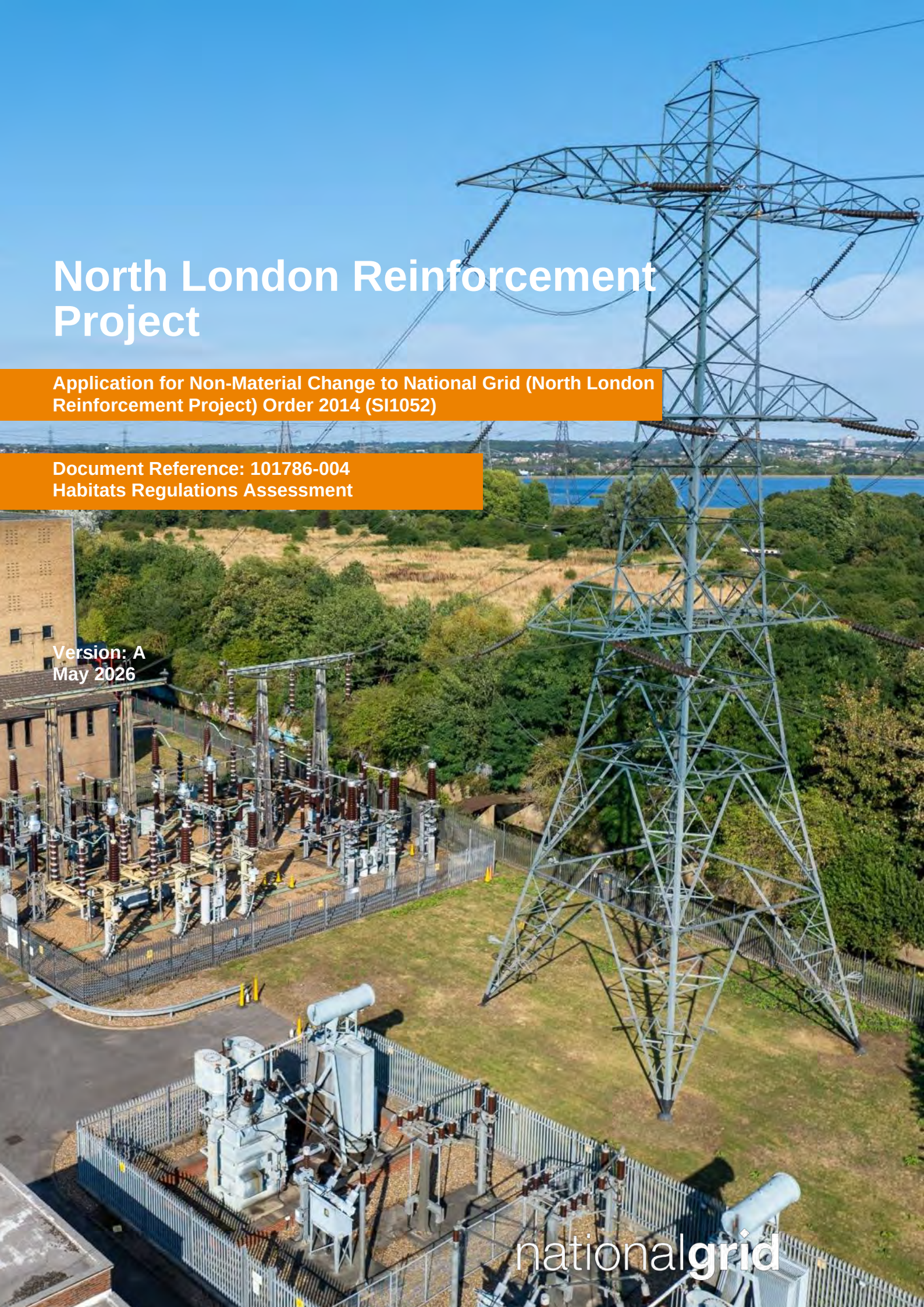

North London Reinforcement Project

Application for Non-Material Change to National Grid (North London Reinforcement Project) Order 2014 (SI1052)

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Executive Summary

Ex1.1 Introduction

Ex1.1.1 This Habitats Regulations Assessment (HRA) Report supports a Non-Material Change (NMC-1) application made by National Grid Electricity Transmission Plc (NGET) in respect of the National Grid (North London Reinforcement Project) Order 2014 (reference SI 2014/1052) (the 2014 Order). The 2014 Order was supported by an HRA undertaken in 2012 (Amec, 2012), which assessed the potential effects of the proposed scheme on international sites. This HRA Report (herein referred to as the Report) supplements the original assessment.

Ex1.1.2 NGET is proposing the following five changes (the Proposed Changes) to the 2014 Order to facilitate a new overhead line (OHL) bypass of Tottenham substation:

- Proposed Change 1: Amendment of design of transmission pylon VC1R;
- Proposed Change 2: Installation of a new transmission pylon ZBC44;
- Proposed Change 3: Installation of two spans of new 400kV overhead line (OHL);
- Proposed Change 4: Minor extension to the Order Limits; and
- Proposed Change 5: Removal of authorised development relating to underground cable bypass of Tottenham substation.

Ex1.1.3 This Report documents the potential for likely significant effects on international sites as a result of the five Proposed Changes to the 2014 Order in the context of the Conservation of Habitats and Species Regulations 2017 (as amended). Based on the defined study area, only one international site is identified for consideration: the Lee Valley Special Protection Area (SPA) and Ramsar site. The assessment considers potential construction and operational effects, both alone and in combination with other plans or projects. The Proposed Changes are confined to an existing operational substation and surrounding industrial land and will not involve works within any international site or functionally linked land (FLL).

Ex1.1.4 The Proposed Changes are located within the Proposed Amendment Order Limits (herein referred to as “the Site”) as shown on the Proposed Amendment Order Limits Plan (ref: 30302490-ARC-EGN-ZZ-DR-ZZ-00003-S2) in Appendix A.

Ex1.2 Habitats Regulations Assessment

Ex1.2.1 The noisiest construction activities associated with the Proposed Changes, including percussive piling, are programmed to take place during the overwintering period for qualifying bird species. This Report has therefore explicitly considered this worst-case timing. Published evidence on disturbance distances, together with detailed wintering bird surveys undertaken during the 2024/2025 season, demonstrate that the Site is not used by qualifying SPA/Ramsar species and is not integral to the function of the designated site. Construction and operational noise have been assessed in the context of an existing urban and industrial baseline, and the Proposed Changes represent a

reduction in construction intensity compared with the works authorised by the 2014 Order.

Ex1.3 Conclusion

Ex1.3.1 It is concluded that the Proposed Changes will not result in likely significant effects on the Lee Valley SPA/Ramsar site, either alone or in combination with other plans or projects.

Ex1.3.2 Accordingly, this Report concludes at the screening stage and no Appropriate Assessment is required.

Ex1.3.3 This conclusion is supported by Natural England, who have been consulted prior to the making of the NMC-1 application (see Appendix C).

1. Introduction

1.1 Overview

1.1.1 The National Grid (North London Reinforcement Project) Development Consent Order was made by the (then) Secretary of State for Energy and Climate Change on 16 April 2014 and came into force on 7 May 2014 (SI 2014 No. 1052), hereafter referred to as 'the 2014 Order'.

1.1.2 The 2014 Order provides development consent to National Grid Electricity Transmission Plc (NGET) to carry out the North London Reinforcement Project (NLRP), which comprises of the replacement of approximately 14 kilometres of existing 275kV OHL with 400kV OHL from Waltham Cross substation in Epping Forest, through Enfield, and then to Tottenham substation in Haringey. The 2014 Order also contains powers to carry out associated works to the substations at Waltham Cross, Brimsdown and Tottenham.

1.2 Purpose of the Report

1.2.1 This Report has been prepared to accompany the submission of the NMC-1 application for minor changes to the 2014 Order.

1.2.2 The purpose of this Report is to:

- Set out the details of the Proposed Changes;
- Supplement the conclusions of the original HRA (Amec, 2012) by assessing whether the Proposed Changes to the 2014 Order give rise to any new or different likely significant effects on international sites designated under the Conservation of Habitats and Species Regulations 2017 (as amended); and
- Demonstrate that the Proposed Changes will not result in likely significant effects on designated international sites, and that, accordingly, the HRA concludes at the screening stage.

1.2.3 This supplementary HRA has been informed by consultation with Natural England in January and February 2026, see Appendix C. During this consultation, Natural England has confirmed that it agrees with the conclusions reached in this Report.

2. Proposed Changes/Nature of the Change

2.1 Reason for the Proposed Changes

2.1.1 The authorised development at Tottenham Substation is set out in Schedule 1 to the 2014 Order within Work Numbers 9 – 13. The cable bypass at Tottenham substation provided for within Work Number 10 cannot be delivered within the Order Limits as detailed design work has demonstrated that there is insufficient space for the cable bending radius and associated cable bridge to accommodate cables currently available on the market.

2.1.2 A design review exercise was undertaken to consider alternative technical solutions. Each solution would require a change to the 2014 Order; however, the most efficient solution was identified as a bypass over Tottenham Substation using a short section of OHL. A detailed description of the Proposed Changes is provided in Section 2.2. An illustration of the Proposed Changes is shown on the Concept Plan (ref: 30302490-ARC-EGN-ZZ-DR-ZZ-00001-S2) in Appendix A.

2.2 Proposed Changes

2.2.1 NGET proposes to make the following changes to the 2014 Order:

Proposed Change 1: Amendment of design of transmission pylon VC1R

2.2.2 To facilitate an OHL bypass of Tottenham Substation, transmission pylon VC1R consented under **Work No. 11** of the 2014 Order will need to be increased in height to allow sufficient safety clearances of the substation. The plans and sections certified under Article 43 of the 2014 Order show transmission pylon VC1R at a height of 46.3m (not including the 3m limit of deviation). Proposed Change 1 is to increase the height of transmission pylon VC1R to 62m (not including the 3m limits of deviation). This is an increase in height of 15.7m.

2.2.3 Proposed Change 1 requires an amendment to the relevant plans and design drawings certified under Article 43 of the 2014 Order. The amendments needed to **Work No.11** are captured by Proposed Change 5.

2.2.4 The proposed new design for an OHL bypass would also involve consented (but not yet built) pylon VC1R being installed approximately 17m southwest of the location shown on the 2014 certified plans, although the new location lies within the original limits of deviation for **Work No 11.**

Proposed Change 2: Installation of a new transmission pylon ZBC44

2.2.5 To facilitate an OHL bypass of Tottenham Substation, Proposed Change 2 relates to the installation of a new transmission pylon – ZBC44 - at a height of 61m (not including the 3m limits of deviation) within the Order Limits and on land owned by NGET.

2.2.6 This change will require amendments to the description of **Work No 10** in Schedule 1 to the 2014 Order and to the relevant plans and design drawings certified under Article 43 of the 2014 Order.

Proposed Change 3: Installation of two spans of new 400kV overhead line

2.2.7 To facilitate an OHL bypass of Tottenham Substation, Proposed Change 3 is for the installation of two short sections of new 400kV OHL comprising new phase and earthwire conductors, insulators and fittings to connect:

- Transmission pylon ZBC43 to new transmission pylon ZBC44 (Proposed Change 2), approximately 55m in length; and
- Transmission pylon VC1R (Proposed Change 1) to new transmission pylon ZBC44 (Proposed Change 2), approximately 260m in length.

2.2.8 This change will require an amendment to the description of **Work No 10** in Schedule 1 and to the relevant plans and design drawings certified under Article 43 of the 2014 Order

Proposed Change 4: Minor extension to the Order Limits

2.2.9 To facilitate an OHL bypass of Tottenham Substation, Proposed Change 4 would involve a minor extension to the 2014 Order Limits. The proposed new section of OHL between new transmission pylon VC1R and the new transmission pylon ZBC44 (Proposed Change 3) will span over the southeastern corner of the Tottenham substation building which lies to the north of transmission pylon VC1R.

2.2.10 Tottenham substation is owned by NGET and leased to a Distribution Network Operator (DNO). The Order Limits will be extended to include the part of the substation building over which the proposed new section of OHL will span.

2.2.11 This change will require the replacement and amendment of the relevant plans and design drawings certified under Article 43 of the 2014 Order.

Proposed Change 5: Removal of authorised development relating to underground cable bypass of Tottenham substation

2.2.12 As an OHL bypass of Tottenham Substation is now proposed instead of an underground cable bypass this change would amend Schedule 1 to the 2014 Order to remove from the authorised development any works relating to the underground cable bypass. Change 5 will omit the following authorised works under Work No. 10 relating to the underground cable bypass:

- **"Work No. 10 (b)** Installation of new phase and earthwire conductors to gantries within new northern cable sealine end compound and removal of existing cables connecting ZBC43 to Tottenham Substation;

- **Work No. 10 (c)** Installation of new sealing end compounds at pylons ZBC43 and VC1R.
- **Work No. 10 (d)** The installation of up to twelve 400kV cables predominantly underground from the northern cable sealing end compound at transmission pylon ZBC43 to the southern sealing end compound at transmission pylon VC1R; and
- **Work No. 10 (e)** Installation of two cable bridges across Pymmes Brook."

2.2.13 The proposed southern sealing end compound required for the underground cable bypass will also no longer be needed and therefore this change will also require an amendment to Work No.11 in the 2014 Order to omit the following:

- "....and new connections from pylon VC1R to the gantries in the new southern cable sealing end compound".

2.2.14 Proposed Change 5 will also require amendment of the relevant plans and design drawings certified under Article 43 of the 2014 Order.

2.2.15 The Proposed Changes are located within the Proposed Amendment Order Limits (hereafter referred to as the Site), see Proposed Amendment Order Limits Plan (ref: 30302490-ARC-EGN-ZZ-DR-ZZ-00003-S2), in Appendix A.

3. HRA of the Proposed Changes

3.1 Need for HRA

3.1.1 The Conservation of Habitats and Species Regulations 2017 (as amended) supersede the Conservation (Natural Habitats &c.) Regulations 2010, on which the Habitats Regulation Assessment (HRA) submitted with the 2014 Order was based. Despite this change in regulations, the key drivers for requiring an HRA remain the same: any plan or project that is likely to have significant effects on an international site, either alone or in combination with other plans or projects, and that is not directly connected with or necessary to the management of that site, must undergo an appropriate assessment in view of the site's conservation objectives.

3.1.2 International sites, for the purpose of the legislation and current planning policy, are:

- Special Areas of Conservation (SACs); and
- Special Protection Areas (SPAs).

3.1.3 Government policy also requires an HRA to be undertaken for proposals affecting the following sites:

- Ramsar sites (both listed and proposed); and
- Potential SACs and SPAs.

3.1.4 The Site is adjacent to an international site, the Lee Valley SPA and Ramsar site and the Proposed Changes are not directly connected with the Lee Valley SPA and Ramsar site's management.

3.2 Purpose of the HRA of the Proposed Changes

3.2.1 This Report has been prepared to accompany the submission of the NMC-1 application to seek authorisation for the Proposed Changes. An assessment is required because the Proposed Changes were not considered in the original HRA undertaken in 2012. The Proposed Changes have the potential to give rise to likely significant effects that were not previously assessed and therefore must be evaluated under the Conservation of Habitats and Species Regulations 2017 (as amended). The 2012 HRA assessed the entirety of NLRP, from Waltham Cross to Tottenham. It concluded that there was not likely to be any significant effects and that there was no requirement for further assessment. Therefore, the 2012 HRA concluded at Screening Stage.

3.3 Stages of HRA

HRA is a multi-stage process with progression to the next stage dependent on the outcome of the previous stage. The stages of HRA are as follows:

HRA Stage 1: Screening for likely significant effects

3.3.1 The purpose of HRA Screening is to determine if a Project could have likely significant effects on an international site during construction or operation (and maintenance) on its

own or in combination with other projects. This Report follows the screening procedures outlined by the Natural England Standard: Habitats Regulations Assessment (Natural England, 2019) as well as the Planning Inspectorate's Advice Page (Planning Inspectorate, 2025).

3.3.2 Where it is determined at Stage 1 of the HRA process that a plan or project is not likely to have any significant effects on protected sites, HRA concludes at this stage.

3.3.3 The steps included in screening are set out in detail in Section 4 below.

HRA Stage 2: Appropriate Assessment (if required)

3.3.4 Where likely significant effects cannot be ruled out in screening, the assessment must then proceed to Appropriate Assessment, which is a detailed consideration of the potential for the Proposed Changes to have adverse effects on the integrity of the sites being assessed.

3.3.5 The Appropriate Assessment, if required, includes consideration of embedded, standard good practice and mitigation measures.

3.3.6 Where there is no reasonable scientific doubt that the proposal will not have an adverse effect on the integrity of the site, then the HRA concludes at this stage.

HRA Stage 3: Derogations (if required)

3.3.7 Where there is still a likely adverse effect on site integrity following application of mitigation, a derogation can be considered for the plan or project. There are three legal tests that must be passed in this instance:

- There are no feasible alternative solutions that would be less damaging or avoid damage to the site;
- The proposal needs to be carried out for imperative reasons of overriding public interest; and
- The necessary compensatory measures can be secured.

3.4 Limitations and Assumptions

3.4.1 The assessments of the Proposed Changes are supported by this Report which has been prepared specifically for the NMC-1 application. The Environmental Statement (ES) and HRA submitted with the 2014 Order application provide important contextual baseline information but did not assess the effects of the proposed new OHL bypass. This Report therefore draws on relevant 2014 baseline data where appropriate. This data has been supplemented by targeted wintering bird surveys (2024–2025; RSK Biocensus) and biodiversity surveys completed to inform the discharge of requirements under the 2014 Order.

3.4.2 Construction access will continue to be via Leeside Road and A1055 Watermead Way, as authorised under the 2014 Order and assessed within the original HRA. No new or amended access routes are proposed as part of the NMC-1 application. The continued use of Leeside Road and A1055 Watermead Way confines construction traffic to an established urban and industrial environment and will not introduce new land take, or vegetation clearance.

4. HRA Stage 1

4.1 Screening for likely significant effects on the international sites from the Proposed Changes alone

4.1.1 The purpose of this section is to identify the likely effects of the Proposed Changes on international sites and to assess their significance. All possible direct, indirect, and cumulative effects on the qualifying features of the site are considered.

Screening Step 1: Determining whether the plan / project is directly connected with or necessary for the management of the site

4.1.2 In accordance with the International Commission guidance, for a project to be 'directly' connected with, or necessary for, the management of an international site, the management must refer to measures that are for conservation purposes, with the 'directly' element referring to measures that are solely conceived for the conservation management of a site and not direct or indirect consequences of other activities (International Commission, 2019).

4.1.3 The 2014 Order and the Proposed Changes are not for the purposes of conservation management.

Screening Step 2: Describing the plan / project

4.1.4 The NLRP is described in the HRA and ES submitted with the 2014 Order Application, and the Proposed Changes are described above in Section 2.2.

Review of Proposed Changes to 2014 Order for HRA

4.1.5 The following Proposed Changes were not considered in the HRA submitted with the 2014 Order application and require assessment to determine whether they are likely to have a significant effect on designated features of the nearby Lee Valley SPA/Ramsar site.

4.1.6 Proposed Change 1: Amendment of design of transmission pylon VC1R – The revised location of pylon VC1R will still be within the Order Limits as defined in the 2014 Order and was therefore considered within the scope of the HRA submitted with the 2014 Order application. The pylon will be installed at an increased height to that considered within the HRA submitted with the 2014 Order application.

4.1.7 Proposed Change 2: Installation of a new transmission pylon ZBC44 – The installation of pylon ZBC44 is a new element that was not included within the 2014 Order. The works will involve similar construction activities as those for the new pylons considered in the HRA submitted with the 2014 Order application. The new pylon ZBC44 will be installed on previously developed land within the existing urban landscape. The previously developed land was the site of a former bus depot which is now owned by NGET.

4.1.8 Proposed Change 3: Installation of two spans of new 400kV overhead line (OHL) - involves installing a new OHL to connect the existing pylon ZBC43 to the new pylon ZBC44 and on to the relocated pylon VC1R.

4.1.9 Proposed Changes 1, 2, and 3 will result in the following construction activities:

- foundation construction at pylon bases;
- pile installation;
- operation of construction plant, including piling rigs and cranes;
- construction vehicle movements, including Heavy Goods Vehicles (HGVs); and
- the presence of construction personnel within defined working areas.

4.1.10 The relocated pylon VC1R and new pylon ZBC44 will not represent a new or unexpected source of visual disturbance, nor will they materially alter the existing vertical infrastructure envelope compared with the baseline established by the 2014 Order. Existing transmission infrastructure within and around the Tottenham substation has formed part of the local landscape since the 1960s and defines the established visual baseline (LVA Technical Note, Arup 2026).

4.1.11 Proposed Change 4: Minor extension to the Order Limits - introduces a minor amendment to the Order Limits to allow the new OHL (as considered in Proposed Change 3) between the new pylon ZBC44 and VC1R to safely span the southeastern corner of the Tottenham substation.

4.1.12 The purpose of Proposed Change 4 is to ensure sufficient clearance height of the new OHL above the building. It will not introduce any additional works or construction activities beyond those already considered in the HRA screening for Proposed Changes 1, 2, and 3. Therefore, the extension to the Order Limits will not create new pathways for effects that were not already considered for Proposed Changes 1, 2, and 3. It is considered that Proposed Change 4, in itself, will have no likely significant effect on the international site. On this basis it is not considered further in this Report, and it is concluded that Proposed Change 4 will not result in new or different likely significant effects on the Lee Valley SPA/Ramsar site, either alone or in combination with other plans or projects.

4.1.13 Proposed Change 5: Removal of authorised development relating to underground cable bypass of Tottenham substation – Proposed Change 5 eliminates the need for invasive underground cabling and associated excavations from the cable bypass.

4.1.14 The main focus of this Report is to assess the effect of the new works required for Proposed Changes 1, 2, and 3. While there are no new works to assess under Proposed Change 5, the removal of the previously assessed works and construction activities under Proposed Change 5 will be highlighted, where relevant to the assessment, to ensure that the impact and nature of the Proposed Changes are fully and accurately described.

4.1.15 No other changes to the 2014 Order, and no permanent land-take within any international site are proposed by the NMC-1 application.

Working hours

4.1.16 Construction activities associated with the Proposed Changes would be undertaken within defined daytime working hours. Substation construction works would typically take place between 07:30 and 18:30 Monday to Friday and 07:30 to 16:30 at weekends.

Works outside of these hours would be limited and temporary and undertaken only where required for specific operational or safety reasons. No routine night-time construction is proposed.

4.1.17 These hours are the same as those authorised under the 2014 Order and assessed within the original HRA.

Works programme

4.1.18 The construction programme indicates that construction activities associated with Proposed Changes 1 and 2 would include piling to form pylon foundations. Piling activities are currently programmed to take place between October and early December 2026.

4.1.19 Pile installation would involve the use of piling rigs and cranes, the operation of heavy plant, construction vehicle movements including HGVs, and the presence of construction personnel within defined working areas. These works would be undertaken following localised vegetation clearance and the installation of temporary working areas, including stone pads and fencing.

Nearby projects

4.1.20 Meridian Water Development is a new development that was not considered in the 2014 Order application. It is located to the north of the Proposed Changes and is a large, phased, mixed-use development that is currently under construction. Construction activity at Meridian Water Development is anticipated to continue during 2026 and is expected to overlap temporally with construction activities associated with the Proposed Changes, which are also anticipated to occur during 2026.

Screening Step 3: Identifying the potential effects on international sites

4.1.21 This step identifies international sites within the study area that have the potential to be affected by the Proposed Changes, as described in Screening Step 2 and Section 2.2.

Study Area and Relevant Designated Sites

4.1.22 The methodology for defining the study area for international sites in this Report is laid out below.

4.1.23 For linear infrastructure projects, the most appropriate guidance to identify a study area is DMRB LA 115 Habitats Regulations Assessment (National Highways, 2020a) and Natural England (2021), where screening criteria is included to identify the international sites that could potentially be affected by the Proposed Changes. DMRB has been referred to in the absence of other appropriate guidance.

4.1.24 The criteria for identifying a study area within the DMRB guidance comprises:

- Is the project within 2 km of an international site or FLL?
- Is the project within 30 km of a SAC, where bats are noted as one of the qualifying interests?
- Does the project cross or lie adjacent to, upstream of, or downstream of, a watercourse which is designated in part or wholly as an international site?
- Does the project have a potential hydrological or hydrogeological linkage to an international site containing a groundwater dependent terrestrial ecosystem

(GWDTE) which triggers the assessment of international sites in accordance with DMRB LA 113 (National Highways, 2020b)?

- Does the project have an affected road network which triggers the criteria for assessment of international sites (DMRB LA 105 (National Highways, 2024)?
- Additional international sites should be subject to screening where the existence of ecological connectivity between projects and international sites is identified beyond the screening criteria.
- Those international sites with Impact Risk Zones (IRZs) within the project Order Limits should be subject to HRA screening.

4.1.25 Additionally, guidance assessing connectivity with SPAs (SNH, 2016) has been used to determine a study area of 20km for certain goose species, which can use land up to this distance from their core foraging areas.

4.1.26 There is one international site which has the potential to be affected by the Proposed Changes, the Lee Valley SPA and Ramsar site (see Appendix D).

Lee Valley SPA/Ramsar site

4.1.27 The Lee Valley SPA/Ramsar site was classified on 22 September 2000 and encompasses a network of wetlands and reservoirs extending approximately 20 km along the river valley between Waltham Cross and Hackney, covering approximately 450ha (Natural England, 2014). The site comprises a mosaic of embanked water-supply reservoirs, sewage treatment lagoons, and former gravel pits, supporting a range of man-made and semi-natural wetland habitats.

4.1.28 Under the SPA, the habitats of international importance for wintering wildfowl, particularly gadwall *Anas strepera* and shoveler *Anas clypeata*, both of which occur in numbers exceeding 1% of their biogeographical populations. The SPA also supports significant numbers of wintering bittern *Botaurus stellaris*, a species listed on Annex I of the Birds Directive. The Lee Valley Ramsar site is designated for its internationally important wintering populations of shoveler and gadwall, and also for the presence of whorled water-milfoil *Myriophyllum verticillatum* and the rare invertebrate *Micronecta minutissima* (Ramsar Sites Information Service, 2023).

4.1.29 The SPA is composed of several SSSIs:

- Amwell Quarry SSSI;
- Rye Meads SSSI;
- Turnford and Cheshunt Pits SSSI;
- Walthamstow Reservoirs SSSI;
- Walthamstow Marshes SSSI; and
- Chingford Reservoirs SSSI.

4.1.30 Walthamstow Marshes SSSI is recorded 340m from the Site and is designated for its semi-natural wetland and floodplain grassland habitats supporting several marshland birds such as reed bunting and reed, sedge and willow warbler.

Likely effects on international sites

4.1.31 This section identifies the potential effects that could arise from the Proposed Changes described in Screening Step 2 and Section 2.2. The purpose of this section is to identify

the possible effect pathways only; the significance of these effects is considered in Screening Step 4.

Construction

4.1.32 The Proposed Changes will have the potential to give rise to the following effects during construction:

- Noise and visual disturbance to qualifying bird species of the Lee Valley SPA/Ramsar site, particularly during the sensitive overwintering period, arising from construction activities associated with the replacement and installation of pylons, including piling, plant operation and the presence of construction personnel;
- Temporary disturbance associated with vegetation clearance, including noise from hand-held equipment and increased human activity; and,
- Disturbance arising from construction traffic and vehicle movements, including HGV movements to and from the Site.

Operation

4.1.33 During operation, the Proposed Changes will have the potential to give rise to the following effects:

- Operational noise, including audible conductor noise under certain weather conditions, which could contribute to disturbance of qualifying bird species;
- Operational visual presence of replacement and new pylons and associated OHLs, which could influence bird behaviour within the wider area; and,
- Collision risk, associated with the introduction of a new short section of OHL infrastructure.

In-combination effects

4.1.34 In combination with other plans or projects, there is potential for:

- Cumulative disturbance effects on qualifying bird species of the Lee Valley SPA/Ramsar site arising from overlapping construction activities in the surrounding area.

Permanent land-take

4.1.35 There is no permanent land-take proposed within the international site.

Environmental Statement and Habitats Regulations Assessment for the 2014 Order

4.1.36 The ES (Amec, 2014) assessed the potential effects of the NLRP on biodiversity, including designated sites, habitats and protected species. The ES identified that the only potential for a likely significant effect on the Tottenham Marshes Site of Borough Importance for Nature Conservation (SBINC) related to the permanent and temporary loss of semi-improved grassland and scrub during construction. Temporary losses were associated primarily with installation of the north–south cable route, with approximately 2ha of semi-improved grassland and 0.2ha of scrub removed temporarily (between

March 2014 and January 2016). Permanent losses comprised only 0.2ha of scrub and semi-improved grassland habitats that are widespread within the SBINC and not of intrinsically high ecological value. Consequently, the ES concluded that these losses would not affect the conservation status of the habitats for which the SBINC is designated.

4.1.37 For species, the ES reported that:

- Breeding birds may be affected through permanent loss of scrub and woodland, but temporary vegetation removal around pylons would not result in detectable changes to local populations;
- Wintering birds, bats, and reptiles would not experience significant effects; and
- Water vole may experience a minor positive effect due to habitat management, with no adverse effect on population conservation status.

4.1.38 The HRA (Amec, 2012) for the 2014 Order noted that the Lee Valley Special Protection Area/Ramsar site, the Epping Forest Special Area of Conservation (SAC) and the Wormley - Hoddesdon Park Woods SAC were within 5km of the 2014 Order Limits. The following potential effects were noted:

- Aural and visual disturbance of wintering birds from the Lee Valley SPA/Ramsar site due to construction, including due to vegetation clearance; and
- Degradation of water quality and nutrients through pollutants entering the lakes in the Lee Valley SPA/Ramsar site.

4.1.39 These effects were associated with Waltham Cross substation, and no effects were noted at Tottenham.

4.1.40 However, the HRA concluded that there were not likely to be any significant effects.

4.1.41 Proposed Change 1 introduces an increase in height and a change in location to pylon VC1R. Construction of pylon VC1R will require the permanent loss of approximately 0.1ha of semi-improved grassland and 0.1ha of scrub, alongside temporary loss of approximately 0.5ha of semi-improved grassland and ruderal vegetation. These areas fall within habitat types already assessed in the ES and HRA and are comparable in scale and ecological value to those previously reported.

4.1.42 Proposed Change 2 is the installation of an additional pylon ZBC44. No additional loss of habitat is associated with this change given it is proposed to be located on previously developed land.

4.1.43 Proposed Change 3 is the installation of the new OHL spanning over the existing substation. No loss of habitat will be required for this change.

4.1.44 These areas are comparable in scale and ecological value to those previously considered in the original ES and HRA. The habitats affected remain of low to moderate ecological value and are not critical to the integrity of designated features. As such, the assessment of change that supports the NMC-1 concludes that the Proposed Changes 1 and 2 will not alter the validity of the original ES or its conclusions regarding effects on the SBINC.

Wintering bird survey

4.1.45 Field surveys were undertaken between November 2024 and February 2025 (RSK Biocensus) to identify the potential for functionally linked land for birds within proximity

to the Order Limits and in relation to the nearby Lee Valley SPA/Ramsar site. The survey approach focused on identifying bird species and habitats that may contribute to the ecological functions of the Lee Valley SPA/Ramsar site. The full survey details are provided in the wintering bird survey report 2025 in Appendix B.

4.1.46 No designated features of the Lee Valley SPA/Ramsar site were identified during the surveys (see Appendix B which includes Figure 3 of the wintering bird survey report 2025). Further, the surveys determined that, whilst three of the species listed as features of the nearby Walthamstow Reservoirs SSSI designated site were recorded, they were found in low numbers. It was concluded in the report that both sites are not considered to be integral to the wintering bird populations of the SPA, Ramsar site or SSSI.

4.1.47 The label ‘indicative site boundary’ being the area within the red lines on Figure 3 in Appendix B refers to the assumed working area for the underground cable bypass (original Work No. 10). As explained above, the NMC-1 is proposing to replace the underground cable bypass with an overhead line bypass of Tottenham substation. However, the overwintering survey area, being the area within the blue lines on Figure 3 in Appendix B, covers the full extent of the 2014 Order Limits, as extended by NMC-1, which are shown in Figure 1 in Appendix D. The survey area is therefore suitable to inform the HRA for the NMC-1 application.

Screening Step 4: Assessing the significance of any effects on Lee Valley SPA/Ramsar site

4.1.48 The significance of effects on the Lee Valley SPA/Ramsar site is assessed with regard to the conservation objectives for its qualifying features.

Construction Effects from the Proposed Changes Alone

Noise disturbance

4.1.49 Proposed Changes 1 and 2 involve construction activities associated with the amended design and increased height of pylon VC1R and the installation of a new pylon ZBC44. These works will include foundation construction, piling, plant operation, vehicle movements and the presence of construction personnel. In comparison with the underground cabling works consented under the 2014 Order (to be removed from the 2014 Order under Proposed Change 5), the proposed OHL bypass avoids trenching, drilling and prolonged groundworks and will result in reduced construction noise, traffic and vibration. There are no works proposed within the Lee Valley SPA/Ramsar site or any FLL. Further to this, the surrounding environment is characterised by elevated baseline noise levels associated with the nearby A406 North Circular Road, existing industrial land uses and established substation activity.

4.1.50 When the 2014 Order application was submitted, construction works were planned to take place during the summer. The construction programme for the Proposed Changes envisages that the noisiest works are due to take place during the winter months. This may lead to a potential disturbance pathway between the construction works and the features of the designated site. Elevated construction noise and increased activity during winter could give rise to behavioural responses, such as increased vigilance, flight initiation, or temporary displacement, depending on the magnitude, duration and acoustic characteristics of the piling work.

4.1.51 Research shows that anthropogenic noise levels above 45–55 dB(A) cause disturbance to overwintering waterbirds such as bitterns, shovelers, and gadwalls by exhibiting

avoidance behaviour, reduced feeding efficiency, and lowered local densities when exposed to elevated noise, especially near traffic and construction sites (Buckland et al., 2017; Reijnen & Foppen, 1994). Bitterns, as habitat specialists, are particularly sensitive and may abandon traditional sites at moderate disturbance levels (BTO, 2012). For shovelers and gadwalls, increased vigilance and disrupted foraging due to noise can result in poorer body condition and decreased winter survival prospects (Klein, 1993). Overall, noise disturbance during the overwintering period leads to behavioural changes and habitat fragmentation, ultimately threatening the survival of these species.

4.1.52 Although percussive piling in the vicinity of the Tottenham substation is expected to generate high source noise levels (70–100 dB), the substation is located approximately 340 metres from the SPA/Ramsar site. Waterbird behavioural studies show that significant disturbance, such as flight responses, typically occurs at noise levels above 85 dB and within 250–300 metres of the source (Cutts, Phelps and Burdon, 2009; Smith et al., 2019; Stillman et al., 2021). While anthropogenic noise above 80–85 dB can lead to disturbance and displacement (Kight and Swaddle, 2011), the likelihood of significant effects at distances greater than 300 metres is low, as most adverse impacts are recorded much closer to the noise source. Furthermore, the recent wintering bird surveys (2024–2025) did not record any qualifying features or significant concentrations of waterbirds within the Survey Area. Taking both the distance to designated features and the absence of sensitive species into account, it is unlikely that temporary piling works will result in a significant effect on SPA/Ramsar site interest features.

4.1.53 As such, significant effects arising from Proposed Changes 1 and 2, due to construction noise, are screened out.

4.1.54 A small area of vegetation clearance will be required to facilitate construction, which will generate short-term noise from handheld equipment such as chainsaws and brush cutters. As the assessment is already screening potential effects from higher intensity construction activities, including percussive piling, the temporary and lower magnitude noise associated with vegetation clearance will not give rise to any additional or different likely significant effects beyond those already assessed. As such, significant effects arising from the Proposed Changes, due to vegetation clearance, are screened out.

4.1.55 Construction-related vehicle movements are expected to contribute noise levels similar in nature to the existing industrial and road traffic sounds. As such, these activities are unlikely to introduce a significant new stimulus capable of producing strong behavioural reactions in local waterbird populations. Furthermore, where waterbirds have already habituated to existing anthropogenic noise, the incremental contribution from construction vehicles is not anticipated to cause additional disturbance or displacement (Buckland et al., 2017). Consequently, the potential for significant effects on SPA/Ramsar site interest features from construction vehicle noise is considered low.

4.1.56 In comparison with the underground cabling works consented under the 2014 Order (to be removed from the 2014 Order under Proposed Change 5), the proposed OHL bypass (Proposed Changes 1 to 3) avoids trenching, drilling and prolonged groundworks and will result in reduced construction noise, traffic and vibration. Construction traffic will remain confined to an established industrial environment characterised by existing background noise.

4.1.57 Furthermore, the Noise Impact Assessment Technical Note as included as an Appendix D in the Supporting Statement further confirms that construction-related noise and vibration will not lead to different or heightened effects to those assessed in the ES submitted with the application for the 2014 Order.

4.1.58 The Proposed Changes represent a reduction in disturbance from construction noise from those assessed in the HRA submitted with the 2014 Order application. The Proposed Changes will not give rise to new or different likely significant effects on the Lee Valley SPA/Ramsar site and construction phase noise disturbance is screened out.

Visual disturbance

4.1.59 Construction phase visual disturbance arising from Proposed Changes 1 to 3 and the presence of construction personnel have been considered as potential disturbance pathways for qualifying avian features of the Lee Valley SPA/Ramsar site. However, the works will take place within a landscape already subject to frequent and ongoing human activity. The area is influenced by regular vehicular movement associated with the nearby A406 North Circular Road, a busy industrial estate characterised by daily operational activity and worker presence, and a network of public footpaths around lake habitats within and adjacent to the SPA/Ramsar site that are routinely used by walkers and recreational users. Birds from the Lee Valley SPA/Ramsar site are thus considered likely to be habituated to regular visual stimulus and human presence within the wider area.

4.1.60 The piling rig and associated construction plant will be temporary in nature and comparable in height and scale to existing pylons and Tottenham substation. Therefore, they will not appear visually incongruous within the established skyline. Taking account of the separation distance, the absence of works within the designated site, and the existing pattern of human activity, there is unlikely to be a conceivable pathway for significant effects on the qualifying features of the Lee Valley SPA/Ramsar site.

4.1.61 On this basis, construction phase visual disturbance from Proposed Changes 1 to 3 is not considered to result in likely significant effects for the qualifying features of the Lee Valley SPA/Ramsar site.

Operational Effects from the Proposed Changes Alone

Noise disturbance

4.1.62 The Proposed Changes lie approximately 1.2 km from the A406 North Circular Road, which already contributes to elevated background noise levels. Further, the proposed new pylon and relocated pylon at Tottenham substation are located directly adjacent to an active industrial estate where ongoing commercial activities generate regular operational noise.

4.1.63 The existing environment is already characterised by continuous industrial and road traffic activity, and studies indicate that waterbirds are less affected by stable background noise than by abrupt increases or new sources of disturbance (Buckland et al., 2017; Klein, 1993). Minor increases in conductor noise from Proposed Change 3 may occur during wet conditions, but these are predicted to remain well within the current baseline influenced by the A406 North Circular Road and the active industrial estate**.** Further, with pylons remaining in situ and no additional operational infrastructure required within designated sites, there will be no change in habitat availability or direct encroachment.

Visual disturbance

4.1.64 Proposed Change 1 involves the replacement and increased height of pylon VC1R, Proposed Change 2 is the installation of a new pylon ZBC44, Proposed Change 3 is a new OHL connecting pylon ZBC43 to ZBC44, and from ZBC44 to the replacement pylon

VC1R. The Proposed Changes are located within an established urban and industrial environment comprising existing substations, transmission infrastructure, road corridors and active commercial land uses, where baseline visual disturbance is already high and qualifying bird species are considered to be habituated to vertical structures and human activity.

4.1.65 The Proposed Changes are located approximately 340m north-west of the Lee Valley SPA/Ramsar site, while the principal aquatic habitats and hydrologically connected reservoirs that comprise the SPA lie predominantly to the north and east. As a result, direct flight routes between these wetland components do not pass over the Tottenham substation or the area affected by the Proposed Changes.

4.1.66 Further, wintering bird surveys undertaken in 2024/2025 demonstrate that the Site is not used by qualifying species of the Lee Valley SPA/Ramsar site, with no gadwall, shoveler or bittern recorded within the Survey Area. Birds recorded during the surveys were predominantly associated with aquatic habitats within the Lee Valley corridor and exhibited north–south movement patterns, with no evidence of east–west movement across the Site. The Site is therefore not considered to be integral to the function of the SPA/Ramsar site (RSK Biocensus, 2025).

4.1.67 Taking into account the long-established presence of transmission infrastructure, the already built-up and visually complex character of the surrounding environment, and the fact that the proposed pylons and OHLs are similar in scale, form and function to infrastructure already consented under the 2014 Order, and that of other existing infrastructure in the vicinity, the Proposed Changes will not introduce a significant collision risk. In the absence of suitable flightlines, qualifying species use, or FLL, the likelihood of collision risk, behavioural avoidance or displacement is considered negligible.

4.1.68 Overall, the anticipated operational scenario will not present a risk of increased disturbance or collision risk to overwintering qualifying features and are not expected to introduce any significant new sources of noise to the nearby Lee Valley SPA/Ramsar site.

In-combination effects

4.1.69 Meridian Water Development is spatially separate from the Proposed Changes and is confined to its own defined development area. The Site and Meridian Water Development are located within a heavily urbanised, industrial environment characterised by limited suitable habitat for the qualifying features of the Lee Valley SPA/Ramsar site. Recent wintering bird surveys undertaken in 2024/25 did not record qualifying species within the Survey Area.

4.1.70 Evidence from the literature indicates that overwintering bitterns, shovelers and gadwalls can be sensitive to disturbance from increased noise and activity, potentially exhibiting avoidance behaviour or reduced feeding efficiency in response to construction or traffic (Buckland et al., 2017; Reijnen & Foppen, 1994; Klein, 1993).

4.1.71 However, in the absence of evidence that qualifying species use the Site and given the lack of key habitats in the vicinity, any additional noise or disturbance arising from concurrent construction activities will not present a credible pathway for significant effects on the conservation objectives of the Lee Valley SPA/Ramsar site. On this basis, in-combination disturbance effects can be screened out as not likely significant.

Functionally linked land

4.1.72 The majority of construction and operational works are confined to an industrial and urban environment, comprising existing substation infrastructure, hardstanding, access routes, and previously developed land. There is a small area of works occurring on greenfield land. This environment lacks the habitat characteristics required by the qualifying avian features of the SPA/Ramsar site for foraging, roosting, or resting, particularly during the overwintering period. Wintering bird surveys and baseline ecological information indicate that the Site is not routinely used by qualifying species, nor will it provide suitable alternative habitat that would support the ecological functions of the SPA/Ramsar site. As such, no land within or adjacent to the Order Limits is considered to be functionally linked to the Lee Valley SPA/Ramsar site. In the absence of a credible functional linkage pathway, effects on FLL are screened out, and no further assessment is required.

Screening resolution

4.1.73 The Proposed Changes 1 to 3 will not give rise to any materially new or materially different likely significant environmental effects on an international site.

4.1.74 The amendment to the Order Limits under Proposed Change 4 is required solely to allow the OHL between pylon VC1R and the proposed new pylon ZBC44 to safely span over the Tottenham substation. The purpose of this change is limited to ensuring sufficient clearance height above the building, and it will not introduce any additional works or activities beyond those required for Proposed Changes 1 to 3.

4.1.75 The potential impacts on the SPA/Ramsar site therefore remain unchanged from the 2014 Order baseline. On this basis, Proposed Changes 1 to 4 will not result in materially new or materially different likely significant effects on the Lee Valley SPA/Ramsar site, either alone or in combination with other plans or projects.

4.1.76 Proposed Change 5 involves the removal of previously authorised underground cabling works and associated ground disturbance. As this represents a reduction in the scale and intensity of development assessed under the 2014 Order, the change is considered de minimis and will not give rise to likely significant effects on the Lee Valley SPA/Ramsar site.

4.1.77 No construction, or operation relating to the Proposed Changes are likely to result in significant effects, either alone or in combination with other plans or projects, to the qualifying features of the Lee Valley SPA/Ramsar site.

5. Conclusion

5.1.1 This Report has focused on whether the Proposed Changes, either alone or in combination with other plans or projects, will have the potential to result in likely significant effects on the Lee Valley SPA and Ramsar site. The Proposed Changes are confined to an area around the existing operational Tottenham Substation and surrounding industrial land and will not involve works within any international site or FLL. The use of construction access routes, including Leeside Road and A1055 Watermead Way, and the majority of construction activities were authorised and assessed as part of the 2014 Order, and in this regard, the conclusions of the original HRA remain applicable.

5.1.2 Importantly, the Proposed Changes replace underground cabling works consented under the 2014 Order and avoids trenching, drilling and prolonged ground disturbance. As such, the Proposed Changes represent a similar or slightly less construction intensity, noise, traffic movements and duration compared with those assessed in the HRA submitted with the 2014 Order application.

5.1.3 The noisiest construction activities, including percussive piling, are programmed to take place during the overwintering period for qualifying bird species. Therefore, this Report considers the worst-case timing for construction activities and associated impacts on overwintering qualifying bird species. Published evidence indicates that significant disturbance responses in overwintering waterbirds are generally limited to shorter distances than the separation between the Proposed Changes and the Lee Valley SPA/Ramsar site. In addition, wintering bird surveys undertaken during the 2024/2025 season confirmed that the Site is not used by qualifying SPA/Ramsar species and is not integral to the function of the designated site, with bird activity largely confined to aquatic habitats within the Lee Valley corridor.

5.1.4 Construction and operational noise have therefore been assessed in the context of an existing urban and industrial baseline influenced by road traffic and commercial activity. Taking account of the nature of the Proposed Changes, the reduced construction impacts compared with the works consented in the 2014 Order, the absence of qualifying species within or adjacent to area affected by the Site, and the lack of credible impact pathways, it is concluded that the Proposed Changes will not result in likely significant effects on the Lee Valley SPA/Ramsar site, either alone or in combination with other plans or projects.

5.1.5 Accordingly, this Report concludes at the screening stage and no Appropriate Assessment is required.

5.1.6 This conclusion is supported by Natural England, who have been consulted prior to the making of the NMC-1 Application (see Appendix C).

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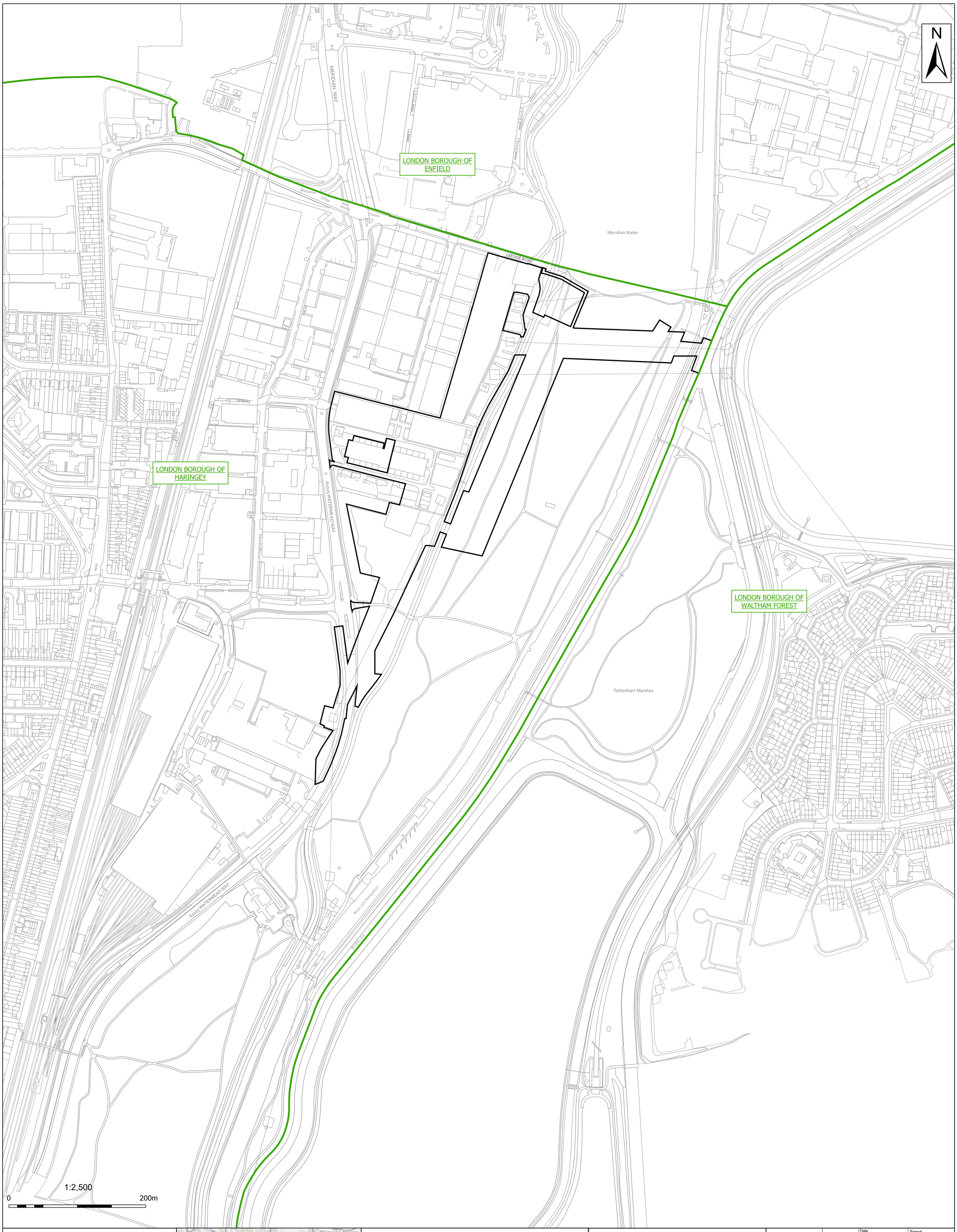
Appendix A

Plans



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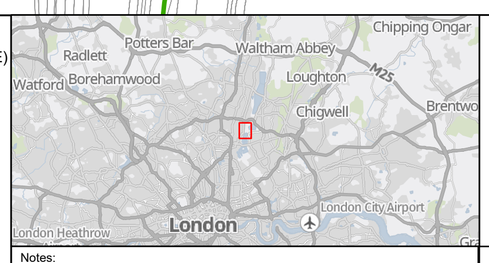
- BOROUGH BOUNDARY



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Client: nationalgrid

Project: NORTH LONDON REINFORCEMENT PROJECT

Site: Tottenham Substation

Client: National Grid Electricity Transmission

Rev	Date	Description	Drawn	Check	Approv
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02	09/02/26	Amendment to template	RE	HJ	SD
01	22/01/26	INITIAL ISSUE	RE	HJ	SD

Title: North London Reinforcement Project - Proposed Non-Material Amendment - Proposed Amendment Order Limits

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Drawn	R.E	Date 10 APR 26	Signed
Checked	H.J	Date 10 APR 26	Signed
Approved	S.D	Date 10 APR 26	Signed
Scale:	1:2,500	Datum:	AOD
Original Size:	A1	Grid:	OS
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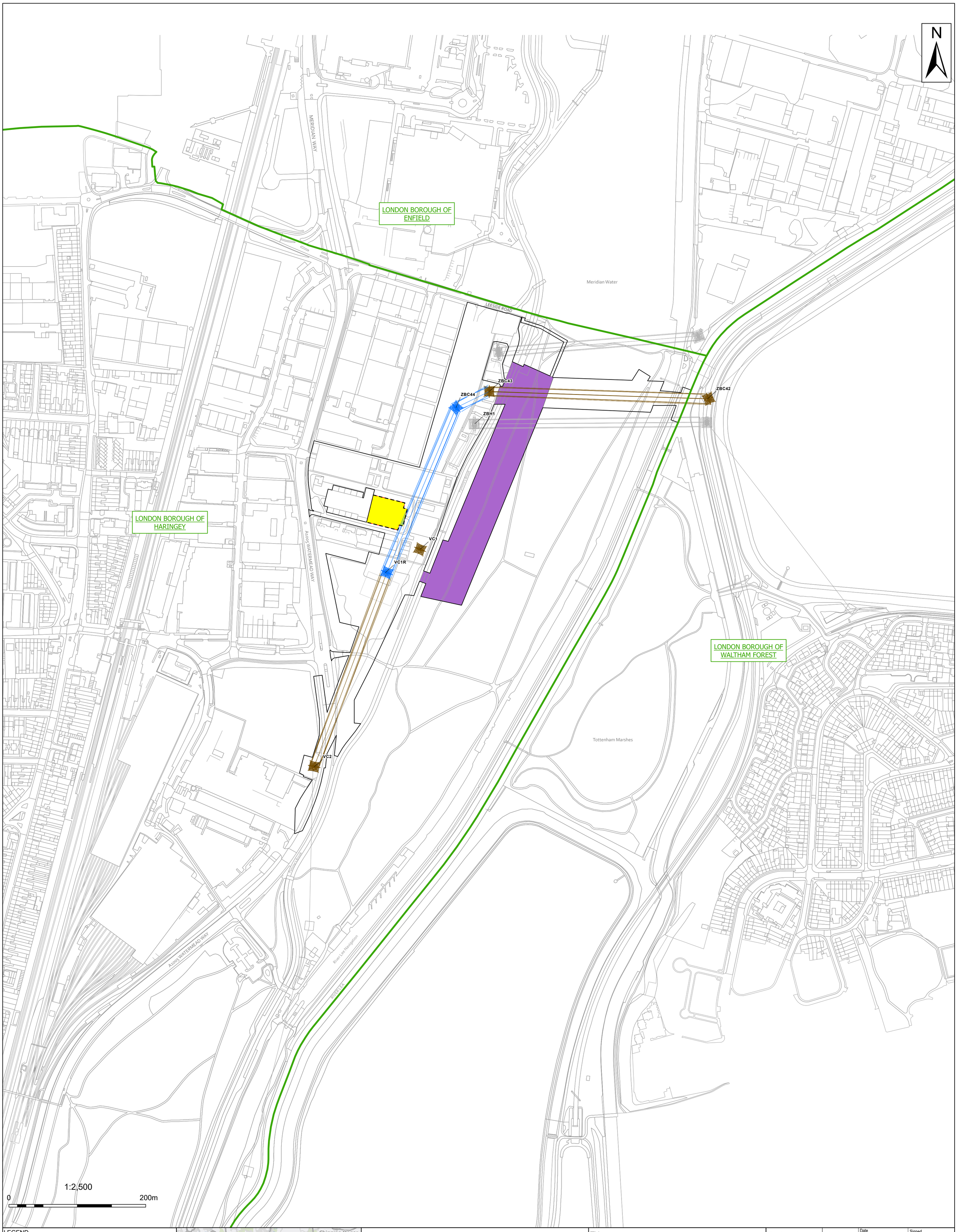
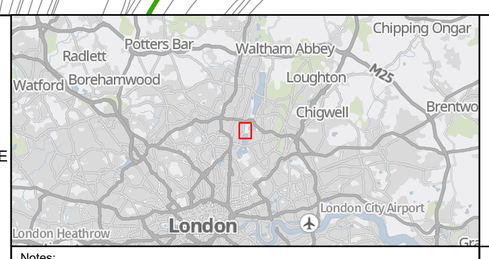


LEGEND

- ORDER LIMITS (THE SITE)
- BOROUGH BOUNDARY
- EXISTING ORDER LIMITS IN 2014 ORDER
- WORKS CONSENTED IN 2014 ORDER
- PROPOSED WORKS TO FACILITATE OVERHEAD LINE BYPASS OVER TOTTENHAM SUBSTATION (PROPOSED CHANGES 1, 2, AND 3)
- PROPOSED EXTENSION TO ORDER LIMITS (PROPOSED CHANGE 4)
- REMOVAL OF WORKS IN 2014 ORDER TO FACILITATE A CABLE BYPASS OF TOTTENHAM SUBSTATION (PROPOSED CHANGE 5)



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Client: National Grid Electricity Transmission

Rev	Date	Description	Drawn	Check	Approv
05	21/04/26	Update to data	RE	HJ	SD
04	10/04/26	Update to legend	RE	HJ	SD
03	16/03/26	Update to title	RE	HJ	SD
02	09/02/26	Amendment to template	RE	HJ	SD
01	22/01/26	INITIAL ISSUE	RE	HJ	SD

Title: North London Reinforcement Project – Proposed Non-Material Change Application – Concept Plan

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Appendix B

Wintering Bird Report, Biocensus, 2025

Murphy Group

North London Reinforcement Tottenham Substation

Wintering Bird Survey Report

2486718

FEBRUARY 2025

RSK biocensus
EXPERTS IN ECOLOGY

RSK GENERAL NOTES

Project No.: 2486718

Title: Tottenham Substation – Wintering Bird Survey Report

Client: Murphy Group

Date: February 2025

Office: Tonbridge

Status: Rev 00

Author:	Alice Marlow, Ornithologist BSc	**Technical and Quality Reviewer:**	Nick Henson, Associate Director
Signature:		Signature:	
Date:	10/02/2025	Date:	28/02/2025

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Where field investigations have been carried out, these have been restricted to a level of detail required to achieve the stated objectives of the work.

This work has been undertaken in accordance with the quality management system of RSK Biocensus.

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EXECUTIVE SUMMARY

This report presents the results of wintering bird surveys undertaken between November 2024 and February 2025 (inclusive) in relation to the proposed uprating of the cable routes for which new infrastructure will need to be constructed to the east of the existing Tottenham substation. These surveys were carried out to record the wintering bird populations present within and in close proximity to the site, to inform an evaluation of the wintering bird assemblage. The site is located within the Lee Valley Regional Park and is part of the Tottenham Marshes. It comprises an operational electricity substation site and surrounding non-operational land.

The desk study identified three designated sites with features of ornithological interest within 2 km of the site including Lea Valley Special Protection Area (SPA), Lea Valley Wetlands Ramsar Site and Walthamstow Reservoirs Site of Special Scientific Interest (SSSI), all of which were designated primarily for their waterbird assemblages. Based on the bird populations recorded within and adjacent to the site in winter 2024/25, the site is not considered to be integral to the wintering bird populations of the SPA, Ramsar site or SSSI.

A total of 41 bird species were recorded during the surveys. Twenty-one species were recorded within the site boundaries and a further 20 species were recorded outside of the site boundaries. These included 16 specially protected and/or notable species.

Due to the removal of vegetation across the Enabling Works area, the proposed works have the potential to impact upon bird species using the site. As such, habitat clearance should take place outside of the breeding bird season to accord with legislative requirements and since birds using the site are likely to be more susceptible to impacts during this time.

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1.0 INTRODUCTION

1.1 Purpose of this report

1.1.1 This report presents the results of surveys for wintering birds undertaken in relation to the proposed maintenance and refurbishment work at Tottenham substation (hereafter referred to as 'the proposed development') in North London between November 2024 and February 2025 inclusive, following recommendations made within the Ecological Constraints Walkover (RSK Biocensus, 2024[1]). These surveys were carried out to record the wintering bird populations present within and in close proximity to the site of the proposed development (hereafter referred to as 'the site'), to inform an evaluation of the wintering bird assemblage. The surveys were conducted by RSK Biocensus on behalf of Murphy Group.

1.2 Landscape context

1.2.1 The survey area is indicated in Figure 1, Appendix A (blue line) and comprises approximately 57.862 hectares (ha) of land within the Lee Valley National Park, centred at Ordnance Survey (OS) grid reference TQ 35272 91250. The survey area predominantly comprises an operational electricity substation site and surrounding non-operational land made up of the canalised Pymmes brook, lowland mixed deciduous woodland, and areas of open grassland with patches of mixed and bramble scrub. Adjacent to the site are the River Lea, Banbury Reservoir and Lockwood Reservoir.

1.3 Proposals

1.3.1 The proposed works at Tottenham substation involve the construction of new infrastructure to the east of the existing substation within the Tottenham Marshes area, to connect two overhead line routes (Waltham Cross to Tottenham substations and Tottenham to Hackney substations) to increase capacity of National Grid's transmission lines. The need for critical reinforcement along the route was identified by The North London Reinforcement Project (NLRP) to facilitate the expected increase in electricity generation from the East Anglia wind connections. In 2012 the Development Consent Order (DCO) for the NLRP allowed for upgrade works to Waltham Cross, Brimsdown and Tottenham substations, while proposed works at Hackney and Pelham substations will be completed under permitted development rights [2].

[1] RSK Biocensus (2024) North London Reinforcement Project 2486718 Tottenham Substation Ecological Constraints Walkover – Rev 00

[2] National Grid (2023) NGET Project Specific Scope HV Substation North London Reinforcement Project (HWUP) Substation. Version 1.0

1.4 Structure of this report

1.4.1 This report is structured as follows:

- *Section 2* presents legislation and guidance relevant to wintering birds;
- *Section 3* describes the methods adopted for data collection and interpretation;
- *Section 4* presents the results of the desk study and field surveys;
- *Section 5* evaluates the results of the desk study and field surveys and assesses the importance of the wintering bird populations recorded;
- *Section 6* summarises the conclusions of the wintering bird survey report; and
- *Appendices A-B* provide accompanying field survey data.

2.0 LEGISLATION AND GUIDANCE

2.1 Overview

2.1.1 Relevant legislation and guidance relating to wintering birds is summarised below. Such legislation and guidance have been used to inform the evaluation of the conservation statuses of the species recorded and when assessing the importance of the wintering bird populations present.

2.2 Legislation

European Commission Birds Directive (2009/147/EC)

2.2.1 Certain UK bird species (including some wintering species) are protected at an international level under the European Commission (EC) Directive on the Conservation of Wild Birds 2009 (2009/147/EC). These species are afforded enhanced legal protection and European Union member states have a responsibility to maintain populations of these species. This Directive is transposed into English law through the Conservation of Habitats and Species Regulations 2017 (as amended)[3].

2.2.2 Species listed on Annex 1 of the Directive are those for which the UK Government is required to take special conservation measures (including the designation of land as Special Protection Areas) to conserve populations of these species throughout their distributions. These sites form part of the UK's national site network of core sites that are protected for rare and threatened species.

2.2.3 Bird species listed on Annex 1 of the Directive are those which are deemed to be:

- in danger of extinction;
- vulnerable to specific changes to their habitats;
- considered rare due to their small population sizes and/or restricted local distributions; and
- in need of particular attention due to the specific nature of their habitat requirements.

Wildlife and Countryside Act 1981 (as amended)

2.2.4 Wild birds are protected in the UK under Section 1 of the Wildlife and Countryside Act (WCA) 1981 (as amended). This protection was extended by the Countryside Rights of Way (CRoW) Act 2000. Under this legislation it is an offence to intentionally:

[3] As such, the requirements of the EC Birds Directive (2009/147/EC) apply despite the UK no longer being a member state of the European Union.

- kill, injure or take any wild bird;
- take, damage or destroy the nest of any wild bird while that nest is in use or being built; and
- take or destroy an egg of any wild bird.

2.2.5 In addition, certain species are listed on Schedule 1 of the WCA and receive special protection under Sections 1(4) and 1(5), which confer penalties where the above-mentioned offences are committed, in addition to making it an offence to intentionally or recklessly:

- disturb any such bird whilst building its nest or whilst it is in or near a nest containing eggs or dependent young; and
- disturb the dependent young of such a bird.

2.2.6 As this legislation relates to offences and penalties during the breeding season only, further reference to Schedule 1 of the WCA is not made in this report.

Natural Environment and Rural Communities Act 2006

2.2.7 The Natural Environment and Rural Communities (NERC) Act 2006 requires local and governmental authorities and departments to have regard to the conservation of biodiversity and measures associated with public rights of way and other rural affairs.

2.2.8 Forty-nine bird species are listed as being Species of Principal Importance for conservation in England under Section 41 (S41) of the NERC Act 2006, and as such they are a material consideration during the planning process. These Species of Principal Importance are those identified as requiring action under the UK Biodiversity Action Plan (UKBAP), which continue to be regarded as species of conservation priority under the UK Post-2010 Biodiversity Framework (which succeeded the UKBAP in July 2012).

2.3 Guidance

National Planning Policy Framework

2.3.1 The National Planning Policy Framework (NPPF, 2023) sets out the government's planning policies for England and how these are expected to be applied. This includes requirements for the contribution to and enhancement of the natural environment, including habitats and biodiversity. The NPPF specifies the obligations that local authorities and the UK government have regarding statutory designated sites and protected species under UK and international legislation and how these are to be delivered in the planning system.

Birds of Conservation Concern

2.3.2 The Birds of Conservation Concern (BoCC) Red, Amber and Green lists categorise the UK's regularly occurring bird species according to their level of conservation concern (Stanbury *et al.,* 2021). Although these listings confer no legal protection, they are useful in guiding conservation action for individual species when birds may be affected by plans or projects.

Red list species

2.3.3 These are species of high conservation concern, including:

- species that are globally threatened according to the International Union for the Conservation of Nature (IUCN) criteria;
- species with a historical breeding decline that have not shown a substantial recent recovery;
- species that have shown a severe breeding decline over the last 25 years or longer term;
- species that have shown a severe breeding range decline over the last 25 years or longer term; and
- species whose non-breeding populations have declined over the last 25 years or longer term.

Amber list species

2.3.4 These are species of medium conservation concern, including:

- species of European Conservation Concern;
- species whose populations have declined historically but which have made a substantial recent recovery;
- species whose breeding populations have declined moderately over the last 25 years or longer term;
- species that have shown a moderate breeding range decline over the last 25 years or longer term;
- species whose non-breeding populations have declined moderately over the last 25 years or longer term; and
- rare breeders or non-breeding rarity species with internationally important or localised populations.

Green list species

2.3.5 Green list species fulfil none of the criteria detailed above. As such, they have stable or increasing populations and are not currently of conservation concern.

2.3.6 Non-native species such as Canada goose (*Branta canadensis*) are not afforded Red, Amber or Green list status.

London guidance

2.3.7 London's priority bird species are those which require conservation action and meet one or more of the following criteria:

- Species that have been assessed as of conservation concern using the IUCN Red List criteria or birds listed on the UK list of Birds of Conservation Concern.
- Species with native or long-term naturalised populations in London that are listed on Section 41 of the Natural Environment and Rural Communities (NERC) act 2006.
- Species that are not recognized as of national conservation concern but are characteristic of London and under threat locally.

2.3.8 Species included on the 2018 London Priority Species List (LPSL) which have the potential to be on site in winter include herring gull (*Larus argentatus*), bullfinch (*Pyrrhula pyrrhula*), kingfisher *(Alcedo atthis)*, pochard *(Aythya ferina)*, bittern *(Botaurus stellaris)*, peregrine falcon (*Falco peregrinus)*, lesser-black back gull *(Larus fuscus),* linnet *(Linaria cannabina)*, gadwall *(Anas strepera)*, house sparrow *(Passer domesticus)*, black redstart *(Phoenicuris ochruros)*, dunnock *(Prunella modularis)*, starling *(Sturnus vulgaris)* and song thrush *(Turdus philomelos)*. Species included on the London Priority Species List should be considered as target species for conservation efforts where appropriate[4].

[4] As detailed by Greenspace Information for Greater London. Available at: https://www.gigl.org.uk/about-gigl/planning-projects/londons-biodiversity-action-plan/london-bap-priority-species/ (accessed 05/02/24).

3.0 METHODS

3.1 Desk study

3.1.1 A desk-based review was undertaken to identify any international statutory designated sites with features of ornithological interest (e.g. Special Protection Areas (SPAs), Special Areas of Conservation (SACs) or Ramsar sites) within 10 km of the development site, and any relevant national statutory designated sites (e.g. Sites of Special Scientific Interest (SSSIs)) within 2 km of the development site. This review was undertaken using the Multi-Agency Geographic Information for the Countryside (MAGIC) website.

3.1.2 To provide supplementary data on bird species known to be present in the vicinity, ornithological records from within the site and a 2 km buffer were obtained from the London Bird Report 2021[5].

3.2 Field surveys

3.2.1 The field surveys for wintering birds were undertaken between November 2024 and February 2025 inclusive in accordance with the *Bird Survey Guidelines for Assessing Ecological Impacts* (BSG) (Bird Survey and Assessment Steering Group, 2023). These comprised a series of four survey visits during which suitably experienced ornithologists walked a pre-determined transect route throughout the site and the wider survey area.

3.2.2 The transect route was interspersed with stops, during which ornithologists scanned for birds using optical equipment. All bird species encountered (either visually or through their vocalisations) were recorded onto ArcGIS Field Maps software using standard British Trust for Ornithology (BTO) species codes and behaviour notation (Marchant, 1983). Any noteworthy observations within 100 m of the site boundary were recorded. Particular attention was given to undertaking counts of any notable aggregations of feeding and roosting birds such as waders, finches and thrushes, and to recording raptor roosting and foraging activity.

3.2.3 Considering the size of the survey area and the habitats present, a single transect route was surveyed, following public footpaths and covering the area of Tottenham Marshes proposed for development, as well as the area beyond, extending to within 20 meters of the Banbury and Lockwood Reservoirs. This transect route was subject to four survey visits (as described in Section 3.2.1).

3.2.4 Surveys were undertaken in suitable weather conditions, avoiding extreme temperatures, heavy rain, snow, or fog during which bird activity may be atypical and surveying may be

[5] London Bird Report 2021.Available at: https://lnhs.org.uk/images/publications/LBRBackIssues/LBR_2021_optimize.pdf (accessed 26/02/2025).

impractical. The dates, timings, and weather conditions for the four survey visits are indicated in *Appendix B*.

3.3 Interpretation of survey results

Overview

3.3.1 In order to assess the importance of the wintering bird populations recorded during the field surveys, interpretation of the survey results considered the following:

- The importance of the populations recorded in the context of any nearby designated sites with features of ornithological interest;
- The conservation statuses of the species recorded (i.e., their inclusion on any of the legislation or conservation status categories described in *Section 2*);
- The sizes of the populations recorded (i.e., species abundance);
- The overall diversity of the wintering bird assemblage recorded; and
- The spatial patterns of wintering bird usage within the site, including areas and habitat types of particular importance to wintering birds.

Conservation status

3.3.2 The assessment of the importance of the bird populations recorded took into consideration the conservation statuses of the species recorded. Species afforded special statutory protection or included on lists of species of conservation interest were evaluated. These included:

- EC Birds Directive (2009/147/EC) Annex 1 species;
- NERC S41 Species of Principal Importance; and,
- BoCC Red and Amber list species.

Species abundance

3.3.3 The importance of the wintering bird populations recorded was assessed in the context of the sizes of those populations relative to international, national, and regional population estimates for the species in question.

3.3.4 International 1% population thresholds (i.e., the size at which a population is assessed as being of international importance, as it comprises over 1% of the international population for a given species) were obtained from Wetlands International[6].

3.3.5 National 1% population thresholds (i.e., the size at which a population is assessed as being of national importance, as it comprises over 1% of the national population for a

[6] As detailed by Wetlands International. Available at: Waterbird Population Estimates (wetlands.org) (accessed 22/12/2023).

given species) were calculated from the national population estimates detailed by Woodward *et al.* (2020).

3.3.6 Assessment of county, district or local importance was based on professional judgement and in reference to county population data detailed within the *2021 London Bird Report* by the London Natural History Society.

Species diversity

3.3.7 The overall diversity of the wintering bird assemblage was assessed, taking into consideration the number of species recorded.

3.4 Assumptions and limitations

3.4.1 Field surveys for wintering birds were undertaken at appropriate times of day and in suitable weather conditions. Considering the extent and types of habitats present within and immediately adjacent to the site, and the species for which the site is potentially suitable, four visits conducted between November 2024 and February 2025 were considered sufficient to record the wintering bird populations present.

3.4.2 Whilst desk study data are useful in providing supplementary ecological information for a site, it should be acknowledged that these data are dependent on the submission of records to the relevant organisation. As such, a lack of records for a particular species does not necessarily mean that the species is absent from the site and/or wider search area. Similarly, records of a particular species do not necessarily mean that the species is still present within the site and/or wider search area.

3.4.3 It should be noted that ecological features (e.g., bird populations) are transient, and that the distributions of habitats and species may be subject to change. As such, in line with Chartered Institute of Ecology and Environmental Management (CIEEM) guidance, the ecological survey data presented in this report are considered valid for two years (CIEEM, 2019), after which it may be necessary for further field surveys to be undertaken.

3.5 Quality assurance

3.5.1 The wintering bird surveys and subsequent reporting were undertaken by RSK Biocensus ornithologists who are experienced in conducting ornithology work in relevant habitats. These ornithologists are CIEEM members at the appropriate level and follow their code of professional conduct when undertaking ecological work.

4.0 RESULTS

4.1 Desk study

Designated sites

4.1.1 The desk study identified three designated sites with features of ornithological interest within the study areas outlined in Section 3.1.1. The nearest internationally designated sites, Lea Valley SPA and Ramsar site are located approximately 340 m south of the development site and are designated for internationally important numbers of wintering wildfowl, especially gadwall and shoveler and for wintering bittern.

4.1.2 The desk study identified one nationally designated site with features of ornithological interest within 2km of the site: Walthomstow Reservoirs SSSI, located approximately 510 m south of the site. This SSSI is designated primarily for its importance as a major heronry, gathering area for moulting tufted duck and nationally significant population of wintering wildfowl and other wetland birds. Whilst the populations of shoveler and tufted duck consistently reach levels of national significance, great crested grebe, pochard and coot also occur in important numbers.

4.1.3 Six non-statutory designated sites were identified within 500 m of the Site: Lea Valley Sites of Importance for Nature Conservation (SINC), Tottenham Marshes SINC, Banbury Reservoir SINC, Tottenham Marshes East SINC, Tottenham Hale to Northumberland Park Railsides SINC and Marsh Lane Allotments SINC.

4.2 Field surveys

4.2.1 A total of 41 bird species were recorded during the field surveys undertaken between November 2024 and February 2025 inclusive.

4.2.2 The species recorded during the wintering bird surveys are provided in *Table 1*. The peak count for each species (i.e., the maximum number of birds recorded during a single survey visit) are summarized in *Table 1,* with descriptions of species' behaviour and distribution. Full wintering bird survey data are provided in *Appendix A.*

Table 1. Summary of species recorded during the 2024/25 wintering bird surveys

Species			Peak count	Description
BTO code	Common name	Scientific name		
B.	Blackbird	*Turdus merula*	8	Alarm calling, calling, perching, and loafing throughout the site in woodland and scrub.
BH	Black-headed gull	*Chroicocephalus ridibundus*	12	Frequently flying over the canalised areas of the survey area in all directions.
BT	Blue tit	*Cyanistes caeruleus*	15	Calling and perching in scrub and woodland.
C.	Carrion crow	*Corvus corone*	10	Recorded flying over the site and calling, perching, and loafing in scrub, woodland, and open grassland.
CA	Cormorant	*Phalacrocorax carbo*	5	Recorded flying over canals and feeding in canals.
CC	Chiffchaff *	*Phylloscopus collybita*	2	Calling in areas of woodland and dense scrub.
CG	Canada goose *	*Branta canadensis*	4	Recorded three times on canals.
CH	Chaffinch	*Fringilla coelebs*	11	Calling in areas of scrub and woodland on site.
CM	Common gull *	*Larus canus*	1	Recorded once flying over the canal to the south of the survey area.
CO	Coot *	*Fulica atra*	12	Frequently recorded calling and loafing in and around canals.
CW	Cetti's warbler *	*Cettia cetti*	2	Singing and calling in areas of scrub surrounding canals.
D.	Dunnock	*Prunella modularis*	8	Calling throughout the site in areas of open grassland, scrub, and woodland.
G.	Green woodpecker *	*Picus viridis*	1	Calling in open grassland.

Species			Peak count	Description
BTO code	Common name	Scientific name		
GC	Goldcrest	*Regulus regulus*	2	Recorded on one occasion calling in scrub.
GL	Grey wagtail *	*Motacilla cinerea*	1	Calling whilst flying over the south of the site and within a canal adjacent to the existing substation.
GO	Goldfinch *	*Carduelis carduelis*	4	Calling from woodland and whilst flying over the site.
GR	Greenfinch *	*Chloris chloris*	2	Recorded on one occasion calling from scrub.
GS	Great spotted woodpecker *	*Dendrocopos major*	3	Calling from woodland.
GT	Great tit	*Parus major*	12	Calling, singing, loafing, and perching throughout the site, predominantly from areas of woodland.
H.	Grey heron *	*Ardea cinerea*	1	Recorded on one occasion perching alongside the canal.
HG	Herring gull	*Larus argentatus*	33	Frequently flew over the site in multiple directions.
J.	Jay *	*Garrulus glandarius*	3	Calling from woodland and whilst flying over the site.
K.	Kestrel	*Falco tinnunculus*	3	Hunting and perching over scrub and open grassland.
LG	Little grebe *	*Tachybaptus ruficollis*	1	Recorded on one occasion within the canal.
LI	Linnet *	*Linaria cannabina*	3	Flew over and called in scrub.
LT	Long-tailed tit	*Aegithalos caudatus*	29	Frequently recorded calling, perching, and loafing in groups within scrub and woodland across the site.
MA	Mallard *	*Anas platyrhynchos*	20	Feeding and loading within canals.
MG	Magpie	*Pica pica*	12	Recorded perching, calling, and loafing within woodland, scrub and open grassland and flying over the site.
MH	Moorhen *	*Gallinula chloropus*	5	Loafing and calling in canals.
MS	Mute swan *	*Cygnus olor*	3	Loafing in canals.

Species			Peak count	Description
BTO code	Common name	Scientific name		
MU	Mediterranean gull	*Ichthyaetus melanocephalus*	1	Recorded on one occasion flying over the site above the existing substation.
R.	Robin	*Erithacus rubecula*	17	Frequently recorded singing, calling, perching, and loafing across the site from scrub.
RE	Redwing	*Turdus iliacus*	2	
RI	Ring-necked parakeet	*Psittacula krameri*	7	Calling from woodland.
SG	Starling	*Sturnus vulgaris*	7	Flew over site and recorded calling from and perching on transmitters and wires next to the existing substation.
SH	Sparrowhawk	*Accipiter nisus*	1	Flew over the site on one occasion.
ST	Song thrush *	*Turdus philomelos*	2	Calling and loafing in scrub and open grassland.
T.	Teal *	*Anas crecca*	1	Recorded on one occasion calling in the canal.
TU	Tufted duck *	*Aythya fuligula*	1	Recorded twice loafing in the canal.
WP	Wood pigeon	*Columba palumbus*	9	Recorded flying over and loafing, perching, calling, and feeding.
WR	Wren	*Troglodytes troglodytes*	13	Singing and calling throughout the site from scrub, woodland, and open grassland.

**Recorded outside of the site boundaries within the survey area.*

5.0 EVALUATION

5.1 Overview

5.1.1 An assessment of the importance of the wintering bird populations recorded within the site and survey area is provided below, taking into consideration:

- Their relevance to any nearby designated sites with features of ornithological interest;
- The conservation statuses of the species recorded (i.e., their inclusion on the legislation and guidance described in *Section 2* of this report);
- The sizes of the populations of the species recorded (i.e., species abundance);
- The overall diversity of the wintering bird assemblage (i.e., species diversity); and
- The spatial patterns of breeding bird usage of the site and survey area, including any areas of particular importance to wintering bird populations.

5.2 Designated sites

5.2.1 Two internationally designated sites with features of ornithological interest are present within 10 km of the site: Lea Valley SPA and Ramsar site. Furthermore, a nationally designated site, Walthomstow Reservoirs SSSI, is also present within 2km of the proposed development site.

5.2.2 Three of the species listed as qualifying features of the designated sites (heron, tufted duck, and coot) were recorded on the wintering bird surveys. However, they were recorded in low numbers and, therefore, not considered to be integral to the wintering bird populations of the designated sites. Moreover, the small size and unsuitable nature of the habitats present for waterbirds within the proposed development site mean the site is unlikely to support significant numbers of birds described to be wintering in the Lea Valley SPA and Ramsar site or the Walthamstow reservoirs SSSI.

5.3 Conservation status

5.3.1 Of the 41 species recorded during the 2024/25 field surveys for wintering birds, the majority comprised common and widespread species typical of mixed deciduous woodland, neutral grassland and continuous scrub habitat within an urban context. Sixteen of the 41 species are included within the legislation and guidance described in *Section 2* of this report (as indicated in *Table 2* below).

Table 2. Specially protected and notable species recorded during the 2023/24 wintering bird surveys.

Species	Annex 1	S41	Red	Amber	LPSL
Black-headed gull				✓	
Dunnock		✓		✓	✓
Grey heron *					
Grey wagtail *				✓	
Greenfinch *			✓		
Herring gull		✓	✓		✓
Kestrel				✓	
Linnet *		✓	✓		✓
Mallard *				✓	
Moorhen *				✓	
Redwing				✓	
Song thrush *		✓		✓	✓
Starling		✓	✓		✓
Teal *				✓	
Wood pigeon				✓	
Wren				✓	

5.3.2 In summary, the 16 species recorded included:

- No EC Birds Directive Annex 1 species;
- Five NERC S41 Species of Principal Importance;
- Four BoCC Red list species;
- Eleven BoCC Amber list species; and
- Five LPSL species.

5.3.3 Five species are considered to be of principal importance for biodiversity in England, as defined by Section 41 of the Natural Environment and Rural Communities Act 2006: dunnock, herring gull, linnet, song thrush and starling. Whilst these are considered to be priority species for conservation, they are all comparatively numerous species in the local area.

5.3.4 Eleven species are included on the BoCC Amber List: black-headed gull, dunnock, grey wagtail, kestrel, mallard, moorhen, redwing, song thrush, teal, wood pigeon and wren. Four species were included on the BoCC Red List: greenfinch, herring gull, linnet, and starling. Five of these species: dunnock, herring gull, linnet, song thrush and starling were included on the London Priority Species List. Due to the planned vegetation clearance across the Enabling Works area, the proposed works have the potential to impact upon these species. As such, all habitat clearance should be completed in September – October inclusive, avoiding the nesting bird season and therefore according to legislative requirements and avoiding the period when these species are likely to be most susceptible to impacts associated with the proposed works. Alternatively, vegetation clearance should be carried out in late February to avoid disturbance to wintering birds at the Lea Valley SPA, as most birds will have left by late February.

5.4 Species abundance

5.4.1 Based on the peak counts for species recorded during the wintering bird surveys, no species were present in numbers of international or national importance. Most of the species recorded are widespread and common in the context of similar habitats within this area and are, therefore, considered to be of local importance only.

5.5 Species diversity

5.5.1 A total of 41 species were recorded during the wintering bird surveys undertaken between November 2024 and February 2025 inclusive. Twenty-one species were recorded within the site boundary with a further 20 species recorded across the survey area. Species diversity increased in areas containing dense scrub and woodland with a range of passerines including tit, thrush and finch species utilising this habitat. Meanwhile, canalized areas containing standing water contained a high diversity of waterbirds

including cormorant, Canada goose, coot, grey heron, little grebe, mallard, moorhen, mute swan, teal and tufted duck.

5.6 Site usage by wintering birds

5.6.1 Scrub and woodland habitats, which covered most of the site, were used by a broad array of passerine species, most notably robin and blue tit which were the two most frequently recorded species on the survey visits. They also supported some more notable species including dunnock, linnet, and song thrush.

5.6.2 Kestrels were observed hunting over areas of open grassland within the survey area on all four visits, suggesting the area provides good raptor foraging grounds. Green woodpecker, which is strongly associated with open areas of grassland, was also recorded in this habitat.

5.6.3 Waterbirds were restricted to the immediate vicinity of the canals which ran parallel to the development site and provided areas for feeding wildfowl. Gull species such as black-headed gull, mediterranean gull and herring gull were recorded flying over but did not interact with the site.

5.6.4 Starlings were observed using transmitter towers and cables as perches.

6.0 CONCLUSIONS

6.1.1 A total of 41 species were recorded during the field surveys undertaken between November 2024 and February 2025 inclusive, 20 of which were recorded outside of the site boundary within the survey area. Sixteen of these 41 species are species of principal importance and/or of conservation concern. These include five NERC S41 Species of Principal Importance, 11 BoCC Amber list species and five LPSL species.

6.1.2 Two internationally designated sites and one nationally designated site with features of ornithological interest were found within close proximity to the site. The Lea Valley SPA and Ramsar site are located approximately 340 m south of the site boundary whilst the Walthomstow Reservoirs SSSI is located approximately 510 m south of the site. Whilst three of the species listed as qualifying features of the designated sites were recorded on the wintering bird surveys, they were recorded in low numbers and the site is, therefore, not considered to be integral to the wintering bird populations of the SPA, Ramsar site or SSSI.

6.1.3 The wintering bird assemblage recorded within and in close proximity to the site is considered to be of local importance and consists of widespread and common species expected within the context of similar habitats within this area.

6.1.4 The wintering bird population was evenly distributed throughout the site with passerines recorded in greater numbers within denser scrub and tree cover. Waterbird species as well as passerines including grey wagtail and Cetti's warbler were strongly associated with areas of standing water on site, which provided important feeding areas and commuting corridors for species likely to be using the nearby reservoirs. Species including herring gull and common gull were recorded flying over the survey area but did not interact with the site.

6.1.5 Due to the removal of vegetation across the Enabling Works area, the proposed works have the potential to impact upon these species. As such, habitat clearance should take place outside of the breeding bird season to accord with legislative requirements and avoid the period when birds using the site are likely to be more susceptible to impacts associated with the proposed works.

REFERENCES

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FIGURES

Figure 1. Site boundary

Figure 2. Nationally and internationally designated sites within 10km of the site boundary

Figure 3. Summary of 2024/2025 survey results

Legend:

- Original site boundary
- Indicative extenson to the site boundary

Rev	Date	Project Code	Drn	Chk	App
00	19/11/2024	2486718	RG	RS	LT

N London Reinforcement

RSK biocensus
EXPERTS IN ECOLOGY

TITLE: Figure 1:

Site Location Plan
Tottenham Substation

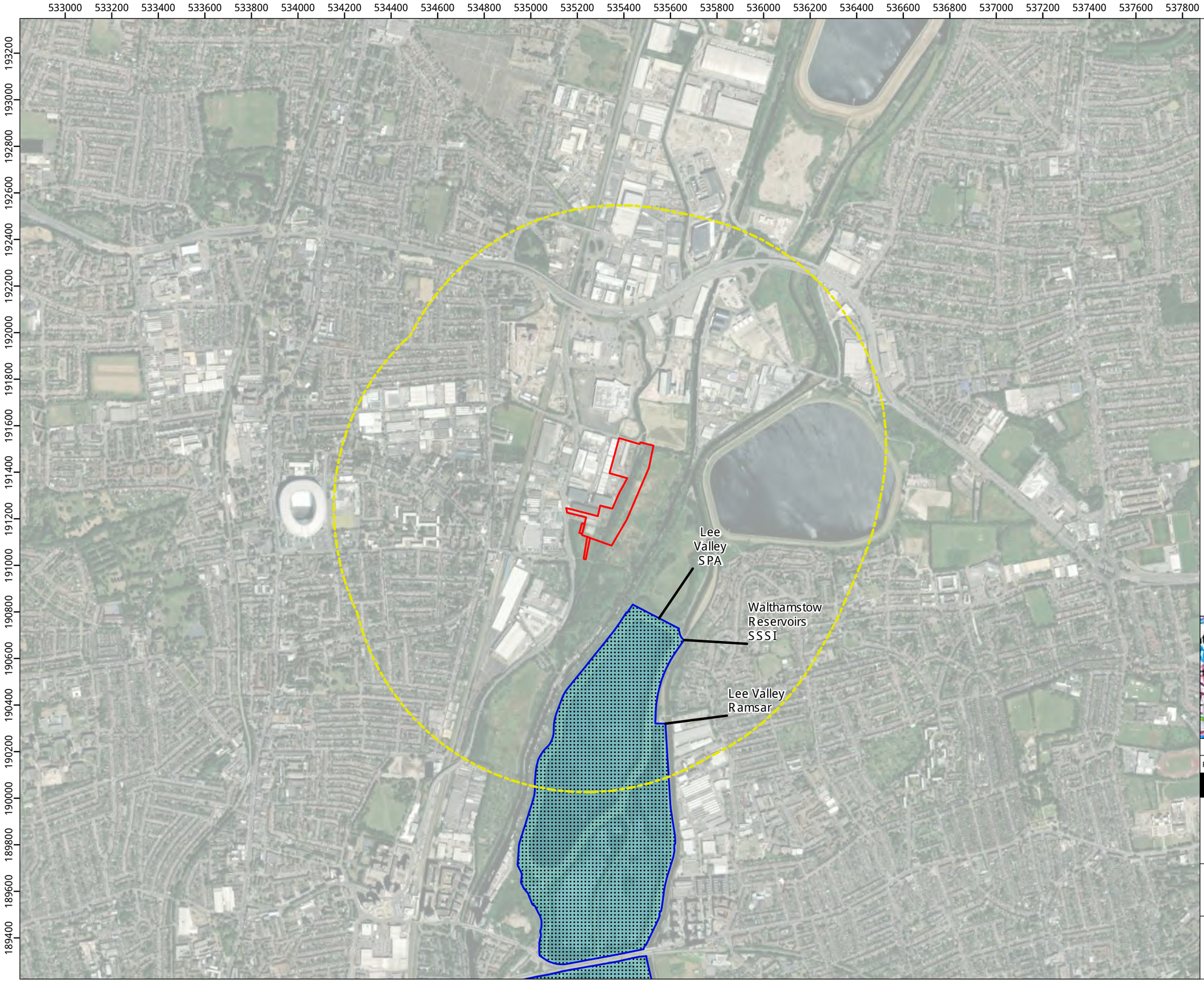
0 60 120 180
Metres
SCALE: 1:5,000 @ A3

N W E S

REV 00

World Imagery: Maxar, Microsoft
Hybrid Reference Layer: Esri Community Maps Contributors, Esri UK, Esri, TomTom, Garmin, Foursquare, GeoTechnologies, Inc, METI/NASA, USGS
OS Open Rasters: Contains OS data © Crown Copyright and database right 2022

Document Path: C:\OneDrive\OneDrive - RSK Group\08 GIS - 2486718 - N London Reinforcement Project\02 - APRX\2486718 - N London Reinforcement Project - Tottenham - Figure 1 - Site Location Plan.aprx



Legend:

- Site boundary
- 1km site buffer
- Ramsar
- Special Protection Area
- Sites of Special Scientific Interest

Rev	Date	Project Code	Drn	Chk	App
00	10/03/2025	2486718	RG	RS	LT

N London Reinforcement

RSK biocensus EXPERTS IN ECOLOGY

TITLE: Figure 2:

Closest Designated Sites

0 190 380 570

Metres

SCALE: 1:15,000 @ A3

N W E S

REV 00

Document Path: C:\OneDrive\RSK Group\RSK Biocensus - 08 GIS - 2486718 - N London Reinforcement Project\02 - APRX\2486718 - N London Reinforcement Project - Tottenham - Figure 2 - Closest Designated Sites.aprx

World Imagery: Maxar, Microsoft
OS Open Rasters: Contains OS data ø Crown Copyright and database right 2022

Legend:

- Indicative site boundary
- Survey area

Bird Activity

- Flying over / Circling
- Singing
- Calling
- Alarm Call

Visit number

- 1
- 2
- 3
- 4

Code	Species
BH	Black-headed gull
D.	Dunnock
GR	Greenfinch
GL	Grey wagtail
HG	Herring gull
K.	Kestrel
LI	Linnet
MA	Mallard
MH	Moorhen
RE	Redwing
ST	Song thrush
SG	Starling
T.	Teal
WP	Woodpigeon
WR	Wren

Rev	Date	Project Code	Drn	Chk	App
00	10/03/2025	2486718	TG	SP	AM

N London Reinforcement

RSK biocensus EXPERTS IN ECOLOGY

TITLE: Figure 3:
Summary of 2024/25 Survey Results including Specially Protected and Notable Species
Tottenham Substation

0 50 100 150
Metres
SCALE: 1:4,500 @ A3

N W E S

REV 00

Document Path: C:\OneDrive\RSK Group\RSK Biocensus - 08 GIS - 2486718 - N London Reinforcement Project\02 - APRX\Wintering Birds\2486718 - N London Reinforcement Project - Tottenham - Figure 2 - WB Survey Results - Notable_Protected Species.aprx

World Imagery: Maxar, Microsoft
OS Open Rasters: Contains OS data © Crown Copyright and database right 2022

APPENDIX A – SURVEY DATA

Table 3. Full survey data

Species			Peak count for each survey visit				Peak count	Total count
BTO code	Common name	Scientific name	1	2	3	4		
B.	Blackbird	*Turdus merula*	7	5	8	4	8	24
BH	Black-headed gull	*Chroicocephalus ridibundus*	12	9	4	10	12	35
BT	Blue tit	*Cyanistes caeruleus*	14	15	12	12	15	53
C.	Carrion crow	*Corvus corone*	6	10	5	7	10	28
CA	Cormorant	*Phalacrocorax carbo*	3	3	5	5	5	16
CC	Chiffchaff *	*Phylloscopus collybita*	2	-	-	-	2	2
CG	Canada goose *	*Branta canadensis*	2	4	-	-	4	6
CH	Chaffinch	*Fringilla coelebs*	11	1	1	6	11	19
CM	Common gull *	*Larus canus*	-	1	-	-	1	1
CO	Coot *	*Fulica atra*	10	12	8	11	12	41
CW	Cetti's warbler *	*Cettia cetti*	-	1	-	2	2	3
D.	Dunnock	*Prunella modularis*	3	8	3	1	8	15
G.	Green woodpecker *	*Picus viridis*	1	-	-	-	1	1
GC	Goldcrest	*Regulus regulus*	2	-	-	-	2	2

Species			Peak count for each survey visit				Peak count	Total count
BTO code	Common name	Scientific name	1	2	3	4		
GL	Grey wagtail *	*Motacilla cinerea*	1	1	1	-	1	3
GO	Goldfinch *	*Carduelis carduelis*	4	-	-	1	4	5
GR	Greenfinch *	*Chloris chloris*	2	-	-	-	2	2
GS	Great spotted woodpecker *	*Dendrocopos major*	1	-	3	1	3	5
GT	Great tit	*Parus major*	4	6	8	12	12	30
H.	Grey heron *	*Ardea cinerea*	1	-	-	-	1	1
HG	Herring gull	*Larus argentatus*	30	23	33	31	33	117
J.	Jay *	*Garrulus glandarius*	2	-	3	-	3	5
K.	Kestrel	*Falco tinnunculus*	3	1	1	2	3	7
LG	Little grebe *	*Tachybaptus ruficollis*	1	-	-	-	1	1
LI	Linnet *	*Linaria cannabina*	3	-	-	-	3	3
LT	Long-tailed tit	*Aegithalos caudatus*	29	2	8	6	29	45
MA	Mallard *	*Anas platyrhynchos*	9	20	13	11	20	53
MG	Magpie	*Pica pica*	12	10	11	10	12	43
MH	Moorhen *	*Gallinula chloropus*	5	5	-	4	5	14
MS	Mute swan *	*Cygnus olor*	1	-	3	1	3	5
MU	Mediterranean gull	*Ichthyaetus melanocephalus*	1	-	-	-	1	1
R.	Robin	*Erithacus rubecula*	6	17	16	13	17	52

Species			Peak count for each survey visit				Peak count	Total count
BTO code	Common name	Scientific name	1	2	3	4		
RE	Redwing	*Turdus iliacus*	1	2	-	-	2	3
RI	Ring-necked parakeet	*Psittacula krameri*	1	7	4	2	7	14
SG	Starling	*Sturnus vulgaris*	7	-	5	-	7	12
SH	Sparrowhawk	*Accipiter nisus*	1	-	-	-	1	1
ST	Song thrush *	*Turdus philomelos*	-	-	2	-	2	2
T.	Teal *	*Anas crecca*	-	-	1	-	1	1
TU	Tufted duck *	*Aythya fuligula*	-	1	1	-	1	1
WP	Wood pigeon	*Columba palumbus*	3	1	7	9	9	20
WR	Wren	*Troglodytes troglodytes*	13	8	2	2	13	25

**Recorded outside of the site boundaries within the survey area.*

APPENDIX B – SURVEY DETAILS

Table 4. Dates, timings and weather conditions for the wintering bird surveys undertaken in 2024/25

Visit no.	Date	Timing	Temp. (°C)	Weather conditions
1	29.11.24	10:05-12:35	9	Dry with alight south-easterly breeze (BF 1-3), clear sky and excellent visibility.
2	18.12.24	09:39 – 11:50	10	Dry with a light breeze (BF 1-3), overcast and good visibility.
3	13.01.25	10:09 – 12:01	4	Dry with a light south-westerly breeze (BF 1-3), partly clouded and excellent visibility.
4	14.02.25	10:14 – 12:30	4	Dry with a moderate south-easterly breeze (BF-4), partly clouded and excellent visibility.

Appendix C

Communications with Natural England

Jones, Helen

From: Jonathan Shavelar <Jonathan.Shavelar@naturalengland.org.uk>
Sent: 19 March 2026 10:17
To: Jones, Helen; McParland, Caroline; Jamie Melvin; Ben Gadd; Denise Shaw
Cc: Lees, Morgan; Douglas, Sophie
Subject: RE: NLRP - Natural England meetings minutes 27.01.2026

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Sincere apologies,

I believed I had responded to this. I can confirm it does satisfy my query and address any remaining concerns that Natural England had. I can confirm there are no outstanding matters for discussion from our perspective.

Any further questions please let me know.

Kind regards,
Jonathan Shavelar
Senior Officer - Nationally Significant Infrastructure Projects
Thames Solent Team
Natural England

www.naturalengland.gov.uk

Eastleigh House
Upper Market Street
Eastleigh
SO50 9YN

From: Jones, Helen <helen.jones@arcadis.com>
Sent: 19 March 2026 09:11
To: McParland, Caroline <caroline.mcparland@arcadis.com>; Jonathan Shavelar <Jonathan.Shavelar@naturalengland.org.uk>; Jamie Melvin <Jamie.Melvin@naturalengland.org.uk>; Ben Gadd <benjamin.gadd@nationalgrid.com>; Denise Shaw <denise.shaw@nationalgrid.com>
Cc: Lees, Morgan <morgan.lees@arcadis.com>; Douglas, Sophie <sophie.douglas@arcadis.com>
Subject: RE: NLRP - Natural England meetings minutes 27.01.2026

Hi Jonathan,
I hope you're well.
I just want to follow up on Caroline's email below that sets out the survey methods from the 2024/2025 wintering bird survey report prepared by RSK. Does this information satisfy your outstanding query about the bird survey methodology and that it was in line with best practice/guidance?

Many thanks and regards

Helen

From: McParland, Caroline <caroline.mcparland@arcadis.com>
Sent: 10 February 2026 09:29
To: Jonathan Shavelar <Jonathan.Shavelar@naturalengland.org.uk>; Jones, Helen <helen.jones@arcadis.com>; Jamie Melvin <Jamie.Melvin@naturalengland.org.uk>; Ben Gadd <benjamin.gadd@nationalgrid.com>; Denise Shaw <denise.shaw@nationalgrid.com>
Cc: Lees, Morgan <morgan.lees@arcadis.com>; Douglas, Sophie <sophie.douglas@arcadis.com>
Subject: Re: NLRP - Natural England meetings minutes 27.01.2026

Hello Jonathan,

Many thanks for your response. I have pasted below the survey methods from the wintering bird survey report, setting out the methods used by RSK in detail. These follow best practice guidance for wintering bird surveys and as the last paragraph under the "Field surveys" subsection notes, four visits were undertaken across winter 2024-2025.

Best regards,

Caroline.

"**Field surveys**
3.2.1 The field surveys for wintering birds were undertaken between November 2024 and February 2025 inclusive in accordance with the *Bird Survey Guidelines for Assessing Ecological Impacts* (BSG) (Bird Survey and Assessment Steering Group, 2023). These comprised a series of four survey visits during which suitably experienced ornithologists walked a pre-determined transect route throughout the site and the wider survey area.

3.2.2 The transect route was interspersed with stops, during which ornithologists scanned for birds using optical equipment. All bird species encountered (either visually or through their vocalisations) were recorded onto ArcGIS Field Maps software using standard British Trust for Ornithology (BTO) species codes and behaviour notation (Marchant, 1983). Any noteworthy observations within 100 m of the site boundary were recorded. Particular attention was given to undertaking counts of any notable aggregations of feeding and roosting birds such as waders, finches and thrushes, and to recording raptor roosting and foraging activity.

3.2.3 Considering the size of the survey area and the habitats present, a single transect route was surveyed, following public footpaths and covering the area of Tottenham Marshes proposed for development, as well as the area beyond, extending to within 20 meters of the Banbury and Lockwood Reservoirs. This transect route was subject to four survey visits (as described in Section 3.2.1)

3.2.4 Surveys were undertaken in suitable weather conditions, avoiding extreme temperatures, heavy rain, snow, or fog during which bird activity may be atypical and surveying may be impractical. The dates, timings, and weather conditions for the four survey visits are indicated in *Appendix B*.

Interpretation of survey results
Overview
3.3.1 In order to assess the importance of the wintering bird populations recorded during the field surveys, interpretation of the survey results considered the following:
• The importance of the populations recorded in the context of any nearby designated sites with features of ornithological interest;

• The conservation statuses of the species recorded (i.e., their inclusion on any of the legislation or conservation status categories described in *Section 2*);

• The sizes of the populations recorded (i.e., species abundance);

• The overall diversity of the wintering bird assemblage recorded; and

• The spatial patterns of wintering bird usage within the site, including areas and habitat types of particular importance to wintering birds.

Species abundance

3.3.3 The importance of the wintering bird populations recorded was assessed in the context of the sizes of those populations relative to international, national, and regional population estimates for the species in question.

3.3.4 International 1% population thresholds (i.e., the size at which a population is assessed as being of international importance, as it comprises over 1% of the international population for a given species) were obtained from Wetlands International.

3.3.5 National 1% population thresholds (i.e., the size at which a population is assessed as being of national importance, as it comprises over 1% of the national population for a given species) were calculated from the national population estimates detailed by Woodward *et al.* (2020).

3.3.6 Assessment of county, district or local importance was based on professional judgement and in reference to county population data detailed within the *2021 London Bird Report* by the London Natural History Society."

Caroline McParland BSc (Hons), PhD, CBiol, MRSB, CEnv, MCIEEM | Technical Director - Ecology

She/Her

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+44(0)7345321098

My working days are Monday to Thursday

Please note that, regardless of when you receive this email, I do not expect a reply outside of your own working hours

---

From: Jonathan Shavelar <Jonathan.Shavelar@naturalengland.org.uk>
Sent: 09 February 2026 13:27
To: McParland, Caroline <caroline.mcparland@arcadis.com>; Jones, Helen <helen.jones@arcadis.com>; Jamie Melvin <Jamie.Melvin@naturalengland.org.uk>; Ben Gadd <benjamin.gadd@nationalgrid.com>; Denise Shaw <denise.shaw@nationalgrid.com>

Cc: Lees, Morgan <morgan.lees@arcadis.com>; Douglas, Sophie <sophie.douglas@arcadis.com>
Subject: RE: NLRP - Natural England meetings minutes 27.01.2026

Some people who received this message don't often get email from jonathan.shavelar@naturalengland.org.uk. Learn why this is important

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Hello Caroline,

Thank you for providing that further information. I think the final question from me is just to confirm the survey methodology for the 24/25 survey. Provided the survey effort was in line with best practice / guidance then we would agree that the operational impacts could be screened out, and would overall agree the conclusions of your updated HRA Screening Assessment.

Many thanks,
Jonathan Shavelar
Senior Officer - Nationally Significant Infrastructure Projects
Thames Solent Team
Natural England

www.naturalengland.gov.uk

Eastleigh House
Upper Market Street
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SO50 9YN

From: McParland, Caroline <caroline.mcparland@arcadis.com>
Sent: 03 February 2026 17:27
To: Jonathan Shavelar <Jonathan.Shavelar@naturalengland.org.uk>; Jones, Helen <helen.jones@arcadis.com>; Jamie Melvin <Jamie.Melvin@naturalengland.org.uk>; Ben Gadd <benjamin.gadd@nationalgrid.com>; Denise Shaw <denise.shaw@nationalgrid.com>
Cc: Lees, Morgan <morgan.lees@arcadis.com>; Douglas, Sophie <sophie.douglas@arcadis.com>
Subject: Re: NLRP - Natural England meetings minutes 27.01.2026

Hello Jonathan,

I hope you're feeling better now and many thanks for your note.

I have here a Concept Plan showing the changes. Please note that this is a draft drawing.

Changes 1 to 4 are the increase in height of pylon VC1R, addition of pylon ZBC44 and connecting overhead line, plus related change to order limits. Change 5 is removal of the cabling east of Pymmes Brook.

Also attached is a screengrab of the 2024-2025 wintering bird surveys results showing lack of use of the area by SPA/Ramsar qualifying species (or by Walthamstow Reservoirs SSSI which underpins the nearest part of the Lee Valley SPA/Ramsar to the development), and flight paths not going across the works area. There were four visits

carried out, and species recorded were black-headed gull, dunnock, greenfinch, grey wagtail, herring gull, kestrel, linnet, mallard, moorhen, redwing, song thrush, starling, teal, woodpigeon and wren.

The flight path information shows that there isn't really a strong east-west pattern of travel between the SPA/Ramsar and the works area and most activity is concentrated over the vegetated areas to the east of the order limits, which are over the areas of existing buildings and hard standing.

If you have any queries after having a look at the below and attached, I'm happy to set up a call.

Best regards,

Caroline.

Caroline McParland BSc (Hons), PhD, CBiol, MRSB, CEnv, MCIEEM | Technical Director - Ecology

She/Her

caroline.mcparland@arcadis.com

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My working days are Monday to Thursday

Please note that, regardless of when you receive this email, I do not expect a reply outside of your own working hours

From: Jonathan Shavelar <Jonathan.Shavelar@naturalengland.org.uk>
Sent: Tuesday, February 03, 2026 09:58
To: Jones, Helen <helen.jones@arcadis.com>; Jamie Melvin <Jamie.Melvin@naturalengland.org.uk>; Ben Gadd <benjamin.gadd@nationalgrid.com>; Denise Shaw <denise.shaw@nationalgrid.com>; McParland, Caroline <caroline.mcparland@arcadis.com>
Cc: Lees, Morgan <morgan.lees@arcadis.com>; Douglas, Sophie <sophie.douglas@arcadis.com>
Subject: RE: NLRP - Natural England meetings minutes 27.01.2026

> Some people who received this message don't often get email from jonathan.shavelar@naturalengland.org.uk. Learn why this is important

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Hello all,

Apologies once again that I couldn't make this call last week. I've had a read through the meeting note with interest. Are you able to share any slides from the day please? It looks like most of the areas of concern have been considered – the one thing I am interested in looking at more closely is the potential operational impact from the pylons and the potential for bird strike/interruption of flight paths.

Good that you already have surveys and evidence of bird movement across the site, it would just be good to see a little more of this and to better understand the layout of the proposed pylon and how it wouldn't impede any north/south movement. I note the action to set up a follow up call – it may be that this is not necessary depending on the content of the slides, but I appreciate the offer and will take you up on it if I have further questions if that's okay?

Many thanks,

Jonathan Shavelar

Senior Officer - Nationally Significant Infrastructure Projects

Thames Solent Team

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From: Jones, Helen <helen.jones@arcadis.com>
Sent: 28 January 2026 17:05
To: Jamie Melvin <Jamie.Melvin@naturalengland.org.uk>; Jonathan Shavelar <Jonathan.Shavelar@naturalengland.org.uk>; Ben Gadd <benjamin.gadd@nationalgrid.com>; Denise Shaw <denise.shaw@nationalgrid.com>; McParland, Caroline <caroline.mcparland@arcadis.com>
Cc: Lees, Morgan <morgan.lees@arcadis.com>; Douglas, Sophie <sophie.douglas@arcadis.com>
Subject: NLRP - Natural England meetings minutes 27.01.2026

Hi everyone

Many thanks for our meeting yesterday to discuss the update to the Habitat Regulations Assessment Screening to consider the proposed changes to North London Reinforcement Project made DCO.

Below are the notes taken from the call.

Please let me know if you have any queries or amendments.

Thanks

Helen

NLRP Meeting notes Natural England 27.01.2026 1pm

Attendees

Jamie Melvin (Senior Officer, Essex Team, Natural England) (JM)

Ben Gadd (Lead PM NLRP National Grid) (BG)

Caroline McParland (Arcadis) (CM)

Helen Jones (Arcadis) (HG)

Denise Shaw (Environment Consents, National Grid) (DS)

Apologies – Jonathan Shavelar (London team, Natural England) (JS)

Introductions

All introductions made and their roles on the project.

JM noted that JS was unwell and the site under discussion was in JS's 'patch' rather than JM's but he'd advise on what he could.

The proposed changes context

An overview of the need for the non material change application and the proposed changes in be included in the application was given.

In summary the proposed changes are:

- Removal of the underground cabling to the east of Pymmes Brook and retention of the existing baseline vegetation
- Provision of a new pylon (ZBC44) at a height of 62m in the old bus depot, east of Pymmes Brook
- Increase the height of a consented pylon (VC1R) from 46.3m and proposed change is a height of 62m. FYI, this tower would also be moved 17m to the south west of its current proposed location which is within the limits of deviation of the made DCO, to allow for safe oversailing of the new OHL from existing infrastructure.
- New overhead line between the pylons, over existing NG land.
- Increase the Order Limits to allow the OHL to span over a building owned by National Grid.

The setting of the proposed changes within the surrounding environment was discussed.

The surrounding area is built up and noisy with a nearby metal recycling plant and also the North Circular near to the site. High buildings lie to the west of the proposed change. No connectivity between Lee Valley and to the area to the west of the site.

HRA overview:

The HRA Screening that supported the made DCO didn't consider operational impacts only construction.

A suite of wintering bird surveys in 2024/2025 indicated that none of the qualifying species of the Lee Valley SPA/Ramsar Site (gadwall, shoveler, bittern) were present, and other species were using marshes and/or traveling north-south. These birds were not traveling east to west across the works area.

Operational Impacts

Wintering bird surveys have been completed by the contractor for 2024/2025. No qualifying species were recorded. Generally, the recorded birds were using the Lee Valley north to south.

It is proposed that the proposed changes will post no risk to wintering birds during operation therefore, we propose no operation LSE.

Construction Impacts

The tallest towers already present at and near to the site are 60m. The new pylons are similar in height.

Construction associated with the proposed changes will start Sept 2026

National Grid is taking on Lee Valley stewardship of the area as part of ecological mitigation.

This ecological management will be completed as soon as possible.

London Borough of Haringey is happy with this ecological management as long as there's a ECoW.

BG noted that, in comparison with the original UGC in the made DCO, the proposed additional tower and overhead line, together with moving VC1R and increasing its height, constitutes much less construction noise, traffic and drilling works than is set out in the made DCO. Existing accesses from Leeside Road will be used.

The closest SSSI to the site, Walthamstow Marshes SSSI, is 340m away. None of the bird species for the SSSI designation were recorded in the wintering bird surveys

Is it considered that the proposed changes will be de-minimus and would not result in LSEs on the SPA/Ramsar site.

JM's initial thoughts were there were no real concerns over moving of pylons and increased height however he needed to discuss with JS when he was back from sick leave and feedback to National Grid. Action – JM.

Set up call with JS after his return to work to arrange a follow up meeting to discuss the proposed changes and get his feedback. Action – CM.

Helen Jones (she/her) BSc(Hons), CEnv, MIEMA
Associate Technical Director - PEAM
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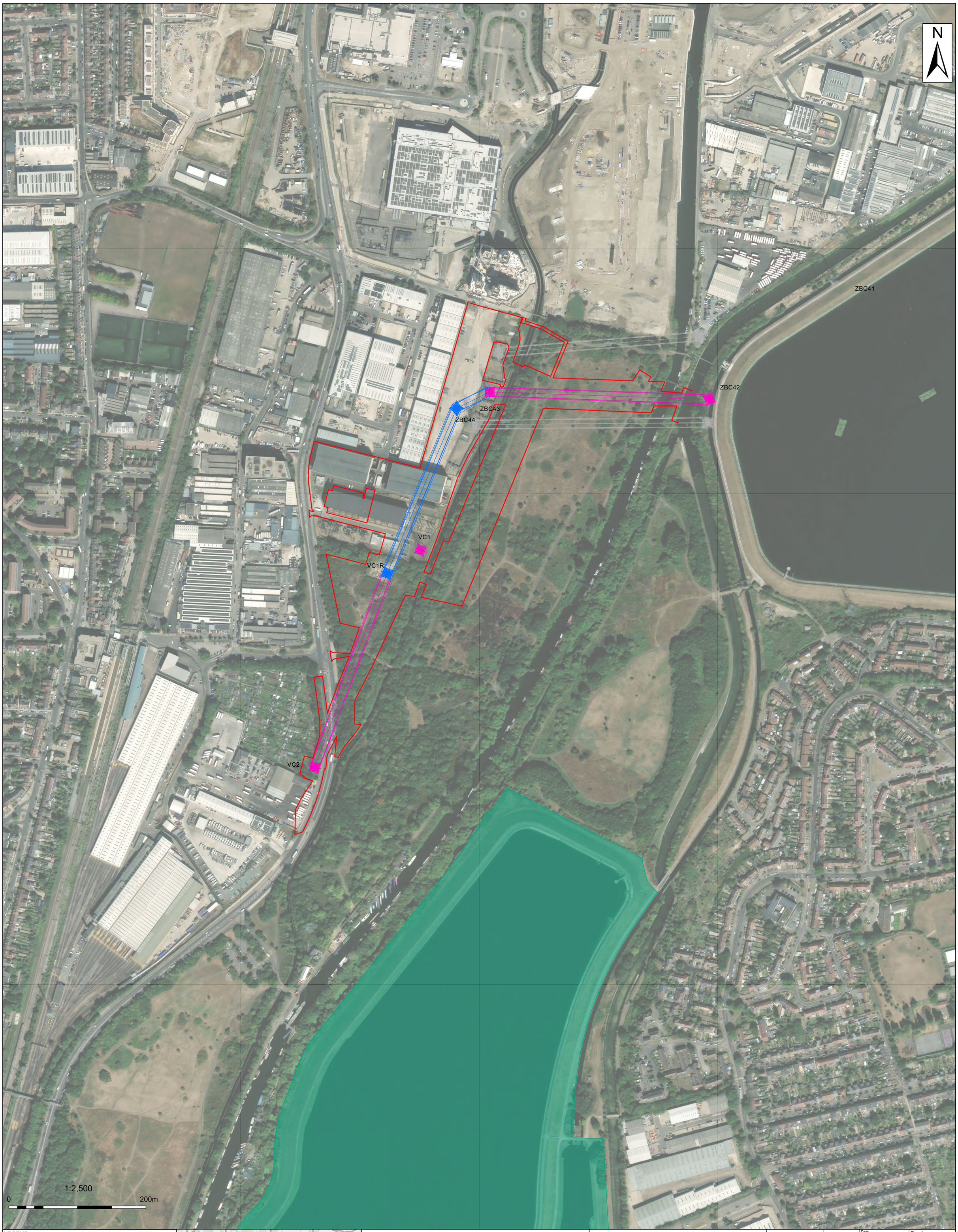
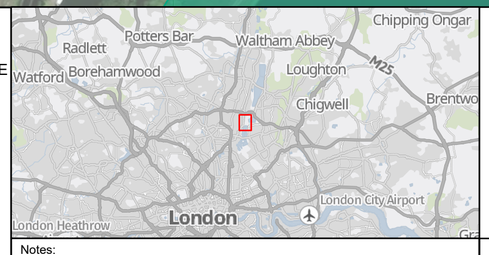
Appendix D

Location plan showing nearby Lee Valley SPA/Ramsar site used to assess likely significant effects



LEGEND

- ORDER LIMITS (THE SITE)
- PROPOSED WORKS TO FACILITATE OVERHEAD LINE BYPASS OVER TOTTENHAM SUBSTATION (PROPOSED CHANGES 1, 2, AND 3)
- WORKS CONSENTED IN 2014 ORDER
- LEE VALLEY SPA/RAMSAR SITE



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Client: nationalgrid

Project: NORTH LONDON REINFORCEMENT PROJECT

Site: Tottenham Substation

Client: National Grid Electricity Transmission

Rev	Date	Description	Drawn	Check	Approv
03	21/04/26	Update to data	RE	HJ	SD
02	10/04/26	Amendment to legend	RE	HJ	SD
01	19/03/26	INITIAL ISSUE	RE	HJ	SD

Title: North London Reinforcement Project – Figure 1 Location plan showing nearby Lee Valley SPA/Ramsar site

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Coordinating Office: 80Fen, 80 Fenchurch Street, London, EC3M 4BY

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Designed	H.J	Date 10 APR 26	Signed
Drawn	R.E	Date 10 APR 26	Signed
Checked	H.J	Date 10 APR 26	Signed
Approved	S.D	Date 10 APR 26	Signed
Scale:	1:2,500	Datum:	AOD
Original Size:	A1	Grid:	OS
Suitability Code:	S2	Project Number:	30302490

Suitability Description: For Information

Drawing Number: 30302490-ARC-EGN-ZZ-DR-ZZ-00004-S2

Revision: P02

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