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Our ref: 343848
Your ref: BC080001



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Dear Kathrine Haddrell

NSIP Reference Name: The London Resort
NSIP Reference Code: BC080001
Natural England User Code: 20027486

Thank you for your consultation on the above dated 19 February 2021, which was received by Natural England on the same day.

Following our registration as an interested party on the 19 March 2021, I can confirm that the contact details for Natural England in relation to the London Resort examination are as follows:

- Main contact: Patrick McKernan, Manager Sussex and Kent Area Team
- Telephone number: [REDACTED]
- Email address (preferred contact method for document sharing and project updates): londonresort@naturalengland.org.uk
- Postal address: Natural England Mail Hub, Natural England, Worcester County Hall, Spetchley Road, Worcester WR5 2NP

I can confirm that Natural England will be pleased to provide oral representations to the Examining Authority on areas within our remit during issue-specific and open floor hearings.

Natural England is a non-departmental public body. Our statutory purpose is to ensure that the natural environment is conserved, enhanced, and managed for the benefit of present and future generations, thereby contributing to sustainable development.

Natural England's advice in these relevant representations is based on information submitted by London Resort Company Holdings Limited in support of its application for a Development Consent Order ('DCO') in relation to the London Resort Global Entertainment Resort.

These relevant representations provide Natural England's summary of what we consider to be the main nature conservation, landscape, access and related issues¹ in relation to the DCO application, including the Deemed Marine Licence contained therein, and indicate the principal submissions that we wish to make at this point. Natural England will develop these points further as appropriate during the examination process. Natural England may have further or additional points to make, particularly if further information about the project becomes available.

¹ PINS NSIP Advice Note 11 Annex C sets out Natural England's role in infrastructure planning.
https://infrastructure.planninginspectorate.gov.uk/wp-content/uploads/2015/10/PINS-Advice-Note-11_AnnexC_20150928.pdf

Natural England will continue discussions with the promoter to seek to resolve these concerns and agree outstanding matters in a statement of common ground. Failing satisfactory agreement, Natural England advises that the matters summarised below and set out in detail within Sections 2 to 14 below will require consideration by the Examining Authority as part of the examination process.

The Examining Authority may wish to ensure that the matters set out in these relevant representations are addressed as part of the Examining Authority's first set of questions to ensure the provision of information early in the examination process.

Summary of Natural England's Relevant Representation

Swanscombe Peninsula Site of Special Scientific interest (SSSI)

- There will be significant adverse impacts on the Swanscombe Peninsula SSSI from both direct loss and the indirect impacts of the proposed development.
- Natural England estimates that the built environment footprint of the development alone would result in the direct loss of approximately 40% of the SSSI. It is also likely that there would be significant indirect impacts to the site from the construction and operational phases, and any site-enabling and remediation works.
- Given Natural England's concerns regarding the effectiveness of the proposed on-site mitigation measures, we consider it is highly likely, should the development be approved, that off-site compensation measures would be required.
- Natural England's view, however, is that compensation cannot adequately address the harm that would result to the SSSI from the development proposal, as the feasibility of doing this is considered low and very unlikely to offer an equivalent assemblage and richness of species.

Swanscombe Peninsula SSSI and the Environmental Statement (ES)

- The Swanscombe Peninsula SSSI was notified after the ES submitted with the DCO application was produced, and the consequences of SSSI notification have not been addressed in the ES. In Natural England's view, the decision-maker in this case cannot reasonably grant permission for this project without the ES first being updated to reflect the consequences of the SSSI notification.
- In addition, we consider the comparison of the environmental effects of alternative sites is insufficient and should be revised to take full account of all designated environmental sites affected by the proposed development.

Swanscombe Marine Conservation Zone (MCZ)

- The proposal has the potential to cause significant adverse impacts on the Swanscombe Marine Conservation Zone (MCZ). These include the potential for both direct and indirect impacts on the MCZ feature Tentacled Lagoon worm.
- Natural England is unable to agree with the conclusions of the current MCZ Assessment, as we require further information and evidence to justify the conclusions made.

On-site mitigation proposals

- A focus of the on-site mitigation proposals to address impacts to designated sites and protected species is the creation of new habitat, and management of existing habitats within the site. These measures, however, have the potential to impact on the Swanscombe Peninsula SSSI and the Swanscombe MCZ.

Shadow Habitats Regulations Assessment (HRA)

- Natural England considers that much greater clarity is required within the Shadow HRA. At present Natural England cannot concur with the conclusion of no adverse effect on integrity.
- Further information is required on the potential impact pathways and the avoidance measures for impacts to Special Protection Areas, Ramsar Sites and Special Areas of Conservation.

Other terrestrial statutory designated sites

- There are also a number of SSSIs in the Thames Estuary area that are identified within the ES as having the potential to be affected by the proposed development. These include potential indirect impacts from damage to habitats (from pollutants), disturbance, noise, lighting, and air quality impacts.

Protected landscapes

- There is the potential for impacts on the setting of the Kent Downs Area of Outstanding Natural Beauty (AONB). Further impacts may also occur from urbanising effects arising from the proposed development.
- Natural England recommends that greater clarity on the likely impacts to the AONB is provided, including the need for an updated landscape and visual impact assessment.

Protected species

- The information supplied in support of the DCO indicates that significant impacts to a number of protected species are likely to result from this project.
- Natural England does not consider there is sufficient certainty at this stage to enable us to advise the Examining Authority that impacts to protected species will be avoided, fully mitigated or, as a last resort, compensated. Natural England is therefore not confident at present that we will be able to provide letters of no impediment.

Non-designated or protected species and habitats of conservation value

- The proposed development is also likely to result in significant impacts to additional features of significant conservation value, including nationally rare plant species, reptiles, wintering birds, and habitats and species of principal importance under Section 41 of the Natural Environment and Rural Communities Act 2006.
- Natural England therefore recommends that much greater clarity is provided on the proposed mitigation and compensation measures for all species and habitats directly and indirectly impacted by the proposal.

England Coast Path

- The London Resort's Access Strategy includes plans to modify the route of the existing England Coast Path landward of the approved alignment. The rationale for moving the route, with less opportunity to view the Thames, is not made explicitly clear.
- We consider that any proposed diversion to the route of the National Trail should be closer to the River and offer views of the Thames. Any amendments would also need to fully consider and mitigate for potential impacts on other relevant environmental features, as well as any health and safety risks associated with the past use of the site.

Biodiversity net gain

- Natural England supports, in principle, the proposal for developments to deliver biodiversity net gain and note that the London Resort is committed to deliver biodiversity net gain as part of its commitment to sustainable development.
- However, given the significant adverse impacts from the development proposal on statutory protected sites, and the current uncertainty regarding the proposed mitigation and compensation measures, at present we consider it is doubtful whether it could be reasonably considered that a net gain for biodiversity can also be achieved whilst these matters are unresolved.

Utilities statement

- Natural England recommends that further clarity is provided on the potential impacts that may result from the requirements within the Utilities Statement.

Draft Development Consent Order (DCO)

- Natural England has a number of significant concerns regarding the draft DCO. This is in the main results from the proposed disapplication of Natural England's Section 28(e) SSSI consenting regime under the Wildlife and Countryside Act 1981 (as amended).
- As much of the Kent site falls within the Swanscombe Peninsula SSSI, and the order limits also include the Swanscombe MCZ, greater clarity is required on the permitted actions and requirements that may affect these sites.

Outline Construction Environmental Management Plan

- We advise the Outline CEMP needs to provide a high degree of certainty that the measures within the ES to avoid, mitigate or as a last resort fully compensate for the environmental impacts are capable of being delivered.

Contaminated Land Management Strategy

- This strategy suggests that there is a high degree of uncertainty in relation to the contamination within the application site. Natural England recommends that greater clarity on the total area of land that may be subject to remedial works is provided, and that the ES is updated to reflect this. Without such clarity, there is a significant degree of uncertainty regarding the mitigation measures proposed within the ES for ecological and geological impacts.

I trust the advice in this letter is helpful and we will continue to work with the Planning Inspectorate, the proposer and the Examining Authority over the coming weeks to try and resolve these matters where this is possible.

Yours sincerely

Patrick McKernan
Manager
Sussex and Kent Area Team

Table of contents

1	Overarching advice.....	7
2	Swanscombe Peninsula Site of Special Scientific Interest (SSSI).....	8
3	Swanscombe Marine Conservation Zone	22
4	Shadow Habitats Regulations Assessment	26
5	Other terrestrial statutory designated sites	28
6	Protected landscapes	32
7	Protected species	33
8	Non designated or protected species and habitats of conservation value	35
9	England Coast Path.....	36
10	Biodiversity net gain	38
11	Utilities statement	39
12	Draft Development Consent Order	40
13	Outline Construction Environmental Management Plan.....	42
14	Contaminated Land Management Strategy	44

1 Overarching advice

1.1 Defra bodies joint advice

1.1.1 Natural England, the Marine Management Organisation, the Environment Agency and the Forestry Commission are all part of the Defra family. We each have different remits, however our comments and the matters we are addressing may overlap. We would therefore recommend that any issues that may cross over our different organisations are addressed to us as a group so that we can join up our responses.

1.2 Pre-application engagement

1.2.1 The Applicant contacted Natural England in April 2020 inviting us to a workshop to provide a project update and summary of the further environmental work they had undertaken. Since providing our responses during the summer of 2020 to the Environmental Impact Assessment Scoping Request and the Preliminary Environmental Impact Assessment, Natural England has provided high level advice on the draft Shadow Habitats Regulations Assessment and wintering bird surveys. We also held a discussion with the Applicant in December 2020 during the pre-notification consultation for the then proposed Swanscombe Peninsula SSSI.

1.2.2 Natural England has yet to hold discussions with the Applicant on a Statement of Common Ground and understand that a first draft is to be shared by London Resort Companies Holding with Natural England in the near future. Natural England will continue to work constructively with the Applicant to try and address matters wherever possible but recognise that this may be challenging given the nature of the environmental impacts associated with the proposal.

1.2.3 Natural England has engaged as fully as it can in reviewing the Development Consent Order application to provide detailed and comprehensive comments in relation to the potential environmental risks associated with the project. In line with many other consultees, this has been challenging during the Coronavirus pandemic which has affected staff availability. This, along with the size and complexity of the application, much of which we were not given the opportunity to review prior to submission, has constrained our review of the application. We have however used our best endeavours to provide as comprehensive a Relevant Representation response as possible and we reserve the right to expand upon our views as this matter progresses.

1.3 Comments on environmental surveys and impacts

1.3.1 Natural England notes that surveys for potential impacts to designated sites and ecological receptors in Essex have largely been scoped out for consideration. We would recommend that much greater clarity on the potential impacts from the proposed development to ecological receptors north of the Thames is provided with a clear ecological justification for surveys not being undertaken.

1.3.2 Chapter 12 (Terrestrial and freshwater ecology and biodiversity) (document 6.1.12) considers the impacts from the environmental impact pathways to designated and non-designated ecological receptors. For many such pathways in relation to designated sites, these are assessed as being 'not significant' during the construction and/or operational phases of the proposal (for example see Table 12.10: Construction effects on important ecological features without mitigation). Very limited supporting evidence appears to have been provided to support such conclusions within Chapter 12 of the Environmental Statement. Natural England recommends that a much greater level of detail is provided to give a high degree certainty that impacts will be fully avoided or mitigated for all potential impact pathways.

2 Swanscombe Peninsula Site of Special Scientific Interest (SSSI)

2.1 Swanscombe Peninsula SSSI - introduction

2.1.1 On 11th March 2021, Natural England notified the Swanscombe Peninsula as a SSSI. There is a very significant overlap between the geographical extent of the SSSI and the proposed development boundary. Although this application and its Environmental Statement (ES) were submitted at a time when SSSI notification was known to be under consideration by Natural England, the effects of this have not been addressed by the Applicant. Natural England therefore wishes to bring attention to the legal and policy consequences of SSSI notification and to deficiencies in the Environmental Statement.

2.1.2 This section of Natural England's Relevant Representations deals with general issues arising from SSSI notification. Sections 2.5.10 to 2.5.49 below set out a summary of issues relating to the features for which the SSSI has been notified. Natural England reserves the right to address these important matters in more detail elsewhere in this process and once the Applicant has clarified its proposals.

2.1.3 Swanscombe Peninsula SSSI is an area of open mosaic habitat on previously developed land and traditional estuarine habitat which connects Ebbsfleet Valley to the southern shore of the River Thames between Dartford and Gravesend. The site includes chalk pits, free-draining grassland, scrub, wetlands, grazing marsh, intertidal mudflats and saltmarsh.

2.1.4 Swanscombe Peninsula SSSI is of special interest for the following nationally important features:

- Quaternary geology at Baker's Hole, a key Pleistocene site with a complex sequence of periglacial and temperate climate deposits and Middle Palaeolithic archaeology;
- populations of the plants divided sedge *Carex divisa*, yellow vetchling *Lathyrus aphaca*, slender hare's-ear *Bupleurum tenuissimum*, Bithynian vetch *Vicia bithynica* and round-leaved wintergreen *Pyrola rotundifolia* subsp. *maritima*;
- assemblages of invertebrates associated with bare sand and chalk, open short swards, open water on disturbed mineral sediments and saltmarsh and transitional brackish marsh; and
- two diverse assemblages of breeding birds, one associated with lowland open waters and their margins, lowland fen and lowland damp grassland, the other with lowland scrub.

2.1.5 A copy of the Swanscombe Peninsula SSSI notification document, which details the Reasons for notification, is attached to this relevant representation². These documents comprise:

- The 'citation', which gives a general description of the site and describes its features of scientific interest;
- The list of operations appearing to Natural England to be likely to damage the features described in the citation ('Operations Requiring Natural England's Consent' [ORNEC]);
- Natural England's views about the management of the land, including any views about

² The notification documentation is also available to view at <https://consult.defra.gov.uk/natural-england/swanscombe-peninsula/>

the conservation or enhancement of the features described in the citation;

- Maps showing the land subject to the SSSI notification; and
- An introductory preface to the above four statutory documents.

2.2 Swanscombe Peninsula SSSI – notification

2.2.1 The legal basis for this notification is section 28C of the Wildlife and Countryside Act 1981, as amended ('the 1981 Act'), which allows an existing SSSI to be enlarged. In this case, the previously notified Baker's Hole SSSI, last notified in May 1989 for its geological interest. The effect of the notification of Swanscombe Peninsula SSSI is to subsume Baker's Hole SSSI into a larger notified area, to add additional features of special scientific interest, and to update the ORNEC and views about management. The previous notification of Baker's Hole SSSI ceased to have effect upon the notification of Swanscombe Peninsula SSSI on 11 March 2021.

2.2.2 By section 28C (3) of the 1981 Act, subsections 28 (2) to (8) apply to this notification, key elements of which are:

“(3). A notification under subsection (1) shall specify the time (not being less than three months from the date of the giving of the notification) within which, and the manner in which, representations or objections with respect to it may be made; and Natural England shall consider any representation or objection duly made.

(4). A notification under subsection (1)(b) shall also specify—

- (a) the flora, fauna, or geological or physiographical features by reason of which the land is of special interest, and*
- (b) any operations appearing to Natural England to be likely to damage that flora or fauna or those features,*

and shall contain a statement of Natural England's views about the management of the land (including any views Natural England may have about the conservation and enhancement of that flora or fauna or those features).

(5). Where a notification under subsection (1) has been given, Natural England may within the period of nine months beginning with the date on which the notification was served on the Secretary of State either—

- (a) give notice to the persons mentioned in subsection (1) withdrawing the notification; or*
- (b) give notice to those persons confirming the notification (with or without modifications).*

...

(6). A notification shall cease to have effect—

- (a) on the giving of notice of its withdrawal under subsection (5)(a) to any of the persons mentioned in subsection (1); or*
- (b) if not withdrawn or confirmed by notice under subsection (5) within the period of nine months referred to there, at the end of that period.*

...

(7). Natural England's power under subsection (5)(b) to confirm a notification under subsection (1) with modifications shall not be exercised so as to add to the operations specified in the notification or extend the area to which it applies.

(8). As from the time when there is served on the owner or occupier of any land which has been notified under subsection (1)(b) a notice under subsection (5)(b) confirming the notification with modifications, the notification shall have effect in its modified form in relation to so much (if any) of that land as remains subject to it.”

- 2.2.3 Subsection 28 (3) of the 1981 Act provides that an owner or occupier of land who has received the notification papers has a period of three months in which to make objections to or representations about the notification.³ In practice, Natural England allows four months for this. Subsection 28 (5) then gives Natural England a period of nine months from the date of notification to confirm that notification (with or without modifications) or withdraw it. This decision is to be informed by any objections or representations duly made pursuant to subsection 28 (3), but not by socio-economic issues. If a notification is not confirmed within nine months from its date it will lapse and be of no legal effect.
- 2.2.4 At the date of these Relevant Representations, the Applicant has yet to make any representations including any objections it may have, to Natural England. They continue to have the opportunity to do so, until July 2021.
- 2.2.5 It is important to note that all of the provisions of the 1981 Act that protect SSSIs, and associated policy, take effect from the date of notification of a SSSI, rather than from the later date of confirmation. Thus, Swanscombe Peninsula SSSI has had statutory and policy protection since 11th March 2021. By 10th December 2021 it will be known whether the notification is to be confirmed, and if so whether subject to modifications. Natural England does not pre-judge the decisions to be made at the confirmation stage.
- 2.2.6 By section 28E of the 1981 Act, owners or occupiers of land within Swanscombe Peninsula SSSI must now give notice to Natural England before carrying out, causing or permitting any of the activities set out in the ORNEC list. If it appears to Natural England that the activity in question would be harmful to the special scientific interest of the site it has power to refuse consent, subject to a right of appeal given by section 28F.
- 2.2.7 Sections 28J, 28K and 28L of the 1981 Act contain provisions allowing Natural England to require the proper management of an SSSI for the benefit of its features of special scientific interest. Section 28P of the 1981 Act creates various offences that can be committed in connection with SSSIs.
- 2.2.8 Sections 28G, 28H and 28I contain provisions that engage other public bodies, including the decision-maker in this case.

2.3 The section 28G duty

2.3.1 The key provisions of section 28G of the 1981 Act are as follows:

(1). An authority to which this section applies (referred to in this section and in sections 28H and 28I as “a section 28G authority”) shall have the duty set out in subsection (2) in exercising its functions so far as their exercise is likely to affect the flora, fauna or geological or physiographical features by reason of which a site of special scientific interest is of special interest.

(2). The duty is to take reasonable steps, consistent with the proper exercise of the authority’s functions, to further the conservation and enhancement of the flora, fauna or geological or physiographical features by reason of which the site is of special scientific interest.

(3). The following are section 28G authorities—

³ <https://consult.defra.gov.uk/natural-England/swanscombe-peninsula/>

- (a) a Minister of the Crown (within the meaning of the Ministers of the M5 Crown Act 1975) or a Government department;
- (b) ...
- (c) a local authority;
- (d) a person holding an office—
 - (i) under the Crown,
 - (ii) created or continued in existence by a public general Act of Parliament, or
 - (iii) the remuneration in respect of which is paid out of money provided by Parliament;
- (e) a statutory undertaker; and
- (f) any other public body of any description.

(4). “Statutory undertaker” means a person who is or is deemed to be a statutory undertaker for the purposes of any provision of Part 11 of the Town and Country Planning Act 1990.

2.3.2 The decision-maker in this case is a ‘section 28G authority’. In any decision that is likely to affect the flora, fauna or geological or physiographical features by reason of which a site of special scientific interest is of special interest the decision-maker is under a statutory duty to take reasonable steps, consistent with the proper exercise of that authority’s functions, to further the conservation and enhancement of the flora, fauna or geological or physiographical features by reason of which the site is of special scientific interest. This is the ‘section 28G duty’.

2.3.3 In Natural England’s view no loss of functional area from a SSSI is consistent with the conservation and enhancement of its features of special interest. In this case, where the built footprint of the proposed development will cover perhaps 40% of the area of the SSSI, with further areas to be subject to unsuitable management, indirect impacts to the site from the construction and operational phases, and any site-enabling and remediation works – this view is strongly reinforced.

2.4 Planning policy toward Swanscombe Peninsula SSSI

2.4.1 Following notification of Swanscombe Peninsula SSSI subparagraph 175 (b) of the National Planning Policy Framework applies. The paragraph applies in full and is as follows:

175. When determining planning applications, local planning authorities should apply the following principles:

a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;

b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;

c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons⁵⁸ and a suitable compensation strategy exists; and

d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.

⁵⁸ *For example, infrastructure projects (including nationally significant infrastructure projects, orders under the Transport and Works Act and hybrid bills), where the public benefit would clearly outweigh the loss or deterioration of habitat.*

2.5 Swanscombe Peninsula SSSI and the Environmental Statement ('ES')

2.5.1 The Swanscombe Peninsula SSSI was notified after the ES submitted with the DCO application was produced, and the consequences of SSSI notification have not been addressed in the ES. This is recognised in paragraph 12.90 of Chapter 12 of the ES (Terrestrial and freshwater ecology and biodiversity, document 6.1.12), which states:

'LRCH Ltd have received correspondence from Natural England informing them of an area of land within the DCO boundary that is being considered for notification as a SSSI. Given the early stage of this process, this pre-notification is not considered any further as part of this assessment. The Applicant is working closely with Natural England as further details of the SSSI notification process emerge.'

2.5.2 Natural England appreciates that where a public authority has the function of deciding whether to grant permission for a project that requires an environmental impact assessment it is for that authority to decide whether the information contained in the document presented as an environmental statement is sufficient to meet the requirements of the EIA Regulations, and that an unduly legalistic approach ought not to be taken in this assessment.⁴

2.5.3 In Natural England's view, the decision-maker in this case cannot reasonably grant permission for this project without the ES first being updated to reflect the consequences of the SSSI notification. In view of its own statutory purpose and duties in making these Relevant Representations, it is Natural England's opinion that this omission is not trivial. An updated ES will need to consider the national importance of all of the features for which the site has been notified, and the extent to which they would be affected by this proposed development.

2.5.4 The Ecological Mitigation and Management Framework in Appendix 12.3 (document 6.2.12.3), for instance, provides a summary of the ecological baseline for the site. Whilst both the invertebrate assemblage and assemblage of rare plants on the site are considered to be nationally important, the breeding bird assemblage is considered to be of only regional importance. This does not reflect the national importance of breeding birds as a feature of the Swanscombe Peninsula SSSI.

2.5.5 Furthermore, the statutory citation for the SSSI lists 4 overall categories of special scientific interest:

- Geology at Baker's Hole;
- Populations of five plant species;
- Assemblages of invertebrates associated with four different habitats; and
- Two assemblages of breeding birds.

2.5.6 The text of the citation then goes on to describe botanical, invertebrate and ornithological interest features in more detail, specifically referring to a number of further species of plants and to species of invertebrate and bird, and to their locations within the site. Whilst it is

⁴ *R (Friends of the Earth Ltd and Ors) v Heathrow Airport Ltd* [2020] UKSC 52.

accepted that the ES as it stands does consider implications for the geological interest at Baker's Hole and does note the presence of various of the cited features of special scientific interest, it does not do so in a way that allows a clear understanding of the implications of the proposal on each cited feature of special scientific interest. A helpful way of allowing a suitably clear understanding would be to review each of the cited features against criteria that include the following:

- The national importance of the feature;
- Extent of loss due to development footprint;
- Extent of effect upon the areas outside of the built development footprint, both during the construction and the operation phases;
- Any proposed mitigation measures, including location, size, proposed management, and securing mechanisms; and
- Any proposed compensation measures, including location, size, proposed management, and securing mechanisms

2.5.7 Natural England's opinion is that without clarity being provided in these areas it will be unreasonable for the decision-maker to accept the ES as adequate.

2.5.8 In order for the ES to comply with paragraph 3 of Schedule 4 to the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017, Natural England considers it should be updated to include an outline of the likely evolution of the baseline environmental scenario without the implementation of the development, bearing in mind that the powers given by sections 28J, 28K and 28L of the 1981 Act now allow Natural England to ensure the correct management of the SSSI.

2.5.9 Following the notification of the site, Natural England is working with the Applicant to provide advice on the environmental impacts of the development, including those to the Swanscombe Peninsula SSSI. An initial assessment of the impacts of the proposed development on the SSSI's features is provided below.

Quaternary geology

2.5.10 Given that the Swanscombe Peninsula SSSI in the area of Baker's Hole is notified for its nationally important biological and geological assets, all measures to avoid impacts to the designated sites must be explored. Significant direct and indirect impacts to the geoarchaeological features of the SSSI will result from the proposed development's access road and the people mover route. We advise that it is not possible to compensate for any impacts to the geoarchaeological interest.

2.5.11 In order to minimise impacts to the geoarchaeological interest in this area of the SSSI, the People Mover Route would need to be as far west as possible. A non-invasive survey, e.g. via ground penetrating radar, should be used to accurately position the edge of the natural deposits and landfill. This should therefore ensure the route is aligned so it has the minimum impact possible on the geoarchaeological features in the SSSI. However, any proposed route alignment will also need to consider the impacts to the biological features of the SSSI.

2.5.12 In addition, further clarity is required on associated impacts, including, but not limited to, the following:

- Impacts from any additional infrastructure (e.g. geotechnical investigations, cabling, lighting, pipework, vegetation management and planting, for example);
- Details of the working area required and details of how areas of the SSSI outside of the working area will be protected;
- Details of any construction compounds, storage areas, etc., and how these will avoid impacts to the SSSI;
- Clarity on the potential impacts to the geoarchaeological interest of the SSSI from the proposed interchange facility between the people mover and Ebbsfleet International Station;
- Clarity on the performance of the Jablite (or similar construction material for the people mover) and its maintenance requirement to ensure that impacts to the geoarchaeological interest at Baker's Hole are avoided; and
- Clarity on the mechanism for the temporary removal of the people mover route to allow for future study of the interest within this part of the Swanscombe Peninsula SSSI. This will need to include information on how the removal, movement and reinstatement of the route will take place so as to avoid impacts to the SSSI, be authorised, be secured in perpetuity, will be funded and the timescales for gaining the permissions required, for example.

2.5.13 Should the Secretary of State grant consent, then Natural England will require full mitigation through conservation by recording of the areas of the SSSI at Baker's Hole to be directly and indirectly impacted by the transport infrastructure.

2.5.14 In addition, mitigation proposed to address the impacts on the geological features of the SSSI will also need to fully address the potential impacts on other interest features of the designated site in this area.

Vascular plants

2.5.15 The notified interest within the Swanscombe Peninsula SSSI includes five species of vascular plant with four species comprising sustainable populations of species which are Nationally Scarce (NS) and Vulnerable (VU) at either the Great Britain or Great Britain and England levels, namely:

- Slender hare's-ear (*Bupleurum tenuissimum*);
- Divided sedge (*Carex divisa*);
- Yellow vetchling (*Lathyrus aphaca*); and
- Bithynian vetch (*Vicia bithynica*)

2.5.16 Slender hare's ear and divided sedge are also listed as 'species of principal importance in England' under Section 41 of the Natural Environment and Rural Communities Act (2006). The fifth species is round-leaved wintergreen *Pyrola rotundifolia* subsp. *maritima* which is a Great Britain Scarce species. The Swanscombe Peninsula SSSI holds the only known sustainable population of this species in the Area of Search.

2.5.17 The potential impact to slender hare's-ear does not appear to have been assessed within the ES. Given this is a notified feature of the SSSI, further information on the potential impacts should be provided within an updated ecological assessment.

2.5.18 For the other four species, it appears that direct and indirect impacts are likely to result from the scheme. Should consent be granted, there needs to be a high degree of certainty that the mitigation/compensation will secure sustainable populations of all notified species.

Natural England therefore recommends that greater clarity on the mitigation measures for all vascular plants associated with the SSSI is provided; such measures are likely to be challenging.

- 2.5.19 No specific mitigation measures appear to have been provided within the ES for the population of divided sedge; further information is therefore required.
- 2.5.20 The mitigation strategy to sustain the population of yellow vetchling appears to be largely dependent on areas of restored/enhanced habitat, and therefore the precise disposition and details of management would be critical in ensuring the retention of a large and thriving population as that which currently exists.
- 2.5.21 Much of the population of Bithynian vetch would be subject to disruptive translocation during sea wall works. Natural England is not aware of any similar work being undertaken when this species has been present in quantity, so it represents a novel strategy with a significant risk of failure.
- 2.5.22 The population of round-leaved wintergreen is small and dependent on relatively settled ecological conditions. It has a highly restricted distribution, especially in the south-east, and is known to be ecologically exacting in its requirements. The proposal to translocate this population represents the highest risk element of the vascular plant mitigation strategy and would carry a very high risk of failure. The risk of failure is particularly associated with the selection of a receptor site with the biotic/hydrological and edaphic conditions necessary.

Summary

- 2.5.23 Natural England recommends that further clarity is provided on the nature of the impacts and the species-specific mitigation and compensation measures that are to be implemented to sustain viable populations of these species.

Invertebrates

- 2.5.24 Paragraph 3.212 of the Ecological Baseline Report (ES Appendix 12.1, document 6.2.12.1) confirms that the complex mosaic of habitats is of key importance to the invertebrates on the site:

'Rather than one particular habitat being of key importance, the value of the Project Site to invertebrates lies in its complex mosaic of habitats, in which a range of different successional stages are represented and in which other environmental conditions such as water/moisture levels and salinity vary significantly.'

- 2.5.25 The ES highlights that the Kent Project Site is of 'national importance' for its invertebrate assemblage (paragraph 2.18 of Annex EDP 9, The Invertebrate Mitigation Strategy, in Appendix 12.3).
- 2.5.26 Paragraph 3.2 of Annex EDP 9 details that in total, some 79.2 hectares of 'the most relevant habitat' for invertebrates will be directly lost, damaged or degraded as a result of the development. Paragraph 4.3 also details that 69.28 hectares of 'invertebrate-rich habitats' will be retained and protected during the construction phase, and enhanced during the operational phase of the development. This appears to represent a direct loss of more than 50% of the habitat resource for invertebrates within the Kent site, not accounting for indirect impacts. No such quantification of the habitat loss and retention for invertebrates associated with the waterbodies appears to have been included within the Mitigation Strategy.
- 2.5.27 It is unclear from the ES whether the full extent of the remediation works on the Kent Site are known at this stage, in the absence of the detailed ground investigation study. The Contaminated Land Management Strategy (Appendix 18.9, document 6.2.18.9) states that 'a substantial programme of ground investigation is planned for 2021.' This has the potential to

significantly increase the area of land impacted by the proposal over and above that which is required for the built environment.

2.5.28 A number of nationally rare or scarce species and species of principal importance under Section 41 of the Natural Environment and Rural Communities Act (2006) form part of the notified invertebrate assemblages for the SSSI. Given the exacting ecological requirements of many of these species, the ES should provide much greater clarity on the species-specific impacts and mitigation/compensation measures that are to be implemented to ensure there is no impact to the nationally important invertebrate populations.

2.5.29 The Invertebrate Mitigation Strategy in Annex EDP 9 recognises the uniqueness of the site which results in a significant risk to the success of any mitigation and compensation strategy. Paragraph 4.5 states:

*'The quantum of previously developed land on the Swanscombe peninsula will be unavoidably reduced to make way for the Proposed Development, which in turn will reduce the total extent of open mosaic habitat (OMH) available to invertebrates. The underlying substrate of this habitat has formed as a result of a unique history of modification of the original saltmarsh and **cannot be simply recreated elsewhere.**' [our emphasis].*

2.5.30 Natural England does not consider that it will be possible to mitigate or compensate for the scale of the impacts to the invertebrate populations within the remainder of the site. Compensation within an SSSI for impacts to the site is not normally possible because site boundaries are typically tightly drawn to exclude areas that do not already contain features of interest. As such, a significant offsite compensation package will be required if the Secretary of State is minded to grant consent. Paragraph 4.10 of the Invertebrate Mitigation Strategy provides limited information in relation to an offsite compensation area stating that:

'Land acquisition is still underway for the purposes of off-site habitat creation. This is intended to fulfil a range of ecological objectives and functions but includes the creation of a range of habitats (including OMH [open mosaic habitat]) for invertebrates to mitigate the loss of habitat from the Project Site.'

2.5.31 Whilst a series of principles for the offsite compensation land are provided, no details of the scale, location, specific habitats and how it will replicate the complex mosaic of habitats and substrates on the application site are provided. As highlighted above, the proposer acknowledges that the uniqueness of the site for invertebrates 'cannot be simply recreated elsewhere'. Natural England agrees with this, and advises that, at best, there is a very significant degree of uncertainty around the likely success of any mitigation and compensation strategy as regards invertebrates protected by SSSI notification.

Summary

2.5.32 Given the importance of the invertebrate assemblages within the SSSI which will be directly and indirectly impacted by the development proposal, and the scale of habitat loss and degradation, Natural England recommends that significant additional detail is required around the impacts to the invertebrate populations associated with the SSSI. Similarly, greater detail on the mitigation and compensation package for the nationally important invertebrate populations is required for Natural England to be able to advise the Examining Authority.

2.5.33 Natural England will continue to work with the London Resort project team in the coming weeks to try and reach agreement but acknowledge that these are challenging matters given that a high degree of certainty is required.

Breeding birds

2.5.34 Annex EDP 1 of the Ecological Mitigation and Management Framework (ES Appendix 12.3)

discusses the breeding and wintering bird mitigation strategy. As an overarching comment, we note that paragraph 1.11 states that the intention is to 'reduce development impacts' through compensation, mitigation and enhancement measures. Natural England's view is that the proposed development needs to fully address the impacts on species and habitats. Whilst we note the Applicant's commitment to securing biodiversity net gain, it is important that the measures proposed to address environmental impacts ensure there is no net loss of biodiversity as a result of the proposal.

- 2.5.35 Chapter 2 of the Annex provides an overview of the survey findings, and Table 2-1 details important habitat features by species grouping, including a list of key/notable species. However, this table does not include some species components of the Swanscombe Peninsula SSSI breeding bird assemblages, as follows:
- i. From the scrub assemblage – long-tailed tit, bullfinch, garden warbler, lesser whitethroat
 - ii. From the wetland mixed habitats assemblage – tufted duck, little egret, sedge warbler, reed warbler and lapwing
- 2.5.36 These additional bird species (as components of the breeding bird assemblage at the time of notification) should be considered as part of the refreshed assessment of the ES following the notification of the SSSI.
- 2.5.37 Paragraph 3.2 in Annex EDP 1 provides the following assessment of the construction phase impacts in relation to birds arising from direct habitat loss, damage or degradation. In addition, the following negative impacts are set out – habitat fragmentation, loss of flight paths, disturbance (visual and noise), light pollution, and hydrological changes; there does not appear to be any further analysis of these impacts on the habitats and species at the application sites and any proposed mitigatory/compensatory requirements as a result.
- 2.5.38 The effects of the operational phase on birds are also described in paragraph 3.3 of this Annex, but the impacts of these on the bird species are not quantified.
- 2.5.39 Natural England considers that although the wider impacts are described, they are not adequately addressed. Our view is that the measurement of actual habitat loss is not on its own an adequate means of assessing impact. There can also be effective habitat loss if the retained areas do not perform the same ecological function as the current, intact SSSI area. These impacts are also likely to be exacerbated by habitat fragmentation and disturbance if the development proceeds. These wider impacts have not been quantified within the ES.
- 2.5.40 The section beginning with paragraph 4.34 also sets out the principles of management activities to maintain or enhance the retained and new habitats within the Kent Project Site. However, an assessment of whether the breeding bird assemblages for which the SSSI has been notified will still be utilising these areas is needed, given the impacts that will arise from habitat fragmentation and disturbance.
- 2.5.41 Paragraph 4.5 of the Annex recognises that the impacts of the development will be to 'reduce the total extent of habitat available to birds, particularly areas of scrub/grassland mosaic, as well as areas of grazing marsh and reedbed'. However, the benefits of the proposed management of scrub to 'partially compensate' for these effects are not provided, and need to be considered in the context of the overall impacts of reduced habitat on the bird species.
- 2.5.42 Paragraph 4.6 also proposes further additional mitigation through the creation of 8.0 km of new ditches, together with 5.69 ha of new reedbed habitat, and the creation of c.3.03 ha of saltmarsh habitat through managed retreat. However, as stated, below, the creation of habitat within the SSSI may itself have an impact on a feature or features for which the SSSI has been notified. As stated in paragraph 2.6.6 below, Natural England believes it is wrong

to try to compensate for the loss of one part of an SSSI by harming another part of it.

- 2.5.43 The proposed measures would therefore need to be informed by an assessment of their potential impacts on the SSSI, to consider the extent to which they may be suitable in addressing the impacts on the designated site.
- 2.5.44 Paragraph 4.23 states that 'As a general principle, habitat enhancement and creation works will take place in advance of construction works (and associated habitat losses)'. Natural England supports the general principle of ensuring agreed mitigation measures are undertaken before the impacts of development. However, given the timescales necessary to establish and monitor effective habitat for the SSSI bird species, it is uncertain whether it is technically feasible to achieve this outcome.

Off-site habitat creation

- 2.5.45 The summary of off-site compensation in Annex EDP 1 (paragraphs. 4.7 - 4.11), together with paragraph 3.2 of ES Appendix 12.10 (General Principles of Offsite Ecological Mitigation - document 6.2.12.10) suggests that off-site compensation land for birds is only being considered with regards to biodiversity net gain and the impacts on land functionally linked to the Thames Estuary and Marshes SPA/Ramsar and Medway Estuary and Marshes SPA/Ramsar sites.
- 2.5.46 Given Natural England's concerns regarding the effectiveness of the proposed on-site mitigation and compensation measures, we consider it is highly likely, should the development be approved, that off-site compensation measures for the impacts on the SSSI's bird features would be required. Natural England considers it will be challenging to create areas that adequately compensate for the habitats lost to provide the same ecological function for breeding birds.
- 2.5.47 This is a matter Natural England will discuss in further detail with the Applicant. However, we note that the details of the off-site compensation land are yet to be decided (paragraph 4.53 of Annex EDP 1) and that (paragraph 4.9) 'No agreement has so far been reached to secure off-site land.'

Summary

- 2.5.48 One of the conclusions in Annex EDP 1 (paragraph 6.4) is that the 'The overall aim in respect of the bird population is to maintain and enhance the existing scrub and wetland habitat mosaic, and associated diverse range of refuge and feeding opportunities, to meet the needs of the diverse range of birds present on or adjacent to the Kent Project Site.' Given the significant direct habitat loss and other impacts on the SSSI habitats, and the uncertainty regarding the proposed measures, it is difficult to see how this conclusion can be supported.
- 2.5.49 Paragraph 6.10 also concludes that 'Subject to the development of this mitigation strategy in further detail' there will be no significant impacts on breeding and wintering birds. Similarly, we do not believe this conclusion can be reached without significant further work undertaken on both the assessment of impacts and the robust package of measures that will be needed to address the impacts of the proposed development, should it be given consent.

2.6 On-site and off-site mitigation and compensation proposals

- 2.6.1 Natural England advises that the concepts of mitigating and/or compensating for loss of or damage to features of special scientific interest within an SSSI are hard to reconcile with the section 28G duty and the policy that development that is likely to have an adverse effect on an SSSI should not normally be permitted. Whilst it will be necessary for the ES to consider the scale of the impacts of the proposed development on the Swanscombe Peninsula SSSI, Natural England estimates that the built environment footprint of the development alone

would result in the direct loss of approximately 40% of the SSSI; the scale of this loss means that this concern is substantially heightened. It is also likely that there would be significant indirect impacts to the site from the construction and operational phases (including from disturbance, noise and light pollution and habitat fragmentation) and any site-enabling and remediation works.

- 2.6.2 Mitigation and compensation measures raise difficult issues when being used as a counterweight against actual harm to existing features of special scientific interest in a SSSI. Before they can be accepted as adequate, we consider there has to be an understanding that these measures are going to work, are on a suitable scale, and take into account both the risk of failure, the length of time it will take before the measures are effective, and the distance between impacts and mitigation or compensation. Moreover, there need to be enforceable measures in place to ensure that beneficial effect continues long into the future.
- 2.6.3 In Natural England's view, the greater the extent of harm that a proposed development will cause to a SSSI, the higher the degree of rigour with which any proposals for compensation and mitigation must be assessed.
- 2.6.4 One focus of the Applicant's on-site mitigation proposals is the creation of new habitat, and habitat management, within the site. The Applicant's Landscape and Ecology Management Plan (ES Appendix 11.8, document 6.2.11.8) provides details of a number of proposals including the creation of new water bodies, wetlands and woodland, scrub removal, and the creation of an extensive network of new ditches.
- 2.6.5 The plan also states (paragraph 5.5) that both the primary road leading to the Resort and the People Mover Road, which fall largely within the Swanscombe Peninsula SSSI, 'will be landscaped with swathes of trees, earth sculpture and land art'.
- 2.6.6 However, these measures have the potential to damage or destroy existing features of special scientific interest at Swanscombe Peninsula SSSI. This is because the creation of new habitat or habitat management within the SSSI to mitigate the impact on a habitat or species may itself impact on a feature for which the SSSI is notified. Put simply, Natural England believes it is wrong to try to compensate for the loss of one part of an SSSI by harming another part of it.
- 2.6.7 ES Appendix 12.10 – General Principles of Offsite Ecological Mitigation (document 6.2.12.10) also confirms that off-site ecological mitigation will be required, as well as the provision of off-site compensation land. Paragraph 6.65 of the Ecological Mitigation and Management Framework (document 6.2.12.3) states that the Biodiversity Net gain assessment indicated that 'on-site mitigation alone will not be sufficient to meet national and local policy requirements.'
- 2.6.8 Appendix 12.10 of the ES, General Principles of Offsite Ecological Mitigation (document 6.2.12.10), whilst providing a set of general guiding principles for this land, states (paragraph 1.5) that 'At the time of making the DCO application, off-site mitigation has not yet been secured.' Paragraph 4.4 also notes that the further details of the off-site mitigation will need to be agreed in writing with relevant statutory consultees, including Natural England. Natural England will work with the Applicant to consider issues of mitigation and compensation, but it should be noted that it does this without prejudice to its opinions that (a) these concepts are not appropriate to this case, and (b) that if mitigation and compensation measures are to form part of a permitted development they must be ascertained and secure before permission is granted.
- 2.6.9 Whilst Natural England does not support the proposed project because of its significant environmental impacts, we recognise that if it is approved, compensation measures are likely to be necessary.
- 2.6.10 However, Natural England's view is that compensation cannot adequately address the harm

that would result to the SSSI from the development proposal to both the biological and geological interest. Many of the species found at Swanscombe Peninsula SSSI are tied to the unique and special habitats found at the site. The value of the site for wildlife is also derived from its relatively large size and proximity of its 'brownfield' habitats to areas with more semi-natural origins, including saltmarsh, intertidal mudflats and grazing marsh. Whilst some of the component habitats can be created, the feasibility of doing this at the scale, location and with a similarly rich mosaic is considered low and very unlikely to offer an equivalent assemblage and richness of species.

2.6.11 Natural England's view is that the provision of mitigation and compensation measures for the proposed development are important matters to be considered in the Examination.

2.7 Environmental assessment of alternatives

2.7.1 The ES Chapter 4 Project development and alternatives document (document 6.1.4) states, in paragraph 4.22, that one of the reasons the London Resort site was chosen was because it 'does not contain any international or national wildlife or heritage designations'. Appendix 4.1 (document 6.2.4.1) clarifies that this is a reference to the Swanscombe Peninsula area, with this appendix recognising the presence of Baker's Hole SSSI in the Ebbsfleet Valley (an area within the DCO boundary), and part of the Ebbsfleet Marshes Local Wildlife Site.

2.7.2 However, this assessment, which Appendix 4.1 states was undertaken by LRCH in 2011-12 and reviewed in 2017, does not take into account the Swanscombe Marine Conservation Zone (MCZ), which was designated in May 2019, and lies both within and adjacent to the proposed development boundary.

2.7.3 Appendix 4.1 also states (page 22) that Natural England wrote to LRCH on 30 November 2020 to advise of 'its intention to consider most undeveloped areas of the Swanscombe Peninsula for potential notification as a Site of Special Scientific Interest (SSSI), in view of the presence of habitats attractive to invertebrates, scarce plants and breeding birds.' However, no further comparison appears to have been undertaken to compare this information with the alternative locations. Given the site has now been notified as an SSSI, we consider the assessment of alternatives should be revised to take full account of this site.

2.7.4 Neither ES Chapter 4 nor Appendix 4.1 makes reference to Darenth Woods SSSI, which also partly falls within the DCO boundary.

2.7.5 Appendix 1.4 (document 6.2.1.4), detailing the Secretary of State's EIA Scoping Opinion states that 'The Inspectorate would expect to see a discrete section in the ES that provides details of the reasonable alternatives studied and the reasoning for the selection of the chosen option(s), including a comparison of the environmental effects.'

2.7.6 In Natural England's written response in September 2020 to the Preliminary Environmental Information Report and draft Development Consent Order, we also stated that 'Given the conservation significance of the application site, and the Kent Site in particular, a robust assessment of alternative options, which avoid or have a lesser environmental impact should be included within the environmental statement.'

2.7.7 In Natural England's view, neither Chapter 4 of the ES nor Appendix 4.1 provide a sufficient comparison of the environmental effects. As well as failing to include an assessment of the Swanscombe MCZ, and the need to take account of the Swanscombe Peninsula SSSI, the assessment does not consider the impacts on national and international designated wildlife sites beyond the immediate boundary of the Swanscombe site.

2.7.8 For comparison, the environmental constraints assessment for Option 7 (Southend-on-Sea and Canvey Island) in Appendix 4.1 states that the 'Coastal and estuarine environments are subject to a range of nature conservation constraints including SSSI, SPA, SAC and Ramsar designations.' No such assessment is made for the Swanscombe site, despite the presence

of the Swanscombe MCZ site, and the ES recognising the impacts of the proposed development on European Sites (see Section 4, below).

- 2.7.9 Natural England also notes that the assessment for Option 6 (Great Leighs racecourse, Essex) states that 'The site itself is free of strategic environmental constraints and well separated from statutorily protected habitats.'
- 2.7.10 In Natural England's view, the comparison of the environmental effects is insufficient and should be revised to take full account of all designated environmental sites affected by the proposed development, and how this assessment compares to alternative locations.

3 Swanscombe Marine Conservation Zone

- 3.1.1 This site became a Marine Conservation Zone (MCZ) in May 2019. This means that specific features within this area are protected and, where necessary, regulators will manage marine activities.
- 3.1.2 The Thames Estuary as a whole is an extremely important tidal river. The seabed of Swanscombe MCZ is composed largely of shells, pebbles, sands and mud. The site supports tentacled lagoon worms, which are found in the intertidal and subtidal soft sediments. This small worm is scarce throughout the UK and lives within a tube made of mud in sheltered lagoons and estuaries. They are very vulnerable to changes to the habitats in which they live. Intertidal mud supports the tentacled lagoon worm feature, and is a highly productive ecosystem that provides important feeding grounds for wading and migratory birds.

Summary of Natural England's comments

- 3.1.3 Natural England have considerable concerns regarding the direct and indirect impacts on the MCZ feature tentacled Lagoon worm. We note that benthic surveys (2015, 2017 and 2020) conducted in the area report very large densities of tentacled lagoon worm in the vicinity of the proposed passenger pontoon, White's Jetty and Bell's Wharf, indicating that this area of the MCZ is of particular importance to the tentacled Lagoon worm designated feature. These are all areas encompassed in the proposal under Options A, B and C of the development.
- 3.1.4 Tentacled Lagoon worm are not homogeneously distributed across the MCZ but are found on the southern shore of the site in patchy concentrations, highlighting the importance of the local conditions in this area which support such high numbers. As a viviparous species that lacks a planktonic larval stage, their ability to recolonise areas when disturbed or displaced is limited. As a result, continuous vessel activity resulting in smothering, and changes in water flow, coupled with habitat loss, means their ability to survive as a population in this area is likely to be impeded.
- 3.1.5 Natural England is unable to agree with the conclusions of the current MCZ Assessment, as we require further information and evidence to justify the conclusions made. Our key concerns are listed below, however further comments will also be made at the written representation stage:
- Natural England is concerned that there is the potential for direct impacts on tentacled lagoon worm through vessel docking procedures and prop wash, and that further evidence is needed to support the conclusion that the conservation objectives of the site will not be hindered.
 - Further information is needed regarding the physical loss of intertidal and subtidal habitats, including calculations of loss due to activities that have not yet been considered.
 - Further information is needed to support the assessment conclusion that disturbance and displacement effects, as outlined in the ES, would be small in relation to the availability of habitat within the project site, and that the number of tentacled lagoon worm individuals affected would be negligible in relation to the wider population within the Thames.
 - Clarification is needed on the inconsistency between the number of vessel movements per day stated in the MCZ Assessment and in the ES.

- 3.1.6 ES Appendix 13.8 (document 6.2.13.8) details the Marine Conservation Zone Assessment. In the MCZ Stage 1 assessment table it is stated, under tentacled lagoon worm, that indirect scour could occur due to vessel docking and prop wash, but that disturbance is anticipated to be highly localised and the area affected in relation to available habitat in the area is considered to be very small.
- 3.1.7 Natural England's advice is that tentacled lagoon worm are known to be sensitive to propeller wash and changes in habitat structure. We will therefore require more detailed evidence that disturbance as a result of vessel procedures and propeller wash will not hinder the conservation objectives for this feature of the MCZ.
- 3.1.8 This evidence will need to include, for example, the depth of water during different states of the tide at the jetties, and the load draught of the proposed vessels for construction and operation phases. If there is not sufficient depth of water between boat propellers and the seabed, it is likely that regular wash from vessel propellers and docking procedures will mean the seabed is regularly disturbed, and therefore not supportive of tentacled lagoon worm during the operation of the jetties.
- 3.1.9 Regarding ES Chapter 13 (Marine ecology and biodiversity, document 6.1.13), paragraph 13.94, Natural England is unable to agree that disturbance and displacement effects would be small in relation to the availability of similar habitat within the project site, particularly under Option C, and that the number of individuals affected would be negligible in relation to wider populations within the Thames for tentacled lagoon worm.
- 3.1.10 Tentacled lagoon worm has specific habitat requirements (salinity, sediment composition, levels of exposure) with a preference for sheltered, low energy environments, and is sensitive to disturbance. Densities of tentacled lagoon worm within the MCZ are highly localised. From records to date, key areas of tentacled lagoon worm reside within the Swanscombe MCZ, predominantly on the south side of the river. Furthermore, due to the use of backhoe dredging for Option C, individuals from within the dredge pocket are likely to be removed from the MCZ with dredge sediment, rather than displaced.
- 3.1.11 In both the MCZ assessment (ES Appendix 13.8, p.22) and in paragraph 6.22 of the Water Framework Directive Report (ES Appendix 13.7, document 6.2.13.7), it is stated there will be 27 passenger vessel movements per day between upstream locations and London Resort (extension of existing route) and 42 passenger vessel movements per day between London Resort and Tilbury (new passenger ferry services).
- 3.1.12 However, the ES Chapter 13 states (paragraph 13.219) that the new passenger ferry between the Essex Project Site and the Kent Project Site is expected to operate with 84 movements per day, and a new passenger service between central London and the Proposed Development will comprise 54 movements per day. Clarification of the number of passenger vessel movements will be required to fully support the assessment of impacts outlined above.
- 3.1.13 In response to the draft MCZ Assessment, Natural England has previously agreed, based on the information provided, that the physical loss of intertidal mud was relatively small. However, we advised that further information was required, for example loss of mud as a result of temporary cofferdams, and scour associated with outfalls. Whilst we note that temporary cofferdams have now been included in the assessment, there are still other activities that we advise will need further consideration. In addition, we advise that the removal of temporary cofferdams should be secured through the DCO. We consider this is necessary to accurately inform the assessment of intertidal mud habitat loss.

Additional information required to support MCZ assessment

- Further detail on the construction methods for refurbishment of Bell Wharf and White's Jetty. For example, will refurbishment be like for like replacement?
- Natural England would like to be provided with evidence from site investigations to support the assumption that maintenance dredging for Options A and B will not be required at the passenger jetty and ferry terminal.
- Under the mitigation hierarchy the first step is to avoid. However, from the current information provided there do not appear to be any alternative locations, outside of the MCZ boundary, considered for the proposed marine infrastructure. Natural England would wish to see more information on what steps have been taken to avoid impacts to MCZ features.
- It is stated in the MCZ Assessment (ES Appendix 13.8, page 33) that for Option C:

'should dredging take place there will be a potential for recolonisation of the dredge pocket by tentacled lagoon worm from nearby areas if suitable substrate settles in the dredge pocket. Consequently, in general it is considered that any effects of dredging on population numbers would likely be temporary. It is acknowledged, however, that increases in depth or change in substrate type could result in sediment within the dredge pocket being unsuitable for tentacled lagoon worm colonisation and if there was maintenance dredging this would result in further disturbance of individuals'.

Natural England agrees that there is no guarantee that sediment within the dredge pocket will be suitable for tentacled lagoon worm after dredging has taken place, and even after sediment has re-filled the dredge pocket. We also advise that if backhoe dredging is to be the chosen dredge method, then any records of tentacled lagoon worm within the dredge pocket are likely to be removed with dredge sediment. Therefore, we cannot agree that the effects of dredging on population numbers would be likely to be temporary.

- Natural England notes the proposed mitigation (ES Chapter 13. paragraphs. 13.267 – 13.274 of the ES). We advise that an assessment will be needed of the impacts of these measures on MCZ features, and how they would contribute to the conservation objectives of the site. In addition, the measures will also need to be assessed where there is the potential for impacts on the Swanscombe Peninsula SSSI, particularly with regard to the creation of saltmarsh habitat (paragraph 13.267).
- Should the proposal be given consent, any habitat compensation measures in response to impacts on the MCZ would need to contribute to the conservation objectives of the site. For example, aspects of the proposal are likely to cause the loss and damage of some shallow subtidal and lower littoral sediment. This habitat is likely to be the supporting habitat for tentacled lagoon worm. The creation of saltmarsh or upper littoral sediment is unlikely to support tentacled lagoon worm and compensate for loss of its supporting habitat.

As part of our constructive engagement with LRCH, Natural England will continue to engage with LRCH to discuss potential mitigation and compensation measures for the loss of intertidal and subtidal mud associated with the development.

Additional comments

- 3.1.14 For the MCZ Assessment in-combination assessment, Purfleet Centre Regeneration is stated as being 29km west of the Proposed Development. However, Purfleet City Centre, the location of the proposed regeneration works of this project, is approximately 3km west of the Proposed London Resort Development. The effects of overlapping activities such as pilling need to be re-assessed based upon this distance.
- 3.1.15 Tentacled lagoon worm is protected under Section 9(4a) of Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), meaning it is an offence to damage or destroy any structure or place which they use for shelter or protection (i.e. the subtidal mud habitat). Natural England is aware that there are records of tentacled lagoon worm in the vicinity of the proposed works and that this species could potentially be impacted by these works. The onus is on the applicant to ensure they are compliant with the relevant legislation.

4 Shadow Habitats Regulations Assessment

- 4.1 Regulation 63 of the Conservation of Habitats and Species Regulations 2017 (as amended) provides that a competent authority, before deciding to give any consent, permission or other authorisation for a plan or project which is likely to have a significant effect on a European site (either alone or in combination with other plans or projects), and which 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.
- 4.2 The assessment required by Regulation 63 is known as a 'Habitats Regulations Assessment' (HRA) and is made up of two stages. The first stage is a consideration of whether a plan or project is likely to have a significant effect on a European site, either alone or in combination with other plans or projects. If this question is answered in the affirmative, the second stage is engaged, involving the carrying out of an appropriate assessment to determine whether it can be ascertained that the plan or project will not adversely affect the integrity of the European site, in view of that site's conservation objectives. At the first of these two stages, any proposed mitigation measures are not to be taken into account. At the second of these stages mitigation measures may be taken into account, provided that there is certainty that they will be applied and that they will work. Compensatory measures may not be taken into account at either stage of an HRA and only become relevant if it cannot be ascertained that a site will not suffer an adverse effect on its integrity and it is also determined that the plan or project must be granted consent for imperative reasons of overriding public interest (IROPI). Natural England reserves the right to expand upon the legal background to the protection of European sites, if necessary.
- 4.3 Natural England considers that much greater clarity is required within the Shadow Habitats Regulations Assessment (HRA); at present Natural England cannot concur with the conclusion of no adverse effect on integrity. Further information is required on the potential impact pathways and the avoidance measures for impacts to Special Protection Areas, Ramsar Sites and Special Areas of Conservation to ensure that the project will not result in an adverse effect on the integrity of sites in Kent and Essex. At present, there is insufficient detail to justify the conclusions for a number of pathways. The Shadow HRA needs to be based upon robust survey information.
- 4.4 The ES highlights that the Kent Site is utilised by a significant numbers of birds associated with the Thames Estuary and Marshes and/or the Medway Estuary and Marshes Special Protection Areas (SPAs) and Wetlands of International Importance under the Ramsar Convention (Ramsar Sites). Natural England concurs with the assessment that Kent site is considered to provide functionally linked land to either or both of these sites.
- 4.5 In addition to the direct habitat loss for birds associated with the SPAs and Ramsar Sites, additional negative impacts are considered within the ES, namely habitat fragmentation, loss of flight paths, disturbance (visual and noise), light pollution and hydrological changes.
- 4.6 Whilst these the wider impacts are described we do not consider they have been adequately addressed within the ES. The measurement of the actual habitat loss from the footprint of the proposal is clearly not the only loss. There is effective habitat loss as a result of several factors, (i.e. some areas of habitat are retained but the birds are unlikely to use them in the same way – so they do not perform the same ecological function). An attempt to quantify this or consider a wider zone of influence of the proposal is not included within the ES or the Shadow HRA.
- 4.7 Habitat fragmentation and the impact of disturbance will effectively increase the areas of habitat loss as birds will no longer access these habitats. The roost and refuge sites are of vital importance for the SPA and Ramsar Site features and the consideration of the viability of these sites in the face of the disturbance and other impacts from the proposal needs to be

fully addressed.

- 4.8 Natural England therefore considers that further detailed evidence is required to provide clarity and certainty on the conclusions reached within the Shadow HRA for all potential environmental impact pathways to the sites themselves and functionally linked land.
- 4.9 The Habitats Regulations Assessment that the Examining Authority and the Secretary of State will need to undertake for the London Resort needs to ensure that there is no reasonable scientific doubt as to the effects of the proposed project. In addition to the certainty and evidence to support the assessment of impacts within the Shadow HRA, much greater clarity on the proposed off-site mitigation area for impacts to the functionally linked land is required for Natural England to provide advice to the Examining Authority. High level principles have been provided but these do not provide the degree of certainty required.
- 4.10 Notwithstanding the above, given the notification of the Swanscombe Peninsula SSSI, the proposed habitat enhancement measures to mitigate or compensate for impacts to birds associated with the designated sites will need to be revisited.
- 4.11 The Shadow HRA concludes that traffic-generated air quality impacts to the North Downs Woodland Special Area of Conservation (SAC) will not result, due to the site not falling within 200 metres of the affected road network. It is unclear whether the transport model has considered the potential for air quality impacts along the A249 Detling Hill and the A229 Bluebell Hill which fall within 200 metres of the North Downs Woodland SAC. Figure 9.1 – Traffic Model Extent, suggests that the eastern extent of the traffic model was the A2/M2 interface rather than extending to the M2 junctions with the A229 and A249. Traffic-generated air quality impacts should be considered alone and in combination with other plans or projects along the affected road network.
- 4.12 For all air quality impacts considered within the Shadow HRA, it is unclear whether the assessment within the air quality chapter of the ES or the Shadow HRA considers potential impacts alone and in combination with other plans or projects; from the list of projects considered, local plans and other relevant strategic plans do not appear to have been considered as part of the cumulative assessment within the ES nor the in-combination assessment within the Shadow HRA. Greater clarity is required within the Shadow HRA.
- 4.13 We will continue to work with the Proposer to try and resolve these wherever possible to assist the Examining Authority but recognise that there are some areas which may be challenging to resolve.

5 Other terrestrial statutory designated sites

5.1 There are also a number of designated sites of national or international importance for wildlife or geology in the Thames Estuary area that are identified within the ES as having the potential to be affected by, the proposed development, namely:

- Darenth Woods SSSI;
- Cobham Woods SSSI;
- Great Crabbles Wood SSSI;
- Inner Thames Marshes SSSI;
- Lion Pit SSSI;
- Medway Estuary and Marshes SSSI;
- Mucking Flats and Marshes SSSI;
- Purfleet Chalk Pits SSSI;
- Shorne and Ashenbank Woods SSSI;
- South Thames Estuary and Marshes SSSI;
- West Thurrock Lagoon and Marshes SSSI; and
- Wouldham to Detling Escarpment SSSI.

5.2 Darenth Woods SSSI

5.2.1 Whilst the ES details that direct land take from within Darenth Woods SSSI is no longer expected to result from the proposal, the development boundary still includes part of the SSSI. Additionally, the draft Development Consent Order allows for works to any trees within the Order Limits to be undertaken. If no works are to be undertaken within or adjacent to the SSSI then it would seem appropriate for the order boundary to be modified to reflect this. If the SSSI remains within the order limits, then a greater degree of certainty on the potential impacts and the avoidance and mitigation measures should be provided.

5.2.2 The ES indicates that traffic generated air quality impacts will result to 6.52% (by area of the SSSI) but this is considered insignificant and no mitigation is proposed. Natural England recommends that further details on how air quality impacts to the SSSI are to be mitigated should be provided.

5.3 Cobham Woods SSSI

5.3.1 Table 12.6 (Consideration of SSSI for inclusion in the EclA.) of the ES includes Cobham Woods SSSI within the scope of the ecological impact assessment given 'effect-receptor pathways identified'. However, no further consideration of the SSSI within the ES appears to have been undertaken. Clarity on the potential impacts and any mitigation measures required should therefore be provided.

5.4 Great Crabbles Wood SSSI

5.4.1 Table 12.6 (Consideration of SSSI for inclusion in the EclA.) of the ES includes Great Crabbles Wood SSSI within the scope of the ecological impact assessment given 'effect-receptor pathways identified'. However, no further consideration of the SSSI within the ES appears to have been undertaken. Clarity on the potential impacts and any mitigation measures required should therefore be provided.

5.5 Inner Thames Marshes SSSI

5.5.1 The ES identifies that a number of impacts to the Inner Thames Marshes SSSI are likely to result from the proposal during both the construction and operational phases of the project. These include damage to habitats (from pollutants) and disturbance to birds associated with the designated site from river traffic, recreational disturbance, noise and lighting, for example. Despite a number of the impacts persisting throughout the lifetime of the project

(such as lighting, disturbance from river traffic for example), they are assessed as being temporary and reversible (Table 12.11: Operational Effects on Important Ecological Features without Mitigation).

- 5.5.2 A number of avoidance and mitigation measures are proposed within Table 12.14: Avoidance and Mitigation of Potential Significant Construction Effects. Natural England recommends that much greater clarity is provided on the nature, scale and longevity of the potential impacts along with the effectiveness and deliverability of the suite of mitigation measures proposed. For example, for disturbance to birds from the passenger ferry, one of the mitigation measures proposed is ‘monitoring of bird use on the intertidal habitats and other functionally linked land – if the numbers of birds within the monitored area fall below a certain threshold in response to obvious operational shipping then those disturbance activities will be temporarily ceased’; it is unclear whether such a restriction would be implementable or effective.
- 5.6 Lion Pit SSSI
- 5.6.1 Table 12.6 (Consideration of SSSI for inclusion in the EclA.) of the ES in relation to Lion Pit SSSI states ‘SSSI designated for its geological rather than ecological importance and will be addressed if appropriate within Chapter 14: Cultural Heritage and Archaeology (Document: 6.1.14)’. No reference to Lion Pit SSSI within Chapter 14 of the ES appears to be included; clarity is therefore required on whether there is any potential for impacts to the SSSI.
- 5.7 Medway Estuary and Marshes SSSI
- 5.7.1 As with the Inner Thames Marshes SSSI, The ES identifies that a number of impacts to the Medway Estuary and Marshes SSSI are likely to result from the proposal during both the construction and operational phases of the project. These include damage to habitats (from pollutants) and disturbance to birds associated with the designated site from river traffic, disturbance, noise and lighting, for example. Despite a number of the impacts persisting throughout the lifetime of the project (such as lighting, disturbance from river traffic for example), they are assessed as being temporary and reversible (Table 12.11: Operational Effects on Important Ecological Features without Mitigation).
- 5.7.2 A number of mitigation measures are proposed within Table 12.14. Natural England, however, recommends that much greater clarity is provided on the nature, scale and longevity of the potential impacts along with the effectiveness and deliverability of the suite of mitigation measures proposed.
- 5.7.3 The Medway Estuary and Marshes SSSI is the underpinning designation for the Medway Estuary and Marshes Special Protection Area and Ramsar Site; our comments in relation to these sites are provided in the Shadow Habitats Regulations Assessment section below.
- 5.8 Mucking Flats and Marshes SSSI
- 5.8.1 As with the Inner Thames Marshes SSSI, The ES identifies that a number of impacts to the Mucking Flats and Marshes SSSI are likely to result from the proposal during both the construction and operational phases of the project. These include damage to habitats (from pollutants) and disturbance to birds associated with the designated site from river traffic, disturbance, noise and lighting, for example. Despite a number of the impacts persisting throughout the lifetime of the project (such as lighting, disturbance from river traffic for example), they are assessed as being temporary and reversible (Table 12.11: Operational Effects on Important Ecological Features without Mitigation).
- 5.8.2 A number of mitigation measures are proposed. Natural England, however, recommends that greater clarity is provided on the nature, scale and longevity of the potential impacts

along with the deliverability and certainty of the mitigation measures.

- 5.8.3 The Medway Estuary and Marshes SSSI is the underpinning designation for the Thames Estuary and Marshes Special Protection Area and Ramsar Site; our comments in relation to these sites are provided in the Shadow Habitats Regulations Assessment section below.
- 5.9 Purfleet Chalk Pits SSSI
- 5.9.1 Table 12.6 (Consideration of SSSI for inclusion in the EclA.) of the ES in relation to Purfleet Chalk Pits SSSI states 'SSSI designated for its geological rather than ecological importance and will be addressed if appropriate within Chapter 14: Cultural Heritage and Archaeology (document: 6.1.14)'. No reference to Lion Pit SSSI within Chapter 14 of the ES appears to be included; clarity is therefore required on whether there is any potential for impacts to the SSSI.
- 5.10 Shorne and Ashenbank Woods SSSI
- 5.10.1 Table 12.6 (Consideration of SSSI for inclusion in the EclA.) of the ES includes Shorne and Ashenbank Woods SSSI within the scope of the ecological impact assessment given 'effect-receptor pathways identified'. However, no further consideration of the SSSI within the ES appears to have been undertaken. Clarity on the potential impacts and any mitigation measures required should therefore be provided.
- 5.11 South Thames Estuary and Marshes SSSI
- 5.11.1 As with the Medway Estuary and Marshes SSSI, The ES identifies that a number of impacts to the South Thames Estuary and Marshes SSSI are likely to result from the proposal during both the construction and operational phases of the project. These include damage to habitats (from pollutants) and disturbance to birds associated with the designated site from river traffic, disturbance, noise and lighting, for example. Despite a number of the impacts persisting throughout the lifetime of the project (such as lighting, disturbance from river traffic for example), they are assessed as being temporary and reversible (Table 12.11: Operational Effects on Important Ecological Features without Mitigation).
- 5.11.2 A number of mitigation measures are proposed within Table 12.14 but Natural England recommends that much greater clarity is provided on the nature, scale and longevity of the potential impacts along with the effectiveness and deliverability of the suite of mitigation measures proposed.
- 5.11.3 The South Thames Estuary and Marshes SSSI is the underpinning designation for the Thames Estuary and Marshes Special Protection Area and Ramsar Site; our comments in relation to these sites are provided in the Shadow Habitats Regulations Assessment section below.
- 5.12 West Thurrock Lagoon and Marshes SSSI
- 5.12.1 The ES identifies that a number of impacts to the Inner Thames Marshes SSSI are likely to result from the proposal during both the construction and operational phases of the project. These include damage to habitats (from pollutants), disturbance to birds associated with the designated site from river traffic, recreational disturbance, and noise and lighting, for example. Despite a number of the impacts persisting throughout the lifetime of the project (such as lighting, and disturbance from river traffic), they are assessed as being temporary and reversible (Table 12.11: Operational Effects on Important Ecological Features without Mitigation).
- 5.12.2 A number of mitigation measures are proposed within Table 12.14 but Natural England recommends that much greater clarity is provided on the nature, scale and longevity of the potential impacts along with the effectiveness and deliverability of the suite of mitigation

measures proposed.

5.13 Wouldham to Detling Escarpment SSSI

5.13.1 The ES concludes that no impacts are likely to result to the Wouldham to Detling Escarpment SSSI from the construction or operation of the Resort. This is on the basis that the site is not within 200 metres of the affected road network based upon the transport model. Figure 9.1 – Traffic Model Extent suggests however that the eastern extent of the traffic model was the A2/M2 junction rather than extending to the M2 junctions with the A229 and A249. Greater clarity is therefore required on the extent of the affected road network to understand whether impact to this site is likely to result from the proposal.

5.13.2 The Wouldham to Detling Escarpment underpins the North Downs Woodland Special Area of Conservation (SAC). Further advice in relation to the SAC is provided in the Shadow Habitats Regulations Assessment section of this relevant representation.

6 Protected landscapes

- 6.1 Chapter 11, Landscape and Visual Effects (document 6.1.11) includes three viewpoints from within the Kent Downs Area of Outstanding Natural Beauty (AONB), namely:
- Viewpoint 41, public footpath NS177 at Cobham;
 - Viewpoint 73 – Pedham Place Golf Centre; and
 - Viewpoint 74 – layby on Camer Road.
- 6.2 The assessment indicates that the London Resort proposed development would be visible from the Kent Downs AONB based upon the viewpoints and photomontages undertaken in the autumn. The accurate visual representations provided within the landscape assessment show that the structures will be clearly visible from Viewpoints 41 and 74. It is concluded that the impacts to the setting of the AONB are considered to be 'Moderate/Minor Adverse Permanent Not Significant' within the ES. Similar conclusions are stated for the night time assessments given the existing light levels along the Thames Estuary.
- 6.3 Given the national importance of the Kent Downs AONB, Natural England recommends that greater clarity on the likely impacts to the AONB is provided. A robust landscape and visual impact assessment is required at this stage for us to provide advice to the Examining Authority. We recommend that additional photomontages during the winter period (when the maximum visibility of the scheme is likely with trees not being in leaf) are provided. In addition, more detailed accurate visual representations should be provided. These should show the form of the buildings and structures proposed and include detail of the materials, the finishes/colours that are to be used and the likely night time lighting. For a project of this scale, we recommend that a rendered, photo-realistic montage for the viewpoints within the AONB should be provided rather than the block parameter plans that have been supplied.
- 6.4 In addition, no assessment of the potential impacts to the AONB from urbanising effects such as increased traffic and associated impacts to tranquillity and the sunken rural lanes appears to have been considered within the landscape assessment. We therefore recommend that further information is provided to fully understand the potential impacts to the Kent Downs AONB.

Summary

- 6.5 Natural England recommends that further clarity on the likely impacts to the Kent Downs AONB is provided both in terms of the inter-visibility between the AONB and the proposed development and the potential for urbanising impacts within the AONB.

7 Protected species

7.1 Overarching comments

- 7.1.1 The information supplied in support of the DCO indicates that significant impacts to a number of protected species are likely to result from this project, particularly in relation to bats, dormice and water voles. At present for these species, Natural England is not confident that we will be able to provide letters of no impediment for any of these species/species groups.
- 7.1.2 Natural England has significant concerns regarding the survey effort for protected species upon which the environmental impact assessment is based along with the nature of the mitigation/compensation measures proposed.
- 7.1.3 Much of the proposed mitigation for protected species relies on habitat enhancement and/or creation within the areas of the Swanscombe Peninsula SSSI which will not be directly lost to the built development. The measures proposed for protected species are highly unlikely to be compatible with the management prescription for the SSSI to conserve and enhance the notified features.
- 7.1.4 In addition, significant reliance is placed on the offsite compensation area to provide compensatory habitat for protected species. In the absence of clarity on the location, existing ecological status and the detailed habitat enhancement and/or creation measures proposed, Natural England does not consider there is sufficient certainty at this stage to enable us to advise the Examining Authority that impacts to protected species will be avoided, fully mitigated or, as a last resort, compensated.

7.2 Bats

- 7.2.1 Natural England requires greater clarity on the survey effort undertaken for bats to provide sufficient confidence in relation to the importance of the area and the likely impacts given that up to ten species, including some that are rare to the area, have been recorded.
- 7.2.2 The ES suggests that approximately half of the available bat foraging habitat (some 95 hectares) is to be lost, damaged or degraded to the development with habitat enhancement measures proposed for the remaining 94 hectares. Notwithstanding the comments above regarding the need for the mitigation and compensation strategy to consider the Swanscombe Peninsula SSSI, Natural England does not consider these proposals are sufficient to mitigate the effects of loss of access to feeding habitat. As such, suitably located off-site compensatory habitat will be of crucial importance in ensuring no adverse effect on the bat populations impacted. Whilst some broad principles for the compensation strategy have been provided, suitable sites have yet to be identified or secured. Natural England therefore recommends that much greater clarity on the compensation measures for bats is provided to ensure that the favourable conservation status (FCS) of the bat populations is maintained.

7.3 Dormice

- 7.3.1 The current proposals include a loss of 51.13 hectares, approximately 42% of the on-site habitat assessed as being suitable for dormice. In addition to direct habitat loss, fragmentation of the dormouse population is a concern, both across site and in the wider area. The current proposals do not enable dormice to easily travel between the eastern and western sections of the peninsula. Additionally, it is unclear how connectivity is to be maintained from the site to known dormouse populations in the wider area. Due to the size and impact of the project, off-site compensation is likely to be required to ensure that the FCS of the dormouse population is maintained.
- 7.3.2 The dormouse mitigation strategy does not specify the area of compensatory planting that is

proposed; the majority of the proposed mitigation/compensation refers to retention and enhancement of existing habitat, which alone is unlikely to be sufficient to maintain FCS. Natural England notes that much of the habitat mitigation or compensation measures for dormice are to be provided within the Swanscombe Peninsula SSSI which are likely to result in impacts to the SSSI. Our advice is that the mitigation strategy is updated to reflect the notification of the Swanscombe Peninsula SSSI.

7.4 Water voles

7.4.1 Natural England advises, that based on the information provided, we do not consider that sufficient information has been provided to demonstrate how the proposal will maintain the FCS for the water vole population impacted by the proposal. Natural England considers that the surveys have not been undertaken following the guidelines within the Water Vole Mitigation Handbook. For example, not all areas were surveyed, and surveys were undertaken when the vegetation was high reducing the efficacy of the surveys. We therefore recommend that greater clarity is provided on the likely impacts to water voles from the proposal.

7.4.2 Natural England notes that much of the habitat mitigation or compensation measures for water voles are to be provided within the Swanscombe Peninsula SSSI which are likely to result in impacts to the SSSI. Our advice is that the mitigation strategy is updated to reflect the notification of the Swanscombe Peninsula SSSI.

Summary

7.4.3 Natural England recommends that greater clarity on the survey effort undertaken, the likely impacts and mitigation or compensation measures proposed are provided to ensure that the favourable conservation status for protected species is maintained.

7.4.4 At present, Natural England is not confident we will be able to provide letters of no impediment. We will continue to engage with the proposer to try and address these matters but we consider they may be challenging to resolve.

8 Non designated or protected species and habitats of conservation value

- 8.1 In addition to the impacts to habitats within the designated sites, the species these support and protected species for which Natural England is the licensing authority, the proposal will result in significant impacts to additional features of significant conservation value.
- 8.2 The ES identifies that the proposal will impact, for example, the following:
- Several nationally rare or scarce species of vascular plant including man orchid, golden samphire, Borrer's saltmarsh-grass, stiff saltmarsh-grass, annual beard-grass, hairy vetchling and sickle medick;
 - Three species of reptile with 'exceptional' populations of common lizard and slow worm;
 - Assemblage of wintering birds; and
 - Habitats and species of principal importance under Section 41 of the Natural Environment and Rural Communities Act 2006.
- 8.3 Many of these species have specific ecological requirements so a strategy detailing how the populations of each species will be sustained is required. For example, there does not appear to be any specific mention of the measures to be implemented for the majority of the vascular plant species listed above.
- 8.4 Natural England therefore recommends that much greater clarity is provided on the proposed mitigation and compensation measures for all species and habitats directly and indirectly impacted by the proposal. The updated strategies will need to reflect the notification of the Swanscombe Peninsula SSSI and difficulty in providing mitigation and compensation land within the SSSI.

9 England Coast Path

- 9.1 The England Coast Path is a long distance, pedestrian route around the coast – a National Trail. Natural England’s proposals at Swanscombe were approved by the Secretary of State in April 2020. The National Trail is currently being established by Kent County Council to open later in 2021 (Covid restrictions allowing). At Tilbury, the route was approved by the Secretary of State in November 2020 and the Access Authority is preparing to install infrastructure during 2021. Where developments, such as London Resort, affect the England Coast Path, the National Trail should be protected and enhanced in line with paragraphs 98, 168 and 170 of the National Planning Policy Framework. Any changes to the route, as a result of these plans, would require a Variation Report, approved by the Secretary of State.
- 9.2 The alignment of the England Coast Path across Swanscombe Peninsula is along raised, grassed banks, which offer views over the Thames. The current alignment is also set back from the shoreline along the north/eastern part of the peninsula to avoid health and safety impacts relating to the legacy of cement kiln dust landfill and the leachate treatment water bodies on the site, as well as minimising recreational disturbance to a key area for wintering birds. Given that the England Coast Path also creates a margin of accessible land between the trail and the sea (the coastal margin) - a direction excludes coastal access rights on this part of the peninsula, to further reduce the health and safety and disturbance risks.
- 9.3 The route alignment across Swanscombe reflects the Section 297 Marine and Coastal Access Act principles for the coast path to be close to the coast and have views of the sea, while balancing conservation interests with public benefits.
- 9.4 The London Resort’s Access Strategy plans to ‘modify the existing England Coast Path to align with DS1 (a diverted footpath) allowing for onward and continual connectivity’ (document 6.2.11.9 paragraph 6.15). This route is set landward of the approved alignment. The rationale for moving the ECP inland onto a route with less opportunity to view the Thames is not made clear by the proposer, and the Section 297 principles are not highlighted in the Public Rights of Way Assessment.
- 9.5 We consider the proposed diversion to the National Trail, if required for a consented development proposal, should be closer to the River and offer views of the Thames, with sufficient access management or off-site mitigation provided to ensure:
- the wintering bird populations around the northern tip of the peninsula are not impacted by recreational disturbance along the trail or in the coastal margin; and
 - any health and safety risks associated with the past use of the site, both along the trail or in the coastal margin are mitigated.
- 9.6 Suitable adjustments should be made to provide easy access for less-abled visitors along any combined Public Right of Way/England Coast Path (i.e. minimal barriers and appropriate surfacing).
- 9.7 During the development phase, the connectivity of this National Trail should be maintained, and we would support the retention of a route across the peninsula (close to the sea) *throughout* the development period – as the area provides a key natural greenspace for local populations. In addition, the ECP National Trail (which will connect the source of the River Thames to the sea) is likely to be a popular route once it is open, later in 2021 and this area provides the naturalistic setting missing in the adjacent stretches of industrial/residential landscapes.
- 9.8 If any short term diversion of the National Trail were required at any stage, it should be suitable (safe and accessible) for significant pedestrian traffic.
- 9.9 During the development phase, the connectivity of this National Trail should be maintained,

and we support the intention to provide access through the site when this can be achieved, as part of the phased development. Any temporary route suggested for the National Trail should also be suitable (safe and accessible) for significant pedestrian traffic, as this National Trail (which will connect the source of the River Thames to the sea) is likely to be a popular route once it is open, later in 2021.

- 9.10 Any amendments to the National Trail or other public rights of way will also need to fully consider the potential impacts to the Swanscombe Peninsula SSSI, the functionally-linked land relating to the coastal SPA/Ramsar sites and the wider biodiversity of the Kent Site.

10 Biodiversity net gain

10.1 Natural England supports, in principle, the proposal for developments to deliver biodiversity net gain and notes that the London Resort is committed to delivering biodiversity net gain as part of its commitment to sustainable development (Appendix 12.2 Biodiversity net gain assessment, document 6.2.12.2).

10.2 Natural England notes that ES Appendix 12.3 Ecological Mitigation and Management Framework (document 6.2.12.3) paragraph 2.10 states:

'The EclA for the Proposed Development took forward a range of IEFs [Important Ecological Features] for assessment and it was demonstrated that the Proposed Development is capable of ensuring there is no net loss to biodiversity as a whole.'

10.3 However, given the significant adverse impacts from the development proposal on statutory protected sites, and the current uncertainty regarding the proposed mitigation and compensation measures, at present we disagree with paragraph 2.10 and consider it is doubtful whether it could be reasonably considered that a net gain for biodiversity can also be achieved whilst these matters are unresolved.

10.4 We consider this is in accordance with planning policy guidance (Paragraph: 024 Reference ID: 8-024-20190721, Revision date: 21 07 2019) which states:

'Biodiversity net gain complements and works with the biodiversity mitigation hierarchy set out in paragraph 175a of the NPPF⁵. It does not override the protection for designated sites, protected or priority species and irreplaceable or priority habitats set out in the NPPF. Local planning authorities need to ensure that habitat improvement will be a genuine additional benefit, and go further than measures already required to implement a compensation strategy.'

10.5 As detailed above, should the Secretary of State grant consent for this project, a significant mitigation and compensation package for all habitats and species directly and indirectly impacted by this proposal will need to be secured. This will need to focus on the functionality of the habitat along with its ability to support and sustain viable populations of the species impacted. This is likely to be challenging given the nature of the habitats and species affected and the scale of direct and indirect impacts. A high degree of certainty regarding the likely success of these measures will be required.

⁵ <https://www.gov.uk/government/publications/national-planning-policy-framework--2>

11 Utilities statement

- 11.1 Natural England notes that the Utilities Statement (document 7.6) was uploaded to the Examination documents page on the 25 March 2021. Given the late submission of this information, Natural England has not been able to review the documents in detail to assess the potential impacts that may arise.
- 11.2 Where additional impacts may result from utilities diversions to designated sites, protected species and habitats, and species of conservation importance, these will need to be fully reflected within the ES. Given the late submission of this documentation, it is unclear whether these have been fully considered and Natural England recommends that further clarity is provided.
- 11.3 We note however that there is insufficient potable water supply within the area to service the resort and that the Applicant is continuing to work with Thames Water to find alternative water supply sources. Many of the designated sites within the wider Thames Estuary are water dependent and as such, consideration of the potential for impacts to designated sites from additional extraction will need to be provided within the ES and potentially the Shadow HRA, depending on the sites that may be impacted from extraction.
- 11.4 Natural England therefore recommends that further clarity is provided on the potential impacts that may result from the requirements within the Utilities Statement.

12 Draft Development Consent Order

- 12.1 Given the comments and further clarity requested above, Natural England has a number of significant concerns regarding the draft Development Consent Order (DCO) (document 3.1). This in the main results from the proposed disapplication of Natural England's Section 28E SSSI consenting regime under the Wildlife and Countryside Act 1981 (as amended) in relation to works during the 5 year 'maintenance period' (article 32(12) of the DCO). Given the area of the Kent site falling within the Swanscombe Peninsula SSSI, Natural England does not agree to the proposed disapplication of our SSSI consenting role through the DCO. Given the number of environmental concerns detailed within our Relevant Representations, we consider there are a significant number of concerns with the draft DCO. Our principal concerns are detailed below.
- 12.2 As set out above, given that much of the Kent site falls within the Swanscombe Peninsula SSSI and the order limits also include the Swanscombe MCZ, greater clarity is required on the development footprint and the working areas, including any earthworks and site remediation measures. The parameters and limits of deviation referred to within Section 5 draft DCO and the accompanying documentation appear much greater than the development footprint; should the Secretary of State grant permission we would expect the limits of deviation and work areas to be the narrowest possible to minimise the impact to the remaining areas of the SSSI and ecological value.
- 12.3 Section 3 (Streets) of the draft DCO provides for the creation or maintenance of the street scene and alteration to layout of any vehicle route or footpath within the order limits. Much of this infrastructure falls within the Swanscombe Peninsula SSSI; should consent be granted Natural England will need to be consulted on any works that will be undertaken in the future which could directly or indirectly impact the any remaining areas of the SSSI.
- 12.4 As mentioned above, Natural England expects the England Coast Path to be maintained during construction and operation of the proposal, we would not expect anything within the draft DCO to alter the route of the Coast Path without Natural England's agreement.
- 12.5 Section 18 (Discharge of water) allows the proposer to discharge water into any watercourse (or make connections to discharge into any watercourse) within the order limits. Given the rich ecology of the peninsula, including the SSSI and MCZ, which are sensitive to changes in water quantity and quality, much greater clarity is required at this this stage on the measures that will conserve and enhance the nature conservation assets within the order limits. Natural England is unlikely to be able to agree to this in its current form.
- 12.6 Section 20 of the draft DCO proposes to allow the undertaker access to any land within the order limits for surveys, including invasive ground investigations. Given much of the DCO boundary falls within a SSSI or MCZ, Natural England is unlikely to be able to agree to this in its current form as significant impacts to the ecology an could result.
- 12.7 Section 39 of the draft DCO permits actions within the Thames including works to the banks, bed and foreshore for example. These are likely to fall within the Swanscombe Peninsula SSSI and Natural England would be unlikely to agree to such measures in their current form and in the absence of our SSSI consenting role.
- 12.8 Section 40 of the draft DCO (Felling or lopping of trees) allows works to trees within the order limits. Part of Darenth Woods SSSI falls within the order boundary and the ES provides assurances that no direct impacts will result to the woodland. Natural England is unlikely to agree to these measures in their current form without further assurances being provided in relation to the SSSI.
- 12.9 Section 48 (Disapplication and modification of legislative provisions) details the intent to disapply Natural England Section 28(e) SSSI consenting role during the construction and operation of the resort. Given the significant direct and indirect impacts to designated sites

resulting from the proposal, Natural England does not agree to the disapplication of its SSSI consenting role.

- 12.10 Requirement 3 (Detailed design) requires the detailed design to be in accordance with the design principles unless otherwise agreed by local planning authority in consultation with Kent and Essex Police. Given the significant ecological and geological interest within the order limits, Natural England would expect to also be consulted by the local planning authority.
- 12.11 Requirement 4 details that the mitigation measures for a number of impacts must be approved by the local planning authority; no mention is made of a mitigation strategy for geodiversity. Given part of the Baker's Hole area of the Swanscombe Peninsula SSSI is notified both for its geological and biological importance, a geodiversity mitigation plan should form part of this requirement. Natural England would also expect to be a named consultee on both the ecological and geological strategies. Similarly the Construction Environmental Management Plan (CEMP) should also reflect the geological mitigation strategy required (Requirement 5).
- 12.12 Requirement 6 details the landscaping strategy including the mitigation measures. Again, reference is made only to Kent and Essex Police being consulted on the strategy. Given the ecological and geological importance of the area covered by the order limits, Natural England would expect to be consulted on the detailed landscaping strategy. The requirement should also include indicators of success to demonstrate how any habitats created to mitigate or compensate for the impacts achieve functioning habitat to support the assemblages of species impacted.
- 12.13 Requirement 8 (lighting) again refers to consultation with the Police; given the significant ecological impacts that may result from lighting Natural England would expect to be consulted on this requirement.
- 12.14 Requirement 9 (Flood risk and surface water drainage) has potentially significant implications for the Swanscombe Peninsula SSSI and Natural England would expect to be involved in discussions and agreements on this requirement alongside colleagues from the Environment Agency and the lead local flood agency.
- 12.15 Similarly, Natural England would expect to be involved in discussions and agreements on Requirement 10 (Contaminated land) alongside colleagues from the Environment Agency given the potential implications for the Swanscombe Peninsula SSSI.
- 12.16 Natural England notes that there is a requirement for ecological mitigation and management (Requirement 13) and historic environment mitigation (Requirement 15) but there does not appear to be any requirement covering geological mitigation. Given geological interest forms part of the notified features of the Swanscombe Peninsula SSSI and there will be direct and indirect impacts should the Secretary of State grant consent, an additional requirement should be included for geological mitigation.

13 Outline Construction Environmental Management Plan

- 13.1 Natural England acknowledges that the Construction Environmental Management Plan (CEMP) (ES appendix 3.2document 6.2.3.2) will be subject to further refinement by the contractor should consent be granted. The CEMP is a key document to ensure that the environmental measures within the ES are delivered, along with a monitoring and feedback mechanism to ensure compliance with the agreed measures and legislative requirements. As such, the Outline CEMP (and accompanying topic specific management plans) needs to provide a high degree of certainty that the measures within the ES to avoid, mitigate or as a last resort fully compensate for the environmental impacts are capable of being delivered.
- 13.2 Paragraph 3.7 of the Outline CEMP details that construction activities for Gates 1 and 2 will last approximately seven years. The duration of such construction impacts should not be considered temporary in ecological terms for the purpose of the impact assessment given that this represents several lifecycles for many of the species utilising the site.
- 13.3 Table 3.1 of the Outline CEMP provides an outline of the construction phasing for the project. Whilst it is accepted that this is a summary, Natural England consider that this should include clarity on the delivery of the environmental mitigation and compensation measures.
- 13.4 Reference is made throughout the ES to the need for significant ecological and geological mitigation and compensation, both on and off-site and it would seem appropriate for the timing of these to be reflected within the summary timetable. The mitigation and compensation measures need to be ecologically functioning at the point of impact and sufficient lead-in time is therefore required within the timetable; a point confirmed within the Ecological Mitigation and Management Framework. For example, paragraph 4.12 of Annex EDP 9 (The Invertebrate Mitigation Strategy) states that:
- ‘As a general principle, habitat enhancement and creation works will take place in advance of construction works (and associated habitat losses) to allow time for source populations of invertebrates within the development footprint to locate and colonise the new habitats created.’*
- 13.5 Given the nature and scale of the impacts, the ecological mitigation and compensation measures will be challenging and greater we recommend greater certainty is provided within the Outline CEMP.
- 13.6 Paragraph 4.5 of the Outline CEMP details that a log of environmental breaches will be kept for inspection by the Local Planning Authorities on request. Given that the Kent site encompasses significant areas of the Swanscombe Peninsula SSSI and the Swanscombe MCZ, Natural England must be informed as soon as practicable of any breaches that may result in impacts to the retained areas of these sites. Similarly, paragraph 4.27 details the regulatory authorities who will be contacted in the event of an incident but omits Natural England; we recommend this is amended to reflect our designated site regulatory and enforcement role.
- 13.7 Table 5-1 Construction mitigation measures stated in the London Resort ES summarises the ecological mitigation measures proposed. Notwithstanding the concerns expressed within the rest of our Relevant Representation, given the significant scale of habitat loss and disturbance throughout the seven year construction period, the measures within Table 5-1 are unlikely to be successful in maintaining the rich ecological interest of the site should consent be granted. Again, no mention is made of the offsite mitigation/compensation area creation, indicators of success and long-term management. Natural England therefore recommends that the Outline CEMP is updated to include full details of the on and offsite avoidance and mitigation measures required to ensure there is no net loss of terrestrial and marine biodiversity and geodiversity assets within the order limits. This should reflect the

direct and indirect impacts that are likely to result.

- 13.8 Natural England acknowledges that reference is made within the Outline CEMP to measures to mitigate impacts to cultural heritage assets but no reference is made to geological impacts and mitigation. The Swanscombe Peninsula SSSI includes nationally important geological features at Baker's Hole and the Outline CEMP should include details of the measures to ensure impacts are avoided.

14 Contaminated Land Management Strategy

- 14.1 The Outline CEMP specifically refers to a number of associated control strategy documents in paragraph 1.14 including the Contaminated Land Management Strategy (ES Appendix 18.9). This strategy suggests that there is a high degree of uncertainty in relation to the contamination within the application site:

'Currently, the Proposed Development is at Stage 1 with respect to the phased process set out above. The risk assessment is at the preliminary stage and the available information on land affected by contamination is largely based upon desk-based studies and existing ground investigation data. Accordingly, there is currently uncertainty with respect to the precise description of the various sources of contamination across the Project Site the receptors that could be affected and the pathways that link them. These uncertainties will be reduced or resolved by a substantial programme of ground investigation planned to commence in 2021.' (Page 13).

- 14.2 The Contaminated Land Management Strategy recognises that the rich ecology of the Kent Site is significantly influenced, and benefits from the historical industrial use of the site and the resultant disposal of materials:

'However, in some of the landscape areas, it is the nature of the ground conditions that has led to the development of a particular ecology with important flora and fauna. In such areas, it is envisaged that the "capping" material and design will be constructed to protect people from the hazardous ground conditions, whilst minimising infiltration and enable the particular ecosystem (flora and fauna) to thrive.' (Page 29).

- 14.3 The Contaminated Land Management Strategy includes some high level objectives for the mitigation measures in relation to the ecological sensitive areas that may be impacted but not in relation to the geologically important areas. Given the high degree of uncertainty highlighted within the Strategy, the impact of the remediation works to the retained habitat on site appear unclear. Natural England therefore recommends that greater clarity on the total area of land that may be subject to remedial works is provided, and that the ES is updated to reflect this. Without such clarity, there is a significant degree of uncertainty regarding the mitigation measures proposed within the ES for ecological and geological impacts



Swanscombe Peninsula SSSI Kent

***Notification under Section 28C of the Wildlife
and Countryside Act 1981***

Contact points and further information

This notification document is issued by Natural England's Sussex and Kent Team. During the current coronavirus situation, Natural England staff are working remotely and a limited number of our offices are open. Please send any correspondence relating to this notification by email or contact us by phone using the information below. Alternatively, you can send a response online using the Citizenspace link below.

Your contact point for specific enquiries relating to this notification is **Neil Fuller**.

Telephone: [REDACTED]

Email: thamesestuary@naturalengland.org.uk

Online: <https://consult.defra.gov.uk/natural-england/swanscombe-peninsula>

A second document (Swanscombe Peninsula SSSI - Supporting Information) is available online and on request using the details above. This contains information and extracts from relevant documents that have been used in the decision to notify this SSSI.

The date of notification of Swanscombe Peninsula SSSI is **11 March 2021**

Contents

1. Summary	4
2. The legal background	4
3. Making representations	5
4. Reasons for notification	6
5. Site boundaries and relationships with other SSSIs	7
6. Management of the SSSI.....	7
7. Supporting information.....	7
8. Legal documents	7
<i>Annex 1 Citation</i>	<i>8</i>
<i>Annex 2 Views about Management.....</i>	<i>12</i>
<i>Annex 3 List of operations requiring Natural England's consent.....</i>	<i>18</i>
<i>Annex 4 Map(s) showing the land notified.....</i>	<i>22</i>

1. Summary

- 1.1 This document explains why Swanscombe Peninsula is notified by Natural England as a Site of Special Scientific Interest (SSSI).
- 1.2 Swanscombe Peninsula SSSI is an area of open mosaic habitat on previously developed land and traditional estuarine habitat which connects Ebbsfleet Valley to the southern shore of the River Thames between Dartford and Gravesend. The site includes chalk pits, free-draining grassland, scrub, wetlands, grazing marsh and saltmarsh. It is of special interest for its nationally important assemblages of invertebrates and breeding birds, populations of five species of vascular plant, and its geological features.
- 1.3 The site includes public rights of way and the Grain to Woolwich stretch of the England Coast Path, both of which provide opportunities for local communities and visitors to experience the natural environment.
- 1.4 Previously, one SSSI (Bakers Hole SSSI, last notified on 11 May 1989) has been notified on the Swanscombe Peninsula. This comprised a 6.89ha Geological Conservation Review site. Parts of Bakers Hole are also a Scheduled Monument. Swanscombe Peninsula SSSI includes the land previously notified as Bakers Hole SSSI and extensions totalling 257.21ha. The total area of the enlarged SSSI is 264.10ha.
- 1.5 The annexes to this document comprise the legal papers that detail the scientific interest of Swanscombe Peninsula SSSI, the management required to maintain this interest and maps of the site. You have a right to make representations or objections about the notification of the enlarged SSSI. Part 3 of this document explains how to do this.
- 1.6 Natural England's consent is required by owners and occupiers before any of the operations listed in *Annex 3* can be carried out. We will work closely with owners and managers, as well as other bodies, to ensure that existing operations and new works that are not considered likely to damage the special features of the SSSI can be carried out.

2. The legal background

- 2.1 Bakers Hole SSSI is enlarged under section 28C of the Wildlife and Countryside Act 1981 and is now known as Swanscombe Peninsula SSSI.
- 2.2 The enlarged site includes land within and extending beyond the previously notified Bakers Hole SSSI, as last notified in 1989.
- 2.3 With effect from the date of this notification under section 28C of the Wildlife and Countryside Act 1981, the previous notification of Bakers Hole SSSI dated 1989 ceases to have effect (section 28C(5) of the Wildlife and Countryside Act 1981).
- 2.4 Part 8 of this notification document contains the following legal papers required by section 28C of the Wildlife and Countryside Act 1981:
 - a citation detailing the reasons for notification (*Annex 1*);
 - a statement of Natural England's views on the management of the SSSI (*Annex 2*);
 - a list of operations requiring Natural England's consent (*Annex 3*); and
 - maps identifying the land subject to this notification (*Annex 4*).
- 2.5 This notification of the SSSI under section 28C has several effects. The key ones are summarised as follows:
 - owners and occupiers must give Natural England notice before carrying out, causing or permitting to be carried out any of the activities in the list of operations at *Annex 3*;
 - owners of land included in the SSSI have a legal obligation to notify Natural England within 28 days if the ownership or occupancy of the land changes;

- it is an offence for any person intentionally or recklessly to destroy or damage the special features of the SSSI or to disturb any of the fauna;
- other public bodies must consult Natural England before carrying out or authorising any works that may damage the SSSI; and
- it gives Natural England the ability to require the management of the SSSI by way of management schemes and notices.

2.6 If you require any further information or advice on how this notification affects you, please do not hesitate to contact Natural England using the information at the beginning of this document.

3. Making representations

3.1 You have a legal right to make objections and representations about this notification. Any representations, including those supporting the notification, or objections should be made in writing to Natural England's Sussex and Kent Team by **12 July 2021**. Representations can be sent by e-mail or online using the details on page 2. You may wish to seek legal or independent advice and your representative may wish to write to us on your behalf.

3.2 Natural England's Sussex and Kent Team will consider your objections or representations and will try to resolve them. If there are no unresolved objections, approval to confirm the notification will be considered by an appropriate Natural England Director within nine months of this notification.

3.3 Any unresolved objections or representations will be considered by the Board of Natural England within nine months of this notification. Following consideration of objections and representations, the Board of Natural England may confirm or withdraw all or part of this notification. In reaching its decision the Board will consider whether, in light of the objections and representations received, Natural England remains of the opinion that the site is of special scientific interest. The desirability of the notification for socio-economic reasons will not form part of the Board's decision.

3.4 If you wish to emphasise any of your objections or representations to the Board in person, you should tell us when you write to us. You will then be advised of the date and location of the Board meeting.

3.5 Natural England will accept correspondence relating to unresolved objections up to seven days prior to the Board meeting at which the confirmation is due to be considered. Correspondence received after this date will only be presented to the Board in very exceptional circumstances and you will be expected to provide justification as to why there has been a delay in providing the information. The decision whether this information will be submitted to the Board is entirely at Natural England's discretion. The reason that there is a seven day cut off is to allow Board members sufficient opportunity to consider all of the issues and read all the relevant paperwork before they meet to take their decision.

3.6 Natural England has a policy of openness, which reflects our obligations under the Environmental Information Regulations 2004 and the Freedom of Information Act 2000. This legislation provides a legal right of access to information held by public bodies. This means that we will provide information on how we make our decisions on SSSIs to any person on request. This includes details of objections and representations received. We will assume, therefore, that your representation or objection can be made publicly available unless you indicate with clear and valid reasons which (if any) part(s) of these you wish to be excluded from this arrangement. However, you should be aware that the requirements of the legislation may mean that we cannot comply with your request that this information be withheld. We do, however, respect people's privacy and will take all reasonable steps to consult you before reaching a decision on disclosure of the information.

3.7 As an individual or organisation with an interest in Swanscombe Peninsula SSSI, your information will be stored and processed on a computer database that will be operated within the General Data Protection Regulation and the Data Protection Act 2018. For the

purposes of the Data Protection Act, the data controller is Natural England, Foss House, Kings Pool, 1-2 Peasholme Green, York YO1 7PX. For more information, please see the *SSSI notifications privacy notice* at <https://www.gov.uk/government/publications/natural-england-privacy-notice/site-of-special-scientific-interest-notification-privacy-notice> or request a copy using the details on page 2 of this document.

4. Reasons for notification

4.1 Swanscombe Peninsula SSSI is of special interest for the following nationally important features:

- **Geology**

Bakers Hole is a key Pleistocene site with a complex sequence of periglacial and temperate climate deposits, including solifluction, freshwater and possible estuarine deposits associated with the Ebbsfleet Valley. The deposits have yielded fossils and evidence of human occupation. The site contains Levallois lithic remains from the Middle Palaeolithic and palaeoenvironmental indicators, including fossils of small and large mammals, molluscs and ostracods.

- **Vascular plants**

Swanscombe Peninsular SSSI supports populations of five Nationally Scarce species of vascular plant, the first four of which are also 'Vulnerable' to extinction in Great Britain: divided sedge *Carex divisa*, yellow vetchling *Lathyrus aphaca*, slender hare's-ear *Bupleurum tenuissimum*, Bithynian vetch *Vicia bithynica* and round-leaved wintergreen *Pyrola rotundifolia subsp. maritima*.

- **Invertebrates**

Extensive areas of open mosaic habitat on previously developed land and semi-natural habitat including chalk pits, free-draining grassland, scrub, wetlands, grazing marsh and saltmarsh support four diverse assemblages of invertebrates.

Brownfield areas within the SSSI support assemblages of species associated with bare sand and chalk, and open short swards. These assemblages are rich in bee and wasp species which use the open substrates for nesting, prey collection and basking, and the rich wild flower resource for nectar and pollen. Priority Species (Section 41) within the assemblage include the Critically Endangered distinguished jumping spider *Sitticus distinguendus*, rare five-banded weevil-wasp *Cerceris quinquefasciata* and Nationally Scarce brown-banded carder bee *Bombus humilis*.

Wetland areas, primarily Black Duck Marsh and ponds resulting from construction of the Channel Tunnel Rail Link (CTRL), support assemblages of species associated with open water on disturbed mineral sediments, and saltmarsh and transitional brackish marsh. These wetlands support 84 species of water beetle. This represents over a quarter of the UK water beetle fauna. Notable species include the nationally scarce *Enochrus halophilus*, and the nationally rare great silver water Beetle *Hydrophilus piceus*.

- **Breeding birds**

The wetland areas of the site support an assemblage of breeding birds of lowland damp grassland, lowland open waters and their margins and lowland fen. Species associated with the fen and swamp habitats of Black Duck Marsh and the CTRL wetlands include bearded tit *Panurus biarmicus*, marsh harrier *Circus aeruginosus* and the elusive water rail *Rallus aquaticus*. Wetland habitats across the site support reed bunting *Emberiza schoeniclus*, sedge warbler *Acrocephalus schoenobaenus* and reed warbler. The wetland mosaic with scrub supports Cetti's warblers *Cettia cetti*.

Botany Marsh West is a surviving fragment of grazing marsh, providing damp grassland habitat for lapwing *Vanellus vanellus*. Little egret *Egretta garzetta* and grey heron *Ardea cinerea* utilise a number of wetland habitats and forage within the intertidal habitats of

the adjacent River Thames. The water bodies support breeding waterfowl including pochard *Aythya ferina*, mute swan *Cygnus olor* and little grebe *Tachybaptus ruficollis*.

The chalk pits and areas of scrub support an assemblage of breeding birds of lowland scrub. Grasshopper warbler *Locustella naevia* can be found in open habitats on Broadness, while nightingale *Luscinia megarhynchos* favours the denser scrub areas of Botany Marsh East and the chalk pits. Linnets *Linaria cannabina* and lesser whitethroats *Curruca curruca* can be found in the former landfill tips and areas north of the CTRL wetlands.

5. Site boundary and relationship with other SSSIs

- 5.1 The boundary has been drawn to include land supporting the features of special interest and areas required to ensure their long-term sustainability. These include free-draining grassland, scrub, wetlands, grazing marsh, transitional grassland, saltmarsh and four chalk pits supporting scrub, grassland and free-draining substrates, as well as geological features.
- 5.2 The boundary of the SSSI follows the River Thames mean low water mark in the north and fence lines and roads for most of its remaining perimeter. In places where there is no mapped feature, the boundary is formed by straight lines between fixed points. The footprints of a number of internal built structures such as roads, pumping stations, treatment works and radar towers have been excluded from the boundary.
- 5.3 The nearest SSSI to Swanscombe Peninsula SSSI is Swanscombe Skull Site SSSI, approximately 0.5 km to the west. This site, which is also a National Nature Reserve, is designated for its nationally important geological features.

6. Management of the SSSI

- 6.1 This notification includes at *Annex 2* a statement of the management that Natural England considers is needed to conserve and enhance the features of special interest. Different management will be appropriate in different parts of the site and this statement is not intended to detail the exact requirements at specific locations. The statement is intended to explain how we can work with and support owners and managers in continuing to achieve positive management of the SSSI.
- 6.2 This notification also includes a list of the operations requiring Natural England's consent at *Annex 3*. The basis for the selection of these operations is set out in the Supporting Information document. Some operations may already be taking place. Where they do not cause any damage, they will be given consent. We will work with landowners and managers to agree lists of such existing and planned activities, which can be approved.
- 6.3 Where an operation has been granted a consent, licence or permission from another public body a separate consent will not generally be required from Natural England. However, other public bodies are required to consult Natural England before such consents, licences or permissions are issued.
- 6.4 In particular, we recognise the important roles of the owners and managers of the land in managing this site. We will continue to work with them to develop means to secure the sustainable management of Swanscombe Peninsula SSSI.

7. Supporting information

- 7.1 The detailed information, which has been used to assess the importance of this SSSI is available online and on request using the details on page 2 of this document.

8. Legal documents

- 8.1 Attached at *Annexes 1 - 4* are the legal documents, which are required by section 28C of the Wildlife and Countryside Act 1981.

Annex 1

Citation

This is a legal document on which you have a right to make objections or representations, as explained in part 3 of this notification document.

that the three individual temperate episodes of MIS 7 may be represented at the site. Further investigation of this will help to establish a framework for MIS 7 sites in the British Pleistocene.

Vascular plants

Although vegetation communities of the peninsula have been significantly affected by the cement industry and construction of the Channel Tunnel Rail Link (CTRL), there are surviving fragments of habitats that are representative of a former more extensive marshland. These include intertidal mudflats, saltmarsh, sea wall corridor with transitional grasslands, grazing marsh with extensive reed-lined ditch networks, winter wet low-ways and scattered scrub. In addition to this, the relatively recent habitats of free-draining grassland and extensive scrub, and the increased range of waterbodies with brackish transitions, have collectively formed a habitat mosaic that has enabled characteristic and scarce plants to survive and establish.

The site supports nationally scarce species characteristic of coastal grazing marsh and transitional grassland, such as divided sedge *Carex divisa*, annual beard-grass *Polypogon monspeliensis*, stiff saltmarsh-grass *Puccinellia rupestris*, Borrer's saltmarsh-grass *Puccinellia fasciculata* and slender hare's-ear *Bupleurum tenuissimum*. The saltmarsh is rather species-poor, when compared with more expansive outer Thames areas but does support the nationally scarce golden samphire *Limbarda crithmoides* in one of its most upriver locations within the Thames Estuary.

The open grassland areas across the site support large populations of legumes, including the nationally scarce yellow vetchling *Lathyrus aphaca* and Bithynian vetch *Vicia bithynica*. The presence of the nationally rare hairy vetchling *Lathyrus hirsutus* and the endangered man orchid *Orchis anthropophora* provide additional interest in grassland areas associated with scattered scrub. A sustainable population of the nationally scarce round-leaved wintergreen *Pyrola rotundifolia* subsp. *maritima* is found amongst denser scrub.

Invertebrates

The site supports over 1,700 species of invertebrate and four nationally important assemblages. Brownfield areas support assemblages of species chiefly associated with bare sand and chalk and open short swards. These assemblages are rich in bee and wasp species which use the open substrates for nesting, prey collection and basking, and the rich wild flower resource for nectar and pollen. Significant species within the assemblage include the critically endangered distinguished jumping spider *Sitticus distinguendus*, rare five-banded weevil-wasp *Cerceris quinquefasciata* and provisionally nationally scarce Phoenix fly *Dorycera graminum*. Nationally scarce species include the sea aster mining bee *Colletes halophilus*, black-headed mason wasp *Odynerus melanocephalus*, brown-banded carder bee *Bombus humilis* and chalk carpet moth *Scotopteryx bipunctaria*.

Wetland areas, primarily Black Duck Marsh and ponds resulting from construction of the CTRL support assemblages chiefly associated with open water on disturbed mineral sediments and saltmarsh and transitional brackish marsh. The marshland was formerly extensive and evidence of a possible prehistoric staked woven trackway is recorded at the mouth of a creek in Broadness.

These wetlands support 84 species of water beetle. This represents over a quarter of the UK water beetle fauna. This richness derives from a mix of fresh and brackish water. Species of note include the nationally scarce *Enochrus halophilus*, which is generally associated with brackish pools and ditch saltmarsh and the nationally rare great silver water beetle *Hydrophilus piceus*, found in marshes, drains and especially coastal grazing marshes. Other nationally scarce water beetles include the crawling water beetle *Peltodytes caesus* and whirligig beetle *Gyrinus paykulli* associated with well-vegetated margins, and the diving beetle *Rhantus frontalis*, which occurs in waterbodies with more exposed substrates characteristic of grazing marshes. Other species such as the nationally scarce soldier fly *Stratiomys singularior* develop as larvae feeding on detritus within the shallow sometimes temporary pools of these brackish coastal marshes and fens.

Breeding birds

The wetlands, grasslands, scrub, saltmarsh and intertidal mud within the SSSI support a range of breeding birds.

Notable species associated with the fen and swamp habitats of Black Duck Marsh and the CTRL wetlands include bearded tit *Panurus biarmicus*, marsh harrier *Circus aeruginosus* and the elusive water rail *Rallus aquaticus*. Wetland habitats across the site also support reed bunting *Emberiza schoeniclus*, sedge warbler *Acrocephalus schoenobaenus* and reed warbler *Acrocephalus scirpaceus*, with the last of these often providing host nests for cuckoo *Cuculus canorus*. The wetland mosaic with scrub supports Cetti's warblers *Cettia cetti*.

Scrub varies in density across the site. Species such as grasshopper warbler *Locustella naevia* prefer the scattered patches in open habitats on Broadness, while nightingale *Luscinia megarhynchos*, bullfinch *Pyrrhula pyrrhula* and garden warbler *Sylvia borin* favour the denser scrub areas of Botany Marsh East and the chalk pits. Long-tailed tits *Aegithalos caudatus* favour areas of scrub with more open margins, whilst linnets *Linaria cannabina* and lesser whitethroats *Curruca curruca* are typically associated with the scrub mosaic of the former landfill tips and areas north of the CTRL wetlands, respectively.

Botany Marsh West is a surviving fragment of a formerly more extensive grazing marsh, providing damp grassland habitat for lapwing *Vanellus vanellus* and greylag goose *Anser anser*. Shelduck *Tadorna tadorna*, little egret *Egretta garzetta* and grey heron *Ardea cinerea* utilise a number of wetland habitats and forage within the intertidal habitats of the adjacent River Thames. Little egret and grey heron nest in the heronry south of Black Duck Marsh. The water bodies, particularly the larger examples within the CTRL wetlands and Black Duck Marsh, also support a number of breeding waterfowl including pochard *Aythya ferina*, tufted duck *Aythya fuligula*, gadwall *Mareca strepera*, shoveler *Spatula clypeata*, mute swan *Cygnus olor* and little grebe *Tachybaptus ruficollis*.

Annex 2

Views about Management

This is a legal document on which you have a right to make objections or representations, as explained in part 3 of this notification document.



Views About Management

Wildlife and Countryside Act 1981 Section 28(4)

A statement of Natural England's views about the management of Swanscombe Peninsula Site of Special Scientific Interest (SSSI)

This statement represents Natural England's views about the management of the Swanscombe Peninsula SSSI for nature conservation. It sets out, in principle, our views on how the site's special conservation interest can be conserved and enhanced. Natural England has a duty to notify the owners and occupiers of SSSIs of its views about the management of the site.

Not all of the management principles will be equally appropriate to all parts of the SSSI. Also, there may be other management activities, additional to our current views, which can be beneficial to the conservation and enhancement of the features of interest.

This Statement does not constitute consent for any of the 'operations requiring Natural England's consent'. The written consent of Natural England is required before carrying out any of those operations. Natural England welcomes consultation with owners, occupiers and users of the SSSI to ensure that the management of this site conserves and enhances the features of interest, and to ensure that all necessary prior consents are obtained.

Background

Post-industrial sites may support considerable nature conservation interest, particularly when they provide habitat connectivity with remnant semi-natural habitats, including saltmarshes and intertidal areas, and function as important refuges for wildlife within urban and intensive agriculture landscapes. For example, old quarries, industrial workings and old landfill areas can provide free-draining and impoverished substrates with unusual pH and mineral content within a varied topography. Where opportunities allow, these conditions enable a range of dry to wetland habitats to develop within a mosaic providing important transitions between them for the benefit of many animals and plants.

Management principles

A range of management approaches are required to maintain the special features of this SSSI in a favourable condition. Broadly speaking, they can be summarised as follows:

- Geological features – the management aim is to ensure that features remain intact, accessible for study and free from tree or scrub roots, which penetrate the deposits.
- Intertidal mudflats and saltmarsh – these habitats do not generally require active management. The priority is to maintain suitable water quality and tidal and sediment supply processes.
- Wet grassland – this habitat requires active management, primarily to remove each year's growth of vegetation, and the maintenance of a seasonally-high water table.
- All other habitats (including dry and wetland open mosaic habitats on previously developed land, scrub, ponds and swamp/fen) – the management aim is to maintain the overall extent and relative proportions of these habitats and the transitions between them in a complex mosaic. The distribution and juxtaposition of components of the mosaic will shift over time in line with vegetation succession and periodic, rotational management interventions to arrest that succession.

Management should seek to maintain the favourable hydrological conditions and levels of saline intrusion that support the range of coastal wetland habitats. The habitats within this site are highly sensitive to inorganic fertilisers and pesticides, applications of which should be avoided. Herbicides may be useful in targeting certain invasive species but should be used with extreme care. Access to parts of this site, and any recreational activities within it, may also need to be managed.

Even where the management aims summarised above are similar, the methods for achieving them in different parts of the site may vary significantly, as described in more detail below. It is also important to avoid any incidental damage when carrying out site management; for instance, vegetation clearance in breeding bird habitats should avoid the nesting season.

The site contains features that reflect its industrial past. Some of these may provide valuable supporting habitat for key species within the invertebrate assemblages. Management should ensure that where necessary these man-made structures are retained on site and, where appropriate, allowed to decay naturally.

Due to its qualities and history, the site has an important role to play in better understanding the ecological requirements of key invertebrates; for instance, by experimenting with innovative techniques to inform the management of other sites. Some species within the invertebrate assemblages require conservation at a metapopulation level and an abundant forage resource within the wider landscape. Consequently, we acknowledge the importance of sympathetic management within a wider landscape.

Geology

The geological interests within the SSSI at Bakers Hole are shallow, finite, sensitive and irreplaceable. The main management principles are to conserve the resource in the long-term, while permitting scientific usage, which involves accessing the sediments via exposing temporary sections, trial pits and boreholes as well as specimen collecting with consent. Balancing these two opposing principles is the key to long-term positive management.

Judgment of how much collecting can be permitted, while sustaining the resource, must be made on a case-by-case basis. Collecting of specimens requires very careful management to ensure that the geological resource is conserved. Where there is any doubt, caution should be applied before removing or allowing any material to be removed.

Sites such as this with a finite geological resource are particularly sensitive because the important interest features are typically restricted in volume. In addition to unconsented specimen collecting, any activity which disturbs, conceals, or requires removal of part or all of the geological interest features can cause irreparable damage or destruction, and should not be permitted. Any structure or proposal that restricts access to the feature for sampling (for example by excavation, boreholes and trial pits), should also not be allowed.

Vegetation control, involving sensitive removal of large trees and scrub, is required at Bakers Hole to avoid root penetration disrupting the shallow, finite deposits and to enable re-exposure of the geological features when required for study. The maintenance of permanent exposures is not advisable at Bakers Hole due to the soft nature of the geology.

Intertidal mudflats and saltmarsh

Mudflats often occur in the upper intertidal zones of estuaries, eventually progressing to saltmarsh in the highest part of the tidal range and beyond the tidal limit. Mudflats and saltmarshes are important feeding sites for water birds, with saltmarshes additionally providing refuge and breeding grounds. Saltmarshes are also an important habitat for invertebrates, particularly in areas of structurally diverse vegetation.

Muddy coasts are natural habitats generally dominated by tidal processes and the need for active management is usually minimal. However, their proper management requires an understanding of inputs and processes, both natural and anthropogenic. Maintenance of good water quality and sediment quality is important, and the sediment budget within the estuarine or coastal system should not be restricted by anthropogenic influences.

The birds that use mudflats and saltmarshes are vulnerable to disturbance from human activities, for example, bait digging, dog walking and wildfowling. Increased disturbance can lead to reduced time spent feeding, or individuals being restricted to areas with a poor food supply. Management should seek to minimise any such disturbance.

The location and extent of mudflats and saltmarsh is dependent on the ability of the estuary or coast where they occur to respond to sea level rise and changing sediment regimes. Where appropriate management needs to create space for landward roll-back in response to sea-level rise and to allow the system to respond to associated changes, such as movement of physical features.

Wet grassland

Wet grasslands occur on land that is subject to periodic flooding or has a seasonally high water table and is waterlogged for much of the year. They often support a wide variety of plants and animals and are an important habitat for breeding waders and wintering wildfowl.

Wet grassland requires active management if it is to retain its conservation interest. Generally, each year's growth of vegetation must be removed. Otherwise the sward becomes dominated by tall, vigorous grasses and rushes which, together with an associated build-up of dead plant matter, suppress less vigorous species and lower the botanical richness of the sward. Traditionally, this management is achieved by grazing. Cattle are often the preferred stock, being relatively tolerant of wet conditions and able to control tall grasses and rank vegetation. They also tend to produce a rather uneven, structurally diverse sward. Grazing usually takes place between late spring and early autumn, but the precise timing and intensity will depend on local conditions and requirements, such as the need to avoid trampling ground-nesting birds. Heavy poaching should be avoided but light trampling can be beneficial in breaking down leaf litter and providing areas for seed germination. Agricultural operations in general should be avoided before mid-June to minimise disturbance to breeding birds or the destruction of nests. An element of managed scrub, both within and fringing the grassland can be of importance to birds and invertebrates.

A mosaic of winter flooded and permanently un-flooded grassland is desirable, with both temporary and permanent pools present. From April onwards, the area of standing surface water should be reduced to increase the area available for nesting waders and to concentrate aquatic invertebrates in small pools to provide suitable feeding areas for their young. Some shallow areas of flooding should be maintained until late June to provide patches of bare muddy ground on which the birds and their young can feed as raised sward height makes feeding on the drier areas more difficult. The birds using these features are directly vulnerable to disturbance, which can cause them to lose time spent feeding or drive them to areas with a poorer supply of food. Management should seek to minimise any harmful disturbance.

Careful maintenance of existing ditches and drains is usually acceptable practice, but abandonment or deepening of ditches can be harmful. Cultivation and increased drainage are likely to be damaging and should be avoided.

All other habitats (including dry and wetland open mosaic habitats on previously developed land, scrub, open water, swamp and fen)

Much of this site comprises a complex mosaic of habitats which have formed on previously developed land, as well as remnants of habitats with more semi-natural origins. This mosaic includes free-draining herb-rich grassland, disturbed bare ground, open swards, scrub, open waters, swamp, fen and wetlands with brackish transitions. The component habitats grade into one another and the transitions between them are important. Many of the special invertebrates and breeding birds rely on several elements of the mosaic, so it is essential that management maintains the full range and broad proportions of habitats and transitions, near to one another and with complex structural variation.

The mosaic of habitats will change over time if processes of natural succession continue unchecked. For instance, if the site is not managed it is likely that areas currently supporting open and flower-rich grassland will become increasingly dominated by robust, species-poor vegetation and affected by shading-out from trees, scrub or bramble. Appropriate timing and levels of cutting,

soil disturbance and tree/scrub/bramble removal may be necessary to maintain the desirable balance of successional stages of key habitats within the site.

Management should aim to leave a complex structure with varied micro-topography after disturbance and ensure that the site supports adequate quantities of suitable bare ground (including within swards and on slopes, micro-cliffs and cliff exposures). This can be achieved by the complete clearance of areas on a rotational basis or regular disturbance within existing open areas. It is important though that all elements of the habitat mosaic are represented at appropriate spatial scales over time and this will influence the scale of clearance works that is desirable. Where appropriate (although not in areas supporting important geological or archaeological features), up-rooting scrub in wet and dry habitats may be beneficial by avoiding herbicide use and creating periodic disturbance.

Both natural and artificial open waters, such as freshwater and brackish ponds and ditches can support a wide range of aquatic plants and often provide important habitats for breeding birds, invertebrates and amphibians. Some ponds may only contain water during certain periods of the year and these temporary ponds are important for specialised plants and animals which depend on the seasonal nature of the habitat. Swamps develop on the fringes of open water, or in shallow depressions with permanent standing water. Swamps usually consist of a single species of plant such as reeds, with a few other species thinly distributed among them. Swamps and fens represent transient stages in the change from open water to dry land.

Natural succession will lead to the gradual drying out of wetland habitats and therefore some scrub and bramble clearance may be required. Ditches and ponds may need to be de-silted on a rotational basis to slow succession down. Silt and plant material should only be removed from a portion of the pond or ditch at any one time, allowing sufficient recovery time before other areas are dredged. Additionally, a range of water depths and areas of exposed muddy margins should be retained. It may be desirable to maintain a range of ponds and ditches in various stages of succession.

Management should either seek to retain swamp and fen communities in the same place or provide new niches for the swamp and fen communities to develop in. Vegetation succession may be slowed by raising the water table and by periodically removing any encroaching scrub. If the vegetation surface of the whole wetland appears to be building up or drying out for some other reason it may be necessary to create scrapes or ponds. Rotational cutting can help maintain reedbeds by encouraging reed growth and preventing excessive leaf litter. This is best undertaken during the winter (November–March) with all cut material removed.

Wetland areas (such as brackish ditches, ponds and shallow depressions) can be impacted by changes to the hydrological regime and alterations to the current levels of saline intrusion. Management should seek to maintain the favourable hydrological conditions that support the range of wetland habitats on site.

The management of wetland habitats should maintain good water quality. Nutrient increases can cause a loss of aquatic plants and increased algal growth. Other factors can also lead to a decrease in aquatic plants in favour of algae, including introduction of species such as bottom feeding coarse fish which uproot plants and disturb sediments.

Open waters and other wetlands are particularly susceptible to invasion by non-native aquatic plants such as Australian swamp stonecrop and parrot's feather. These species grow rapidly, taking up available habitat and smothering other plants. These plants should be removed as soon as they are observed. Some native species such as duckweeds are also able to take over in this way, but such growths are usually avoided by maintaining appropriate nutrient levels in the water.

Although some scrub will need to be cleared periodically to maintain open habitats and wetlands (as described above), it is an essential component of the habitat mosaic in this site. It supports breeding birds and the transitional zone between scrub and other habitats can be particularly important for invertebrates.

Often, scrub is a transitional stage that will develop into woodland if unmanaged. Structural diversity and a mosaic of age classes is important for maintaining the diversity of species that an

area of scrub is able to support. For example, hawthorn scrub supports the greatest variety of bird and insect species in the early and middle stages of growth.

Scrub can be managed using rotational cutting (as part of a wider approach to managing the mosaic of habitats at this site), which should aim to maintain a mosaic of patches at different stages of growth. Where stands of scrub are to be maintained in situ, they can be cut in small patches to create an intimate mixture of scrub and grassland. Grazing is another method for managing scrub and on some sites and locations may be a more suitable management tool than cutting. By its nature, grazing can help to create a patchy mosaic of scrub. As with cutting, it can also help to maintain a range of age classes. However, stock levels need to be carefully controlled and too high a grazing pressure may lead to an impoverished vegetation structure and prevent natural regeneration, leading to a loss of cover over time. Where the objective is to increase the area of scrub an initial period of fencing to control grazing may be required.

Where scrub supports nesting grey herons *Ardea cinerea* and/or little egrets *Egretta garzetta*, management should aim to keep areas around the heronry quiet and undisturbed.

Date notified: 11 March 2021

Annex 3

List of operations requiring Natural England's consent

This is a legal document on which you have a right to make objections or representations, as explained in part 3 of this notification document.

Operations requiring Natural England's consent

Wildlife and Countryside Act 1981 Section 28 (4)(b)

The operations listed below may damage the features of interest of **Swanscombe Peninsula SSSI**. Before any of these operations are undertaken you must consult Natural England and may require consent.

It is usually possible to carry out many of these operations in certain ways, or at specific times of year, or on certain parts of the SSSI, without damaging the features of interest. If you wish to carry out any of these activities please contact the Natural England Area Team, who will give you advice and where appropriate issue a consent. Please help us by using the 'notice form' (provided at notification and available on request) to ask us for consent to carry out these operations.

In certain circumstances it will not be possible to consent these operations, because they would damage the features of interest. Where possible the Area Team will suggest alternative ways in which you may proceed, which would enable a consent to be issued. To proceed without Natural England's consent may constitute an offence. If consent is refused, or conditions attached to it which are not acceptable to you, you will be provided with details of how you may appeal to the Secretary of State.

Standard reference number	Type of operation
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| 1. | Cultivation, including ploughing, rotovating, harrowing and re-seeding. |
| 2. | Grazing and alterations to the grazing regime (including type of stock, intensity or seasonal pattern of grazing). |
| 3. | Stock feeding and alterations to stock feeding practice. |
| 4. | Mowing or cutting vegetation and alterations to the mowing or cutting regime (such as from haymaking to silage). |
| 5. | Application of manure, slurry, silage liquor, fertilisers and lime. |
| 6. | Application of pesticides, including herbicides (weedkillers) whether terrestrial or aquatic, and veterinary products. |
| 7. | Dumping, spreading or discharging of any materials. |
| 8. | Burning. |
| 9. | Release into the site of any wild, feral, captive-bred or domestic animal, plant, seed or micro-organism (including genetically modified organisms). |
| 10. | Killing, injuring, taking or removal of any wild animal (including dead animals or parts thereof), or their eggs and nests, including pest control and disturbing them in their places of shelter. |
| 11. | Destruction, displacement, removal or cutting of any plant or plant remains, including tree, shrub, herb, hedge, dead or decaying wood, moss, lichen, fungal fruiting bodies, leaf-mould and turf. |
| 12. | Tree and/or woodland management and alterations to tree and/or woodland management (including, planting, felling, pruning and tree surgery, thinning, coppicing, changes in species composition, removal of fallen timber). |
| 13a. | Draining (including the use of mole, tile, tunnel or other artificial drains). |
| 13b. | Modification to the structure of water courses (ditches and drains), including their banks and beds, as by re-alignment, regrading, damming or dredging. |
| 13c. | Management of aquatic and bank vegetation for drainage purposes. |

Standard reference number	Type of operation
14.	Alterations to water levels and tables and water utilisation (including irrigation, storage and abstraction from existing water bodies and through boreholes). Also the modification of current drainage operations.
15.	Infilling or digging of ditches, drains, ponds, pools, marshes or pits.
16a.	Freshwater fishery production and/or management, including sporting fishing and angling and alterations to freshwater fishery production and/or management.
16b.	Coastal fishing, fisheries management and seafood or marine life collection, including the use of traps or fish cages and alterations to coastal fishing practice or fisheries management and seafood or marine life collection.
17.	Reclamation of land from sea, estuary or marsh.
18.	Bait digging in intertidal areas.
19.	Erection and repair of sea defences or coast protection works.
20.	Extraction of minerals including topsoil, subsoil, chalk, sand, gravel and spoil.
21.	Destruction, construction, removal, rerouting, or regrading of roads, tracks, walls, fences, hardstands, banks, ditches or other earthworks, including soil and soft rock exposures or the laying, maintenance or removal of pipelines and cables, above or below ground.
22.	Storage of materials.
23.	Erection of permanent or temporary structures or the undertaking of engineering works, including drilling.
24a.	Modification of natural or man-made features and clearance of boulders, large stones, loose rock or spoil.
24b.	Battering, buttressing, grading or seeding of geological exposures (spoil and soil) and infilling of pits and quarries.
25.	Removal of geological specimens including rock samples, minerals and fossils.
26.	Use of vehicles or craft.
27.	Recreational or other activities likely to damage or disturb the features of special interest.
28a.	Game and waterfowl management and hunting practices and alterations to game and waterfowl management and hunting practice.
28b.	Use of lead shot.

Notes

- i. This is a list of operations appearing to Natural England to be likely to damage the special features of the SSSI, as required under section 28 (4) (b) of the Wildlife and Countryside Act 1981.
- ii. Where an operation has been granted a consent, licence or permission from another authority separate consent will not be required from Natural England. However, other authorities are required to consult Natural England before such consents, licences or permissions are issued.
- iii. Any reference to 'animal' in this list shall be taken to include any mammal, reptile, amphibian, bird, fish or invertebrate.

Date notified: 11 March 2021

National Grid Reference: TQ605758

Annex 4

Map showing the land notified

This is a legal document on which you have a legal right to make objections or representations, as explained in part 3 of this notification document.

Insert map(s) here