The London Resort Development Consent Order

BC080001

Environmental Statement
Volume 2: Appendices

Appendix 12.10 – General Principles of Offsite Ecological Mitigation

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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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Revisions

Revision	Description	Issued by	Date	Approved by
r058_00	Issue for DCO Submission	JB/CL	24/12/2020	EDP/LRCH

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Executive Summary

Details of the mitigation measures to be provided within the Order Limits are described in full detail within Appendix 12.3: *Ecological Mitigation and Management Framework* (Document Reference 6.2.12.3) and summarised within Chapter 12: *Terrestrial and Freshwater Ecology and Biodiversity* of the Environmental Statement (Document reference 6.1.12). However, for some species/taxa additional off-site ecological mitigation is required to ensure the Proposed Development is capable of compliance with relevant legislation and planning policy.

Off-site mitigation can take two main forms including creation/enhancement of land for the benefit of specific species and for biodiversity, or financial contributions towards an existing or new ecological mitigation project. The final off-site mitigation 'package' will likely form a combination of both developer contributions and land acquisition, however at the time of making the application for development consent, off-site mitigation has not yet been secured.

This report has therefore been prepared to provide the general principles to be adhered to in the delivery of off-site ecological mitigation land, final details of which will be agreed with Natural England through the Examination of the Development Consent Order (DCO) application.

The off-site mitigation will need to fulfil multiple ecological objectives and functions, including to provide mitigation for the loss of wetland habitat considered to be functionally linked to the nearby European sites Thames Estuary and Marshes Special Protection Area (SPA)/Ramsar and Medway Estuary and Marshes SPA/Ramsar sites; to mitigate the loss of suitable dormouse habitat, to create or enhance a suitably sized reptile receptor site; to provide additional habitats of value to invertebrates; and to deliver a net biodiversity gain. To ensure these objectives are met, a range of off-site mitigation principles are provided, which are specific to the specific needs of each species/taxa requiring off-site mitigation.

Subject to the delivery of off-site mitigation in accordance with the principles prescribed within this report, with further details to be agreed in writing with relevant statutory consultees including Natural England, it is considered that the Proposed Development can comply with the various legislation and planning policy requirements relevant to ecology and deliver a biodiversity net gain.

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Contents

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Chapter One ◆ INTRODUCTION

1.1. This report has been prepared by The Environmental Dimension Partnership Ltd (EDP) on behalf of London Resort Company Holdings Limited (LRCH; hereafter referred to as 'the Applicant'). It describes the general principles to be adhered to in the delivery of off-site ecological mitigation as part of the Proposed Development (as defined in Chapter 3 of the Environmental Statement) to ensure compliance with relevant legislation and planning policy.

1.2. Chapter 12: *Terrestrial and Freshwater Ecology and Biodiversity* of the Environmental Statement (Document reference 6.1.12) summarises the mitigation measures to be provided within the Order Limits. Further details of the mitigation are provided within Appendix 12.3: *Ecological Mitigation and Management Framework* (Document Reference 6.2.12.3) secured through the DCO. However, for some species/taxa, described further in Chapter 3 below, it is intended that additional off-site mitigation outside of the Order Limits will be required to ensure compliance with relevant legislation and planning policy.

1.3. Off-site Ecological Mitigation can take two main forms:

a. Off-site Mitigation Land – This would either be land acquired by the Applicant and managed to improve biodiversity or land acquired and managed by a biodiversity offset provider such as the Environment Bank and 'paid for' by the Applicant. In the first instance, the land acquired would form part of the land under the control of the applicant and could form part of the application for development consent. In the latter case, the acquisition of land via an agent such as the Environment Bank would form part of a Section 106 obligation or an equivalent agreement to be agreed.

b. Off-site Mitigation Payments – These may take the form of an agreed sum to be paid towards an existing or developing ecological enhancement project local to the Project Site. The payment would be made to facilitate a particular project (for example a wetland or woodland establishment scheme) or to fund land management over a longer time period. The payment amount would be agreed with the local authority and body responsible for the project and would form part of a Section 106 obligation or equivalent agreement associated with the DCO.

1.4. It should be noted that the final off-site mitigation 'package' may take the form of a combination of both payments and land acquisition and thus the quantum of land areas and payments would be adjusted accordingly. As it delivers a more direct 'like for like' replacement of habitats lost on-site, it is intended that off-site mitigation land will provide the majority of the required mitigation, with mitigation payments being used where necessary to address any shortfall to meet legislation or policy requirements once all options of off-site land have been explored.

1.5. At the time of making the DCO application, off-site mitigation has not yet been secured. Therefore, for the purposes of this application for development consent, a set of general guiding principles has been set out with regard to the type of land that might be acquired if that is the preferred off-site mitigation option.

Chapter Two ◆ RELEVANT LAW, POLICY AND GUIDANCE

2.1 The mitigation principles described within this report are intended to provide additional information on off-site mitigation measures (outside of the DCO Order Limits) to supplement those mitigation measures already provided within the DCO Order Limits, as detailed in Chapter 12: *Terrestrial and Freshwater Ecology and Biodiversity* of the Environmental Statement (Document reference 6.1.12). This is to enable the relevant authorities to fulfil their statutory duties in respect of sites and species protected by international or domestic law and to demonstrate that the Proposed Development is capable of complying with relevant planning policies and best practice guidance.

2.2 The legislation, policy and guidance that is relevant to this document is summarised below.

LEGISLATIVE CONTEXT

European Legislation

2.3 Council Directive 92/43/ECC on the conservation of natural habitats and of wild fauna and flora (the Habitats Directive) and Council Directive 2009/147/EC on the conservation of wild birds (the Birds Directive) aim to ensure the long-term survival of certain species and habitats by protecting them from adverse effects of plans and projects.

2.4 The Habitats Directive provides for the designation of sites for the protection of habitats and species of European importance. These sites are called Special Areas of Conservation (SACs). The Birds Directive provides for the classification of sites for the protection of rare and vulnerable birds and for regularly occurring migratory species. These sites are called SPAs. SACs and SPAs form part of a network of protected sites across Europe called Natura 2000.

2.5 The Convention on Wetlands of International Importance 1972 (the Ramsar Convention) provides for the listing of wetlands of international importance. These sites are called Ramsar sites. UK Government policy is to afford Ramsar sites the same protection as European sites (and the term 'European sites' as used subsequently in this Report includes Ramsar sites).

2.6 In the UK, the Conservation of Habitats and Species Regulations 2017 (as amended; the Habitat Regulations) transpose the Habitats and Birds Directives into national law as far as the 12 nautical mile limit of territorial waters. These Regulations provide for the designation and protection of statutory designated wildlife sites of European value (European sites), and the protection of a number of rare and vulnerable species in a European context (European Protected Species; EPS).

2.7 In relation to European sites, Regulation 9(1) of the Habitats Regulations provides that:

"The appropriate authority, the nature conservation bodies and, in relation to the marine area, a competent authority must exercise their functions which are relevant to nature conservation, including marine conservation, so as to secure compliance with the requirements of the Directives."

2.8 Furthermore, Regulation 9(3) states:

"Without prejudice to the preceding provisions, a competent authority, in exercising any of its functions, must have regard to the requirements of the Directives so far as they may be affected by the exercise of those functions."

2.9 Regulation 63 of the Habitats Regulations provides that:

"(1) A competent authority, before deciding to undertake, or give any consent, permission or other authorisation for, a plan or project which —

(a) is likely to have a significant effect on a European site or a European offshore marine site (either alone or in combination with other plans or projects), and

(b) is not directly connected with or necessary to the management of that site, must make an appropriate assessment of the implications of the plan or project for that site in view of that site's conservation objectives."

2.10 In regard to EPS, Regulation 43 (1) of the Habitats Regulations provides that:

"A person who –

a) deliberately captures, injures or kills any wild animal of a European protected species,

b) deliberately disturbs wild animals of any such species,

c) deliberately takes or destroys the eggs of such an animal, or

d) damages or destroys a breeding site or resting place of such an animal, is guilty of an offence."

2.11 With respect to 'disturbance', Regulation 43 (2) of the Habitats Regulations states that this includes in particular any disturbance which is likely:

a) "to impair their ability:

i) to survive, to breed or reproduce, or to rear or nurture their young; or

ii) in the case of animals of a hibernating or migratory species, to hibernate or migrate; or

b) to affect significantly the local distribution or abundance of the species to which they belong."

2.12 The protection afforded under Regulation 43 can be derogated through a licensing process under the requirements of Regulation 55 under certain circumstance, including the preservation of public health and public safety or other imperative reasons of overriding public need including those of a social nature, subject to there being no satisfactory alternative, and that the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in its natural range.

National Legislation

2.13 The Wildlife and Countryside Act 1981 (as amended, principally by the Countryside and Rights of Way Act 2000 and the Natural Environment and Rural Communities Act 2006) sets out varying degrees of protection and offences with regard to native species and their habitats that are rare and vulnerable in a national context. Section 9(1) of the Wildlife and Countryside Act 1981 prohibits the killing, injuring or taking by any method of those wild animals listed on Schedule 5 of the Act, which, of relevance to this report, includes those widespread reptile species confirmed present on the Kent Project Site including slow-worm (*Anguis fragilis*), grass snake (*Natrix helvetica helvetica*) and common lizard (*Zootoca vivipara*).

2.14 The Kent Project Site supports several Species of Principal Importance as defined by Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006, including many nationally scarce or rare invertebrate species. Whilst this does not equate to strict legal protection of individuals of a species, Section 40 of the NERC Act places a duty on decision-makers such as public bodies, including local and regional authorities to have regard to the conservation of such species when carrying out their normal functions.

PLANNING POLICY CONTEXT

National Policy Statement (NSP) for National Networks (2014)

2.15 Whilst there is no NPS for business and commercial Nationally Significant Infrastructure Projects (NSIPs), the extent that the Proposed Development includes transport and highways infrastructure means that regard will be had to the NPS on National Networks.

2.16 Of relevance to the delivery of ecological mitigation, paragraph 5.25 of the National Networks NPS states:

"As a general principle, and subject to the specific policies below, development should avoid significant harm to biodiversity and geological conservation interests, including through mitigation and consideration of reasonable alternatives. The applicant may also

wish to make use of biodiversity offsetting[1] in devising compensation proposals to counteract any impacts on biodiversity which cannot be avoided or mitigated. Where significant harm cannot be avoided or mitigated, as a last resort, appropriate compensation measures should be sought."

2.17 Furthermore, paragraph 5.37 acknowledges that the Secretary of State can secure the delivery of mitigation measures through the use of DCO requirements and/or a planning obligation, as below:

"The Secretary of State should consider what appropriate requirements should be attached to any consent and/or in any planning obligations entered into in order to ensure that mitigation measures are delivered."

National Planning Policy Framework (NPPF)

2.18 In the absence of an NPS for business and commercial NSIP, due consideration has been given to the relevant parts of the NPPF, which is a material consideration that must be taken into account in the determination of planning applications.

2.19 In relation to the delivery of net biodiversity gain, paragraph 170(d) of NPPF states that:

"Planning policies and decisions should contribute to and enhance the natural and local environment by:

… minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures"

BEST PRACTICE GUIDANCE

The Mitigation Hierarchy

2.20 The mitigation hierarchy requires that the design of a development follows what is known as the mitigation hierarchy to reduce impacts upon Important Ecological Features (IEFs). The Chartered Institute for Ecology and Environmental Management (CIEEM) guidelines for Ecological Impact Assessment (EcIA)[2] outline the principles as follows:

"Avoidance: Seek options that avoid harm to ecological features (for example, by locating on an alternative site).

Mitigation: Negative effects should be avoided or minimised through mitigation measures, either through the design of the project or subsequent measures that can be guaranteed – for example, through a condition or planning obligation.

[1] Biodiversity offsets are measurable conservation outcomes resulting from actions designed to compensate for residual adverse biodiversity impacts arising from a development after mitigating measures have been taken. The goal of biodiversity offsets is to achieve no net loss and preferably a net gain of biodiversity.

[2] CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Chartered Institute of Ecology and Environmental Management, Winchester.

Compensation: Where there are significant residual negative ecological effects despite the mitigation proposed, these should be offset by appropriate compensatory measures.

Enhancement: Seek to provide net benefits for biodiversity over and above requirements for avoidance, mitigation or compensation."

Biodiversity Net Gain – Good Practice Principles

2.21 The off-site mitigation process will follow best practice guidance, as outlined in 'Biodiversity net gain. Good practice principles for development: A practical guide'[3]. Therefore, the off-site mitigation habitat will:

a. Mitigate difficulty, uncertainty and other risks to achieve net gain;

b. Achieve a measurable, overall gain for biodiversity and the services ecosystems provide while directly contributing towards nature conservation priorities;

c. Be ecologically equivalent in type, amount and condition to that lost within the Project Site;

d. Account for the location and timing of biodiversity loss;

e. Achieve net gain as local to the development as possible;

f. Enhance ecological connectivity by creating more, bigger, better and joined up habitat;

g. Achieve nature conservation outcomes that demonstrably exceed existing obligations;

h. Be designed to be resilient to external factors; and

i. Ensure net gain generates long-term benefits.

2.22 The land would also follow some general guiding principles to ensure it delivers the required mitigation relevant to the species/taxa concerned, some of which also aid in adhering to the principles listed above. Those principles are listed and expanded upon below.

[3] Biodiversity net gain. Good practice principles for development: A practical guide (2019) Ciria - https://cieem.net/wp-content/uploads/2019/02/C776a-Biodiversity-net-gain.-Good-practice-principles-for-development.-A-practical-guide-web.pdf accessed 08.10.2020

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Chapter Three ◆ OFF-SITE MITIGATION PRINCIPLES

3.1 As described within Chapter 1, the final off-site mitigation 'package' to be secured through the DCO is likely to involve a combination of both off-site mitigation land managed to improve biodiversity and off-site mitigation payments towards new or existing ecological creation/restoration projects. It is intended that off-site mitigation land will provide the majority of the required mitigation.

3.2 Off-site mitigation land, if acquired, would need to fulfil multiple ecological objectives and functions. Its primary objectives and functions would be:

- To act as mitigation for the loss of wetland habitat within the Kent Project Site which, on a precautionary basis, is being treated as functionally linked[4] to the Thames Estuary and Marshes SPA/Ramsar and Medway Estuary and Marshes SPA/Ramsar sites. This equates to a net loss of approximately 14.55ha of coastal/floodplain grazing marsh and 0.94hectares (ha) of reedbed (see Appendix 12.4: *Shadow Habitats Regulations Assessment* (Document Reference 6.2.12.4));

- To mitigate the loss of suitable dormouse habitat on the Kent Project Site, which equates to a loss of approximately 51.13ha of suitable dormouse habitat, (see 'Dormouse Mitigation Strategy' included within Appendix 12.3: *Ecological Mitigation and Management Framework* (Document Reference 6.2.12.3));

- To create or enhance a suitably sized reptile receptor site with sufficient 'carrying capacity' to accommodate the translocation of widespread reptile species from the Kent Project Site, as mitigation for the loss of suitable reptile habitat to the Proposed Development (see 'Reptile Mitigation Strategy' included within Appendix 12.3: *Ecological Mitigation and Management Framework* (Document Reference 6.2.12.3));

- To create additional habitats for the benefit of invertebrates (in particular species associated with Open Mosaic Habitats on Previously Developed Land; OMH), beyond those already proposed for enhancement within the Order Limits, as described in the 'Invertebrate Mitigation Strategy' included within Appendix 12.3: *Ecological Mitigation and Management Framework* (Document Reference 6.2.12.3)); and

- To deliver a net biodiversity gain, collectively through delivery of the requirements set out above and any additional land needed to meet any remaining shortfall in biodiversity units if necessary (measured through the use of the Department for the Environment Farming and Rural Affairs (DEFRA) Biodiversity Metric 2.0).

[4] ' Functionally linked' land refers to land outside the Ramsar/SPA/SSSI that supports Ramsar/SPA/SSSI qualifying species, and therefore provides a function linked to the Ramsar/SPA/SSSI

3.3 These objectives are expanded upon and described in more detail below.

3.4 For each of the below scenarios, potentially suitable land will be subject to an initial Extended Phase 1 Habitat survey followed by an assessment of the potential impacts of any proposals for habitat creation/enhancement on the existing habitats and species of conservation value. The impact assessment, and design of ecological mitigation measures will be informed by detailed 'Phase 2' ecological surveys as considered necessary following the completion of the initial Phase 1 survey. Natural England will be consulted on the survey proposals

a) Mitigation for the Loss of Functionally Linked Wetland Habitat

3.5 Any off-site land to be provided as part of an overall mitigation package for the above habitat losses, will need to adhere to the following principles.

Proximity to the Project Site

- The off-site mitigation land would be as close to the Project Site as is possible whilst also fulfilling other principles. The closest possible land will not necessarily be targeted if it cannot logistically be enhanced to create wetland habitat, a fundamental requirement of the mitigation habitat.

Within the Greater Thames Marshes Nature Improvement Area (NIA)

- The off-site mitigation land would be situated within the Greater Thames Marshes NIA[5]. The habitat lost within the Project Site is situated within the NIA, and the off-site mitigation land should assist in achieving the aims of the NIA.

Near to, or within, the Functional Range of Birds using the Thames Estuary and Marshes SPA/Ramsar and Medway Estuary and Marshes SPA/Ramsar

- The off-site mitigation land would be situated in proximity to one or both of the European sites affected by the development. In this way, it can be ensured that there are no significant negative effects upon those sites through loss of functionally linked habitat.

Comprise at least Partially Former Marshland – i.e. Low-lying and Capable of being Restored to Marshland

- The off-site mitigation land would contain at least enough low-lying, former marshland to offset the loss of wetland habitat within the Project Site. This would be achieved through the targeted 're-wetting' of those areas and through groundworks and planting where considered necessary. The off-site mitigation land would aim for a 2:1 ratio for creation of habitat relative to the net loss of wetland habitats within the

[5] Nature Improvement Areas are a network of large scale areas in which specific biodiversity goals are promoted in order to restore the natural landscape. The Greater Thames Marshes NIA aims to create and enhance grazing marsh, salt marsh and mudflat habitats.

Project Site described at paragraph 3.2 above. This would equal approximately 30ha of grazing marsh and 2ha of reedbed.

Not Earmarked for Development

- Only land with no development commitments would be considered for off-site mitigation.

Long Term Management and Monitoring

- Long term, the off-site land will be managed for the benefit of wintering waders and wildfowl, full details of which are to be agreed with Natural England; and

- Habitat condition monitoring and population monitoring will be subject to written agreement with Natural England through a requirement of the DCO.

b) Dormouse Mitigation

3.6 As described further within the Dormouse Mitigation Strategy (included within the '*Ecological Mitigation and Management Framework'*, Document Reference 6.2.12.3), the Proposed Development will result in the loss of 51.13ha of suitable dormouse habitat from the Kent Project Site. The total habitat loss includes c.4.42ha broadleaved semi-natural woodland (*high to moderate quality*), 0.55ha of broadleaved plantation woodland (*moderate to low* quality), 38.72ha of dense/continuous scrub (*moderate* quality) and 7.44ha of scattered scrub over poor semi-improved grassland (*low quality).*

3.7 In a letter dated 09 October 2020 (Natural England ref: DAS/UD7110, issued as part of a wider consultation via Natural England's Discretionary Advice Service), Natural England have stated that it would unlikely accept a net loss in habitat when determining an EPS derogation licence application in respect of dormice. However, during a subsequent meeting held with Natural England on 20 October 2020, in recognition of the difficulties in securing off-site land connected to the Project Site due to the presence of surrounding land being largely already developed or committed for development purposes, Natural England agreed to the consideration of an alternative mitigation 'package' that may not strictly replace lost habitat on a 1:1 basis nor provide a quantifiable net gain in habitat area. This would, however, be subject to there being a comprehensive package of offset mitigation measures which delivers a 'qualitative' net gain to the local dormouse population, so as to ensure the maintenance of the favourable conservation status[6] of the

[6] 'Favourable Conservation Status' (FCS) is defined by the EU Habitats Directive by Article 1(i) of the Directive. The conservation status of a species is defined as "the sum of the influences acting on the species concerned that may affect the long-term distribution and abundance of its populations within the territory". This is considered 'favourable' when:

(i) Population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats;

(ii) The natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future; and

(iii) There is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

local dormouse population. This package would likely include a combination of measures which are developer-funded, including new habitat creation/management, alongside the provision of financial contributions to new or existing dormouse mitigation projects/recording schemes/management plans.

3.8 At this stage, the following principles are proposed which aim to ensure the maintenance of the favourable conservation status of the local dormouse population.

Proximity to the Project Site

- The off-site mitigation land would be as close to the Kent Project Site as is possible, and within the same local authority boundary.

Connectivity

- The off-site mitigation land would be connected to the existing dormouse population on the Kent Project Site, for example through habitat connections via woodland habitat or scrub/hedgerow corridors.

Size and Suitability

- Off-site mitigation land will be of a sufficient size (no less than 2ha per land parcel acquired unless otherwise connected to suitable dormouse habitat) and quality to ensure the favourable conservation status of the local dormouse population will be maintained over the long term. Where the total quantum of off-site mitigation land acquired does not meet that proposed for loss onsite, the mitigation package will focus on delivering a qualitative net gain. This will be achieved through a combination of measures, including the enhancement of habitats proposed to be retained onsite and across mitigation land acquired off-site, as well as through the provision of financial contributions towards new or existing dormouse mitigation projects/recording schemes/management plans; and

- Where new habitat is being created, the existing topography, soils, ground conditions and hydrology must be suitable to ensure that the off-site land is capable of supporting new woodland, hedgerow and scrub habitat over the long-term.

Not Earmarked for Development

- Only land with no development commitments would be considered for off-site mitigation.

Long Term Management and Monitoring

- Long term, the off-site mitigation land will be managed for the benefit of dormice;

- Habitat condition monitoring will be undertaken in years 1, 3 and 5 post completion of new habitat creation; and

- Population monitoring will be undertaken onsite and across off-site mitigation land, as agreed with Natural England through the European Protected Species Mitigation Licence to be secured in advance of site clearance commencing.

c) Reptile Mitigation

3.9 Off-site mitigation for reptiles will take the form of creating or enhancing a suitable reptile receptor site, adhering to the following principles:

Proximity to the Project Site

- The off-site mitigation land for reptiles would be as close to the Kent Project Site as is possible, ideally within the same/neighbouring local authority boundary.

Size and Suitability

- The off-site mitigation land will be of sufficient size and quality to accommodate the proposed translocation of widespread reptile species from parts of the Kent Project Site to be lost to the Proposed Development;

- The receptor site will include the creation or enhancement of a mosaic of different habitat types such as rough tussocky grassland, scrub, woodland, ponds and temporary pools, bare ground and sparsely vegetated areas, to ensure the site incorporates as much habitat structure diversity, small-scale variation in topography and exposed substrates as is feasible;

- The habitats within the receptor site should either be already suitable for reptiles to be released into, or capable of being made suitable with some habitat restoration or enhancement;

- The receptor site must include all necessary features to support a population of at least equivalent status to that at the donor site; and

- The receptor site must include features suitable for breeding, foraging and hibernation, and be well connected to existing areas of suitable habitat.

Not Earmarked for Development

- Only land with no development commitments would be considered for off-site mitigation.

Long Term Management and Monitoring

- Long term, the receptor site will be managed for the benefit of reptiles;

- Habitat condition monitoring will be undertaken in years 1, 3 and 5 post reptile translocation; and

- Reptile presence/absence surveys and a population size class estimate (based on 7 survey visits) will also be undertaken in years 1, 3 and 5 post reptile translocation in tandem with the above.

d) Invertebrate Mitigation

3.10 Through the delivery of each of the above areas of off-site land, new habitats will be created or enhanced, which will in turn provide benefits to invertebrates, and supplement the proposed mitigation measures provided within the DCO Order Limits.

3.11 To provide further enhancements to the local invertebrate population, in particular those species associated with OMH, additional features will be provided within each of the areas of off-site mitigation land discussed above, including:

- Creation of bare ground scrapes;
- Creation of shallow pools of varying depth;
- Creation of piles/mounds of mixed crushed and coarse concrete rubble;
- Creation of exposed chalk mounds and low bunds; and
- Creation of rubble piles.

3.12 In addition to the introduction of additional invertebrate habitat features within other habitat types as described above, it is proposed that entire areas of 'new' brownfield habitat/OMH will be created specifically for invertebrates within some of the off-site land to mitigate the loss of such habitat from the Project Site. This has been done successfully on other sites in the Thames Gateway area, for example to offset losses of habitat from the development of the London Distribution Park (LDP) at Tilbury[7]. In this example, new brownfield habitat/OMH was created in 2013 by spreading chalk slurry over a wide area and then placing dunes made from waste fly ash and chalk bunds on the top. Monitoring studies in 2019 found that the new habitats supported a proportionally higher number of rare and scarce invertebrate species than had been found at the LDP site in 2011 prior to development.

e) Biodiversity Net Gain

3.13 Biodiversity impact calculations set out within Appendix 12.2: *Biodiversity Net Gain Assessment* (Document Reference 6.2.12.2) confirm that, in the absence of off-site mitigation, the Proposed Development will result in the net loss of -829.98 biodiversity units.

[7] https://www.forthports.co.uk/latest-news/wildlife-study-finds-habitat-created-by-the-port-of-tilbury-is-now-a-site-of-national-importance-for-invertebrates/

3.14 Collectively, areas of off-site land provided as mitigation for the loss of functionally linked land, dormouse habitat, reptile habitat and invertebrate habitat, as described above, will form part of the overall package to ensure a net gain in biodiversity.

3.15 The number of biodiversity units gained from each respective element can be calculated using the DEFRA Biodiversity Metric 2.0, or similar, and subject to the final quantum of land to be secured for each of the above purposes and the associated habitat creation or enhancement delivered, the remaining shortfall of land required to deliver a net gain can be calculated. Any shortfall required to deliver a net gain will be secured via further off-site land creation/enhancement.

3.16 The Biodiversity Net Gain assessment (Appendix 6.2.12.2) sets out five hypothetical scenarios for off-site compensation land to demonstrate the off-site land area required and that delivery of biodiversity net gain is technically feasible. It concludes (at paragraph 4.5) that:

"Based on these hypothetical calculations, it is concluded that between 160 and 210 hectares of off-site mitigation land will be required to achieve a biodiversity net gain. The precise quantum is, however, highly dependent upon the baseline habitat and condition, but also upon the target condition that can be achieved on the land in question."

3.17 In summary, therefore, to meet the Applicant's aspiration to deliver at least a net biodiversity gain, and in accordance with the requirements of the NPPF, between 160 and 210ha of off-site land will be necessary, depending on the baseline habitat and condition. The total area of off-site land will include those areas of land provided as part of mitigation for the loss of functionally linked wetland habitats, dormouse habitat, reptile habitat and invertebrate habitats.

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Chapter Four ◆ SUMMARY AND CONCLUSIONS

4.1 This report provides the general guiding principles for the delivering of off-site ecological mitigation associated with the Proposed Development.

4.2 Off-site ecological mitigation is required for a range of ecological receptors including land functionally linked to European sites, dormice, reptiles, and invertebrates to comply with relevant statutory legislation, planning policy and best practice. Furthermore, to meet the Applicant's aspiration to deliver at least a net biodiversity gain, in accordance with the requirements of the NPPF, significant off-site compensation land created/enhanced for biodiversity will be required.

4.3 At the time of submitting the DCO application off-site ecological mitigation has not been secured and will need to be secured through a DCO requirement or planning obligation.

4.4 Subject to the delivery of off-site mitigation in accordance with the principles prescribed within this report, with further details to be agreed in writing with relevant statutory consultees including Natural England, it is considered that the Proposed Development can comply with the various legislation and planning policy requirements relevant to ecology and deliver a biodiversity net gain.

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