

Chapter Ten ♦ River Transport

INTRODUCTION

- 10.1. The River Transport chapter sets out the methodologies adopted in the assessment and relates them to the relevant policies and guidance. Following the review of policies and guidance, the existing and future baseline conditions are outlined and assessed. This leads on to the assessment of the effects of the proposed London Resort and construction impacts. Consideration is then given to mitigation strategies (where deemed necessary) and any residual and in-combination effects. The chapter concludes with a summary of the results of the assessment.
- 10.2. The proposed London Resort has the potential to affect existing river traffic and its users to varying degrees depending on the season, visitor demand, and extent of implementation of waterborne services provided. This chapter provides a preliminary assessment of the potential effects arising from the waterborne transport associated with the Proposed Development during both construction and operational phases. It should be highlighted that other transport effects are discussed separately in chapter nine of this PEIR.
- 10.3. The River Transport chapter is not intended to be read as a stand-alone document and information provided should be considered in conjunction with chapter four and chapter five of the PEIR providing complete Project Site and the Resort descriptions respectively, chapter nine providing details of Transport, accessibility and movement, as well as other chapters discussing other matters
- 10.4. As indicated above, the assessment provided in this chapter is preliminary, and its results may alter as the project progresses. However, the principles and premises outlined here remain constant and are applicable throughout the London Resort's lifetime. This is particularly relevant with regards to the future development of a Navigation Risk Assessment (NRA).
- 10.5. This chapter precedes a detailed Environmental Statement (ES) forming part of the Environmental Impact Assessment (EIA) and Transport Assessment (TA), which will assess the impacts of the London Resort with regards to any potential effects associated with traffic and transport in greater detail. The proposed London Resort's access strategy is contained in the relevant DCO documents supporting the statutory consultation.
- 10.6. The River Transport, chapter provides preliminary information based on the development of the project to date and data gathered at the time of writing of this report, that will subsequently be provided in full and final form as part of the ES.
- 10.7. The Proposed Development will include a number of marine transportation facilities which will form River Works requiring licencing from the Port of London Authority (PLA)

and potentially a marine licence from the Marine Management Organisation (MMO) within the River as follows:

- a new pier/jetty on the Swanscombe Peninsula for Thames Clippers' vessels
- an extension to the existing floating jetty at Port of Tilbury / London Cruise Terminal to provide mooring for Thames Clippers services
- new mooring and berthing for roll-on roll-off (Ro-Ro) vessels
- new mooring and berthing for service barges
- potential temporary mooring for construction material discharge

10.8. The Proposed Development will also introduce a number of vessel operations, including passenger ferry services from central London and cross-river services from the Resort and Ferry facility at Port of Tilbury.

- Thames Clippers services from central London
- Thames Clippers service between Tilbury and the Resort
- construction materials transfer between Tilbury and the Resort
- construction materials delivery
- deliveries during operation
- inspection and maintenance of marine infrastructure.

10.9. It is likely that dredging will be required in order to bring Bell's Wharf back into a usable condition. Further survey work is being undertaken to ascertain the extent of dredging that may be required.

RELEVANT LAW, POLICY AND GUIDANCE

Introduction

10.10. Chapters two and three of this PEIR endeavour to provide an overview of all relevant law, policy and best practice. As these chapters explain, the relevant EIA regulations are the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017.

10.11. Building upon the information within these chapters, the following information summarises the specific policy and guidance related to river transport relevant to the London Resort at a national and local level. These policies and plans were considered to help define the scope of the assessment in this chapter.

National policy

10.12. National Policy Statement for Ports (PNPS). The PNPS was designated by the SoS in January 2012 and sets out the Government's policies for new nationally significant port development projects. The Scheme does not provide for a nationally significant port

development, as described within the PNPS, however, where aspects of the PNPS are pertinent to aspects of the Scheme that may affect existing port facilities, assessments within this PEIR have appropriately referenced the statement.

- 10.13. The PNPS requires applicants to consider the effects of a project during both the construction and operational phases upon air quality taking into account the existing air quality levels. This aspect as relates to river transport is assessed in chapter 16.
- 10.14. The PNPS requires an applicant to assess the noise generating aspects of a development on the marine and terrestrial environment including noise sensitive areas and noise sensitive species which has been informed by the existing marine and terrestrial noise environment. These assessments should then identify any measures that are included to mitigate the effects of noise. This aspect as relates to river transport is assessed in chapter 15.
- 10.15. The PNPS identifies policies specific to coastal environments in which ports are located, particularly with the need to consult the MMO on projects that impact on coastal change.
- 10.16. The PNPS identifies that any dredging required as part of a development must be assessed in accordance with the Water Frameworks Directive.
- 10.17. South East Inshore Marine Plan (Draft Only) (SEIMP). The draft South East Inshore Marine Plan was prepared in accordance with Section 51 of the Marine and Coastal Access Act 2009 and published by Marine Management Organisation on 10th January 2020.
- 10.18. Whilst not yet adopted and agreed by the SoS the policies contained have been considered in the preparation of this PEIR.
- 10.19. Ports and harbours are essential to realise economic and social benefits for the south east inshore marine plan area and the UK. Policy SE-PS-1 of the SEIMP makes sure proposals do not restrict current port and harbour activity or future growth, enabling long-term strategic decisions, and supporting competitive and efficient port and shipping operations.
- 10.20. Space within the small and busy south east inshore marine plan area is limited. To realise sustainable social, environmental and economic benefits it is therefore important to plan for and make efficient use of the space. Policy SE-CO-1 in the SEIMP encourages proposals to be spatially planned, take account of existing activities, and promote co-existence. The policy ensures new activities seek to avoid creating conflicts and to minimise their footprint.
- 10.21. Many marine activities in the south east and adjacent marine plan areas are reliant on land-based infrastructure in the south east inshore marine plan area. Supporting infrastructure development will provide economic and social benefits and facilitate marine business, including those that are land-based. Policy SE-INF-1 of the SEIMP

supports integration between marine and terrestrial systems by encouraging proposals and other measures that maintain existing or provide new infrastructure in the intertidal area that facilitates marine activity.

10.22. All UK Statutory Harbour Authorities (SHAs) have a responsibility to comply with, inter alia, the letter and spirit of the Port Marine Safety Code (PMSC). A core requirement of the PMSC is that the Duty Holder of the SHA must:

- Assess, and keep under review, the marine risks within the waters for which the SHA is responsible
- Develop policies and procedures to manage those risks and to employ, resource, and empower suitably competent personnel to manage marine operations and reduce risk
- Undertake the above by means of a structured Safety Management System (SMS), which has clear objectives, clear outcomes, and has the concept of continuous improvement embedded within it.

10.23. As part of this responsibility it is required that an NRA is prepared to assess the risks associated with marine operations.

Best practice guidance (national)

10.24. MGN543: Safety of Navigation: Offshore Renewable Energy Installations. MGN543 is a Marine Guidance Note (MGN) that identifies the issues that should be taken into consideration when assessing the navigational safety of renewable energy installations. This is the most recent publication relating to marine navigational safety and hence represents best practice.

Table 10.1: River Transport – Policy and Guidance

Assessment Area and Policy	Policy Summary	Scheme Summary
Navigation Safety PMSC	Assess, and keep under review, the marine risks within the waters for which the SHA is responsible.	These assessments will be undertaken as part of the Navigational Risk Assessment (NRA).
Navigation Safety PMSC	Develop policies and procedures to manage those risks and to employ, resource, and empower suitably competent personnel to manage marine operations and reduce risk.	These assessments will be undertaken as part of the Navigational Risk Assessment (NRA).
Navigation Safety MGN543: Safety of Navigation: Offshore Renewable Energy Installations	MGN543 is a Marine Guidance Note (MGN) that identifies the issues that should be taken into consideration when assessing the navigational safety of	These assessments will be undertaken as part of the Navigational Risk Assessment (NRA).

Navigation Safety	renewable energy installations. This is the most recent publication relating to marine navigational safety and hence represents best practice.	
Existing Operations South East Inshore Marine Plan (Draft Only) (SEIMP).	Policy SE-CO-1: Proposals that optimise the use of space and incorporate opportunities for co-existence and co-operation with existing activities will be supported.	Proposals include re-establishment of existing infrastructure and co-operation with existing port facilities and operators, e.g. POLT and Thames Clipper.
Existing Operations South East Inshore Marine Plan (Draft Only) (SEIMP).	Policy SE-PS-1: Only proposals demonstrating compatibility with current activity and future opportunity for sustainable expansion of port and harbour activities will be supported.	These assessments will be undertaken as part of the Navigational Risk Assessment (NRA).
Existing Operations South East Inshore Marine Plan (Draft Only) (SEIMP).	Policy SE-INF-1: Appropriate land-based infrastructure which facilitates marine activity (and vice versa) should be supported.	The scheme has been developed to include infrastructure to facilitate marine transportation for visitors and deliveries, discussions with service operators is ongoing.

METHODOLOGY AND DATA SOURCES

Consultation feedback

- 10.25. LRCH carried out a consultation meeting with the PLA to discuss potential navigational impacts of the scheme in May 2017. At this meeting it was agreed that the assessment area for the London Resort NRA should cover a 6 mile stretch of the River Thames between Tilbury Landing Stage and QE Bridge, as shown on Figure 1.1 overleaf.

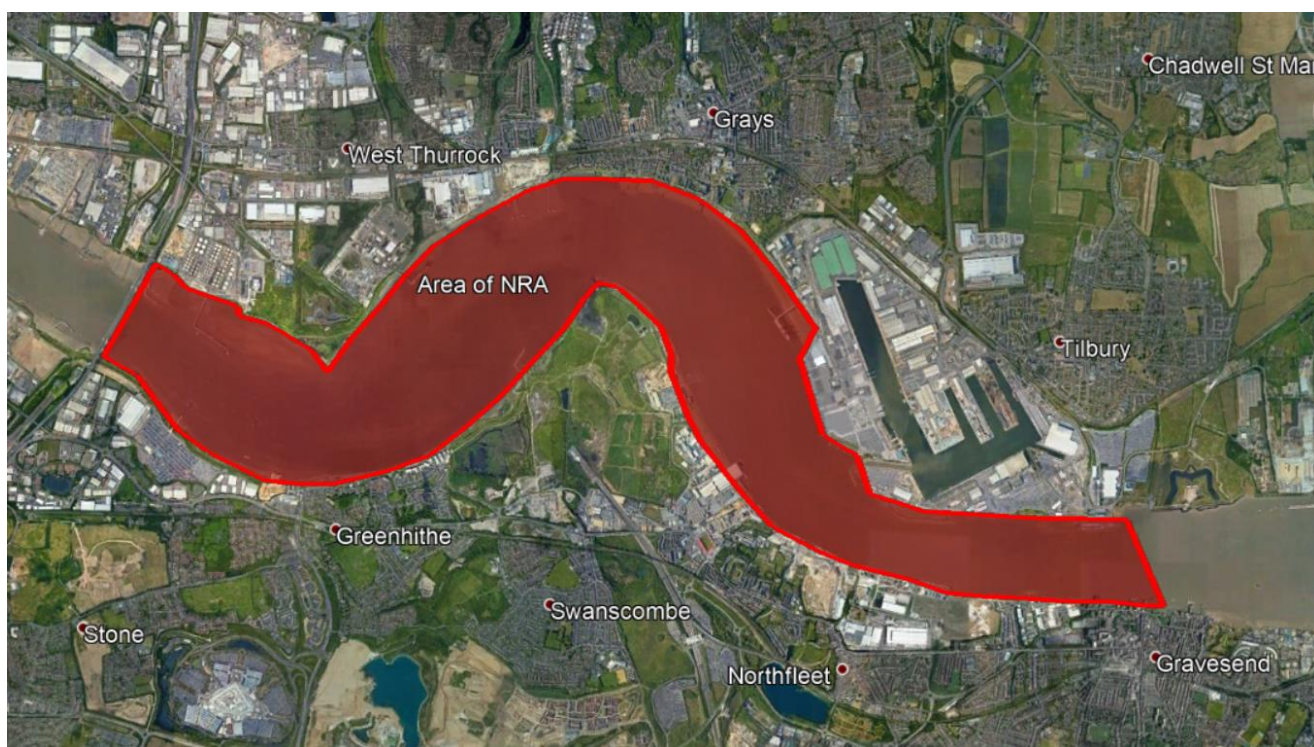


Figure 10.1: NRA – Extent of Assessment

10.26. It was also agreed that the NRA should be seen as an iterative process. The NRA issued with the DCO application will be referred to as a Preliminary NRA and it will be a matter of condition that this will be updated as new and more detailed information becomes available, such as final vessel sizes and frequencies, temporary works e.g. for outfall construction etc.

10.27. The aspects of the London Resort development which have potential to impact the safety of navigation are listed in the following table:

Table 10.2: Table of development that could affect safety of navigation

Aspect of Development with potential impact	Example	Construction Phase	Operational Phase
Passenger Ferry Operations	Thames Clipper arrivals/departures		X
Delivery/waste transportation	Delivery of construction materials	X	X
Maritime construction activities	Construction of new jetty	X	
Landside development with potential to impact sight lines and navigation systems	Buildings (including temporary works), land raising	X	X

10.28. The introduction of additional vessel operations will inevitably result in an increase in

vessel movements in the River in general and around the Proposed Development in particular. This increase will bring with it an increase in vessel emissions and noise along with an increase in navigational risk.

Assessment methodology

- 10.29. The assessment of the environmental effects from marine operations are considered in the relevant section within this PEIR, specifically chapter 15 – Noise, chapter 12 – Terrestrial and Freshwater Ecology, chapter 13 – Marine Ecology and chapter 16 – Air Quality.
- 10.30. Construction activities connected to the marine infrastructure have the potential to create disturbance to marine habitats through sediment disruption and underwater noise (especially piling activities). These are considered within chapters 13 – Marine Ecology and 18 – Soils, Hydrogeology and Ground Conditions.
- 10.31. All UK Statutory Harbour Authorities (SHAs) have a responsibility to comply with, inter alia, the letter and spirit of the Port Marine Safety Code (PMSA).
- 10.32. An NRA is therefore required to be submitted to the SHA in whose water the candidate shipping will navigate, in this case the PLA, for their acceptance.
- 10.33. In order to assess the impact of the development on navigation risk the NRA will be based on guidance published by the International Maritime Organization in MSC/Circ.1180-MEPC/Circ.474 and MSCMEPC.2/Circ.5.
- 10.34. The approach will follow the PLA's preferred methodology for a NRA taken from <http://www.pla.co.uk/Safety/Navigational-Risk-Assessment-Guidance-to-Operators-and-Owners>.
- 10.35. The NRA will also take account of the recommendation of the following documents:
 - Port Marine Safety Code, DfT/MCA Nov 2016
 - A Guide to Good Practice on Port Marine Operations, DfT/MCA Feb 2018
 - MGN 543 (M+F) – Safety of Navigation: Offshore Renewable Energy Installations (OREI's) – Guidance on UK Navigational Practice, Safety and Emergency Response, DfT/MCA Jan 2016
 - The National Contingency Plan - A Strategic Overview for Responses to Marine Pollution from Shipping and Offshore Installations, DfT/MCA
 - Methodology for Assessing the Marine Navigational Safety & Emergency Response of Risks of Offshore Renewable Energy Installations, DfT/MCA
 - Local byelaws etc
- 10.36. For the NRA the following information sources will be reviewed;

- Existing operational arrangements
 - Previous studies and assessments
 - Scheme studies and assessments
 - Vessel traffic density
 - MAIB incident reports
 - RNLI incident reports
 - SHA recorded Accident-Incident records.
- 10.37. Potential impacts on navigation could occur during the construction and operational periods. Without prejudice to the outcome of the NRA, the following are the types of hazard which it is anticipated will need to be assessed during this NRA. The list is not intended to be exhaustive, and Hazard Identification meetings may well identify other hazards.
- Collision (between two vessels underway)
 - Contact (a vessel hitting stationary object, either a moored vessel or other object)
 - Grounding (vessel hitting riverbed)
- 10.38. As part of the assessment, consideration will be given to the need for mitigation in the form of aids to mitigation whether during construction or operation. This will be fully discussed and agreed with the PLA and subsequently Trinity House in their function as General Lighthouse Authority (GLA) for the UK.
- 10.39. Any dredging required will be assessed during the preparation of the full ES, assessments will be conducted to satisfy the requirements of both the PLA and the MMO's dredging and disposal licencing regimes.

BASELINE CONDITIONS

Existing Baseline Conditions

- 10.40. Existing services include river buses and river tours. These provide passenger services along the River Thames from Putney and Chelsey Harbour Piers in west London (with tours between Hampton Court and Westminster operating in summer only) to Woolwich Royal Arsenal Pier and North Greenwich Pier in east London respectively. The closest pier to the London Resort (Woolwich Arsenal Pier) is located to the west of the Project Site approximately 20 km up the River Thames.
- 10.41. There are six River Bus services operated by Thames Clippers. River Bus Routes RB1 and RB5 both serve Woolwich Royal Arsenal, with the route RB1 offering the services to/from the Westminster/Battersea Power Station. The route RB5 then runs between North Greenwich and Woolwich Royal Arsenal only. Although branded as 'commuter services', both RB1 and RB5 operate throughout the day as well. However, the services outside

the commuter peak hours operate only between Westminster and North Greenwich (RB1) with the service RB5 not operating outside these hours at all.

- 10.42. The frequency of the services throughout the day is up to three boats per hour. It should also be highlighted that the services are currently disrupted by the Covid-19 pandemic.
- 10.43. In addition to the above River Bus services, a regular ferry service of up to two per hour operates from Monday to Saturday between Tilbury Landing and Town Pier in Gravesend. The ferry service is operated by Jetstream Tours on behalf of Kent County Council and Thurrock Council.

Kent Project Site

- 10.44. The Kent Project Site currently includes the following marine infrastructure:
- Bell Wharf lies midway down the western side of the Swanscombe Peninsula. It was previously used by Blue Circle as part of their cement works operations.
 - White's Jetty extends out the northern part of Bell Wharf. It is currently in poor condition.
 - On the most northern tip of Swanscombe Peninsula is a gangway leading out to Broadness Point Light.
 - Located between the navigation channel and Bell Wharf is St Clements anchorage. The area of the anchorage extends approximately 400m into the river from the land and runs from the end of White's Jetty upstream to approximately 750m.

Essex Project Site

- 10.45. The Essex Project Site includes the following:
- Tilbury Landing Stage which is currently used as a berthing area for the London Cruise Terminal.
 - Ferry landing that operates between the north and south sides of the River Thames.
 - Tilbury Ro-Ro which includes a series of dolphins that run upstream from the end of the Tilbury Landing Stage.
 - Downstream of Tilbury Docks is a buried cable that runs across the River Thames.
- 10.46. From publicly available information on vessel traffic density it can be ascertained that the annual number of commercial vessel movements currently occurring in the vicinity of the proposal is in the order of 20,000. A baseline vessel density will be agreed with the PLA and other stakeholders during the preparation of the NRA.

Future Baseline Conditions

- 10.47. Due to the Project Site's strategic location adjacent to the River Thames, there is the opportunity to adopt river-based travel. Indicatively, the use of river taxis/shuttle services can provide a further travel option, reducing the impact on the local and strategic road networks.
- 10.48. Discussions with Thames Clippers indicated that a potential journey time from London

Waterloo to the Resort and from Greenwich to the Resort would be a viable and attractive alternative to other modes. Ultimately, the journey time will be dependent on the service pattern adopted and economic viability. However, this provided an outline indication of how a passenger ferry could be adopted to serve the London Resort and provide another public transport alternative from central London.

- 10.49. As part of the water access strategy, supporting river infrastructure at the Project Site is to be developed that will enable the movement of users to and from the Project Site.
- 10.50. The Proposed Development will provide new water-based infrastructure and pump-prime new services for the Proposed Development, supporting wider growth plans. It is anticipated that this infrastructure would further support growth in passenger numbers by forming a new/extended interchange for development growth in Ebbsfleet and the North Kent Thames transport interchanges.
- 10.51. Port of Tilbury, London (PoTL) has agreed to accommodate a new car park (plus ancillary visitor services) north of the river and to allow access to the river for a new ferry service connecting the Resort to the PoTL. Furthermore, PoTL will also now be the hub for the majority of construction material and operational servicing for the Resort.
- 10.52. In addition to the above, an agreement has been reached with Thames Clippers to provide new river-based passenger services to the London Resort from PoTL and central London.
- 10.53. Provisional proposals for the River Transport associated with the scheme visitors includes a new passenger ferry between PoLT and the London Resort operating 84 movements per day and passenger services between central London and the London Resort comprising 54 movements per day.
- 10.54. In addition to the proposed passenger services, operational deliveries will create additional vessel movements to and from the scheme, at present the frequency of these movements has not been determined however they are expected to be significantly less than the anticipated passenger service numbers, this will be further reported in the ES.
- 10.55. During construction it is considered that a number of vessel movements associated with the scheme will be required, potential movement numbers will be developed during the preparation of the ES however it is expected that these will be significantly lower than the annual number anticipated during operations, notwithstanding this specific effects of construction vessels will be assessed separately within the NRA.
- 10.56. With the currently available information on the schemes operational river transport it is estimated that the number of new vessel movements created by the scheme would be up to 50,000 per year.
- 10.57. The specifications for the vessels to be used both during construction and through operations have not been confirmed at the current time. Currently available information

suggests that passenger services may utilise 400PAX capacity catamarans, these would typically be of around 40m length and 10m beam, with draughts between 1 and 2 metres, further detail will be provided in the ES submitted as part of the DCO application.

- 10.58. Details of the proposed river transport operations and the management of vessel movements and terminal operations, at both ends of the routes, are under discussion with operators.

POTENTIAL SIGNIFICANT ENVIRONMENTAL EFFECTS OF THE PROPOSALS

- 10.59. The introduction of additional vessel operations will inevitably result in an increase in vessel movements in the River in general and around the Proposed Development in particular. This increase will bring with it an increase in vessel emissions and noise along with an increase in navigational risk. The effects will be fully assessed and reported on in the ES chapter provided as part of the DCO application.
- 10.60. Emissions and noise generated by the proposed river transport are considered in the relevant chapters in this PEIR.
- 10.61. The proposals will not affect the operation of the existing Tilbury to Gravesend Ferry as neither the physical infrastructure nor vessel movements for the London Resort will infringe on the route of the ferry.

Proposed mitigation

- 10.62. A full NRA will be prepared which will identify any mitigation required to maintain navigational safety.
- 10.63. At present the range of mitigations is expected to include aids to navigation, operational process controls, surveys and monitoring, and maintenance processes.

RESIDUAL AND IN-COMBINATION EFFECTS

Residual effects

- 10.64. Due to the lack of navigation data, at this stage, it is not possible to determine the residual effects of the London Resort. However, mitigation strategies will be developed as part of the NRA where required, and the post-mitigation residual effects are predicted to be 'not significant' in EIA terms.

In-combination effects

- 10.65. The in-combination effects cannot be established at this stage due to the lack of specific navigation data at the time of writing. However, the assessment carried out as part of the EIA/ES will utilise the data from the developed NRA, which will consider all significant

committed development in the area. Inherently, any effects identified during the assessment will also be in-combination effects.

Transboundary effects

- 10.66. The transboundary impacts are the impact of the London Resort on countries outside of the UK and in the EEA (European Economic Area). In river transport terms, this would be the residual impact of the additional vessel movements associated with the resort upon other countries.
- 10.67. It is anticipated that all vessel movements to the London Resort during both construction and operation will originate from within the UK.
- 10.68. It is therefore considered that while transboundary effects will be considered as part of the EIA, this will not require a detailed assessment for river transport.

CLIMATE CHANGE

- 10.69. While climate change and more specifically sea-level rise has the potential to impact on river transport, the range of impacts is most associated with the design and operation of ship to shore interfaces rather than navigational aspects.
- 10.70. Climate change effects will be considered during the design of all marine infrastructure within the London Resort and for this reason, it is not considered that climate change factors would materially affect this assessment.

SUMMARY AND CONCLUSIONS

- 10.71. A preliminary assessment of the potential navigational effects associated with the river transport aspects of the London Resort has been carried out, and it is discussed in this chapter of the PEIR.
- 10.72. Assessments of the other ecological effects associated with river transport are covered in the relevant chapters of the PEIR.
- 10.73. It should be noted that the detailed assessments and preliminary NRA will be provided as part of the EIA process and form part of the ES that will be submitted alongside the DCO application.