising replacement community facility (D2) on ground and basement level and residential development to provide 42 new residential units (C3) with associated access and parking.	6.9km	Approved
NL 22	Newham London	20/00853/PREP	A 298.08 kW rooftop solar pv system installed across two pitched rooftops of the site. The installation will consist of 1,104 solar modules, installed via a railed system on the rooftops.	9.4km	Registered
NL 23	Newham London	19/00457/PREP	A 299.97 kW Solar PV system on the pitched rooftops of site. The installation will consist of 1,111 x JA Solar 270w solar modules, installed via a railed system on the pitched rooftops.	9.5km	Approved
NL 24	Newham London	18/03506/OUT	Redevelopment of land bounded by Manor Road, (i) outline planning permission for up to 449 dwellings (Class C3), up to 1,845m ² of commercial (Class B1) and retail (Class A1/A2/A3/A4) floorspace; car parking, open space and associated infrastructure works; (ii) full planning permission for Phase 1 for 355 dwellings (Class C3), 555m ² of commercial (Class B1) and retail (Class A1/A2/A3/A4) floorspace; car parking, open space and associated infrastructure works.	9km	Approved
NL 25	Newham London	17/01847/OUT	Hybrid planning application comprising: Detailed planning application for Phase 1 with works to include: The proposed demolition of existing buildings and structures, The erection of buildings, including tall buildings, comprising: 1,020 Residential Units (Use Class C3) 689 sqm (GEA) of Business Floorspace (Use Class B1); 5,400 sqm (GEA) of Retail Floorspace (Use Class A1-A4); and 12,004 sqm (GEA) of Community and Leisure Floorspace including a Secondary School (Use Class D1 and D2). Associated infrastructure, including a new bridge connection to West Ham Station and two footbridges across Manor Road; Alterations to the existing access road and vehicle bridge; Streets, open spaces, landscaping and public realm; Car, motorcycle and bicycle parking spaces and servicing spaces; Utilities including energy centre and electricity substations; and Other works incidental to the proposed development. Outline planning application (all matters reserved) for the balance of the site for: The proposed demolition of existing buildings and structures; The erection of buildings, including tall buildings, comprising: Residential Units (Use Class C3); Business Floorspace (B1); Retail (A1-A4); Community and Leisure (D1 and D2); and	9.1km	Approved

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			Associated infrastructure; Streets, open spaces, landscaping and public realm; Car, motorcycle and bicycle parking spaces and servicing spaces; Utilities including electricity substations; and Other works incidental to the proposed development.		
NL 26	Newham London	23/00655/FUL	Redevelopment of the site (phased into three distinct and severable component parts) comprising site preparation works and erection of seven new buildings ranging from 8 storeys to 30 storeys to provide 871 dwellings (Use Class C3) and 2,635sqm (GIA) employment space (Use Class E), alongside basement, communal amenity space, car parking, cycle parking, refuse storage, landscape, public realm improvements and other associated works.	9.1km	Approved
NL 27	Newham London	22/02523/VAR [17/01847/OUT]	Section 73 application to vary conditions A2 (Approved Drawings and Documents), B3 (Approved Drawings and Documents) and B5 (Quantum of Floor space) to amend the parameter plans and floor space parameters to allow for an uplift of 15,960.62 sqm (GEA) floor space comprising residential and Class E attached to planning permission 17/01847/OUT (as amended) dated 16th August 2018 which granted permission for: Hybrid planning application comprising: Detailed planning application for Phase 1 with works to include: The proposed demolition of existing buildings and structures, The erection of buildings, including tall buildings, comprising: 1,020 Residential Units (Use Class C3) 689 sqm (GEA) of Business Floorspace (Use Class B1); 5,400 sqm (GEA) of Retail Floorspace (Use Class A1-A4); and 12,004 sqm (GEA) of Community and Leisure Floorspace including a Secondary School (Use Class D1 and D2). Associated infrastructure, including a new bridge connection to West Ham Station and two footbridges across Manor Road; Alterations to the existing access road and vehicle bridge; Streets, open spaces, landscaping and public realm; Car, motorcycle and bicycle parking spaces and servicing spaces; Utilities including energy centre and electricity substations; and Other works incidental to the proposed development. Outline planning application (all matters reserved) for the balance of the site for: The proposed demolition of existing buildings and structures; The erection of buildings, including tall buildings, comprising: Residential Units (Use Class C3); Business Floorspace (B1); Retail (A1-A4); Community and Leisure (D1 and D2); and Associated infrastructure; Streets, open spaces, landscaping and public realm; Car, motorcycle and bicycle parking spaces and servicing spaces; Utilities including electricity substations; and Other works incidental to the proposed development.	9.1km	Approved
NL 28	Newham London	21/03151/VAR [18/03231/VAR]	Section 73 application to vary Condition 2 (Approved drawings and documents) to remove the provision of 'Street Properties' (11 x social rent units). The removal of the 'Street Properties' will be secured via a Deed of Variation to the Section 106 Agreement, attached to planning permission 18/03231/VAR dated 14th March 2019 which granted full planning permission for: "Demolition of existing building and redevelopment of the site including the erection of two residential buildings of 5 and 6 storeys to provide 77 residential units along with landscaping, car and cycle parking and associated works".	8.3km	Registered

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NL 29	Newham London	21/02760/FUL	Demolition of existing structures and redevelopment to provide a building for industrial and warehousing purposes (Use Classes B2 & B8), ancillary offices, associated parking and servicing, landscaping, means of access, highways works and infrastructure.	9.3km	Approved
NL 30	Newham London	21/01302/NONMAT [18/03506/OUT]	Non-material amendment attached to planning permission 18/03506/OUT dated 18 November 2020 for various design amendments to Blocks A, B C and amendment to description of development. The following proposed amendment to the description of development is proposed: Redevelopment of land bounded by Manor Road, (i) outline planning permission for up to 449 dwellings (Class C3), up to 1,638m2 of commercial (Class B1) and retail (Class A1/A2/A3/A4) floorspace; car parking, open space and associated infrastructure works; (ii) full planning permission for Phase 1 for 355 dwellings (Class C3), 762m2 of commercial (Class B1) and retail (Class A1/A2/A3/A4) floorspace; car parking, open space and associated infrastructure works.	9.2km	Approved
NL 31	Newham London	21/00830/FUL	Demolition of existing church buildings and erection of a new mixed use development of 3, 5 and 6 storeys to provide a community use (Use Class E), 80 self-contained residential apartments, amenity space, refuse storage and cycle parking.	8.2km	Approved
NL 32	Newham London	20/00544/FUL	Demolition of existing buildings and redevelopment of the site to comprise the delivery of 854 residential dwellings and set within buildings up to ground plus 22 storeys in height, with associated car and cycle parking, landscaping, amenity spaces and other associated works.	7.6km	Approved
NL 33	Newham London	18/03657/OUT	Hybrid planning application comprising 1. Detailed planning application for Phase 1 with works to include: The erection of a series of light industrial workspace units (Use Class B1c) comprising 5,360 sqm, as well as shared space for exhibitions, open workshops or shared working area; ancillary café; new access, servicing, cycle parking, plant, landscaping and public realm. 2. Outline planning application (all matters reserved) for the balance of the Site (Phase 2) for further light industrial and ancillary floorspace (Use Class B1c) up to 2,555 sqm and associated works. This is a major application and a departure from the development plan.	9km	Approved
NL 34	Newham London	18/03557/OUT	Hybrid planning application comprising: 1. Detailed planning application for Phase 1 with works to include: Proposed demolition of existing buildings and structures, erection of buildings, including tall buildings, comprising: 460 residential Units(Use Class C3), 3,417sqm(GEA) of flexible employment floorspace (Use Classes B1b, B1c, B2 (restricted), B8); 162 sqm(GEA) of flexible retail floorspace (Use Classes A1-A4) ;a new/altered access road from Dock Road/North Woolwich Road; new streets, open spaces, landscaping and public realm; car, motorcycle and bicycle parking spaces and servicing spaces; and other works incidental to the proposed development. 2. Outline planning application (all matters reserved) for phased delivery of the balance of the site for the proposed demolition of existing buildings and structures; erection of buildings, including tall buildings, comprising: a new local centre; a primary school (Use Class D1); residential and older person units (Use Class C3); flexible employment floorspace (Use Classes B1b, B1c, B2 (restricted), B8) ; flexible employment floorspace (Use Classes B1c, B2,	8.9km	Approved

ID	Determining Authority	Application Reference* *Additional information on other developments under other application references are included in [], where relevant to the cumulative effects assessment.	Description	Distance from Site Boundary (km)	Development Status
			B8); flexible retail floorspace (Use Classes A1-A4); community and leisure floorspace (Use Classes D1 and D2) ; the construction of a new flood defence wall and delivery of ecological habitat adjacent to the River Thames and associated infrastructure; streets, open spaces, landscaping and public realm (including new park and SINC improvements); car, motorcycle and bicycle parking spaces and servicing spaces; utilities including energy centre, electricity substations and incidental works.		
NL 35	Newham London	23/00098/FUL	Demolition of existing building and erection of a new nine storey building to provide ground level commercial space (Use Class E) and 24 new dwellings (Use Class C3) with associated secure cycle parking and refuse storage facilities.	8.9km	Registered
NL 36	Newham London	22/02615/LA3	A residential-led redevelopment comprising the erection of five buildings ranging from 3-9 storeys, plus a podium level, for the provision of 147 residential units and 191sqm (GIA) non-residential floor space (Use Class E (a, b, c, d, g) / F1 / F2), installation of plant, public realm, car parking, landscaping and highway works and other associated works.	8.5km	Approved
NL 37	Newham London	21/03040/LA3	Demolition of existing buildings including garages to rear and erection of two blocks comprising a part three/ part four storey building and a five storey building to provide 32 residential units (Use Class C3) with associated works and landscape improvements.	8.2km	Approved
NL 38	Newham London	21/01325/FUL	Mooring of a 160 room hotel on a floating platform with associated access, car parking and landscaping. (The application is a Departure from the Development Plan) (This application site affects the setting of Grade II Listed Building - Stothert and Pitt Cranes) (The application affects a Public Right of Way) This is a re-consultation in light of following amendments to the scheme; - Increase in number of hotel rooms from 148 to 160 including alterations to the layout and number of wheelchair accessible rooms.	7.8km	Approved
NL 39	Newham London	23/00610/OUT	Outline planning application with all matters reserved for the demolition of existing buildings and the erection of a phased development of:- up to 650 new, replacement or retrofitted homes (Use Class C3) - up to 2,500sqm GIA of commercial, business and service floor space (Use Class E) including up to 200sqm GIA of hot food takeaways (Sui Generis Use) - up to 750sqm GIA of commercial, business and service (Use Class E) or local community (Use Class F2) floor space - up to 2,100sqm GIA for a health hub (Use Class E) - up to 250sqm GIA of nursery/local community floor space (Use Class E (f) /F.2(b) up to 50sqm GIA for bus welfare (Sui Generis Use) and associated open space, public realm, landscaping, servicing facilities, plant space, parking, access and highways works. This phased development is intended to be capable of coming forward in distinct and separable phases and/or plots in a severable way.	7.9km	Registered
NL 40	Newham London	22/02157/LA3	Proposed demolition & redevelopment of the site to construct three, four and seven storey residential blocks to provide 55 residential units (Use Class C3) comprising a tenure of: eighteen no. 1-bed units, thirteen no. 2-bed units, twenty no. 3-bed units and four no. 4-bed units at London	7.9km	Approved

ID	Determining Authority	Application Reference* *Additional information on other developments under other application references are included in [], where relevant to the cumulative effects assessment.	Description	Distance from Site Boundary (km)	Development Status
			Affordable Rent with associated cycle parking, public realm improvements, landscaping and replacement substation.		
NL 41	Newham London	22/01853/FUL	Demolition of existing buildings and redevelopment of the site to provide a total of 95 residential units (Use Class C3) arranged within two separate residential blocks ranging from four to eight storeys at Leslie Road (Plot 1A) and a residential block of part five part 8 storeys at Freemansons Road (Plot 1B), in addition to 141sqm (GIA) of non-residential floorspace (Use Class E) and associated landscaping, public realm, access and highways works.	8km	Approved
NL 42	Newham London	21/02013/FUL	Reconfiguration of the internal layout to convert the 63 existing guest apartments to create 99 hotel rooms (1st to 11th floors); reconfiguration of the ground floor to provide a new reception and restaurant area (for guests only) and erection of a new internal fire escape and door.	6.7km	Approved
NL 43	Newham London	20/02679/FUL	Erection of a five-storey extension to the existing hotel (use class C1) to provide 77 additional hotel bedrooms and a single storey extension to the existing cafe / restaurant at ground floor; change of use of a vacant retail unit (use class E) to a meeting room ancillary to the hotel; associated hard and soft landscaping works.	6.7km	Approved
NL 44	Newham London	18/02203/LA3	The erection of a three storey stand-alone teaching facility with adjoining sports and community facilities, to accommodate 600no pupils and additional associated staff. A two storey extension to the existing sixth form provision to consolidate the year 12 and 13 pupils within a single educational facility. Extension to the existing staffroom and library facilities within the existing courtyard of the existing main school building to provide adequate educational and staff provision on site. Proposed landscaping works which include an entrance pavilion and improvements to the Boundary Lane entrance and service road, a landscaped arrival courtyard with covered walkways, sixth form garden, year 7 playground, external pupil and staff dining facilities and improvements to out-of-hours community access from the Roman Road entrance. Relocation of the seasonal athletics and track provision, MUGA and artificial pitch with flood lights is being proposed due to location of the new year seven and to improve the accessibility to sports facilities for staff, pupils and the local community.	6.8km	Approved
NL 45	Newham London	21/03054/LA3	Erection of a two-storey extension to the retained Depot Building (Building A) and construction of a six-storey residential building (Building B), a two storey four-bed house (Building C) and a row of five no. part two/part three storey town houses (Building D) to provide 48 residential units (Use Class C3), comprising of a tenure of: seventeen no. 1-bed units, nine no. 3-bed units; one no. 4-bed unit at London Affordable Rent; one no. 1-bed, one no.2-bed, one no. 3-bed, one no. 4-bed and one no. 5-bed wheelchair accessible M4(3) units at London Affordable Rent; and eight no. 1-bed and eight no. 2 bed units at shared ownership; with a linear open space and public realm with associated landscaping and boundary treatments; five on-site disabled parking spaces for the new scheme and twenty replacement parking spaces for the wider estate; and 87 cycle spaces.	6.3km	Approved

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NL 46	Newham London	19/00332/LA3	The erection of a 4 storey infill block extension to the north side of the existing school building to accommodate an increase in school capacity of 300 students. New spaces to include an extension to the existing dining hall, food tech classroom, ICT rooms, science labs, general teaching classrooms and associated ancillary spaces. The erection of a single storey amenity deck with changing facilities, WC's, staff car parking and storage under for the adjacent school sports pitch. Landscape alterations and improvements and a new sports enclosure for the school on London Borough of Newham land to the west of the existing school site.	9.5km	Approved
NL 47	Newham London	18/03268/VAR [17/00467/FUL]	Section 73 application to vary condition 2 (approved plans and documents) for the following amendments;- building footprint and internal layout changes; plant room relocation and a basement created under Block B; parking and refuse/cycle store changes and building height and elevational changes attached to planning permission 17/00467/FUL dated 6th September 2017 which granted full planning permission for: Redevelopment of the site to provide three residential buildings of 5 to 6 storeys in height comprising 78 units (20 no. 1 bedroom, 27 no. 2 bedroom and 31 no. 3 bedroom residential units) with associated car and cycle parking, landscaping, plant and refuse areas and associated development.	9.5km	Approved
NL 48	Newham London	18/02488/FUL	Erection of a part 5 storey and part 6 storey (with setback top floor) building comprising a total of 36 residential dwellings (Use Class C3) with provision of associated access, landscaped communal amenity areas, wheelchair parking spaces, cycle parking and refuse storage.	9.6km	Approved
NL 49	Newham London	18/02396/FUL	Demolition of the existing Church and Church Hall (Use Class D1) and the erection of a new 1074 sqm Church (Use Class D1) including community facilities and ancillary accommodation for use as a caretakers flat (Use Class C3), erection of a new six storey adjoining building comprising 520 sqm of retail use (Use Class A1/A2/A3) at ground floor and five storeys of residential (Use Class C3) above, comprising 31 units in a mix of 1, 2 and 3 bed units, along with associated cycle storage and public realm improvements.	9.5km	Approved
NL 50	Newham London	20/00088/FUL	Renovation of the C15th to C19th elements of the listed building, following demolition of C20th additions internally and externally to provide pub bar, restaurant, lounge/coffee bar, meeting rooms, reinstated conservatory and garden at ground, function room with bar at basement and 9 suites at 1st and 2nd floors; construction of new 4 storey 68 bedroom hotel extension, with ancillary leisure and staff facilities at basement and a pergola at ground linking the listed building and the new hotel extension; 1 new tree compensating for removal of 1 existing tree.	9km	Approved
NL 51	Newham London	23/00790/FUL	Redevelopment of the site for provision of a mixed-use development ranging from 3 storeys to 16 storeys and a basement level, providing 650 purpose built student bed spaces (up to 21,040sqm of student accommodation floor space) and 4,913sqm of teaching and learning facilities (Class F1), nursery and gym and associated car, cycle parking, public realm, landscaping and other ancillary supporting infrastructure works and facilities.	9.9km	Registered

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NL 52	Newham London	19/01335/FUL	Full planning for demolition of existing prefabricated nursery buildings to enable the construction of a four/five storey, mixed use development to provide a new facility for the nursery and a residential component comprising of 8 no. 1 Bedroom units, 15 no. 2 Bedroom units and 5 no. 3 bedroom units including ancillary waste and bike storage.	9.1km	Approved
NL 53	Newham London	18/01889/FUL	Demolition of existing buildings and redevelopment of the site to deliver a five-storey building (plus enlargement of the existing basement level) comprising a 579 sqm retail unit (Use Class A1) at basement and part ground floor and a total of 28 residential (Class C3) units (8 x one-bed, 9 x two-bed, 11 x three-bed) across part ground floor and all upper floors together with associated vehicle parking, amenity space and landscaping.	9km	Approved
NL 54	Newham London	21/01737/LA3	Demolition of existing building and erection of three blocks comprising an eight storey building, a part two/part three/part seven storey building and a five storey building to provide a replacement gym (Use Class E (d)) and 81 affordable residential units (Use Class C3). Proposal to include associated landscape improvements, cycle parking, car parking and refuse storage.	8.7km	Approved
NL 55	Newham London	18/03413/FUL	Construction of 845sqm (GIA) community centre (use class D2); 394sqm (GIA) nursery school (use class D1); 55 affordable dwellings (use class C3) consisting of a tenure of: - 27 units consisting of: 6no. 1-bed, 1no. 2-bed, 19no. 3-bed, and 1no. 4-bed to be provided at 'London Affordable Rent' and, - 28 units consisting of: 13no. 1-bed and 15no. 2-bed to be provided at 'London Shared Ownership' and; landscape and public realm improvements; new and replacement car parking arrangements; new pedestrian access routes; and all associated infrastructure, including an electrical substation.	9.2km	Approved
NL 56	Newham London	20/02187/LA3	Redevelopment to provide a part-four, part-five storey building comprising a Children's Day Nursery (Use Class E(f)) of 362 sq.m (GIA) at ground floor level, 65 residential dwellings (Use Class C3) on ground to fourth floors, and roof level plant. Creation of new play space, landscaping, cycle parking, access and electric substation; in addition to associated on-street car parking.	9.8km	Approved
NL 57	Newham London	22/02855/OUT	Hybrid Planning Application for a mixed-use redevelopment comprising up to 885,000 sqm GEA: 1.Detailed Component: i) construction of 1,248 new residential units and 82,328 sqm GEA non-residential floorspace including Use Class E, F1, F2 and Sui Generis (Drinking Establishments); in buildings ranging from 3 to 15 storeys; public open space, utilities works, construction of estate roads and new accesses to the public highway, cycle, motorcycle and car parking areas and associated access and public realm works, including the alteration, partial demolition and conversion of Millennium Mills, demolition of other structures; and ii) site reclamation/dock infill works to Pontoon Dock, and other associated works. 2. Outline Component (all matters reserved): demolition of existing buildings and structures and construction of a phased mixed-use development comprising up to 608,466 sqm GEA Residential (Use Class C3) floorspace (up to circa. 5,924 dwellings) and non-residential floorspace up to 176,211 sqm GEA including Use	7.6km	Registered

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			Class E, B8, C1, F1, F2 and Sui Generis (Drinking Establishments, Hot Food Takeaways, Live Music Venues, Theatres, Cinemas, Commercial Kitchen and Delivery Centres and Infrastructure); public open space, works of repair and restoration of dock walls, the placing of structures in, on, or over the dock area, utilities works, construction of estate roads and new accesses to the public highway, cycle, motorcycle and car parking areas and associated access, public realm works, and associated works. This Hybrid Planning Application is for a phased development intended to be capable of coming forward in distinct and separable phases and/or plots in a severable way.		
NL 58	Newham London	22/00650/FUL	Demolition of existing buildings and comprehensive redevelopment comprising 81 residential units across three blocks ranging from 2 to 9 storeys, associated landscaping, cycle parking and associated works.	8.6km	Registered
LBR 1	London Borough of Redbridge	3417/22	Redevelopment of site to provide 98 new affordable homes across three blocks (2x five storey and 1x 4 storey) with associated public realm improvements, landscaping, car parking, cycle and refuse/recycling storage and improvements to Station Approach.	9.4km	Approved
LBR 2	London Borough of Redbridge	2089/16	Planning application for the extension of mineral workings at Fairlop Quarry, into phases E and F, with establishment of new lagoon facilities, retention and modification of plant site and ancillary facilities, the establishment of a new conveyor and haul road with restoration to agriculture and nature conservation habitats by importation of inert restoration materials.	7km	Approved
LBR 3	London Borough of Redbridge	0985/19	Demolition of existing school dining hall building and structures and removal of existing TPO tree and development of a new Class D1 Special Educational Needs and Disability ('SEND') school including external play space, new vehicular access from Aldborough Road North, associated car parking and landscaping works and development of a new Multi Use Games Area (MUGA).	8.4km	Approved
LBR 4	London Borough of Redbridge	0601/17	Erection of one and a half storey sports hall with single storey ancillary building providing changing facilities, storage and plant room.	8.6km	Approved
LBR 5	London Borough of Redbridge	3414/20	Demolition of properties 73-83 and garages. Erection of 103 residential units consisting of 24x1 bedroom, 41x2 bedroom and 18x3 bedroom flats. 6x4 bedroom maisonettes and 14x4 bedroom dwelling houses with associated landscaping, waste/refuse services, cycle and car parking. (Summary) (Amended description).	9.8km	Approved
LBR 6	London Borough of Redbridge	2676/17	Three storey extension to teaching block. Modification to substation and associated landscaping.	9.7km	Approved
LBR 7	London Borough of Redbridge	2570/22	Erection of six, seven, eight and nine storey building for mixed use. Commercial floorspace (Use Class E) at ground floor and 53no. x self-contained flats above with associated car parking, cycle storage, waste / refuse storage, landscaping and amenity / children's play space.	7km	Under assessment

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LBR 8	London Borough of Redbridge	4462/20	Retention of Montrose House. Erection of a 8 storey plus basement building and 5 storey building to provide 1325.1sqm of commercial floorspace and 15no. residential units with private amenity space, children's play space, communal amenity space, cycle parking, accessible parking, waste storage facilities, hard and soft landscaping and associated works.	8.5km	Approved
LBR 9	London Borough of Redbridge	2708/19	Demolish existing structures. Erection of up to a 10 storey student accommodation building, with ground, lower ground and basement level, comprising 321 student rooms and associated communal facilities, hard and soft landscaping, 5 disabled parking spaces and cycle parking.	8.3km	Approved
LBR 10	London Borough of Redbridge	4309/19	Demolition of all existing buildings including petrol filling station. Redevelopment of the site to provide a replacement food retail store (use class A1, now superseded by use class E), a series of apartment blocks ranging between 4 and 23 storeys in height to provide 1,280 residential units (use class C3), flexible use floorspace for commercial/community uses (within use classes A1/A2/A3/B1/D1, all now superseded by use classes F1, F.2 and E), a 3 form entry primary school (use class D1, now superseded by use class F.1), public open space, car and cycle parking, associated landscaping and infrastructure works, and provision of pedestrian and vehicular access.	6.7km	Approved
LBR 11	London Borough of Redbridge	5064/21	Demolish existing structures. Erection of a 12 storey building comprising of commercial floorspace (Use Class E) at ground floor and 58 no. flats with associated landscaping, balconies, cycle storage, waste / refuse space, play areas and amenity space.	7.1km	Approved
LBR 12	London Borough of Redbridge	4411/21	Demolition of existing structures. Erection of mixed use building ranging from six to nine storeys with commercial use at ground floor and 55 residential units above. With associated landscaping, amenity space, car parking, cycle and refuse storage.	6.7km	Approved
LBR 13	London Borough of Redbridge	0680/21	Demolish existing structures. Redevelopment of retail warehouse for mixed use development comprising 7 buildings. Provision of flexible use space (Use Class E/F1) at ground and first floor (Class E/F1). Creation of up to 568 residential units with associated public space, private landscaped amenity spaces, ancillary car parking and cycle and refuse stores.	7.1km	Approved
LBR 14	London Borough of Redbridge	4417/19	Demolish existing buildings. Erection of a ten storey building comprising of 50 flats and ground floor commercial floorspace (Use Class B1/D1).	7.1km	Approved
LBR 15	London Borough of Redbridge	3305/19	Demolish existing structures. Erection of part 7, part 11 storey building including 35 residential units (6x1, 17x2, 12x3 bedroom) and commercial unit (A1/A2/B1) on ground floor.	7.1km	Approved
LBR 16	London Borough of Redbridge	0649/19	EIA Scoping Opinion: circa 1,360 apartments, a 3 -form entry primary school, a replacement Tesco store and some small-scale units (use classes A1 / A2 / A3 / B1/ D1).	7.1km	Scoping Opinion Issued

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LBR 17	London Borough of Redbridge	4182/18	Demolition of existing building and redevelopment of the site to provide a part mixed-use scheme comprising 52 residential apartments (Class C3), commercial floor space (Class E) and shared ancillary floor space, within a part 9, part 11, part 7 storey building, together with associated car and cycle parking and works to public realm, landscaping, utilities and highways.	7.1km	Approved
LBR 18	London Borough of Redbridge	1106/20/01 [4236/16]	Non-material amendment to description of approved permission 4326/16, as varied by S73 application ref. 1106/20, for 'demolition of the existing buildings and structures and the development of a part 30, part 15, part 8 and part 10 storey building, comprising residential apartments; flexible non residential floor space comprising Classes A1 and A3 at ground floor and B1 at first floor; podium landscaped amenity and play areas, including village hall at second floor; new basement comprising disabled parking spaces, cycle storage, and plant at first floor level; and to add condition no. 60 Building Parameters' to make a series of amendments including: increasing the number of residential units from 290 to 330; alterations to internal layouts (residential & non-residential areas); and amendments to the façade' to allow the insertion of 2 (no.) additional stair cores, minor amendment in mix of units, and minor amendment to increase footprint of the proposed building.	7.1km	Approved
LBR 19	London Borough of Redbridge	1843/21	Erection of a part 13, part, 18 and part 25 storey building comprising residential development with associated residential parking and amenity space, landscape works and all necessary ancillary and enabling works.	8km	Approved
LBR 20	London Borough of Redbridge	0794/20	Demolition of existing structures. Construction of a mixed use development comprising retail space, workspaces and up to 94 residential units with ancillary service areas and plant room.	7.1km	Approved
LBR 21	London Borough of Redbridge	4326/16	Demolition of the existing buildings and structures and the development of a part 30, part 15, part 8 and part 10 storey building comprising: 290 residential apartments (including a mix of studio, 1, 2 and 3 bedroom units); 2,277.6sqm of flexible non-residential floor space comprising Classes A1-A3 at ground floor and B1 at first floor; podium landscaped amenity and play areas, including village hall at second floor; new basement comprising 32 disabled parking spaces, cycle storage, 482 cycle spaces and plant at first floor level.	7.1km	Approved
LBR 22	London Borough of Redbridge	4124/19	Demolition of existing structures. Erection of ground plus 9 storey building (17-23 Clements Road) containing ground floor commercial unit (A1/A2/A3/B1a) and 54 dwellings (9 studios, 36x1 and 9x2 bedroom flats). Erection of a ground floor plus 10 storey building (22-26 Clements Road) containing 40 dwellings (10 studios, 20x1 and 10x2 bedroom flats). Includes affordable housing, private and communal amenity space and associated landscaping and parking works.	7.6km	Awaiting Decision
LBR 23	London Borough of Redbridge	2792/15	Change of use of the existing building; extensions and alterations to provide 96 residential units comprising 52 x 1 bed, 20 x 2 bed and 24 x 3 bed with private and communal amenity spaces. Provision of office floorspace on the upper/lower ground floors.	7.1km	Approved

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LBR 24	London Borough of Redbridge	2776/19	Part demolition of existing retail (A1), office (B1), flats (C3) and place of worship (D1) structure. Extension and change of use to create five storey building with basement and new shopfront containing restaurant (A3) and an 83 bedroom hotel (C1).	7.9km	Approved
LBR 25	London Borough of Redbridge	0978/19	EIA Scoping Opinion: redevelopment of site to provide a maximum of 850 residential units, commercial and retail units, and primary school, with associated public realm and car parking.	7.1km	Approved
LBR 26	London Borough of Redbridge	0337/19	Demolish existing structures. Erection of 10 storey building fronting Ilford High Road containing 36 residential units with flexible A1/A2/A3 floor space at ground floor. Erection of 19 storey building at the rear, fronting Clements Lane, containing 81 residential units. Provision of a central courtyard, new access and landscaping.	7.1km	Approved
LBR 27	London Borough of Redbridge	4570/18	Erection of part 6, part 10 and part 13 storey building comprising 134 residential units with ancillary facilities and parking (Class C3), flexible commercial floorspace (Class A1-A3, B1, D2) and all other incidental works.	7.1km	Approved
LBR 28	London Borough of Redbridge	1279/13	Redevelopment of the site to provide 141 residential units comprising of one, two and three bedroom flats in three blocks of 10, 14 and 18 storeys in height, and ground floor flexible A1, A2, A3, B1 and D2 floor space, with associated landscaping, amenity space, parking and new public realm.	7.8km	Approved
LBR 29	London Borough of Redbridge	2190/19	Change of Use from Office Use (B1 (a)) to a 80 x residential units at Becketts House (C3) and 28 x residential units at Caxton Place (C3).	7.9km	Approved
LBR 30	London Borough of Redbridge	2886/18	Erection of dining hall and kitchen with the secondary function of indoor sport facility, including associated hard and soft landscaping.	7.3km	Approved
LBR 31	London Borough of Redbridge	1189/20	Demolition of existing buildings. Redevelopment of site to create 17 Dwellings (C3) and 142 flats with associated landscaping and car parking.	6.1km	Approved
LBR 32	London Borough of Redbridge	3428/20	Demolition of 6no. garages and a caretaker's store. Roof extensions to existing blocks and the erection of 4no. infill blocks to create sixty residential units (consisting of 12 x 1 bedroom, 20 x 2 bedroom, 21 x 3 bedroom and 7 x 4 bedroom flats) with associated landscaping, boundary treatment, cycle and car parking, waste storage and amenity space.	8.1km	Approved
LBR 33	London Borough of Redbridge	0807/20	Demolish existing structures. Erection of one part 3/part 6 storey and one part 3/part 5 storey building to provide 52 residential flats with associated highway, cycle parking spaces, landscaping and communal amenity space.	7.1km	Approved

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LBR 34	London Borough of Redbridge	3399/13	Demolish existing public house. New 4-6 storey building to provide 95 bedroom hotel including ancillary car park and one commercial unit to ground floor.	7.1km	Approved
LBR 35	London Borough of Redbridge	0951/13	Demolish existing building. New six storey building including lower ground floor to provide 32 flats (21, one-bedroom, 9, two bedroom and 2, three-bedroom) and two commercial units with associated landscaping, and basement parking.	7.1km	Approved
LBR 36	London Borough of Redbridge	4778/19	Erection of six storey building at 132 - 142, four storey extension and recladding at No.126 – 130, two-storey extension and recladding at Nos 144 - 148 and 1 - 13 Ask Court for use as a hotel (C1). Retention of existing or previously approved commercial uses (A1 and A2), residential uses (C3) and office uses (B1).	7.9km	Approved
TC 1	Thurrock Council	23/00775/FUL	Construction of six new general industrial buildings (Class E(g)(iii)/B2/B8) with associated hard and soft landscaping to create new car parking and lorry loading/unloading areas.	6.2km	Awaiting Decision
TC 2	Thurrock Council	22/00653/FUL	Construction of an Innovation and Technology Centre comprising of a laboratory and office facilities with associated access road and parking facilities.	8.6km	Approved
TC 3	Thurrock Council	23/00489/REM [20/01129/CV]	Application for approval of reserved matters (layout, scale, appearance and landscaping) following outline approval ref. 20/01129/CV (for development of 2,850 dwellinghouses and associated uses on land at Land at Purfleet, bounded to the north by Tank Lane and the High Speed 1 Rail Link; to the east by the chalk cliffs of Botany Quarry, the Carpetright storage and distribution centre and to the southeast by Esso Petroleum storage facility; to the south-west and south by the River Thames and to the west / north-west by residential properties and the Essex Thameside railway line and associated), for a Market Square and Below Ground Car Park to include provision of public realm and landscaping; creation of pedestrian, vehicular and cycle accesses; installation of child's play features and street furniture; car and cycle parking facilities; and, erection of ancillary structures along with associated waste facilities, engineering, drainage, utilities and infrastructure works (Purfleet Centre).	9.4km	Awaiting Decision
TC 4	Thurrock Council	23/00411/FUL	Redevelopment of land to provide 36 apartments with parking and private/communal gardens.	8.9km	Awaiting Decision
TC 5	Thurrock Council	23/00033/FUL	Demolition of existing structures and redevelopment of the site for flexible commercial uses falling within Use Classes E(g)(iii) (industrial processes), B2 (general industrial), B8 (storage and distribution) servicing, parking, access - including construction of an access ramp, landscaping, means of enclosure and associated development.	7.7km	Awaiting Decision
TC 6	Thurrock Council	22/01471/SCR	Request for screening opinion for the demolition of existing commercial uses and the construction of up to 65,000 square metres (sqm) Gross Internal Area (GIA) of commercial uses (comprising Use Class E(g)(iii), B2 and/ or B8 uses), as well as servicing, parking, access, landscaping and means of enclosure at Thurrock Shopping Park.	9.4km	Pre-Application

ID	Determining Authority	Application Reference* *Additional information on other developments under other application references are included in [], where relevant to the cumulative effects assessment.	Description	Distance from Site Boundary (km)	Development Status
TC 7	Thurrock Council	16/01698/FUL	Full planning permission for the demolition of existing buildings and structures and the erection of new buildings, structures, port infrastructure (including road, railways, tracks, gantries and surfacing) landscaping, drainage, and other ancillary works in association with continued use of the port for the storage and transfer of trailers, containers and cars, including the erection of a car storage building on the former Paper Mills land, a workshop in South Park, and a new areas of open storage and transfer trailers, containers and cars on land at Purfleet Farm and south of the railway line. Outline planning permission for the expansion of the existing Pre-Delivery Inspection Building.	6.9km	Approved
TC 8	Thurrock Council	22/01275/REM	Demolition of the existing buildings and the erection of up to 6,000 sq.m (Gross Internal Area) of Class B1c (light industrial), Class B2 (general industrial) and Class B8 (storage & distribution).	8.5km	Approved
TC 9	Thurrock Council	22/01222/FUL	Retention of the former Thurrock Football Club Stadium for use by Grays Athletic FC (and other community groups). Development of a vehicle Pre-Delivery Inspection (PDI) centre to comprise 1,224 parking spaces, PDI Building (1,199.6 sqm GEA), new access to include HGV turnaround, EV charging facilities, enforcement camera, 2.4m boundary fence, landscaping, change of use of existing flat (Use Class C3) to part of clubhouse and all associated works.	7.3km	Refused (not yet appealed)
TC 10	Thurrock Council	20/01787/FUL	Demolition of the existing buildings and the construction of six new buildings falling within Use Classes E(g)(iii)/B2//B8 with associated parking and alterations to the existing hard and soft landscaping on site.	5.8km	Approved
TC 11	Thurrock Council	18/00887/FUL [17/00548/REM]	Redevelopment of the site to provide 256 dwellings (an uplift of 242 dwellings when combined with 17/00548/REM Approval of reserved matters (layout, scale, appearance and landscaping) for Phase 1 of the outline part of application ref. 13/01231/FUL comprising the construction of 214 residential dwellings, new public open space, car parking and associated infrastructure works) and associated provision of open space, landscaping, car parking and infrastructure works.	7.8km	Approved
TC 12	Thurrock Council	18/00507/FUL	Redevelopment of the site to provide 102 dwellings and associated access, parking, public open space, landscaping and drainage infrastructure.	10km	Approved
TC 13	Thurrock Council	20/01180/SCO	Proposed hybrid planning application comprising detailed application for site access road and ecological buffer zone and outline planning application for warehouse and light industrial development (Use Class B8, B2 and associated B1) of up to 31,000 sqm floorspace with associated access, parking and landscaping.	8.6km	Pre-Application
TC 14	Thurrock Council	17/01171/FUL	Proposed construction of part three /part four-storey, 6 form entry secondary school for 1,150 students (including 250 sixth form pupils) in 8,850 sqm, new school building.	5.9km	Approved
TC 15	Thurrock Council	19/01701/OUT	Outline planning application for the demolition of the existing buildings and the erection of up to 3,280sqm (Gross Internal Area) of Class B8 (storage & distribution) and up to 924 sqm of ancillary office space.	8.5km	Approved

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TC 16	Thurrock Council	13/01231/FUL	Demolition of existing buildings and redevelopment to provide: in detail: a superstore extending 6,694 sqm (GIA) (Use Class A1) and petrol filling station; restaurants extending 704 sqm (GIA) (Use Class A3); a drive-through restaurant extending 246 sqm (GIA) (Use Class A3/5); community space extending 1,026 sqm (GIA) (Use Class D1/2); and associated car parking, landscaping and highways improvements; in outline (all matters reserved except access): up to 320 residential units (Use Class C3) and associated highways improvements.	7.7km	Approved
TC 17	Thurrock Council	13/00880/OUT	Part demolition/reconfiguration of existing western entrance to shopping centre (adjacent to Marks and Spencer unit), external entrances to Marks and Spencer unit and associated structures, and cinema. Demolition of bridge link between car parks 10 and 12 and associated external lift and stair cores. Erection of new buildings within use classes A1, A3, A4, A5, C1 and D2 together with ancillary facilities and alterations to existing cinema and Marks and Spencer unit including replacement entrances. Formation of replacement western entrance to shopping centre at ground and first floor levels including change of use of retail floorspace at first floor level (use class A1) to mall space (sui generis). Provision of new public realm and landscaped areas, including a new town square, new external pedestrian walkway at first floor level, and alteration of existing and creation of new boardwalk areas adjacent to the lake. Alterations to existing and creation of new vehicular, pedestrian and cycle access and egress arrangements and other ancillary works and operations.	8.3km	Approved
TC 18	Thurrock Council	19/01140/OUT	Part demolition of existing Debenhams store and demolition of existing bus station. Alteration and extension of the northern end of the shopping centre including erection of new buildings for uses within Use Classes A1-A5 and a new multi-storey car park. Erection of a new bus station and the alteration and extension of the shopping centre on its eastern side including the erection of new buildings for uses within Use Classes A1- A5. Provision of new public realm and landscaping area. Alterations of existing and construction of new vehicular, pedestrian and cycle access and egress arrangements and car parking and other ancillary works and operations.	8.3km	Approved
TC 19	Thurrock Council	18/00404/FUL	Development of a car storage building with associated site works and ecological mitigations.	5.3km	Approved
TC 20	Thurrock Council	19/00557/OUT	Outline planning application for the demolition of the existing buildings and the erection of up to 6,000sq. m (Gross Internal Area) of Class B1c (light industrial), Class B2 (general industrial) and Class B8 (storage & distribution).	8.6km	Approved
TC 21	Thurrock Council	14/01392/FUL	Use of part of land for vehicular storage for use in association with Purfleet Thames Terminal, formation of hardstanding, associated landscape and infrastructure works including erection of a gatehouse building, lighting columns, erection of fencing, drainage infrastructure including a surface water balancing pond, infill and alteration to levels, alterations to vehicular access to London Road.	5.3km	Approved

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TC 22	Thurrock Council	18/01671/FUL	Hybrid planning application for the demolition of existing buildings and structures; site preparation works; up to 2,500 dwellings [Use Class C3] and supporting infrastructure. Outline approval (with all matters reserved) sought for: up to 2,158 dwellings comprising a mix of 1, 2, 3-bedroom units (Use Class C3); a serviced plot for a new primary / nursery school up to 2,300 sq.m; a health centre up to 1,000 sq.m (Use Class D1); community pavilion of up to 500 sq.m (Use Class D1); convenience retail store up to 400 sq.m (Use Class A1); public art together with associated vehicle parking, open space, landscape and public realm provision, ecological mitigation, highways, pedestrian and vehicular access routes, and other associated engineering, utilities and infrastructure works. Creation of a new additional vehicle access. Detailed approval sought for: 342 dwellings (Use Class C3) comprising a mix of 1, 2, 3-bedroom units; linear park; a lido facility with changing room facilities up to 340 sq.m (Use Class D1) and ancillary café up to 100 sq.m (Use Class A3); 3km of mountain bike routes and a pump track, a pedestrian / cycle link tunnel from Lakeside Shopping Centre underneath the A1306, and vehicular access from the A1306 and MSA roundabout (bus / emergency).	8.5km	Awaiting Decision
TC 23	Thurrock Council	16/00275/FUL	Construction of warehouse development (B8) with associated access, car parking and servicing areas and installation of new footpath.	5.9km	Approved
TC 24	Thurrock Council	18/01231/FUL	Change of use of Units A1 to A4 from an industrial unit (Use Class B2) to a 20MW embedded Short Term Operating Reserve (STOR) generating facility (Sui Generis) together with internal and external alterations to the existing units, including the creation of one unit, the erection of two integrated chimney stacks, auxiliary equipment, substation, 10 coolers, gas kiosk, car parking, security fence and associated works.	7.6km	Approved
TC 25	Thurrock Council	23/00727/SCR	Proposed development comprising the demolition of existing buildings and re-development of the site to comprise up to 45,000 square metres of employment uses (Use Classes B2/B8), with associated access, parking and landscaping.	4.8km	Pre-Application
TC 26	Thurrock Council	22/01621/SCR	Proposed solar park at Aveley Landfill.	4.2km	Pre-Application
TC 27	Thurrock Council	22/01370/FUL	Application for full planning permission comprising the demolition of existing buildings / structures and provision of an employment hub comprising of 44,463 sq.m (gross internal area) of general industrial (Use Class B2) / logistics floorspace (Use Class B8) with ancillary development. Creation of a new boardwalk adjacent to the Mardyke; upgrades to Public Footpath 149; a new community and workplace hub; new roundabout junction on Ship Lane; hard and soft landscaping, and outdoor recreational facilities.	6.7km	Awaiting Decision
TC 28	Thurrock Council	21/01855/SCO	Proposed development for up to 50,000 sq.m (GEA) of warehouse space and ancillary uses including office space, on-site parking of up to 580 spaces, service yards, proposed vehicular access to the east of the site from Ship Lane, associated infrastructure works, landscape buffer and drainage works.	7km	Pre-Application

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TC 29	Thurrock Council	19/00271/FUL	Proposed new Distribution Centre consisting of - Erection of Warehouse and Distribution building (B8 Use Class), with ancillary Offices, Technical Service Block, Tote Wash, Vehicle Maintenance Building; Vehicle Inspection Hut, Gatehouse; creation of new access point from Purfleet Road and 'left-in' access from London Road; cycle, motorcycle, car, van and HGV parking (including construction of multi-storey car parking facility); fuel refill; hardstanding and circulation areas; sprinkler tanks; pump house; vehicle wash; and all other ancillary and enabling works including landscaping, drainage, engineering, ground stability works and boundary treatment.	4.8km	Approved
TC 30	Thurrock Council	19/01349/FUL	Construction of Class B8 (storage and distribution) building with associated access, servicing, parking and landscaping.	5.8km	Approved
TC 31	Thurrock Council	20/00370/FUL	Installation of a 60,000L capacity fuel storage tank above ground level with associated fences and landscaping.	6.1km	Approved
TC 32	Thurrock Council	12/50447/TTGFUL	Erection of a new academy secondary school and ascend learning centre with associated access, sports facilities, hard and soft landscaping, car and cycle parking and other associated infrastructure.	6.1km	Approved
TC 33	Thurrock Council	19/00324/SCR	Proposed development of 23,424 square metres (sqm) gross external area (GEA) of storage and distribution uses (Use Class B8), with 3,056sqm (GEA) of ancillary office uses (Use Class B1) and 1,795sqm (GEA) of ancillary buildings (Use Class B8), car parking (including construction of a multi-storey car parking facility), access, drainage, landscaping, plant and other associated works.	4.8km	Pre-Application
TC 34	Thurrock Council	16/00307/FUL	Mixed use development to provide 203 no. residential units, landscaping, car/cycle parking, commercial units (370sq.m.) comprising Class A1 (shops) / Class A2 (financial and professional services) / Class A3 (food and drink) / Class A4 (drinking establishments) / Class A5 (hot food takeaways) / Class D1 (non-residential institutions) floorspace and a doctor's surgery (280sq.m.).	8.7km	Approved
TC 35	Thurrock Council	21/01765/SCR	Proposed residential development of the site to provide up to 130 dwellings (Class C3), including up to 55 affordable dwellings, and up to a 75-unit care home with associated landscaping, parking and infrastructure, as well as ecological enhancement.	10km	Pre-Application
TC 36	Thurrock Council	22/01706/TBC	Full planning application for redevelopment and improvement works to construct 33 affordable homes with associated landscaping and vehicle/cycle parking provision.	8.3km	Awaiting Decision
TC 37	Thurrock Council	20/01777/FUL	Development of 173 residential dwellings, comprising a mix of one and two bedroom apartments and two and three bedroom houses alongside the re-provision of public open space with associated landscaping and public realm, private and communal amenity space, car and cycle parking provision and access improvements.	8.1km	Awaiting Decision
TC 38	Thurrock Council	18/01717/SCR	66 two-bedroom houses, 66 three bedroom houses and 20 flats within seven buildings (a total of 152 properties). The proposed development will also include private and guest car parking, private gardens and communal landscaping.	8.7km	Pre-Application

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TC 39	Thurrock Council	18/01716/SCR	31 one and two bed flats, 8 three bedroom houses, 4 four-bedroom houses (a total of 43 properties), car parking, private gardens and communal landscaping.	7.2km	Pre-Application
TC 40	Thurrock Council	20/00827/FUL	The erection of 92 units, comprising 86 No. 1 and 2 bed apartments, 2 No. 3 bed dwellings and 4 No. 2 bed dwellings along with associated infrastructure, works and landscaping.	7.3km	Approved
TC 41	Thurrock Council	21/02190/FUL	Erection of five buildings to provide 38 residential apartments (Use Class C3) with car parking, cycle parking, new primary and secondary vehicular accesses, soft and hard landscaping including amenity space and associated works.	8.7km	Awaiting Decision
TC 42	Thurrock Council	09/50035/TTGOUT	Outline planning permission is sought for demolition of existing buildings and re development of the site for up to 650 residential dwellings, associated car parking, roads, landscaping and public open space. All matters to be reserved except access points into the site.	8.5km	Approved



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