The London Resort Development Consent Order

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Environmental Statement
Volume 1: Main Statement

Chapter 4 – Project development and alternatives

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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 Four ◆ Project development and assessment of reasonable alternatives

INTRODUCTION

4.1 An effective site selection process is a precondition for a successful project. It influences both the likelihood of securing a consent to build a development and the prospects of commercial success once a development becomes operational. From the outset, LRCH has been acutely aware of the need to secure the optimal site for the London Resort, and then to test different development and access scenarios for the chosen site.

4.2 This chapter has two purposes – to outline the main reasons for the selection of the option being taken forward to application, and to summarise the development options that were considered once the Swanscombe site had been selected. The second consideration was highlighted as a particular topic of interest in paragraph 2.3.6 of the Secretary of State's EIA Scoping Opinion for the London Resort project (July 2020, document reference 6.2.1.4).

4.3 Regulation 14 of the EIA Regulations 2017 states that an environmental statement must include amongst other things, a description of the reasonable alternatives studied by the applicant, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the development on the environment.

AREA OF SEARCH

4.4 Chapter 5: *Relevant law and policy* of this ES (document reference 6.1.5) summarises the policy context for the Proposed Development, highlighting amongst other things the need for new visitor attractions in the UK capable of attracting international visitors and retaining domestic tourists. The UK is one of the most visited countries in the world but currently fails to provide an entertainment resort comparable with those found elsewhere in Europe, North America and across Asia.

4.5 A question faced by the project promoters at the outset was where in the UK an entertainment resort with a truly global profile in the UK should be located. By a large margin, London is the most popular destination for international visitors, suggesting that a location close to the capital was desirable. London offers direct air and rail connections and is located conveniently with respect to international ferry services. Domestically, London is also the hub of the national rail and road networks. No other region of the UK (and few places elsewhere in Europe) offer comparable connectivity or population density. It was thus determined early on in the site selection process that the Resort should be

located within 100 km of central London.

4.6 Parts of this general area of search are subject to significant planning and environmental constraints. These include the metropolitan green belt that encircles Greater London, the Chilterns Area of Outstanding Natural Beauty (AONB) to the north-west of London, the Surrey Hills AONB to the south-west and the Kent Downs AONB to the south and south-east. In the gap between the Chilterns and Surrey Hills AONBs there are already three theme parks – Legoland, Thorpe Park and Chessington World of Adventures – albeit each smaller in scale and catering more for day trips than is the intention for the London Resort. Having regard to these considerations, LRCH decided to focus its site search in a broad corridor extending from Northamptonshire in the north-west, around the north and east of London to Kent in the south-east. This search corridor and the eleven options identified and reviewed within it are shown in figure 4.1.

SITE SELECTION CRITERIA

4.7 With the defined area of search, LRCH proceeded to draw up a list of site selection criteria. These were broadly based in order to give weight to planning, environmental, social and economic considerations that lay beyond LRCH's immediate commercial objectives. This approach aligns with the dimensions of sustainable development identified in paragraph 8 of the National Planning Policy Framework (NPPF, published in February 2019).

4.8 In no order of priority, the site selection criteria were defined as follows. It was recognised from the outset that it might be impractical to secure a site capable of completely matching all criteria and that compromise might be necessary.

i). Land availability

4.9 By definition the site needs to be large enough to accommodate the Resort, including a theme park, attendant visitor attractions and amenities, hotels and transport facilities. The site should also have a generally level terrain to facilitate construction and ease of access around the resort for mobility-impaired guests.

4.10 To meet these requirements, LRCH initially defined a minimum area of 80 hectares, preferably with room for future expansion. The land would preferably be available for purchase on commercially acceptable terms.

ii). Land use

4.11 The Resort should be compatible with neighbouring land uses and, where possible, should avoid displacing existing land uses, particularly residential occupiers. A high priority was accorded to identifying vacant or under-used brownfield land in preference to greenfield sites.

iii). Proximity to and connectivity with central London

4.12 Connectivity with London is essential for the attractiveness and viability of the Resort. The brand under which the Resort is ultimately marketed is strengthened by incorporating a reference to London. To facilitate connectivity, the Project Site should ideally be as close to central London as possible, with direct transport connections.

iv). Transport and accessibility

4.13 The Project Site requires first class transport links in a variety of modes, including ample opportunity to travel to the Resort by means other than the car. These links must be local, regional, national and international, and close proximity or good access to established transport interchanges is highly desirable.

v). Environmental constraints

4.14 The Project Site should as far as possible be free of land and buildings of designated landscape, natural, cultural or historic interest.

vi). Planning constraints

4.15 The Proposed Development should as far as possible avoid compromising other planning intentions, including adopted development plan policy and the implementation of existing planning permissions. A particular concern is to avoid conflict with green belt policy, a significant constraint given the extent of the metropolitan green belt around Greater London.

vii). Regeneration and economic benefit

4.16 The Resort is expected to have a transformative effect on the economy of the area that hosts the development, through direct investment in the development, its operation and the attraction of visitors to the locality. LRCH is concerned to ensure that the net economic impact is substantially beneficial rather than disruptive to the local economy, housing supply or existing visitor attractions. The ability of the development to dovetail with wider regeneration initiatives is thus important, as is the availability of a workforce for the Resort.

viii). Micro-climate

4.17 The location should offer a climate conducive to the year-round operation of an entertainment resort, having regard to the fact that visitors will be outside at various times during their visits. This criterion was dropped at an early stage because, with the options sharing a broadly similar climate, it provided no meaningful basis for differentiation.

EVALUATION OF LOCATIONAL OPTIONS

4.18 The initial search for broad locations for the Resort combined a desktop search, site inspections and contacts with landowners and agents. Options identified through this process are mapped in figure 4.1 and listed below. The findings of the individual evaluations of these eleven options are summarised in Appendix 4.1 to this ES and illustrated in table 4.1 overleaf.

1. North Northamptonshire
2. Marston Vale
3. Luton and Dunstable
4. M25 north corridor
5. M11 corridor
6. Great Leighs racecourse, Essex
7. Southend-on-Sea and Canvey Island
8. Cliffe, north Kent
9. Swanscombe Peninsula, Kent
10. Ashford, Kent
11. Olympic Park legacy development sites, London

4.19 The original intention was to reduce the long list to a shortlist of between two and four options for more detailed evaluation. In the event, one option performed so well against all of the evaluation criteria in comparison with the alternatives that LRCH decided to focus on confirming the feasibility of that option. The site concerned was the Swanscombe Peninsula on the Thames estuary (option 9).

4.20 As the assessment reports for the eleven site options in Appendix 4.1 (document reference 6.2.4.1) affirms, the Swanscombe Peninsula offers a unique combination of advantages. It centres upon a large and generally unused brownfield site with a broadly level terrain, large enough to accommodate a full resort development. It is close to the edge of London but outside of the metropolitan green belt. It lies only 1 km north of Ebbsfleet International Station, which offers high speed train connections to London St Pancras International station with a journey time as low as 17 minutes and services to and from continental Europe.

4.21 Strategic highway routes in the locality include the A2(T), which passes 3 km to the south of the peninsula and provides a connection to Junction 2 of the M25 motorway to the west and onwards into London. The Dartford Tunnels and Queen Elizabeth II Bridge crossings of the River Thames lie approximately 3 km to the west of the Swanscombe Peninsula and Highways England's proposed Lower Thames Crossing lies c. 10 km to the east.

4.22 The Swanscombe Peninsula does not contain any international or national wildlife or heritage designations, and it offers the potential to dovetail the resort development with significant local economic regeneration initiatives.

4.23 LRCH verified these conclusions through early discussions with landowners and the county and local authorities, supported by preliminary site investigations and conceptual design feasibility work, before deciding to announce the Swanscombe site as its preferred option for an entertainment resort in 2014. The original long list of site options was reviewed again in 2017 and the findings reported in ES Appendix 4.1 (document reference 6.2.4.1).

Table 4.1: Summary of the site options evaluation undertaken by LRCH in 2011-12

Red = negative Amber = neutral Green = positive

	Option	Land availability	Land use	Proximity to London	Transport and accessibility	Environmental constraints	Planning constraints	Regeneration and economic benefit		Overall assessment
1.	North Northamptonshire									
2.	Marston Vale									
3.	Luton / Dunstable									
4.	M25 north corridor									
5.	M11 corridor									
6.	Great Leighs racecourse									
7.	Southend / Canvey Island									
8.	Cliffe, north Kent									
9.	Swanscombe, north Kent									
10.	Ashford, Kent									
11.	Olympic Park legacy sites									

4.24 LRCH's site selection process and the acceptance of the London Resort as a nationally significant infrastructure project (NSIP) by the Secretary of State, through a direction made under section 35 of the Planning Act 2008, took place in advance of the establishment of Ebbsfleet Development Corporation (EDC) in April 2015. LRCH engaged with the EDC during the preparation of the *Ebbsfleet Implementation Framework* 2017. This Framework, which is guiding the delivery of Ebbsfleet Garden City, identifies the general footprint of the proposed Resort north of the North Kent railway as *'land subject to [the] London Entertainment Resort NSIP process'*. The Framework also identifies a transport connection between the A2(T) and the heart of the Resort site on the Swanscombe Peninsula, running generally along the western side of the HS1 railway.

4.25 Having determined that the Swanscombe site provided the best location for an entertainment resort, LRCH proceeded to appraise a range of development layout and access options for the site. For clarity these will be described in turn, although the options appraisal took place in an integrated and iterative manner. A further account of the design evolution of the London Resort is provided in the *Design and Access Statement* (document reference 7.1).

The Essex Project Site

4.26 In 2020 it was decided to extend the Project Site through the inclusion of land at Tilbury in Thurrock in order to provide an element of the London Resort's car and coach parking on the northern side of the Thames with a passenger ferry connection to the Resort itself. The location of this additional land was not the subject of a free-standing site search and evaluation exercise along the lines of that described above. Instead, its selection was determined by its proximity to the Kent Project Site, the availability of established lightly-used passenger ferry terminal facilities surrounded by a substantial area of land already laid out for car parking, and by positive dialogue with Port of Tilbury London Limited.

4.27 Road traffic modelling suggested that the Asda Roundabout at the junction between the A1089 St Andrews Road / Dock Road, Windrush Road and Thurrock Park Way should be included in the Essex Project Site to accommodate highway improvements.

EVOLUTION OF DEVELOPMENT LAYOUT OPTIONS

4.28 This work has brought together several distinct strands, as follows:

- ***Site evaluation***, including preliminary assessments of ground conditions, landscape and heritage sensitivities and ecology field surveys. The environmental evaluation was formalised following the receipt of EIA screening opinions from Dartford and Gravesham Borough Councils in 2013, confirming the need for EIA. Once the project had been accepted as an NSIP in May 2014, LRCH requested an EIA scoping opinion from the Secretary of State for Communities and Local Government in the following November. The EIA scoping opinion was issued in December 2014 and confirmed the scope of the applicant's environmental studies. As explained in chapter 1: *Introduction* of this ES, an updated scoping opinion was subsequently adopted by the Secretary of State on 28 July 2020 (document reference 6.2.1.4).

- ***Analysis of existing patterns of land use, land ownerships and liabilities***. This work has been informed by extensive dialogue with landowners and occupiers, as confirmed by the Consultation Report (document reference 5.1) and Book of Reference (document reference 4.3) that accompany the DCO application.

- ***Conceptual design studies***. This design work has taken into account the specific requirements of intellectual property (IP) providers around whose themed attractions the Resort will be based. In addition, technical advice on the requirements for visitor

accommodation has been provided by hotel operators. Commercial viability has been a standing consideration, it being necessary to ensure that the Resort is capable of generating revenue streams sufficient to underwrite the cost of the extensive supporting infrastructure that the Proposed Development requires, including transport infrastructure and ecological mitigation.

- ***Extensive consultations*** with local authorities and the EDC, statutory agencies, landowners and other interested parties, including two rounds of public consultation in 2014 to test the general concept of building and operating an entertainment resort in this location, and a further two rounds of public consultation including statutory consultations in April-June 2015 and a final round of statutory consultation between July and September 2020.

Development content, land take and environmental considerations

4.29 LRCH and its advisers tested a range of development options and confirmed the area of land required to deliver a viable and globally-attractive resort. This requirement was then reconciled with site constraints and the land-take of associated development. Sensitivities identified through the EIA and consultation processes and taken into account in the design evolution of the Proposed Development included the following.

i). *The amenity of residential neighbourhoods at the south-western corner of the Swanscombe Peninsula.* The western boundary of the London Resort (i.e. the area identified in the DCO application as Gate Two) is adjacent to housing on Wainwright Avenue, Vaughan Avenue and Duncannon Place on the eastern edge of the Ingress Park residential neighbourhood. Baseline noise assessment (see ES chapter 15: *Noise and vibration* – document reference 6.1.15) identified the potential for disturbance to residential amenity from construction and operational noise in the absence of mitigation. Consideration of layout options took this sensitivity into account, ensuring, for example, that rides and attractions likely to give rise to noise are either enclosed in buildings or located at a suitable distance from housing.

ii). *The displacement of existing businesses from the Manor Way, Northfleet and Kent Kraft industrial estates.* Whereas the Proposed Development would be a substantial source of new employment, it was recognised that businesses and employment would be displaced and might be lost in the absence of mitigation. Because the affected land is considered essential for the delivery of the London Resort, business displacement could not be addressed in the master plan. ES chapter 7: *Land use and socio-economic effects* (document reference 6.1.7) examines this topic and explains how LRCH proposes to assist affected businesses and landowners.

iii). *The ecological value of Swanscombe Peninsula and the excavated chalk pits to the south, including the need to retain areas of habitat on Black Duck, Botany and Broadness marshes and the potential for off-site mitigation*. During the refinement

of the concept design, different boundary alignments were evaluated for the London Resort and potential ecological mitigation was explored. As ES chapter 12: *Terrestrial and freshwater ecology and biodiversity* (document reference 6.1.7) explains, it was decidedly ultimately to promote a response in which the three marshes are retained and enhanced for their biodiversity value, open spaces inside the Resort are designed to serve as wildlife habitats and green corridors, and off-site mitigation is included in the form of newly created habitats to provide biodiversity net gain.

iv). *Ground conditions, drainage and land contamination, including the desire to minimise disturbance to CKD deposits and to accommodate existing drainage arrangements across the site*. Whilst appreciating the potential for the further contamination of land and water courses through the excavation and movement of CKD deposits on the Swanscombe peninsula, LRCH recognised also that the Proposed Development affords opportunities to enhance the management of contaminated land to promote a development that works with it. The evolution of the master plan was influenced by analysis of contaminated land with the objective of avoiding unnecessary disturbance to CKD deposits and managing contaminated soil proactively where its excavation is unavoidable, whilst seeking to protect the water environment. Chapters 17: *Water resources and flood risk* (document reference 6.1.17) and 18: *Soils, hydrology and ground conditions* (document reference 6.1.18) explain the assessments that were undertaken.

v). *Physical constraints presented by features including local terrain, flood defences along the Thames shoreline, the HS1 railway and electricity transmission lines.* Different master plan options were used to test, in consultation with relevant operators and agencies, the nature of these constraints and the protections that the master plan should afford.

vi). *Transport requirements* – which are considered specifically below.

vii). *The need for future flexibility in the content of Gates One and Two.* The content of the themed lands is likely to change from time to time in keeping with market demand and the emergence of new IP and entertainment media.

Building heights and development massing

4.30 Considerations taken into account in the assessment of options included views of the resort from surrounding neighbourhoods, including Swanscombe to the south and Ingress Park to the west, the need to achieve appropriate separation from electricity transmission lines, and the need to protect the structural integrity of the HS1 cutting and tunnels. Massing diagrams also took into account the maximum height, length and breadth of rides proposed in individual themed 'lands' in Gates One and Two and the desire for a visually prominent central feature in the leisure core. The Applicant's *Design and Access Statement* (document reference 7.1) describes the outcome of this work. Various massing options were tested and are expressed as parameters in the draft DCO (document

reference 3.1) and Parameters Plans (document references 2.19).

Scheme evolution

4.31 Figures 4.2 a-e (document reference 6.3.4.2) show draft master plans of the resort at critical stages in the design and consultation process, illustrating how the Proposed Development layout has evolved in response to a combination of environmental and operational influences, informed by successive rounds of consultation. As noted, a further account of the iterative design process is provided in the Design and Access Statement that accompanies the DCO application (document reference 7.1).

The original vision

4.32 Figure 4.2a shows versions of the original resort vision, with a single gated theme park with all retail, dining and entertainment (RDE) contained within the secure 'payline'. This plan demonstrated that the Swanscombe Peninsula is capable of accommodating an entertainment resort. However, a single theme park area would not assist the delivery of the development in phases, and including all RDE within the payline would limit the availability of Resort amenities to local people and would not facilitate the staging of entertainment and conference events unconnected with the theme park.

4.33 Figure 4a shows the general outer boundaries of the Resort delineated by reference to the surrounding marshes. Preliminary ecological field survey work and desktop analysis has identified the ecological and landscape value of Botany, Broadness and Black Duck marshes and the potential for a boundary landscape treatment that would achieve a suitable transition between the Resort and its surroundings.

4.34 At the same time the marshes were found to be in a variable condition and - like the environment across much of the Swanscombe Peninsula – much altered as a consequence of human interventions, including the historical tipping of CKD and river dredgings, hydrological changes relating to tipping activity, the management of 'leachate' (water that has percolated through contaminated land and which might be bearing contaminants), flood defence measures on the river edge and drainage modifications associated with the construction and protection of the HS1 railway tunnel. LRCH recognised that the Resort development afforded an opportunity to bring the marshes under beneficial management, enhancing their landscape, ecological and recreational value. These principles are retained in the submitted design.

4.35 Another design consideration identified at this stage was the recognition that the north-eastern boundary of the Resort should not encroach into the wayleave corridor for the 400 kV overhead power line that crosses the Swanscombe peninsula. The early concept layouts also acknowledged the potential for the development of what is now known as Station Quarter South, to the south of Ebbsfleet International Station. Partly in response, the Resort Access Road from the A2(T) was shown running tightly alongside the HS1 railway so maximising the development potential of the land to the west. Although alternative Access Road alignments were subsequently appraised (see below), the easterly

alignment in the Ebbsfleet valley is retained in the submitted design. An easterly alignment helps to protect the residential amenity of neighbourhoods on the eastern edge of Swanscombe.

Consolidation of the Resort Gates in two phases

4.36 The layout option in figure 4.2b responded to the operational concerns about development phasing and the desire to include more resort amenities outside the secure 'payline'. It incorporated a two-gate theme park and many RDE amenities outside of the theme park payline. The Resort Access Road was retained on its eastern alignment in the Ebbsfleet valley to facilitate the development of land to the west.

4.37 This option reinforced the benefit of focusing the transport arrivals hub in the lower central area of the Peninsula. This location provides a shared point of entry for visitors arriving by a variety of transport modes – rail, road or river, and forms a natural dispersal point for access on foot into different areas of the Resort, including the two Gates. It also ensures easy access to the Resort for local visitors via Pilgrim's Way, to the north of Swanscombe High Street.

4.38 A further scheme element that began to crystallise at this stage was the need for a suitably sized and located 'back-of-house' area to service the range of logistical demands that would arise once the Resort is in operation. The option shows a back-of-house area on the south-eastern edge of the Resort, on the eastern side of the HS1 railway cutting. This prompted more detailed consideration for how the displacement of businesses on the Manor Way industrial estate should be managed.

4.39 This option tested a 'densification' of the RDE area outside the two theme park gates, with more consideration given to the siting and content of 'resort-style' hotels to optimise the resort experience for guests.

4.40 Extensive areas of surface car parking are shown to the south of Black Duck Marsh and in the chalk pits to the south of London Road / Galley Hill Road. This option raised the question of whether this was an efficient use of land and helped to stimulate consideration of a transport strategy with less reliance on the private car.

An expanded Resort

4.41 Following the first statutory consultation in summer 2015 the Project entered a period of commercial viability review. As a part of this process, Nassal, a Florida-based company that specialises in theme park design and construction, was invited to undertake a review of the master plans described above. Nassal tested a more expansive Resort design that covered most of Swanscombe Peninsula, with Black Duck Marsh absorbed completely in into an expanded RDE and hotel area and only limited areas of Broadness and Botany Marshes retained. Car parking again absorbed a considerable area of land, including an extensive staff car park on Broadness Marsh.

4.42 Nassal's option gave conscious priority to commercial drivers. LRCH's environment team highlighted the shortcomings and likely objections to this expansive approach, particularly the loss of natural habitats, and the option was not pursued.

4.43 Consideration was also given at this stage to alternative route options for the Resort Access Road in the Ebbsfleet valley. These are described later in this chapter.

Internal design

4.44 Much of the consideration of options described thus far sought to identify and test the external envelope of the proposed Resort, guided at each stage by inputs from the environmental consultant team. This work enabled planning and environmental constraints to be identified clearly, informed by several rounds of statutory and informal public consultation, to a point where LRCH had gathered a detailed understanding of site characteristics and development constraints and opportunities.

4.45 At the same time, with progress being made by LRCH in signing intellectual property (IP) partners for the Resort, work began to test the development from the inside out in terms of how rides and attractions inside the Gates should be accommodated.

4.46 This work was assisted by Rethink Leisure and Entertainment, a California-based company specialising in innovative theme park design. Whereas it was always intended that the DCO application should follow a Rochdale Envelope parameters approach (explained in chapter 3: *Project Description* of this ES), particularly for the development content of the two Gates, analysis of how rides and attractions inside the Gates might be accommodated was valuable in respect of fine-tuning the boundaries and shape of the Gates and understanding their relationships with the RDE area and pedestrian movement patterns, including pedestrian circulation and emergency evacuation.

4.47 The Gates were divided into 'lands', with each land containing rides and attractions from a different IP provider. Significantly from an EIA perspective, the development of design concepts for the Gates assisted consideration of the strategy for contaminated land remediation, the 'cut-fill' balance between excavated and raised ground, spoil management and drainage. A range of options was considered, including consideration for the material required for new landscape features inside the Gates and around the boundary of the Resort. The outcome of this work is reflected in chapter 11: *Landscape and visual effects*, chapter 17: *Water Resources and flood risk* and chapter 18: *Soils, hydrogeology and ground conditions* of this ES.

4.48 The output of this phase of design and assessment work is summarised in figure 4d. Noteworthy features include a clear definition of Gates One and Two and a decision for Gate One to be the larger theme park element. In advance of Gate Two being delivered, it is essential that Gate One has the size and content to be a global attraction in its own right. It is also important to ensure that there is a clear physical separation between Gate Two and the first phase of development in Gate One and the hotel and RDE area, to avoid disruption to Resort visitors when Gate Two is under construction.

Towards the current proposals

4.49 Other aspects of the development layout in figure 4.2d were less satisfactory. The back-of-house area appeared as a rather unsorted cluster of buildings for individual purposes associated with maintenance, storage, administration, training and supply. The main Resort entrance plaza appeared likewise to be an unresolved cluster of multi-storey car parks and buildings that would not provide the desired sense of arrival for visitors.

4.50 The development layout in figure 4d also shows a part of Gate Two in Craylands Lane Pit to the south of London Road. This would have connected to the main northern area of Gate Two through tunnels in the intervening chalk spine. Section 160 of the Housing and Planning Act 2016, which came into effect on 6 April 2017, amended section 115 of the Planning Act 2008 to enable DCO applications to include provision for 'Related Housing'. LRCH saw this as an opportunity to provide housing on-site for some Resort staff, reducing the need to commute and reducing demand on the wider housing stock in the local area. With land to the north of the A226 London Road / Galley Hill Road required for Resort development in the emerging master plan and areas east and south of Ebbsfleet International Station allocated for high density missed development in the EDC's Ebbsfleet Implementation Framework 2017, Craylands Lane Pit was recognised as suitable self-contained site for accommodating 500 staff apartments, with Gate Two consolidated to the north of London Road.

4.51 In response to these considerations, Apt, a London-based firm of architects and urban designers, was appointed to assist the project team to assimilate all of the design options work, environmental information, consultation feedback and commercial requirements and to produce a final Resort Master Plan to inform the DCO application. Apt produced the draft master plan that informed the PEIR for the statutory consultation that took place between July and September 2020. EDP was appointed to work alongside Apt in the development of the landscape strategy for the site, the outputs of which are explained in the *Landscape Strategy* that accompanies the DCO application (document reference 6.2.11.7).

4.52 Figure 4.2e shows the current proposal, as described in the preceding chapter of this ES and as applied for. Having tested a range of layout options, LRCH considers that this option works with the grain of the Site, including its topography, and offers an appropriate balance of amenities inside and outside the two Gates. It also reflects a clear design focus on the functioning of the 'Conferention' and e-Sports Centres (see ES chapter 3: *Project description,* document reference 6.1.3), on the movement of visitors and transport around the site and on the layout of functional areas including car parks and the back-of-house area. The 500 units of Related Housing are accommodated in Craylands Lane Pit, with adjacent pits containing elements of service infrastructure for the Resort including the proposed energy centre.

4.53 The decision to include the Essex Project Site in the DCO application is intended to realise distinct transport benefits, considered in chapters nine: *Land transport* and ten: *River*

transport of this ES (documents reference 6.1.9 and 6.1.10). A further benefit of this decision is that it enables 2,500 car parking spaces or 25% of guest car parking provision to be located away from the Swanscombe Peninsula, freeing land for an improved transport hub and arrivals area in the Resort itself.

4.54 Importantly for the future success of the Project, the master plan and DCO application it informs aim to deliver a well-connected landmark tourism destination with a strong and distinctive sense of place that works with the grain of the local landscape. As this chapter has sought to demonstrate, reaching this state of project maturity has required extensive testing of options and a clear understanding of environmental and other constraints.

4.55 This chapter has provided a contextual summary of the design and layout alternatives considered by LRCH since the project commenced. A further account of how the design of individual project elements has evolved is provided in the *Design and Access Statement* that accompanies the DCO application (document reference 7.1).

EVALUATION OF ACCESS OPTIONS

4.56 Access was an important criterion in the assessment of site options for the London Resort. The availability of viable river and rail transport options in conjunction with the potential for direct access from the strategic road network was a significant consideration in the overall site selection decision.

4.57 Following the selection of the Swanscombe peninsula as the preferred location for the Resort, LRCH reviewed options for road, rail and river access to the Resort in detail, in accordance with paragraph 4.27 of the government's *National Policy Statement for National Networks* (December 2014). This work is summarised below and included consideration of viable modal alternatives including the use of river transport during both the construction and operation of the Resort, and the use of river and rail as alternatives to road transport for Resort visitors.

Road access

4.58 An explanation of the evolution of the proposed road access arrangements in the light of traffic modelling is provided in chapter nine: *Land transport* of this ES. From an early stage it was evident that the local road network would be unable to accommodate construction or operational resort traffic and that a dedicated highway access from the A2(T) to the south was essential. The Ebbsfleet valley between Swanscombe and Northfleet provides an open corridor of land between the A2(T) and Swanscombe Peninsula. With the HS1 railway already in place, the valley is already a transport corridor and is the logical route for a new access road.

4.59 Early assessments of operational traffic volumes indicated that a two lane dual carriageway would be required. Early design work focused on three particular elements:

- ***The A2(T) junction*** – options for modifying the existing Ebbsfleet junction on the A2(T) to achieve the desired capacity and an effective separation between local and resort traffic.

- ***Ebbsfleet Valley*** – route options for the access road, taking into account constraints including the Ebbsfleet river and its associated wetland and woodland habitats, existing roads and public rights of way, Ebbsfleet International Station and other HS1 infrastructure, the Baker's Hole SSSI and scheduled monument, landfill sites, the amenity of residential neighbourhoods on the eastern edge of Swanscombe, and areas of land identified for development in the EDC's *Ebbsfleet Implementation Framework* 2017.

- ***A separate people mover route*** to convey visitors between Ebbsfleet International Station and the Resort.

4.60 The evolution of these three elements will be discussed in turn. As work on the design of the Resort itself progressed, road access to car and coach parks, bus and coach interchanges, hotels and the 'back of house' elements of the development was also taken into account.

A2(T) junction options

4.61 The primary vehicular access for visitors to the Proposed Development would be from the A2(T) via a new and improved junction with the B259. Figure 4.3 a-c (document reference 6.3.4.3) shows the principal layout options that have been assessed for the A2(T) junction and Resort Access Road.

4.62 In 2015, two primary access junction options were considered, utilising a combination of existing highway infrastructure at the A2(T) junction and necessary capacity improvements. The two options that were originally assessed are shown in WSP Drawings 5155-GA-1001 (Option A, Figure 4.3a) and 5155-GA-1002 (Option B, Figure 4.3b).

4.63 Option A comprised a new dual carriageway in the Ebbsfleet valley, connecting directly to the A2(T) via new slip roads and a new gyratory junction. This option would enable Resort traffic and the local residential traffic to be segregated by upgrading the existing roundabouts for local traffic and by providing a new dedicated access for the Resort. Existing roundabouts would be replaced by a new single signalised gyratory to provide additional capacity.

4.64 Option B differs by the utilisation of the existing Ebbsfleet Junction eastbound off-slip to accommodate both local and Resort traffic. The layout includes two new gyratories north of the A2(T), one for the Resort traffic only and a second predominantly for local traffic. The Resort gyratory would generally act as free flow in the morning peak hours when most visitors would arrive. When conflicts arise, both gyratories would be signal-controlled to regulate traffic flows and reduce the likelihood of vehicles queuing back onto the A2(T).

4.65 Consultations with parties including Highways England and Kent County Council suggested that the introduction of new grade-separated slips would not be accepted as these would create significant departures from established design standards and require significant alterations to the existing power lines located to the north. In response, a third option was developed, featuring a significant upgrade of the existing Ebbsfleet Junction (figure 4.3c, document reference 6.3.4.3). This revised arrangement proposed an increase in size of both existing roundabouts into a single signal-controlled gyratory. The option included a 'hamburger' style arrangement on the eastern section of the gyratory to improve access into the Resort and the introduction of signalisation to optimise their use. This would require both Resort and local traffic to use the same road space. However, the revised arrangement obviated the need to divert power lines or create new grade-separated roads over the A2(T).

4.66 Independently of the London Resort project, Highways England was preparing its own proposals for the improvement of the A2(T) Bean and Ebbsfleet junction. Draft Orders for the A2 Bean and Ebbsfleet junction improvements scheme under the Highways Act 1980 were published on 14 February 2019 and submitted with a Side Roads Order and Compulsory Purchase Order to the Secretary of State for Transport for confirmation. A public inquiry was held in October 2019 where an independent planning inspector heard evidence from Highways England and interested parties. On 27 May 2020 the Secretary of State confirmed Orders with modifications, and construction has commenced. In response, LRCH made further refinements to its junction design to reconcile it with the approved Highways England layout. The hamburger arrangement has been dropped in favour of a signalised roundabout. This design is included in the current DCO application and is shown in figure 3.2 of this ES (document reference 6.3.3.2).

Resort access road route options

4.67 A number of route options were considered for the access road between the A2(T) Ebbsfleet junction and Swanscombe Peninsula. In order to maximise the flexibility to use remaining land in the valley for development and open space in accordance with the EDC's *Ebbsfleet Implementation Framework*, routes along the eastern and western sides of the valley corridor were assessed. Table 4.2 summarises the respective benefits and disadvantages of the two options. The table illustrates how the consideration of environmental factors including noise, air quality, ecology, archaeology, contaminated land and land use in addition to traffic management requirements, contributed to the evolution of the scheme as now proposed.

Table 4.2 Design considerations raised by eastern and western route options for the Resort access road through the Ebbsfleet valley

Design considerations	Eastern route	Western route
A2(T) junction alignment	The eastern route enables a gentle turning radius and smooth turning movement for traffic entering the access road from the A2(T).	The western route requires all traffic leaving the A2(T) to make a sharp left turn from the slip road.
Integration with local highway infrastructure	The eastern route facilitates the early separation of resort and local traffic	The division point for resort and local traffic occurs further into Ebbsfleet valley and would involve a greater land-take.
Integration with other resort infrastructure	The eastern route would pass in a cut-and cover tunnel below a proposed resort transport interchange to the west of the Ebbsfleet International Station concourse. A separate people mover route would be required from this interchange to the resort. Because the main access road would occupy the space between the Baker's Hole SSSI and scheduled monument, the people mover route would have to cross the designated areas.	The western route would allow a simpler at-grade construction of a resort transport interchange at Ebbsfleet International Station. The people mover route could pass between HS1 and the Baker's Hole SSSI and scheduled monument without encroaching on the designated areas.
Gradient	The route follows the alignment of HS1 along the bottom of the Ebbsfleet valley on a broadly level route.	The route crosses undulating higher land on the western side of the valley before dropping to pass beneath North Kent railway and the A226. This would require a cutting into a capped landfill and an embanked section over the former chalk pit to the north.
Construction difficulty	The principal engineering challenge is to avoid compromise to HS1 structures. This will require the road to pass in a cut-and cover tunnel below the proposed resort arrivals concourse to the west of the Ebbsfleet International	The route would cross the western side of a capped landfill site to the east of Swanscombe. Any road alignment over or along the edge of the landfill would require excavations into the waste, relocation of landfill gas and leachate capture and

Design considerations	Eastern route	Western route
	Station concourse. It would also pass in a cutting close alongside HS1 in order to avoid the Baker's Hole scheduled monument and to minimise land-take from the Baker's Hole SSSI.	monitoring infrastructure. These are both technically complex and would require careful mitigation to control drainage and avoid odour during construction. Measures would also be required to ensure the finished road does not subside as the landfill continues to settle.
Residential amenity during construction and operation	The eastern route would keep the access road as far as possible from existing residential neighbourhoods in Swanscombe, and affords the best protection from noise, dust and air quality effects.	The western route would pass close to existing residential neighbourhoods in Swanscombe, with greater potential for adverse effects on residential amenity, particularly during construction in view of the complexities of working over a capped landfill.
Effects on wider land use	A road alignment running alongside HS1 maximises the flexibility to use remaining land in the valley for development and open space, in accordance with the implementation framework for Ebbsfleet Garden City.	Given the desire to separate resort and local traffic, a western route would complicate the provision of road access to future development in Ebbsfleet Valley, reducing connectivity with existing neighbourhoods and complicating the delivery of Ebbsfleet Development Corporation's Ebbsfleet Central development.

4.68 LRCH discussed the technical and environmental challenges of the eastern and western access road options with consultees including the county and local authorities, Ebbsfleet Development Corporation, the Environment Agency, Natural England, Historic England, Highways England, landowners and HS1.

4.69 On balance, the western route option was not favoured by LRCH and its technical advisers in view of its convoluted junction arrangement at the A2(T) and the considerable technical and amenity challenge of constructing the road across an undulating landfill site and close to residential neighbourhoods. A further disadvantage of the western option is that when in operation it would bring traffic close to homes on the eastern edge of Swanscombe. I would also impede the development of the Station Quarter South neighbourhood proposed in EDC's Ebbsfleet Implementation Framework.

4.70 As such, the eastern option was considered to offer a superior balance of benefit, notwithstanding the engineering cost complexity of building the road beneath a resort travel interchange at Ebbsfleet International Station. The route would allow a superior junction arrangement with the A2(T), would follow an established transport route in the form of HS1 and would largely avoid any incursion into landfilled areas. It would encroach upon the margins of the Baker's Hole SSSI (although not the scheduled monument). However, LRCH is committed to an appropriate package of mitigation including the comprehensive management and interpretation of the Baker's Hole site and consideration for the EDC's Ebbsfleet Quarters Joint Monitoring Strategy, the purpose of which is to monitor the progress of development against a series of transport, environmental and community indicators.

People mover route

4.71 A people mover route is required to connect a dedicated Resort travel interchange located to the west of Ebbsfleet International Station to the Leisure Core. The route would be used exclusively by a dedicated fleet of articulated shuttle buses or 'people movers', each with a capacity of 100-150 passengers.

4.72 A design challenge presented by the people mover route is the presence of the Baker's Hole SSSI and Scheduled Monument immediately to the north of Ebbsfleet International Station. In consultation with the local authorities and statutory agencies, LRCH assessed various means of avoiding or minimising harm to the designated sites.

4.73 Options considered are described in detail in a Technical Note in the Transport Assessment (ES Appendix 9.1, document reference 6.2.9.1). They include a route built above the main Resort Access Road and route options across Baker's Hole. However, this decked option would have required a wider access route corridor to accommodate the structures required to support the people mover route, and would have encroached further into the Baker's Hole designated sites, defeating the object of the exercise. This option was deemed not to be viable.

4.74 The solution now proposed involves a people mover route comprising a lightweight road laid on the surface of the Baker's Hole SSSI, with minimal ground penetration to avoid disturbance to the geological and Palaeolithic features that justify the protection of the site. From the proposed travel interchange the route would cross the designated area and then follow a course along the eastern edge of the Baker's Hole SSSI. To facilitate its future removal or realignment, the people mover route would not be adopted as public highway.

4.75 Chapters twelve: *Terrestrial ecology and biodiversity* and fourteen: *Cultural heritage and archaeology* of this ES explain the measures proposed to safeguard and manage the Baker's Hole SSSI and scheduled monument in further detail.

Rail access

4.76 As explained earlier in this chapter, the presence of Ebbsfleet International Station was an important consideration in the selection of the Swanscombe Peninsula site as the preferred option for the Resort. A further advantage of the Swanscombe site is its proximity to the North Kent railway line, which provides suburban train services to and from London.

4.77 There are three local stations on the North Kent line: Greenhithe station 2 km to the west of the peninsula, Swanscombe station on the southern edge of the peninsula and Northfleet station c. 1 km to the south-east. In dialogue with Network Rail, LRCH has investigated the potential of each of these stations to accommodate Resort visitors whilst continuing to cater for existing rail passengers.

4.78 Although Swanscombe station would be closest to the Resort, its location in a confined cutting does not facilitate improvements to station capacity or the provision of facilities for mobility-impaired visitors. In contrast, Greenhithe station is an at-grade facility with lifts from platform level to a covered pedestrian bridge and several bus stop bays. For these reasons it is proposed that Resort visitors arriving on the North Kent line will be encouraged to alight at Greenhithe station, from where a *Fastrack* or shuttle bus service would convey them to and from the Resort. Visitors preferring to use Swanscombe station would be able to walk down the restored Pilgrims' Way historic pedestrian route to the Resort's leisure core, or through to the Ferry Terminal. Although not a part of the DCO application, LRCH is in dialogue with Network Rail following suggestions raised as part of its consultation response regarding potential for improvements to Swanscombe station.

4.79 Northfleet station is a 15 minute walk from the proposed Resort transport hub adjacent to Ebbsfleet International Station and might be afforded better connectivity with Ebbsfleet International Station in the future but the Resort's transport strategy does not rely on this.

4.80 One of the routes under consideration for a future extension of the Elizabeth Line (Crossrail) would terminate at Northfleet for Ebbsfleet International Station. Although the Resort's transport strategy does not rely upon this additional transport option it would clearly provide a further connectivity enhancement in the long term. This is also the case with the proposed *KenEx* Thames Gateway Tramlink, which could connect Dartford, Swanscombe, Gravesend, Ebbsfleet International and Grays.

River access

4.81 The location of the Swanscombe Peninsula beside the River Thames is recognised as a further important asset of the site. LRCH has identified opportunities for using river transport during the construction and operation of the Resort, this is covered in further detail as part of chapter ten: *River transport* of this ES. Once upgraded it is proposed that the existing Bell Wharf on the north-western shore of the peninsula would be used for these purposes.

4.82 Following discussions with parties including the Port of London Authority, the Marine Management Organisation, the Port of Tilbury London Limited and river boat operator Uber Boat by Thames Clippers, LRCH proposes the following arrangements for river transport.

- Construction materials would be supplied to the site by boat from the Port of Tilbury, using Bell Wharf, which would be reconditioned. By these means it is intended that up to 80% of construction materials can be delivered to the Resort site by river. Construction waste would be removed from the site by the same route.

- The Uber Boat by Thames Clippers passenger ferry services from central London and Tilbury would use a new floating pontoon jetty extending from the shore beside Bell Wharf. Up to 15% of visitors are projected to use this means of travel to and from the Resort from central London.

4.83 The dedicated car and coach parking and passenger ferry facilities now proposed at the Port of Tilbury represent a reinforcement of LRCH's commitment to river transport and will reduce road traffic generation on the local and strategic road networks and the Thames crossings. A passenger ferry connection between the Resort and Grays is not provided for in the current DCO application and ES but is under consideration following consultation with Thurrock Council. If LRCH decides to pursue this option, consent would be sought from Thurrock Council by means of a planning application made under the Town and Country Planning Act 1990.

CONCLUSION

4.84 In proposing to make a major investment in an entertainment resort with a global profile, LRCH is certain that it has selected the best site in Swanscombe peninsula with a leading range of resort attractions, supported by a comprehensive transport strategy. The identification and testing of options, supported by iterative environmental analysis and several rounds of consultation, has been an integral component of the iterative design process for the London Resort, giving confidence that the Project would be deliverable and viable.