
NORTH LONDON WASTE AUTHORITY

NORTH LONDON HEAT AND POWER PROJECT

NO SIGNIFICANT EFFECTS REPORT (HABITAT REGULATIONS ASSESSMENT)

The Planning Act 2008 The Infrastructure
Planning (Applications: Prescribed
Forms and Procedure) Regulations 2009
Regulation 5 (2) (g)

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This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

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Glossary

See Project Glossary (AD01.05)

Executive summary

- i.i.i This No Significant Effects Report (NSER) has been prepared to support North London Waste Authority's (the Applicant's) application (the Application) for a Development Consent Order (DCO) made pursuant to the Planning Act 2008 (as amended).
- i.i.ii The Application for the North London Heat and Power Project (the Project) comprising the construction, operation and maintenance of an Energy Recovery Facility (ERF) capable of an electrical output of around 70 megawatts (MW_e) at the Edmonton EcoPark in north London with associated development including a Resource Recovery Facility (RRF). The ERF would replace the existing energy from waste plant at the Edmonton EcoPark which would be decommissioned as part of the Project.
- i.i.iii This NSER has been undertaken to inform a Habitats Regulations Assessment (HRA) for the Project in accordance with Regulation 61(1) of the Conservation of Habitats and Species Regulations 2010¹ (as amended). Regulation 61(1) which states that:
- "A competent authority, before deciding to undertake, or give any consent, permission or other authorisation for, a plan or project which—*
- (a) is likely to have a significant effect on a European site or a European offshore marine site (either alone or in combination with other plans or projects); and*
- (b) is not directly connected with or necessary to the management of that site,*
- must make an appropriate assessment of the implications for that site in view of that site's conservation objectives."*
- i.i.iv This NSER concludes that the Project would not result in any likely significant effects on European sites, either alone or in-combination with other plans or projects. It is therefore considered that no further stages in the HRA process are required and the Project will not proceed to the next stage of carrying out an appropriate assessment of the implications of the Project on the integrity of European sites.
- i.i.v The Project involves the demolition of the existing facilities in the northern part of the Application Site, construction of an ERF in their place with a proposed RRF and EcoPark House in the southern part of the Application Site, and subsequent demolition of the existing Energy from Waste (EfW) facility. These works would require the removal of a pond and the clearance of vegetation, including young plantation woodland in the northern part of the Application Site. It is anticipated that demolition of the facilities would commence in 2019 and that the proposed works would be constructed to be fully operational by 2026.
- i.i.vi A meeting was held with Natural England (NE) in June 2014, which informed the scope of the HRA. European sites located within 10km of the Application Site were considered, as well as other designated sites that

¹ HMSO (2010) Conservation of Habitats and Species Regulations.

support qualifying features of these European sites. Relevant baseline information was derived from surveys undertaken in 2013, 2014 and 2015. The results of air quality modelling for the existing EfW facility and the Project were also reviewed. Likely significant effects on European sites have been considered in light of their conservation status. The assessment has also considered any likely significant effects of the Project in-combination with other plans and projects. The first draft of this report was submitted to NE as part of Phase Two Consultation and it was stated in their response that they were satisfied that there would be no likely significant effects on European sites alone or in-combination with other plans and projects.

- i.i.vii The European sites located within 10km of the Application Site are Lee Valley Special Protection Area (SPA) and Ramsar site and Epping Forest Special Area of Conservation (SAC). Lee Valley SPA and Ramsar site are located approximately 1.5km to the south and these two sites are designated because they both support populations of bird species of European importance, as well as scarce plant and invertebrate species. Epping Forest SAC is located approximately 2.8km to the east of the Application Site and is designated because of the presence of habitats of European importance, as well as stag beetle and great crested newt. Epping Forest SAC is also designated as a Site of Special Scientific Interest (SSSI), which is split into units. Many of the units of Epping Forest SSSI are not currently in a favourable condition, due to 'a very significant issue'² relating to the deposition of acidity and nitrogen. Chingford Reservoirs SSSI was considered due to its proximity to the Application Site and therefore potential for disturbance to bird species associated with Lee Valley SPA and Ramsar site.
- i.i.viii Within the Application Site, Edmonton EcoPark is dominated by hard standing and buildings, although there is also a small pond surrounded by amenity grassland, introduced shrub, scattered trees and areas of young plantation woodland. Lee Park Way and the Temporary Laydown Area to the east primarily support areas of tall ruderal vegetation, semi-improved grassland and dense and scattered scrub. The Application Site supports no habitats that are qualifying features of Epping Forest SAC. Qualifying bird species of Lee Valley SPA and Ramsar site have not been recorded at the Application Site and there is a lack of suitable habitat for these species. The pond within the Application Site and the lagoon at Deephams Sewage Treatment Works fall within the poor suitability category for great crested newt. The Application Site was not considered to have a potential to support notable invertebrates or plants, including qualifying features of Epping Forest SAC and Lee Valley Ramsar site.
- i.i.ix Qualifying bird species for Lee Valley SPA and Ramsar site are vulnerable to disturbance associated with noise and lighting, but there is not considered to be a potential for significant effects considering their distance from the Application Site. The same applies to Chingford Reservoirs SSSI

² NE, (2014); 'Condition of SSSI Units. Epping Forest.' Available at: <http://www.sssi.naturalengland.org.uk/special/sssi/reportAction.cfm?report=sdrt13&category=S&reference=1001814>

and any indirect disturbance effects to birds that could form part of the Lee Valley SPA and Ramsar site population.

- i.i.x Lee Valley SPA and Ramsar site, Epping Forest SAC and Chingford Reservoirs SSSI are considered to be too far from the Application Site to be affected by dust associated with construction and demolition work, with any indirect effects on Lee Valley SPA and Ramsar site through the deposition of dust on connected watercourses being avoided by implementation of the Code of Construction Practice. There would be a reduction in the deposition of nitrogen within the European sites and Chingford Reservoirs SSSI from the Project during Stage 2 (transition stage when both existing EfW facility and proposed ERF are partially operational) and Stages 3/4 (when the existing EfW facility is decommissioned and the proposed ERF is fully operational), although the effects of this reduction are not considered to be significant. Emission rates for particulate matter are expected to be no worse than existing. Modelling undertaken for the purposes of the assessment predicts that operation of the ERF and removal of the existing EfW facility would result in an increase in sulphur deposition although the increases predicted are less than the variation recorded in background levels. Acidity levels are predicted to remain below the maximum critical loads within the European sites and Chingford Reservoirs SSSI. As such, there is not considered to be a potential for significant effects associated with the deposition of nitrogen, sulphur, acidity or dust.
- i.i.xi Standard mitigation measures would be implemented as part of standard working practices to alleviate potential effects on surface water quality and runoff to surface water courses and the contamination of groundwater during construction, which would avoid any potential significant effects to interest features of Lee Valley SPA and Ramsar site associated with polluted discharges.
- i.i.xii It has been recognised that modelling predicts an increase in sulphur deposition. Therefore, a precautionary high level review of the in-combination projects identified during the Environmental Impact Assessment (EIA) process has been undertaken, which has found that none were likely to result in sulphur emissions. Therefore there is no potential for significant effects associated with sulphur deposition, or any other effects, in combination with other projects.

1 Introduction

- 1.1.1 This No Significant Effects Report (NSER) has been prepared to support North London Waste Authority's (the Applicant's) application (the Application) to the Secretary of State for Energy and Climate Change for a Development Consent Order (DCO) made pursuant to the Planning Act 2008 (as amended).
- 1.1.2 The Application is for the North London Heat and Power Project (the Project) comprising the construction, operation and maintenance of an Energy Recovery Facility (ERF) capable of an electrical output of around 70 megawatts (MW_e) at the Edmonton EcoPark in north London with associated development, including a Resource Recovery Facility (RRF). The proposed ERF would replace the existing Energy from Waste (EfW) facility at the Edmonton EcoPark.
- 1.1.3 The Project is a Nationally Significant Infrastructure Project (NSIP) for the purposes of Section 14(1)(a) and section 15 in Part 3 of the Planning Act 2008 (as amended) because it involves the construction of a generating station that would have a capacity of more than 50MW_e.

1.2 Legislation and guidance

Conservation of Habitats and Species Regulations 2010

- 1.2.1 The Conservation of Habitats and Species Regulations 2010³ (the Habitats Regulations) transposes the Habitats Directive (Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora⁴) into UK law. Regulation 61(1) states that:
- "A competent authority, before deciding to undertake, or give any consent, permission or other authorisation for, a plan or project which—*
- (a) is likely to have a significant effect on a European site or a European offshore marine site (either alone or in combination with other plans or projects); and*
- (b) is not directly connected with or necessary to the management of that site,*
- must make an appropriate assessment of the implications for that site in view of that site's conservation objectives."*
- 1.2.2 Such an assessment is referred to as a Habitats Regulations Assessment.
- 1.2.3 Regulation 61(2) states:
- "A person applying for any such consent, permission or other authorisation must provide such information as the competent authority may reasonably require for the purposes of the assessment or to enable them to determine whether an appropriate assessment is required."*

³ HMSO (2010) Conservation of Habitats and Species Regulations.

⁴ European Commission (1992) Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora. <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31992L0043:EN:HTML>

- 1.2.4 European sites, as defined under the Habitats Regulations, are Special Areas of Conservation (SACs) designated under the Habitats Regulations and Special Protection Areas (SPAs). As a matter of UK government policy, sites designated under the Convention on Wetlands 1971 (the Ramsar Convention)⁵, known as Ramsar Sites, are also included within the consideration of European sites.

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

- 1.2.5 Regulation 5(2)(g)⁶ states that the application for an order granting development consent must be accompanied by:

“any report identifying any European site to which regulation 48 of the Conservation (Natural Habitats, &c.) Regulations 1994 applies [since replaced by regulation 61 of the Habitats Regulations], or any Ramsar site, which may be affected by the proposed development, together with sufficient information that will enable the Commission [Secretary of State] to make an appropriate assessment of the implications for the site if required by regulation 48(1)”.

Planning Inspectorate Advice Note 10: Habitat Regulations Assessment

- 1.2.6 This Planning Inspectorate advice note⁷ states that, if an NSIP, when taken alone or with existing and known future projects, is likely to affect a European site and/or a European marine site, the applicant must provide a report with the application showing the site(s) that may be affected together with sufficient information to enable the Competent Authority to make an appropriate assessment, if required. The note provides advice for applicants in relation to the preparation of that report, and the processes relating to Habitats Regulations Assessment (HRA).

1.3 Purpose of this report

- 1.3.1 This NSER provides information to allow the Secretary of State to undertake an HRA in their role as the Competent Authority, in accordance with Regulation 61(2) of the Habitats Regulations and Planning Inspectorate Advice Note 10. This NSER informs the first stage of the HRA process to screen for likely significant effects. The formal assessment will be undertaken by the Secretary of State in the process of determining the DCO in their role as the Competent Authority.
- 1.3.2 The report identifies if there are any likely significant effects of the Project on European sites and features, either alone or in-combination with other

⁵ United Nations Educational, Scientific and Cultural Organization (UNESCO) (1994) Convention on Wetlands of International Importance especially as Waterfowl Habitat. Ramsar, Iran, 2.2.1971 as amended by the Protocol of 3.12.1982 and the Amendments of 28.5.1987.

http://www.ramsar.org/sites/default/files/documents/library/current_convention_text_e.pdf

⁶ HMSO (2009) The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009.

⁷ The Planning Inspectorate, (2015); Habitats Regulation Assessment. Advice note ten: Habitat Regulation Assessment relevant to nationally significant infrastructure projects.

plans or projects, in light of their conservation objectives, as required under Regulation 61(1) of the Habitats Regulations. Potential effects on ecology that may arise from the Project are also assessed in Vol 2 Section 5 of the Environmental Statement (ES) (AD06.02).

- 1.3.3 This Report forms part of a suite of documents accompanying the Application submitted in accordance with the requirements set out in section 55 of the Planning Act 2008 (as amended) and Regulations 5, 6 and 7 of the Infrastructure Planning (Applications: Prescribed Forms and Procedures) Regulations 2009 (APFP Regulations 2009), and should be read alongside those documents (see Project Navigation Document AD01.02).

1.4 Process of Habitats Regulations Assessment

- 1.4.1 This NSER comprises stage one of the HRA process, which is screening for likely significant effects on European sites.
- 1.4.2 Stage one has not identified any likely significant effects. It is therefore not considered necessary to proceed with further stages in the HRA process, which would be:
- a. Stage two, which involves an appropriate assessment of the implications of the Project on the integrity of European sites;
 - b. Stage three, which requires consideration of alternative solutions, applies if stage two concludes that the Project would adversely affect the integrity of these sites, or is inconclusive; and
 - c. Stage four, which considers whether the project is justified by Imperative Reasons of Overriding Public Interest and whether compensatory measures are required, applies if there are no satisfactory alternatives.

1.5 Document structure

- 1.5.1 This NSER is structured as follows:
- a. Section 2 describes the methods of assessment, including the criteria for consideration of European sites;
 - b. Section 3 describes designated sites considered to be relevant to the assessment;
 - c. Section 4 sets out the existing baseline conditions on the Application Site and the air quality modelling results;
 - d. Section 5 reviews the embedded mitigation measures that are relevant to the assessment;
 - e. Section 6 reviews any likely significant effects on European sites;
 - f. Section 7 identifies any in combination effects; and
 - g. Section 8 sets out the conclusions.

1.6 The Applicant

- 1.6.1 Established in 1986, the Applicant is a statutory authority whose principal responsibility is the disposal of waste collected by the seven north London boroughs of Barnet, Camden, Enfield, Hackney, Haringey, Islington and Waltham Forest (the Constituent Boroughs).
- 1.6.2 The Applicant is the UK's second largest waste disposal authority, handling approximately 3 per cent of the total national Local Authority Collected Waste (LACW) stream. Since 1994 the Applicant has managed its waste arisings predominantly through its waste management contract with LondonWaste Limited (LWL) and the use of the EfW facility at the existing Edmonton EcoPark and landfill outside of London.
- 1.6.3 LWL is a private waste management company wholly owned by the Applicant, and is the freeholder of the Edmonton EcoPark and the operator of the existing EfW facility. LWL has a current contract with the Applicant for management of its waste which expires in December 2025 with flexibility for termination sooner. The contract includes:
- a. the reception, treatment and disposal of residual wastes;
 - b. the operation of Reuse and Recycling Centres (RRC), including the recycling of wastes and the transfer of residual wastes to a disposal point;
 - c. the reception and treatment of separately collected organic wastes;
 - d. the reception and transportation of other separately collected wastes for recycling by third parties; and
 - e. the reception and transportation of other separately collected clinical and offensive wastes for treatment by third parties.

1.7 The Application Site

- 1.7.1 The Application Site, as shown on the Site Location Plans (A_0001 and A_0002) in the Book of Plans (AD02.01), extends to approximately 22 hectares and is located wholly within the London Borough of Enfield (LB Enfield). The Application Site comprises the existing waste management site known as the Edmonton EcoPark where the permanent facilities would be located, part of Ardra Road, land around the existing water pumping station at Ardra Road, Deephams Farm Road, part of Lee Park Way and land to the west of the River Lee Navigation, and land to the north of Advent Way and east of the River Lee Navigation (part of which would form the Temporary Laydown Area and new Lee Park Way access road). The post code for the Edmonton EcoPark is N18 3AG and the grid reference is TQ 35750 92860.
- 1.7.2 The Application Site includes all land required to deliver the Project. This includes land that would be required temporarily to facilitate the development.
- 1.7.3 Both the Application Site and the Edmonton EcoPark (existing and proposed) are shown on Plan A_0003 and A_0004 contained within the Book of Plans (AD02.01). Throughout this report references to the

Application Site refer to the proposed extent of the Project works, and Edmonton EcoPark refers to the operational site. Upon completion of the Project the operational site would consist of the Edmonton EcoPark and additional land required to provide new access arrangements and for a water pumping station adjacent to the Deephams Sewage Treatment Works outflow channel.

Edmonton EcoPark

1.7.4 The Edmonton EcoPark is an existing waste management complex of around 16 hectares.

1.7.5 Current use of the Edmonton EcoPark comprises:

- a. an EfW facility which treats circa 540,000 tonnes per annum (tpa) of residual waste and generates around 40MW_e (gross) of electricity;
- b. an In-Vessel Composting (IVC) facility which processes food, landscaping and other green waste from kerbside collections and Reuse and Recycling Centres (RRCs) as well as local parks departments. The facility currently manages around 30,000tpa, and has a permitted capacity of 45,000tpa;
- c. a Bulky Waste Recycling Facility (BWRF) and Fuel Preparation Plant (FPP) which receive bulky waste from RRCs and direct deliveries. These facilities respectively recycle wood, metal, plastic, paper, card and construction waste; and separate oversized items and shred waste suitable for combustion. These integrated facilities manage over 200,000tpa;
- d. an Incinerator Bottom Ash (IBA) Recycling Facility which processes ash from the existing EfW facility;
- e. a fleet management and maintenance facility which provides parking and maintenance facilities for the Edmonton EcoPark fleet of operational vehicles;
- f. associated offices, car parking and plant required to operate the facility; and
- g. a former wharf and single storey building utilised by the Edmonton Sea Cadets under a lease.

1.7.6 In order to construct the proposed ERF, the existing BWRF and FPP activities would be relocated within the Application Site; the IVC facility would be decommissioned and the IBA recycling would take place off-site.

Temporary Laydown Area and eastern access

1.7.7 The proposed Temporary Laydown Area is an area of open scrubland located to the east of the River Lee Navigation and north of Advent Way. There is no public access to this area. The Temporary Laydown Area would be reinstated after construction and would not form part of the ongoing operational site.

1.7.8 In addition to the Temporary Laydown Area the Application Site includes land to the east of the existing Edmonton EcoPark which would be used for

the new Lee Park Way entrance and landscaping along the eastern boundary.

Northern access

- 1.7.9 The Application Site also includes Deephams Farm Road and part of Ardra Road with land currently occupied by the EfW facility water pumping station between the junction of A1005 Meridian Way and Deephams Farm Road.

1.8 Surrounding area

- 1.8.1 The Application Site is located to the north of the A406 North Circular Road in an area that is predominantly industrial. The Lee Valley Regional Park (LVRP) is located to the east of the Edmonton EcoPark.
- 1.8.2 Land to the north and west of the Application Site is predominantly industrial in nature. Immediately to the north of the Edmonton EcoPark is an existing Materials Recovery Facility (MRF) which is operated by a commercial waste management company, alongside other industrial buildings. Further north is Deephams Sewage Treatment Works. Beyond the industrial area to the north-west is a residential area with Badma Close being the nearest residential street to the Application Site (approximately 60m from the nearest part of the boundary) and Zambezie Drive the nearest to the Edmonton EcoPark at approximately 125m west.
- 1.8.3 Eley Industrial Estate located to the west of the Application Site comprises a mixture of retail, industrial and warehouse units.
- 1.8.4 Advent Way is located to the south of the Application Site adjacent to the A406 North Circular Road. Beyond the A406 North Circular Road are retail and trading estates; this area is identified for future redevelopment to provide a housing-led mixed use development known as Meridian Water.
- 1.8.5 The LVRP and River Lee Navigation are immediately adjacent to the eastern boundary of the Edmonton EcoPark, and Lee Park Way, a private road which also forms National Cycle Network (NCN) Route 1, runs alongside the River Lee Navigation. To the east of the River Lee Navigation is the William Girling Reservoir along with an area currently occupied by Camden Plant Ltd. which is used for the crushing, screening and stockpiling of waste concrete, soil and other recyclable materials from construction and demolition. The nearest residential areas to the east of the Application Site and LVRP are located at Lower Hall Lane, approximately 550m from the Edmonton EcoPark and 150m from the eastern edge of the Application Site.

1.9 The Project

- 1.9.1 The Project would replace the existing EfW facility at Edmonton EcoPark, which is expected to cease operations in around 2025, with a new and more efficient ERF which would produce energy from residual waste, and associated development, including temporary works required to facilitate construction, demolition and commissioning. The proposed ERF would surpass the requirement under the Waste Framework Directive (Directive 2008/98/EC) to achieve an efficiency rating in excess of the prescribed

level, and would therefore be classified as a waste recovery operation rather than disposal.

1.9.2 The main features of the Project once the proposed ERF and permanent associated works are constructed and the existing EfW facility is demolished comprise:

- a. a northern area of the Edmonton EcoPark accommodating the proposed ERF;
- b. a southern area of the Edmonton EcoPark accommodating the RRF and a visitor, community and education centre with offices and a base for the Edmonton Sea Cadets ('EcoPark House');
- c. a central space, where the existing EfW facility is currently located, which would be available for future waste-related development;
- d. a new landscape area along the edge with the River Lee Navigation; and
- e. new northern and eastern access points to the Edmonton EcoPark.

1.9.3 During construction there is a need to accommodate a Temporary Laydown Area outside of the future operational site because of space constraints. This would be used to provide parking and accommodation for temporary staff (offices, staff welfare facilities), storage and fabrication areas, and associated access and utilities.

1.9.4 There are some aspects of the Project design that require flexibility and have therefore yet to be fixed, for example, the precise location and scale of the buildings associated with the Project. It would not be possible to fix these elements in advance of the detailed design and construction which would be undertaken following appointment of a contractor should the DCO be granted. In order to accommodate this and ensure a robust assessment of the likely significant environmental effects of the Project, the Application is based on the limits of deviation set out in the Book of Plans (AD02.01), which identifies:

- a. works zones for each work or group of works (to establish the area in which the development can be located); and
- b. maximum building envelopes (to establish the maximum building length, width, height and footprint).

1.9.5 The Book of Plans (AD02.01) is supplemented by Illustrative Plans (included in the Design Code Principles, AD02.02) that set out the indicative form and location of buildings, structures, plant and equipment, in line with the limits of deviation established by the draft DCO (AD03.01).

1.9.6 A separate Environmental Permit would need to be obtained from the Environment Agency (EA) for the operation of the waste facility under the Environmental Permitting (England and Wales) Regulations 2010. The existing EfW facility at the Edmonton EcoPark is subject to an Environmental Permit issued by the EA. The Applicant is currently in discussions with the EA regarding an application for the new Environmental Permit(s) associated with the proposed ERF with a view to submitting an application in parallel with the DCO process.

Principal development (Works No.1a)

1.9.7 The principal development comprises the construction of an ERF located at the Edmonton EcoPark, fuelled by residual waste and capable of an electrical output of around 70MW_e (gross) of electricity. The principal development consists of the following development, located within the limits of deviation shown on Drawing C_0002 and within the building envelopes shown on Drawing C_0003 (in the Book of Plans (AD02.01)):

- (i) a main building housing:
 - 1. a tipping hall;
 - 2. waste bunker and waste handling equipment;
 - 3. two process lines (with each line having a capacity of 350,000 tonnes of waste per annum), consisting of a moving grate, furnace, boiler and a flue gas treatment plant;
 - 4. facilities for the recovery of incinerator bottom ash and air pollution control residue;
 - 5. steam turbine(s) for electricity generation including equipment for heat off-take; and
 - 6. control room containing the operational and environmental control and monitoring systems, and offices.
- (ii) entry and exit ramps to the ERF;
- (iii) a stack containing flues for flue gas exhaust;
- (iv) cooling equipment; and
- (v) an observation platform enclosure.

Associated development (Works No. 1b – 7)

1.9.8 Associated development within the meaning of section 115(2) of the Planning 2008 Act (as amended) in connection with the Nationally Significant Infrastructure Project referred to in Works No.1a, comprising:

- (a) Works No.1b – works required to provide buildings, structures, plant and equipment needed for the operation of the ERF as shown on Drawing C_0002 (AD02.01) comprising:
 - (i) a wastewater treatment facility;
 - (ii) a water pre-treatment plant;
 - (iii) external stores and workshops;
 - (iv) a fuelling area and fuel storage, vehicle wash, transport offices and staff facilities, toilets, natural gas intake and management compound, and fire control water tank(s); and
 - (v) electrical substation(s).
- (b) Works No.2 – the construction of a resource recovery facility comprising the following building, structures and plant, as shown on Drawing C_0004 and within the building envelope shown on Drawing C_0005 (AD02.01):

- (i) a Recycling and Fuel Preparation Facility (RFPF);
 - (ii) a RRC;
 - (iii) offices, and staff and visitor welfare facilities;
 - (iv) odour abatement and dust suppression plant and equipment; and
 - (v) fire control water tank(s) and pump house and equipment.
- (c) Works No.3 – the construction of a building to provide visitor, community and education facilities, office accommodation, and a boat canopy, as shown on Drawing C_0006 and within the building envelope shown on Drawing C_0007 (AD02.01).
- (d) Works No.4 – utilities and infrastructure work, landscaping, access, security and lighting, and weighbridges, as shown on Drawing C_0008 (AD02.01), comprising:
 - (i) With regard to the following
 - (a) potable water;
 - (b) waste water;
 - (c) surface water;
 - (d) foul water;
 - (e) raw water;
 - (f) electricity;
 - (g) gas; and
 - (h) CCTV, telecoms and data,works could include:
 - the diversion, repositioning, decommissioning, removal, replacement, modification or upgrading of existing pipes, cables, systems and associated apparatus;
 - the laying or installation of new pipes, cables, systems and associated apparatus; and
 - the creation of connections to existing or new pipes, cables, systems and associated apparatus.
 - (ii) the erection of a raw water pumping station;
 - (iii) stabilisation works to the eastern bank of Salmon's Brook;
 - (iv) the construction of surface water pumps, pipework and attenuation tanks;
 - (v) landscaping works;
 - (vi) the installation of areas of green roof and/or brown roof;
 - (vii) the widening of the existing entrance into the Edmonton EcoPark from Advent Way, including modification or replacement of the bridge over Enfield Ditch;
 - (viii) construction within the Edmonton EcoPark of vehicle and cycle parking, vehicle, cycle and pedestrian routes, and weighbridges;

- (ix) construction of an access into the Edmonton EcoPark from Lee Park Way, including bridging over Enfield Ditch;
 - (x) improvements to Lee Park Way including vehicle barriers and the creation of segregated pedestrian and cycle paths;
 - (xi) improvements to Deephams Farm Road and use of Deephams Farm Road as an access to the Edmonton EcoPark;
 - (xii) the resurfacing of Ardra Road (if required);
 - (xiii) security, fencing, and lighting works and equipment;
 - (xiv) the erection of security facilities and equipment and gatehouses within the operational site at access points from Advent Way, Ardra Road, and Lee Park Way;
 - (xv) the upgrade and maintenance of the existing bridge over the River Lee Navigation; and
 - (xvi) the installation of photovoltaic panels at roof level of the ERF and RRF.
- (e) Works No.5 – works for the creation of the Temporary Laydown Area and its temporary use, as shown on Drawing C_0009 (AD02.01), as follows:
- (i) areas of hardstanding;
 - (ii) the erection of fencing, hoarding or any other means of enclosure;
 - (iii) the erection of security facilities and equipment and gatehouses;
 - (iv) vehicle parking;
 - (v) office and staff welfare accommodation;
 - (vi) storage, fabrication, laydown area;
 - (vii) foul water storage and pumps and surface water attenuation storage and pumps;
 - (viii) utility works including electricity, water, CCTV, telecoms and data;
 - (ix) the creation of vehicular, cycle and pedestrian access from Lee Park Way to the Temporary Laydown Area; and
 - (x) restoration of the Temporary Laydown Area.
- (f) Works No.6 – site preparation and demolition works within the area as shown on Drawing C_0010 (AD02.01), comprising:
- (i) demolition of existing buildings, structures and plant excluding demolition of the existing EfW facility;
 - (ii) construction of a temporary ash storage building;
 - (iii) realignment of the exit ramp from the existing EfW facility; and
 - (iv) works to prepare the land shown on Drawing C_0008 (AD02.01) for the construction of works numbers 1a, 1b, 2, 3, 4 and 5.
- (g) Works No.7 – as shown on Drawing C_0011 (AD02.01), comprising decommissioning and demolition of the existing EfW facility and removal of:
- (i) the existing stack;

- (ii) demolition of the existing water pumping station on Ardra Road; and
- (iii) making good the cleared areas.

1.9.9 The draft DCO also identifies such other works as may be necessary or expedient for the purposes of or in connection with the construction, operation and maintenance of the authorised development which do not give rise to any materially new or materially different environmental effects from those assessed and set out in the Environmental Statement (ES) (AD06.02).

1.10 Stages of development

1.10.1 The proposed ERF is intended to be operational before the end of 2025, but with the precise timing of the replacement to be determined. In order to do this, the following key steps are required:

- a. obtain a DCO for the new facility and associated developments;
- b. obtain relevant environmental permit(s) and other licences, consents and permits needed;
- c. identify a suitable technology supplier;
- d. agree and arrange source(s) of funding;
- e. enter into contract(s) for design, build and operation of new facility and associated development;
- f. move to operation of new facility; and
- g. decommission and demolish the existing EfW facility.

1.10.2 Site preparation and construction would be undertaken over a number of years and it is expected that the earliest construction would commence is 2019/20, although this may be later. Construction would be implemented in stages to ensure that essential waste management operations remain functioning throughout. This is especially relevant for the existing EfW facility and associated support facilities.

1.10.3 The stages of the Project are as follows:

- a. Stage 1a: site preparation and enabling works;
- b. Stage 1b: construction of RRF, EcoPark House and commencement of use of Temporary Laydown Area;
- c. Stage 1c: operation of RRF, EcoPark House and demolition/clearance of northern area;
- d. Stage 1d: construction of ERF;
- e. Stage 2: commissioning of ERF alongside operation of EfW facility, i.e. transition period;
- f. Stage 3: operation of ERF, RRF and EcoPark House, demolition of EfW facility; and
- g. Stage 4: operation of ERF, RRF and EcoPark House, i.e. final operational situation.

Stage 1a

- 1.10.4 Stage 1a involves a series of site preparation and enabling works required for the Project. The works would include:
- a. enabling works along Deephams Farm Road to create the Deephams Farm Road access;
 - b. demolition of clinical waste building and maintenance workshop building;
 - c. infill of artificial pond and clearance of landscaped area to form temporary storage and parking area;
 - d. layout of replacement fleet parking areas and temporary support buildings on the site of the maintenance workshop;
 - e. establishment of hoarded demolition work sites with safe pedestrian and vehicular access to the existing EfW facility main entrance and staff car parks. Access to the existing EfW facility would continue to be from the existing Edmonton EcoPark access;
 - f. relocation of Edmonton Sea Cadets to existing EfW facility meeting rooms with safe pedestrian and vehicular access via the existing Edmonton EcoPark access at Advent Way to the main entrance and staff car parks; storage of Edmonton Sea Cadets equipment in a container located at front of the existing EfW facility and relocate their boats to an off-site location provided by the Edmonton Sea Cadets;
 - g. diversion of utilities and services affected by demolition and clearance works including diversion of the sewer trunk main owned by Thames Water Utilities Limited (TWUL) which runs under the proposed location of the RRF;
 - h. demolition and clearance of EcoPark House and RRF construction zones;
 - i. creation of new Lee Park Way access and temporary diversion of footpaths and cycleways; and
 - j. establishment of the Temporary Laydown Area to the north of Advent Way and east of the River Lee Navigation to provide for site offices; storage of construction materials, plant and machinery; fabrication/sub-assembly; and construction staff/contractor vehicle parking. Temporary diversion of footpaths and cycleways at the Temporary Laydown Area access points.
- 1.10.5 The existing EfW facility would continue to operate at current capacity. The existing IBA recycling facility would continue to process ash from the existing EfW facility. The existing BWRF, FPP and IVC would continue to operate in this period.
- 1.10.6 Operational vehicles would continue to access the Edmonton EcoPark via the access at Advent Way. This accounts for approximately 1,063 one way vehicle movements per day.
- 1.10.7 Traffic associated with the Stage 1a demolition and enabling works would arrive at the Edmonton EcoPark via the existing access on Advent Way.

Stage 1b

- 1.10.8 During Stage 1b, the RRF and EcoPark House buildings would be constructed in the southern part of the Edmonton EcoPark. It would be necessary to construct these buildings prior to the construction of the proposed ERF and demolition of the operations north of the existing EfW facility. The works required during this stage of construction would include:
- a. commencement of use of Temporary Laydown Area;
 - b. relocation of LWL vehicle fleet to the north of existing EfW facility;
 - c. construction of EcoPark House;
 - d. construction of RRF and its weighbridges;
 - e. erection of temporary ash storage building;
 - f. layout of staff and visitor parking area immediately adjacent to EcoPark House;
 - g. commencement of use by staff and visitor vehicles of the new Lee Park Way access;
 - h. construction of the attenuation tank and associated drainage of the RRF sub-catchment; and
 - i. existing EfW facility exit ramp arrangements aligned with RRF construction area and required RRF operational vehicles routes.
- 1.10.9 The existing EfW facility would continue to operate at current capacity. The Edmonton Sea Cadets would continue to occupy space in the existing EfW facility.
- 1.10.10 The existing BWRF, FPP and IVC would continue to operate in this period, until the RRF is completed (see Stage 1c). The IBA recycling facility would continue to process ash from the existing EfW facility.
- 1.10.11 Operational vehicles would continue to access the Edmonton EcoPark via the existing Edmonton EcoPark access from Advent Way. The new Lee Park Way access would become available and be used by some staff and Edmonton Sea Cadets traffic.
- 1.10.12 Traffic associated with the construction of the RRF and EcoPark House would arrive at the Edmonton EcoPark via the existing access on Advent Way. Some traffic may arrive at the Temporary Laydown Area, travelling from the Temporary Laydown Area to the Edmonton EcoPark via Walthamstow Avenue and the existing access. Some light vehicles including construction staff shuttle buses may travel to the Edmonton EcoPark via the new Lee Park Way access.

Stage 1c

- 1.10.13 During this stage of construction the facilities to the north of the existing EfW facility would be demolished to make way for the proposed ERF. The works required involve:
- a. completion of RRF and transfer of FPP/BWRF operations;

- b. completion of EcoPark House and occupation by the Edmonton Sea Cadets;
 - c. relocation of Edmonton EcoPark stores;
 - d. disconnection of obsolete services and utilities within demolition zones;
 - e. demolition and clearance of existing FPP area;
 - f. demolition and clearance of existing BWRf area;
 - g. demolition and clearance of existing IBA area; and
 - h. demolition and clearance of existing IVC facility – composting activities to be relocated off-site and bulking facilities provided within the RRF to enable transport to third party treatment sites.
- 1.10.14 The existing EfW facility would continue to operate at current capacity, with a temporary ash storage building provided to replace the existing IBA area and allow the transfer of ash off-site for recycling.
- 1.10.15 The Recycling and Fuel Preparation Facility (RFPF) operations would commence within the RRF, with capacity to treat around 390,000 tpa. The RRC element of the RRF building would be open to members of the public and small businesses with access via the new Lee Park Way access. On completion of EcoPark House this would be available for community and education activities, the Edmonton Sea Cadets and for office accommodation associated with operation of the Edmonton EcoPark.
- 1.10.16 Operational vehicles would continue to access the Edmonton EcoPark via the existing access on Advent Way to serve both the existing EfW facility and proposed RRF. Members of the public and small business vehicles visiting the RRC element of the RRF, users of EcoPark House and staff would access the Edmonton EcoPark via the new Lee Park Way access.
- 1.10.17 Traffic associated with the northern Application Site clearance would use the new Deephams Farm Road access.

Stage 1d

- 1.10.18 During Stage 1d, the main build for the proposed ERF would occur within a defined work zone at the northern area of the Edmonton EcoPark. The works involve:
- a. construction of ERF including piling and excavation works, civil and structural works, establishment of new utilities connections;
 - b. construction of the surface water attenuation tank(s) and associated drainage of the ERF sub-catchment;
 - c. erection of a new pumping station and associated pipework to provide raw water from Deephams Sewage Treatment Works outflow channel; and
 - d. partial landscaping.
- 1.10.19 The majority of heavy goods vehicles associated with the construction of the proposed ERF would arrive at the Edmonton EcoPark via the Deephams Farm Road access. Vehicle movements associated with the

delivery of concrete would be undertaken directly to the Edmonton EcoPark while approximately 50 per cent of all other construction vehicle movements would be to the Temporary Laydown Area, with onward movement to the Edmonton EcoPark when required. The majority of these vehicles would travel via the A406 North Circular Road and A1055 Meridian Way to the Deephams Farm Road access. However, any abnormal loads may travel between the Temporary Laydown Area and the Edmonton EcoPark via the existing access. This would be undertaken at a time that minimises any conflict with Edmonton EcoPark operational vehicles.

- 1.10.20 The existing EfW facility would continue to operate at current capacity and the proposed RRF and EcoPark House would be operational.
- 1.10.21 Operational vehicles would continue to access the Edmonton EcoPark via the existing access on Advent Way to serve both the existing EfW facility and RRF. Members of the public and small businesses visiting the RRC element of the RRF, users of EcoPark House and staff would access the Edmonton EcoPark via the new Lee Park Way access.

Stage 2

- 1.10.22 This stage marks the completion of the proposed ERF, commissioning of the facility and start of operations. The existing EfW facility would then be ready for decommissioning and demolition. The works required involve:
 - a. commissioning of proposed ERF;
 - b. installation of ERF weighbridges;
 - c. relocation of operations contractors compound from adjacent to the existing EfW facility to adjacent to the southern side of the ERF;
 - d. relocation of operational stores adjacent to the ERF;
 - e. relocation of operational fleet depot to adjacent to ERF; and
 - f. completion of landscaping works that are not linked to or affected by the EfW facility demolition.
- 1.10.23 The commissioning stage of the proposed ERF is estimated to take between six and twelve months. The commissioning stage is necessary in order to test all of the equipment and processes before the proposed ERF is fully operational. During this stage both the existing EfW facility and the proposed ERF would be operational as waste inputs are gradually transferred from the existing EfW facility to the proposed ERF.
- 1.10.24 Landscaping and relocation of support facilities would take place during the ERF commissioning stage with use of the Deephams Farm Road access remaining in place for the operations contractor's use, alongside staff shuttle buses from Lee Park Way as required.
- 1.10.25 The existing EfW facility would continue operation at a reduced capacity as incoming waste is transferred to the proposed ERF to allow its commissioning. The proposed ERF would increase the proportion of the waste that it takes as its commissioning progresses and both treatment lines are brought online.
- 1.10.26 The proposed RRF and EcoPark House would be operational.

- 1.10.27 Operational vehicles would continue to access the Edmonton EcoPark via Advent Way as before to serve both the existing EfW facility and proposed ERF and RRF. Some operational vehicles travelling to the ERF would use the Deephams Farm Road access. Members of the public and local businesses visiting the RRC element of the RRF would access the Edmonton EcoPark via the new Lee Park Way access.

Stage 3

- 1.10.28 Decommissioning, stripping out and demolition of the existing EfW facility would commence after the proposed ERF is fully commissioned and tests including the reliability period have been successfully completed. The works required would involve:
- a. hoarding of the demolition work zone;
 - b. clearance of northern half of existing EfW facility site – once cleared the northern area of the EfW facility site would be used as a laydown for demolition equipment which is required before the demolition of the main EfW facility building can proceed;
 - c. completion of fleet parking and facilities area;
 - d. construction of widened southern entrance and new security gatehouse;
 - e. demolition and decommissioning of water pumping station;
 - f. demolition of main EfW facility building;
 - g. excavation of bunker and infilling with suitable material;
 - h. levelling of site and make good;
 - i. completion of Edmonton EcoPark landscaping works;
 - j. completion of staff car parks and surface water attenuation tanks on removal of EfW facility exit ramp; and
 - k. restoration of the Temporary Laydown Area.
- 1.10.29 The proposed ERF would operate at the capacity required with each process line capable of 350,000 tonnes per annum with a total capacity of the facility at 700,000 tonnes per annum. The proposed RRF and EcoPark House would also be operational.
- 1.10.30 Operational vehicles would continue to access the Edmonton EcoPark via the existing access on Advent Way as existing to serve both the ERF and RRF. Members of the public and small businesses visiting the RRC element of the RRF, users of EcoPark House and staff would access the Edmonton EcoPark via the new Lee Park Way access.
- 1.10.31 Traffic associated with the decommissioning and demolition of the existing EfW facility would travel to and from the Edmonton EcoPark via the existing Edmonton EcoPark access on Advent Way to minimise any conflicts with the operational ERF. Some vehicles associated with the removal of materials may be marshalled at the Temporary Laydown Area, waiting there until required on the Edmonton EcoPark. The new Deephams Farm Road access may also be used, if necessary.

Stage 4

- 1.10.32 Stage 4 would see the full operation of all new facilities. The proposed ERF would operate at full required capacity with each process line capable of processing 350,000 tonnes per annum with a total capacity of the facility at 700,000 tonnes per annum. The RRF would operate with a capacity of around 390,000tpa.
- 1.10.33 EcoPark House would be occupied by the site operator and the Edmonton Sea Cadets, and would also be available for other community and education activities.
- 1.10.34 Operational vehicles would continue to access the Edmonton EcoPark via the existing access on Advent Way to serve both the ERF and RRF while some movements would be undertaken using the Deephams Farm Road access. Members of the public and small businesses visiting the RRC element of the RRF, users of EcoPark House and staff would access the Edmonton EcoPark via the new Lee Park Way access.

2 Methods

2.1 Consultation

- 2.1.1 A meeting was held with Natural England (NE) on 16 June 2014 to review the Project and ecological baseline conditions at the Application Site, identify opportunities and constraints, define the survey methodology and discuss the scope of the HRA. The minutes of this meeting are in Appendix A1, along with NE's response in Appendix A2.
- 2.1.2 NE agreed that the results of previous surveys undertaken at the Application Site should be verified through an ecological walkover survey. NE advised that European sites within a 10km radius should be considered. The screening assessment should also consider impacts from noise, light, air pollution (dust) and discharges.
- 2.1.3 NE was contacted on 5 September 2014 for information on possible SACs (pSACs), potential SPAs (pSPAs) and proposed Ramsar (pRamsar) sites within 10km of the Application Site who confirmed there were none. Their response is provided in Appendix A3.
- 2.1.4 A preliminary NSER was provided to NE as part of Phase Two Consultation in May 2015. The feedback received is contained in Appendix A4, which states:

"NE is satisfied that in principle, on the basis of the objective information provided, it can be excluded that the proposed plan or project will have a likely significant effect on the Lee Valley Special Protection Area (SPA) and Ramsar which is also designated as Lee Valley Wetland of International Importance under the Ramsar Convention (Ramsar site), or upon Epping Forest Special Area of Conservation (SAC), either individually or in combination with other plans or projects.

Furthermore, NE is satisfied that the proposed operations are not likely to damage any of the interest features of the Chingford Reservoirs Site of Special Scientific Interest (SSSI), the Walthamstow Reservoirs SSSI or the Epping Forest SSSI."

2.2 Identification of European sites

- 2.2.1 European sites located within 10km of the Application Site have been included in the screening assessment. This radius was established considering the nature and scale of the Project and in accordance with advice provided by NE. This includes the following:
- Natura 2000 sites (SACs and SPAs including candidate sites);
 - Ramsar sites;
 - pSACs;
 - pSPAs;
 - pRamsar sites; and

- f. sites identified, or required, as compensatory measures for adverse effects on European sites.
- 2.2.2 Publically accessible websites were reviewed for information on European sites. This comprised MAGIC⁸ for the locations of designated sites and the Joint Nature Conservation Committee⁹ for citations.
- 2.2.3 The NE website¹⁰ was reviewed for information regarding conservation objectives and condition assessments. Definitions for the condition assessments are provided below¹¹:
- a. favourable - the designated feature(s) within a unit are being adequately conserved and the results from monitoring demonstrate that the feature(s) in the unit are meeting all the mandatory site specific monitoring targets set out in the Favourable Condition Tables (FCT). The FCT sets the minimum standard for favourable condition for the designated features and there may be scope for the further (voluntary) enhancement of the features/unit. A unit can only be considered favourable when all the component designated features are favourable;
 - b. unfavourable recovering - often known simply as 'recovering'. Units/features are not yet fully conserved but all the necessary management mechanisms are in place. At least one of the designated feature(s) mandatory attributes are not meeting their targets (as set out in the site specific FCT). Provided that the recovery work is sustained, the unit/feature will reach favourable condition in time;
 - c. unfavourable no change - the unit/feature is not being conserved and will not reach favourable condition unless there are changes to the site management or external pressures and this is reflected in the results of monitoring over time, with at least one of the mandatory attributes not meeting its target (as set out in the site specific FCT) with the results not moving towards the desired state. The longer the SSSI unit remains in this poor condition, the more difficult it will be, in general, to achieve recovery. At least one of the designated feature(s) mandatory attributes and targets (as set out in the site specific FCT) are not being met; and
 - d. unfavourable declining - the unit/feature is not being conserved and will not reach favourable condition unless there are changes to site management or external pressures. The site condition is becoming progressively worse, and this is reflected in the results of monitoring over time, with at least one of the designated features mandatory attributes not meeting its target (as set out in the site specific FCT) with the results moving further away from the desired state. The longer the SSSI unit remains in this poor condition, the more difficult it will be, in general, to achieve recovery.

⁸ NE, (2014); 'MAGIC.' Available at: <http://magic.defra.gov.uk/>

⁹ Joint Nature Conservation Committee (JNCC), (no date); 'JNCC. UK Protected Sites.' Available at: <http://jncc.defra.gov.uk/page-4>

¹⁰ NE, (no date); 'Designations.' Available at: <https://designatedsites.naturalengland.org.uk/SiteSearch.aspx>

¹¹ NE, (no date); 'SSSI glossary.' Available at: <https://designatedsites.naturalengland.org.uk/SSSIGlossary.aspx>

2.3 Identification of other relevant designated sites

- 2.3.1 Other designated sites were also considered in the assessment where there was considered to be a potential for indirect effects on European sites. Pertinent information was sourced from a data search commissioned from Greenspace Information for Greater London (GiGL)¹². Unit conditions and conservation objectives were sourced from the NE website¹⁰.

2.4 Ecology surveys

- 2.4.1 A summary of the relevant surveys undertaken, in terms of assessing potential effects on the qualifying features of European sites, is provided below:
- a. extended Phase 1 habitat survey on 23 April 2013 in accordance with the Joint Nature Conservation Committee guideline¹³ and data search commissioned from GiGL to identify records of protected and/or notable species within a 2km radius of the Application Site (Appendix B1);
 - b. Habitat Suitability Index¹⁴ (HSI) survey on a drainage lagoon at Deephams Sewage Treatment Works in April 2013 (Appendix B2) in relation to amphibians; and
 - c. ecological walkover on the Application Site on 8 September 2014 (including an HSI survey on the pond) and extended Phase 1 habitat surveys on 17 February and 1 April 2015. These surveys updated the survey work carried out in 2013 and considered additional areas subsequently incorporated into the Application Site (Appendix B3).

2.5 Air quality modelling

- 2.5.1 For the purposes of this assessment, it was necessary to look at the rates of nitrogen and sulphur deposition on habitats within the European sites and the concentration of acidity due to the potential for adverse effects on European sites, particularly Epping Forest SAC, considering that this site is particularly vulnerable to negative effects associated with deposition of nitrogen and acidity (refer to Section 3.1.13). Air quality is expected to improve in the UK in the future as a result of emission controls on road vehicles and other initiatives.
- 2.5.2 Modelling work has been undertaken to predict the deposition rates both for the existing EfW facility, the transition stage between the existing EfW facility and the ERF (Stage 2) and from the operation of the Project (Stages 3 and 4). This dispersion modelling has used the following scenarios:
- a. existing EfW facility;
 - b. wet flue gas treatment without reheat (wet FGT); and

¹² Greenspace Information for Greater London (2013) An Ecological Data Search for London Waste Eco Park Edmonton.

¹³ Joint Nature Conservation Committee (1993) Handbook for Phase 1 Habitat Survey: A Technique for Environmental Audit, Revised Reprint 2003.

¹⁴ Oldham, R.S., Keeble, J., Swan, M.J.S. & Jeffcote, M. (2000) Evaluating the suitability of habitat for the great crested newt (*Triturus cristatus*).¹ Herpetological Journal 10 (4), pp 143 – 155.

c. wet flue gas treatment with reheat (wet with reheat FGT or combined system).

2.5.3 Results from the wet FGT scenario provide worst case results and so have been used in the assessment as a precautionary assumption.

2.5.4 Acidity concentrations are a factor of both nitrogen and sulphur emissions.

2.5.5 The assessment also looks at fine particulate matter (PM₁₀) and determines predicted ground level concentrations at ecological receptors.

2.5.6 As a precautionary assumption, the air quality modelling assessment assumed that emissions from the proposed ERF would be at the air quality emission limits. In addition, one year has been assumed for the transition stage (Stage 2), but this period is expected to be shorter and therefore the deposition rates presented are likely to be an over estimation.

2.6 Assessment of likely significant effects

2.6.1 Any potential impacts on European sites as a result of the Project have been identified. Consideration was then given to whether the impacts would give rise to likely significant effects on the features of the European sites in light of the conservation objectives for those features. The in combination assessment focussed on any projects and plans that have potential to contribute to likely significant effects in conjunction with the Project. Significant effects in terms of the HRA would be considered to be an effect which would prevent or limit the feature from achieving its conservation objectives.

3 Designated sites

3.1 European sites

3.1.1 European sites located within 10km of the Application Site are shown on a plan in Appendix C and the reasons for their designation are outlined below. The Project is not directly connected with or necessary to the management of these sites.

3.1.2 Consultation with NE revealed that there are no pSACs, pSPAs, pRamsar sites or sites identified, or required, as compensatory measures for adverse effects on European sites within 10km of the Application Site (refer to Appendix A3). There are also no Offshore SPAs or SACs within 10km of the Application Site.

Lee Valley Special Protection Area and Ramsar Site

3.1.3 Lee Valley SPA and Ramsar site are located, at the closest point, approximately 1.5km to the south of the Application Site and comprise a series of man-made and semi-natural wetlands. Lee Valley is designated as an SPA as it supports bird populations of European importance over the winter, specifically¹⁵:

- a. Bittern (*Botaurus stellaris*) – 6 per cent of the population in Great Britain;
- b. Shoveler (*Anas clypeata*) – 1 per cent of the population in Great Britain; and
- c. Gadwall (*Anas strepera*) – 1.5 per cent of the population in Great Britain.

3.1.4 The conservation objectives of Lee Valley SPA are to¹⁰:

“Avoid the deterioration of the habitats of the qualifying features [listed above], and the significant disturbance of the qualifying features, ensuring the integrity of the site is maintained and the site makes a full contribution to achieving the aims of the Birds Directive.

Subject to natural change, to maintain or restore:

- a. *The extent and distribution of the habitats of the qualifying features;*
- b. *The structure and function of the habitats of the qualifying features;*
- c. *The supporting processes on which the habitats of the qualifying features rely;*
- d. *The populations of the qualifying features; and*
- e. *The distribution of the qualifying features within the site.”*

3.1.5 Lee Valley is also designated as a Ramsar site as it supports the nationally scarce plant species whorled water-milfoil (*Myriophyllum verticillatum*) and the rare or vulnerable invertebrate *Micronecta minutissima* (a water-boatman)¹⁶.

3.1.6 Qualifying bird species of the Lee Valley Ramsar site comprise¹⁶:

¹⁵ Joint Nature Conservation Committee (JNCC), (2006); ‘UK SPA Data Form. Lea Valley.’

¹⁶ JNCC, (2008); ‘Information Sheet on Ramsar Wetlands (RIS). Lea Valley.’

- a. Shoveler - peak count of 287 individuals in spring/autumn, representing an average of 1.9 per cent of the population in Great Britain; and
 - b. Gadwall - peak count of 445 individuals in winter, representing an average of 2.6 per cent of the population in Great Britain.
- 3.1.7 There are two SSSIs within Lee Valley SPA and Ramsar site that are located within 10km of the Application Site, as described below.
- 3.1.8 Walthamstow Reservoirs SSSI is located closest to the Application Site, approximately 1.5km to the south, and comprises ten relatively small and shallow water storage basins. With respect to interest features of the Lee Valley SPA and Ramsar site, shoveler is often present and nests in some years, with populations reaching levels of national significance¹⁷. The condition assessment for the underlying SSSI is unfavourable recovering², as breeding grey heron (*Ardea cinerea*) numbers continue to fail the minimum threshold. Shoveler counts are assessed as favourable against the baseline data¹⁸.
- 3.1.9 Turnford and Cheshunt Pits SSSI is located approximately 8.5km north of the Application Site and comprises ten former gravel pits. The pits are of national importance for wintering gadwall and shoveler and locally important for wintering bittern¹⁹. The condition assessment is favourable as there has been no loss of habitat, the mosaic of wetland habitats are regarded as favourable for overwintering gadwall, shoveler and bittern and these populations are favourable based on latest available Wetland Bird Survey data²⁰.

Epping Forest Special Area of Conservation

- 3.1.10 Epping Forest SAC is located to the east of the Application Site, approximately 2.8km at the closest point. This site is designated as an SAC as it supports habitats of European importance, specifically²¹:
- a. Northern Atlantic wet heaths with cross-leaved heath (*Erica tetralix*);
 - b. European dry heaths; and
 - c. Atlantic acidophilous beech forests with holly (*Ilex aquifolium*) and sometimes also yew (*Taxus baccata*) in the shrublayer (*Quercion robur-petraeae* or *Illici-Fagenion*).
- 3.1.11 This SAC is also designated as it supports stag beetle (*Lucanus cervus*) and great crested newt (*Triturus cristatus*).
- 3.1.12 The conservation objectives of Epping Forest SAC are to¹⁰:

¹⁷ NE, (2002); 'Walthamstow Reservoirs Site of Special Scientific Interest.'

¹⁸ NE, (2014); 'Condition of SSSI Units. Walthamstow Reservoirs.' Available at: <http://www.sssi.naturalengland.org.uk/special/sssi/reportAction.cfm?report=sdrt13&category=S&refere nce=1004304>

¹⁹ NE, (2002); 'Turnford and Cheshunt Pits Site of Special Scientific Interest.'

²⁰ NE, (2014); 'Condition of SSSI Units. Turnford and Cheshunt Pits.' Available at: <http://www.sssi.naturalengland.org.uk/special/sssi/reportAction.cfm?report=sdrt13&category=S&refere nce=2000066>

²¹ NE, (2011); 'UK SAC Data Form. Epping Forest.'

“Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- a. The extent and distribution of qualifying natural habitats and habitats of qualifying species;*
- b. The structure and function (including typical species) of qualifying natural habitats;*
- c. The structure and function of the habitats of qualifying species;*
- d. The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely;*
- e. The populations of qualifying species; and*
- f. The distribution of qualifying species within the site.”*

3.1.13 The condition assessment of the underlying SSSI varies for different units, from favourable to unfavourable declining²². Only 12 out of 41 units have been assessed as being in favourable condition, with the three units closest to the Application Site being assessed as unfavourable declining, unfavourable no change and unfavourable recovering. This is partly attributed to the under-management of the acid grassland, but there is considered to be ‘a very significant issue’²² for all units relating to air quality and the deposition of acidity and nitrogen. The following symptoms have been reported:

- a. many veteran trees display clear symptoms of stress (e.g. thin canopy and die-back of leading shoots);
- b. Bryophytes are sparse and only a few species are present;
- c. there is excessive growth of bramble;
- d. grassland areas show excessive growth of grasses compared to broadleaved species; and
- e. there are dense stands of nettles along roadsides and ride edges.

3.2 Other designated sites

Chingford Reservoirs Site of Special Scientific Interest

3.2.1 This SSSI is located approximately 300m to the north-east of the Application Site and comprises a series of drinking water storage basins. William Girling Reservoir is located closest to the Application Site, with King George’s Reservoir located approximately 2.5km from the Application Site, further north.

3.2.2 The Chingford Reservoirs are one of the major wintering grounds for wildfowl and wetland birds in the London area. During the winter months, the reservoirs regularly support nationally important populations of shoveler²².

²² NE (2002) Chingford Reservoirs Site of Special Scientific Interest.

3.2.3 All units are unfavourable recovering, as shoveler numbers have not recovered to the minimum level. The minimum average peak count is 108 (derived from a minimum count in 1983/84), which has averaged at 20.25 between 2006/7 and 2009/10²³. However, this has not been attributed to management of the reservoirs and may be affected by background population trends or site preference. NE and Thames Water Utilities Ltd. are investigating wintering bird data in detail and increased monitoring effort is planned.

3.2.4 The conservation objectives for this SSSI are¹⁰:

“Subject to natural change, to maintain the standing open water and canals (including marginal vegetation) in favourable condition or restored to favourable condition if features are judged as unfavourable, with particular reference to any dependant component special interest features (habitats, vegetation types, species, species assemblages etc.) for which the land is designated.”

3.2.5 Special interest features include the nationally important numbers of wintering shoveler. A conservation objective has been set for habitat extent, whereby losses of five per cent or more of the standing open water and canals are considered unacceptable.

3.3 Summary of designated sites

3.3.1 Table 1 provides a summary of designated sites considered in this NSER.

Table 1: Summary of designated sites

Designated site	Distance from the Application Site (km)	Reasons for designation
Lee Valley SPA	1.5	Bird populations of European importance over the winter (bittern, shoveler and gadwall)
Lee Valley Ramsar site	1.5	Whorled water-milfoil and <i>Micronecta minutissima</i> (a water-boatman) Qualifying bird species over the spring/autumn (shoveler) and winter (gadwall)
Epping Forest SAC	2.8	Habitats of European importance (northern Atlantic wet heaths with cross-leaved heath, European dry heaths and Atlantic acidophilous beech forests with holly and sometimes also yew in the shrublayer. Stag beetle and great crested newt
Chingford Reservoirs SSSI	0.3	Wintering grounds for wildfowl and wetland birds, including nationally important populations of shoveler

²³ NE (2014) Condition of SSSI Units. Chingford Reservoirs.
<https://designatedsites.naturalengland.org.uk/>

3.4 Vulnerability of the European sites to impacts from the Project

- 3.4.1 This section reviews any potential adverse effects on European sites (SPA, Ramsar, SAC) associated with the Project, to inform the review of baseline conditions and assessment results as provided in Section 4.

Lee Valley Special Protection Area and Ramsar Site

- 3.4.2 The bird features of these sites may be subject to direct impacts such as disturbance during construction. Chingford Reservoirs SSSI supports nationally important populations of shoveler, which is one of the qualifying features of Lee Valley SPA and Ramsar site. Considering the proximity of the Application Site to William Girling Reservoir within Chingford Reservoirs SSSI, there is potential for disturbance to shoveler when outside Lee Valley SPA and Ramsar site, on William Girling Reservoir. In addition, they are also likely to be vulnerable to indirect impacts as a result of pollution emission from the Project during operation.

Epping Forest Special Area of Conservation

- 3.4.3 The features of the Epping Forest SAC are also considered to be vulnerable to indirect impacts as a result of pollution emission from the Project during operation. There is not considered to be a potential for direct effects associated with the Project due to its distance from the Application Site.

4 Baseline conditions and modelling results

4.1 Survey and desk study results

Habitats

- 4.1.1 Within the Application Site, Edmonton EcoPark is dominated by hard standing and buildings associated with the existing facilities. Natural and semi-natural habitats within the Application Site include scattered broadleaved trees; dense and scattered scrub; open water; ruderal vegetation; introduced shrub; amenity grassland; poor semi-improved grassland; and young broadleaved plantation woodland. The Phase 1 Habitat Map is shown in Appendix B3.
- 4.1.2 An area of young plantation woodland is present on a bund in the north of the Application Site, including along the eastern boundary. Scattered broadleaved trees occur along the northern, eastern and western boundaries of the Application Site, including two mature crack willow *Salix fragilis* trees along Lee Park Way. Areas of introduced shrub are predominantly associated with regularly mown species-poor amenity grassland to the south.
- 4.1.3 Further areas of amenity grassland occur around the pond in the north eastern part of the Application Site, adjacent to the plantation woodland. The pond is man-made and lined and lacks marginal vegetation. Species poor semi-improved grassland also occurs along the western boundary of the Application Site and within the Temporary Laydown Area. A shallow ditch (Enfield Ditch) is periodically wet and runs along the eastern and southern edges of the Application Site, before discharging into the Salmon's Brook in the southwest corner of the Application Site. The River Lee Navigation flows south between Lee Park Way and the Temporary Laydown Area in the eastern part of the Application Site. Dense and scattered scrub occurs within the Temporary Laydown Area and along Lee Park Way. Tall ruderal vegetation is present within the Temporary Laydown Area and along the Application Site boundaries, including Enfield Ditch. The Application Site supports no habitats that are qualifying features of Epping Forest SAC.

Birds

- 4.1.4 The GiGL data search did not identify any records of shoveler, gadwall or bittern within 2km of the Application Site. The results of the extended Phase 1 habitat survey indicate that the Application Site does not have a potential to provide important habitat for qualifying features of Lee Valley SPA and Ramsar site. The pond within the Application Site is small (approximately 400m in area) and lacks marginal and riparian habitat. Enfield Ditch is ephemeral, shallow and engulfed in vegetation. Salmon's Brook is entirely canalised and therefore lacks marginal vegetation. The Application Site is also subject to disturbance associated with the operation of the existing EfW facility. Considering the lack of suitable habitat and high levels of disturbance, the Application Site was not considered to have a potential to provide important habitat for birds over the winter, including for qualifying

features of Lee Valley SPA and Ramsar site and a winter bird survey was not considered necessary. This conclusion was supported by NE (refer to Appendix A2).

Great crested newt

4.1.5 The data search revealed that great crested newt was recorded, at the closest, approximately 1.9km to the northwest of the Application Site in 2011. This species also occurs within Lee Valley Site of Metropolitan Importance for Nature Conservation (SMINC), which falls partly within the Application Site, and Epping Forest SAC.

4.1.6 The HSI survey results for the pond within the Application Site are shown in Table 2.

Table 2: Habitat Suitability Index scores for pond within the Application Site

Category	Field Score	Suitability Index
Location	A-	1
Pond area	400	0.8
Pond drying	Never	0.9
Water quality	Poor	0.33
Shade	20 per cent	1
Fowl	Minor	0.67
Fish	Major	0.01
Ponds	1	0.37
Terrestrial habitat	Poor	0.33
Macrophytes	10 per cent	0.4
HSI score		0.39

4.1.7 The HSI score indicates that the pond falls within the poor suitability category for great crested newt (<0.5), partly on account of the large fish population in the pond. There is a lack of suitable terrestrial habitat on the Application Site and the pond is isolated from Lee Valley SMINC by the River Lee Navigation to the east; Salmon's Brook to the west (and railway and A1055 Meridian Way beyond) and the A406 North Circular Road to the south also form barriers to the movement of great crested newt onto the Application Site. There is also a lack of connecting habitat between the Application Site and Epping Forest SAC.

4.1.8 There is one pond located within 1km of the Application Site that is not separated from the Application Site by barriers. It is a drainage lagoon located at Deephams Sewage Treatment Works, approximately 370m to the north. An HSI score of 0.40 indicates that this waterbody is also of poor suitability for great crested newt. The results of the HSI survey are shown in Appendix B2.

Invertebrates

4.1.9 The Application Site was not considered to have potential to support notable invertebrates, due to the lack of suitable habitat at the Application

Site. The young broadleaved plantation woodland lacks standing or lying deadwood that is required to support stag beetle larvae. No areas of deadwood were recorded in other areas of the Application Site. Similarly, the pond and ditches at the Application Site were not considered suitable for *Micronecta minutissima*.

Whorled water-milfoil

- 4.1.10 Whorled water-milfoil is typically recorded in clear or slightly turbid, still or slowly flowing calcareous water in lakes, streams, canals and ditches, but was not recorded during the extended Phase 1 habitat survey. Enfield Ditch was dry or shallow and turbid during the survey and was choked with vegetation. Salmon's Brook, located adjacent to the Application Site, was entirely canalised and lacked any emergent vegetation. This species was also not recorded in the pond, which was dominated by blanket weed (*Spirogyra adnate*).

4.2 Air quality modelling results

Nitrogen deposition rates

- 4.2.1 The results of the dispersion modelling in terms of predicted nitrogen deposition rates on the three sites being considered are shown in Table 3 and Table 4 below. The Project stages are summarised in Section 1.10 and described in full in Volume 1 of the ES. Detailed results for each location are provided in the air quality assessment (Vol 2 Appendix 2.2 of the ES).
- 4.2.2 Nitrogen deposition rates are shown for:
- a. Baseline - when the existing EfW facility is operational;
 - b. Stage 2 – transition stage when the existing EfW facility and proposed ERF are operational; and
 - c. Stages 3 and 4 - when the existing EfW facility is decommissioned and the proposed ERF is operational.
- 4.2.3 It should be noted that existing deposition rates exceed the minimum critical load values²⁴ at Lee Valley SPA and Ramsar site and Epping Forest SAC. The most sensitive critical loads for the sites as shown in Table 3 and Table 4 have been selected, as detailed below for the European sites²⁴:
- a. Epping Forest SAC - Dwarf shrub heath (Northern Atlantic wet heaths with *Erica tetralix*; and
 - b. Lee Valley SPA and Ramsar site - Fen, marsh and swamp (*Botaurus stellaris* (Europe - breeding) - bittern).
- 4.2.4 The most sensitive critical load was also selected for Chingford Reservoirs SSSI, which is neutral grassland (shoveler).

²⁴ Centre for Hydrology and Ecology (2014) Air Pollution Information System, <http://www.apis.ac.uk/>

Table 3: Predicted change in nitrogen (N) deposition rates within European sites and Chingford Reservoirs SSSI (Wet FGT) during the transition stage (Stage 2)

Designated site	Minimum Critical Load of features	Baseline (2014) N deposition rate (kg N/ha/yr)	Predicted reduction in deposition rate from decommissioning of existing EfW facility (kg N/ha/yr)	Predicted additional deposition resulting from existing EfW and ERF operation (kg N/ha/yr)	Predicted deposition rate (kg N/ha/yr)	Change in deposition rate against baseline (kg N/ha/yr)
Chingford Reservoirs SSSI	20	18.62	-0.085	0.084	18.62	-0.001
Epping Forest SAC	8	16.29	-0.083	0.076	16.29	-0.007
Lee Valley SPA/ Ramsar	15	17.33	-0.045	0.040	17.32	-0.005

Table 4: Predicted change in nitrogen (N) deposition rates within European sites and Chingford Reservoirs SSSI (Wet FGT) during the operational stage (Stages 3 and 4)

Designated site	Minimum Critical Load of features	Baseline (2014) N deposition rate (kg N/ha/yr)	Predicted reduction in deposition rate from decommissioning of existing EfW facility (kg N/ha/yr)	Predicted additional deposition resulting from ERF operation (kg N/ha/yr)	Predicted deposition rate (kg N/ha/yr)	Change in deposition rate against baseline (kg N/ha/yr)
Chingford Reservoirs SSSI	20	18.62	-0.085	0.066	18.60	-0.019
Epping Forest SAC	8	16.29	-0.083	0.039	16.25	-0.044
Lee Valley SPA/ Ramsar	15	17.33	-0.045	0.023	17.31	-0.022

Sulphur deposition rates

- 4.2.5 The results of the dispersion modelling for sulphur deposition on the three sites being considered are shown in Table 5 below. Detailed results for each location are provided in Volume 2 Appendix 2.2 of the ES. Sulphur deposition rates are shown for the same Project stages as nitrogen (see Paragraph 4.2.2).

Table 5: Predicted change in sulphur (S) deposition rates within European sites and Chingford Reservoirs SSSI (Wet FGT)

Project Stage	Designated site	Predicted deposition rate from the existing EfW facility (kg S/ha/yr)	Predicted deposition rate from the Project (kg S/ha/yr) ²⁵	Predicted change in deposition rate (kg S/ha/yr)
Transition (Stage 2)	Chingford Reservoirs SSSI	0.069	0.088	0.019
	Epping Forest SAC	0.062	0.095	0.033
	Lee Valley SPA/Ramsar	0.026	0.035	0.009
Operation (Stages 3 and 4)	Chingford Reservoirs SSSI	0.069	0.075	0.006
	Epping Forest SAC	0.062	0.081	0.019
	Lee Valley SPA/Ramsar	0.026	0.030	0.004

Particulate concentrations

- 4.2.6 Dispersion modelling for ground level particulate concentrations was undertaken for all local ecological sites.
- 4.2.7 The highest concentrations are shown in Table 6 below, with full details also provided in Volume 2 Appendix 2.2 of the ES.

Table 6: Long-term (annual average) PM₁₀ concentrations at discrete ecological receptors, with ERF Wet FGT

Designated site	Annual average PM ₁₀ concentration (µg/m ³)		
	Existing EfW facility	Transition (Stage 2)	Operation (Stages 3 and 4)
Chingford Reservoirs SSSI	22.0	22.0	22.0
Epping Forest SAC	23.3	23.3	23.3
Lee Valley SPA/Ramsar	21.3	21.3	21.3

²⁵ Average values for locations within each site from the dispersion model.

Acidity

- 4.2.8 The potential changes in levels of nitrogen and sulphur deposition as determinants of acidity are shown in Tables 7 and 8 below. It is noted that when reporting deposition as determinants of acidity, this is reported as kiloequivalents deposited per hectare per year (keq/ha/yr)²⁶. Critical load graphs for Chingford Reservoirs SSSI, Lee Valley SPA and Ramsar site and Epping Forest SAC for the existing EfW facility, transition stage (Stage 2) and operation (Stage 3 and 4) (assuming wet FGT) are presented in Appendix D.

Table 7: Modelled deposition of nitrogen at Chingford Reservoirs SSSI, Epping Forest SAC and Lee Valley SPA/Ramsar

N-deposition (Keq/ha/yr)	Chingford SSSI	Epping Forest SAC	Lee Valley SPA/Ramsar
Modelled APIS current deposition level	1.47	1.47	1.49
Recorded variation in current level	0.470	0.470	0.400
Existing EfW facility	0.0086	0.0077	0.0032
Existing EfW facility + proposed ERF - Stage 2	0.0075	0.0076	0.0029
Proposed ERF - Stages 3/4	0.0052	0.0042	0.0017
Change during transition (Stage 2)	-0.0011	-0.0001	-0.0003
	-0.07%	-0.007%	-0.02%
Change during operation (Stages 3/4)	-0.0035	-0.0035	-0.0015
	-0.24%	-0.24%	-0.10%

Table 8: Modelled deposition of sulphur at Chingford Reservoirs SSSI, Epping Forest SAC and Lee Valley SPA/Ramsar

S-deposition (Keq/ha/yr)	Chingford SSSI	Epping Forest SAC	Lee Valley SPA/Ramsar
Modelled APIS current deposition level	0.23	0.240	0.22
Recorded variation in current level	0.030	0.030	0.070
Existing EfW facility	0.004	0.004	0.002
Existing EfW facility + proposed ERF - Stage 2	0.006	0.006	0.002
Proposed ERF - Stages 3/4	0.005	0.005	0.002
Change during transition (Stage 2)	0.0014	0.0023	0.0006
	0.61%	0.96%	0.27%
Change during operation (Stages 3/4)	0.0006	0.0014	0.0003
	0.27%	0.59%	0.15%

²⁶ This differs from kilograms of nitrogen deposited per hectare per year (kg N/ha/yr) reported in Tables 3 and 4. The unit eq refers to molar equivalent of potential acidity resulting from nitrogen and sulphur. 1 keq N/ha/yr is equal to 14 kg N/ha/yr. 1 keq S/ha/yr is equal to 16kg S/ha/yr.

5 Embedded measures

- 5.1.1 The following construction measures form part of the Project and are incorporated in the Code of Construction Practice (CoCP) (AD05.12), the application of which is required by the Draft DCO (AD03.01):
- a. the Contractor would not direct lighting towards Chingford Reservoirs SSSI;
 - b. the Contractor would manage dust, air pollution and exhaust emission during the construction works in accordance with best practicable means, to minimise temporary effects associated with the deposition of dust and pollutants on watercourses connected to Lee Valley SPA and Ramsar site. This includes reference to the general site requirements and good housekeeping procedures (relevant to limiting dust and air pollution); controls and measures to control or mitigate the effect of potential adverse effects caused by the construction works; and dust and air pollution monitoring measures to be employed during construction of the Project;
 - c. water resources would be protected during construction through the implementation of working methods that protect surface and groundwater from pollution and other adverse impacts including change to flow volume, water levels and quality. This would be completed in accordance with relevant legislative requirements and appropriate industry guidance. Measures to deal with pollution incidents at the Application Site during construction would be included within the overall emergency planning for the Project;
 - d. implementation of standard noise and vibration control measures during construction in accordance with BS 5228-1:2009. To minimise disturbance to wildlife associated with Chingford Reservoirs SSSI, which is located approximately 300m from the Application Site and supports bird species associated with Lee Valley SPA and Ramsar site, management and monitoring processes would be employed during construction. The Contractor would assess, and implement best practicable means at all times to control noise and vibration from the construction works. This would include: selection of quiet and low vibration equipment; review of construction programme and methodology to consider quieter methods (including non-vibratory compaction plant, where required); location of equipment on the Application Site; control of working hours; the provision of acoustic enclosures and the use of less intrusive alarms, such as broadband vehicle reversing warnings; and use of appropriate acoustic screening. Noise and vibration management measures would be prepared as part of the Contractor's Construction Environmental Management Plan (CEMP).
- 5.1.2 The following measures secured through the DCO would apply during operation:
- a. lighting would be directed away from Chingford Reservoirs SSSI. The design of operational lighting would be developed with regard to the

commitments set out in the Environmental Commitments and Mitigation Schedule (AD06.03) and the lighting guidelines set out in the Design Code Principles (AD02.02);

- b. water resources would be protected during operation through the implementation of working methods that protect surface and groundwater from pollution and other adverse impacts including change to flow volume, water levels and quality. This would be completed in accordance with relevant legislative requirements and appropriate industry guidance;
- c. acoustic design would be used to limit operational noise from the proposed ERF and RRF with operational noise targets established through the environmental permitting process that would be adhered to.

6 Likely significant effects

- 6.1.1 The Application Site does not support any qualifying habitats or species of the European sites, meaning that there is no potential for habitat loss within the Application Site to affect these features. In accordance with advice provided by NE, the following potential effects on the European sites are considered below:
- a. disturbance;
 - b. air pollution and deposition; and
 - c. discharges and abstractions.
- 6.1.2 Summary tables relating to these potential effects are provided in Appendix F. Potential effects associated with the Project are also assessed in Vol 2 Section 5 of the ES.

6.2 Disturbance

Noise

- 6.2.1 Qualifying bird species for Lee Valley SPA and Ramsar site would be vulnerable to disturbance associated with noise during construction. The design and control measures that would be used to limit operational noise from the proposed ERF and RRF plant would prevent significant effects in both EIA and policy terms (refer to Vol 2 Section 8 of the ES), therefore operational noise effects are not considered further.
- 6.2.2 The closest area used by birds (shoveler) which could form part of the Lee Valley SPA and Ramsar site population is William Girling Reservoir within Chingford Reservoirs SSSI. This reservoir is located approximately 300m from the Application Site. Habitats between the Application site and the SSSI are not considered to be suitable for shoveler. This area comprises the River Lee Navigation, Lee Park Way, towpath and narrow strip of vegetation between Lee Park Way and the river (primarily dense scrub, scattered trees and tall ruderal vegetation). These habitats are shown in Appendix E.
- 6.2.3 Research has shown that the intensity of noise has a significant bearing on the distance at which birds are disturbed. Responses for the loudest sounds of 120db at source caused a behavioural response by birds at a maximum distance of approximately 170m from the source²⁷. Over the distance of 300m (the distance between the Application Site and SSSI boundary), sound reduction would occur and therefore construction activities are not expected to cause disturbance to bird species associated with William Girling Reservoir or the wider Chingford Reservoirs SSSI. Therefore no likely significant effect on Lee Valley SPA and Ramsar site is predicted.

²⁷ Cutts, N; Phelps, A; Burdon, D. (2008). Construction and Waterfowl: Defining Sensitivity, Response, Impacts and Guidance. Report to Humber INCA. Institute of Estuarine and Coastal Studies, University of Hull.

Lighting

- 6.2.4 As outlined above with respect to the effects of noise, qualifying bird species for Lee Valley SPA and Ramsar site would be most vulnerable to disturbance associated with lighting. Light levels are expected to be similar to the existing levels during the operation of the Project. Any additional lighting required during construction is unlikely to result in any significant changes in the light levels at the Application Site or in adjacent areas, considering the urban location of the Application Site and surrounding industrial uses and implementation of the CoCP (AD05.12).
- 6.2.5 Considering their distance from the Application Site, lighting associated with the Project would not spill onto any areas that fall within any European sites. As such, direct effects of lighting are not considered further. Any additional temporary lighting required during construction is not considered to have a potential to effect the movement of birds, for example between roosting and feeding areas, considering the urban location and the existing levels of light at the Application Site and in adjacent areas. There would also be no light spill over William Girling Reservoir, and thus no potential for indirect effects on Lee Valley SPA and Ramsar site associated with bird species within Chingford Reservoirs SSSI.
- 6.2.6 Due to the distance of the European sites from the Application Site and its urban location, it is not considered that there is a potential for lighting associated with the construction and operation of the Project to lead to any significant effects.

6.3 Air pollution and deposition

Dust

- 6.3.1 Lee Valley SPA and Ramsar site and Epping Forest SAC are considered to be sufficiently far from the Application Site to not be affected by dust associated with construction and demolition work. There is the potential for connectivity between Lee Valley SPA and Ramsar site and watercourses within and adjacent to the Application Site as these European sites are located downstream of the Application Site and form part of the Lower Lee catchment. However, in terms of any indirect effects associated with the deposition of dust within connected watercourses, such effects would be avoided by the implementation of control measures as described in the CoCP (AD05.12).

Particulate matter

- 6.3.2 Concentrations of particulate matter (PM₁₀) are expected to be no worse than existing during all stages of the Project at Lee Valley SPA and Ramsar site, Epping Forest SAC and Chingford Reservoirs SSSI. Therefore no likely significant effects are predicted.

Nitrogen and sulphur deposition

- 6.3.3 The habitats within Epping Forest SAC are vulnerable to adverse effects resulting from the deposition of nitrogen and acidity, as confirmed by the condition assessments of all units². Any increase in the atmospheric

concentrations of sulphur dioxide (SO₂) and NO₂ over this European site would be expected to increase the rate of deposition, which could lead to further adverse effects on the habitats of European importance. Potential effects associated with the deposition of nitrogen and acidity within Lee Valley SPA and Ramsar site and Chingford Reservoirs SSSI is also considered with respect to potential changes to nutrient levels in the reservoirs.

6.3.4 With reference to Table 3 and Table 4 operation of the proposed ERF and removal of the existing EfW facility would result in a reduction in nitrogen deposition within Epping Forest SAC and in areas used by the Lee Valley SPA and Ramsar site features during all stages. However, the reduction is small and is not sufficient to reduce deposition rates to below the minimum critical levels for the European sites. The changes in emissions and deposition rates are therefore not considered to constitute a significant effect on the features of the European sites.

6.3.5 With reference to Table 5, results show that operation of the proposed ERF and removal of the existing EfW facility would result in an increase in sulphur deposition (assuming that the proposed ERF operates at air quality emission limits). No baseline information on sulphur deposition in the form of K/ha/yr is available from the APIS website in order to assess the potential significance of sulphur deposition. Therefore the potential effects from sulphur emissions are assessed in terms of the effects of acidity below.

Acidity

6.3.6 Acidity levels in terms of both nitrogen and sulphur deposition are shown in Tables 7 and 8 for the European sites (Lee Valley SPA and Ramsar site and Epping Forest SAC) and for the Chingford Reservoirs SSSI. Nitrogen deposition is expected to decrease during both the transition and operational stages. Sulphur deposition is expected to rise by 0.3% at the Lee Valley SPA/Ramsar and by just under 1% at Epping Forest SAC during the transition phase. However as shown in Table 8, the changes of 0.0006 and 0.0023 Keq/ha/yr are within the range of variation recorded in baseline concentrations reported on the APIS website²⁴ (variation of 0.07 and 0.03 respectively). In the operational phases the changes in deposition of sulphur as a result of the Project are smaller but would still represent a potential increase in deposition of less than 0.6% of the baseline.

6.3.7 The increases predicted in terms of sulphur as a result of the Project would not cause the maximum critical loads to be exceeded. Although increases in sulphur deposition are predicted, these are less than the recorded variation within background deposition rates and are therefore not considered to be significant in terms of effects on the European Sites. Furthermore, the Project would result in a reduction in the levels of the nitrogen component of acid deposition during operational stages. Therefore, no significant effect on the European sites is predicted.

6.4 Discharges and abstractions

6.4.1 Potential effects on surface water quality and runoff to surface water courses (Enfield Ditch, Salmon's Brook and the River Lee Navigation) by

entry of contaminated runoff and the contamination of groundwater would be addressed by standard mitigation measures set out in the CoCP (AD05.12) to ensure no likely significant effects.

- 6.4.2 Air cooled condensers are proposed for the ERF with two options of the water either taken entirely from potable water supplies or a combination of potable water and Deephams Sewage Treatment Works outflow channel. Changes in abstraction from Deephams Sewage Treatment Works outflow channel may result in changes in flow within the downstream Salmon's Brook. For further details concerning the options and potential effects refer to Vol 2 Section 11 of the ES. Salmon's Brook is not hydrologically connected to any waterbodies associated with the European sites or Chingford Reservoirs SSSI. As such, there is no potential for changes in abstraction to alter water levels within the reservoirs. Therefore, potential effects associated with discharges and abstractions are not considered further.

7 In-combination effects

- 7.1.1 This assessment reviews whether there is potential for the Project to result in likely significant effects on European sites in conjunction with other plans and projects. Further information is provided in the screening matrices in Appendix F.
- 7.1.2 The first stage is to identify any effects resulting from the Project that, although not likely to be significant alone, could become significant in conjunction with other plans and projects. There is expected to be an overall reduction in the rate of nitrogen deposition within the European sites, as well as Chingford Reservoirs SSSI, during all stages of the Project. In addition the levels of particulate matter are expected to remain the same at the European Sites during all stages of the Project.
- 7.1.3 Acid deposition rates are predicted to remain below the maximum critical loads for the European sites and any increases in sulphur deposition would be less than could be expected through existing variation in baseline levels.
- 7.1.4 There is not considered to be a potential for disturbance to qualifying bird species of the Lee Valley SPA and Ramsar site due to lighting or noise on account of their distance from the Application Site (refer to paragraphs 6.2.2 and 6.2.3). Standard mitigation measures would be implemented to alleviate potential effects on surface water quality and groundwater during construction through the CoCP (AD05.12) as set out in Paragraph 5.1.1.
- 7.1.5 As such, there is not considered to be a potential for significant effects on European sites from the Project alone associated with the deposition of nitrogen or acidity; disturbance associated with noise or lighting; or discharges and abstractions.
- 7.1.6 It is recognised that modelling predicts an increase in sulphur deposition with respect to Lee Valley SPA and Ramsar site, Epping Forest SAC and Chingford Reservoirs SSSI, assuming that the proposed ERF operates at air quality emission limits. As such, a review of the in-combination projects identified during the EIA process has been undertaken to identify any potential sources of additional sulphur or acid emissions that would increase deposition rates. The only project that was identified as potentially giving rise to sulphur or acid emissions is Kedco Waste Wood Biomass Plant. This project involves a change of use from the existing storage building to an industrial facility for the production of renewable energy, but it was established that operation of this facility is not likely to create sulphur or acid emissions.
- 7.1.7 Whilst other projects may exist within a wider area, the potential diffusion of emissions would mean that the potential for in-combination effects between the Project and other projects in excess of 600m would be greatly reduced. Therefore as none of the in-combination projects are likely to result in sulphur or acid emissions, the assessment has concluded that there is no potential for significant effects in-combination with other projects.

8 Conclusion

- 8.1.1 The Project involves replacement of the existing EfW facility at Edmonton EcoPark with an ERF and associated development, including a RRF.
- 8.1.2 There are three European sites within 10km of the Application Site. These are the Lee Valley SPA and Ramsar site and Epping Forest SAC. Lee Valley SPA and Ramsar site are located approximately 1.5km from the Application Site, with Epping Forest SAC located approximately 2.8km to the east. It is also likely that birds which form part of the Lee Valley SPA and Ramsar site population use Chingford Reservoirs SSSI, located approximately 300m from the Application Site.
- 8.1.3 Nitrogen deposition rates within the European sites and Chingford Reservoirs SSSI are predicted to decrease as a result of the Project and PM₁₀ concentrations would be no worse than existing, but sulphur deposition rates are modelled to increase. However, the predicted increases during both transition and the operational stages are less than the recorded variation within the background deposition rate for the sulphur component of acid deposition. Acid deposition would remain below maximum critical loads within Chingford Reservoirs SSSI, Lee Valley SPA /Ramsar site and Epping Forest SAC.
- 8.1.4 The European sites and Chingford Reservoirs SSSI are located too far from the Application Site for there to be a potential for disturbance to qualifying features due to noise and lighting. Implementation of the CoCP (AD05.12) would alleviate potential effects on surface water quality and groundwater during construction and no indirect effects are predicted as a result of changes to abstraction rates during the operation of the Project.
- 8.1.5 Predicted impacts in terms of disturbance, airborne pollution emissions and discharges and abstractions are not considered to be significant during construction or operation of the Project, either alone or in-combination with other Projects, and therefore an appropriate HRA is not required.

Appendix A: Consultation documents

A1 NE meeting minutes (16 June 2014)

Project title	Edmonton EcoPark Energy Recovery Facility	Job number 235271
Meeting name and number	Meeting with Natural England (NE)	File reference
Location	Arup offices, 8 Fitzroy Street London W1T 4BQ	Time and date 2pm 16 June 2014
Purpose of meeting	Commence early consultation with NE (to address any concerns), discuss the approach to consultation/engagement and the scope for the ecological assessment for the EIA and HRA	
Present	[REDACTED] (NE), [REDACTED] (NWL), [REDACTED] (Arup), [REDACTED] (Arup), [REDACTED] (Arup)	
Apologies		
Circulation	Those present [REDACTED]	

Action

1. Background

[REDACTED] provided an update on the proposed development which is for a new Energy Recovery Facility (ERF), which is proposed to replace the current facility which is projected to come to the end of its design life by 2025.

A number of options are currently being explored which includes a three line facility capable of managing over 900ktpa of waste and producing 90MW of heat. Or a two line facility which would manage 600ktpa of waste and produce 60MW of heat.

The project will be a Nationally Significant Infrastructure Project (NSIP) due to the size of the proposed throughput.

Access to the site will continue via Advent Way (adjacent to the North Circular), however option is being considered to provide access via a private road located on the northern end of the site (owned by Thames Water) on to Ardra Road. This access would be used as an alternative if there were issues associated with Advent Way. Also considering an option to create access from the east of the site using a road that runs from the north circular and along the edge of the Lee Valley Park. This would potentially be used as access for a household waste centre.

Also an option for the southern end of the site to be used to store back up/top up boilers for the Lee Valley Regional Heat Network. This would not impact on the TfL easement or Enfield Ditch along the southern edge of the site.

Prepared by [REDACTED]

Date of circulation

Date of next meeting

Minutes

Project title

Job number

Date of Meeting

Edmonton EcoPark Energy Recovery Facility

235271

16 June 2014

Action

Draft programme:

- 26 June 2014 – project proposals submitted to committee for sign off
- Late Nov 2014 – first phase of consultation
- May 2015 – second phase of consultation
- Aug/Sept 2015 – submit application to Planning Inspectorate (PINS)

2. Ecological survey work

A number of surveys have been undertaken on the site from 2012 to 2013 (details in appended note). Propose to undertake another walkover survey to confirm conclusions that have been previously drawn.

█ explained that NE usually require survey data to be approximately 18 months old (at time of submission) to ensure validity of data. As extensive survey work has already been undertaken would be happy to extend to 24 months subject to clear explanation of how previous survey data has been validated e.g. through site walkovers; and opportunities for habitat are considered (e.g. bat habitat).

3. Relevant baseline information

Arup to contact
National Grid

█ recommended consulting Lee Valley Regional Park Authority (LVRPA) and National Grid as they may be able to provide data from recent surveys undertaken in the vicinity of the site. Deephams STW may have some baseline information. Also check if Meridian Water has survey data. █ to contact LVRPA

Need to be aware that there may be seasonal limitations imposed on the project to ensure that impacts on nearby wintering birds (specifically Shovellers and Grebes on the William Girling Reservoir in the LVRP) are mitigated. National Grid has been able to work within seasonal limitations by programming certain activities to be avoided during certain seasons. █ to provide confirmation on queries raised about wintering birds

█ to confirm:

- When the season limitations would be for wintering birds
- If NE have any monitoring data from LVRP
- What the noise limits are for wintering birds.

4. Issues and opportunities

█ explained that the project needs to be aware that stakeholders may have differing concerns e.g. Environment Agency (EA).

Need to be aware of cumulative impacts and planning proposals for the area which are set out in the local authorities' area action plans and the Edmonton Eco-Park SPD (EL explained that they have already commented on the SPD as Arup were responsible for drafting).

Look for opportunities (wherever possible) to provide green infrastructure

Minutes

Project title

Job number

Date of Meeting

Edmonton EcoPark Energy Recovery Facility

235271

16 June 2014

Action

(e.g. green and brown roofs, living walls, greywater recycling), although noted that potential is limited. Could enter into a section 106 agreement with the LVRP to support opportunities for biodiversity and/or enhance the boundary with the LVRP.

5. Habitat Regulations Assessment (HRA)

An HRA will be required as the project is an NSIP. The HRA will need to cover a radius of approximately 10km around the site and identify any Natura 2000 sites

The HRA will have to consider impacts from noise, light, air pollution (dust) and discharges.

An appropriate assessment screening will be required, this will need to explain why further assessments stages are not required/scoped out e.g. due to measures that will be contained within the CoCP.

NE can work with the project to identify impacts and reach agreement on the HRA ahead of submission.

May need to start engagement with EA about HRA as well – particularly with regard to aquatic habitats.

6. NE Response

Initial response from NE to be provided Friday 20th June.

Case officer still to be assigned, but likely to be [REDACTED].

[REDACTED] confirmed case will be kept as confidential and will inform NLWA prior to any release of information through FOI.

[REDACTED] to confirm asap who case officer will be

A2 NE's pre-application consultation response (20 June 2014)

Date: 20 June 2014
Our ref: 8162/122372
Your ref:



██████████
████████████████████
Arup
13 Fitzroy Street
London
W1T 4BQ
BY EMAIL ONLY

Customer Services
Hornbeam House
Crewe Business Park
Electra Way
Crewe
Cheshire
CW1 6GJ

T 0300 060 3900

Dear ██████████,

Project Edmonton – Energy Recovery Facility Pre Application Advice

Thank you for your consultation on the above dated 13 May 2014 which was received by Natural England on the same day, together with the meeting attended on 16 June 2014.

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

The approach and methodology of the surveys is in line with advance that would be offered by Natural England, identifying species and land designations. The survey results currently available are within the last one to two years, and are acceptable, however it is advised that due to the length of time for schemes to be submitted and a decision reached that ongoing monitoring of the site for species is maintained to ensure the baseline evidence remains sound.

Discussion with the Lee Valley Regional Park Authority and the Environment Agency are being undertaken and this is to be encouraged as an ongoing dialogue.

Consideration of the scheme as a Nationally Strategic Infrastructure Project (NSIP) will need to consider appropriate and relevant legislation including the National planning Policy Framework and the Habitats Regulations 2010 and Wildlife and Countryside Act 1981 (as amended).

The site is close to Natura 2000 sites and therefore will require screening for Likely Significant Effect (LSE) on the interest features of the Walthamstow Reservoirs Ramsar and Epping Forest Special Area of Conservation, alone and in combination with other plans and projects. If LSE cannot be ruled out, an Appropriate Assessment (AA) will be required to ascertain whether the scheme will have an adverse impact on Nature 2000 site integrity. To proceed if adverse impact is likely, the applicant would need to demonstrate no alternative solution and Imperative Reasons of Over-riding Public Interest (IROPI), and provide compensation to ensure the coherence of the Natura 2000 network.

Regarding IROPI: IROPI means:

- o Imperative - both necessary and urgent;
- o Overriding - of such a scale of importance that the reasons outweigh the scale of harm to the integrity of the site;
- o Public Interest – to achieve a public good rather than a private interest;

Chingford Reservoirs are also in close proximity to the proposed site which includes numbers of overwintering Gadwall and Grebe. These species are susceptible to noise and air pollution disturbance, especially during the period December to February, when they are likely to be at their weakest.

I would suggest that you consider a Discretionary Advice Service approach for this scheme, allowing a bespoke response to be issued, covering potential for species impacts, landscape and regulation including Habitats Regulation Assessment screening and comments, in order to assess and assist the scheme for submission to the planning authority.

As you may be aware we do not have a statutory duty to be involved with pre-application work. Consequently, across the country our engagement has not been consistent depending on workloads of the teams/advisers involved. This has been recognised and Natural England has brought out a Discretionary Advice Service (DAS). So where cases meet the criteria (as I believe this one will) we can provide a bespoke service to the customer. More details can be found at:

<http://www.naturalengland.org.uk/ourwork/planningdevelopment/spatialplanning/das/servicestandards.aspx>

This initial advice is free and would normally cover a meeting to discuss issues. Subsequent engagement is subject to charge, it is optional whether you go through the service, and however DAS cases are treated with the same priority as our statutory work. So if you want the comfort of having a dedicated officer for the pre-app who will then be the case officer for the application, and want certainty of the level of service I would recommend that you have a look at the website. Then if you want to take advantage complete the request form and send to the consultations email address.

Additional information to assist in the determination of this planning can be found from other sources in respect of species availability and distribution within or adjacent to your proposed site (which may include the local records centre, your local wildlife trust, local geo-conservation group or other recording society and a local landscape characterisation document in order to ensure that there is sufficient information to fully understand the impact of the proposal before determination. A more comprehensive list of local groups can be found at [Wildlife and Countryside link](#).

For any queries relating to the specific advice in this letter only please contact [REDACTED] on [REDACTED]. For any new consultations, or to provide further information on this consultation please send your correspondences to consultations@naturalengland.org.uk.

We really value your feedback to help us improve the service we offer. We have attached a feedback form to this letter and welcome any comments you might have about our service.

Yours sincerely

[REDACTED]
[REDACTED]
Sustainable Development & Regulation
Thames Valley Team

A3 NE's consultation response on European sites (18 September 2014)

[REDACTED]

From: [REDACTED]@naturalengland.org.uk>
Sent: 18 September 2014 11:16
To: [REDACTED]
Cc: [REDACTED]
Subject: RE: Possible, Candidate and Proposed Sites Request - Edmunton

Hi [REDACTED],

I can confirm that the compensation sites Sarah refers to are all outside of the 10km buffer of the grid ref provided.

Many thanks,

[REDACTED]
Designations & Protected Sites Strategy
Conservation, Strategy and Innovation Team
Natural England

[REDACTED]
Please check first if sending urgent mail, otherwise mail should be sent to :
Hub Block B, Whittington Road, Worcester WR5 2LQ
Tel: [REDACTED] Mob: [REDACTED]
[REDACTED]@naturalengland.org.uk

<http://www.naturalengland.org.uk>

We are here to secure a healthy natural environment for people to enjoy, where wildlife is protected and England's traditional landscapes are safeguarded for future generations.

In an effort to reduce Natural England's carbon footprint, I will, wherever possible, avoid travelling to meetings and attend via audio, video or web conferencing.

Natural England is accredited to the Cabinet Office Customer Service Excellence Standard

From: [REDACTED] (NE)
Sent: 17 September 2014 13:07
To: [REDACTED]
Cc: [REDACTED]
Subject: RE: Possible, Candidate and Proposed Sites Request - Edmunton

Hi [REDACTED]

Further to our telephone conversation earlier, this is just to confirm that there are no pSPA, pSAC or pRamsar sites in the vicinity of the location you cited.

I've since had further discussion with my GIU colleagues and apparently this information is actually available via the following link (and not via the website link we discussed on the call):

<http://www.geostore.com/environment-agency/>

You should use this for future reference (we have a collaborative agreement that the EA host some of our datasets).

As we also discussed it is very unlikely that there are any proposed compensation sites in the area of Edmunton. We do not as yet have such areas mapped out. I have copied this to my colleague Vicky, however, who has been working on compiling a database of compensation areas so that she can cross check whether, based on the information she has, there are any such sites in the Edmunton vicinity.

Apologies again for the delay in getting back to you on this as I was on leave.

From: [REDACTED] (NE)
Sent: 16 September 2014 16:07
To: [REDACTED]
Cc: [REDACTED]
Subject: RE: Possible, Candidate and Proposed Sites Request - Edmunton

[REDACTED]
Thanks for you call and apologies you had to chase me up. I will look into this and see whether there is information available that we can share with you.
Best wishes
[REDACTED]

[REDACTED]
Sites, Species & Designations Strategy

Tel [REDACTED]

Natural England is accredited to the Cabinet Office Customer Service Excellence Standard

From: Natural England GI Data Managers (NE)
Sent: 08 September 2014 16:21
To: [REDACTED]
Cc: [REDACTED]
Subject: RE: Possible, Candidate and Proposed Sites Request - Edmunton

Dear [REDACTED],

I am forwarding this query to [REDACTED] and [REDACTED] who may be able to help you.

Regards,
[REDACTED]

[REDACTED]
Data Management and Reporting team
Access to Evidence, Evidence Team, Natural England,
Suite D, Unex House, Bourges Boulevard, Peterborough, PE1 1NG
mobile: [REDACTED], email: [REDACTED], website: www.naturalengland.org.uk
I work Monday, Tuesday and Thursday

For data requests, please email the Natural England GI Data Managers' Inbox, NaturalEnglandGIDataManagers@naturalengland.org.uk. To receive our Data Request form and licensing documents go to the Contractors' and Partners' area of the Natural England website (<http://www.naturalengland.org.uk/publications/data/giforcontractorpartners.aspx>). For our Service Standards go to our website at <http://www.naturalengland.org.uk/publications/data/servicestandards.aspx>. This sets out our commitments and expectations when supplying data.

We are here to secure a healthy natural environment for people to enjoy, where wildlife is protected, and England's traditional landscapes are safeguarded for future generations. In an effort to reduce Natural England's carbon footprint, I will, wherever possible, avoid travelling to meetings and attend via audio, video or web conferencing.

Natural England is accredited to the Cabinet Office Customer Service Excellence Standard. As part of our on-going commitment to provide excellent customer service, please help us to make improvements by completing our [customer satisfaction survey](#).

From: [REDACTED]
Sent: 05 September 2014 14:52
To: Natural England GI Data Managers (NE)
Subject: Possible, Candidate and Proposed Sites Request - Edmunton

Hello,

Could you tell me if there are any of the following within 10km of TQ 34639 94009:

- Candidate (c)SACs;
- Potential (p)SPAs;
- Possible Special Areas of Conservation; or
- Proposed Ramsar sites.

If there are any sites, could you send through mapping showing their location, any citations and conservation objectives?

I'm not sure if this is something that you can provide, but I'm also looking for sites identified, or required, as compensatory measures for adverse effects on Natura 2000 sites, pSPAs, possible SACs, and listed or proposed Ramsar sites within this search area? I will be looking at the council websites also, but if you're aware of any such sites, it would be useful if you could send that through also.

Many thanks,

[REDACTED]

[REDACTED]

Environmental Consulting | [REDACTED]

Arup

8 Fitzroy Street London W1T 4BO United Kingdom

[REDACTED]

www.arup.com



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A4 NE's response to Phase Two Consultation (16 June 2015)

Date: 16 June 2015
Our ref: DAS1391 - 8162/154516
Your ref:



North London Waste Authority
Unit 1B, Berol House
25 Ashley Road
Tottenham Hale
London N17 9LJ

Customer Services
Hornbeam House
Crewe Business Park
Electra Way
Crewe
Cheshire
CW1 6GJ

0300 060 3900

Sent by E Mail only to: [REDACTED]@NLWA.gov.uk

Dear [REDACTED],

Discretionary Advice Service (Charged Advice)

DAS1391

Development proposal and location: North London Heat and Power Project – Interim Screening Statement to inform a Habitats Regulations Assessment – London Waste Eco-Park, Advent Way, London, N18 3AG

Thank you for your consultation on the above dated 20 May 2015, which was received on 20 May 2015.

This advice is being provided as part of Natural England's Discretionary Advice Service (DAS). North London Waste Authority has asked Natural England to provide advice upon:

- The Interim Screening Statement to inform a Habitats Regulations Assessment

This advice is provided in accordance with the Quotation and Agreement dated 17 October 2014.

The following advice is based upon the information within;

- The *Interim Screening Statement to inform a Habitats Regulations Assessment* – Arup report dated May 2015.

In Summary, Natural England would advise that the approach and methodology used in the Habitats Regulations Assessment (HRA) is in accordance with relevant legislation namely the Planning Act 2008, Habitats Regulations 2010 (as amended) and the Wildlife and Countryside Act 1981 (as amended), together with the National Planning Policy Framework 2012. Appropriate and relevant guidance has been identified and used to inform the baseline information for the screening and relevant sites have been identified for consideration. The approach and methodology is in line with advice that would be offered by Natural England. The conclusions reached in Chapter 7: Conclusions can be agreed with by Natural England.

Protected sites

1. Natural England has no concerns

Natural England is satisfied that in principle, on the basis of the objective information provided, it can be excluded that the proposed plan or project will have a likely significant effect on the Lee Valley Special Protection Area (SPA) and Ramsar which is also designated as Lee Valley Wetland of International Importance under the Ramsar Convention (Ramsar site), or upon Epping Forest Special Area of Conservation (SAC), either individually or in combination with other plans or

projects.

Furthermore, Natural England is satisfied that the proposed operations are not likely to damage any of the interest features of the Chingford Reservoirs Site of Special Scientific Interest (SSSI), the Walthamstow Reservoirs SSSI or the Epping Forest SSSI.

Due to the nature of this development, this proposal may require a statutory Environmental Impact Assessment (EIA) under the Town and Country Planning (Environmental Impact Assessment) Regulations 2011 or the Infrastructure Planning (Environmental Impact Assessment) Regulations 2009. Further advice and confirmation should be sought from Enfield Borough Council and the Planning Inspectorate.

Protected species

The advice on this proposal, and the guidance contained within Natural England's standing advice relates to this case only and does not represent confirmation that a species licence (should one be sought) will be issued. Please see **Annex 1** for information regarding licensing for the following European Protected Species:

- Bats
- Overwintering birds – principally gadwall and shoveler

This proposal may have potential to affect species protected under European or UK legislation. Natural England has produced [Standing Advice](#) which is available on its website. Whilst this advice is primarily designed to assist local planning authorities better understand the information required when assessing the impact of developments upon protected species, it also contains a wealth of information to help applicants ensure that their applications comply with good practice guidelines and contribute to sustainable development. In particular I would draw your attention to the flow chart which gives guidance on the species that are likely to be present on the application site based upon readily identifiable habitat features. Please refer to this Standing Advice for further information on what information the authority may require in terms of survey and mitigation proposals.

Further information can also be obtained from [The Institute of Ecology and Environmental Management](#), [The Bat Conservation Trust](#) and [Biodiversity Planning Toolkit](#) for more guidance.

Other advice

There are also other possible impacts resulting from this proposal that you should consider when developing your planning application. These issues, together with where you may find further guidance, are summarised below.

Green Infrastructure

The proposed development is within an area that Natural England considers could benefit from enhanced green infrastructure (GI) provision. Multi-functional green infrastructure can perform a range of functions including improved flood risk management, provision of accessible green space, climate change adaptation and biodiversity enhancement. Evidence and advice on green infrastructure, including the economic benefits of GI can be found on the Natural England [Green Infrastructure web pages](#).

Local wildlife sites

Local wildlife or geological sites remain material considerations in the determination of planning applications. A more comprehensive, but not exhaustive, list can be found at [Wildlife and Countryside link](#).

For clarification of any points in this letter, please contact [REDACTED] on [REDACTED].

As the Discretionary Advice Service is a new service, we would appreciate your feedback to help shape this service. We have attached a feedback form to this letter and would welcome any

comments you might have about our service.

Senior adviser to QA letter and check box below

☐ The advice provided in this letter has been through Natural England's Quality Assurance process

The advice provided within the Discretionary Advice Service is the professional advice of the Natural England adviser named below. It is the best advice that can be given based on the information provided so far. Its quality and detail is dependent upon the quality and depth of the information which has been provided. It does not constitute a statutory response or decision, which will be made by Natural England acting corporately in its role as statutory consultee to the competent authority after an application has been submitted. The advice given is therefore not binding in any way and is provided without prejudice to the consideration of any statutory consultation response or decision which may be made by Natural England in due course. The final judgement on any proposals by Natural England is reserved until an application is made and will be made on the information then available, including any modifications to the proposal made after receipt of discretionary advice. All pre-application advice is subject to review and revision in the light of changes in relevant considerations, including changes in relation to the facts, scientific knowledge/evidence, policy, guidance or law. Natural England will not accept any liability for the accuracy, adequacy or completeness of, nor will any express or implied warranty be given for, the advice. This exclusion does not extend to any fraudulent misrepresentation made by or on behalf of Natural England.

Yours sincerely

[Redacted]

[Redacted]

Sustainable Development and Regulation
Thames Valley Team

Cc [Redacted]@naturalengland.org.uk

Annex 1

European Protected Species

A licence is required in order to carry out any works that involve certain activities such as capturing the animals, disturbance, or damaging or destroying their resting or breeding places. Note that damage or destruction of a breeding site or resting place is an absolute offence and unless the offences can be avoided (e.g. by timing the works appropriately), it should be licensed. In the first instance it is for the developer to decide whether a species licence will be needed. The developer may need to engage specialist advice in making this decision. A licence may be needed to carry out mitigation work as well as for impacts directly connected with a development. Further information can be found in Natural England's ['How to get a licence'](#) publication.

If the application requires planning permission, it is for the local planning authority to consider whether the permission would offend against Article 12(1) of the Habitats Directive, and if so, whether the application would be likely to receive a licence. This should be based on the advice Natural England provides at formal consultation on the likely impacts on favourable conservation status and Natural England's [guidance](#) on how the three tests (no alternative solutions, imperative reasons of overriding public interest and maintenance of favourable conservation status) are applied when considering licence applications.

Natural England's pre-submission Screening Service can screen application drafts prior to formal submission, whether or not the relevant planning permission is already in place. Screening will help applicants by making an assessment of whether the draft application is likely to meet licensing requirements, and, if necessary, provide specific guidance on how to address any shortfalls. The advice should help developers and ecological consultants to better manage the risks or costs they may face in having to wait until the formal submission stage after planning permission is secured, or in responding to requests for further information following an initial formal application.

The service will be available for new applications, resubmissions or modifications – depending on customer requirements. More information can be found on [Natural England's website](#).

Appendix B: Baseline ecology reports

B1 Phase 1 report 2013

North London Waste Authority
Edmonton EcoPark
Phase 1 Habitat Survey Report

001

Issue | 29th May 2013



This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 224552

Ove Arup & Partners Ltd
13 Fitzroy Street
London
W1T 4BQ
United Kingdom
www.arup.com

ARUP

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Appendices

Appendix A

Edmonton: Phase 1 Habitat Survey Figures

1 Introduction

1.1 Background

Ove Arup & Partners Ltd (Arup) has been commissioned by North London Waste Authority (NLWA) Ltd to conduct a Phase 1 Habitat Survey at a site in Edmonton.

1.2 The site

The site is known as Edmonton EcoPark, London Waste Ltd, Advent Way, London, N18 3AG. UK grid reference: TQ 35767 92649. It lies adjacent to the A406 at its southern end, and is bound by watercourses to the east and west. A water treatment works represents the northern boundary of the site.

Figure 1 in Appendix A presents an overview of the Edmonton site where the Phase 1 Habitat Survey detailed in this report was undertaken. Figure 2 illustrates the findings of Phase 1 habitat survey.

1.3 Legislative and policy context

The principal legislation relating to ecological resources, that are relevant this appraisal, are as follows:

- Wildlife and Countryside Act 1981 (as amended);
- Conservation of Habitats and Species Regulations 2010 (which consolidates all the various amendments made to the Conservation [Natural Habitats, &c.] Regulations, 1994)
- Countryside and Rights of Way (CROW) Act 2000;
- Natural Environment and Rural Communities (NERC) Act 2006;
- The Protection of Badgers Act 1992.

Species-specific legislation relating to this site is described in further detail in the following sub-sections.

1.3.1 Bats

All species of bat are strictly protected in Europe and in the UK by the Wildlife & Countryside Act 1981 and the Conservation (Natural Habitats &c) Regulations 1994. This protection makes it illegal to intentionally kill, injure, capture or disturb bats, and to damage, destroy or prevent access to roost sites.

1.3.2 Birds

Under the Wildlife and Countryside Act 1981 (as amended), all birds, their nests and eggs are protected by law and it is thus an offence, with certain exceptions, to intentionally kill, injure or take any wild bird; intentionally take, damage or destroy the nest of any wild bird whilst it is in use or being built; and intentionally

take or destroy the egg of any wild bird. Additional protection is afforded to those scarce species listed on Schedule 1 of the Act such that it is an offence to intentionally or recklessly disturb any wild bird listed on Schedule 1 while it is nest building, or at a nest containing eggs or young, or disturb the dependent young of such a bird.

1.3.3 Reptiles

All British native reptile species are afforded at least some level of protection under the Wildlife & Countryside Act 1981 (as amended). Common lizards, grass snakes, adders and slow worms are protected from killing and injury only. Protection is not extended to their habitats. Therefore, construction activities should not result in the death of individual reptiles where they are known to occur.

1.3.4 Badgers

Badgers are protected under The Protection of Badgers Act, 1992. Consequently, it is an offence to:

- kill, injure or take a badger, or to attempt to do so;
- interfere with a badger sett by (a) damaging a sett or any part of one; (b) destroying a sett; (c) obstructing access to any entrance of a sett; (d) causing a dog to enter a sett; or (e) disturbing a badger when it is occupying a sett.

1.3.5 Otters

Otters are protected by the Wildlife and Countryside Act 1981 (as amended) and by the EC Habitats Directive, transposed into domestic law through the Conservation of Habitats and Species Regulations 2010 (as amended). Under the Habitats Regulations otters are classed as a European protected species and therefore given the highest level of protection. This legislation makes it an offence to kill, injure or disturb an otter or to destroy any place used for rest or shelter by an otter. Additional protection is also provided by the Countryside and Rights of Way (CROW) Act (2000). Otters are also listed as a priority species on the UK Biodiversity Action Plan (BAP).

1.3.6 Water voles

Water voles receive legislative protection which was further strengthened from April 2008, under the Wildlife and Countryside Act 1981 (as amended) under Section 9 which makes it a criminal offence to:

- intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection;
- intentionally or recklessly disturb water voles whilst occupying a structure or place used for that purpose;
- intentionally kill, injure or take water voles;
- possess or control live or dead water voles or derivatives;

- sell water voles or offer or expose for sale or transport for sale;
- publish or cause to be published any advertisement which conveys the buying or selling of water voles.

Natural Environment and Rural Communities Act 2006 (NERC) also lists water vole as a species of principle importance under Section 41 and Section 40 requires every public body in the exercising of its functions (in relation Section 41 species) 'have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity'; therefore making the water vole a material consideration in the planning process and requiring a detailed ecological survey before planning permission can be granted.

1.4 Policies and Guidance

1.4.1 Biodiversity Action Plans

As a result of new drivers and requirements, the 'UK Post-2010 Biodiversity Framework', published in July 2012, has now succeeded the UK BAP. In particular, due to devolution and the creation of country-level biodiversity strategies, much of the work previously carried out under the UK BAP is now focussed at a country level. Additionally, international priorities have changed: the framework particularly sets out the priorities for UK-level work to support the Convention on Biological Diversity's (CBD's) Strategic Plan for Biodiversity 2011-2020 and its five strategic goals and 20 'Aichi Targets', agreed at the CBD meeting in Nagoya, Japan, in October 2010; and the new EU Biodiversity Strategy (EUBS) in May 2011. The UK BAP lists of priority species and habitats remain, however, important and valuable reference sources (see below)¹.

The UK Biodiversity Action Plan (BAP) was produced in accordance with the 1992 UN Convention on Biological Diversity. It describes the UK's biological resources and commits a detailed plan for the protection of these resources, focusing on key habitats and species considered to be of particular significance to nature conservation within a UK context.

The London BAP promotes the protection and enhancement of the area's most important and distinctive animals, plants and habitats, as well as its regional-level contribution to the UK Action Plan.

Priority species and priority habitats listed under the UK BAP and London BAP are addressed at all levels of UK planning policy, the aim of this being that development contributes to halting further losses and encouraging population enhancement. Under the Natural Environment and Rural Communities (NERC) Act 2006, it is now the duty of all governmental departments to take BAP species into account as a material consideration in the determination of planning applications.

BAP species have been taken into account when assessing the value of ecological resources at the site.

¹ <http://jncc.defra.gov.uk/page-5705-theme=textonly>

1.4.2 The National Planning Policy Framework

The National Planning Policy Framework (NPPF), published in April 2012 replaces all Planning Policy Statements and Guidance (PPSs and PPGs) to set out the government's planning policy in a less complex and more accessible manner.

The stipulations for conservation and enhancement of the natural environment state that the planning system should minimise the impacts on biodiversity and where possible restore degraded or depleted habitats.

The overall aim is to contribute to the government objective to halt the overall decline in biodiversity through the establishment of coherent ecological networks, that are more resilient to current and future environmental pressures. There has also been a range of conservation and enhancement principles established to guide planning processes and decisions.

Local planning authorities have been given responsibility to set the strategic approach for the creation, protection, enhancement and management of biodiversity networks through planning at the landscape-scale, often across local authority boundaries.

The NPPF emphasises the importance of local green space and states that Local Planning Authorities should plan positively for the creation, protection, enhancement and management of biodiversity networks and green infrastructure.

1.4.3 The England 2020 Biodiversity Strategy

The England Biodiversity Strategy 2020 (August 2011) was published by Defra in response to the National Environment White Paper. It sets the Government's objectives for halting the net loss of biodiversity by 2020 and promotes the recognition of the intrinsic value of the benefits of biodiversity to society.

It emphasises the landscape-scale and ecosystems approach for the demonstration of the benefits obtained from ecosystem services, their interactions and feedbacks rather than a species approach in order to establish more coherent and resilient ecological networks.

1.4.4 London Plan

The London Plan (2011) is the overall strategic plan for London, and it sets out a fully integrated economic, environmental, transport and social framework for the development of the capital to 2031. It forms part of the development plan for Greater London. London boroughs' local plans need to be in general conformity with the London Plan, and its policies guide decisions on planning applications by councils and the Mayor.

1.4.5 Local Development Frameworks

Local Development Frameworks are a folder of documents prepared by the local planning authority, usually the borough council. These documents outline the spatial planning strategy for the area. All Local Development Frameworks must be in general conformity with the Mayor's London Plan. In the case of Edmonton, Haringey Council is the relevant body.

The LDF, together with The London Plan, will determine how the planning system helps to shape your community. The London Plan provides London-wide policies to help achieve the Mayor's vision for London. Whilst the LDFs provide more focused and localised policies to shape development within the borough to achieve the council's vision.

1.5 Aims and objectives

The aims and objectives of this Phase 1 Habitat Survey are to:

- Provide information on the nature, location, extent and distribution of habitat types present at the site;
- Provide an evaluation of the likely ecological interest of the site, its ability to support protected species, and the scope of further survey work required in relation to these resources; and,
- Inform the development proposals in order to avoid and mitigate any detrimental ecological impacts associated with the proposals.

1.6 Report structure

Following on from this introductory section, Section 2 provides details of the methodologies of the desk-based and field surveys and assessment, including any limitations of the exercise. Section 3 details the results and an appraisal of the desk study and field survey. Section 4 provides conclusions and recommendations.

2 Methodology

Information about the ecological features present on (and in the immediate environs of) the site have been gathered through a combination of desk study and field survey. The methodology for both the desk study and field survey are provided in this section, together with any limitations identified during the course of the study.

2.1 Desk study

Ecological records were obtained from the Greenspace Information for Greater London (GiGL) database. The UK Biodiversity Action Plan (UKBAP) and the London BAP (Local Biodiversity Action Plan - LBAP) were also consulted for details of notable species that could be expected to occur in the area. The area covered by these data searches extended up to 2km from the main Edmonton site.

This contextual information can assist in determining which species are likely to be affected by the proposed development, and this has helped to focus the field survey in identifying signs of notable species that could be expected to occur in the vicinity.

2.2 Field survey

A Phase 1 Habitat Survey was undertaken on April 23rd 2013. The survey was undertaken in accordance with standard guidance (JNCC, 2007¹). Habitat types were mapped in the field, with notes taken relating to the dominant plant and vegetation communities present. Evidence of protected species, or the potential for the site to support protected species, was also noted.

Searches for protected species included the presence of any identifiable field signs such as the paths, tracks and scats of mammal species, for example badger (*Meles meles*), plus areas of shelter, such as potential bat roost sites within trees or built structures. Any man-made or natural refugia were inspected and lifted where possible, to search for sheltering wildlife such as reptiles and/or amphibians.

Based on an understanding of the habitat types present and consideration of the site's position within the wider landscape, an assessment was made of the site's potential to support protected species and species of high individual nature conservation value, which may be impacted upon by the proposed works.

2.3 Limitations

The findings presented in this study represent those at the time of survey and reporting. Variations in these conditions will take place as a result of seasonal factors, and with the general passage of time.

It should also be noted that fauna may travel over wide areas and can have large home ranges and so can be overlooked during surveys. Species which are absent at the time of survey may also return to or colonise a site anew at any future time.

¹ Joint Nature Conservation Committee's Handbook for Phase 1 habitat survey: *A technique for environmental audit* (2007).

3 Results and appraisal

3.1 Desk study

3.1.1 Sites Designated for Nature Conservation Value

A desk study was undertaken to identify any designated sites within a 2km radius of the site. The records obtained show that there are four sites with European or National statutory designation and one Local Nature Reserve within the search area. The records obtained from the GiGL database are shown in Table 1.

Table 1: Statutory Sites Designated for Nature Conservation Value within 2 km of the proposal site

Site Name	Description
Lee Valley Special Protection Area (SPA)	Located approximately 1.8km to the south of the site and comprises a series of man-made and semi-natural wetlands which are of European importance due to supporting rare wintering waterbirds (e.g. bittern <i>Botaurus stellaris</i>) and significant numbers of wintering wildfowl such as shoveler (<i>Anas chlypeata</i>) and gadwall (<i>Anas strepera</i>).
Lee Valley Ramsar Site	As above, the area also qualifies as a Ramsar site due to the presence of a nationally rare aquatic plant and an uncommon aquatic invertebrate in addition to the waterfowl included above.
Chingford Reservoirs Site of Special Scientific Interest (SSSI)	Located approximately 0.3km north east of the site and comprises a series of drinking water storage basins, which attract a wide variety of migratory wildfowl, gulls and other waterbirds. The reservoirs are one of the major wintering grounds for wildfowl and wetland birds in the London area and hold nationally important wintering numbers of shoveler and great crested grebe (<i>Podiceps cristatus</i>).
Walthamstow Reservoirs SSSI	Located approximately 1.8km south of the site and comprises ten relatively small and shallow water storage basins. The reservoirs contain one of the country's major heronries and have a large concentration of breeding wildfowl, as well as supporting nationally significant populations of wintering shoveler and tufted duck (<i>Aythya fuligula</i>). Breeding birds include coot (<i>Fulica atra</i>), pochard (<i>Aythya ferina</i>), yellow wagtail (<i>Motacilla flava</i>), reed (<i>Acrocephalus scirpaceus</i>) and sedge (<i>Acrocephalus schoenobaenus</i>) warblers and great crested grebe. Locally important plants at the site include marsh marigold (<i>Caltha palustris</i>) and lesser bulrush (<i>Typha angustifolia</i>).
Ainslie Wood Local Nature Reserve (LNR)	Locally important area of woodland located approximately 2km east of the site.

Non-statutory sites are identified by the Greater London Authority on account of their flora and fauna. They are of Greater London or regional importance. Table 2 lists those non-statutory sites within the 2km search area from the site.

Table 2 Non-statutory Sites Designated for Nature Conservation Value within 2 km of the proposal site

Site Name	Description
Lee Valley	Site of Metropolitan importance for nature conservation, consisting of a series of open spaces along the River Lee valley, including lakes, reservoirs, marshes and wet grassland. The River Lee lies approximately 200m to the east of the site. Protected or notable species found here include: water vole (<i>Arvicola terrestris</i>), great crested newt (<i>Triturus cristatus</i>), kingfisher (<i>Alcedo atthis</i>), little ringed plover (<i>Charadrius dubius</i>), goosander (<i>Mergus merganser</i>), red-eyed damselfly (<i>Erythromma najas</i>), creeping marshwort (<i>Apium repens</i>) and brookweed (<i>Samolus valerandi</i>).
Tottenham Marshes	Located approximately 1km south of the site. Large expanse of rough grassland, damp in places, with small areas of scrub and tall herbs. Diverse flora includes the nationally scarce wall bedstraw (<i>Galium parisiense</i>) and yellow vetchling (<i>Lathyrus aphaca</i>).
Banbury Reservoir	Large reservoir and adjacent area of community woodland, approximately 1km south east of the site. Reservoir is important for waterbirds including gulls and great crested grebe. Areas of wildflowers and neutral grassland attract several species of butterflies and grasshoppers.
Tottenham Marshes East	Located approximately 1.5km south of the site and comprises a large expanse of rough grassland and scrub. The grassland provides good habitat for invertebrates and the scrub and young trees provide good breeding habitat for common bird species.
Tottenham Hale to Northumberland Park Railsides	Located approximately 1.5km south west of the site and comprises a range of linear habitats including rough grassland and scrub. Some areas of more mature woodland are also present along with patches of tall herbs. The rare hybrid 'Wurzell's wormwood' (<i>Artemisia vulgaris x verlotiorum</i>) is abundant around Northumberland Park station.
Ching Brook in Central Walthamstow	Located approximately 1.5km south east of the site, consisting of a tree-lined stream flowing through allotments and open space which attracts birds such as grey wagtail (<i>Motacilla cinerea</i>), house sparrow (<i>Passer domesticus</i>) and chaffinch (<i>Phylloscopus collybita</i>). Flora includes oak (<i>Quercus robur</i>), crack willow (<i>Salix fragilis</i>), pendulous sedge (<i>Carex pendula</i>) and soft rush (<i>Juncus effusus</i>).
Pymmes Park	Located approximately 1.8km west of the site and comprises a large public park with a lake which supports a range of breeding waterbirds including mallard (<i>Anas platyrhynchos</i>), tufted duck, coot, and mute swan (<i>Cygnus olor</i>). Flora includes water figwort (<i>Scrophularia auriculata</i>), remote sedge (<i>Carex remota</i>) and gypsywort (<i>Lycopus europaeus</i>).
Marsh Lane Allotments	Allotments with fruit trees and climbers providing habitat for a variety of wildlife including grass snakes and common bird and mammal species. Located approximately 1.8km south of the site.
Chingford Mount Cemetery	Large cemetery with abundant grassland, mature trees and a pond, located approximately 1.8km north east of the site. Trees include London plane (<i>Platanus x hispanica</i>), ash (<i>Fraxinus excelsior</i>) and pines (<i>Pinus</i> spp.). The pond is likely to contain common amphibian species and wetland plants occur including great willowherb (<i>Epilobium hirsutum</i>), pendulous sedge and water mint (<i>Mentha aquatica</i>). A variety of common birds occur at the site, including the nationally declining house sparrow.

3.1.2 Legally Protected or Otherwise Notable Species

A desk study was undertaken to obtain records of any legally protected or otherwise notable species within a 2km radius of the site. Table 3 contains records from the GiGL database of all protected or notable species within 2km radius of the site, with the closest record given in metres from the site.

Table 3 Protected or notable species within 2km radius of the site

Common Name	Scientific Name	Closest Record (m)
Freshwater crayfish	<i>Austropotamobius pallipes</i>	1487
Stag beetle	<i>Lucanus cervus</i>	1043
White-letter hairstreak	<i>Satyrrium w-album</i>	829
Wall	<i>Lasiommata megera</i>	1759
Great crested newt	<i>Triturus cristatus</i>	1945
Common frog	<i>Rana temporaria</i>	1193
Caspian gull	<i>Larus cachinnans</i>	1235
Greylag goose	<i>Anser anser</i>	1235
Ruddy shelduck	<i>Tadorna ferruginea</i>	1235
Garganey	<i>Anas querquedula</i>	1996
Greater scaup	<i>Aythya marila</i>	1369
Velvet scoter	<i>Melanitta fusca</i>	1369
Common goldeneye	<i>Bucephala clangula</i>	1235
Smew	<i>Mergellus albellus</i>	1369
Slavonian grebe	<i>Podiceps auritus</i>	1235
Little egret	<i>Egretta garzetta</i>	1487
Eurasian marsh harrier	<i>Circus aeruginosus</i>	1690

Common Name	Scientific Name	Closest Record (m)
Osprey	<i>Pandion haliaetus</i>	1690
Little ringed plover	<i>Charadrius dubius</i>	1996
European golden plover	<i>Pluvialis apricaria</i>	1235
Northern lapwing	<i>Vanellus vanellus</i>	1075
Temminck's stint	<i>Calidris temminckii</i>	1996
Black-tailed godwit	<i>Limosa limosa</i>	1996
Bar-tailed godwit	<i>Limosa lapponica</i>	1996
Whimbrel	<i>Numenius phaeopus</i>	1690
Common greenshank	<i>Tringa nebularia</i>	1235
Green sandpiper	<i>Tringa ochropus</i>	1235
Mediterranean gull	<i>Larus melanocephalus</i>	76
Little gull	<i>Larus minutus</i>	1235
Herring gull	<i>Larus argentatus</i>	1235
Little tern	<i>Sternula albifrons</i>	1235
Black tern	<i>Chlidonias niger</i>	1235
Common tern	<i>Sterna hirundo</i>	782
Arctic tern	<i>Sterna paradisaea</i>	1235
European turtle dove	<i>Streptopelia turtur</i>	1690
Common cuckoo	<i>Cuculus canorus</i>	1690
Common kingfisher	<i>Alcedo atthis</i>	1235
Skylark	<i>Alauda arvensis</i>	1690

Common Name	Scientific Name	Closest Record (m)
Sand martin	<i>Riparia riparia</i>	1235
Yellow wagtail	<i>Motacilla flava</i>	1235
Hedge accentor	<i>Prunella modularis</i>	1690
Black redstart	<i>Phoenicurus ochruros</i>	1235
Fieldfare	<i>Turdus pilaris</i>	1235
Song thrush	<i>Turdus philomelos</i>	1690
Redwing	<i>Turdus iliacus</i>	1690
Common grasshopper warbler	<i>Locustella naevia</i>	1690
Spotted flycatcher	<i>Muscicapa striata</i>	1690
Red-backed shrike	<i>Lanius collurio</i>	1690
Common starling	<i>Sturnus vulgaris</i>	662
House sparrow	<i>Passer domesticus</i>	423
Eurasian tree sparrow	<i>Passer montanus</i>	1690
Brambling	<i>Fringilla montifringilla</i>	1369
Common linnet	<i>Carduelis cannabina</i>	1475
Common redpoll	<i>Carduelis flammea</i>	1690
Common crossbill	<i>Loxia curvirostra</i>	1690
Common bullfinch	<i>Pyrrhula pyrrhula</i>	1690
Reed bunting	<i>Emberiza schoeniclus</i>	1690
West European hedgehog	<i>Erinaceus europaeus</i>	1193

Common Name	Scientific Name	Closest Record (m)
Daubenton's bat	<i>Myotis daubentonii</i>	447
Noctule bat	<i>Nyctalus noctula</i>	1396
Common pipistrelle	<i>Pipistrellus pipistrellus</i>	1396
European otter	<i>Lutra lutra</i>	1006
European water vole	<i>Arvicola terrestris</i>	291

3.2 Field survey

A Phase 1 habitat survey map is provided in Appendix A (Figure 2). A habitat description, together with details of characteristic and/or notable species, is provided below.

3.2.1 Habitat description

The site is approximately 16 ha in extent, consisting predominantly of a fully operational waste handling facility with associated infrastructure, which also contains small amounts of natural and semi-natural habitat.

Large areas of the site are dominated by hard standing and buildings. Natural and semi-natural habitats within the site include: mature trees, vegetated boundaries, a small pond, ruderal vegetation, introduced shrubs, amenity grassland and young plantation woodland. The eastern and western boundaries of the site consist of watercourses.

A line of semi-mature trees is present along the eastern boundary of the north-east part of the site and this linear feature has the potential to be used by bats when dispersing between roosting and foraging sites. Some of the older trees may provide opportunities for roosting bats.

A small area of young plantation woodland is present to the north of the site and this has some potential as a habitat for invertebrates, which in turn would provide bats with foraging opportunities as well as providing foraging and nesting resources for birds.

Areas of introduced shrub are present on site, predominantly within the amenity grassland area to the south and around several of the parking areas and building boundaries. Vegetation is relatively dense in these areas and comprises a number of species. These shrubs have the potential to support a number of invertebrate species and hence represent a foraging resource for bats and also provide opportunities for nesting and foraging birds.

Areas of amenity grassland are present at the site. The main areas of amenity grassland lie to the south and north-east of the site. These areas comprise regularly mown species-poor grassland which has been assessed as being unlikely

to support reptiles. Some ruderal vegetation and longer grass is present around the site boundaries, particularly to the south.

The site boundary to the west consists of a watercourse known as Salmon's Brook. This watercourse has the potential to support otters, water voles and breeding birds as well as providing habitat for a diverse invertebrate community and hence foraging resource for bats. The River Lee is situated just to the east of the site boundary and, although outside the site boundary, it is likely to support a diverse invertebrate community and hence foraging resource for bats and birds which is close to the site itself. A shallow ditch (known as Enfield ditch) which is periodically wet is present to the east and south of the site and has the potential to act as a resource for foraging bats and birds.

A small man-made lined pond is located in the north-east of the site, within an area of mown amenity grassland edged by young planted trees to the north and a line of mature trees to the east. The south and west boundaries of this area are adjacent to access roads, car parks and buildings. The pond is open in terms of vegetation encroachment and any marginal vegetation is limited in its extent. The pond is likely to support a range of invertebrates which in turn, have potential to support foraging bats.

3.3 Protected Species records and observations

The majority of grassland areas are mown to a short sward, and few opportunities exist for reptiles. No reptiles were found during 2012 surveys at the site.

No evidence of badgers, otters or water voles was observed at the site during 2012. This situation has also been monitored during site visits in 2013 with no evidence shown.

Birds were observed utilising the buildings, wooded areas, shrubs, waterbodies and mature trees for foraging. A breeding bird survey is being undertaken during 2013 and the results will be presented in a subsequent report.

Bats are likely to be using wooded edges, the pond, watercourses and grassland areas for foraging, and a limited number of trees may provide suitable roosting sites. A series of bat surveys is therefore being undertaken. Three common pipistrelles were recorded foraging at the site during a bat survey in 2012.

3.4 Appraisal

The Edmonton site consists largely of a fully operational waste handling facility with associated infrastructure. As a consequence of this, it does not represent a site of high biodiversity potential.

However, the site has some potential to support notable and/or protected species and surveys are being undertaken to fully investigate this.

4 Conclusions and Recommendations

4.1 Summary of findings

The desk study data search has identified four designated sites fall within a 2km radius of the site. However, no designated areas are likely to be impacted by the proposed level of works. Furthermore, proposed development of the site will be set back from the boundary and enclosed by landscaping elements and is therefore less likely to have a significant negative impact upon biodiversity in the wider area.

Nevertheless, at a site level, protected species may be at risk from the proposals and mitigation or compensation measures may be required to ensure that there is no net negative effect on the habitats and species present in the longer-term. Therefore, a number of species-specific surveys have been, and continue to be, undertaken to identify which species are present and how and to what extent they may be impacted upon by the development proposals.

4.1.1 Reptile Surveys

Reptile surveys were undertaken during 2012 and none were found to be present at the site. Given that the surveys were undertaken in accordance with Best Practice Guidelines, at the correct time of year and in appropriate weather conditions, it is unlikely any reptiles are present at the site.

4.1.2 Birds

The site is likely to be suitable for a range of common bird species. The level of works proposed is unlikely to have a significant impact upon any populations at the local or regional level. However, all nesting birds, their young and eggs are protected by law and thus any building demolition or vegetation clearance should be undertaken outside of the nesting season (generally from March to August inclusive). Guidance should be sought from a suitably-qualified ecologist with regard to clearance works at any time of the year. A breeding bird survey is being undertaken during 2013 to assess the species assemblage present and to determine any important areas of the site for breeding birds.

4.1.3 Bat Surveys

Bat surveys will be needed to inform upon the general level of bat activity at the site, whether any roosts will be affected by the proposed works and whether important foraging and/or commuting routes are present. An initial dusk survey was conducted in 2012 and further surveys are being undertaken in 2013.

4.1.4 Otter and water vole surveys

Otter and water vole surveys were carried out during 2012 and no evidence of either species was found at the site. The situation has been monitored during other site surveys in 2013 and again no evidence has been found on site.

4.1.5 Badger survey

Badger surveys were carried out during 2012 and no evidence of this species was found at the site. The situation has been monitored during other site surveys in 2013 and again no evidence has been found on site.

4.2 Summary of Recommendations

- Land take which impacts semi-natural habitats should be kept to a minimum in order to reduce the risk of impacts upon any protected species and the level of mitigation required for such impacts.
- Bat surveys should be completed to identify the levels and types of use of the site by bats.
- With regard to breeding birds, surveys will be undertaken during 2013. Any works involving building demolition, tree, scrub or ground clearance associated with the proposals should be conducted outside of the main breeding season (March to August inclusive). Potential breeding habitat should be checked by an ecologist prior to works at any time of the year.

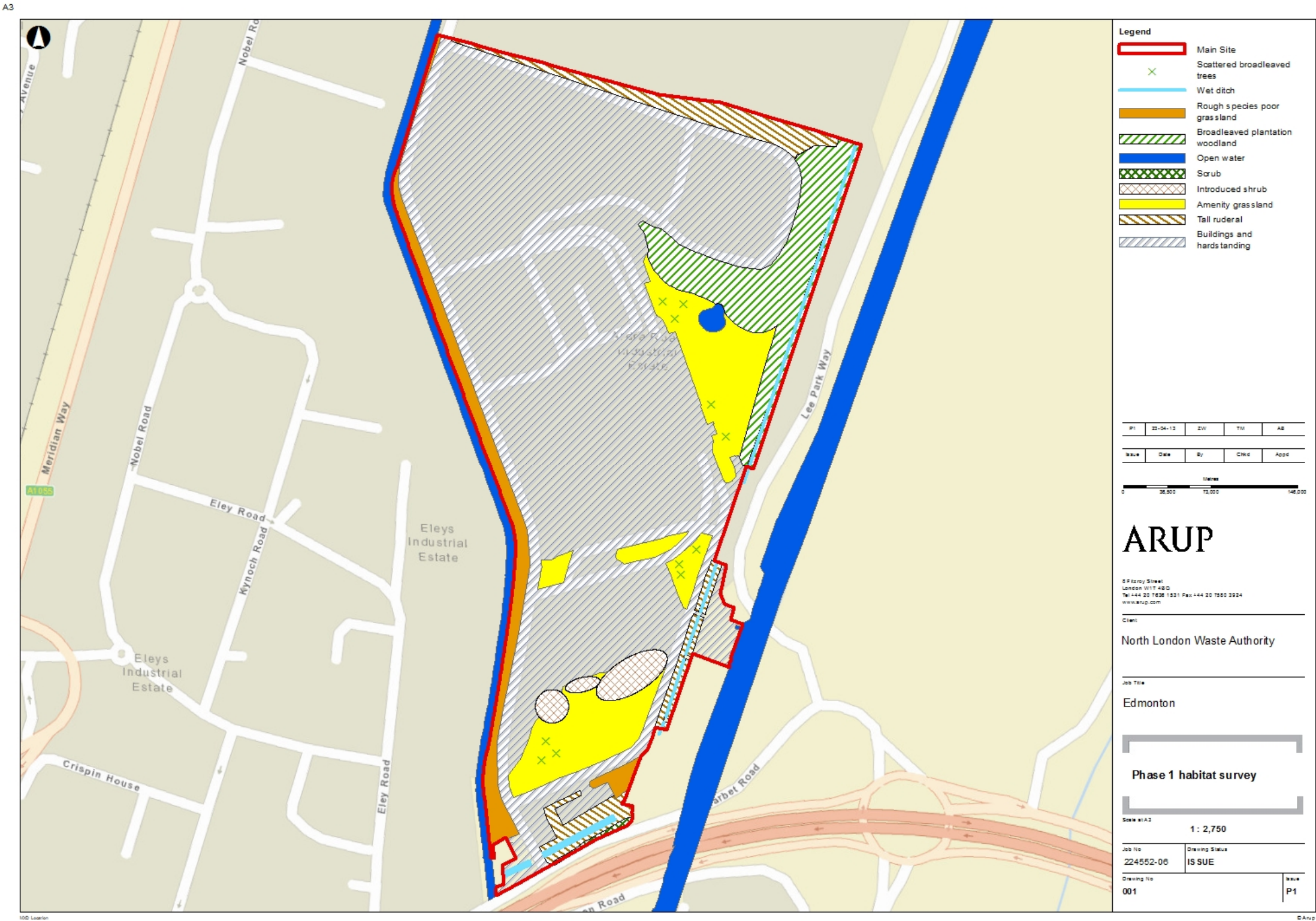
Appendix A

Edmonton: Phase 1 Habitat Survey Figures

Figure 1: Site overview showing redline boundary



Figure 2: Phase 1 habitat map



B2 Deephams Sewage Treatment Works Habitat Suitability Index Survey (2013)

Technical Note

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28th August 2013

Subject NLWA Edmonton Access To Deephams Site re. Great Crested Newt Assessment

The aim of this technical note is to provide a brief summary of the situation regarding access to the Deephams site to the north of the main Edmonton site. It was proposed that the drainage lagoon situated on this site would undergo a Habitat Suitability Index Assessment (HSI). This method of assessment is commonly used as a tool to quickly assess whether or not a waterbody is likely to support Great Crested Newts (GCN) or not.

Access to the lagoon during 2013 has not been possible because of works taking place which we were advised would make a site visit unsafe (email from [REDACTED] of Thames Water, 30.04.13). Further requests were made during July 2013 and the following email and information was received:

I met [REDACTED], Technical Officer from NLWA last week and she mentioned that you would like an update regarding your request for a great crested newt (GCN) survey at Deephams.

Further to my previous email dated 12th February 2013, Thames Water's EIA consultants (Cascade Consulting) have provided the following response:

Although we do not consider the lagoon to provide suitable habitat opportunities for GCN, with the area being more characteristic of swamp habitat than open water habitat, we undertook a HSI during an update walkover survey of the site in April 2013 to confirm this. The following provides the detail of the HSI that was completed, which confirms our previous judgement that the lagoon is of poor suitability for GCN. The boundary value for further survey is 0.5, with scores below this not requiring further survey.

Technical Note

230751-05

28th August 2013

Pond Reference		Score
SI1 - Location	The lagoon is within Greater London area and falls within Zone A (Optimal)	1
SI2 - Pond area	The lagoon area is approximately 2,700m ² (60m x 45m)	0.8
SI3 - Pond drying	The lagoon did not hold open water at the time of survey, however desiccation depends on its usage, so the rarely dries category is considered to be most appropriate and represents the worst case scenario in relation to the HSI	1
SI4 - Water quality	Owing to the nature of the lagoon, the water quality is considered to be bad in HSI terms	0.01
SI5 - Shade	There is no shade around the perimeter of the lagoon	1
SI6 - Fowl	The lagoon and surrounding habitat is known to support a number of wintering birds and shows some signs of impact	0.67
SI7 - Fish	Due to the nature of the lagoon, fish are considered absent	1
SI8 - Ponds	There are no ponds within 1km that are not on the distant side of a significant barrier	0.1
SI9 - Terrestrial habitat	The surrounding habitat is considered to be of moderate quality and provides opportunities for shelter and foraging but not extensively due to the urban setting	0.67
SI10 - Macrophytes	There are no macrophytes present in the lagoon	0.3
HSI		0.40

Given the above information, it seems unnecessary to make further attempts to visit the site when the assessment has already been undertaken recently (April 2013) and provides sufficient evidence that it is very unlikely GCN would be present in the settling lagoon at the Deephams site.

B3 Phase 1 and Bat Survey Report (2015)

North London Waste Authority
**North London Heat and Power
Project**
Phase 1 and Bat Survey Report

Issue | 07 August 2015

Ove Arup & Partners Ltd.

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Figure 2 Invasive Species Map

1 Introduction

- 1.1.1 Ove Arup & Partners Ltd. (Arup) undertook a series of ecology surveys and a desk-based assessment in 2012 and 2013 to inform the planning application for the site. An updated ecological walkover was undertaken in 2014. In 2015, two additional areas of land were identified for inclusion in the site boundary and these were subject to an extended Phase 1 habitat survey on 17th February 2015 and 1st April 2015. A further update survey was undertaken on 6th July 2015. This report presents the methodology and results of these assessments and provides recommendations for mitigation where appropriate.
- 1.1.2 The objectives of the 2014 and 2015 surveys were to verify that the results of the previous surveys undertaken in 2012 and 2013 remain accurate and make any updates as required, as well as survey additional areas of land that were incorporated into the site, as follows:
- 2014 - Lee Park Way; and
 - 2015 – The proposed Laydown Area to the east of the River Lee Navigation, land associated with a proposed access route along Ardra Road into the EcoPark site from the north and land south of the Laydown Area.
- 1.1.3 Land used by Edmonton Sea Cadets was also surveyed in 2014, which was not previously accessible. This work was followed by bat surveys on buildings in this area.
- 1.1.4 The key objectives of this work are outlined below:
- Update the Phase Habitat 1 Map;
 - Review the potential of the site to support notable and protected species, including an assessment of the potential of buildings and trees on the site to support roosting bats;
 - Assess the presence or likely absence of roosting bats within buildings at the site;
 - Undertake continued monitoring for the potential presence of otter *Lutra lutra*, water vole *Arvicola amphibius* and badger *Meles meles*; and
 - Review opportunities for ecological enhancement along both sides of Lee Park Way and within the Laydown Area.

2 Methodology

2.1 Ecological Walkover Survey 2014

2.1.1 An ecological walkover survey was undertaken across the site on 8th September 2014 to update the results of previous surveys. The habitats were classified according to the Phase 1 Habitat survey methodology¹. Within the Lee Park Way, higher plant species were recorded and their relative abundance was assessed using the DAFOR scale:

- D Dominant;
- A Abundant;
- F Frequent;
- O Occasional; and
- R Rare (meaning 'rarely encountered in the survey' rather than inherently uncommon as a species).

2.1.2 Invasive plant species were recorded and mapped and the habitats were reassessed for the potential to support notable and protected species. This included an external inspection of the trees, buildings and other structures on site to assess their potential to support roosting bats, in accordance with the criteria derived from the Bat Conservation Trust (BCT) guidelines². The category classifications relate to trees and levels of potential to the buildings and structures:

- Negligible potential/Category 3 - No features that could be used by bats (for roosting, foraging or commuting);
- Low potential/Category 2 – A small number of potential roosting features, isolated habitat that could be used by foraging bats, e.g. a lone tree or patch of scrub but not parkland and an isolated site not connected by prominent linear features (but if suitable foraging habitat is adjacent it may be valuable if it is all that is available);
- Moderate potential/Category 1 - Several potential roosting features, habitat could be used by foraging bats, e.g. trees, shrub, grassland or water and the site is connected with the wider landscape by linear features that could be used by commuting bats, e.g. lines of trees and scrub or linked back gardens;
- High potential/Category 1* – Features of particular significance for roosting bats, habitat of high quality for foraging bats, e.g. broadleaved woodland, tree-lined watercourses and grazed parkland and the site is connected with the wider landscape by strong linear features that would be used by commuting bats, e.g. river/stream valleys or hedgerows, site is close to known roosts; and
- Confirmed roosting - Evidence indicates that roosting bats are present, e.g. bats seen roosting or observed flying from a roost or freely in the

¹ Joint Nature Conservation Committee (JNCC), (1993); 'Handbook for Phase 1 Habitat Survey: A Technique for Environmental Audit, revised reprint 2003.' JNCC. Peterborough.

² Bat Conservation Trust (BCT), (2012); 'Bat Surveys; Good Practice Guidelines. Second Edition'

habitat; droppings, carcasses, feeding remains, etc. found; and/or bats heard 'chattering' inside on a warm day or at dusk and bats recorded/observed using an area for foraging or commuting.

- 2.1.3 The site was surveyed for field signs of otter³, water vole⁴ and badger⁵. In the case of otter and water vole, all areas of accessible bankside vegetation along watercourses were checked. This involved searching the areas adjacent to Salmon's Brook, Pymmes Brook and the section of the Lee Navigation along the Lee Park Way. In the case of badgers, all boundary fences, banks and areas of grassland, scrub and woodland were surveyed.
- 2.1.4 A Habitat Suitability Index (HSI) survey was undertaken on the pond at the site in accordance with Oldham *et al.* (2000)⁶. This methodology considers several ecological parameters such as location, desiccation, water quality, and pond area. These parameters each have a bearing on the suitability of a waterbody to support great crested newt (*Triturus cristatus*). A value is recorded for each parameter and these are combined to determine an index of breeding suitability for great crested newts. The HSI is represented by a value from 0 to 1, the higher the value the more likely it is that the pond may support breeding great crested newts.

2.2 Bat Survey 2014

- 2.2.1 The ecological walkover survey identified buildings within the area of land leased to the Edmonton Sea Cadets to have a low potential to support roosting bats. These buildings were therefore subject to internal inspections and an emergence and return survey in accordance with the BCT guidelines².
- 2.2.2 Buildings B3 and B4 (see Figure 1) were inspected internally on 22nd September 2014 by an Arup ecologist experienced in conducting internal inspections, with the aid of a ladder and high powered torch. This included an inspection of a loft space within building B3. The aims of this work were to identify any potential access locations, roosting opportunities and field signs to indicate the presence of roosting bats, such as feeding remains, droppings and urine staining.
- 2.2.3 These buildings were then subject to an emergence and return survey on 22nd and 23rd September 2014. The surveyors were positioned adjacent to the buildings, observing potential access/egress points for bats that had been identified during the ecological walkover survey. The surveyors recorded any bats emerging from or returning to the buildings, as well as

³ Natural England, (2013); 'Standing Advice Species Sheet: Eurasian Otter.' Available at: http://www.naturalengland.org.uk/Images/Otters_tcm6-21615.pdf.

⁴ Rob Strachan and Tom Moorhouse, (2006); 'Water Vole Conservation Handbook. Second Edition.' The Wildlife Conservation Research Unit.

⁵ Harris, S., Cresswell, P. and Jefferies, D. (1989); 'Surveying Badgers.'

⁶ Oldham, R.S., Keeble, J., Swan, M.J.S. & Jeffcote, M. (2000); 'Evaluating the suitability of habitat for the great crested newt (*Triturus cristatus*).' Herpetological Journal 10 (4), pp 143 – 155.

any other commuting or foraging activity. Details regarding the conditions and timing of these surveys are provided in Table 1.

Table 1: Conditions during the Bat Emergence and Return Surveys

Date	Survey Type	Sunset/ Sunrise Time	Start and End Times	Weather Conditions
22/09/2014	Emergence	18:59	18:44 – 20:30	Dry, minimum temperature 14°C, 0/8 cloud, still
23/09/2014	Return	06:47	05:17 – 06:47	Dry, minimum temperature 9.5°C, 1/8 cloud, still

- 2.2.4 The surveyors were equipped with a Batbox Duet and Anabat SD1 or SD2 bat detector. The Anabat data was analysed using Analook, with reference to current guidelines⁷. This software was used to analyse the recorded bat passes to identify species (where possible), type of bat call and the time of calls.

2.3 Extended Phase 1 Habitat Surveys 2015

- 2.3.1 The additional parcels of land were subject to an extended Phase 1 habitat survey on 17th February and 1st April 2015, with a further survey undertaken on 6th July. Higher plant species were recorded and their relative abundance assessed according to the DAFOR scale. Invasive plant species were recorded and the habitats were assessed for their potential to support protected and notable species, as outlined in Section 2.1. These areas were also surveyed for field signs of otter, water vole and badger.

2.4 Limitations

- 2.4.1 No account can be made for the presence or absence of species on any one survey occasion, since they may travel over wide areas and/or have large home ranges.
- 2.4.2 During the 2014 ecological walkover survey, contractors were seen removing Himalayan balsam *Impatiens glandulifera* from Pymmes Brook and Enfield Ditch. This will have had an impact upon the locations and extent of invasive species recorded at the site, as it is likely that plants will have been under-recorded and may re-establish in the same or different locations than those indicated on Figure 2 of this Appendix. The removal of invasive plant species has had an impact on the bankside vegetation in the areas described above and this may have resulted in field signs of otter and/or water vole being destroyed. However, this is considered to be

⁷ Jon Russ, (2012); 'British Bat Calls. A Guide to Species Identification.' Pelagic Publishing.

unlikely in view of the lack of field signs of these species during previous site surveys.

- 2.4.3 The area of woodland in the north-east corner of the site was inaccessible due to being enclosed by a high metal fence (shown on Figure 1). Consequently, this area could not be assessed for the potential for notable and protected species, particularly the potential of trees to support roosting bats. This is unlikely to pose a significant limitation, as the trees appeared to be too young to provide roosting habitat for bats.
- 2.4.4 Most of the area between Lee Park Way and the main site could not be accessed due to the presence of dense scrub, meaning that invasive species could occur in other areas other than those identified in Figure 2 of this Appendix.
- 2.4.5 The weather conditions during the bat surveys were considered to be suitable for recording bat activity, although the survey was conducted at the end of the suitable survey window (May to September inclusive) when bats are most active. However, this was not considered to pose a significant constraint, on account of the low level of bat potential attributed to the surveyed buildings and low level of bat activity recorded during previous surveys.
- 2.4.6 It is likely that floodlighting on Building B3 (see Figure 1) deters bats from foraging in this area of the site. Since this lighting was turned off for the purpose of the survey, it is likely that this affected the results, potentially indicating higher levels of activity than would normally be recorded when the lights are on.
- 2.4.7 None of the above limitations are considered to be significant enough to have had a detrimental effect on the overall results. The data collected provides a robust assessment of the ecological baseline of the site.

3 Results

3.1 Habitats

- 3.1.1 The habitats were largely unchanged since the initial extended Phase 1 Habitat survey was undertaken on 23rd April 2013.
- 3.1.2 The Sea Cadet training area was dominated by ephemeral, short perennial vegetation, as shown on Figure 1. The plant species were growing on a stony substrate with some bare patches of ground. Species recorded included common mugwort *Artemisia vulgaris*, yarrow *Achillea millefolium*, ribwort plantain *Plantago lanceolata*, common fleabane *Pulicaria dysenterica*, rough hawkbit *Leontodon hispidus*, and red clover *Trifolium pratense*. Three buildings were also recorded (buildings B3, B4 and B5), which are described in Table 2.
- 3.1.3 Invasive plants listed on Schedule 9 of the Wildlife and Countryside Act 1981⁸ (as amended) that were recorded at the site are shown on Figure 2. These comprised Himalayan balsam, Japanese knotweed *Fallopia japonica* and giant hogweed *Heracleum mantegazzianum*, which have all been recorded during previous surveys.

Lee Park Way

- 3.1.4 The section of land along Lee Park Way consisted of a tarmac track with scattered trees and dense scrub on either side, interspersed with patches of tall ruderal vegetation. The species noted in this area are listed in Table 2 below.

Table 2: Indicative plant species list for Lee Park Way

Common Name	Scientific Name	Notes
Ash	<i>Fraxinus excelsior</i>	Occasional
Bramble	<i>Rubus fruticosus</i>	Abundant
Common comfrey	<i>Symphytum officinale</i>	Abundant, dominant in places.
Common hop	<i>Humulus lupulus</i>	Occasional
Dog rose	<i>Rosa canina</i> agg	Occasional
Elder	<i>Sambucus nigra</i>	Occasional
English oak	<i>Quercus robur</i>	Occasional
Field maple	<i>Acer campestre</i>	Occasional
Goat willow	<i>Salix caprea</i>	Occasional
Hawthorn	<i>Crataegus monogyna</i>	Occasional

⁸ Her Majesty's Stationary Office (HMSO), (1981); 'Wildlife and Countryside Act 1981.'

Hedge bindweed	<i>Calystegia sepium</i>	Frequent
Himalayan balsam	<i>Impatiens glandulifera</i>	As shown on Figure 2
Japanese knotweed	<i>Fallopia japonica</i>	As shown on Figure 2
Reedmace	<i>Typha latifolia</i>	Frequent in Enfield Ditch, some places dominant.
Stinging nettle	<i>Urtica dioica</i>	Abundant
Sycamore	<i>Acer pseudoplatanus</i> ,	Occasional
Crack willow	<i>Salix fragilis</i>	Two mature specimens on the east side of the Lee Park Way (Target Note 2 on Figure 1)

Proposed Northern Access Road

- 3.1.5 The first section of the proposed northern access road (from the northwest site access gate to where it joins Ardra Road) was dominated by tall ruderal vegetation with several semi-mature willow (*Salix* sp.) trees growing alongside Salmon's Brook. Species recorded in this area included cow parsley *Anthriscus sylvestris*, perennial sow thistle *Sonchus arvensis*, bristly oxtongue *Picris echioides*, hoary mustard *Hirschfeldia incana*, hedge mustard *Sisymbrium officinale*, common mallow *Malva sylvestris*, groundsel *Senecio vulgaris*, common nettle *Urtica dioica*, common ragwort *Senecio jacobaea* and bramble *Rubus fruticosus* agg.
- 3.1.6 Where the proposed northern access road meets Ardra Road and further north, the vegetation became a mosaic of thick scrub and patches of tall ruderal vegetation with some semi-improved grassland in the central and peripheral sections. This detail is shown on Figure 1. Two buildings were also recorded within this area, and are described in Table 2. Species noted here included elder *Sambucus nigra*, hawthorn *Crataegus monogyna*, hazel *Corylus avellana*, common comfrey *Symphytum officinale*, mugwort *Artemisia vulgaris*, yarrow *Achillea millefolium*, ribwort plantain *Plantago lanceolata*, and several common grass species.
- 3.1.7 Giant hogweed is an invasive plant listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). Several stands of this species were noted at the northernmost end of the proposed northern access road. The locations are shown on Figures 1 and 2, Target Note 2 (TQ 35736 93225, TQ 35723 93236 and TQ 35727 93257). Butterfly bush *Buddleja davidii* was also present in several places and is a species of high impact/concern in London¹⁰.

⁹ Her Majesty's Stationary Office (HMSO), (1981); 'Wildlife and Countryside Act 1981.'

¹⁰ London Biodiversity Partnership, (2007); 'London's BAP Priority Species.' Available at: <http://www.lbp.org.uk/londonpriority.html>. Accessed on 10.09.14.

3.1.8 Table 3 below gives a list of indicative plant species found in the northern access road area.

Table 3: Indicative plant species list in proposed northern access road area

Common Name	Scientific Name	Notes
Bramble	<i>Rubus fruticosus</i> agg	Abundant
Butterfly bush	<i>Buddleia davidii</i>	Frequent
Cherry	<i>Prunus</i> sp.	Occasional
Cleavers	<i>Galium aparine</i>	Frequent
Common bent	<i>Agrostis capillaris</i>	Frequent
Common chickweed	<i>Stellaria media</i>	Occasional
Common comfrey	<i>Symphytum officinale</i>	Frequent
Common mallow	<i>Malva sylvestris</i>	Frequent
Common nettle	<i>Urtica dioica</i>	Abundant
Common ragwort	<i>Senecio jacobaea</i>	Occasional
Common vetch	<i>Vicia sativa</i>	Occasional
Couch grass	<i>Elymus repens</i>	Frequent
Crane's-bill	<i>Geranium</i> sp.	Occasional
Creeping buttercup	<i>Ranunculus repens</i>	Occasional
Creeping cinquefoil	<i>Potentilla reptans</i>	Occasional
Dandelion	<i>Taraxacum officinale</i>	Frequent
Dog rose	<i>Rosa canina</i> agg	Occasional
Dogwood	<i>Cornus sanguinea</i>	Occasional
Elder	<i>Sambucus nigra</i>	Abundant
Fat hen	<i>Chenopodium album</i>	Occasional
Germander speedwell	<i>Veronica chamaedrys</i>	Occasional
Giant hogweed	<i>Heracleum mantegazzianum</i>	Occasional
Greater burdock	<i>Arctium lappa</i>	Occasional
Groundsel	<i>Senecio vulgaris</i>	Occasional
Hairy bitter-cress	<i>Cardamine hirsuta</i>	Occasional
Hawthorn	<i>Crataegus monogyna</i>	Frequent

Hazel	<i>Corylus avellana</i>	Occasional
Hedge bindweed	<i>Calystegia sepium</i>	Frequent
Hedge mustard	<i>Sisymbrium officinale</i>	Frequent
Mugwort	<i>Artemisia vulgaris</i>	Occasional
Perennial sow-thistle	<i>Sonchus arvensis</i>	Occasional
Petty spurge	<i>Euphorbia peplus</i>	Occasional
Ribwort plantain	<i>Plantago lanceolata</i>	Occasional
Snowberry	<i>Symphoricarpos albus</i>	Frequent
White dead-nettle	<i>Lamium album</i>	Frequent
Wild carrot	<i>Daucus carota</i>	Frequent
Yarrow	<i>Achillea millefolium</i>	Frequent
Yorkshire fog	<i>Holcus lanatus</i>	Occasional

Proposed Laydown Area

- 3.1.9 This area consisted of scattered scrub (predominantly hawthorn, blackthorn *Prunus spinosa* and bramble), tall ruderal vegetation and semi-improved grassland. There was a species-poor hedgerow present along the western edge by the River Lee and a strip of plantation woodland on the southern boundary.
- 3.1.10 The semi-improved grassland was located mostly in the central eastern part of the Laydown Area. Plant species associated with this habitat included several common grass species (common bent *Agrostis capillaris*, couch grass *Elymus repens*, Yorkshire fog *Holcus lanatus*) with other plants such as black horehound *Ballota nigra*, hoary mustard *Hirschfeldia incana*, common comfrey *Symphytum officinale* and creeping thistle *Cirsium arvense*.
- 3.1.11 An area of plantation woodland was present along the southern boundary of the Laydown Area and the southeastern corner of the site. Woody species here included elder, dogwood, oak, hawthorn, hazel, goat willow, ash, hornbeam (*Carpinus betulus*), privet (*Ligustrum vulgare*) and holly (*Ilex aquifolium*). The understory was relatively sparse due to a lack of light but species included cow parsley *Anthriscus sylvestris*, dandelion, germander speedwell, sweet violet *Viola odorata* and red dead nettle *Lamium purpureum*.
- 3.1.12 The species noted in the Laydown Area are listed in Table 4 below.

Table 4: Indicative plant species list for proposed Laydown Area

Common Name	Scientific Name	Notes
Ash	<i>Fraxinus excelsior</i>	Frequent
Black horehound	<i>Ballota nigra</i>	Occasional
Blackthorn	<i>Prunus spinosa</i>	Frequent
Bramble	<i>Rubus fruticosus agg</i>	Abundant
Bristly oxtongue	<i>Picris echioides</i>	Frequent
Broad-leaved dock	<i>Rumex obtusifolius</i>	Abundant
Butterfly bush	<i>Buddleia davidii</i>	Occasional
Cleavers	<i>Galium aparine</i>	Frequent
Common bent	<i>Agrostis capillaris</i>	Frequent
Common comfrey	<i>Symphytum officinale</i>	Abundant
Common mallow	<i>Malva sylvestris</i>	Frequent
Common nettle	<i>Urtica dioica</i>	Abundant
Common privet	<i>Ligustrum vulgare</i>	Occasional
Couch grass	<i>Elymus repens</i>	Frequent
Cow parsley	<i>Anthriscus sylvestris</i>	Frequent
Creeping cinquefoil	<i>Potentilla reptans</i>	Occasional
Creeping thistle	<i>Cirsium arvense</i>	Frequent
Dog rose	<i>Rosa canina agg.</i>	Occasional
Elder	<i>Sambucus nigra</i>	Frequent
Germander speedwell	<i>Veronica chamaedrys</i>	Frequent
Goat willow	<i>Salix caprea</i>	Frequent
Greater burdock	<i>Arctium lappa</i>	Occasional
Hawthorn	<i>Crataegus monogyna</i>	Abundant
Hazel	<i>Corylus avellana</i>	Frequent
Hedge mustard	<i>Sisymbrium officinale</i>	Abundant
Hoary mustard	<i>Hirschfeldia incana</i>	Abundant, dominant in some areas.
Holly	<i>Ilex aquifolium</i>	Occasional

Hornbeam	<i>Carpinus betulus</i>	Frequent
Ivy	<i>Hedera helix</i>	Frequent
Mugwort	<i>Artemisia vulgaris</i>	Occasional
Oak	<i>Quercus robur</i>	Occasional
Red dead nettle	<i>Lamium purpureum</i>	Frequent
Ribwort plantain	<i>Plantago lanceolata</i>	Occasional
Scot's Pine	<i>Pinus sylvestris</i>	Rare
Sweet violet	<i>Viola odorata</i>	Occasional
Wild teasel	<i>Dipsacus fullonum</i>	Occasional
Yorkshire fog	<i>Holcus lanatus</i>	Occasional

3.2 Protected and Notable Species

Bats

- 3.2.1 All trees on the site were listed under Category 3, due to the lack of roosting opportunities, such as splits, holes and cavities. Several bird boxes were recorded on the trees.
- 3.2.2 Two Category 1 trees were recorded on the eastern side of Lee Park Way, (Target Note 2 on Figure 1).
- 3.2.3 The buildings at the site are described in Table 5, which also identifies their potential to support roosting bats. Building numbers are shown on Figure 1. Four buildings (B3, B4, B5 and B26) were found to have potential to support roosting bats, in addition to the concrete ramp at Target Note 1 on Figure 1. All other buildings were found to have negligible potential for roosting bats.

Table 5: Potential of Buildings and Structures to Support Roosting Bats

Building Number	Description	Bat Potential
1	Energy from waste facility. Large, flat-roofed metal building and collection of smaller metal structures. Concrete chimney, smooth-sided, no visible crevices. High levels of noise and lighting.	Negligible
2	Fuel storage shelter with metal frame and plastic sheeting.	Negligible
3	Pitched roof, metal-framed building. Further investigation is required to determine whether a roof void is present.	Low
4	Single storey brick building with wooden boards and felt roof. Gaps under felt and in between wooden boards. Gaps also present under bricks and under metal overhang on	Low

	roof. Gaps at top of wall and between cement and wooden frame. No access possible on one side.	
4a	Single storey building.	Negligible
5	Weighbridge building, single storey, concrete cast bricks in wall attached to wooden frame with plastic barge boards. Some boards missing and gaps present beneath boards. Crevice with 10cm void and crevices present between concrete slabs.	Low
6	Metal-framed warehouse.	Negligible
7	Portacabins	Negligible
8	Metal-framed warehouse.	Negligible
9	Metal shed.	Negligible
10	Single storey brick building with concrete flat roof.	Negligible
11	Brick building, flat roof.	Negligible
12	Metal building.	Negligible
13	Metal warehouse.	Negligible
14	Single storey brick building with flat roof.	Negligible
15	Collection of metal and flat roofed brick buildings.	Negligible
16	Metal warehouse.	Negligible
17	Weighbridge building, single storey, metal barge boards overhanging secure tiled walls.	Negligible
18	Metal framed building.	Negligible
19	Pitched roof, concrete walls. No visible gaps.	Negligible
20	Metal framed building.	Negligible
21	Metal building with brick reception/office area.	Negligible
22	Portacabin.	Negligible
23	Single storey brick building with a flat roof covered with roofing felt. The brickwork was in a good condition, but the roofing felt was lifted in places, although not creating any suitable roosting opportunities for bats.	Negligible
24	Single storey brick building with a flat roof, in a good condition.	Negligible
25	Small brick structure in a good condition.	Negligible

26	Concrete bridge over the River Lee leading to Lee Park Way. Slatted concrete strips with gaps on the underside of the bridge. Signs of roosting and/or nesting birds.	Moderate
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Water Vole, Otter and Badger

- 3.2.4 No field signs or sightings of water vole, badger or otter were recorded, which is consistent with the results of previous surveys. The results therefore support the conclusion that these species do not occur at the site.

Reptiles

- 3.2.5 The habitats within the Laydown Area provide suitable hibernacula, basking and foraging opportunities for common reptile species, specifically common lizard *Zootoca vivipara*, slow worm *Anguis fragilis* and grass snake *Natrix natrix*. These species have been recorded approximately 600m to the south of the lay down area, which is bounded by the Lee Navigation to the west and the River Lee to the east¹¹. While these watercourses would provide barriers to the movement of reptiles from the east and west, they are also associated with green corridors that could facilitate movement from the north and south. As such, there is connectivity to other suitable reptile habitat nearby.

Amphibians

- 3.2.6 As shown in Table 6 below, the HSI score for the onsite pond was 0.39, indicating that this waterbody is of poor suitability for great crested newt. However, this pond has a potential to support common amphibians, such as smooth newt *Triturus vulgaris*.

Table 6: HSI Calculation Table

HSI Parameter	Field Score	SI
SI1 Location	A	1
SI2 Pond Area (m ²)	400	0.8
SI3 Pond Drying	Never	0.9
SI4 Water Quality	Poor	0.33
SI5 Shade	20%	1
SI6 Fowl Count	Minor	0.67
SI7 Fish Population	Major	0.01
SI8 Pond Count	1	0.37
SI9 Terrestrial Habitat	Poor	0.33

¹¹ GiGL, (2013); 'An Ecological Data Search for London Waste EcoPark Edmonton'

SI10 Macrophyte Cover	10%	0.4
SI Scores Multiplied	-	7.77494
Tenth Root of SI Scores	-	0.39

Birds

3.2.7 Table 7 provides a list of bird species recorded at the site, which is broadly consistent with the results of the breeding bird survey carried out in 2013. This table does not include bird species recorded within the Laydown Area, which will be summarised upon completion of the recommended reptile survey.

Table 7: Incidental Bird Records

Common Name	Scientific Name
Canada goose	<i>Branta canadensis</i>
Mallard	<i>Anas platyrhynchos</i>
Grey heron	<i>Ardea cinerea</i>
Moorhen	<i>Gallinula chloropus</i>
Coot	<i>Fulica atra</i>
Common gull	<i>Larus canus</i>
Lesser black-backed gull	<i>Larus fuscus</i>
Herring gull	<i>Larus argentatus</i>
Great black-backed gull	<i>Larus marinus</i>
Feral pigeon	<i>Columba livia domesticus</i>
Woodpigeon	<i>Columba palumbus</i>
Collared dove	<i>Streptopelia decaocto</i>
Magpie	<i>Pica pica</i>
Carrion crow	<i>Corvus corone</i>
Blue Tit	<i>Cyanistes caeruleus</i>
Long-tailed tit	<i>Aegithalos caudatus</i>
Wren	<i>Troglodytes troglodytes</i>
Starling	<i>Sturnus vulgaris</i>
Blackbird	<i>Turdus merula</i>

Robin	<i>Erithacus rubecula</i>
Dunnoek	<i>Prunella modularis</i>
House sparrow	<i>Passer domesticus</i>
Pied wagtail	<i>Motacilla alba</i>
Chaffinch	<i>Fringilla coelebs</i>

3.3 Bat Survey 2014

- 3.3.1 The internal inspection of building B3 (see Figure 1) revealed that there is a loft in the northern part of the building. The building has a shallow roof void, with wooden rafters, which were covered in cobwebs. The roof is lined with wooden boards, with plywood attached to the rafters in some areas. Gaps were noted between the wall and the roof, where bats could potentially gain access into the roof void. However, no signs to indicate the presence of roosting bats were recorded. Brown rat *Rattus norvegicus* droppings were noted.
- 3.3.2 The eastern part of building B4 was accessible to bats internally via holes in the wall. A ceiling void was also noted above the western part of the building, which was accessible from the east. No bat droppings or signs of any other mammals were recorded.
- 3.3.3 Low levels of bat activity were recorded during the dusk and dawn surveys, with no bats recorded emerging from or returning to the buildings. High light levels were recorded, which are mainly attributed to two floodlights at the northern end of building B3, which illuminated both buildings, as well as the Lee Navigation. One of the lights facing east was turned off during the dusk survey.
- 3.3.4 During the dusk survey on 22nd September, no bat activity was recorded until 19:47, when a noctule that was heard but not seen. It was likely to have been commuting over the site. Nathusius' pipistrelle was later recorded occasionally between 19:50 and 20:27. Some passes were observed to the east of building B3, over the area of ephemeral/short perennial vegetation. This activity was recorded when the floodlight facing east was turned off. No bat activity was recorded during the dawn survey on 23rd September.

4 Summary

4.1 Ecological Walkover Survey 2014

- 4.1.1 No significant changes to habitats at the site were recorded. Additional areas within and adjacent to the site were assessed and habitats recorded were commensurate with existing habitats onsite. The distribution of invasive species was updated. The survey also updated the results of potential presence of protected and/or notable species, identifying buildings considered to have a potential to support roosting bats that were subject to further survey work (refer to Section 4.2). In addition to buildings B3 and B4, the concrete ramp and weighbridge reception building (B5) were considered to have a low potential to support roosting bats. These features were previously surveyed in 2013. The pond on site was found to be of poor suitability for great crested newt; consequently presence/absence surveys are not required.
- 4.1.2 Two Category 1 trees were recorded on the eastern side of Lee Park Way. Due to their proximity to the road, should bats roost in these trees, there would be a potential for disturbance associated with the construction and operation of the proposed access road, particularly resulting from permanent lighting and headlights. It is therefore recommended that two emergence/return surveys are undertaken to assess the presence or likely absence of roosting bats. Irrespective of the results, these trees should be retained and protected as part of the project.

4.2 Bat Survey 2014

- 4.2.1 No evidence of roosting bats was recorded during the bat survey. Noctule and Nathusius' pipistrelle bats were not recorded until 48 and 51 minutes after sunset respectively, indicating that bats were not roosting on the site or nearby. This result is in line with the results of bat surveys undertaken in 2013.

4.3 Extended Phase 1 Habitat Surveys 2015

Proposed Northern Access Road

- 4.3.1 This area consists of scrub and small patches of semi-improved grassland. The current landscaping proposals do not include specific plans for this area. Given that this area is to be developed as an access road, it is recommended that some scrub is retained where possible as this habitat provides a valuable foraging and nesting resource for many birds and other wildlife.

Proposed Laydown Area

- 4.3.2 This area consists of scattered scrub, tall ruderal and semi-improved tussocky grassland vegetation, with a small area of plantation woodland along the southern edge and southeaster corner. There is also a species-poor hedgerow along the western edge by the River Lee.

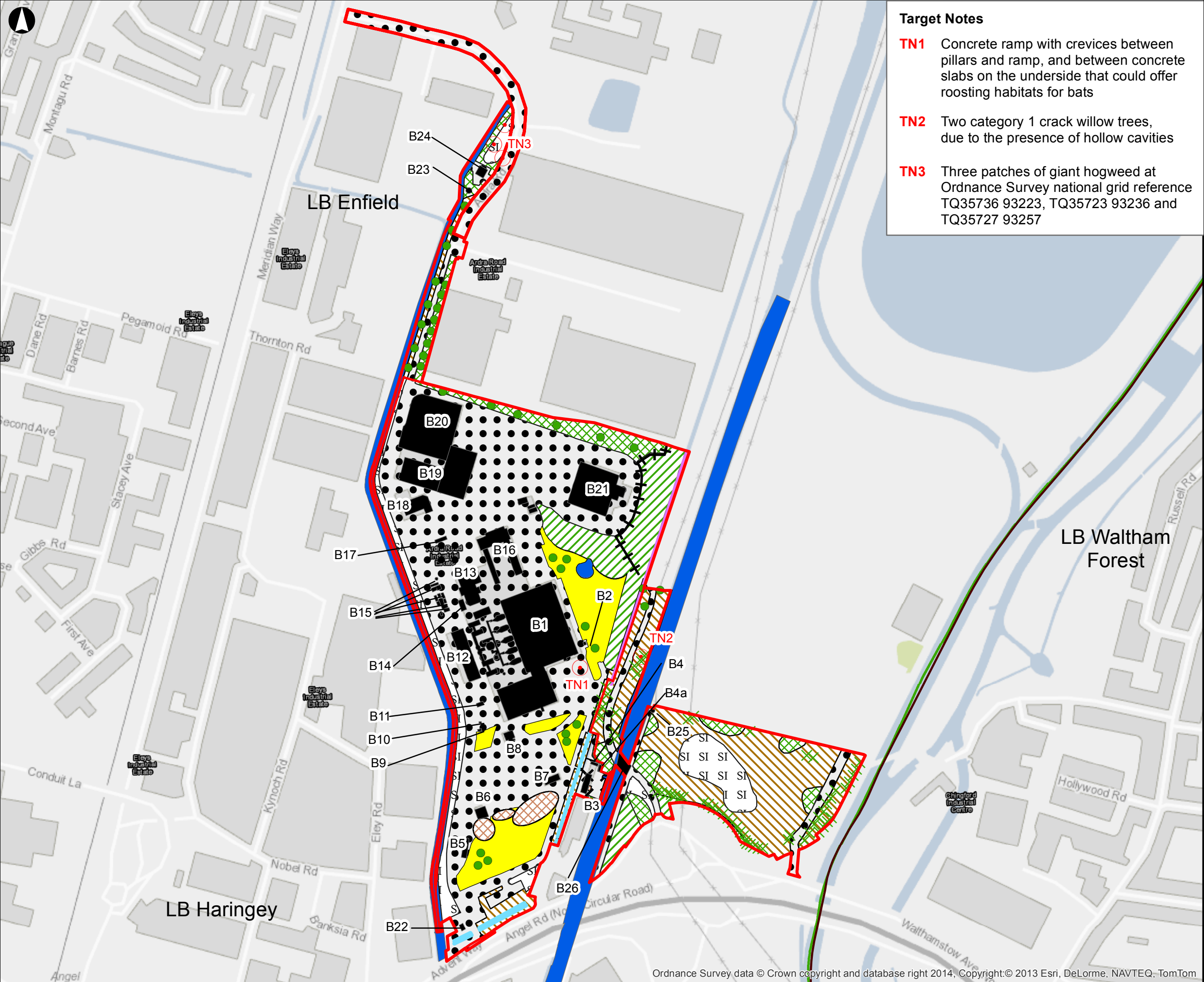
- 4.3.3 Considering that the proposed Laydown Area has a potential to support common reptile species, it is recommended that a reptile survey is carried out to assess the presence or likely absence of reptiles within this area. This work should be undertaken when reptiles are active, between March and October and ideally during April, May and/or September, in accordance with current guidelines¹².

Lee Park Way

- 4.3.4 The concrete bridge over the River Lee leading to Lee Park Way was found to have a moderate potential to support roosting bats. Should bats roost within the bridge, there would be a potential for disturbance associated with construction and operation of the proposed access road. The movement of vehicles over the bridge would create noise and vibration that could disturb roosting bats. Furthermore, permanent lighting along Lee Park Way and headlights could cause further disturbance.
- 4.3.5 Two emergence/return surveys are recommended on the bridge to assess the presence or likely absence of roosting bats. These surveys should consider any foraging and commuting activity along the River Lee Navigation, considering the potential for disturbance associated with lighting along Lee Park Way.

¹² Froglife, (1999); 'Froglife Advice Sheet 10; Reptile Survey. An Introduction to Planning, Conducting and Interpreting Surveys for Snake and Lizard Conservation.'

Figures



Target Notes

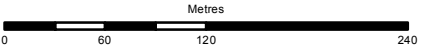
- TN1** Concrete ramp with crevices between pillars and ramp, and between concrete slabs on the underside that could offer roosting habitats for bats
- TN2** Two category 1 crack willow trees, due to the presence of hollow cavities
- TN3** Three patches of giant hogweed at Ordnance Survey national grid reference TQ35736 93223, TQ35723 93236 and TQ35727 93257

Legend

- Site Boundary
- London Borough Boundary
- Building
- Scattered broadleaved trees
- Scattered scrub
- Target note
- Dry ditch
- Fence
- Wet ditch
- Introduced shrub
- Amenity grassland
- Poor semi-improved grassland
- Tall ruderal
- Broadleaved plantation woodland
- Dense scrub
- Ephemeral/short perennial
- Standing open water
- Bare ground

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Client
North London Waste Authority

Job Title
North London Heat and Power Project

Drawing Title
Phase 1 Habitat Map

Scale at A3
1:4,500

Job No 235271-00	Drawing Status For Issue	Revision P1
Drawing No 001		

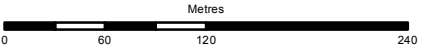


Legend

- Site Boundary
- London Borough Boundary
- Japanese knotweed
- Himalayan balsam
- Giant hogweed

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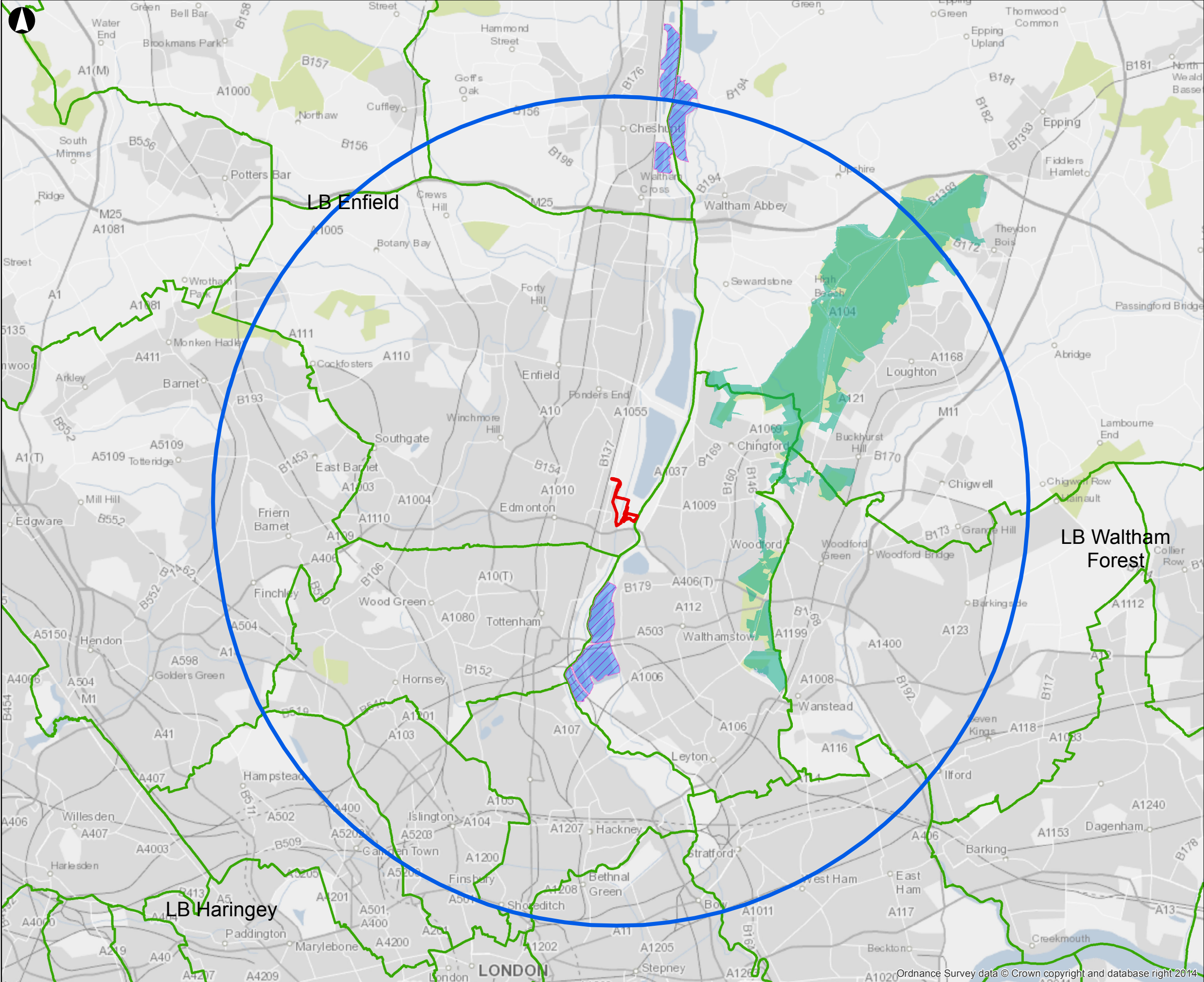
Job Title
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Drawing Title
Invasive Species Map

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1:4,500

Job No 235271-00	Drawing Status For Issue	Revision P1
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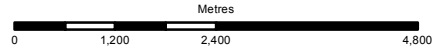
Appendix C: European sites



- Legend**
- Application Boundary
 - 10km Radius
 - London Borough Boundary
 - Epping Forest Special Area of Conservation
 - Lea Valley Ramsar Site
 - Lea Valley Special Protection Area

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Drawing Title
European Sites

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1:90,000

Job No 235271-00	Drawing Status Draft
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Drawing No 001	Revision P2
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Appendix D: Acidity critical load graphs

Plate 1: Existing EfW facility stack emissions Chingford SSSI

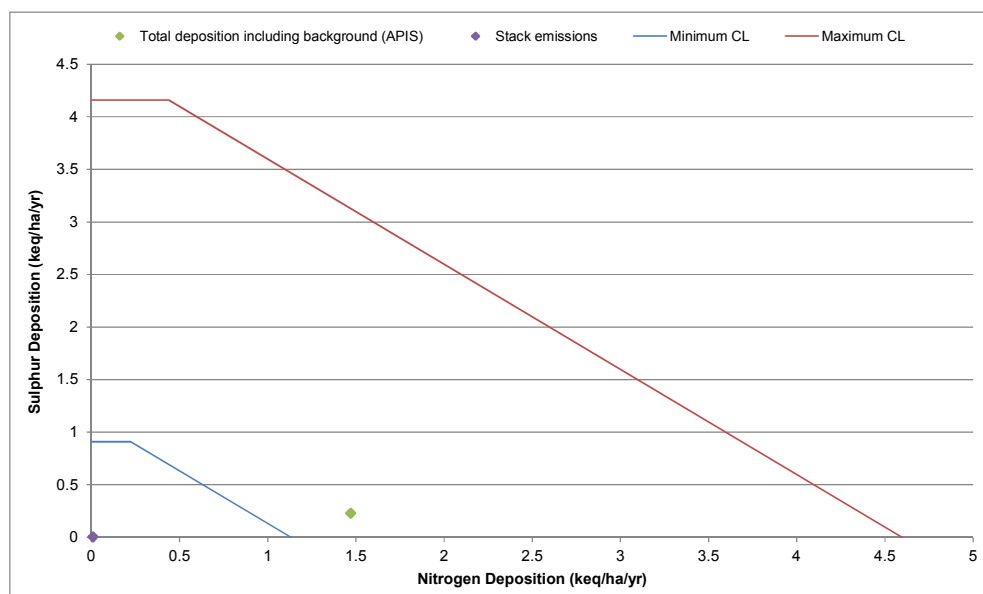


Plate 2: Existing EfW facility stack emissions Epping Forest SAC

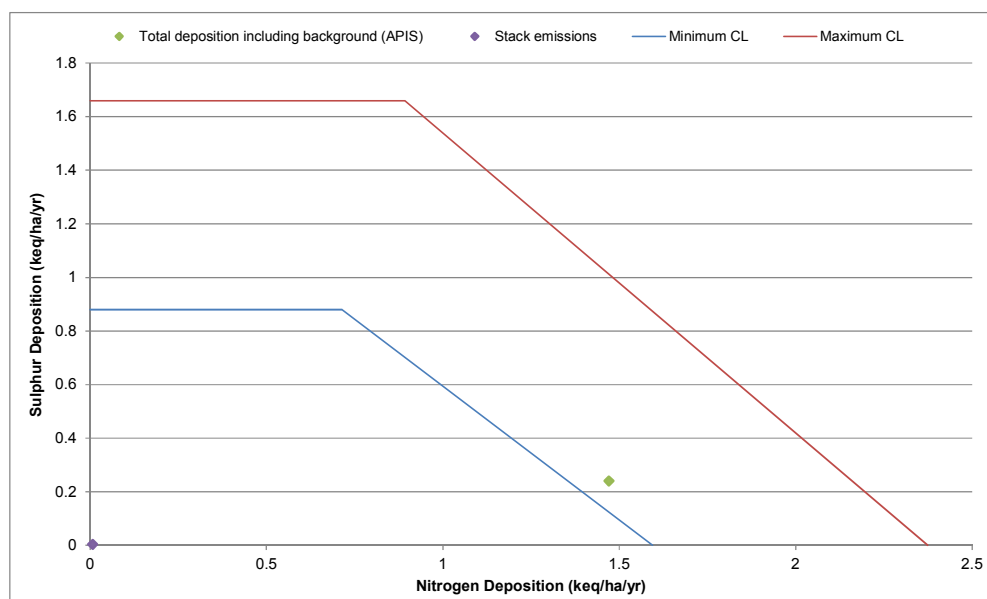


Plate 3: Existing EfW facility stack emissions Lee Valley SPA/Ramsar

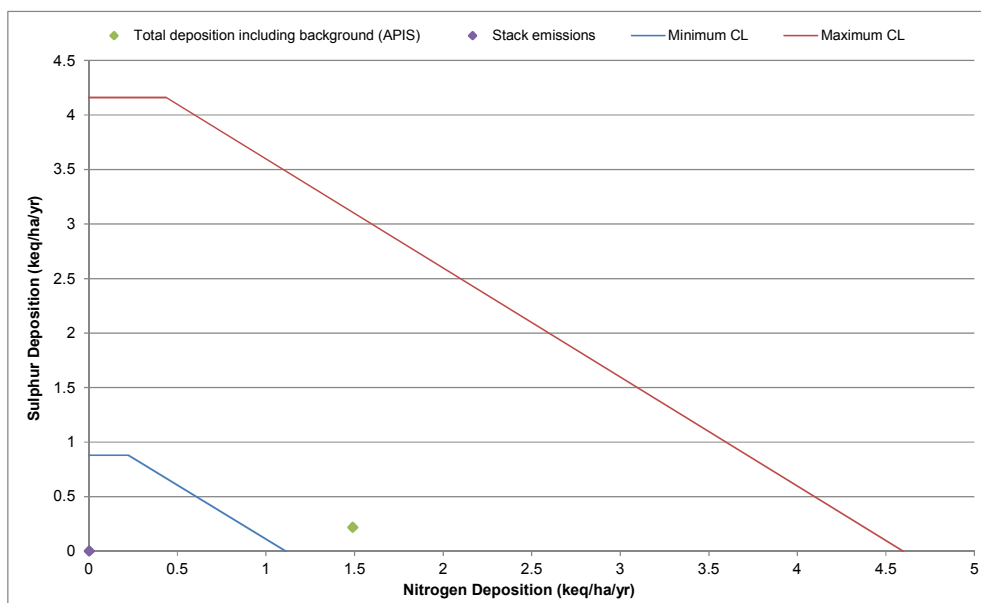


Plate 4: Wet FGT stack emissions Chingford SSSI during transition (Stage 2)

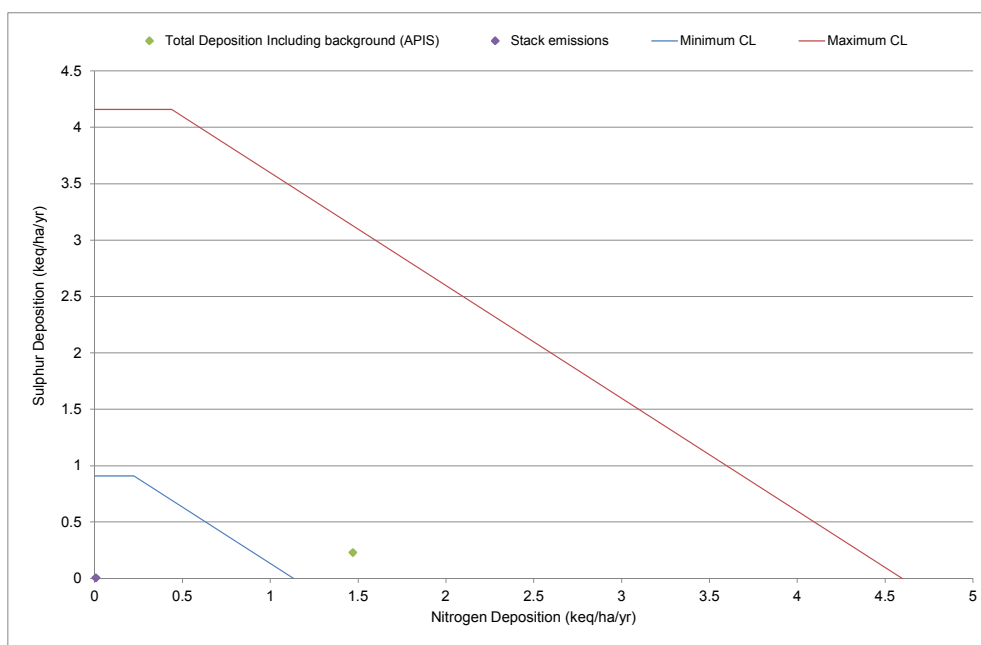


Plate 5: Wet FGT emissions Epping Forest SAC during transition (Stage 2)

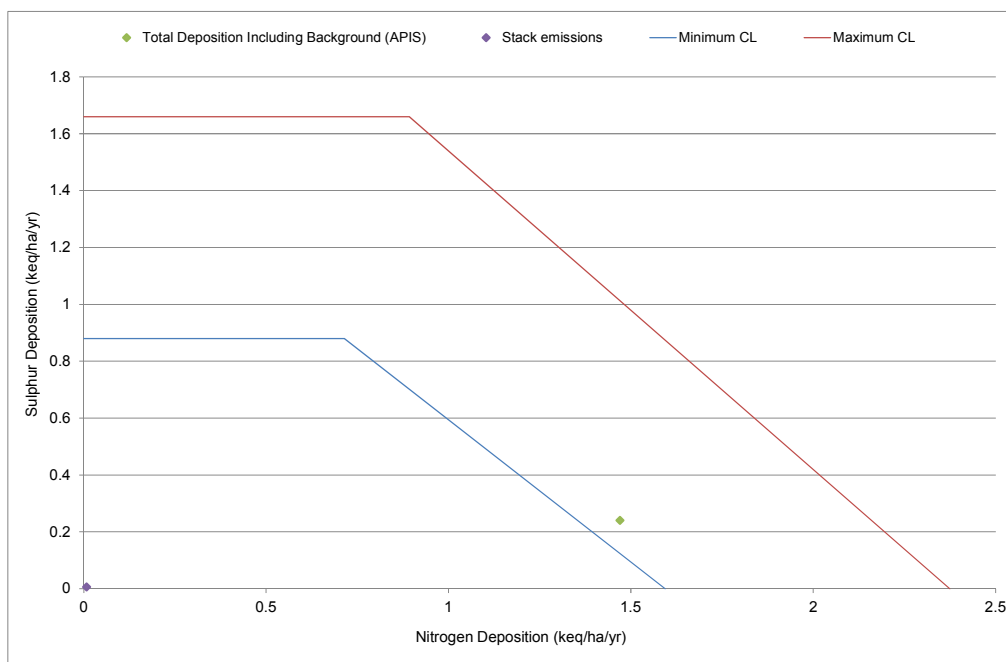


Plate 6: Wet FGT emissions Lee Valley SPA/Ramsar during transition (Stage 2)

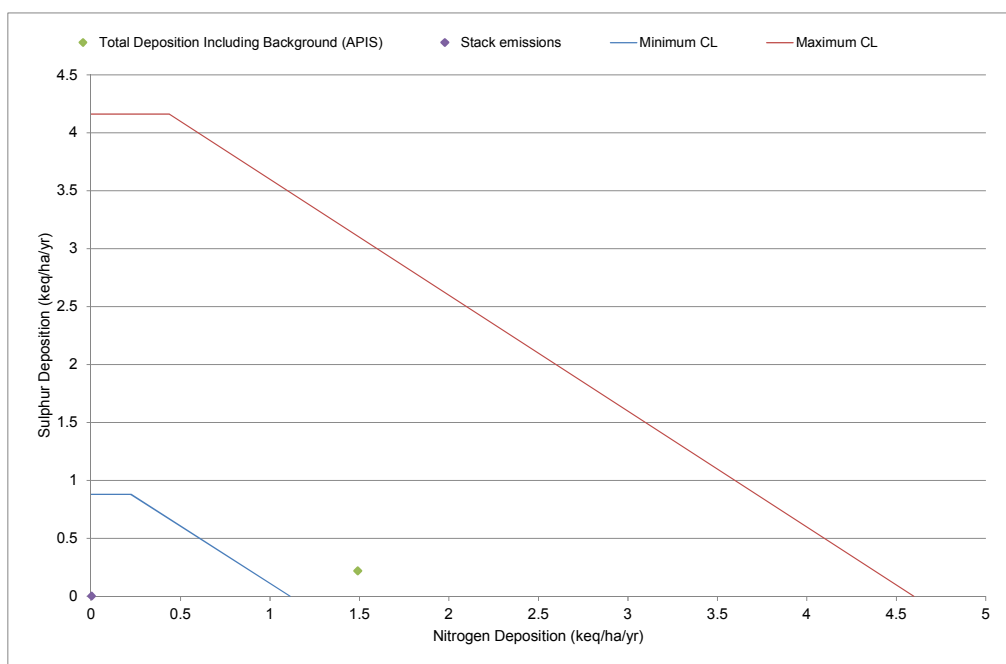


Plate 7: Wet FGT stack emissions Chingford SSSI during operation (Stage 3/4)

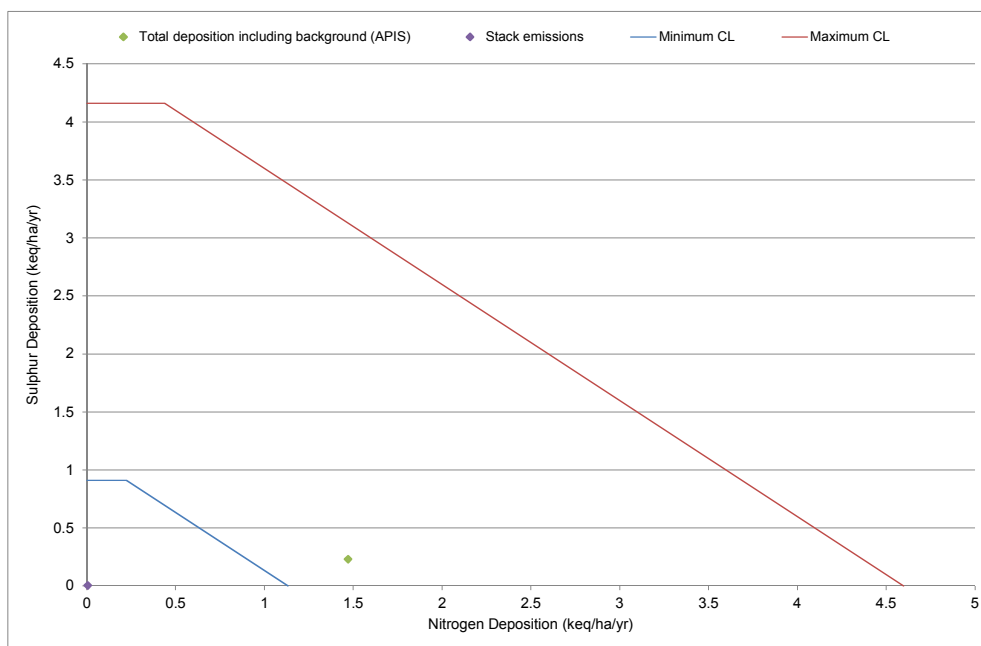


Plate 8: Wet FGT emissions Epping Forest SAC during operation (Stage 3/4)

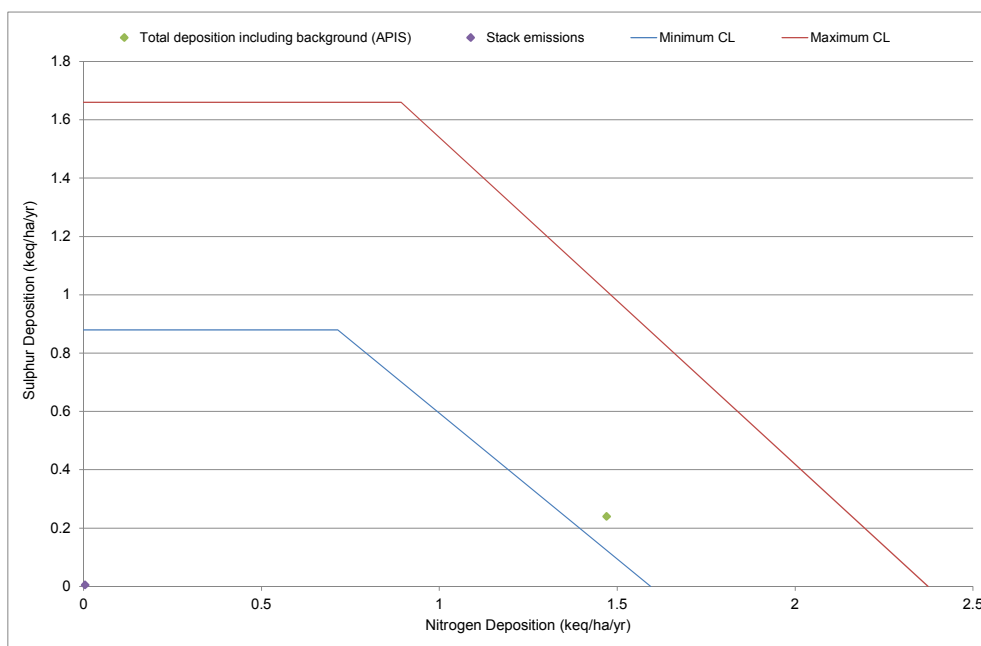
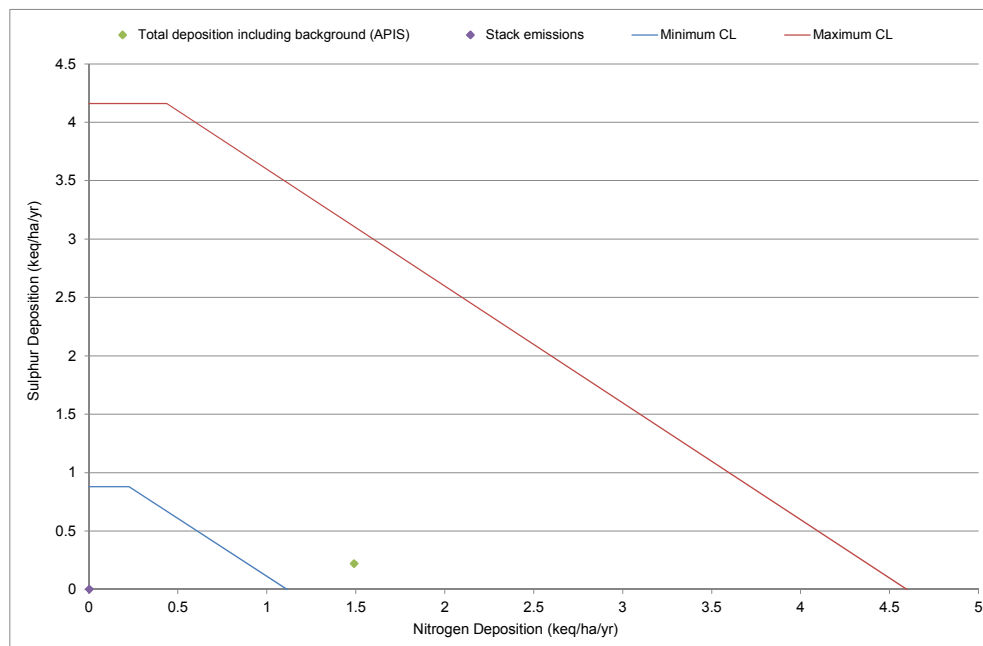


Plate 9: Wet FGT emissions Lee Valley SPA/Ramsar during operation (Stage 3/4)



Appendix E: Figure showing habitats between the Application Site and Chingford Reservoirs Site of Special Scientific Interest



Legend

Application Site Boundary

Chingford

Reservoirs Site of Special Scientific Interest

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Drawing Title
**Habitats between the Application Site
and Chingford Reservoirs Site
of Special Scientific Interest**

Scale at A3
1:5,000

Job No 235271-10	Drawing Status ISSUE
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Drawing No 001	Revision 00
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Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Appendix F: Screening matrices

F1 Potential impacts

F1.1.1 Potential impacts upon the European site(s) are provided in the table below. It has not been necessary to group impacts in the screening matrices due to the simplicity of the information presented in the submission information. Therefore the impacts are presented the same in the submission information and screening matrices.

Impacts considered within the screening matrices

Designation	Impacts in submission information	Presented in screening matrices as
Lee Valley SPA/Ramsar	Disturbance Air pollution and deposition Discharges and abstractions	Disturbance Air pollution and deposition Discharges and abstractions
Epping Forest SAC	Air pollution and deposition	Air pollution and deposition

F2 Stage 1 screening matrices

- F2.1.1 The European sites included within the Applicant's assessment are:
- a. Lee Valley SPA and Ramsar site; and
 - b. Epping Forest SAC.
- F2.1.2 Evidence for likely significant effects on their qualifying features is detailed within the footnotes to the screening matrices below.
- F2.1.3 Matrix key:
- ✓ = Likely significant effect cannot be excluded
 - ✗ = Likely significant effect can be excluded
 - C = construction
 - O = operation
 - D = decommissioning
- F2.1.4 Where effects are not applicable to a particular feature they are greyed out.

Stage 1 Matrix A: Lee Valley SPA

Name of European site: Lee Valley SPA												
Distance to NSIP 1.5km												
European site features	Likely effects of NSIP											
	Disturbance			Air pollution and deposition			Discharges and abstractions			In-combination effects		
	C	O	D	C	O	D	C	O	D	C	O	D
Bittern	x _a	x _a	x _a	x _b	x _b	x _b	x _c	x _c	x _c	x _d	x _d	x _d
Shoveler	x _a	x _a	x _a	x _b	x _b	x _b	x _c	x _c	x _c	x _d	x _d	x _d
Gadwall	x _a	x _a	x _a	x _b	x _b	x _b	x _c	x _c	x _c	x _d	x _d	x _d

F2.1.5 Evidence set out in this report supporting conclusions:

- a. Page 30, Section 4.1, paragraph 4.1.4. Page 36, Section 5, paragraphs 5.1.1 and 5.1.2. Page 38, Section 6.2, paragraphs 6.2.1 and 6.2.2, 6.2.3, 6.2.4, 6.2.5 and 6.2.6. Appendix C. Lee Valley SPA is considered to be too far from the Application Site to be vulnerable to impacts associated with disturbance. Chingford Reservoirs SSSI is also located too far from the Application Site for there to be a potential for disturbance to qualifying features of Lee Valley SPA due to noise and lighting, considering implementation of the CoCP (AD05.12).
- b. Page 33, Section 4.2, Table 3 and Table 4. Page 34, Table 5. Page 34, Table 6. Page 35, Table 7 and Table 8. Page 36, Section 5, paragraph 5.1.1. Page 39, Section 6.3, paragraphs 6.3.1, 6.3.2, 6.3.3, 6.3.4, 6.3.5 and 6.3.6. Appendix D. Nitrogen deposition rates would decrease during all stages and PM₁₀ concentrations would be no worse than existing. Sulphur deposition rates are predicted to increase, but acidity levels would be no worse than existing within Chingford Reservoirs SSSI and remain below minimum critical loads within Lee Valley SPA. Any indirect effects associated with the deposition of dust would be mitigated by implementation of the CoCP (AD05.12).
- c. Page 36, Section 5, paragraphs 5.1.1 and 5.1.2. Page 40, Section 6.4, paragraphs 6.4.1 and 6.4.2. Implementation of the CoCP (AD05.12) would alleviate potential effects on surface water quality and groundwater during construction and no indirect effects are predicted as a result of changes to abstraction rates during the operation of the Project.
- d. Page 42, Section 7, paragraphs 7.1.1, 7.1.2, 7.1.5 and 7.1.6. No in-combination effects have been identified.

Stage 1 Matrix B: Lee Valley Ramsar site

Name of European site: Lee Valley Ramsar site												
Distance to NSIP 1.5km												
European site features	Likely effects of NSIP											
	Disturbance			Air pollution and deposition			Discharges and abstractions			In-combination effects		
	C	O	D	C	O	D	C	O	D	C	O	D
Shoveler	x _a	x _a	x _a	x _b	x _b	x _b	x _c	x _c	x _c	x _d	x _d	x _d
Gadwall	x _a	x _a	x _a	x _b	x _b	x _b	x _c	x _c	x _c	x _d	x _d	x _d
Whorled water-milfoil				x _b	x _b	x _b	x _c	x _c	x _c	x _d	x _d	x _d
<i>Micronecta minutissima</i> (a water-boatman)				x _b	x _b	x _b	x _c	x _c	x _c	x _d	x _d	x _d

F2.1.6 Evidence set out in this report supporting conclusions:

- a. Page 30, Section 4.1, paragraph 4.1.4. Page 36, Section 5, paragraphs 5.1.1 and 5.1.2. Page 38, Section 6.2, paragraphs 6.2.1, 6.2.2, 6.2.3, 6.2.4, 6.2.5 and 6.2.6. Appendix C. Lee Valley Ramsar site is considered to be too far from the Application Site to be vulnerable to impacts associated with disturbance. Chingford Reservoirs SSSI is also located too far from the Application Site for there to be a potential for disturbance to qualifying features of Lee Valley Ramsar site due to noise and lighting, considering implementation of the CoCP (AD05.12).
- b. Page 33, Section 4.2, Table 3 and Table 4. Page 34, Table 5. Page 34, Table 6. Page 35, Table 7 and Table 8. Page 23, Section 5, paragraph 5.1.1. Page 39, Section 6.3, paragraphs 6.3.1, 6.3.2, 6.3.3, 6.3.4, 6.3.5 and 6.3.6. Appendix D. Nitrogen deposition rates would decrease during all stages and PM₁₀ concentrations would be no worse than existing. Sulphur deposition rates are predicted to increase, but acidity levels would be no worse than existing within Chingford Reservoirs SSSI and remain below minimum critical loads within Lee Valley Ramsar site. Any indirect effects associated with the deposition of dust within Chingford Reservoirs SSSI would be mitigated by implementation of the CoCP (AD05.12).

- c. Page 36, Section 5, paragraphs 5.1.1 and 5.1.2. Page 40, Section 6.4, paragraphs 6.4.1 and 6.4.2. Implementation of the CoCP (AD05.12) would alleviate potential effects on surface water quality and groundwater during construction and no indirect effects are predicted as a result of changes to abstraction rates during the operation of the Project.
- d. Page 42, Section 7, paragraphs 7.1.1, 7.1.2, 7.1.5 and 7.1.6. No in-combination effects have been identified.

Stage 1 Matrix C: Epping Forest SAC

Name of European site: Epping Forest SAC						
Distance to NSIP 2.8km						
European site features	Likely effects of NSIP					
	Air pollution and deposition			In-combination effects		
	C	O	D	C	O	D
Northern Atlantic wet heaths with cross-leaved heath	x a	x a	x a	x b	x b	x b
European dry heaths	x a	x a	x a	x b	x b	x b
Atlantic acidophilous beech forests with holly (<i>Ilex aquifolium</i>) and sometimes also yew (<i>Taxus baccata</i>) in the shrublayer (<i>Quercion robori-petraeae</i> or <i>ilici-Fagenion</i>)	x a	x a	x a	x b	x b	x b
Stag beetle						
Great crested newt						

F2.1.7 Evidence set out in this report supporting conclusions:

- a. Page 33, Section 4.2, Table 3 and Table 4. Page 34, Table 5. Page 34, Table 6. Page 35, Table 7 and Table 8. Page 23, Section 5, paragraph 5.1.1. Page 39, Section 6.3, paragraphs 6.3.1, 6.3.2, 6.3.3, 6.3.4, 6.3.5 and 6.3.6. Appendix D. Nitrogen deposition rates would decrease during all stages and PM₁₀ concentrations would be no worse than existing. Sulphur deposition rates are predicted to increase, but acidity levels would remain below the critical loads.
- b. Page 42, Section 7, paragraphs 7.1.1, 7.1.2, 7.1.5 and 7.1.6. No in-combination effects have been identified.



Series 05 Technical Documents

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