The London Resort Development Consent Order

BC080001

Environmental Statement
Volume 1: Main Statement

Chapter 6 – EIA assessment methodology

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Planning Act 2008
The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009
Regulation 5(2)(a)
The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017
Regulation 12(1)

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Chapter Six ◆ EIA scope and general methodology

INTRODUCTION

6.1 Chapter 1: *Introduction* of this ES explains the purpose of EIA and the role of the Environmental Statement (ES) that accompanies LRCH'S DCO application for the London Resort. Chapter 1 explains also how the assessment of the environmental effects of the Proposed Development has followed Rochdale Envelope principles.

6.2 This chapter explains how the scope of the EIA has been determined and then sets out the general methodology that has been applied to the technical assessments that have been undertaken as part of the EIA. Further topic-specific explanations of the assessment methodology are provided in following chapters of this ES.

THE SCOPE OF THE EIA

Geographic scope

6.3 The geographical coverage of an EIA is defined by the area of land to be used, the nature of the current environmental conditions and the manner in which impacts are likely to be generated. Whereas land within the boundary of a development site – in this case defined by the DCO Order Limits shown in figure 1.2 of this ES (document reference 6.3.1.2) – forms a focus of the assessment, the influence of many predicted environmental effects can extend beyond the immediate Project Site boundary. Where identified and relevant, these effects have also been assessed as part of the EIA. Wider study areas relevant to individual EIA topics are defined in the chapters that follow.

6.4 The geographical extent of the EIA also considers the potential implications of related and unrelated development activities. The potential cumulative effects of the Proposed Development in association with other developments during construction and in operation are taken into account in individual ES chapters and in chapter 22: *Cumulative, in-combination and transboundary effects* (document reference 6.1.22).

Temporal scope

6.5 The envisaged construction phasing for the London Resort is explained in the Construction Method Statement (CMS, document reference 6.2.3.1). Under the proposed programme, it is expected that construction will take place between 2022 and 2024 for the first phase of development, with the phase 2 Gate Two theme park and its additional car parking and hotel accommodation being completed by 2029.

6.6 The assessments presented in this ES are based largely on the comparison of anticipated environmental effects with current or recent baseline environmental conditions. This is with the exception of topics such as air quality and landscape and visual assessments, which factor in future baseline changes into assessments in defined future year impact scenarios. These approaches are explained in further detail in the relevant chapters.

Technical scope

6.7 In order to ascertain the technical scope of the EIA, a scoping process has been undertaken. Chapter 1: *Introduction* of this ES (document reference 6.1.1) explains that LRCH applied originally to the Secretary of State for an opinion on the scope of the London Resort EIA in November 2014 (document reference 6.2.1.1), with the Secretary of State's EIA Scoping Opinion being published the following month (document reference 6.2.1.2). LRCH's project team took the Scoping Opinion 2014 into account in subsequent assessment work but over time there have been various changes in project definition, local circumstances and legislation that have led LRCH, in consultation with the Planning Inspectorate (PINS), to conclude that the EIA scoping opinion issued in 2014 should be refreshed.

6.8 On 17 June 2020, LRCH submitted a new EIA Scoping Report (document reference 6.2.1.3) to the Planning Inspectorate to ensure that the EIA identifies the appropriate range of environmental information to enable LRCH's DCO application to be accepted for examination and determined by the Secretary of State. The Secretary of State's EIA scoping opinion (document reference 6.2.1.4) was adopted on 28 July 2020 and took into account responses received by PINS from the following consultees.

- Anglian Water;
- Civil Aviation Authority;
- Dartford Borough Council;
- Ebbsfleet Development Corporation;
- Environment Agency;
- Forestry Commission;
- Gravesham Borough Council;
- Health and Safety Executive;
- Historic England;
- Kent County Council;
- Kent Police and Crime Commissioner;
- London Gateway Port Limited;
- Marine Management Organisation;
- Maritime and Coastguard Agency;
- National Grid;
- Natural England;
- Port of London Authority;
- Port of Tilbury London Limited;
- Public Health England;

- Royal Borough of Greenwich;
- Royal Mail;
- Sevenoaks District Council;
- Thames Water;
- Thurrock Council;
- Transport for London;
- Trinity House.

6.9 The 2008 Act requires public consultation to be undertaken by an applicant before a DCO application is made. Between July and September 2020, LRCH undertook a statutory consultation in accordance with sections 42, 47 and 48 of the 2008 Act. A Preliminary Environmental Impact Report (PEIR) was prepared in support of this process.

6.10 The 2020 EIA scoping opinion and comments received from the statutory consultation have enabled LRCH to identify and address any material shortfalls in the environmental information prior to completion of the EIA and ES and submission of the DCO application. The response to consultation feedback is described in the London Resort Consultation Report (document reference 5.1), submitted with the DCO application. In addition, each topic-based chapter of the ES provides a response to the Scoping Opinion and to statutory consultation responses where appropriate.

6.11 The topics that were formally agreed through the scoping process, i.e. those which the Secretary of State deemed to have the potential to give rise to significant environmental effects, are listed below.

- Land-use and socio-economic effects
- Human health
- Land transport
- River transport
- Landscape and visual effects
- Terrestrial and freshwater ecology and biodiversity
- Marine ecology and biodiversity
- Cultural heritage and archaeology
- Noise and vibration
- Air quality
- Water resources and flood risk
- Soils, hydrogeology and ground conditions
- Waste and materials
- Greenhouse gases and climate change.

6.12 No topics were specifically identified through the scoping process to be ‘scoped out’ from further assessment in the EIA.

Major accidents and / or disasters

6.13 The EIA Regulations 2017 (Schedule 4, Paragraph 8) require the consideration of:

> *'A description of the expected significant adverse effects of the development on the environment deriving from the vulnerability of the development to risks of major accidents and/or disasters which are relevant to the project concerned. Relevant information available and obtained through thorough risk assessments pursuant to EU legislation….or UK environmental assessments may be used for this purpose provided that the requirements of this Directive are met. Where appropriate, this description should include measures envisaged to prevent or mitigate the significant adverse effects of such events on the environment and details of the preparedness for and proposed response to such emergencies.'*

6.14 When considering the likely vulnerability of a development to major accidents or disasters, there are three key criteria, derived from best practice and guidance produced by the Institute of Environmental Management and Assessment (IEMA) *Major Accidents and Disasters in EIA: A Primer*, to be considered, as set out in table 6.1.

Table 6.1: Consideration of vulnerability of the Proposed Development to major accidents and / or disasters

Criteria	The Applicant's response
1) Is the development a source of hazard that could result in a major accident and/or disaster?	The Proposed Development is not a direct source of hazard over and above those standard construction and operational activities that are appropriately described within the DCO application documents and which will be controlled through via the DCO.
2) Does the development interact with any external sources of hazard?	The Health and Safety Executive (HSE) confirmed in response to the 2020 scoping exercise that there are no major accident sites and no major accident hazard pipelines within the order limits. The HSE further identified that both parts of the Project Site are within the vicinity of an explosives site at the Port of Tilbury, and as such, the HSE will review the capacity of the port to handle explosives based on the Proposed Development. Based on this feedback, it is considered that there are no external sources of hazard identified that the Proposed Development will interact with, to give rise to vulnerability.
3) If an external man-made or natural hazard occurred,	The Proposed Development will attract a high number of daily and overnight visitors and associated vehicle

Criteria	The Applicant's response
would the presence of the development increase the risk of significant environmental effect(s) to an environmental receptor occurring?	movements to the locality that would not otherwise be present. As such should a major accident and / or disaster occur, the presence of this increased population locally could increase the risk of a significant environmental effect occurring in the absence of appropriate strategies and controls.

6.15 Having considered these criteria, the next stage involved determining whether, for those developments where a risk may be identified, existing design measures or legal requirements, codes and / or standards would adequately control the potential major accident and / or disaster, or whether it will be adequately covered by another assessment or topic.

6.16 The vulnerability of the London Resort to major accidents and disasters has been a significant consideration in the preparation of the DCO application. The consideration of this topic from an environmental perspective is already embedded into a number of topics being considered as part of the inherent approach to assessment, including socio-economics, human health, water resources and flood risk and greenhouse gases and climate change.

6.17 Existing approaches to managing risk might already exist and can be used to understand the residual level of risk. The UK already has a structured framework of risk management legislation in place and therefore it is not deemed appropriate to duplicate any risk quantification and management already undertaken as part of the wider DCO application, or from any future construction and operational procedures that the London Resort would be subject to.

6.18 In considering the vulnerability of the London Resort to major accidents and disasters, it is considered that the wide range of established safety and security legislation applicable to the construction and operation of the London Resort is generally sufficient to manage the vulnerabilities. The DCO application is accompanied by a Security Planning Report (document reference 7.8). The HSE will confirm whether the presence of hazardous substances on, over or under land at, or above, set threshold quantities (Controlled Quantities) will require Hazardous Substances Consent (HSC) under the Planning (Hazardous Substances) Act 1990 as amended. A robust Safety Management System (SMS) will be developed in consultation with the Port of London Authority (PLA) under the Port Marine Safety Code (PMSC).

6.19 During the pre-application stage LRCH consulted with the police, fire, ambulance and local health services and the Centre for the Protection of National Infrastructure (CPNI). The design of the London Resort takes into account considerations including access by land, river and air for the emergency and security services and provisions for the evacuation of

some or all of the Resort or the supporting facilities at the Essex Project Site in the event of a major incident.

6.20 The DCO application is accompanied by the following documents that explain provisions to avoid or reduce vulnerability to accidents and disasters:

- Security Planning Report (document reference 7.8);
- Construction Method Statement (CMS – ES appendix 3.1: document reference 6.2.3.1);
- Outline Construction Environmental Management Plan (CEMP - ES appendix 3.2: document reference 6.2.3.2);
- Outline Lighting Statement (document reference 7.10);
- Outline Construction Traffic Management Plan (CTMP - ES appendix 9.2: document reference 6.2.9.2);
- Navigational Risk Assessment (NRA - ES appendix 10.1: document reference 6.2.10.1);
- Other Consents and Licences (document reference 5.3).

6.21 It is considered that this integrated approach to control and management ensures that vulnerability to major accidents and/or disasters has been taken into account in the design and assessment of the Proposed Development and the EIA and that the risks are reduced to as low as reasonably practicable. As such a separate chapter assessment is not presented in the ES.

ASSESSMENT METHODOLOGY

Baseline

6.22 Defining a consistent baseline is an important part of the EIA process. Baseline conditions are defined as the existing state of the environment and how it might develop in the future in the absence of the proposals. This is established through desk-based analysis and surveys of the area. It is against the defined baseline that the significance of the predicted environmental effects are assessed.

6.23 The topic-specific assessments contained within this ES assess the likely significant effects of the Proposed Development at both the construction and operational phases. The EIA has not assessed decommissioning because the London Resort is intended to be a permanent development and consideration for decommissioning at this stage would be too hypothetical to be meaningful.

EIA methodology

6.24 The detailed methodology employed for the assessment of individual environmental topics is explained in the technical chapters that follow. These methodologies have the following activities in common:

- establishing the existing 'baseline conditions';
- consultation with statutory and non-statutory consultees throughout the application process;
- consideration of relevant local, regional and national planning policies, guidelines and legislation relevant to EIA and to the topic;
- consideration of technical standards for the development of significance criteria;
- review of secondary information, previous environmental studies and publicly available information and databases;
- physical surveys and monitoring;
- desk-top studies;
- computer modelling;
- professional judgement.

6.25 The assessments have considered the likelihood of significant environmental effects on the defined baseline conditions as a direct / indirect result of the Proposed Development. Predictions are necessary when forecasting future impacts. In order to ensure that predictions are as accurate as possible assessments have been undertaken in accordance with best practice guidelines published by relevant professional bodies.

6.26 Where no topic-specific assessment guidance is available, a common framework of assessment criteria and terminology has been utilised for the presentation of predicted environmental effects. This is based on a widely used 'matrix approach' to environmental assessment and combined the characteristics of the impact (magnitude and nature) and the sensitivity of the receptor. In using this approach it is considered that there is a level of transparency to the assessment and it enables the reader to interpret the outputs of the technical assessments more readily.

6.27 Environmental effects have been considered on the basis of their magnitude, duration and reversibility.

Receptor sensitivity

6.28 The sensitivity of a receptor refers to its importance, i.e. its environmental value and attributes. This may include a feature's level of statutory designation. The terminology defining sensitivity can vary according to the discipline or the methodology being used. However, in this, ES sensitivity is generally defined as *Very High, High, Medium or Low.* An

example of the definition of the sensitivity of receptors is set out in the table below. Following chapters of this ES consider the attributes of specific receptors in more detail.

Table 6.2: The measurement of environmental effects - receptor sensitivity

Sensitivity	**Example**
Very High	Internationally designated site (e.g. Ramsar / SPA / World Heritage Site).
High	Nationally designated site (SSSI) / designated Landscape (e.g. NP) / principal aquifer / main watercourse / human health
Medium	Regionally designated ecology / heritage site / secondary aquifer / minor watercourse
Low (or lower)	Locally designated ecology / heritage site; area of hardstanding / brownfield land / industrial site / low ecological value.
Negligible	No sensitivity to change

Determining impact magnitude

6.29 Magnitude is determined by predicting the *scale* of any potential change in the baseline conditions. Where possible magnitude is quantified, but where this is not possible a fully defined qualitative assessment has been undertaken. The assessment of magnitude takes into account any design or embedded mitigation in a proposed development, and any additional mitigation has been applied.

6.30 Table 6.3 overleaf sets out how magnitude is defined in relation to the London Resort.

Table 6.3: The measurement of environmental effects - magnitude of impact

Magnitude		Example
Major	Adverse	A permanent or long term adverse impact on the integrity and value of an environmental attribute or receptor
	Beneficial	Large scale or major improvement of resource quality; extensive restoration or enhancement; major improvement of attribute quality.
Moderate	Adverse	An adverse impact on the integrity and/or value of an environmental attribute or receptor, but recovery is possible in the medium term and no permanent impacts are predicted.
	Beneficial	Benefit to, or addition of, key characteristics, features, or elements or improvement of attribute quality.
Minor	Adverse	An adverse impact on the value of an environmental attribute or receptor, but recovery is expected in the short-term and there would be no impact on its integrity.
	Beneficial	Minor benefit to, or addition of key characteristics, features or elements; some beneficial impact on attribute or a reduction in the risk of a negative impact occurring.
Negligible	Adverse	Very minor loss
	Beneficial	Very minor benefit
No change		No change would be perceptible either positive or negative

Determining the significance and nature of effects

6.31 To determine the significance of effect, the predicted magnitude of the impact is combined with the assigned sensitivity of the receptor, as set out in the table below.

6.32 The interaction of magnitude and sensitivity combined enables the determination of significance of an environmental effect on a scale. Deviation from the terminology may occur in cases where an established methodology requires this, and where relevant this is explained in the chapters that follow.

6.33 According to Schedule 4, paragraph 5 of the EIA Regulations 2017, The description of the likely significant effects should cover '*the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the development*'. The definition of at what level of significance a significant effect arises is provided in the topic method section of each of the topic-based chapters that follow.

Table 6.4: The measurement of environmental effects - significance of effect

		Magnitude of impact				
		No change	**Negligible**	**Minor**	**Moderate**	**Major**
Receptor Sensitivity	Very high	Neutral	Slight	Moderate	Large	Very large
	High	Neutral	Slight	Moderate	Large	Large
	Medium	Neutral	Slight	Slight	Moderate	Large
	Low	Neutral	Slight	Slight	Slight	Moderate
	Negligible	Neutral	Neutral	Neutral	Neutral	Neutral

Mitigation

6.34 Schedule 4, paragraph 7 of the EIA Regulations 2017 requires: *'A description of the measures envisaged to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment and, where appropriate, of any proposed monitoring arrangements . . .'* When describing mitigation measures, they generally fall under two headings, 'design or embedded mitigation' and 'additional mitigation'.

6.35 Design or embedded mitigation is where the design of the Proposed Development has been altered to take account of a particular environmental consideration or accommodate an important feature. The mitigation taken into account in the London Resort EIA is be identified in the relevant topic-based chapter of this ES. The arrangement of the Proposed Development has involved the consideration of potential impacts of alternative designs and layouts. This is summarised in chapter 4: *Project development and assessment of reasonable alternatives* of this ES (document reference 6.1.4).

6.36 Additional mitigation is all other mitigation that has been identified as a result of the environmental impact assessment undertaken for the design of the Proposed Development. Additional mitigation is described and assessed in the chapters that follow and is summarised in the mitigation schedule in chapter 22: *Conclusions* of this ES (document reference 6.1.22). These measures will be secured pursuant to the DCO (including its requirements) and possibly additional legal mechanisms or agreements.

6.37 Effects that remain after consideration of the proposed mitigation measures are termed 'residual effects'. The key outcome of the EIA is the significance of these residual effects and these are clearly defined within the technical chapters and set out in the conclusions in chapter 22 of this ES.

IN-COMBINATION AND CUMULATIVE EFFECTS

6.38 Schedule 4, paragraph 5(e) of the EIA Regulations 2017 requires the EIA to take into account the:

'*cumulation of effects with other existing and / or approved projects taking into account any existing environmental problem relating to areas of particular environmental importance likely to be affected or the use of natural resources*'.

6.39 Schedule 4, paragraph 5 of the Regulations requires also that:

'The description of the likely significant effects on the factors specified in regulation 5(2) should cover the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the development.'

6.40 In preparing the cumulative effects assessment (CEA) for the London Resort, consideration has been given to the approach set out within the Planning Inspectorate's Advice Note 17: *Cumulative Effects Assessment*.

Methodology for cumulative assessment

6.41 The Planning Inspectorate's Advice Note 9: *Using the Rochdale Envelope* (version 3, July 2018) states that:

'The potential cumulative impacts with other major developments will also need to be carefully identified such that the likely significant effects can be shown to have been identified and assessed against the baseline position (which would include built and operational development). In assessing cumulative impacts, other major development should be identified through consultation with the local planning authorities and other relevant authorities. Applicants should have regard to the staged approach to cumulative effects assessment set out in Planning Inspectorate's Advice Note Seventeen: Cumulative Effects Assessment'.

6.42 Advice Note 17: *Cumulative Effects Assessment* (version 2, August 2019) provides a four-stage approach to cumulative effects assessment (CEA). This staged CEA process has been followed to identify a 'long list' and then to establish the 'shortlist' of developments for the CEA in order to ensure that it is appropriately focussed and proportionate. Using the guidance provided, developments have been identified by reference to local knowledge, published information and consultation with local planning authorities in the area.

6.43 In its statutory consultation for the London Resort project in summer 2020. LRCH invited feedback on a proposed list of cumulative schemes to be taken into account in the EIA. The final list employed in this ES has taken feedback into account and is set out in chapter 21: *Cumulative, in-combination and transboundary effects* with justifications for scheme selection. This ES considers the cumulative effects of the construction and operational

phases of the Proposed Development against this CEA shortlist.

6.44 This ES also considers the interrelationships between different aspects of the Proposed Development (also termed in-combination or synergistic effects). This is where receptors experience multiple potentially non-significant effects that might collectively become significant. These have been considered through a matrix based approach.

6.45 The outputs from the CEA and interrelationship assessments are described in chapter 21: *Cumulative, in-combination and transboundary effects* of this ES (document reference 6.1.21).

TRANSBOUNDARY EFFECTS

6.46 Certain types of major development might exert environmental effects that extend beyond the boundary of the nation-state in which the development would be located. Planning Inspectorate Advice Note 12: *Transboundary Impacts and Process* (version 5, March 2018) offers guidance on the procedures for transboundary consultation associated with a DCO application.

6.47 PINS Advice Note 12 (paragraph 2.1 and 2.2) explains that:

'The UK is a signatory to the United Nations Economic Commission for Europe (UNECE) Convention on Environmental Impact Assessment in a Transboundary Context. The Convention was adopted in 1991 in the Finnish city of Espoo and is therefore known as the 'Espoo Convention'. The UK is also a signatory to the Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (the 'Aarhus Convention') and its Protocol which provide people with the rights to easily access information, participate effectively in decision-making in environmental matters and to seek justice if their rights are violated.

The European Union (EU) Directive 85/337/EEC (as amended) (the EIA Directive) implements the Espoo and Aarhus Conventions in the EU and is transposed into UK law through the EIA Regulations.'

6.48 PINS Advice Note 12 (paragraph 4.1.2) explains the role of developers and offers the following advice:

'… the Applicant is requested to provide information to the Inspectorate to enable a view to be reached as to whether the development is likely to have significant transboundary effects on other EEA States. Information about the potential for transboundary effects should be provided by the Applicant as part of:

- *The suite of documents accompanying the application for development consent ...'*

6.49 A transboundary screening matrix for the London Resort project was provided with the EIA scoping request 2020 and included the preliminary environmental information for the statutory consultation on the London Resort project that took place in summer 2020. The following potential transboundary effects were identified.

- *Traffic and transport* - significant traffic and transport effects could occur where visitor trips between European Economic Area (EEA) States and the UK give rise to transport capacity problems (particularly in sensitive areas) that cannot be mitigated. The transboundary screening matrix concluded that, in the context of the daily people trips between the UK and EEA States, it is likely that the increase in trips that could be attributed to the London Resort would be negligible and that many of the overseas people visiting the London Resort would already be staying in the region anyway. It is therefore likely that the existing transport network would be able to accommodate the increase within the work associated with the Proposed Development.

- *Air quality* - significant air quality effects could occur where increases in trips between EEA States and the UK give rise to traffic-related emissions which have an adverse effect on residential properties in terms of local air quality, or ecologically sensitive designated sites and cannot be mitigated. The transboundary screening matrix concluded that, as the increase in trips between the UK and EEA states attributed to the London Resort is considered negligible, it is likely that emissions of traffic related pollutants in EEA States that are directly attributable to the London Resort will be insignificant in terms of effects on the local air quality of residential properties near major transport routes and environmentally sensitive designations.

- *Socio-economic* - significant economic effects could occur where the Proposed Development has either a positive or negative effect on the economy of an EEA State. Negative effects could occur through the redistribution of visitors from EEA State visitor attractions to the UK and / or where business opportunities are created in the EEA States (directly or indirectly) as a direct result of the Proposed Development. The transboundary screening matrix identified that the London Resort may result in a reduced number of people visiting entertainment resorts in EEA States which may result in reduced gross domestic product in certain states. However, in the context of the overall tourism numbers for the EEA States identified, any potential reduction is likely to be negligible and the effects on economies insignificant. It was considered that the overall level of GDP within EEA States would increase as a result of the operation of the London Resort, with more visitors attracted from outside Europe.

6.50 It was not considered at the scoping stage that the Proposed Development would give rise to significant transboundary effects on EEA States when taking into account the nature and likelihood of the effects. Nonetheless, the screening of potential significant transboundary effects is an iterative process and as further assessment work became available through the EIA process, the likely transboundary effects were kept under review. The outcome of the transboundary assessment is reported in chapter 21: *Cumulative, in-combination and transboundary effects* of this ES.

ASSUMPTIONS AND LIMITATIONS

6.51 The following key assumptions have been made in preparing the ES:

- All legislative requirements will be met;
- the Proposed Development will be constructed in accordance with industry standard techniques and currently enforced mandatory minimum standards and assumes suitably experienced contractors will be appointed to design, construct and commission the development.

6.52 Where further assumptions have been made for individual topic assessments these are identified the relevant topic-based chapters.

6.53 Any limitations or uncertainties associated with the impact prediction or the sensitivity of receptors - for example, due to the absence of data or other factors - will give rise to uncertainty in the assessment. In accordance with the EIA Regulations, any material limitations in the assessments are identified in the chapters that follow.