
NORTH LONDON WASTE AUTHORITY

NORTH LONDON HEAT AND POWER PROJECT

REPORT ON NATURAL FEATURES

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

AD05.16

Arup

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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

Refer to Project Glossary (AD01.05)

Executive summary

- i.i.i A Report on Natural Features 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) for the North London Heat and Power Project (the Project). This is the proposal for a new Energy Recovery Facility (ERF) in the London Borough of Enfield (LB Enfield) to replace the existing Energy from Waste (EfW) facility at the Edmonton EcoPark.
- i.i.ii The report has been prepared pursuant to Regulation 5(2)(l) of the Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 which requires an assessment of any effects on natural features likely to be caused by the Project, and a plan identifying nearby features.
- i.i.iii Informed by the Environmental Impact Assessment (EIA) process, the following types of features have been identified in the vicinity of the Application Site:
 - a. statutory sites and features of nature conservation;
 - b. non-statutory sites and features of nature conservation;
 - c. sites of landscape importance;
 - d. habitats of protected species; and
 - e. water bodies in a river basin management plan.
- i.i.iv The majority of the identified features would not be affected by the construction, operation or decommissioning of the Project. The exception to this is linnet. During construction of the Project, the clearance of scrub, grassland and tall ruderal vegetation within the Temporary Laydown Area during Stages 1 to 3 of the Project would be likely to deter linnet from nesting within the Application Site, leading to a temporary significant adverse effect. However, implementation of the landscape strategy and the cessation of activity within the Temporary Laydown Area following completion of construction works would be expected to provide suitable breeding habitat for this species. As such, the effect on this species during operation of the Project is not significant.

1 Introduction

- 1.1.1 This Report on Natural Features 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) pursuant to Section 37 of 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 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 Purpose of this report

- 1.2.1 This report has been prepared pursuant to Regulation 5(2)(l) of the Infrastructure Planning (Applications: Prescribed Forms and Procedures) Regulations 2009. This requires that an application for an order granting development consent must be accompanied by:

“...a plan with accompanying information identifying—

(i) any statutory or non-statutory sites or features of nature conservation such as sites of geological or landscape importance;

(ii) habitats of protected species, important habitats or other diversity features; and

(iii) water bodies in a river basin management plan,

together with an assessment of any effects on such sites, features, habitats or bodies likely to be caused by the proposed development.”

- 1.2.2 This 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 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).

1.3 Document structure

- 1.3.1 The Report on Natural Features is structured as follows:
- a. Section 1 (this section) sets out the legal basis of the Report on Natural Features as well as outlining its content. It also provides a description of the Project;

- b. Section f presents the scope of the natural features considered;
- c. Section 3 describes the methodology used in this assessment;
- d. Section 4 contains a description of the effects on natural features;
- e. Section 5 presents the conclusions of the assessment; and
- f. Appendix A contains a plan showing the natural features in the vicinity of Edmonton EcoPark.

1.4 The Applicant

- 1.4.1 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).
- 1.4.2 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.
- 1.4.3 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.

1.5 The Application Site

- 1.5.1 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.

1.5.2 The Application Site includes all land required to deliver the Project. This includes land that would be required temporarily to facilitate the development.

1.5.3 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

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

1.5.5 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.

1.5.6 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

- 1.5.7 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.
- 1.5.8 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

- 1.5.9 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.

1.6 Surrounding area

- 1.6.1 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.
- 1.6.2 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.
- 1.6.3 Eley Industrial Estate located to the west of the Application Site comprises a mixture of retail, industrial and warehouse units.
- 1.6.4 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.
- 1.6.5 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.

1.7 The Project

- 1.7.1 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.
- 1.7.2 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 northern area of the Edmonton EcoPark accommodating the proposed ERF;
 - 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');
 - a central space, where the existing EfW facility is currently located, which would be available for future waste-related development;
 - a new landscape area along the edge with the River Lee Navigation; and
 - new northern and eastern access points to the Edmonton EcoPark.
- 1.7.3 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.
- 1.7.4 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:
- works zones for each work or group of works (to establish the area in which the development can be located); and
 - maximum building envelopes (to establish the maximum building length, width, height and footprint).
- 1.7.5 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).

- 1.7.6 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)

- 1.7.7 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:
 - (a) a tipping hall;
 - (b) waste bunker and waste handling equipment;
 - (c) 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;
 - (d) facilities for the recovery of incinerator bottom ash and air pollution control residue;
 - (e) steam turbine(s) for electricity generation including equipment for heat off-take; and
 - (f) 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)

- 1.7.8 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.
- 1.7.9 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).

1.8 Stages of development

- 1.8.1 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.
- 1.8.2 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.
- 1.8.3 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

1.8.4 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.

- 1.8.5 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.
- 1.8.6 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.
- 1.8.7 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

- 1.8.8 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.
- 1.8.9 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.
- 1.8.10 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.
- 1.8.11 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.
- 1.8.12 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

- 1.8.13 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.
- 1.8.14 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.
- 1.8.15 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.
- 1.8.16 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.
- 1.8.17 Traffic associated with the northern Application Site clearance would use the new Deephams Farm Road access.

Stage 1d

- 1.8.18 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.

- 1.8.19 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.
- 1.8.20 The existing EfW facility would continue to operate at current capacity and the proposed RRF and EcoPark House would be operational.
- 1.8.21 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

- 1.8.22 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.
- 1.8.23 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.

- 1.8.24 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.
- 1.8.25 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.
- 1.8.26 The proposed RRF and EcoPark House would be operational.
- 1.8.27 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

- 1.8.28 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.
- 1.8.29 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.
- 1.8.30 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.

- 1.8.31 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

- 1.8.32 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.
- 1.8.33 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.
- 1.8.34 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 Scope of natural features considered

- 2.1.1 Regulation 5(2)(l) of the Infrastructure Planning (Applications: Prescribed Forms and Procedures) Regulations 2009 describes the features required to be considered. Data regarding the features has been gathered from the following sources:
- a suite of ecological surveys conducted between 2012 and 2015;
 - a data search for designated sites and notable and protected species commissioned from Greenspace Information for Greater London¹, which was undertaken in 2013; the search area extended 2km from the Application Site, although this was extended to include a review of European sites within 10km of the site using the MAGIC website²;
 - Enfield Borough Local Plan including Enfield Local Development Framework Proposals Map (now referred to as the Local Plan Policies Map) adopted 10 November 2010; and
 - Environment Agency mapping of River Basin Management Plan information³.
- 2.1.2 An assessment area of 10km from the Application Site for European designated ecological sites has been adopted for this report. This is based on the outcome of consultation with Natural England. A 2km assessment area of other designated ecological sites is considered appropriate considering the urban context of the Application Site.
- 2.1.3 For landscape features, the Zone of Theoretical Visibility has been used to identify features that may be affected. This is because effects on landscape are linked to the visibility of the Project. The Zone of Theoretical Visibility is described in Volume 3 of the Environmental Statement (ES) (AD06.02).
- 2.1.4 An assessment area of within approximately 2km from the Application Site has been adopted with respect to water bodies. However this is dependent on the catchment areas of the individual water bodies and their hydrological connectivity in relation to the Application Site. River water bodies upstream of the Application Site have not been considered as no upstream effects are expected. All water bodies that are within the Application Site or in close proximity downstream of the Application Site have been considered.
- 2.1.5 With respect to the Project, the following features can be found in this assessment area:
- Statutory sites and features of nature conservation:
 - Lee Valley Special Protection Area (SPA) and Ramsar;
 - Epping Forest Special Area of Conservation (SAC) and Site of Special Scientific Interest (SSSI);

¹ Greenspace Information for Greater London (2013) An Ecological Data Search for London Waste Eco Park Edmonton

² Natural England 'Magic' <http://magic.defra.gov.uk/>

³ Environment Agency Interactive Maps <http://maps.environment-agency.gov.uk/wiyby> (accessed April 2015)

- Walthamstow Reservoirs SSSI;
 - Chingford Reservoirs SSSI;
 - Turnford and Cheshunt Pits SSSI; and
 - Ainslie Wood Local Nature Reserve.
- b. Non-statutory sites and features of nature conservation:
- Lee Valley Site of Metropolitan Importance for Nature Conservation (SMINC);
 - Tottenham Marshes Site of Borough Grade I Importance for Nature Conservation (SBINC);
 - Banbury Reservoir SBINC (Grade I);
 - Tottenham Marshes East SBINC (Grade I);
 - Tottenham Hale to Northumberland Park Railsides SBINC (Grade II);
 - Ching Brook in Central Walthamstow SBINC (Grade II);
 - Pymmes Park Site of Local Importance for Nature Conservation (SLINC);
 - Marsh Lane Allotments SLINC; and
 - Chingford Mount Cemetery SLINC.
- c. Sites of landscape importance:
- areas of special character (Lee Valley Reservoirs); and
 - Green Belt.
- d. Habitats of protected species:
- bats - the Application Site provides a foraging resource and commuting corridor along the River Lee Navigation for a low number of bats, specifically common *pipistrelle* *Pipistrellus pipistrellus*, *soprano pipistrelle* *Pipistrellus pygmaeus*, *Nathusius' pipistrelle* *Pipistrellus nathusii* and *noctule* *Nyctalus noctula*. All bat species are fully protected under the Wildlife and Countryside Act 1981⁴ (as amended) (WCA) and The Conservation of Habitats and Species Regulations 2010⁵ (as amended) (Habitats and Species Regulations);
 - common mammals - signs of rabbit *Oryctolagus cuniculus* and red fox *Vulpes vulpes* have been recorded at the Application Site. All wild mammals receive protection under the Wild Mammals Protection Act 1996⁶.
 - breeding birds - the buildings and vegetation have a potential to support breeding birds. Notable species that have been

⁴ Her Majesty's Stationary Office (HMSO) (1981) Wildlife and Countryside Act 1981.

⁵ HMSO (2010) The Conservation of Habitats and Species Regulations 2010.

⁶ HMSO (1996) Wild Mammals (Protection) Act 1996.

identified and confirmed as breeding at the Application Site are starling *Sturnus vulgaris* and house sparrow *Passer domesticus*. All birds, their active nests and eggs are protected under the WCA; and

- reptiles - tall ruderal vegetation, scrub and grassland within the Temporary Laydown Area were considered to have a potential to support common lizard *Zootoca vivipara*, slow worm *Anguis fragilis* and grass snake *Natrix natrix*; however surveys were undertaken and no reptiles were found.

e. Water bodies in a river basin management plan:

- River Lee;
- Salmon's Brook (includes Salmon's Brook, River Lee Navigation);
- Pymmes Brook (Salmon's Brook to Lee);
- William Girling Reservoir; and
- Banbury Reservoir.

2.1.6 Within the assessment area, the following categories of feature are not present:

- a. sites of geological importance;
- b. important habitats;
- c. other diversity features; and
- d. groundwater bodies.

2.1.7 A plan showing the locations of the natural features assessed is included at Appendix A.

3 Methodology for the assessment of effects

- 3.1.1 As stated, this report has been prepared in response to Regulation 5(2)(l) of the Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009. In addition, due consideration has been given to the guidance set out in the Department for Communities and Local Government's Planning Act 2008: Nationally Significant Infrastructure Projects: Application Form Guidance. This guidance makes the following points of significance:
- a. *"The Applications Regulations require provision of information on 'any effects' - which is not limited to effects which are classed as 'significant' under the terms of European Directives."*
 - b. *"The effects that are likely to be caused by the proposed development should be assessed at a level of detail that is appropriate for the circumstances."*
- 3.1.2 An Environmental Impact Assessment (EIA) has been undertaken for the Project. The EIA seeks to identify the likely significant effects that would arise from the construction, operation and decommissioning of the Project. EIA is a phased process, three stages of which are particularly relevant to the Report on Natural Features:
- a. scoping - all potential effects that would arise from the Project were considered with a view to focussing the EIA on those which are likely to be significant;
 - b. initial assessment and preparation of the Preliminary Environmental Information Report (PEIR); and
 - c. final assessment and preparation of the ES .
- 3.1.3 This Report on Natural Features has been informed by both the scoping and initial assessment stages in order to identify any effects that may arise (not just those considered significant). It makes use of information provided in the Scoping Report, Scoping Opinion and the ES.
- 3.1.4 Given that the focus of Regulation 5(2)(l) is features of nature conservation, geological or landscape importance and water bodies, the sections of the Scoping Opinion (Vol 1 Appendix 1.1 of the ES (AD06.02)), ES (AD06.02) and No Significant Effect Report (NSER) (AD05.17) relating to ecology, landscape and water are particularly relevant. Those sections include detailed methodologies for how the assessments have been undertaken, as well as the findings of those assessments.

4 Assessment of effects

4.1 Statutory sites and features of nature conservation

Lee Valley Special Protection Area and Ramsar site

- 4.1.1 There is a potential for effects on surface watercourses by entry of contaminated run-off and the contamination of groundwater during construction and demolition. These would be avoided through implementation of standard mitigation measures as described in the Code of Construction Practice (CoCP) (AD05.12).
- 4.1.2 There is a potential for indirect effects on the Lee Valley SPA and Ramsar site due to the potential for disturbance of bird species associated with Chingford Reservoirs SSSI, specifically shoveler *Anas clypeata*. The implementation of the CoCP (AD05.12) would avoid temporary disturbance effects associated with construction noise and lighting of the Project.
- 4.1.3 Air quality modelling predicts that deposition rates for particulate matter (PM₁₀) and nitrogen in areas used by Lee Valley SPA and Ramsar site features (therefore including Chingford Reservoirs SSSI) would decrease as a result of the Project.
- 4.1.4 The predicted sulphur deposition rates within areas used by Lee Valley SPA/Ramsar features would increase, but would nevertheless be low and would not cause deposition rates for acidity to exceed the minimum critical loads⁷.
- 4.1.5 The effects on the Lee Valley SPA and Ramsar due to effects on water resources, disturbance to birds and the deposition of nitrogen, acidity and PM₁₀ are therefore assessed as **not significant**.

Epping Forest Special Area of Conservation and Site of Special Scientific Interest

- 4.1.6 Deposition rates for PM₁₀ and nitrogen within Epping Forest SAC and SSSI are expected to decrease as a result of the Project. Although, sulphur deposition rates would increase (assuming that the proposed ERF operates within air quality emission limits), these would not cause acidity deposition rates to exceed the minimum critical loads. The effects on Epping Forest SAC and SSSI due to the deposition of nitrogen, acidity and PM₁₀ are therefore assessed as **not significant**.

Walthamstow Reservoirs Site of Special Scientific Interest

- 4.1.7 There is a potential for effects on surface watercourses by entry of contaminated run-off and the contamination of groundwater during construction and demolition. These potential effects would be avoided through implementation of standard mitigation measures as described in the CoCP (AD05.12).

⁷ Defined in Centre for Hydrology and Ecology (2014) Air Pollution Information System, <http://www.apis.ac.uk/>

- 4.1.8 Deposition rates for PM₁₀ and nitrogen within Walthamstow Reservoirs SSSI are expected to decrease as a result of the Project. Although sulphur deposition rates would increase (assuming that the proposed ERF operates within air quality emission limits), these would not cause acidity deposition rates to exceed the minimum critical loads.
- 4.1.9 The potential effects on Walthamstow Reservoirs SSSI due to effects on water resources and the deposition of nitrogen, acidity and PM₁₀ are therefore **not significant**.

Chingford Reservoirs Site of Special Scientific Interest

- 4.1.10 This SSSI is close to the Application Site, meaning that qualifying bird species are vulnerable to effects associated with dust, lighting, noise and vibration during the construction of the Project. Noise levels between 50 and 70 decibels (dB) may typically cause birds to be more alert or move around more⁸, but not result in them leaving the area. The context of the SSSI is also a factor, being situated in a largely urban and industrial area, which is already subject to noise and disturbance. Vibration associated with piling activities is not considered to have potential to disturb bird species within the SSSI, due to its distance from the Application Site.
- 4.1.11 Lighting would be designed to avoid light spill over this SSSI, in line with the embedded ecology measures described in Vol 2 Section 5.6 of the ES (AD06.02).
- 4.1.12 Potential effects from dust during construction would be limited by the implementation of control measures as described in the CoCP (AD05.12). The sensitivity of the area to ecological impacts has been assigned as 'low', due to no statutory ecological receptors being located within 100m of the Application Site (Vol 2 Section 2 of the ES (AD06.02)). The implementation of control measures as described in the CoCP (AD05.12) would avoid the potential for effects on bird species due to dust and construction lighting.
- 4.1.13 Lighting across the Application Site during the operational stages would be minimised in line with the embedded ecology measures described in Vol 2 Section 5.6 of the ES (AD06.02). The design and control measures that would be used to limit operational noise from the proposed ERF and RRF would prevent significant effects in both EIA and policy terms (refer to Vol 2 Section 8 of the ES (AD06.02)).
- 4.1.14 The effect on Chingford Reservoirs SSSI from lighting, noise, dust and the deposition of nitrogen, acidity and PM₁₀ is assessed as **not significant**.

Turnford and Cheshunt Pits Site of Special Scientific Interest

- 4.1.15 This SSSI is located 8.2km from the Application Site. Due to its distance from the Application Site, it is considered that there would be **no effects** from the Project on the SSSI.

⁸ Cutts, N., Phelps, A & Burdon D (2008) Construction and Waterfowl: Defining Sensitivity, Response, Impacts and Guidance. Report to Humber INCA, University of Hull.

Ainslie Wood Local Nature Reserve

- 4.1.16 This Local Nature Reserve is located 1.55km from the Application Site. Due to its distance from the Application Site, it is considered that there would be **no effects** from the Project on the Nature Reserve.

4.2 Non-statutory sites and features of nature conservation

Lea Valley Site of Metropolitan Importance for Nature Conservation

- 4.2.1 Approximately 4.5 hectares of the SMINC falls within the Application Site. An area of habitat for which the SMINC is designated would be lost to the Project, while other areas would be enhanced as part of the landscape strategy, as well as adjacent areas outside the SMINC. There is also potential for disturbance to bird species associated with the SMINC.
- 4.2.2 Potential sources of disturbance associated with construction processes would be subject to control measures described in the CoCP (AD05.12). This includes measures to control potential impacts arising from lighting and noise and those upon water resources. No operational lighting is proposed within the Lee Valley SMINC, with the exception of lighting along Lee Park Way. However, the lighting in this area would comply with Bat Conservation Trust Guidelines⁹ and be designed to avoid light spill over the River Lee Navigation.
- 4.2.3 The effect of habitat loss and creation and disturbance on the Lea Valley SMINC is considered **not significant**.

Other Sites of Importance for Nature Conservation

- 4.2.4 The following Sites of Importance for Nature Conservation are at a sufficient distance from the Application Site to conclude that there would be **no effects** on the sites:
- a. Tottenham Marshes SBINC (Grade I);
 - b. Banbury Reservoir SBINC (Grade I);
 - c. Tottenham Marshes East SBINC (Grade I);
 - d. Tottenham Hale to Northumberland Park Railsides SBINC (Grade II);
 - e. Ching Brook in Central Walthamstow SBINC (Grade II);
 - f. Pymmes Park SLINC;
 - g. Marsh Lane Allotments SLINC; and
 - h. Chingford Mount Cemetery SLINC.

4.3 Sites of landscape importance

Area of Special Character (Lee Valley Reservoirs)

- 4.3.1 During the construction phases of the Project, the Temporary Laydown Area would be located within part of the Lee Valley Rivers and Reservoirs

⁹ Bats and Lighting http://www.bats.org.uk/pages/bats_and_lighting.html (accessed July 2015)

Character Area, which forms the Lee Valley Area of Special Character. The use of the site as a Temporary Laydown Area would alter the character of the area by introducing new temporary features such as car parking, stockpiles of material, construction machinery and site cabins within an area that would be surrounded by a hoarding up to 3m high. Where possible, vegetation around the perimeter of the site compound would be retained throughout the duration of the works. Upon completion of the works, the site would be restored to grassland with tree planting, where appropriate, along the boundary with the River Lee Navigation.

- 4.3.2 The restoration of the site and the provision of tree planting along the boundary with the River Lee Navigation would enhance the Temporary Laydown Area within the Area of Special Character. Overall, the effect on the Area of Special Character is considered to be beneficial and **not significant**.

Green Belt

- 4.3.3 During the construction phases of the Project the inclusion of the site compound into the Green Belt would reduce the openness of the Green Belt. However, this would be for a limited period only. The effect on the Green Belt during the construction phase is considered to be **adverse and locally significant**.
- 4.3.4 Where possible, vegetation around the perimeter of the site compound would be retained throughout the duration of the works. Upon completion of the works, the Temporary Laydown Area would be restored to grassland with some tree planting, where appropriate, along the boundary with the River Lee Navigation.
- 4.3.5 The restoration of the Temporary Laydown Area to grassland and the provision of tree planting along the boundary with the River Lee Navigation would enhance the Temporary Laydown Area within the Green Belt. Overall, the effect on the Green Belt following the restoration of the Temporary Laydown Area is considered to be beneficial and **not significant**.

4.4 Habitats of protected species

Bats

- 4.4.1 There is potential for lighting associated with the Project during construction and operation to disturb foraging and commuting bats, particularly along the River Lee Navigation.
- 4.4.2 Lighting would be required during construction, although the design of this would seek to avoid light spill over the River Lee Navigation. It is possible that lighting along Lee Park Way and the eastern boundary of the Edmonton EcoPark could disturb foraging and commuting bats along Lee Park Way. This lighting would be designed to minimise disturbance. However, the dark corridor along the river, where most bat activity was recorded, would be maintained.

4.4.3 In the operational phase, sensitive lighting along Lee Park Way and the dense planting of trees and scrub between Lee Park Way and the River Lee Navigation would seek to avoid light spill along the River Lee Navigation and therefore minimise disturbance to foraging and commuting bats.

4.4.4 The effect of disturbance on bats is considered **not significant**.

Common mammals

4.4.5 There is potential for earthworks and clearance works to harm common wild mammals due to damage to burrows or nests.

4.4.6 Any deep holes and trenches would be covered overnight and planked escape routes provided and maintained for any wildlife that may fall in. In addition, any hazardous liquids that are held on-site would be stored in a secure lock-up. To avoid unnecessary harm to wild mammals, any burrows that are encountered during site clearance works would be excavated sensitively, using hand tools where possible. Where possible, excavation would not occur between March and May inclusive, when female red fox and cubs may be below-ground.

4.4.7 The effect on wild mammals is considered **not significant**.

Breeding birds

4.4.8 There is a potential for disturbance to nesting birds during site clearance works, as well as the effects of habitat loss. Starling was recorded nesting in buildings within Edmonton EcoPark and surveys indicated that linnet were probably breeding within the Temporary Laydown Area.

4.4.9 The implementation of the measures described in the CoCP would ensure compliance with legislation with respect to the demolition of buildings and removal of vegetation.

4.4.10 The landscape proposals include grassland creation and tree and shrub planting, as well as the provision of bird nest boxes. In particular, boxes suitable for starling would be installed during Stage 1 of the Project to mitigate for the loss of nesting habitat, meaning that the effect on starling during construction of the Project is not significant. However, there is expected to be a temporary loss of scrub habitat within the Temporary Laydown Area that would not be reinstated until towards the end of Stage 3 of the Project. Considering the loss of suitable breeding habitat and disturbance associated with operation of the Temporary Laydown Area during Stages 1 to 3 of the Project, a **temporary significant adverse effect** on linnet is predicted during construction.

4.4.11 It is unlikely that breeding birds would be disturbed during operation of the Project, considering that levels of noise and lighting at the site are likely to be similar to current levels. It is considered that the potential impacts on breeding birds during operation of the Project (including starling and linnet) would be **not significant**.

Reptiles

- 4.4.12 Reptiles have not been recorded at the Application Site and have therefore not been considered in the assessment.

4.5 Water bodies in a river basin management plan

- 4.5.1 The River Lee Navigation and surrounding area is located within the London catchment of the Thames River Basin District¹⁰. The EA website¹¹ shows the constituent water bodies and the status based on the 2009 River Basin Management Plan; this is summarised in Vol 2 Section 11 of the ES (AD06.02).
- 4.5.2 All the water features in the assessment area are identified as 'heavily modified' under the Water Framework Directive (WatFD), which means they are only able to achieve good ecological potential rather than status because of substantial changes to the physical character of the water body resulting from physical alterations caused by human use.
- 4.5.3 The features have been grouped as river water bodies or lake water bodies in the following assessment.

River water bodies

- 4.5.4 The Project has the potential to effect the river environment in the vicinity of the Edmonton EcoPark and downstream due to a number of the activities occurring at the Application Site.

Construction effects

- 4.5.5 During construction there is the potential for ground disturbance and an associated increase in sediments in site run-off. This may result in sediments directly reaching watercourses within Salmon's Brook WatFD water body and downstream Pymmes Brook and River Lee WatFD water bodies through bridge creation and contamination from spillage/pollution incidents. These may cause localised changes in the water quality reaching the watercourses (and any downstream water bodies and designated sites).
- 4.5.6 Construction traffic has the potential to cause localised changes in water quality reaching the watercourses within Salmon's Brook WatFD water body due to accidental spills or leaks. These may cause localised changes in water quality reaching the watercourses (and any downstream water bodies and designated sites).
- 4.5.7 There is the potential for change to surface and sub-surface flow patterns that may result in localised changes in water quantity reaching watercourses within Salmon's Brook WatFD water body.

¹⁰ Environment Agency, Thames River Basin Management Plan
<https://www.gov.uk/government/publications/thames-river-basin-management-plan> (accessed March 2015)

¹¹ <http://maps.environment-agency.gov.uk/wiyby> (accessed March 2015)

Operation effects

- 4.5.8 There is the potential for operation of the Project to affect watercourse channel morphology downstream over time and increase flood risk to people and properties downstream due to increased site run-off reaching watercourses. The area of hardstanding at the Application Site would increase by 10 per cent, resulting in the potential for increased volumes and rates of run-off to the watercourses.
- 4.5.9 Operational traffic is anticipated to increase by approximately 90 vehicles per day. These additional vehicles have the potential to cause localised changes in water quality reaching watercourses due to accidental spills or leaks.
- 4.5.10 There is the potential for change to the quantity of water discharged to Chingford Sewer and Enfield Ditch during operation of the Project that may result in localised changes in water quantity reaching groundwater, watercourses and Deephams Sewage Treatment Works (STW). The total water discharged to the sewer would decrease compared to current operation (a maximum of 48.1m³/hr compared to 70-80m³/hr currently). This would remain within the limits of the existing Thames Water Utilities (TWUL) consent (a maximum discharge rate of 237m³ per hour and not to exceed 5,682m³ in a day). While there is no information available on rates of current surface water discharge to Enfield Ditch, for the purpose of this assessment it has been assumed that there would be an increase in the potential volume of water discharged from the current operation due to increased areas of hardstanding. Enfield Ditch flows into Salmon's Brook WatFD water body. Flows of approximately 200m³ of water from tanker spills, and approximately 1,500m³ from firefighting run-off, as well as surface water run-off are anticipated from the Application Site.
- 4.5.11 There is the potential for a decrease in the quantity of water drawn from the Deephams STW outflow channel immediately upstream of the Application Site and therefore an increase in flow within Salmon's Brook. A decrease in abstraction volumes could result in changes to the water quantity reaching groundwater and watercourses.
- 4.5.12 There is the potential for water quality effects resulting from discharges from the Application Site due to on-site operations. Surface water drainage from the Application Site would also have the potential to affect the water quality within receiving waters and other associated surface and groundwater.

Relevant mitigation and residual effects

- 4.5.13 In accordance with relevant legislative requirements and guidance, the works would be undertaken while protecting surface water bodies (and groundwater) from pollution and other adverse impacts including change to flow volume, water levels and quality. More detailed information on the good environmental design that would be embedded in the Project is provided in Vol 2 Section 11 of the ES (AD06.02).
- 4.5.14 All residual effects of the Project on the river water bodies would be **not significant** with all the embedded mitigation measures implemented.

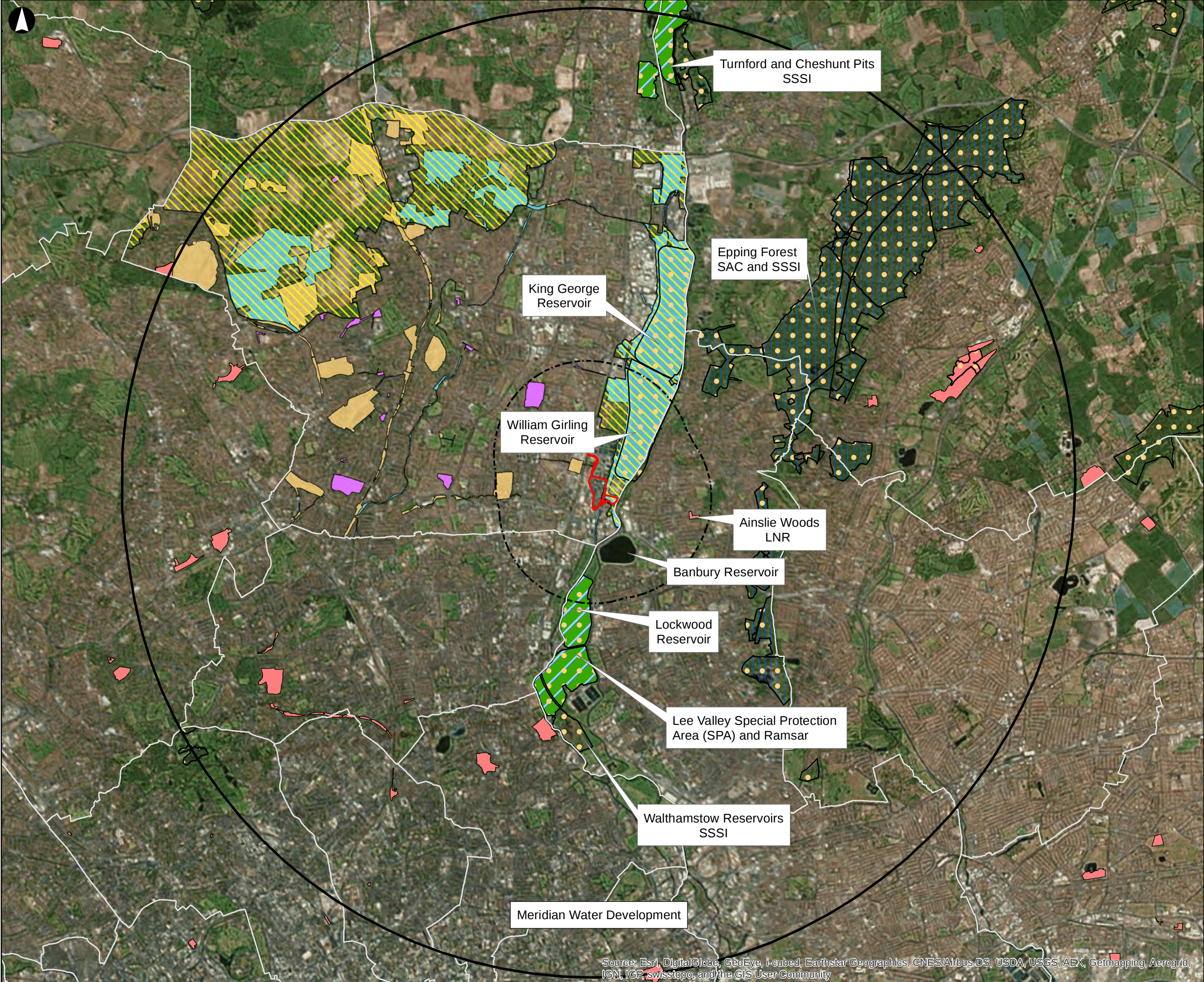
Lake water bodies

- 4.5.15 Approximately 300m north-east of the Application Site lies the William Girling Reservoir. Banbury Reservoir is located approximately 600m to the south-east of the Application Site. Neither William Girling Reservoir nor Banbury Reservoir are likely to be in hydraulic connectivity with Application Site groundwater due to their distance and the likely presence of low permeability liners in the reservoirs.
- 4.5.16 Therefore there are not anticipated to be any potential effects on these WatFD water bodies from the Project. Effects have been assessed as **not significant**.

5 Conclusion

- 5.1.1 A number of natural features covering various aspects of the environment can be found in the vicinity of the Application Site. The majority of these would not be affected by the construction, operation or decommissioning of the Project. The exception to this is linnet.
- 5.1.2 The clearance of scrub, grassland and tall ruderal vegetation and use of the Temporary Laydown Area during Stages 1 to 3 of the Project would be likely to deter linnet from nesting within the Application Site, leading to a **temporary significant adverse effect**. However, implementation of the landscape strategy and the cessation of activity within the Temporary Laydown Area following completion of construction works would be expected to provide suitable breeding habitat for this species. As such, the effect on this species during operation is **not significant**.

Appendix A: Plan showing the natural features in the vicinity of the Application Site

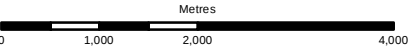


Legend

- Application Site Boundary
- 10km Buffer
- SSSI
- Ramsar
- SPA
- SAC
- LNR
- Areas of Special Character
- SBLINC
- SLINC
- SMINC

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Revision	Date	By	Chkd	Appd



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Drawing Title
**Appendix A
Natural Features Plan**
Pursuant to Regulation
**Regulation 5(2)(l) of the
APFP Regulations 2009**

Scale at A3
1:77,000

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Drawing No 001	Revision 1
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Series 05 Technical Documents

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