Vattenfall Wind Power Ltd

Thanet Extension Offshore Wind Farm

Outline Landscape and Ecological Management Plan

June 2018, Revision A

Document Reference: 8.7

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TABLE OF CONTENTS

1 INTRODUCTION

1.1 Overview

1.1.1 Vattenfall Wind Power Ltd (VWPL) is submitting an application to the Planning Inspectorate (PINS), on behalf of the Secretary of State for Energy and Climate Change, for a Development Consent Order (DCO) for the Thanet Extension Offshore Wind Farm (Thanet Extension) under the Planning Act 2008.

1.1.2 This Outline Landscape and Ecological Management Plan (OLEMP) (Document Ref: 8.7) sets out the in-principle measures which will be implemented by the Project to avoid, reduce or offset potential impacts on landscape and biodiversity resources due to the onshore elements of Thanet Extension. It also provides outline details of proposed biodiversity enhancements and proposed monitoring.

1.1.3 This OLEMP has been prepared by SLR Consulting and Optimised Environments (OPEN) on behalf of VWPL. The OLEMP is intended as a precursor to a more detailed LEMP, which would be produced and agreed with Thanet District Council (TDC) and Dover District Council (DDC), in consultation with Natural England and other relevant stakeholders, post consent.

1.2 Scope of this Document

Spatial Scope

1.2.1 This OLEMP relates to the onshore elements of Thanet Extension. Except where stated otherwise this applies to the areas within the project Red Line Boundary (RLB) that lie above Mean High Water Springs (MHWS). Details of ecological mitigation measures relating to the offshore elements of Thanet Extension, including intertidal and subtidal environments, are provided in the Saltmarsh Mitigation and Reinstatement Plan and the Biogenic Reef Mitigation Plan (Document Ref: 8.13 and 8.15 respectively). The onshore RLB is shown in Figure 1, which also shows the locations of various different areas within the RLB, as referred to in this document.

1.2.2 The main exception to the above relates to measures to avoid disturbance to birds using intertidal habitats, which are also included in this OLEMP. This mirrors the approach taken in the Environmental Statement (ES) where potential impacts on birds using intertidal habitats are addressed in Volume 3, Chapter 5: Onshore Biodiversity (Document Ref. 6.3.5) whilst intertidal habitats and faunal communities are addressed Volume 2, Chapter 5 (Document Ref: 6.2.5).

1.2.3 Within the onshore environment, mitigation, compensation and enhancement measures, as defined in the ES, Volume 3, Chapter 5: Onshore Biodiversity (Document Ref: 6.3.5) (section 5.5), will be restricted to the area within the RLB wherever possible. However, it may be appropriate and beneficial for some biodiversity enhancements to be implemented on land outside the RLB. Such cases are clearly highlighted within the relevant sections of this document. Further details of how these measures will be secured are provided in section 1.4.

Temporal Scope

1.2.4 This OLEMP primarily relates to measures to be employed during the construction phase of Thanet Extension, or immediately thereafter. Where relevant however, measures to be employed during preventative (planned) maintenance throughout the Operation and Maintenance (O&M) phase are also included. Measures which relate to the O&M phase are clearly highlighted in the text. A programme will be provided in the detailed LEMP, once further details of all the relevant measures have been developed and agreed.

1.2.5 The extent or nature of any unplanned corrective maintenance required during the O&M phase can't be predicted at this stage as it is by its nature unplanned, and therefore mitigation requirements cannot be predicted. Mitigation measures relating to any unplanned corrective maintenance during the O&M phase are therefore not included within this document. If required, mitigation for unplanned corrective maintenance would be subject to agreement as part of the process of obtaining any necessary consents and following consultation with the relevant statutory nature conservation bodies.

1.2.6 No decision has been made regarding the final decommissioning for the onshore components of Thanet Extension. It is anticipated that a separate LEMP would be produced to cover the decommissioning phase and the decommissioning phase is therefore not covered in this document. Measures to be included in the decommissioning phase LEMP would depend on the detailed activities and methodology for decommissioning, which will be determined later within the project lifetime. Measures would be based on updated ecological survey data and would adhere to relevant legislation and good practice guidelines in place at the time.

Technical Scope

1.2.7 This OLEMP provides summary details of mitigation and compensation measures incorporated into the project (referred to in the ES as embedded mitigation) to address potential impacts on landscape and biodiversity resources. Potential impacts on these resources are considered in Volume 3, Chapter 5: Onshore Biodiversity (Document Ref. 6.3.5) and Chapter 2: Onshore Landscape and Visual Impact Assessment (LVIA) (Document Ref. 6.3.2), which should be read alongside this document.

1.2.8 The measures covered by this OLEMP include:

- Proposals for reinstatement and restoration following construction;
- Proposals for screening planting at the substation;
- Proposals for the protection of retained habitats; and
- Proposals for measures to address potential impacts on protected or notable species, including:
  - Terrestrial invertebrates;
  - Reptiles;
  - Birds (breeding birds and non-breeding waterbirds);
  - Bats; and
  - Other mammals.

1.2.9 Details of proposed measures to manage potential impacts due to accidental pollution, both airborne (including dust) and waterborne, are provided in the Code of Construction Practice (CoCP) (Document Ref. 8.1) and are not repeated here. The CoCP also includes details of measures to be employed to prevent the spread of invasive non-native species.

1.2.10 This OLEMP also includes initial proposals for biodiversity enhancements, in accordance with relevant planning policy. These proposals will be developed further in consultation with relevant stakeholders and details provided within the detailed LEMP, post consent. It is noted that there is often considerable overlap between mitigation, compensation and enhancement. This document includes a combination of mitigation, compensation and enhancement measures and does not necessarily always distinguish between them. Differences between mitigation, compensation and enhancement are set out in Volume 3, Chapter 5: Onshore Biodiversity (Document Ref. 6.3.5).

1.2.11 This OLEMP also includes proposals for monitoring, where required. Relevant, appropriately timed monitoring is important to enable the success of the measures set out in the LEMP to be determined and to identify the need for measures to be altered, if required.

1.3 Structure of this Document

1.3.1 This OLEMP is structured as follows:

- Section 2 sets out proposals for reinstatement and restoration following construction, with separate sub-sections provided outlining measures to be

employed within designated sites, specifically Pegwell Bay Country Park and Stonelees Nature Reserve, and within other parts of the RLB;

- Section 3 outlines proposals for screening planting at the substation site;
- Section 4 provides details of proposals for the protection of retained habitats;
- Section 5 provides details of measures to address potential impacts on protected or notable species;
- Section 6 sets out initial proposals for biodiversity enhancements; and
- Section 7 outlines proposals for monitoring.

1.4 Mechanisms for Delivery

1.4.1 The production, agreement and implementation of the detailed LEMP form the subject of a DCO Requirement (Document Ref: 3.1). The detailed LEMP will be produced in accordance with the measures set out in this OLEMP. Under the DCO the Project will be required to implement the measures set out in the agreed LEMP.

1.4.2 Any biodiversity enhancements that could be implemented outside the project RLB would be subject to agreement with the relevant land owner/ manager(s).

1.5 Ecological Clerk of Works

1.5.1 A suitably qualified Ecological Clerk of Works (ECoW) will be employed for the duration of the construction period (and any subsequent reinstatement works), although this may not necessarily be a full-time role throughout. The ECoW will oversee the implementation of the detailed LEMP during this period.

2 REINSTATEMENT AND RESTORATION

2.1 Pegwell Bay Country Park

Landfall and Cabling Options

2.1.1 Pegwell Bay Country Park is located on a historic landfill. Due to the potential release of contamination, the suitability of drilling or trenching within this land will need to be informed by detailed Site Investigation (SI) works. A number of different options for the landfall and onward cabling within Pegwell Bay Country Park are therefore included within the Application. Further details are provided in the ES, Volume 3, Chapter 1: Project Description (Onshore) (Document Ref. 6.3.1). The three options for the landfall are summarised below.

2.1.2 Landfall Option 1: Transition Joint Bays (TJBs) would be located below ground within the Country Park, up to 350 m from the existing sea wall and cables would cross the sea wall by Horizontal Directional Drilling (HDD). This Option requires a larger onshore temporary works area (50 m x 60 m) than Options 2 and 3 in order to house the HDD rig and associated equipment but does not require excavation and reinstatement of the sea wall. Under this Option HDD would be undertaken from land to sea, with an initial bore undertaken prior to a wider drill profile and installation of ducts to house the cables. The HDD ducts would be installed from the TJB location, out to a punch-out location at least 100 m seaward of the sea wall. As a result of the uncertainty associated with the contents of the landfill there may be a need to control the HDD works in order to prevent the introduction of a pathway for the contaminants present.

2.1.3 Landfall Option 2: This option would be employed if SI works indicate that drilling or trenching is likely to result in an unacceptable release of contamination. Under this Option TJBs would be located above ground within the Country Park, up to 350 m from the existing sea wall. This would require installation of a temporary cofferdam within the upper intertidal/saltmarsh area before extending the existing sea wall. The cables would be trenched through the upper intertidal area to the seawall extension. The seawall extension is required to allow for the vertical transition from buried offshore cables to the above ground TJBs and onward surface laid onshore cables. This would ensure that the works do not expose any of the landfill. After construction of the seawall extension and installation of the cables the cofferdam would be removed, and the seawall extension would be reinstated.

2.1.4 Landfall Option 3: TJBs would be located below ground within the Country Park before trenching the remainder of the route. As with Option 2 this requires installation of a temporary cofferdam before excavating through from the upper intertidal, through the existing sea wall. For this Option the cofferdam is required to ensure no release of contaminants from the landfall into the marine environment. The offshore cables would be trenched from the intertidal area through this cofferdam and seawall area onshore into the TJB area. The cofferdam would then be removed, and the seawall would be reinstated.

2.1.5 The technique used for onward cabling within Pegwell Bay Country Park will depend on the option adopted for the landfall. For Options 1 and 3, cables would be buried below ground along the entire cable route.. For Option 2, cables would be surface laid within the Country Park, covered by a 1.2 m high berm for the primary cable, and a slightly larger berm where jointing bays are required until the cable route reaches Stonelees Nature Reserve (see section 2.2).

2.1.6 The final solution for the landfall and onshore cabling within Pegwell Bay Country Park will be determined during the detailed design phase and the detailed LEMP will be developed based on that final design. At this stage however, it has to be assumed that any of the three options could be adopted. As such outline reinstatement and restoration proposals are provided for all three options within this OLEMP.

Reinstatement of TJBs and Cable Route (Landfall Options 1 and 3)

2.1.7 If a buried solution is feasible, i.e. under landfall Options 1 and 3, habitats would be reinstated following construction of the landfall and installation of the cables. The overall aim of the reinstatement would be to enable either the re-establishment of existing grassland habitats or the creation of species-rich grassland.

2.1.8 Where possible, excavated soils will be carefully stored and reinstated as soon as possible. Soils will be reinstated in a way that is suitable for the chosen method of vegetation establishment (see below), including any necessary soil preparation. Should contaminated material be excavated this would be disposed of and suitable soil would be imported to facilitate restoration. The precise nature of any soil imported will depend on availability and would be specified within the detailed LEMP. Any imported soil would be relatively nutrient-poor, which is essential for the successful establishment of species-rich grassland.

2.1.9 Revegetation of reinstated soils is most likely to take place via natural colonisation but could also take place via seeding. If seeding is undertaken a native species-rich grassland mix, which is appropriate to the site and the reinstated soils, will be used.

2.1.10 Reinstated habitats will be subject to an initial aftercare period of 12 months following reinstatement (or if seeding is used, following seeding). The methods of aftercare will be agreed in the final LEMP but are likely to include the management of undesirable weeds and (if seeding is used) at least two cuts during the initial 12 month period, with the cuttings removed. During the 12 month aftercare period, seeded areas are likely to need protection from disturbance by people or grazing animals. The precise methods for protection will be agreed as part of the detailed LEMP but may involve the temporary cessation of grazing within the relevant compartments and/ or the use of temporary fencing and signage. If grazing management has to be temporarily halted, The Project would be responsible for the management of the relevant grazing compartments, during the aftercare period, by mechanical means.

2.1.11 Following the 12 month aftercare period it is envisaged that ongoing management would revert back to the existing management regimes, e.g. grazing and cutting. Ongoing management would be the responsibility of the land owner/ manager, in accordance with the existing management plan (Blackwood Bayne, 2018).

2.1.12 Following reinstatement it is intended that public access will be maintained in line with existing access arrangements and that all existing footpaths will continue to be used. Management of access during construction is beyond the scope of this OLEMP and is covered in detail within the Access Management Strategy (Document Ref: 8.4) with broad principles provided within the CoCP (Document Ref. 8.1).

Restoration of Berm (Landfall Option 2)

2.1.13 If a buried solution is not feasible, i.e. under landfall Option 2, habitats would be restored on top of a berm. The overall aim of the restoration would be the creation of species-rich grassland.

2.1.14 At this stage there are two primary options for the substrate to be used in the restoration of the berm. These include:

- Chalk; and
- Nutrient-poor neutral soil or subsoil.

2.1.15 'Virgin' chalk has been used for the restoration of the Nemo Link berm through Pegwell Bay Country Park, created in 2017. It is understood that this will be allowed to colonise naturally. In the long term this should result in the creation of a habitat (chalk grassland) of high conservation value however it is acknowledged that the establishment of chalk grassland habitat on the Nemo Link berm could take several years. In order to speed up the establishment of vegetation it may also be possible to use some form of ameliorated chalk whereby 'virgin' chalk is mixed with an appropriate topsoil to increase its fertility sufficiently to enable vegetation establishment.

2.1.16 The use of 'virgin' chalk for Thanet Extension would complement the Nemo Link restoration and would increase the extent of chalk grassland within the site. However it could take a number of years to establish. The use of some form of ameliorated chalk could speed up establishment but may reduce the conservation value of the resulting grassland community.

2.1.17 Use of a nutrient-poor neutral soil or subsoil should enable the establishment of species-rich neutral grassland more quickly than using 'virgin' chalk, although the long term value of the resulting habitat may not be as great. Neutral soils are present across much of Pegwell Bay Country Park and the restored habitat would therefore be consistent with the grassland habitat currently present across much of the site.

2.1.18 The final choice of substrate to be used for restoration would take into account factors including availability of different materials, the relative value of the habitat which would be created and the time which would be needed for establishment. Any available monitoring data for the Nemo Link berm which are available at that time would also be taken into consideration.

2.1.19 The design of the berm within the section where it would run in parallel to the existing Nemo Link berm (see Figure 1), would take into account its relationship with the Nemo Link berm. This would include consideration of the final landform, choice of substrate and method of establishing vegetation. The aim would be to avoid conflict with the aims of the Nemo Link restoration and to enable existing management (i.e. grazing) to continue as far as possible.

2.1.20 Whichever substrate is used, as for reinstatement, there are two options for the establishment of vegetation, natural colonisation or seeding. If seeding is undertaken a native species-rich grassland mix, which is appropriate to the site and the nature of the substrate chosen, will be used.

2.1.21 Aftercare and ongoing management would take place as described for reinstatement. Potential implications of the chosen restoration method for ongoing management would be discussed with the land owner/ manager at the detailed design stage in order to avoid the need for significant changes to the existing management regime as far as possible.

2.1.22 As for reinstatement, following restoration it is intended that public access will be maintained in line with existing access arrangements and that all existing footpaths will continue to be used. Where existing paths cross the berm a shallow slope (1:12) will be created to maintain inclusive access across the country park. Further details are provided in the ES, Volume 3, Chapter 1: Project Description (Onshore) (Document Ref. 6.3.1) and the Access Management Strategy (Document Ref. 8.4).

Reinstatement of Temporary Works Area

2.1.23 The temporary works area in the western part of Pegwell Bay Country Park will be fully reinstated following construction using similar methods to those set out in relation to the reinstatement of TJBs and Cable Route (Landfall Options 1 and 3).

2.1.24 The temporary access from Sandwich Road, at the northern end of the temporary works area, will be reinstated to trees and scrub, replacing those removed during construction of the access. This will be achieved by planting of native species appropriate to the site, with the detailed mix of species and other planting details specified in the detailed LEMP.

2.1.25 Reinstated trees and shrubs will be subject to an initial aftercare period of two years following seeding. During this period weed control will be applied as appropriate and any failures will be replaced. Further management should not be required following the end of the two year aftercare period.

2.2 Stonelees Nature Reserve

2.2.1 Within Stonelees Nature Reserve excavated soils will be carefully stored and reinstated as soon as possible following cable installation. Soils would be reinstated in a way that is suitable for the chosen method of vegetation establishment, as described in section 2.1 with respect to Pegwell Bay Country Park.

2.2.2 Revegetation of reinstated soils is most likely to take place via natural colonisation but could also take place via seeding if required. If seeding is undertaken a native species-rich grassland mix, which is appropriate to the site and the reinstated soils, will be used.

2.2.3 Reinstated habitats will be subject to an initial aftercare period of 12 months following reinstatement (or if seeding is used, following seeding), as described in section 2.1 with respect to Pegwell Bay Country Park.

2.2.4 Following the 12 month aftercare period it is envisaged that ongoing management would revert back to the existing management regimes, e.g. grazing/ non-intervention. Ongoing management would be the responsibility of the land owner/ manager, in accordance with any existing management plan(s).

2.2.5 Following reinstatement it is intended that public access would be maintained in line with existing access arrangements. Management of access during construction is beyond the scope of this OLEMP and is covered in the Access Management Plan (Document Ref: 8.4).

Replacement of Ephemeral Pools

2.2.6 As set out in the ES, Volume 3, Chapter 5: Onshore Biodiversity (Document Ref. 6.3.5) it is understood that natterjack toads (*Epidalea calamita*) were reintroduced to a number of specially created ephemeral pools within Stonelees Nature Reserve by Kent Wildlife Trust (KWT) between 2003 and 2005. Natterjack toad was not recorded here in 2016 however, with the last known record dating from 2014 and it is considered unlikely that natterjack toad is still present here.

2.2.7 At least one of the ephemeral pools is located within the RLB and may therefore be lost during construction (no other pools appear to be present within the RLB based on aerial photos and initial walkovers, although identification was made difficult as all pools were dry at the time aerial photos were taken and walkover surveys were carried out). Despite the lack of recent natterjack toad records these pools are of value in their own right and therefore any pools which can't be avoided by the cable routing will be replaced with new pools on a 2:1 basis (i.e. two new pools for each one lost).

2.2.8 Replacement pools will be of a similar size and depth to the pools which are lost and will be located within the RLB or adjacent to it (in agreement with the landowner) in similar locations to the pool(s) to be lost. New pools will not be located directly above the cables themselves but will be located adjacent to the cable route in areas subject to temporary disturbance during construction works. The precise location of any replacement pools will be set out in the detailed LEMP. At this stage it is envisaged that the replacement pools will be allowed to colonise naturally, although the introduction of plant matter from other nearby pools may also be considered.

2.3 Other Areas

2.3.1 To the south of Stonelees Nature Reserve the cable route largely passes through habitats of low conservation value, i.e. amenity grassland, hardstanding and bare ground. These will be reinstated to their previous state following construction.

2.3.2 The cable route passes through three lines of trees within or on the boundaries of the Baypoint Sports Club site and a small number of trees will also be lost during construction of the proposed new access into that area. The number of trees which need to be removed will be kept to a minimum but these trees will not be replaced for operational reasons (i.e. because access to the cable route is required). Most of the trees to be lost are introduced non-native species, e.g. Lombardy poplar *Populus nigra 'Italica'* and white poplar *Populus alba*, of low ecological value. Measures to mitigate for possible impacts on nesting birds and bat roosts during felling are outlined in section 5.3.

3 SCREENING PLANTING AT THE SUBSTATION

3.1 Introduction

3.1.1 Whilst not considered to be necessary due to the industrial context of the substation site and absence of sensitive receptors, it is noted through consultation with Dover District Council, that tree planting to the north of the substation site could be proposed as specific visual enhancement. Screen planting at the substation site could be proposed mainly to screen views of the substation experienced by motorists and walkers from the Richborough Roundabout/Ramsgate Road (A256) (Viewpoint 1), but would also strengthen existing screening from more distant views further to the north such as from Pegwell Promenade (Viewpoint 9) and Shellness (Viewpoint 4) (although there is restricted public access to Shellness). Views from these viewpoints are illustrated in the ES, Volume 3, Chapter 2: Onshore LVIA (Document Ref. 6.3.2), Figures 2.11, 2.14 and 2.19.

3.1.2 Landscape and visual effects change over time as mitigation measures establish and mature (such as planting and restoration of habitat types included as part of the proposed development) and/ or the existing landscape external to the proposed development evolves. Vegetation and habitat loss across the site area will be kept to a minimum and proposed landscape mitigation planting will ensure that the character of the local area is retained and enhanced for future benefit. As the proposed landscape matures, the degree of adverse effect would reduce.

3.2 Baseline Situation

3.2.1 The existing tree planting around the proposed substation site is substantial, and together with other vegetation and built elements in the wider landscape, provides visual screening for the majority of visual receptors in the area. The primary view into the substation site that is considered for visual enhancement is from the Richborough Port roundabout which has a view along the existing access road to the British Car Auctions (BCA) gate and would form the principal means of access from the A256 into the proposed substation site. The specific location of the proposed substation entrance from this road has not been determined at this stage and will be agreed at the detailed design stage. Much of the strip of planting between the substation site and the A256 consists of deciduous trees, however some of the bushy understorey is evergreen and the tree cover appears denser due to ivy growing on tree trunks and branches. There is still partial visibility through the woodland belt from the A256 through the gaps between trees in the winter months.

3.3 Key Objectives of Landscape Planting

3.3.1 Mitigation planting for the substation should comprise the establishment of woodland belts in strategic locations around the site where practicable. These could complement existing woodland blocks and belts, increasing their depth and extent to ensure robust screening, and eventually form enclosure from almost all visual aspects.

3.3.2 In order to mitigate the effect of the substation on views from the Richborough Port roundabout, proposed screen planting could either be designed to be situated across the north-west corner of the substation site and continue eastwards along the access road where the site would be accessed (see Figure 2: Outline Landscape Mitigation Plan Option 1). Alternatively, if the access is closer to the Richborough Port roundabout, the proposed screen planting along the access road could be increased in size, where practicable, to screen some of the potential views into the substation site through the point of entrance (see Figure 3: Outline Landscape Mitigation Plan Option 2). The final choice of option will be set out in the form of a landscape plan for the substation as required within the draft DCO (Document Ref: 3.1).

3.3.3 Screen planting around the substation site could ensure that views into the site from the A256, distant views from the north and views of the substation components during winter months are minimised and the visual amenity of nearby visual receptors is enhanced.

3.4 Landscape Planting

3.4.1 Screen planting could be designed to comprise a mix of fast growing species typical to the area specifically selected for their long-term screening potential. Tree species could also be selected for site suitability, local species context and biodiversity value. A larger percentage of evergreen species could be included in the areas defined specifically as screening woodland with a more balanced mix of deciduous / evergreen native species in other areas of proposed woodland, increasing the biodiversity value of the planting. A dense understorey of shrubs including a high percentage of evergreen species could also be included throughout the woodland structure.

3.4.2 Proposed screen planting is considered to be effective and deliverable on the proposed substation site. Whilst the specific growth rates will depend on site conditions and the detailed substation design and layout, it is assumed that screen planting would be sufficiently fast growing to provide substantial screening of the substation structures and building within between 15 and 25 years. Using an average and approximate growth rate for tree and shrub species that may be used (see below), the height of the screen planting should reach approximately 8-10 m after 15 years and 13 - 15 m after 25 years.

3.4.3 Tree species will be selected for site suitability, screening potential, local species context and increased biodiversity. A species mix including Scots pine (*Pinus sylvestris*), hawthorn (*Crataegus monogyna*), poplar (*Populus* sp.), willow (*Salix* sp.), sycamore (*Acer pseudoplatanus*) and oak (*Quercus robur*) would match tree species found in existing coastal woodlands local to the site area. Ultimately, the tree and shrub specification should prioritise screening and biodiversity in its selection of species. Existing planting that surrounds the substation site will continue to grow and could be managed to ensure its long-term screening potential.

3.4.4 Proposed tree and shrub planting could be spaced to maximise growth rate and ultimate screening potential. An example of this would be approximately one plant per m^2 in natural groups and not too regimented (i.e. in randomly spaced species groups of 3, 5 and 7 plants), however the precise detail of these spacings should form part of the planting schedule in the detailed LEMP. The proposed tree and shrub planting could strengthen lines of existing wooded strips, connecting to established coastal shelterbelt/ amenity planting in the area, fitting in to the existing landscape structure.

3.4.5 The quality of the topsoil on the site is not known at this stage and may be subject to further investigation. If the topsoil is of poor quality or insufficient, then the structure may need to be improved. To allow a suitable growing medium, imported topsoil or topsoil found elsewhere within the development site could be redistributed to the planting areas, if required.

3.4.6 In relation to preparation of the planting areas the following guidelines could be followed: ensure area is weed free prior to planting; apply suitable herbicide if required, where practicable and in line with the wider ecological strategy; and break existing ground identified for tree planting to a suitable depth, harrow and remove large stones.

4 PROTECTION OF RETAINED HABITATS

4.1 Habitats within Designated Sites

Protection of Retained Habitats during Construction

4.1.1 Working areas within designated sites will be kept to the minimum area necessary. The extent of the working area will be dependent upon the final design solution adopted and will be specified in the detailed LEMP. Working areas will be enclosed within temporary fencing (e.g. Heras fencing) to avoid inadvertent damage to adjacent habitats.

4.1.2 All retained trees located directly adjacent to working areas will be protected by Root Protection Areas (RPAs) during construction, in accordance with BS 5837:2012 (British Standards Institution, 2012). The location and extent of any RPAs will be specified in the detailed LEMP.

Protection of Retained Habitats during O&M

4.1.3 Regular inspections of any joint pits located within Stonelees Nature Reserve will be undertaken on foot and damage to retained or reinstated habitats within the onshore parts of the Thanet Coast and Sandwich Bay Special Protection Area (SPA)/ Ramsar and Sandwich Bay to Hacklinge Marshes Site of Special Scientific Interest (SSSI) is therefore not likely. Routine maintenance is not anticipated however any emergency/ non-routine maintenance within Stonelees Nature Reserve would only be undertaken following discussions with the relevant Statutory Nature Conservation Bodies.

4.1.4 Regular inspections of the TJBs and joint pits within Pegwell Bay Country Park will be undertaken on foot or using a light vehicle only, that latter will be restricted to existing tracks.

4.2 Open Mosaic Habitat at the Substation

4.2.1 The area of open mosaic (ephemeral/ short perennial) habitat to be retained, to the east of the substation site within the Richborough Port area of the site (see section 5.3), will be enclosed within temporary fencing (e.g. Heras fencing) to avoid inadvertent damage during construction of the substation.

4.3 Other Habitats

4.3.1 Working areas will be enclosed within temporary fencing (e.g. Heras fencing) to avoid inadvertent damage to adjacent habitats. All retained trees will be protected by Root Protection Areas (RPAs) during construction, as set out in section 4.1.

5 MEASURES TO ADDRESS POTENTIAL IMPACTS ON PROTECTED AND NOTABLE SPECIES

5.1 Background

5.1.1 This section provides outline details of measures to minimise potential impacts on protected and notable species and ensure compliance with relevant wildlife-related legislation, e.g. the Wildlife & Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017.

5.1.2 Protected and notable species which could potentially be affected by the proposed development are set out in the ES, Volume 3, Chapter 5: Onshore Biodiversity (Document Ref. 6.3.5) and mitigation measures for those species are included here. Based on current information mitigation measures are not required for any other species or species groups.

5.2 Pre-construction Surveys

5.2.1 Due primarily to the time that will have elapsed since the last surveys and the possibility that species presence or activity could have changed in the intervening period, pre-construction surveys will be undertaken for a number of species/ species groups. These include certain species which, based on current information, will not be affected by the proposed development (and are therefore not subject to the mitigation measures set out in this document) but which could potentially (re)colonise the site prior to construction commencing.

5.2.2 The results of the pre-construction surveys will be used to identify whether any changes to the measures proposed in section 5.3 are required and the detailed LEMP will be updated to reflect the survey results, as required.

5.2.3 Table 5-1 provides further details of the pre-construction surveys proposed. All surveys will be undertaken by suitably experienced/ licensed ecologists who are members of an appropriate professional body such as the Chartered Institute of Ecology and Environmental Management (CIEEM).

Table 5-1 Pre-construction Surveys

Species / Group	Survey Area	Survey Timing	Survey Methods
Terrestrial invertebrates	All habitats of potential value to terrestrial invertebrates within the RLB, i.e. Pegwell Bay Country Park, Stonelees Nature Reserve and areas of open mosaic habitat at the substation site.	May to September, prior to development of detailed LEMP	Bespoke – four visits undertaken by a specialist entomologist, spread across the season and using a range of sampling techniques. All groups to be targeted but specific attention to be focussed on species forming part of the notified Ramsar and SSSI invertebrate assemblages.
Great crested newt (GCN) (*Triturus cristatus*)	The pond in the southern part of Pegwell Bay Country Park (water body 196 in ES Volume 5, Annex 5-3: Great Crested Newt Survey Report (Document Ref. 6.5.5.3) will be subject to a pre-construction survey. Although it is not likely to support GCN it was not able to be surveyed in 2017 or 2018 due to a lack of access so a survey is proposed to confirm absence.	April 15th – June 30th during the season prior to construction commencing	eDNA survey to be carried out in accordance with Biggs *et al*. (2014).
Natterjack toad	Ephemeral freshwater pools within Stonelees Nature Reserve.	April – August during the season prior to construction commencing	Combination of torchlight surveys, refuge searches, egg (spawn) searches and listening for calls (as per Natural England, 2015).
Breeding birds (Schedule 1 and other notable species particularly sensitive to disturbance)	Suitable habitat within 500 m of the RLB (peregrine *Falco peregrinus* and marsh harrier *Circus aeruginosus).* Suitable habitat within 250 m of the RLB (other disturbance-sensitive species, e.g. Cetti's warbler *Cettia cetti*, kingfisher *Alcedo atthis*, redshank *Tringa*	March to July immediately prior to and during the construction period	Surveys prior to construction to follow appropriate methods for the relevant target species, as specified by Gilbert *et al*. (1998) and Hardey *et al*. (2013). Regular checks to be carried out by the ECoW during construction (see section 5.3).

Species / Group	Survey Area	Survey Timing	Survey Methods
	totanus).		
Badger (*Meles meles*)	All suitable habitat within 50 m of the RLB	3-6 months prior to construction commencing	In accordance with Harris *et al*. (1989).
Water vole (*Arvicola aquatica*)	All water courses within or immediately adjacent to the RLB (100 m upstream/ downstream of RLB)	April to September during the season prior to construction commencing	In accordance with Dean *et al*. (2016).
Otter (*Lutra lutra*)	All water courses within or immediately adjacent to the RLB (250 m upstream/ downstream of RLB)	3-6 months prior to construction commencing	In accordance with Chanin (2003).

5.3 Measures to Address Potential Impacts on Protected and Notable Species during Construction

Terrestrial Invertebrates

5.3.1 Three species forming part of the Thanet Coast and Sandwich Bay Ramsar wetland invertebrate assemblage and 21 species forming part of the Sandwich Bay to Hacklinge Marshes SSSI invertebrate assemblage could potentially be present within the RLB (see ES, Volume 5, Annex 5-6: Terrestrial Invertebrate Assessment (Document Ref. 6.5.5.6)). The sections of Pegwell Bay Country Park and Stonelees Nature Reserve within the RLB are considered to be of local or potentially district significance for invertebrates and the open mosaic habitats in the proposed substation site could potentially support an invertebrate assemblage of county value. No legally protected invertebrate species are likely to be affected.

5.3.2 A Terrestrial Invertebrate Mitigation Strategy (TIMS) will be developed following completion of pre-construction invertebrate surveys (see Table 5-1) and further development of the detailed project design. The TIMS will form part of the detailed LEMP.

5.3.3 The TIMS will include specific measures to be employed within Pegwell Bay Country Park and Stonelees Nature Reserve to avoid or reduce effects on the following (if any such species are recorded during the pre-construction survey):

- species forming part of the Thanet Coast and Sandwich Bay Ramsar wetland invertebrate assemblage;
- species forming part of the Sandwich Bay to Hacklinge Marshes SSSI invertebrate assemblage; and
- any other nationally rare or scarce species which could be significantly affected, for example KWT has highlighted the presence of nationally rare micromoths associated with the plant tansy (*Tanacetum vulgare*) within Stonelees Nature Reserve.

5.3.4 The nature of any such measures will depend on the species involved and the extent of potential impacts and can't be determined at this stage. However, such measures may include micro-siting, the restoration or creation of specific micro-habitats following construction works and potentially translocation (if this is considered necessary and likely to be successful).

5.3.5 The TIMS will also include details of measures to maintain and enhance any important invertebrate populations associated with the open mosaic habitat within the proposed substation site within the old Richborough Port site. These measures will include the retention, enhancement and subsequent maintenance of an area of 0.4 ha on the eastern side of the substation site (see Figure 4). This area is currently characterised by a mosaic of ephemeral and short perennial vegetation with some scrub beginning to colonise. Detailed proposals for enhancements and subsequent management within this area will be developed following completion of the pre-construction survey in order to maximise the benefits to any particularly important species recorded there. At this stage however it is envisaged that enhancements are likely to involve the creation of a more varied topography and the possible creation of shallow water features. The nature of the final proposals will be subject to the results of Site Investigation works prior to construction (e.g. in case contaminated materials are identified).

5.3.6 The constructed substation is likely to include substantial areas of open ground, although the extent and location of any such areas won't be known until the detailed design stage. Where possible, areas of open ground within the substation will be managed to promote the establishment and subsequent maintenance of open mosaic habitat. Details will be provided in the TIMS, once further information regarding the substation design is known and Site Investigation works have been completed.

5.3.7 If any other invertebrate species of significant conservation importance are recorded during the pre-construction survey these will also be considered as part of the development of the TIMS.

Reptiles

5.3.8 Surveys in 2017 indicated a good population of viviparous lizard (*Zootoca vivipara*) in Pegwell Bay Country Park and Baypoint Sports Club. A low population of slow-worm (*Anguis fragilis*) was recorded in Pegwell Bay Country Park and low populations of viviparous lizard were recorded in Stonelees Nature Reserve and at the proposed substation site. Both species are listed on Schedule 5 of the Wildlife & Countryside Act 1981 (as amended) and protected in respect of killing, injuring and sale or offering for sale. Both species are also species of principal importance for the conservation of biodiversity in England under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 and Kent Biodiversity Action Plan (BAP) priority species.

5.3.9 Reasonable measures will be employed to reduce the chances of inadvertently killing or injuring individual viviparous lizards or slow-worms during construction works in potentially suitable reptile habitat. Potentially suitable habitat is present throughout Pegwell Bay Country Park and Stonelees Nature Reserve, within areas of unmanaged vegetation at Baypoint Sports Club and around the periphery of the Richborough Port site (Figure 4).

5.3.10 Given that large areas of suitable habitat will remain unaffected by the works and most habitats will be reinstated or restored following construction, fencing and translocation are not considered appropriate. Mitigation will therefore involve the management of vegetation (e.g. strimming long grass) to discourage occupation by reptiles and the identification and removal of potential refugia and hibernacula (if present) by the ECoW prior to construction works taking place in the relevant areas.

5.3.11 The management of vegetation (by strimming or flailing) and removal of potential refugia will only be undertaken during the reptile active period of March to October and therefore may need to be carried out well in advance of construction in areas where work is scheduled to commence during the winter months. At least 24 hours will be left between vegetation management and construction works commencing.

5.3.12 To minimise the potential for reptiles to become trapped in excavations, during the reptile active season (March to October) all excavations left open outside normal working hours will include a ramp at one end to enable reptiles (and other animals) to escape.

5.3.13 The enhancement of an area of 0.4 ha on the eastern side of the substation site (see above in respect of terrestrial invertebrates) will be designed to also benefit viviparous lizard.

Breeding Birds

5.3.14 Four species listed on Schedule 1 of the Wildlife & Countryside Act 1981 were recorded breeding within the ornithological survey area (RLB plus at least 500 m) in 2017: peregrine, marsh harrier, kingfisher and Cetti's warbler. In addition, 12 species forming part of the Sandwich Bay to Hacklinge Marshes SSSI breeding bird assemblage plus a number of other bird species of conservation concern were recorded breeding within the same area. All wild birds are subject to protection under Section 1 of the Wildlife & Countryside Act 1981 (as amended), which makes it an offence to intentionally damage or destroy the nest of any wild bird while that nest is in use or being built. Bird species listed on Schedule 1 are also protected against intentional or reckless disturbance while building a nest; in, on or near a nest containing eggs or young; or with dependent young.

5.3.15 Wherever possible, vegetation which could support nesting birds (e.g. trees, scrub or long grass) will be cleared outside the main bird breeding season (March to August inclusive) to avoid damage to, or destruction of nests. Where this is not possible vegetation to be cleared will be checked for active nests by the ECoW prior to clearance. If active nests are found vegetation clearance in the applicable area will be delayed until the relevant nesting attempt(s) has finished.

5.3.16 As set out in Table 5-1 surveys for Schedule 1 species and other breeding species of conservation concern which are likely to be particularly sensitive to disturbance, e.g. redshank, will take place prior to and during construction (as required, i.e. depending on the planned timing of construction works in the relevant areas). Avoidance of disturbance to these species whilst nesting (and therefore compliance with the relevant legislation) will be achieved through the implementation of disturbance-free buffer zones around active nests. The extent of any buffer zones will be species and location-specific and will be determined by the ECoW, taking into consideration relevant guidance (e.g. Ruddock and Whitfield, 2007) and site-specific factors, e.g. topography, screening and other potential sources of disturbance. The ECoW will then monitor any nesting attempts to determine when nesting attempts have finished and works may proceed and also to check that the buffer zones implemented are successful.

Non-breeding Waterbirds

5.3.17 Pegwell Bay supports important populations of a number of non-breeding waterbirds. These include: European golden plover (*Pluvialis apricaria*) (Thanet Coast and Sandwich Bay SPA qualifying species and Sandwich Bay to Hacklinge Marshes SSSI notified feature); ruddy turnstone (*Arenaria interpres*) (Thanet Coast and Sandwich Bay SPA and Ramsar qualifying feature); and grey plover (*Pluvialis squatarola*), ringed plover (*Charadrius hiaticula*) and sanderling (*Calidris alba*) (Sandwich Bay to Hacklinge Marshes SSSI notified features). It also supports nationally important numbers of lapwing (*Vanellus vanellus*).

5.3.18 Seasonal restrictions will be implemented to restrict works with potential to cause significant disturbance to non-breeding waterbirds utilising intertidal habitats in Pegwell Bay. These restrictions would apply to all construction works within intertidal habitats and at the shoreline, i.e. including all works on or within any cofferdam at the proposed landfall location (as required under Options 2 and 3 for the landfall) (see Figure 4). This would prevent any works taking place in these areas during the period October to March inclusive.

5.3.19 In addition, all driven/ percussive piling within Pegwell Bay Country Park, if required, would also be subject to a timing restriction and would not take place during the period October to March inclusive. Driven/ percussive piling is not likely to be required within Stonelees Nature Reserve.

5.3.20 Any works within 250 m of intertidal habitats (see Figure 4) that are in direct line of sight of intertidal habitats (e.g. works on the TJBs) would only take place during the period October to March following the erection of screening fencing to avoid visual disturbance to non-breeding waterbirds.

5.3.21 Further details relating to restrictions on driven piling and screening fencing would be provided in the detailed LEMP, following confirmation of which landfall option is to be used and the location of the onward cable route.

5.3.22 Precautionary measures are also proposed to minimise disturbance to non-breeding waterbirds from recreational users who may be displaced from Pegwell Bay Country Park into other, more sensitive areas during construction works. These measures could include:

- the erection of additional signs to discourage people from entering intertidal habitats during sensitive periods; and
- the ECoW (or temporary warden / natural ambassador) would monitor visitor disturbance to intertidal areas across all parts of Pegwell Bay during the sensitive October to March period and would speak to visitors to discourage them from entering intertidal habitats, if required.

Bats

5.3.23 No bat roosts have been recorded within or directly adjacent to the RLB, although a small number of trees with low bat roost potential around the edges of the Baypoint Sports Club will need to be felled during installation of cabling (see Figure 4). At least seven bat species were recorded during activity surveys. Activity of most species was relatively low, although common and soprano pipistrelles were recorded in reasonable numbers in some places, e.g. the southern end of Stonelees Nature Reserve. All bat species are protected under the Conservation of Habitats and Species Regulations 2017 and the Wildlife & Countryside Act 1981 (as amended). Noctule and soprano pipistrelle are also species of principal importance for the conservation of biodiversity in England under Section 41 of the NERC Act 2006 and Kent BAP priority species.

5.3.24 Precautionary measures will be employed during the felling of trees identified as having low bat roost potential, in line with current Bat Conservation Trust guidelines (Collins, 2016). All such trees will be felled under the supervision of the ECoW. The precise sensitive felling protocol will depend on the nature of the Potential Roost Features (PRFs) and will be agreed between the ECoW and the contractor on a tree-by-tree basis. However this is likely to involve removing limbs/ parts of the tree with PRFs carefully to the ground, and in accordance with best practice leaving in place for 24 hours before removal.

Other Mammals

5.3.25 No other protected or notable mammals are likely to be affected by construction works based on current survey data. However, a number of generic measures will be implemented to reduce the potential for accidental killing or injury of individual mammals, as follows:

- A maximum site speed limit of 15mph will be adopted during construction, which will reduce the likelihood of accidental injury/ killing of mammals by construction traffic.
- All potentially dangerous substances or materials will be carefully stored to prevent them causing any harm to animals which may enter working areas at night.
- To minimise the potential for mammals to become trapped in excavations, all excavations greater than 1m deep that are left open outside normal working hours will include a ramp at one end to enable animals to escape.

5.4 Measures to Address Potential Impacts on Protected and Notable Species during O&M

5.4.1 The locations of any protected and notable species that could potentially be adversely affected by planned inspections will be avoided as far as possible during preventative (planned) maintenance. Any such locations will be specified in the detailed LEMP based on the most up to date information available at that time and considering the final design solution adopted. Locations would be updated, as required, throughout the O&M period via regular consultation with the NNR site manager(s).

5.4.2 Planned inspections within intertidal habitats will avoid the period October to March inclusive (as for construction) in order to avoid disturbance to non-breeding waterbirds.

6 BIODIVERSITY AND LANDSCAPE ENHANCEMENTS

6.1 Proposed Biodiversity Enhancements

6.1.1 A number of biodiversity enhancements, relevant to the effects of the project, will be provided as part of the proposed development in accordance with relevant planning policy. A number of the measures set out in sections 2, 3 and 5.3 may result in biodiversity enhancements, depending on the details of the final proposals. This section presents initial proposals for additional enhancements. It is anticipated that these would all take place within Pegwell Bay Country Park and/ or Stonelees Nature Reserve, with a number of measures potentially taking place outside the RLB (subject to agreement with the relevant land owner/ manager(s)). Further details will be provided in the detailed LEMP.

6.1.2 Initial proposals for additional biodiversity enhancements include:

- Creation of additional ponds/ pools;
- Creation of reptile refugia/ hibernacula;
- Erection of bat and bird boxes;
- Scrub management to promote grassland habitat and benefit nightingale; and
- Creation of small areas of sacrificial crop (for seed-eating birds).

6.1.3 The creation of additional ponds/ pools could include further ephemeral pools within Stonelees Nature Reserve (see Section 2.2) or more permanent features. Permanent ponds could be located either within Stonelees or the country park, although it is noted that any water features within the country park would need to be 'raised' to avoid the need for excavation of the landfill, as is the case with the existing pond there. The creation of wetland habitat should complement the existing mix of wetland habitats within the NNR and the wider Sandwich Bay to Hacklinge Marshes SSSI and may also contribute towards targets for wetland restoration and re-creation for the Lower Stour Wetlands Biodiversity Opportunity Area (BOA).

6.1.4 Reptile refugia/ hibernacula could include brash and log piles or more engineered hibernacula. Hibernacula may be created using a range of materials, e.g. cut timber, inert stone, grubbed up tree roots or rubble, some of which may be able to be recycled following construction works, before being covered with turf or soil. Methods of construction would follow those set out by Edgar *et al*. (2010) or other relevant guidance.

6.1.5 Most of the trees within Pegwell Bay Country Park and Stonelees Nature Reserve are relatively young and therefore the erection of bird and bat boxes should provide valuable nesting/ roosting habitat for species which use holes in trees. The type of boxes used would target species of conservation importance which are known to be present in the area.

6.1.6 The current Pegwell Bay Country Park Management Plan (Blackwood Bayne, 2018) includes an objective to avoid scrub encroachment onto areas in which chalk substrate is present to promote grassland diversity. If appropriate to do so, scrub clearance undertaken prior to works within the RLB could be extended to include other parts of the country park or Stonelees Nature Reserve. As well as contributing to objectives for the country park this could potentially also contribute towards targets for species-rich grassland enhancement for the Lower Stour Wetlands BOA.

6.1.7 Small numbers of nightingale (*Luscinia megarhynchos*) are currently present within Stonelees Nature Reserve and Pegwell Bay Country Park (see ES Volume 5, Annex 5-4: Ornithology Baseline Report (Document Ref. 6.5.5.4)). Nightingale is a conservation priority, included on the red list of Birds of Conservation Concern following a 48% decline between 1995 and 2015. Nightingale requires structurally diverse areas with patches of scrub at different stages of growth and would therefore potentially benefit from scrub management. Scrub patches of at least half a hectare are needed to allow rotational cutting to be employed (BTO, 2015).

6.1.8 The creation and management of small areas of sacrificial crop should benefit seed-eating birds, potentially including turtle dove (*Streptopelia turtur*), which is a current conservation priority, having suffered a 94% decline between 1995 and 2015 but is still present at Stonelees Nature Reserve (see ES Volume 5, Annex 5-4: Ornithology Baseline Report (Document Ref. 6.5.5.4). Small plots of wild bird cover can be created using a biennial mix of seed-bearing plants such as kale, cereal and quinoa. For turtle doves, at least two plots should be created in alternate years so some seed is available in the spring every year (RSPB, no date).

7 MONITORING

7.1 Monitoring of Reinstated and Restored Habitats

7.1.1 Monitoring of reinstated and restored habitats is proposed within Pegwell Bay Country Park, Stonelees Nature Reserve and at the substation site. The purpose of the monitoring will be to determine whether the habitat reinstatement and/ or restoration has been successful and to identify the need for remedial measures, if required.

Pegwell Bay Country Park and Stonelees Nature Reserve

7.1.2 All reinstated or restored grassland will be subject to monitoring. Monitoring will also include new ephemeral pools.

7.1.3 Monitoring will take place annually for the first three years following construction. The need for further monitoring, e.g. if remedial measures are needed, will be reviewed following completion of the monitoring in Year 3.

7.1.4 Monitoring methods will depend on the nature of the measures employed and will be specified in the detailed LEMP. Monitoring is likely to involve two visits per year with the methodology designed to enable a rapid assessment of habitat condition and the quick identification of any potential issues.

Open Mosaic Habitat at the Substation

7.1.5 Monitoring of open mosaic habitats at the substation will be undertaken in conjunction with the monitoring of terrestrial invertebrates (see section 7.2).

7.2 Monitoring of Terrestrial Invertebrates

7.2.1 The need for monitoring of species forming part of the designated site invertebrate assemblages will depend on whether any such species will be affected and the nature of any measures employed to reduce impacts upon them. Likewise, monitoring methods will depend on the species involved and the nature of the relevant mitigation measures.

7.2.2 Monitoring of terrestrial invertebrates will take place within the retained and created areas of open mosaic habitat at the substation site (where safe access is possible). Monitoring methods will depend on the particular species groups targeted and the nature of the enhancement measures employed. A simple assessment of habitat condition will also be included in the monitoring methodology.

7.2.3 In order to determine whether mitigation has been successful monitoring of terrestrial invertebrates will be undertaken annually for the first three years following construction. The need for further monitoring, e.g. if remedial measures are needed, will be reviewed following completion of the monitoring in Year 3.

7.2.4 Detailed proposals for monitoring of terrestrial invertebrates will be included in the TIMS, which will form part of the detailed LEMP.

7.3 Additional Monitoring of Biodiversity Enhancements

7.3.1 The need for monitoring of biodiversity enhancements can only be determined once further details have been developed and agreed as part of the detailed LEMP. If necessary, monitoring of biodiversity enhancements will be carried out for up to three years following implementation.

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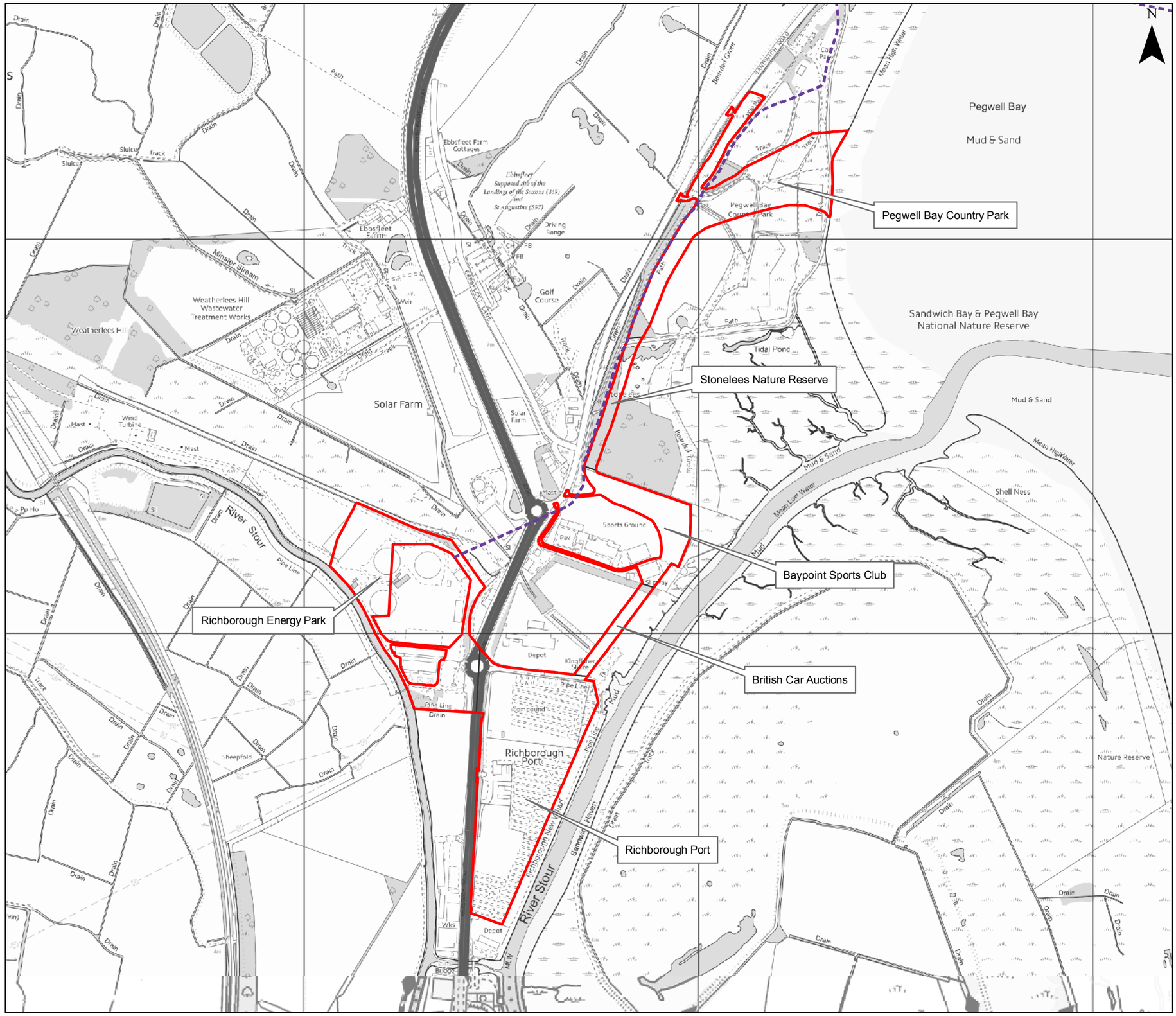
Figures



SLR global environmental solutions

VATTENFALL

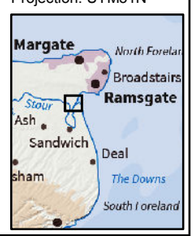
THANET EXTENSION OFFSHORE WIND FARM OUTLINE LEMP

Figure 1
Onshore Site Boundary

Legend

- ONSHORE SITE
- NEMO INTERCONNECTOR

Datum: OSGB 1936
Projection: UTM31N



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[1]© Crown copyright [and database rights] (2015) 0100031673 Expires 06/11/2018

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Rev	0.1	Date	18/05/2018
By	AGB	Layout	N/A

Figure 1

633200 633400 633600 633800

162000 161800 161600

N

Existing trees

Existing trees retained and protected

Proposed screen planting
To mitigate views from Richborough Roundabout

Access Option A

Richborough Roundabout

Existing trees

Proposed screen planting
To mitigate distant views from the north

Habitat Enhancement
Open Mosaic habitat of value to terrestrial invertebrates.

Existing trees retained
Existing trees retained to ensure long term screening potential.

Existing planting retained
Existing planting along the A256 will continue to grow and should be managed to ensure its long term screening potential

Planting Notes

Tree species should be selected for site suitability, screening potential, local species context and increased biodiversity. A species mix including Scots Pine, Hawthorn, Poplar, Willow, Sycamore, and Oak would match tree species found in existing coastal woodlands local to the site area and a dense understorey of shrubs including a high percentage of evergreen species should also be considered. Ultimately, the tree and shrub specification should prioritise screening and biodiversity in its selection of species.

Proposed tree and shrub planting should be spaced to maximise growth rate and ultimate screening potential. An example of this would be approximately one plant per m2 in natural groups and not too regimented (i.e. in randomly spaced species groups of 3, 5 and 7 plants), the precise detail of these spacings should form part of the detailed planting schedule. The proposed tree and shrub planting will strengthen lines of existing wooded strips, connecting to established coastal shelterbelt/ amenity planting in the area, fitting in to the existing landscape structure.

633200 633400 633600 633800

open optimised environments

VATTENFALL

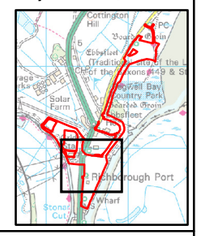
THANET EXTENSION OFFSHORE WIND FARM

Figure 2
Substation Area - Option A Landscape Mitigation

Legend

- Red Line Boundary (Cable corridor)
- Indicative Substation Location
- Indicative Cable Trench
- Existing trees retained
- Proposed Habitat Enhancement
- Proposed Screening Planting

Datum: OSGB 1936
Projection: BNG



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Rev	1	Date	04/06/2018	
By	JM	Layout	THET2018	

633200 633400 633600 633800

162000 161800 161600

N

Existing trees

Existing trees retained and protected

Proposed screen planting
To mitigate views from Richborough Roundabout

Access Option B

Richborough Roundabout

Existing trees

Proposed screen planting
To mitigate distant views from the north

Habitat Enhancement
Open Mosaic habitat of value to terrestrial invertebrates.

Existing trees retained
Existing trees retained to ensure long term screening potential.

Existing planting retained
Existing planting along the A256 will continue to grow and should be managed to ensure its long term screening potential

Proposed screen planting
This area of planting introduced to screen views through access Option B

Planting Notes

Tree species should be selected for site suitability, screening potential, local species context and increased biodiversity. A species mix including Scots Pine, Hawthorn, Poplar, Willow, Sycamore, and Oak would match tree species found in existing coastal woodlands local to the site area and a dense understorey of shrubs including a high percentage of evergreen species should also be considered. Ultimately, the tree and shrub specification should prioritise screening and biodiversity in its selection of species.

Proposed tree and shrub planting should be spaced to maximise growth rate and ultimate screening potential. An example of this would be approximately one plant per m2 in natural groups and not too regimented (i.e. in randomly spaced species groups of 3, 5 and 7 plants), the precise detail of these spacings should form part of the detailed planting schedule. The proposed tree and shrub planting will strengthen lines of existing wooded strips, connecting to established coastal shelterbelt/ amenity planting in the area, fitting in to the existing landscape structure.

633200 633400 633600 633800

open optimised environments

VATTENFALL

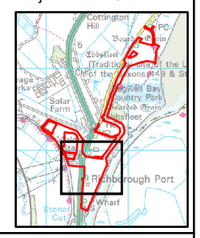
THANET EXTENSION OFFSHORE WIND FARM

Figure 3
Substation Area - Option B Landscape Mitigation

Legend

- Red Line Boundary (Cable corridor)
- Indicative Substation Location
- Indicative Cable Trench
- Existing trees retained
- Proposed Habitat Enhancement
- Proposed Screening Planting

Datum: OSGB 1936
Projection: BNG



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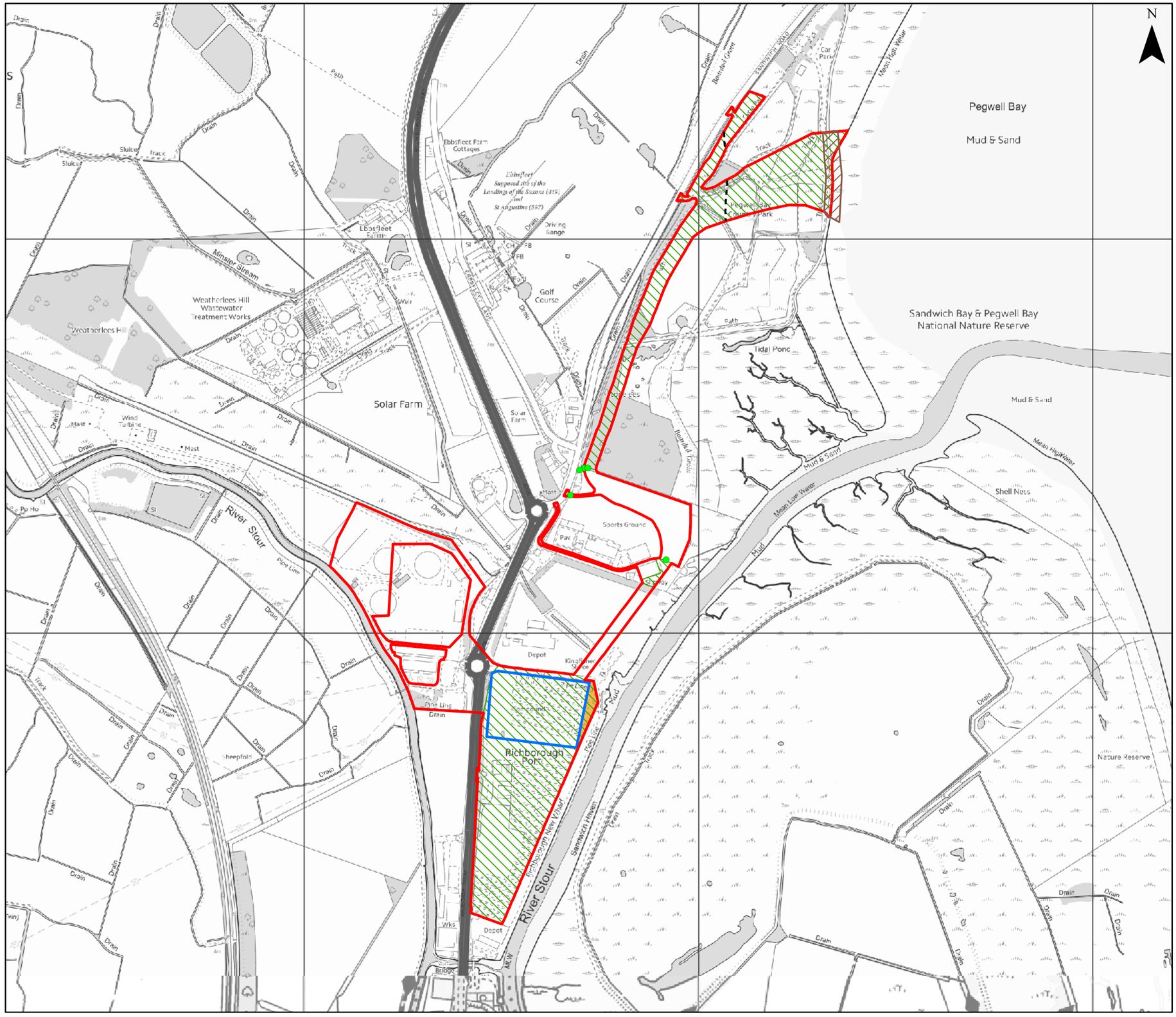
Rev	1	Date	04/06/2018	
By	JM	Layout	THET2018	



SLR global environmental solutions

VATTENFALL

THANET EXTENSION OFFSHORE WIND FARM OUTLINE LEMP

Figure 4

Measures Relating to Protected and Notable Species

Legend

- ONSHORE SITE BOUNDARY
- POTENTIAL ZONE OF SEAWALL COFFER DAM - NO WORKS TO BE CARRIED OUT HERE OCTOBER - MARCH INCLUSIVE
- 250m BUFFER FROM LANDFALL – VISUAL SCREENING TO BE USED AS REQUIRED
- AREAS CONTAINING SUITABLE REPTILE HABITAT WHERE MITIGATION WILL BE EMPLOYED TO AVOID ACCIDENTAL KILLING OR INJURY TO REPTILES
- OPEN MOSAIC HABITAT TO BE CREATED TO BENEFIT TERRESTRIAL INVERTEBRATES (WHERE POSSIBLE) WITHIN SUBSTATION SITE
- AREA OF OPEN MOSAIC HABITAT TO BE RETAINED AND ENHANCED FOR TERRESTRIAL INVERTEBRATES AND REPTILES
- TREES WITH LOW BAT ROOST POTENTIAL WHICH MAY REQUIRE SENSITIVE FELLING PROTOCOL

Datum: OSGB 1936
Projection: UTM31N

Notes
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Rev	0.1	Date	04/06/2018
By	AGB	Layout	N/A

Figure 4