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NORTH LONDON WASTE AUTHORITY  
NORTH LONDON HEAT AND POWER  
PROJECT

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ENVIRONMENTAL STATEMENT:  
VOLUME 1

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

AD06 . 02

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Arup

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October 2015

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)

# 1 Introduction

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- 1.1.1 This Environmental Statement (ES) has been prepared to support North London Waste Authority's (the Applicant) 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 (MWe) 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 50MWe.
- 1.1.4 National Policy Statements (NPS) that are relevant to the consideration of the Project are:
- a. Overarching National Policy Statement for Energy EN-1 (NPS EN-1)<sup>1</sup>; and
  - b. National Policy Statement for Renewable Energy Infrastructure EN-3 (NPS EN-1)<sup>2</sup>.
- 1.1.5 Compliance of the Project with both of these NPSs in environmental terms is considered within the ES.
- 1.1.6 The ES has been prepared pursuant to the Infrastructure Planning (Environmental Impact Assessment) Regulations 2009 (EIA Regulations). It comprises three volumes with supporting appendices, and a non-technical summary (NTS) (AD06.01):
- a. Volume 1 (this volume): provides a description of the existing Application Site and surroundings (Section 2), a description of the Project (Section 3), a description of alternatives (Section 4), a description of the EIA approach and methodology (Section 5) and a summary of the environmental assessment results (Section 6).
  - b. Volume 2: provides assessments for the following topics:
    - Air Quality and Odour (Section 2);
    - Archaeology (Section 3);
    - Daylight, Sunlight and Overshadowing (Section 4);

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<sup>1</sup> Department of Energy and Climate Change (2011) Overarching National Policy Statement for Energy (EN-1), July 2011.

<sup>2</sup> Department of Energy and Climate Change (2011) National Policy Statement for Renewable Energy Infrastructure (EN-3), July 2011.

- Ecology (Section 5);
  - Environmental Wind (Section 6);
  - Ground Conditions and Contamination (Section 7);
  - Noise and Vibration (Section 8);
  - Socio-Economics (Section 9);
  - Transport (Section 10);
  - Water Resources and Flood Risk (Section 11);
  - Interactive Effects<sup>3</sup> (Section 12);
- c. Volume 3: provides the Visual topic assessment;
- d. Appendix – Figures: provides the supporting figures to Volume 1 and Volume 2;
- e. Appendix – Reports: provides supporting reports and documents to Volumes 1, 2 and 3; and
- f. NTS (AD06.01): provides a summary description of the Project and environmental assessment results presented in a non-technical language.
- 1.1.7 In addition to the figures appendix, there are also some images within the main body of Volumes 1, 2 and 3 which are referred to as ‘plates’.
- 1.1.8 A master glossary and abbreviations document (AD01.05) has been prepared for use with all Project application documents. The ES should be read alongside this glossary and abbreviations.
- 1.1.9 The ES has been prepared by Arup with the exception of the Ground Conditions and Contamination, and Water Resources and Flood Risk assessments which have been prepared by AMEC Foster Wheeler.
- ## 1.2 The Applicant
- 1.2.1 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).
- 1.2.2 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.
- 1.2.3 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

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<sup>3</sup> It is noted that cumulative effects are assessed in the topic sections (Volumes 2 and 3) of the ES.

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.

### 1.3 Requirements for an Environmental Impact Assessment

- 1.3.1 The Project falls into Schedule 1 Part 10<sup>4</sup> of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2009 (EIA Regulations). The EIA Regulations define an EIA development as that which is either within Schedule 1 or 2 of the EIA Regulations and in the case of Schedule 2 developments, is likely to have significant effects on the environment by virtue of factors such as its nature, size or location. The Project falls under Schedule 1 Part 10 of the EIA Regulations and therefore an EIA is mandatory.
- 1.3.2 An EIA Scoping Report was submitted to the Planning Inspectorate in October 2014<sup>5</sup>, following which a Scoping Opinion was received in November 2014<sup>6</sup>. A copy of the Scoping Opinion is contained in Vol 1 Appendix 1.1. Details of the scoping process are provided in the Scoping Report and also summarised in Section 5.2 of this volume which sets out how scoping comments have been responded to in the EIA and reflected in this ES.
- 1.3.3 Preliminary environmental information was provided as part of the Phase Two Consultation for the Project (part of the pre-application process). This comprised a Preliminary Environmental Information Report (PEIR)<sup>7</sup>

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<sup>4</sup> "Waste disposal installations for the incineration or chemical treatment (as defined in Annex IIA to Council Directive 75/442/EEC under heading D9) of non-hazardous waste with a capacity exceeding 100 tonnes per day."

<sup>5</sup> North London Waste Authority (2014) North London Heat and Power Project: EIA Scoping Report, October 2014

[http://infrastructure.planningportal.gov.uk/wp-content/ipc/uploads/projects/EN010071/1.%20Pre-Submission/EIA/Scoping/Scoping%20Request/EIA%20Scoping%20Report\\_Main%20Text.pdf](http://infrastructure.planningportal.gov.uk/wp-content/ipc/uploads/projects/EN010071/1.%20Pre-Submission/EIA/Scoping/Scoping%20Request/EIA%20Scoping%20Report_Main%20Text.pdf) (Accessed July 2015)

<sup>6</sup> The Planning Inspectorate (2014) Scoping Opinion Proposed North London Heat and Power Project, November 2014

[http://infrastructure.planningportal.gov.uk/wp-content/ipc/uploads/projects/EN010071/1.%20Pre-Submission/EIA/Scoping/Scoping%20Opinion/141120\\_Scoping%20Opinion%20Report\\_FINAL.doc.pdf](http://infrastructure.planningportal.gov.uk/wp-content/ipc/uploads/projects/EN010071/1.%20Pre-Submission/EIA/Scoping/Scoping%20Opinion/141120_Scoping%20Opinion%20Report_FINAL.doc.pdf) (Accessed July 2015)

<sup>7</sup> North London Waste Authority (2015) North London Heat and Power Project: Preliminary Environmental Information Report, May 2015.

<http://www.northlondonheatandpower.london/document-library/preliminary-environmental-information-report>

prepared in accordance with The Planning Inspectorate Advice Note 7<sup>8</sup> and Regulation 2 of the EIA Regulations. The PEIR took the form of a draft ES to provide preliminary environmental information on the likely significant environmental effects of the Project. The way in which comments received on the PEIR have been considered in the ES is described in Section 5.2 below.

1.3.4 Schedule 4 of the EIA Regulations sets out the information required for inclusion in this ES which is reproduced in Vol 1 Table 1.1 below. This table includes details of where the information can be found in this ES.

Vol 1 Table 1.1: EIA Regulation Schedule 4 information for inclusion in ESs

EIA Regulations – Schedule 4: Information for inclusion in environmental statements	Location within ES
<b>Part 1</b>	
Description of the development, including in particular— (a) a description of the physical characteristics of the whole development and the land-use requirements during the construction and operational phases; (b) a description of the main characteristics of the production processes, for instance, nature and quantity of the materials used; (c) an estimate, by type and quantity, of expected residues and emissions (water, air and soil pollution, noise, vibration, light, heat, radiation, etc) resulting from the operation of the proposed development.	(a) Vol 1 Section 3  (b) Vol 1 Sections 2 and 3  (c) Vol 2 in particular Section 11 for water pollution, Section 2 for air pollution, Section 7 for soil pollution, Section 8 for noise and vibration, and Vol 3
An outline of the main alternatives studied by the applicant and an indication of the main reasons for the applicant's choice, taking into account the environmental effects.	Vol 1 Section 4
A description of the aspects of the environment likely to be significantly affected by the development, including, in particular, population, fauna, flora, soil, water, air, climatic factors, material assets, including the architectural and archaeological heritage, landscape and the interrelationship between the above factors.	Baseline subsections in Vol 2 Sections 2-12 and Vol 3
A description of the likely significant effects of the development on the environment, which should cover the direct effects and any indirect, secondary, cumulative, short, medium and long term, permanent and temporary, positive and negative effects of the development, resulting from: (a) the existence of the development; (b) the use of natural resources; (c) the emission of pollutants, the creation of nuisances and the elimination of waste,	Vol 1 Section 6 Assessment subsections in Vol 2 Sections 2-12 and Vol 3

<sup>8</sup> The Planning Inspectorate (2015) Advice Note 7: Environmental Impact Assessment: Preliminary Environmental Information, Screening and Scoping, March 2015.



<b>EIA Regulations – Schedule 4: Information for inclusion in environmental statements</b>	<b>Location within ES</b>
and the description by the applicant of the forecasting methods used to assess the effects on the environment.	
A description of the measures envisaged to prevent, reduce and where possible offset any significant adverse effects on the environment.	Potential effects and good environmental design management subsections and Supplementary mitigation subsections in Vol 2 Sections 2-11 and Vol 3
A non-technical summary of the information provided under paragraphs 1 to 5 of this Part.	A NTS is provided separately
An indication of any difficulties (technical deficiencies or lack of know-how) encountered by the applicant in compiling the required information.	Assumptions and limitations subsections in Vol 2 Sections 2-11 and Vol 3
<b>Part 2</b>	
A description of the development comprising information on the site, design and size of the development.	Vol 1 Sections 2 and 3
A description of the measures envisaged in order to avoid, reduce and, if possible, remedy significant adverse effects.	Potential effects and good environmental design management subsections and Supplementary mitigation subsections in Vol 2 Sections 2-11 and Vol 3
The data required to identify and assess the main effects which the development is likely to have on the environment.	Baseline subsections in Vol 2 Sections 2-12 and Vol 3
An outline of the main alternatives studied by the applicant or appellant and an indication of the main reasons for the choice made, taking into account the environmental effects.	Vol 1 Section 4
A non-technical summary of the information provided under paragraphs 1 to 4 of this Part.	A NTS is provided separately

## 1.4 Other required consents

- 1.4.1 The DCO would provide consent to construct, operate and maintain the Project.
- 1.4.2 A separate Environmental Permit is 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 for consideration in parallel with the DCO process.

## 2 Site and Surroundings

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### 2.1 Overview

2.1.1 This section provides a description of the existing environmental conditions on and around the Application Site. Section 2.2 provides details of the area in which the Application Site is located, including details of constraints, designations and receptors in the surrounding area. Details of the existing site use and operation are set out in Section 2.3.

### 2.2 Site location and context

2.2.1 This section describes land uses adjacent to the Application Site, nearest sensitive receptors to the Application Site and the existing Edmonton EcoPark site uses and operation.

2.2.2 The Application Site, as shown on Vol 1 Figure 2.1 extends to approximately 22 hectares (ha) 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 proposed Lee Park Way access road). The postcode for the Edmonton EcoPark is N18 3AG and the grid reference is TQ 35750 92860.

2.2.3 The Application Site includes all land required to deliver the Project. This includes land that would be required temporarily to facilitate development including a Temporary Laydown Area outside of the future operational site<sup>9</sup> which is required due to space constraints. This Temporary Laydown Area would be used to provide construction parking, temporary accommodation (offices, staff welfare facilities), storage and fabrication areas and associated access and utilities.

2.2.4 The Application Site lies approximately 1km from the border with LB Haringey to the south and adjacent to LB Waltham Forest to the east.

2.2.5 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 Recycling Facility which is operated by a commercial waste management company, alongside other industrial buildings. Further north is Deephams Sewage Treatment Works (STW). Beyond the industrial area to the north-west is a residential area, further details of which are provided in Paragraph 2.2.10 below.

2.2.6 Eley Industrial Estate located to the west of the Application Site comprises a mixture of retail units, industrial and warehousing uses.

2.2.7 Advent Way is located to the south of the Application Site adjacent to the A406 North Circular Road (Angel Road). Beyond the A406 North Circular

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<sup>9</sup> The future operational site would encompass Edmonton EcoPark and Deephams Farm Road

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.

2.2.8 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 most recent planning permission for the Camden Plant Ltd site (Ref: TP/96/0105) expired in June 2000. Although not yet implemented the permission included requirements for reinstatement due to the site's location within the Green Belt and LVRP where only a short-term planning permission was felt suitable. In addition, the Meridian Water Masterplan<sup>10</sup> has identified the potential to clear the site occupied by Camden Plant Ltd. for use as flood mitigation and formal playing fields. For the purposes of the EIA it is therefore assumed that Camden Plant Ltd. will not occupy this site by the time construction work associated with the Project commences and that the current material storage mounds on the Camden Plant Ltd. site will have been removed by this time.

2.2.9 The nearest residential areas to the east of the Application Site and LVRP are located at Lower Hall Lane, further details of which are provided in Paragraph 2.2.10 below.

### **Residential receptors**

2.2.10 The closest residential receptors to the Application Site are located on Badma Close approximately 60m west of Ardra Road, Zambezie Drive approximately 125m west of the Edmonton EcoPark, and on Lower Hall Lane approximately 150m east of the Application Site boundary (Temporary Laydown Area). Lower Hall Lane is on the eastern side of the LVRP. It is noted that while the receptors would be approximately 150m from the Application Site boundary (Temporary Laydown Area) used during construction (temporary use), Lower Hall Lane is approximately 470m from the Edmonton EcoPark.

2.2.11 To the eastern side of the Edmonton EcoPark is a wharf and single storey building which is currently leased by LWL to the Edmonton Sea Cadets. The Edmonton Sea Cadets are part of the national Sea Cadets organisation. This is a non-service organisation with charitable status which works in partnership with the Royal Navy.

2.2.12 Immediately west of the Edmonton EcoPark site is the Eley Industrial Estate with workers associated with retail units, industrial and warehouse uses.

### **Ecological receptors**

2.2.13 The River Lee Navigation lies immediately east of the Edmonton EcoPark and flows through the LVRP. The LVRP comprises waterways, reservoirs

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<sup>10</sup> LB Enfield and LDA Design (2013) Meridian Water Masterplan, July 2013.

and green space and is designated as Green Belt. Part of the LVRP is also designated as a Site of Metropolitan Importance for Nature Conservation (SMINC), the boundary of which just extends within the Application Site.

- 2.2.14 Within the LVRP and approximately 300m north-east of the Application Site boundary, is the William Girling Reservoir, and beyond this the King George's Reservoir. William Girling Reservoir and King George's Reservoir are known collectively as the Chingford Reservoirs which are designated as a Site of Special Scientific Interest (SSSI). Chingford Reservoirs also encompasses the Banbury Reservoir which is located approximately 750m south-east of the Application Site boundary.
- 2.2.15 Lockwood Reservoir lies approximately 1.5km south of the Application Site boundary. This is one of ten reservoirs forming the Walthamstow Reservoirs, which are part of the designated Lee Valley Special Protection Area (SPA) and Lee Valley Ramsar site<sup>11</sup>.
- 2.2.16 Ainslie Wood Local Nature Reserve (LNR) is located approximately 1.5km east of the Application Site boundary. Environmental designations in the vicinity of the Application Site are shown in Vol 1 Figure 2.2.

### **Water receptors**

- 2.2.17 Salmon's Brook runs along the western boundary of the Application Site and Enfield Ditch runs along the eastern and southern edges of the Edmonton EcoPark, before discharging into Salmon's Brook in the south-west corner of the Application Site.
- 2.2.18 Immediately to the east of the Edmonton EcoPark lies the River Lee Navigation, a canalised river which flows through the LVRP. The Chingford Reservoirs can also be found within the LVRP.
- 2.2.19 As identified above, Banbury Reservoir and Lockwood Reservoir are approximately 750m south-east and 1.5km south from the Application Site boundary respectively.
- 2.2.20 The Application Site is located within an EA designated groundwater Source Protection Zone (SPZ) 1 and 2<sup>12</sup>. It is also partly located within Flood Zone 2, which indicates it is at medium risk of flooding. The remainder of the Application Site is in Flood Zone 1 which indicates a low risk of flooding.

### **Other receptors**

- 2.2.21 The geology of the Application Site comprises made ground, alluvial deposits, Kempton Park Gravels, London Clay, Lambeth Group, Thanet Sand and White Chalk. It is underlain by several Secondary Aquifers and one Principle Aquifer.

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<sup>11</sup> Ramsar sites are wetlands (or riparian habitats e.g. banks of rivers or streams) of international importance, designated under the Ramsar Convention.

<sup>12</sup> Groundwater source protection catchments are split into zones. Zone 1 is defined as the distance equivalent to a 50 day travel time from any point below the water table to the source. Zone 2 is defined by the distance equivalent to a 400 day travel time from a point below the water table.

2.2.22 The entire Application Site is within the Air Quality Management Area which covers the whole area of the LB Enfield.

2.2.23 The Grade II listed Chingford Mill Pumping Station is located approximately 110m east of the Application Site boundary (this includes listed railings and turbine hall). There are no conservation areas within or near to the Application Site.

### **Future receptors**

2.2.24 Where it is known that land use is likely to change as a result of planning approvals and introduce additional sensitive land uses (in this case residential), these future receptors have been assumed for the purposes of the assessment. The basis of the identification of future receptors is described in Section 5.3.

2.2.25 Future baseline receptors and cumulative developments have been identified and described in Vol 1 Appendix 5.2, the location of which are shown on Vol 1 Figure 5.1.

2.2.26 The future receptors closest to the Application Site, comprising residential receptors are:

- a. Meridian Water, located approximately 300m to the south of the Application Site; and
- b. Pumping Station House, located approximately 110m east of the Application Site (Temporary Laydown Area) on Lower Hall Lane. This is the Grade II listed pumping station referred to in Paragraph 2.2.23 that is proposed to be converted to residential use.

## **2.3 Existing site use and operation**

### **Overview**

2.3.1 The Edmonton EcoPark is an existing waste management complex of around 16 hectares. It is occupied by waste management facilities operated on behalf of the Applicant through a waste management contract with LWL.

2.3.2 Vol 1 Plate 2.1 shows the Application Site, and identifies the components of the Edmonton EcoPark as follows:

1. an EfW facility which treats circa 540,000 tonnes per annum (tpa) of residual waste and generates around 40MWe (gross) of electricity;
2. 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;



Vol 1 Plate 2.1: Existing site uses

3. 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;
4. an Incinerator Bottom Ash (IBA) Recycling Facility which processes ash from the existing EfW facility;
5. a fleet management and maintenance facility which provides parking and maintenance facilities for the Edmonton EcoPark fleet of operational vehicles;
6. associated offices, car parking and plant required to operate the facility; and
7. a former wharf and single storey building utilised by the Edmonton Sea Cadets under a lease.

2.3.3 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.

2.3.4 The Edmonton EcoPark operates 24 hours a day, seven days a week. There are approximately 193 full-time equivalent people employed at the Application Site, approximately 96 of whom are directly related to the existing EfW facility. The remaining employees are responsible for other site operations and or the management of LWL and the Edmonton EcoPark as a whole (e.g. security, visitors and education and administration).

2.3.5 As explained in Paragraph 2.3.2 the existing EfW facility treats approximately 540,000tpa of household waste and is a 'five boiler line' facility, with each combustion line comprised of a furnace, boiler, economiser, and electrostatic precipitator, leading to one of four flue gas treatment (FGT) plants. The main elements of the EfW facility are set out below; an animated schematic of the EfW facility is available on the LWL website<sup>13</sup>:

- a. in ramp, tipping hall and out ramp: refuse collection vehicles (RCVs) and bulk delivery heavy goods vehicles (HGVs) deliver waste via the in ramp and reverse into tipping bays in the tipping hall. Vehicles exit via the out ramp. A one-way system is operated for safety and operational efficiency;
- b. bunkers, hoppers and boilers: waste from vehicles is deposited into one of the five bunkers and transferred by overhead grabs into the five hoppers. Each hopper leads to a boiler. The waste enters the boiler at the top of a sloping grate comprised of slowly rotating bars. As the material burns, it is drawn across the bars towards the lower end of the grate. Bottom ash drops off the end of the grate while the hot gases pass along the boiler to generate steam and then onwards to the FGT plant;

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<sup>13</sup> <http://www.londonwaste.co.uk/media/schematic.html> (accessed August 2015).

- c. turbine hall: the turbine hall houses four 12.5MW and one 2.7MW steam turbines, all of which are driven by high pressure steam raised by the boilers;
- d. FGT: following extraction of the thermal energy in the flue gases, the partially cooled gases pass through a series of treatment stages to remove particulates and other pollutants. The main FGT stages are electrostatic precipitators<sup>14</sup> and chemical removal through lime and carbon dosing, and filters;
- e. stack: treated flue gas is discharged to the atmosphere via a 100m tall (above ground level) stack. The stack is made of two separate flues housed within a single concrete windshield for structural stability;
- f. water cooled condensers: residual heat in the steam used to drive the turbines is removed by passing the steam through a condenser unit. This cooling water for the condenser is extracted from the Deephams STW outflow channel and therefore does not require an abstraction licence. This cooling water is drawn via a pump house on Ardra Road and is pumped beneath the western road, parallel to Salmon's Brook, to the cooling towers. Approximately 130 cubic metres (m<sup>3</sup>) per hour is drawn from the pump intake for the cooling system. Some of the cooling water evaporates to the air (resulting during the colder months in a visible plume of water vapour) while the remaining liquid water is combined with other wastewater streams and discharged to Chingford Sewer;
- g. discharges and drainage: water used within the EfW facility is discharged to the sewer main. The total discharge rate to Chingford Sewer is 150m<sup>3</sup>/hr. The hardstanding areas to the north-east of the Application Site are served by drainage which discharges into Enfield Ditch but this is currently sealed with leaves from trees and no water leaves the Application Site by this path. Surface water from the northern area of the Application Site was directed to the outfall pipe at Salmon's Brook. However this outfall was sealed with a blind flange and the surface water diverted into the foul drainage. Before being connected to the foul drainage, surface drainage passes through an oil and grease separator. Then it is attenuated via two attenuation tanks of 175,000 litres (l) each. The attenuation tanks are served by two pumps of 10l/s flow that pump surface water to the foul drainage. Rainfall run-off from the buildings and hardstanding areas in the east of the facility is discharged through the surface water drainage system, which passes through an oil and grease interceptor and is discharged to Enfield Ditch; and
- h. Bottom ash conveyor: ash which falls off the boiler grates (typically called Incinerator Bottom Ash (IBA)) is collected from below the grates, quenched in a water bath and conveyed out of the main building. The ash is then passed under an electromagnet which separates out

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<sup>14</sup> An electrostatic precipitator is a filtration device that removes fine particles like dust and smoke from a flowing gas using the force of an induced electrostatic charge minimally impeding the flow of gases through the unit.



ferrous metals. Ferrous metals recovered by LWL are transferred to a recycling facility. The remaining IBA is transported to the on-site IBA reprocessing facility where non-ferrous metals are separated and aggregates suitable for use in construction are produced.

2.3.6 The following other nearby buildings are directly connected with the operation and maintenance of the EfW facility:

- a. electrical sub-station: the electricity sub-station transfers electricity from the EfW facility to 33 kilovolt cables which run below ground off the Application Site and connect to the National Grid 275 kilovolt network at Tottenham Substation;
- b. external stores and storage area;
- c. contractors compound; and
- d. stores/vehicle fuel tanks.

## **3 Project Description**

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### **3.1 Introduction**

- 3.1.1 This section provides a description of the Project for which a DCO is sought which forms the basis of the EIA.
- 3.1.2 Section 3.2 begins by setting out the defined Project (i.e. the components that the DCO will cover), describing both the principal and associated development. This is followed by a detailed description of the proposed Application Site layout and each of the key principal and associated development project components (Section 3.3).
- 3.1.3 Sections 3.4, 3.5 and 3.6 explain the information on which the EIA is based in terms of the plans and other DCO application documents, and assumptions regarding Project stages and future decommissioning and demolition of the ERF.

### **3.2 The Project**

#### **Application Site boundary**

- 3.2.1 The Application Site boundary for the Project is shown in Vol 1 Figure 2.1. This comprises the Edmonton EcoPark site as well as some additional land outside of the current site as described in Paragraph 2.2.2. The Temporary Laydown Area would be reinstated after construction and would not form part of the ongoing operational site.
- 3.2.2 It is noted that for EIA scoping<sup>3</sup> the Application Site boundary reflected the Edmonton EcoPark site boundary. Since then the Application Site boundary has been amended to incorporate the additional areas of land described in Paragraph 2.2.2. The scope of the EIA has therefore been updated accordingly, for example, additional ecological baseline surveys have been undertaken and topic assessment areas have been adjusted to reflect the amended Application Site boundary. This is explained as appropriate in the topic assessments contained in Volumes 2 and 3.

#### **Project description**

- 3.2.3 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. 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.
- 3.2.4 This section of the report sets out the components that the application for the DCO covers. This comprises the ERF (the principal development) and

developments that would be associated with the ERF (associated development). The works numbers referred to below are shown in the works plans contained in the Book of Plans (AD02.01) which forms part of the DCO application documents.

#### **Principal development (Works No. 1a)**

3.2.5 The principal development comprises development of an ERF generating electricity using residual waste as a fuel and capable of an electrical output of around 70MW<sub>e</sub> (gross). 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 residual 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 electricity and heat generating station;
- (iii) a stack containing flues for flue gas exhaust;
- (iv) cooling equipment; and
- (v) an observation platform enclosure.

#### **Associated development (Works No. 1b – 7)**

3.2.6 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:

3.2.7 Works No.1b – works required to provide buildings, structures, plant and equipment needed for the operation of the electricity and heat generating station 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).
- 3.2.8 Works No.2 – the construction of a RRF 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;
  - (ii) a reuse and recycling centre;
  - (iii) offices, and staff and visitor welfare facilities;
  - (iv) odour abatement and dust suppression plant and equipment; and
  - (v) fire control water tank(s), pump house and equipment.
- 3.2.9 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).
- 3.2.10 Works No.4 – utilities and infrastructure work, landscaping, access, security and lighting, and weighbridges, as shown on Drawing C\_0008 (AD02.01), comprising:
- (i) the diversion of sewers and the creation of connections to sewers;
  - (ii) the decommissioning of existing and the laying of new pipes, cables and systems for:
    - (a) potable water;
    - (b) wastewater;
    - (c) surface water;
    - (d) foul water;
    - (e) process water;
    - (f) electricity;
    - (g) gas; and
    - (h) CCTV, telecoms and data.
  - (iii) the erection of a water pumping station;
  - (iv) the laying of a raw water pipe from Deephams Sewage Treatment Works outflow channel on Ardra Road to the Edmonton EcoPark;
  - (v) stabilisation works to the eastern bank of Salmon's Brook;
  - (vi) the construction of surface water pumps, pipework and attenuation tanks;
  - (vii) landscaping works;
  - (viii) the installation of areas of green roof and/or brown roof;
  - (ix) the widening of the existing entrance into the Edmonton EcoPark from Advent Way, including modification or replacement of the bridge over Enfield Ditch;

- (x) construction within the Edmonton EcoPark of vehicle and cycle parking, vehicle, cycle and pedestrian routes, and weighbridges;
  - (xi) construction of an access into the Edmonton EcoPark from Lee Park Way, including bridging over Enfield Ditch;
  - (xii) improvements to Lee Park Way including vehicle barriers and the creation of segregated pedestrian and cycle paths;
  - (xiii) improvements to Deephams Farm Road and use of Deephams Farm Road as an access to the Edmonton EcoPark;
  - (xiv) the resurfacing of Ardra Road (if required);
  - (xv) security, fencing, and lighting works and equipment;
  - (xvi) 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;
  - (xvii) the upgrade and maintenance of the existing bridge over the River Lee Navigation; and
  - (xviii) [the installation of photovoltaic panels at roof level of the electricity and heat generating station and the resource recovery facility].
- 3.2.11 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 surface water attenuation storage;
  - (viii) utility works including electricity, water, and telecoms;
  - (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.
- 3.2.12 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 energy from waste facility;
  - (ii) construction of a temporary ash storage building;
  - (iii) realignment of the exit ramp from the existing energy from waste 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 and 4;

- 3.2.13 Works No.7 – as shown on Drawing C\_0011 (AD02.01), comprising decommissioning and demolition of the existing energy from waste 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.
- 3.2.14 Works in connection with Works No.1 to (and including) No.7, to the extent that they do not otherwise form part of any such work, being associated development within the meaning of section 115(2) of the Planning Act 2008 (as amended), 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 ES.

### **3.3 Site layout and Project components**

#### **Proposed site layout**

- 3.3.1 The main features of the Project once the proposed ERF and permanent associated works are constructed and the existing EfW facility is demolished are detailed below and are as illustrated in Vol 1 Plate 3.1.
1. a northern area of the Edmonton EcoPark accommodating the proposed ERF;
  2. a southern area of the Edmonton EcoPark accommodating the RRF, a visitor and education centre with offices, and a base for the Edmonton Sea Cadets ('EcoPark House');
  3. a central cleared space, where the existing EfW facility is currently located, which would be available for future waste-related development;
  4. a new landscape area along the edge with the River Lee Navigation; and
  5. new northern and eastern site access points.
- 3.3.2 During construction there is a need to accommodate a Temporary Laydown Area outside of the future operational site given space constraints. This would be used to provide construction parking, temporary accommodation (offices, staff welfare facilities) storage and fabrication areas and associated access and utilities.
- 3.3.3 The layout of the Application Site would vary over the course of the Project development stages as described in Section 3.5.
- 3.3.4 In addition to the ERF, the RRF and EcoPark House, the Application Site would accommodate other associated developments necessary for the operation of the Project (listed in Paragraphs 3.2.6 to 3.2.13).



Vol 1 Plate 3.1: Illustrative Edmonton EcoPark site layout

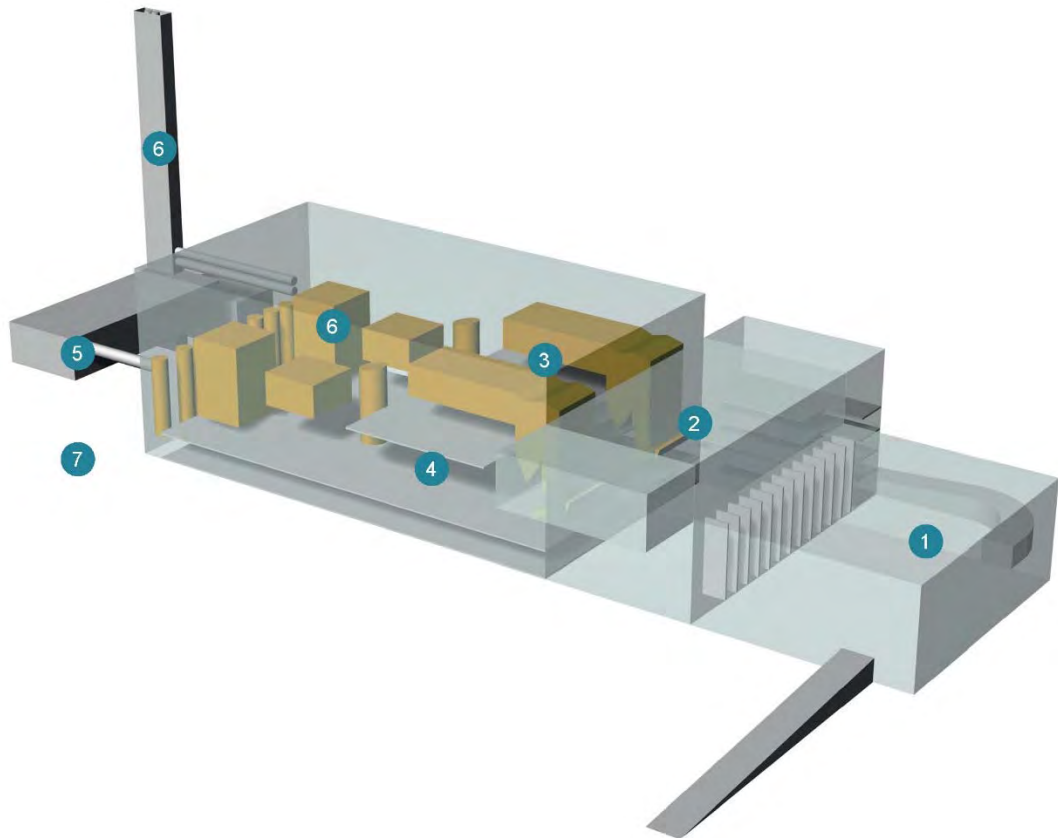
- 3.3.5 The locations of other associated developments are shown in Vol 1 Figure 3.1 (detailed site layout).
- 3.3.6 The site would continue to operate 24 hours a day, seven days a week with approximately 153 full-time equivalent people employed, approximately 49 of whom would be directly related to the ERF.

### **Energy Recovery Facility**

- 3.3.7 The principal development consists of a proposed ERF to be located in the northernmost section of the Edmonton EcoPark currently occupied by the IVC, BWRf, FPP, and ash recycling facility.
- 3.3.8 The ERF would comprise two process lines, with each line having a grate, furnace, boiler and a FGT plant. The proposed capacity of each process line is 350,000 tonnes of residual waste per annum therefore, the total

capacity of the facility would be 700,000 tonnes of residual waste per annum. The two process lines would supply steam to a single steam turbine generator set with an air cooled condenser in place.

3.3.9 Vol 1 Plate 3.2 below provides an illustrative ERF layout.



Vol 1 Plate 3.2: Components of the illustrative ERF layout

3.3.10 The proposed ERF would comprise the following components:

1. tipping hall: residual waste is delivered into the bunker by refuse vehicles;
2. bunker and cranes: residual waste is mixed and fed into the furnace for combustion;
3. grate and boiler: heat is used in the boiler to produce steam;
4. power generation: steam flows to the turbine for power generation;
5. cooling plant system: exhaust stream from the turbine is condensed back to water and returned to the boiler;
6. FGT and stack: flue gases are treated and emitted to atmosphere from the stack; and
7. electricity network connection: the power generated is exported to the national grid for supply to homes and businesses.

3.3.11 Further details of each component are provided below.



### ***Tipping hall***

- 3.3.12 Delivery vehicles would enter the ERF along an access ramp to bring the vehicles to the elevated tipping hall where the waste is delivered into the waste bunker. One way traffic flow is maintained within the tipping hall with vehicles exiting via the down ramp to rejoin the internal circulation route. Access to and from the ramps would be controlled and queuing on the ramps would be avoided or minimised.
- 3.3.13 Waste deliveries vary during the course of the year. Average deliveries, if equally delivered throughout the year, would be circa 13,500 tonnes per week. An analysis of north London weekly residual waste arisings over the last three years (2011 to 2014) shows that average weekly residual waste arisings vary by as much as 12 per cent above the mean and 14 per cent below the mean due to seasonality effects. The tipping hall, internal roads, and weighbridges have all been designed to be capable of accommodating these variations in traffic flows.
- 3.3.14 Odour control measures could include fast acting roller shutters at the tipping hall entrance and exit doors, shutter doors on the tipping bays from the tipping hall to the bunker, and managed ventilation within the tipping hall to provide air intake through louvre openings and exhaust air flowing into the bunker.

### ***Bunker and cranes***

- 3.3.15 The waste storage bunker serves a number of purposes as follows:
- receive waste and enable effective mixing of wastes (by overhead cranes) to create a homogeneous fuel that facilitates stable operations and optimisation of plant performance;
  - maintain sufficient fuel in the bunker for continuous plant operations; and
  - enable continued waste reception in the event of plant shutdown, both planned and unplanned.
- 3.3.16 The hydraulic volume of the bunker would be of sufficient capacity to hold a minimum of five days of processing capacity with the plant operating at full capacity. The proposed storage volume of the bunker is the equivalent of seven days' processing capacity equivalent to 14,784 tonnes or 42,240m<sup>3</sup>. This provides the Applicant with sufficient space to adequately mix the waste as well as providing a greater buffer/capacity to manage both waste deliveries and plant shutdown related disruptions.
- 3.3.17 A water mist spray system would be used in the bunker to suppress dust and odour. Additionally, air from the bunker would be drawn for use as primary and secondary air as part of the waste combustion process which would maintain negative pressure in the bunker, thus mitigating dust and odour escape to the wider environment.

### ***Grate and boiler***

- 3.3.18 Fuel would be deposited into the feed hoppers by grab cranes. From there, waste would be guided from the hopper into the incinerator through the feed chutes. The feed chutes would be hydraulically operated and feed waste

onto the grates in an even layer and control the amount of waste supplied to the grate.

- 3.3.19 The moving grates would transport waste supplied from the feed hoppers at one end to the bottom ash extraction system at the other end, ensuring that the fuel is thoroughly mixed and burnt out while it travels along the length of the grates. The grates would be capable of treating fuel with varying calorific value, meeting combustion requirements and producing the required bottom ash quality. Grate designs would be such that the accumulation of unburned material under the grate is prevented.
- 3.3.20 IBA resulting from waste combustion would be discharged from the end of the grate to a water bath. The IBA would then be transported to a designated area by a slag pusher and a conveyor belt:
- a. IBA would be transported to an off-site treatment area for metal recovery and processing into construction aggregates; and
  - b. a second waste combustion residue would be the finer ash in the combustion gases that would be collected in the boiler, and is thus known as boiler ash. Boiler ash is mixed with either bottom ash or the air pollution control residue from the FGT process which would then be transported off-site for suitable management by a licensed competent contractor.

#### ***Power generation***

- 3.3.21 The boilers would be designed as a natural circulation steam generator, capturing the heat energy from the combustion gases through a series of boiler tubes filled with water.
- 3.3.22 The steam turbine and generator set would convert the energy within the steam into electrical power and provide a point for the extraction of heat for supply to decentralised energy networks.
- 3.3.23 The turbine would be an extraction condensing type turbine, as it combines high efficiency with robustness and a compact design. In line with current best practice, there would be a single common turbine for the two boiler lines. The common turbine would be able to handle 110 per cent nominal steam flow from the boilers, and there would be a by-pass function (bypass station) designed to protect the turbine when operating outside normal steam parameters, e.g. at start-ups and shut-downs where the steam conditions are outside of the turbines' operational ranges. The turbine bypass functions would enable continued waste treatment operations.

#### ***Cooling plant system***

- 3.3.24 The ERF would be equipped with an air cooled condenser for rejection of waste heat. The condenser would be designed for the following modes of operation:
- a. steam turbine operation (with varying ambient temperatures);
  - b. bypass operation; and
  - c. combined steam turbine and bypass mode.

3.3.25 With an air cooled condenser installation, the low pressure exhaust steam from the turbine would pass through a large duct to rows of condenser units cooled by air, forced through heating surfaces by large fans. The condensate would be collected in a tank and pumped back to the turbine building. This condensing method only has minor water requirements as there are no evaporative losses. Therefore, wastewater disposal requirements would be limited to that needed for cleaning of heating surfaces. An air cooled condenser system produces no visible plume. This is because an air cooled condenser system is an enclosed system and therefore no moisture is lost to the surrounding atmosphere. Water supply for the condenser would be from potable water supplies or a mix of potable water supplies and abstraction from the Deephams STW outflow channel. Both of these options have been considered in the EIA.

***Flue gas treatment and stack***

3.3.26 Waste combustion results in the production of gases mainly consisting of water vapour, carbon dioxide (CO<sub>2</sub>) and excess air. This mixture of combustion gases is termed 'flue gas' and carries components including acid gases, organic substances, heavy metals and fly ash particles. Although these components represent a much smaller part than the water, CO<sub>2</sub> or excess air, the ERF would treat flue gases to mitigate the impact of pollutants.

3.3.27 Flue gas technologies would be employed that offer the highest degree of air emission abatement in order to minimise emissions into the atmosphere which are strictly controlled. This would comprise either a wet or combined FGT solution together with selective catalytic reduction abatement of mono-nitrogen oxides (nitric oxide and nitrogen dioxide) (NO<sub>x</sub>). Both options are assessed in the ES.

3.3.28 A wet FGT system would consist of a packed column designed to mix the combustion gases with a lime solution. The gases pass through various scrubber stages (e.g. primary particle separator, acid scrubber, caustic sulphur dioxide scrubber, secondary particle separator) from which wastewater and a solid residue is produced. The wastewater would be treated prior to discharge to the main sewer while the residue would be managed as hazardous waste.

3.3.29 The combined FGT system operates in a similar manner to the wet FGT system, the key difference being wastewater is not produced. Both systems would achieve the same emissions performance which is far below emission limits required by the European Union Industrial Emissions Directive (IED).

3.3.30 The technical arrangement of a combined FGT system is very similar to a wet FGT system with an additional process that enables the wastewater produced to be reused within the overall ERF process, either for dissolution, dilution or suspension of reagents or for the purposes of recirculation, quenching and residue handling. The net impact is that there is no wastewater produced by the combined FGT system. The wet FGT systems would avoid the production of solid Air Pollution Control (APC) residue. The

combined FGT system would produce a solid APC residue which would require treatment or disposal outside the Edmonton EcoPark.

- 3.3.31 Treated flue gas would be discharged to the atmosphere via a 100m (above ground level) tall stack made of two separate flues.
- 3.3.32 Plume visibility from the ERF stack depends on ambient meteorological conditions, i.e. air temperature and humidity, and flue gas humidity and temperature at stack outlet. A visible plume is formed when the temperature of the ambient air mixed with the cleaned flue gas is lower than the saturation temperature of the water vapour emitted with flue gas. It is indicated that the ERF is likely to generate a visible plume for some periods of the year. This is assessed in the EIA.

#### ***Electricity network connection***

- 3.3.33 The ERF would export electricity from the steam turbine generator through transformers and power lines to the grid. The transformers would convert the electricity voltage from the generator to that required by the grid.
- 3.3.34 Upgrade works would be required to the electricity connection to the National Grid. These works would be pursued separately by UK Power Network (UKPN) under their statutory powers and therefore they are not included in the Application Site boundary for the Project or assessed in the ES.

#### **Resource Recovery Facility**

- 3.3.35 The RRF is an associated development to be located in the south of the Edmonton EcoPark. The RRF would encompass the following areas:
- Recycling and Fuel Preparation Facility (RFPP);
  - RRC; and
  - staff facilities.
- 3.3.36 The RRF would have capacity to manage around 390,000 tonnes of waste annually. The RRF would comprise a single storey industrial building.
- 3.3.37 The RRF would receive and sort a variety of wastes to recover items for reuse, recycling or further processing thereby maximising diversion from landfill. Equipment would be used to remove some recyclables from the residual waste (e.g. metals) and the remaining residual waste suitable for thermal treatment would be transported to the proposed ERF for energy recovery. Collected food and garden wastes would also be received and bulked for transport to composting facilities (off-site).
- 3.3.38 The RRF would be broadly organised into component areas as well as a separate area for staff facilities. The component areas would be arranged so that the operational facilities are to the west and the public area is located to the east facing EcoPark House. The division of these areas allows for improved traffic arrangements and site management while improving safety on-site. Staff facilities are proposed to be consolidated in a mezzanine floor above the RRF, affording views both into the public and operational areas.

### ***Recycling and Fuel Preparation Facility***

- 3.3.39 The RFPF area would consist of a reception hall; sorting/preparation areas and storage areas.
- 3.3.40 Discrete areas for different material streams and sources are provided, for example, trade waste, RRC residual waste, bulky waste, green waste etc. The facility would use movable push walls for long term design flexibility.
- 3.3.41 Bulky waste containing materials suitable for recycling would be delivered to the RFPF where it would be sorted and stockpiled. The RFPF would include a series of bays that would be suitable for tipping, storage, and loading of pre-sorted waste, with appropriate access for loading shovels and other required vehicles for the collection of waste with:
- a. recyclable waste being transferred to a reprocessing facility; and
  - b. residual waste unsuitable for combustion being transported to a landfill for disposal.
- 3.3.42 Waste that is suitable for combustion after pre-treatment would be deposited in the RFPF area for sorting and size reduction. After shredding, residual waste suitable for the ERF would be moved to the waste bunker.
- 3.3.43 The RFPF would handle and shred residual waste, creating the potential for dust and odour. Food and gully wastes<sup>15</sup> may be particular sources of odour. Control systems are likely to include a combination of:
- a. dust suppression misting system;
  - b. de-duster unit (e.g. external tower system); and
  - c. odour control such as carbon filters.

### ***Reuse and Recycling Centre***

- 3.3.44 The RRC is located on the eastern side of the RRF. The RRC would have the capacity to handle approximately 8,000 tonnes of waste per year. The RRC would be open to members of the public and small businesses.
- 3.3.45 Concrete drop chutes would be provided on the public facing side of the RRC. Users would deposit waste through the shoots into containers or bays at the base of the chutes. The containers would be arranged in such a way to permit the removal and transport of containers without impacting on the public's ability to use the RRC area.
- 3.3.46 A roll-on roll-off container lorry or front end loader would remove the containers/empty the bays as necessary. Material would be deposited in an appropriate bay in the storage area of the RRF. Site users and members of the public would be isolated from container handling operations.
- 3.3.47 A separate route and entry would be created for the general public to access the RRC.

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<sup>15</sup> Waste that has accumulated in drains.

### **EcoPark House**

- 3.3.48 The EcoPark House building would be a two-storey building used to accommodate the following:
- a. visitor, community and education centre with offices; and
  - b. a base for the Edmonton Sea Cadets – including a launch into the River Lee Navigation.
- 3.3.49 Within EcoPark House a new facility would be provided for the Edmonton Sea Cadets with continued access to the wharf area (as they currently have). Parking would be provided for one minibus as required by the Edmonton Sea Cadets.
- 3.3.50 The temporary residence of the Edmonton Sea Cadets during the construction of EcoPark House is described in Section 3.5.

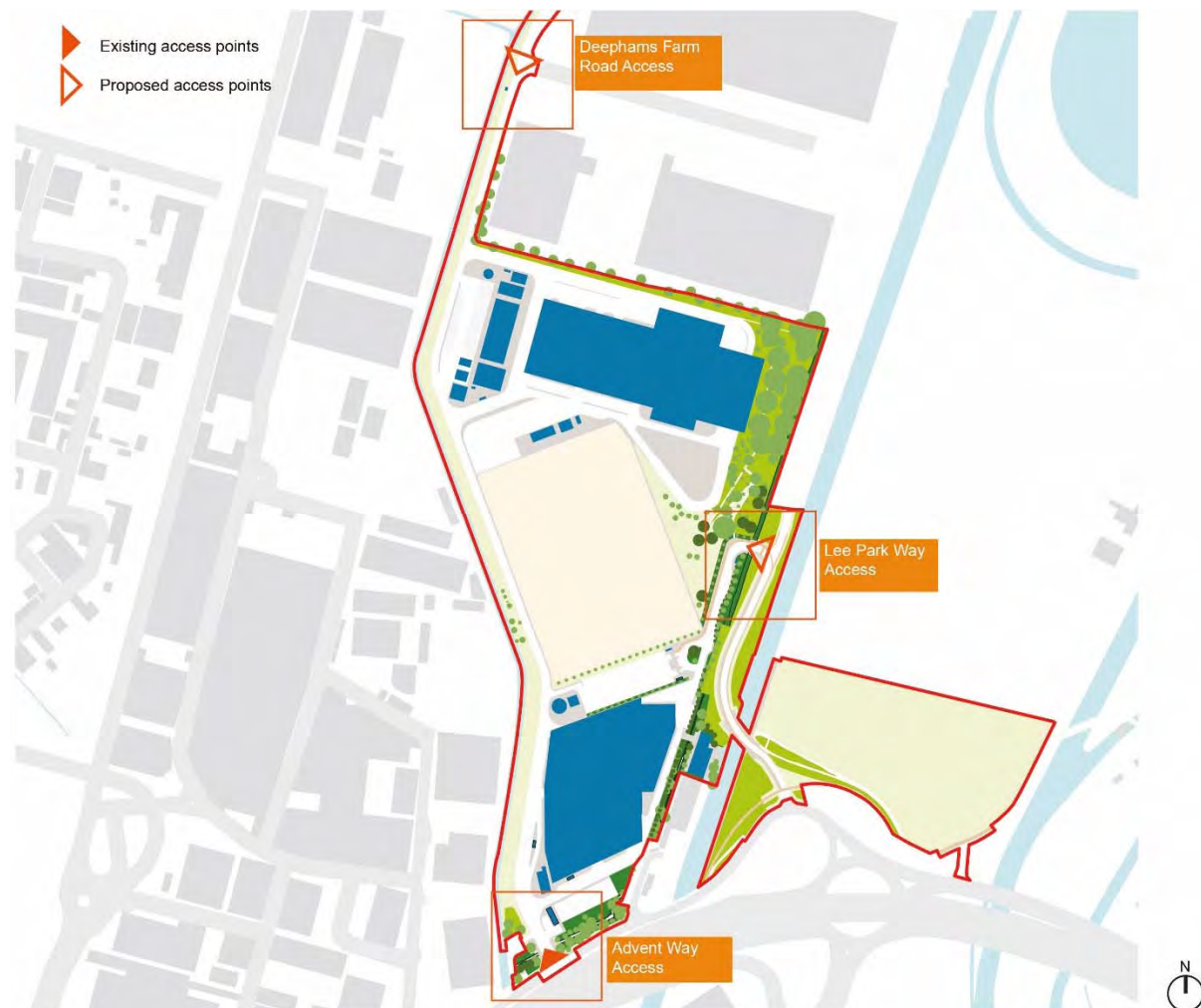
### **Site access**

- 3.3.51 Vehicle movements associated with the proposed facility would include the following:
- a. RCVs and HGVs;
  - b. staff, operational deliveries, Edmonton Sea Cadets, and site visitors; and
  - c. private vehicles/commercial vehicles visiting the RRC.

### **Road access points**

- 3.3.52 Access to the Application Site would be from three locations (see Vol 1 Plate 3.3):
- a. southern access off Advent Way;
  - b. eastern access off Lee Park Way; and
  - c. northern access leading onto Deephams Farm Road from Ardra Road.
- 3.3.53 During the construction stages, all three access points would be used for different types of construction traffic, i.e. materials/equipment deliveries, irregular night-time deliveries, and movement of construction personnel.
- 3.3.54 For operation, the Application Site access points have been arranged in order to provide separate access to operational traffic/deliveries and private vehicles.
- 3.3.55 **Advent Way access** (southern entrance): the Application Site's main access at Advent Way would continue to serve as the main access point for waste delivery vehicles (at present the southern access points accommodates both deliveries and public access). It is proposed that the access would be widened (by widening the existing bridge or constructing a new bridge) to improve operational access to the Application Site. This would provide the width equivalent to two extra lanes of traffic and a larger turning radius from Advent Way. This would facilitate the manoeuvring of large operational vehicles and improve visibility. In addition a new security

gatehouse is proposed which would be the main security building within the Application Site consolidating facilities for gate management, CCTV room and security staff welfare.



Vol 1 Plate 3.3: Access to the Application Site

- 3.3.56 Two other access points, one existing and one new, would be used as follows:
- 3.3.57 **Lee Park Way** (eastern entrance): Lee Park Way currently runs along the west bank of the River Lee Navigation before crossing over the river and forming a junction with Cooks Ferry Roundabout (the Advent Way/A406 North Circular Road roundabout). As part of the Project, a new access off Lee Park Way is proposed which would lead into the Edmonton EcoPark from the east. The proposed access from Lee Park Way would provide a secure vehicle, pedestrian and cycle access to EcoPark House for visitors, staff and the Edmonton Sea Cadets. The Lee Park Way entrance would also accommodate access to the RRC for members of the public.
- 3.3.58 The use of Lee Park Way would create a secure route which would ensure segregation of traffic to avoid conflict with operational vehicle movements. Lee Park Way is currently unadopted and is owned by the Lee Valley Regional Park Authority (LVRPA).

- 3.3.59 It is also proposed to create a temporary access for vehicles from Lee Park Way to the Temporary Laydown Area.
- 3.3.60 **Deephams Farm Road** (northern entrance): the existing access at the north-west corner of the Application Site would be used as the primary access point for construction traffic, which would assist in achieving safe segregation of operational traffic for the existing EfW facility and construction traffic for the proposed ERF. This access may also be used following completion of the ERF for operational vehicles. The north access road is currently unadopted and is owned and maintained by Kennet Properties Ltd. It is intended that access rights over Ardra Road would be secured as part of this Project, and that Deephams Farm Road be acquired and added to the Edmonton EcoPark title.
- 3.3.61 Further details regarding how each of these access points would be used during the Project stages is described in Section 3.5.

***Water and rail transport***

- 3.3.62 A Water Transport study was undertaken in order to establish the viability of transporting IBA from and residual solid waste to the Edmonton EcoPark. The study showed that the waterways in question (River Lee Navigation, Bow Creek and River Thames) are likely to have the capacity to accommodate annual flows of:
- 140,000 tonnes of IBA only; or
  - 180,000 tonnes per year of IBA and residual solid waste.
- 3.3.63 However at the above levels, the transportation of materials along the River Lee Navigation was considered to be technically feasible only with considerable investment costs. This resulted in the total costs of transporting IBA and/or residual solid waste via the waterways being substantially more expensive than road by a factor of 2.2-3.0 times in all circumstances, making this option unviable. Another challenge would be where water transport would be to and from given the limited number of Constituent Boroughs with access to waterways and a limited number of IBA processors.
- 3.3.64 There are two rail lines operating close to the Application Site, namely:
- the East Anglia line from Liverpool Street/Stratford to Hertford East and Stansted Airport, via Angel Road, which is located approximately 470m to the west of the Application Site; and
  - the East Anglia line from Liverpool Street to Chingford, which is located approximately 3km to the east of the Application site.
- 3.3.65 There is no rail connection to the Application Site and there are no railway lines running directly adjacent to the Application Site. For this reason the transporting of waste or construction materials via rail has not been considered as part of the Project. For a direct rail connection to be provided, a new railway spur and associated loading and unloading infrastructure would be required. The construction of any such spur would require significant investment and land take, if an appropriate alignment could be found, and would likely cause significant disruption to the operation of the



existing railway, to residents and businesses and to the local highway network.

3.3.66 While waste or construction materials could be moved to a local rail transfer station, if one were available, the waste or construction materials would still need to be transferred from the rail transfer station to the Application Site via road so this would not provide any benefits for the local highway network.

3.3.67 Further information is provided in Vol 2 Appendix 10.2 (Transport Assessment).

### **Landscape design**

3.3.68 The existing soft landscape areas within the Edmonton EcoPark are mainly located in the east of the Application Site, adjacent to the Lee Valley SMINC and LVRP. Hard and soft open areas around the Edmonton EcoPark are being designed as part of a coherent site wide landscape strategy. The strategy aims to:

- a. visually integrate the landscape into the wider landscape context, in particular linking the landscape in the north and east of the Application Site to the LVRP;
- b. reduce the predicted visual impact of the built form from key locations, in particular the LVRP;
- c. use planting and topography to soften and enhance site edges;
- d. establish a landscape setting, driven where possible by ecological principles, for the built form to sit within;
- e. utilise brown and green roofs to provide ecological benefits from the buildings and promote ecological diversity within the Application Site, and to integrate buildings into the Application Site and to the wider context;
- f. enhance the approach to the Edmonton EcoPark along Lee Park Way for both the public and staff; and
- g. integrate safe pedestrian routes for both visitors and staff within the Edmonton EcoPark, and enhance routes for the public outside the Edmonton EcoPark.

3.3.69 Further details of the proposed landscaping approach are provided in the Design Code Principles (AD02.02). This includes details of the ecology commitments within the landscape strategy for the Application Site with the key principles of:

- a. inclusion of native species;
- b. retention of mature trees;
- c. retention and enhancement of links with adjacent habitats;
- d. provision of nest boxes for birds and bats;
- e. inclusion of brown and green roofs; and
- f. removal of invasive species.

- 3.3.70 Landscaping works would be appropriately timed to take account of Project development stages, i.e. would be implemented once construction works in an area are completed.

### **Lighting**

- 3.3.71 The lighting strategy for the Project requires the replacement of lighting infrastructure across the Application Site to align with the proposed access points, circulation routes and buildings. The lighting would provide illumination for the safe operation of the various activities proposed to be carried out in the Edmonton EcoPark. This has been developed with consideration for potential light spill to adjoining sensitive receptors such as areas of ecological value in the LVRP.
- 3.3.72 The lighting design would take account of the need for some areas of ecological value to be darker such as the watercourses at the Application Site. The need for a sensitive approach to lighting would influence the lighting levels of some operational and public areas. In accordance with the Bat Conservation Trust guidelines, narrow spectrum lights that emit minimal ultra-violet light and peak higher than 550nm (yellow, orange and red wavelengths) would be used where possible; flat cut-off lanterns or accessories would be used; the height of lighting columns would be considered to reduce spillage; and light levels would be as low as guidelines permit and would be turned off when not required.

## **3.4 Application documents and plans defining the Project**

### **Works plans**

- 3.4.1 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 will 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.
- 3.4.2 In order to accommodate this and ensure a robust assessment of the likely significant environmental effects of the Project, the assessment has been undertaken in line with the principles of the 'Rochdale Envelope', as set out in the Planning Inspectorate's Advice Note 9<sup>16</sup>. Advice Note 9 sets out a number of key principles on the level of detail required for a robust assessment. This involves assessing the maximum and minimum parameters for the elements where flexibility is required. Details are set out on a series of works plans (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).

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<sup>16</sup> Planning Inspectorate (2012) Advice note 9: Using the 'Rochdale Envelope', version 2. Available at: <http://infrastructure.planningportal.gov.uk/wp-content/uploads/2013/05/Advice-note-9.-Rochdale-envelope-web.pdf> (accessed July 2015).

- 3.4.3 Given the parameters of the Project, there is potential for variation in the associated range of impacts and effects. In line with Advice Note 9 each topic assesses its own reasonable worst-case scenario for adverse effects. This means that within a range of possible assumptions about an activity, the assessment is based on the higher level of likely impacts and effects. As well as the physical parameters of the Project, this may apply to other factors such as throughput of the ERF or traffic generation, for example.
- 3.4.4 The EIA is based on the works plans, which are contained in the Book of Plans (AD02.01) submitted as part of the Application. Where appropriate, the EIA also draws on illustrative material showing aspects of the Project, for example, the development stage information set out in Section 3.5 below. Such illustrative information represents what is considered to be the most likely programme and staging given the existing site operations, available land (within the Application Site boundary) and construction requirements. It is noted that consent is not being sought for the Project stages but undertaking the EIA in this way ensures that all stages of the Project are identified and assessed by all topics, thus ensuring worst-case assessments are undertaken.

### **Design Code Principles**

- 3.4.5 In addition to the works plans, the design of the proposed facilities would be bound by Design Code Principles (AD02.02).
- 3.4.6 The Design Code Principles (AD02.02) provide clarity over appropriate design quality for the Project thereby providing a level of certainty for the Applicant, local authority and local community alike. It includes a set of written requirements that explain the design approach and which address more detailed issues, including the use of materials. The Design Code Principles (AD02.02) apply to all permanent buildings and structures, however they do not apply to temporary buildings and spaces during construction. All subsequent detailed design development will need to be in accordance with the Principles. Hence the Principles form part of the Project and are therefore assessed within the EIA.
- 3.4.7 Those Design Code Principles that are relevant to the EIA are summarised below. Full details are provided in the Design Code Principles application document (AD02.02).
- 3.4.8 DCP1 - The ERF should be simple in form to reflect its functional requirements, reduce visual impact and have a less dominant presence, in particular from the Lee Valley Regional Park (LVRP) to the east.
- 3.4.9 DCP2 - The composition of the ERF façade should be horizontally divided to further reduce the perceived scale.
- 3.4.10 DCP3 - Contrasting façade systems should be used for the ERF upper elements and plinth.
- 3.4.11 DCP6 - The façade systems of the ERF upper elements should introduce rhythm, variation, shadow, transparency or translucency and use lighter colours to provide visual interest and reduce visual impact.

- 3.4.12 DCP9 - The roofs of the ERF tipping hall and crane hall should incorporate green and brown roofs which contribute to the architectural treatment of the ERF, provide ecological enhancement and serve to attenuate and filter water.
- 3.4.13 DCP19 - The composition of the RRF should be horizontally divided to identify a plinth and robust base that contrast from the lighter upper elements.
- 3.4.14 DCP25 - The sitting and design of EcoPark House should be appropriate to its location adjacent to the River Lee Navigation and provide for the requirements of its use including its public facing role within the Edmonton EcoPark.
- 3.4.15 DCP27 - A green or brown roof should be considered on the roof of EcoPark House in order to provide ecological enhancement and aid in the integration of the Edmonton EcoPark into the LVRP to the east.
- 3.4.16 General Guidelines, landscape:
- a. opportunities should be explored to maximise the extent of landscaping, given functional and operational requirements;
  - b. landscaping should be developed with regard to security fencing and CCTV infrastructure;
  - c. appropriate treatment and control of invasive non-native species should continue in order to comply with the legislation and prevent their further spread;
  - d. areas of the Edmonton EcoPark and structures which are visible from outside the Edmonton EcoPark, as well as all publicly accessible areas within the Edmonton EcoPark, should use materials of a quality and character that reflects its public nature;
  - e. hard landscape materials should be selected for ease of maintenance and high durability;
  - f. native species should be used wherever possible;
  - g. mature trees should be retained where possible;
  - h. links with adjacent habitats should be retained and enhanced where possible; and
  - i. flood storage compensation should be incorporated.
- 3.4.17 DCP45 – Sustainable Drainage Systems (SuDs): as part of the drainage approach for the Application Site permeable paving should be utilised in appropriate areas of the Edmonton EcoPark as part of a wider water attenuation strategy.
- 3.4.18 General Guidelines, lighting:
- a. the lighting design should be determined by the operational requirements for both day-time and night-time lighting of buildings and external areas;

- b. the lighting design should provide adequate lighting levels to enable the safe operation of all facilities on-site and support vehicular, pedestrian and cyclist movements;
- c. the lighting design should be as low as guidelines permit and turned off when not required;
- d. the lighting design should deliver robust and efficient lighting which creates an attractive and safe environment for staff and visitors;
- e. subject to meeting the operational and safety requirements, lighting should be designed to reduce the brightness and spread of light during operation;
- f. lighting across the Application Site should be minimised in accordance with guidelines set out by the Bat Conservation Trust;
- g. lighting proposed within the Lee Valley SMINC should be designed to maintain these dark areas for wildlife, particularly foraging and commuting bats; and
- h. the lighting design should avoid light spill within Chingford Reservoirs SSSI and the River Lee Navigation.

#### **Code of Construction Practice**

3.4.19 A Code of Construction Practice (CoCP) (AD05.12) has been submitted with the Application. This is included as Vol 1 Appendix 3.1 of the ES. The CoCP (Vol 1 Appendix 3.1) sets out principles and controls which would be implemented during construction/demolition to manage any potential impacts on the environment to limit disturbance as far as reasonably practicable. The Applicant will be bound to the measures set out in the CoCP (Vol 1 Appendix 3.1), with the measures applied throughout the construction process.

3.4.20 The CoCP (Vol 1 Appendix 3.1) forms an integral part of the Project and it is assumed in the ES that all the measures set out in the CoCP (Vol 1 Appendix 3.1) are in place during construction/demolition works.

#### **DCO requirements**

3.4.21 The commitments set out in the Design Code Principles (AD02.02) and CoCP (AD05.12 and Vol 1 Appendix 3.1) would be delivered through DCO requirements (see Schedule 2 of the Draft DCO (AD03.01)). Schedule 2 of the Draft DCO also provides the commitment for other environmental design measures and mitigation set out in the ES.

#### **Environmental Commitments and Mitigation document**

3.4.22 An Environmental Commitments and Mitigation Schedule (ECMS) (AD06.03) has been submitted with the Application. The ECMS (AD06.03) sets out the environmental commitments and mitigation that the Applicant commits to delivering as part of the Project, identifying the approval route for each of the commitments, e.g. draft DCO (as requirements), Section 106 Draft Agreement (AD03.03), Design Code Principles (AD02.02) or CoCP (AD05.12 and Vol 1 Appendix 3.1). The ECMS covers both of the following:

- a. Environmental commitments, meaning those measures incorporated in:
  - i. the design for which approval is sought; and
  - ii. other Application documents which have informed the EIA undertaken for the Project.
- b. Environmental mitigation, describing further measures which are considered to be necessary to prevent or reduce significant adverse effects occurring as a result of the Project.

### **3.5 Project development stages**

3.5.1 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.

3.5.2 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.

3.5.3 This section sets out the key development stages that have been identified and are assessed within the EIA. For each stage there is a description of the construction/demolition works to be undertaken (where relevant) and a description of the state of operation of the waste management facility during the Project stage (i.e. whether the current, proposed facility or both facilities would be operational).

#### **Overview of development stages and programme**

3.5.4 The Project programme has been developed based on the most likely sequence of construction activities to maintain continuity of service coupled with construction logistics. The programme comprises the following stages:

3.5.5 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.

3.5.6 Vol 1 Plate 3.4 sets out the summary programme for the development stages for the Project. It is expected that the Project would be implemented in accordance with this programme.

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Stage 1a (Site prep and enabling works)										
Stage 1b (Construction of RRF, EcoPark House)										
BWRF/FPP Transition										
Stage 1c (Demolition of northern area)										
Stage 1d (Construction of ERF)										
Stage 2 (Transition stage)										
ERF full operations										
Stage 3 (EfW decommissioning and demolition)										

Vol 1 Plate 3.4: Indicative summary programme for Project stages

- 3.5.7 Each of the stages is described in Vol 1 Table 3.1 - Vol 1 Table 3.7 below. These descriptions are supported by the development stage plans provided in Vol 1 Figures 3.2-3.8.
- 3.5.8 Further details of the vehicle numbers in each of the stages can be found in the Transport Assessment (which forms Vol 2 Appendix 10.2).
- 3.5.9 All of the stages are assessed within each of the topic assessments in the ES (see Volumes 2 and 3). Stage 2 represents the worst-case for many topics when both the existing EfW facility and proposed ERF are operational at the same time.
- 3.5.10 While it is expected that the Project would be constructed in accordance with this programme and the EIA has been undertaken on this basis, it is recognised that the construction programme may vary slightly. A sensitivity test has therefore also been undertaken which considers if the environmental effects of the Project would be any different if the programme were to change by plus or minus 12 months. Whilst the nature and extent of any programme delay cannot be predicted with certainty, it is considered appropriate to select a representative period so as to enable a realistic and proportionate sensitivity test to be undertaken. Whilst the possibility of delays beyond 12 months cannot be ruled out and the need to deliver the Project before the end of life of the existing EfW facility, significantly longer delays are not considered sufficiently likely to require assessment.

### 3.5.11 The sensitivity test is included in the topic assessments in Volumes 2 and 3.

Vol 1 Table 3.1: Stage 1a - Site preparation and enabling works

<b>Stage 1a: Site preparation and enabling works (see Vol 1 Figure 3.2 for location of numbered items)</b>	
<b>Works 4 (Works Plan C_0006) / Works 5 (Works Plan C_0007) / Works 6 (Works Plan C_0008)</b>	
<i>Expected timescale:</i>	2019
<i>Works:</i>	<p>Enabling works along Deephams Farm Road to create the Deephams Farm Road access (1).</p> <p>Demolition of clinical waste building (2) and maintenance workshop building (3).</p> <p>Infill of artificial pond and clearance of landscaped area to form temporary storage and parking area (4).</p> <p>Layout of replacement fleet parking areas and temporary support buildings on the site of the maintenance workshop (2).</p> <p>Establish hoarded demolition work sites with safe pedestrian and vehicular access to the existing EfW facility main entrance and staff car parks (5).</p> <p>Relocate Edmonton Sea Cadets to existing EfW facility meeting rooms with safe pedestrian and vehicles 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 existing EfW facility and relocate their boats to an off-site location provided by the Edmonton Sea Cadets (6).</p> <p>Diversion of utilities and services effected by demolition and clearance works (2,3,4,5) including diversion of the sewer trunk main owned by Thames Water Utilities Limited (TWUL) which runs under the proposed location of the RRF.</p> <p>Demolition and clearance of EcoPark House (7) and RRF (8) construction zones.</p> <p>Creation of new Lee Park Way access and temporary diversion of footpaths and cycleways (9).</p> <p>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 (10).</p>
<i>Construction/demolition methods:</i>	<p>Topsoil would be stripped using dozers and tracked excavators.</p> <p>Bulk earthmoving operations would be carried out using large excavators, articulated dump trucks, bulldozers and heavy compaction plant.</p> <p>Diversion of existing sewer to be undertaken using trenchless methodology such as tunnel pipe jacking. Access to be provided from new pre-cast concrete manholes.</p> <p>Demolition works would be undertaken using front/back-actor tracked machines fitted with hydraulically powered grabs and crushers.</p>
<i>Construction/demolition vehicles:</i>	<p>Very few construction/demolition movements during this sub-stage.</p> <p>Access via existing southern access on Advent Way.</p>
<i>Landscaping condition:</i>	<p>Existing landscaping areas within the RRF construction zone and EcoPark temporary storage and parking area would be removed. The establishment of the Temporary Laydown Area would replace the existing private soft landscaped area with hard standing. The landscaping works associated with proposed Lee Park Way entrance would be implemented.</p>



<i>Operational scenario:</i>	The existing EfW facility, BWRf, FPP, IVC and IBA facilities would operate at current capacity (as set out in Section 2.3). Edmonton Sea Cadets operate from EfW facility meeting rooms.
<i>Operational vehicles:</i>	2,126 vehicle movements per day (total, two-way). Access via Advent Way.

Vol 1 Table 3.2: Stage 1b - Construction of RRF, EcoPark House and commence use of Temporary Laydown Area

<b>Stage 1b: Construction of RRF, EcoPark House and commence use of Temporary Laydown Area (see Vol 1 Figure 3.3 for location of numbered items)</b> <b>Works 2 (Works Plan C_0004) / Works 3 (Works Plan C_0005) / Works 4 (Works Plan C_0006)</b>	
<i>Expected timescale:</i>	2020 – 2021
<i>Works:</i>	Commence use of Temporary Laydown Area (1). Relocation of LWL vehicle fleet to the north of existing EfW facility (2). Construction of EcoPark House (3). Construction of RRF (4) and its weighbridges (4). Erection of temporary ash storage building (5). Layout of staff and visitor parking area immediately adjacent to EcoPark House (6). Commencement of use by staff and visitor vehicles of new Lee Park Way access (7). Construction of the attenuation tank and associated drainage of the RRF sub-catchment (8). EfW facility exit ramp arrangements aligned with RRF construction area and required RRF operational vehicle routes (9).
<i>Construction/ demolition methods:</i>	RRF piling works: continuous flight auger (CFA) piling to a depth of 7m below ground level (mid depth of the London Clay layer). RRF excavation works: material excavated using excavator bulldozers and scraper boxes. To be transferred by dumper trucks to stockpiling areas for fill which would be used for landscaping north-eastern part of site. RRF steel superstructure works: constructed using mobile cranes. EcoPark House piling works: CFA piling to a depth of approximately 24m below ground level (into Lambeth group) EcoPark House steel superstructure works: precast concrete hollow core floor system to be installed using slim floor construction. Precast systems fabricated off-site and delivered to site as large planks for installation.
<i>Construction/ demolition vehicles:</i>	202 vehicle movements per day (total, two-way). Access via existing southern access on Advent Way for construction works associated with RRF and EcoPark House. Some traffic may arrive at Temporary Laydown Area and then travel to the Application Site via Walthamstow Avenue and the existing access. Some light vehicles including construction shuttle buses may travel to the Application Site via the proposed Lee Park Way access.
<i>Landscaping condition:</i>	As described for Stage 1a.
<i>Operational scenario:</i>	The existing EfW facility, BWRf, FPP, IVC and IBA facilities would operate at current capacity (as set out in Section 2.3). Commence use of temporary ash storage building. Edmonton Sea Cadets operate from EfW facility meeting rooms.

<i>Operational vehicles:</i>	2,054 vehicle movements per day (total, two-way) Operational vehicles access via Advent Way. Staff and Edmonton Sea Cadet vehicles to use both Advent Way and Lee Park Way accesses.
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Vol 1 Table 3.3: Stage 1c - Operation of RRF, EcoPark House and demolition/clearance of northern area

<b>Stage 1c: Operation of RRF, EcoPark House and demolition/clearance of northern area (see Vol 1 Figure 3.4 for location of numbered items)</b> <b>Works 6 (Works Plan C_0008) / Works 4 (Works Plan C_0006)</b>	
<i>Expected timescale:</i>	2021 – 2022
<i>Works:</i>	Completion of RRF and transfer of FPP/BWRF operations (1). Completion of EcoPark House and occupation by the Edmonton Sea Cadets (2). Relocation of EcoPark stores (3). Disconnection of obsolete services and utilities within demolition zones. Demolition and clearance of existing FPP area (4). Demolition and clearance of existing BWRF area (5). Demolition and clearance of existing IBA area (6). Demolition and clearance of existing IVC facility (7) – composting facilities to be relocated off-site and bulking facilities provided within the RRF to enable transport to third party treatment sites.
<i>Construction/ demolition methods:</i>	Northern area demolition: using front/back-actor tracked machines fitted with hydraulically powered grabs and crushers. Material from roadways, hard standing areas and retaining wall structures to be crushed on site for disposal.
<i>Construction/ demolition vehicles:</i>	168 vehicle movements per day (total, two-way) Access via Deephams Farm Road for northern site clearance
<i>Landscaping condition:</i>	As described for Stage 1a. Additionally, clearance works to the north of the Application Site would involve the commencement of vegetation clearance at the north-east corner of the Application Site pending the earthworks required at Stage 1d.
<i>Operational scenario:</i>	The existing EfW facility would operate at current capacity (as set out in Section 2.3). BWRF and FPP to continue operating at current capacity (as set out in Section 2.3) within the RRF. IBA and IVC operations would have ceased; materials bulked for transfer off-site to third party treatment sites. RRC element of RRF building opens to visiting members of the public. Edmonton Sea Cadets transfer to and operate from EcoPark House which would also be available for other community activities. Edmonton Sea Cadets would regain access to Wharf when they relocate to EcoPark House.
<i>Operational vehicles:</i>	2,734 vehicle movements per day (total, two-way) Operational vehicles access via Advent Way to serve EfW facility and RRF. Staff vehicles and Edmonton Sea Cadets to use both existing access on Advent Way and proposed Lee Park Way access. Members of public and local businesses visiting the RRC element of RRF and EcoPark House would access via Lee Park Way.

Vol 1 Table 3.4: Stage 1d - Construction of ERF

<b>Stage 1d: Construction of ERF (see Vol 1 Figure 3.5) Works 1a and 1b (Works Plan C_0002) / Works 4 (Works Plan C_0006)</b>	
<i>Expected timescale:</i>	2022 – 2024
<i>Works:</i>	<p>Construction of ERF including piling and excavation works, civil and structural works, establishment of new utilities connections.</p> <p>Construction of the surface water attenuation tank(s) and associated drainage of the ERF sub-catchment.</p> <p>Erection of a new pumping station and associated pipework to provide raw water from Deephams STW outflow channel.</p> <p>Partial landscaping.</p>
<i>Construction/demolition methods:</i>	<p>Excavation of ERF footprint to remove topsoil.</p> <p>Bunker construction: crawler mounted piling rig to be used to install secant piled embedded bunker walls – depth of walls to be limited to maintain buffer of low permeability London Clay above aquifers to protect groundwater. Piling undertaken using CFA techniques. Bunkers to be machine excavated. Ground anchors to be installed drilling from a track mounted machine and inserting steel bars/strands. Bottom slab of bunker to be reinforced concrete cast in situ.</p> <p>ERF building construction: installation of reinforced concrete CFA bored piles of a length that would not breach required buffer of London Clay. Reinforced concrete pile caps to connect groups of piles to the main columns supporting the ERF.</p> <p>Construction of boiler/furnace: structure brought in as large preassembled sections and assembled on site lifted in by cranes and welded together on the structure.</p> <p>Construction of FGT plant: installed simultaneously to boiler/furnace. Connection duct systems erected from large preassembled sections.</p> <p>Construction of steam turbine: installed on specially formed spring supported concrete base frame using a heavy lift crane.</p>
<i>Construction/demolition vehicles:</i>	<p>568 vehicle movements per day (total, two-way)</p> <p>Access via Deephams Farm Road for the majority of vehicles associated with the construction of the ERF. Vehicle movements associated with the delivery of concrete would be undertaken directly to Application Site while approximately 50 per cent of all other construction vehicle movements would be undertaken to the Temporary Laydown Area, equating to approximately ten trips per day, travelling to the Application Site 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 Application Site via the existing Advent Way access. This would be undertaken at a time that minimises any conflicts with site operational vehicles.</p>
<i>Landscaping condition:</i>	As described for Stage 1a. Earthworks and construction activity continues in the north-eastern corner of the Application Site preventing implementation of site landscaping proposals at this stage.
<i>Operational scenario:</i>	<p>The existing EfW facility would operate at current capacity (as set out in Section 2.3).</p> <p>BWRF and FPP to continue operating at current capacity (as set out in Section 2.3) within the RRF.</p> <p>RRC element of RRF building open to visiting members of the public.</p>

	Edmonton Sea Cadets operate from EcoPark House (with Wharf access) which would also be available for other community activities and NLWA/LWL office requirements.
<i>Operational vehicles:</i>	2,734 vehicle movements per day (total, two-way) Operational vehicles access via Advent Way to serve EfW facility and RRF. Members of public and local businesses visiting the RRC element of RRF and EcoPark House would access via Lee Park Way, along with operational site staff and Edmonton Sea Cadets.

Vol 1 Table 3.5: Stage 2 - Commissioning of ERF alongside operation of EfW facility, i.e. transition period

<b>Stage 2: Commissioning of ERF alongside operation of EfW facility, i.e. transition period (see Vol 1 Figure 3.6 for location of numbered items)</b>	
<b>Works 1a and 1b (Works Plan C_0002) / Works 4 (Works Plan C_0006)</b>	
<i>Expected timescale:</i>	2025
<i>Works:</i>	Commissioning of proposed ERF over a 6-12 month period to test the equipment and processes before the ERF becomes fully operational (1). Continued operation of EfW facility during this transition period as waste inputs are gradually transferred from the EfW facility to the proposed ERF. Operations would not cease at the EfW facility until the proposed ERF is fully commissioned and tests over the reliability period have been successfully completed. Installation of ERF weighbridges (2). Relocation of operations contractors compound from adjacent to the existing EfW facility to adjacent to the southern side of the ERF (3). Relocation of operational stores adjacent to the ERF (3). Relocation of operational fleet depot to adjacent to ERF (4). Completion of landscaping works that are not linked to or affected by the EfW facility demolition (5).
<i>Commissioning methods:</i>	Commissioning process entails: cold testing; hot testing; and test run – three month trial operation period. Commissioning period supported by only minor construction works.
<i>Construction/demolition vehicles:</i>	Very few construction/demolition movements during this stage. Access via Deephams Farm Road access for ERF commissioning works. Staff shuttle buses to use Lee Park Way access as required. Relocation works and landscaping would also use Deephams Farm Road access.
<i>Landscaping condition:</i>	As described for Stage 1a. Completion of landscaping works to north-east of the Application Site that are not linked to or effected by the EfW facility demolition.
<i>Operational scenario:</i>	The existing EfW facility would operate 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 takes place and both of its lines are brought online. BWRf and FPP to continue operating at current capacity (as set out in Section 2.3) within the RRF. RRC element of RRF building open to visiting members of the public. Edmonton Sea Cadets operate from EcoPark House (with Wharf access) which would also be available for other community activities and NLWA/LWL office requirements.

<i>Operational vehicles:</i>	2,516 vehicle movements per day (total, two-way) Operational vehicles access via Advent Way to serve existing EfW facility and proposed ERF and RRF. Some operational vehicles travelling to the ERF would use Deephams Farm Road access. Staff vehicles to use Advent Way and Lee Park Way accesses. Members of public and local businesses visiting the RRC element of RRF and EcoPark House would access via the proposed Lee Park Way access.
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Vol 1 Table 3.6: Stage 3 - Operation of ERF, RRF and EcoPark House, demolition of EfW facility

<b>Stage 3: Operation of ERF, RRF and EcoPark House, demolition of EfW facility (see Vol 1 Figure 3.7 for location of numbered items)</b> <b>Works 7 (Works Plan C_0009) / Works 4 (Works Plan C_0006)</b>	
<i>Expected timescale:</i>	2026 – 2028
<i>Works:</i>	Hoarding of the demolition work zone (1). Clearance of northern half of existing EfW facility site (2) – 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 building can proceed. Completion of fleet parking and facilities area (3). Construct widened southern entrance and proposed security gatehouse (4). Demolition and decommissioning of water pumping station (5). Demolish main EfW facility building (6). Excavate bunker and infill with suitable material (7). Level site and make good (1). Completion of Edmonton EcoPark landscaping works (8). Completion of staff car parks and surface water attenuation tanks on removal of EfW facility exit ramp (9). Restoration Temporary Laydown Area.
<i>Construction/ demolition methods:</i>	Bunker excavation: waste bunker which comprises five reinforced concrete boxes (total plan area of 80m by 13m extending to a depth of 14m below ground level) would be removed to minimise risk of pollution to the underlying aquifer. Most likely method of removal is using a reverse open-cut excavation method. Following excavation and demolition, a waterproofing layer of engineering clay would be placed over the natural ground or provide a low permeability barrier to groundwater resources, followed by compacted backfill and finally top backfill of granular material and topsoil up to ground level. Stack demolition: to be demolished by a specialist contractor using a top-down technique, i.e. a cradle suspended from the stack from which the structure would get taken down in a controlled manner. Other demolition works: to be undertaken using industry standard plant and methods.
<i>Construction/ demolition vehicles:</i>	184 vehicle movements per day (total, two-way) Access via Advent Way for decommissioning and demolition works of existing EfW facility. Some vehicles associated with the removal of materials may travel via the Temporary Laydown Area, waiting there until required on the Application Site. The proposed Deephams Farm Road access may also be used for some vehicle movements if required.
<i>Landscaping condition:</i>	As described for Stage 1a. Completion of landscaping works following EfW facility demolition.

<i>Operational scenario:</i>	ERF to operate a full required capacity with each process line capable of processing 350,000 tpa with a total capacity of the facility being 700,000 tpa. The proposed RRF and EcoPark House would also be operational. Edmonton Sea Cadets operate from EcoPark House (with Wharf access) which would also be available for other community and education activities.
<i>Operational vehicles:</i>	2,302 vehicle movements per day (total, two-way) Operational vehicles access via Advent Way to serve ERF and RRF. Members of public and local businesses visiting the RRC element of RRF, EcoPark House and staff car park would access via the proposed Lee Park Way access. Deephams Farm Road access may also be used if necessary.

Vol 1 Table 3.7: Stage 4 - Operation of ERF, RRF and EcoPark House, i.e. final operational situation

<b>Stage 4: Operation of ERF, RRF and EcoPark House, i.e. final operational situation (see Vol 1 Figure 3.8)</b>	
<i>Expected timescale:</i>	2028 onwards
<i>Works:</i>	None
<i>Construction/ demolition methods:</i>	None
<i>Construction/ demolition vehicles:</i>	None
<i>Landscaping condition:</i>	Landscaping works complete.
<i>Operational scenario:</i>	ERF to operate a full required capacity with each process line capable of processing 350,000 tpa with a total capacity of the facility being 700,000 tpa. RRF to operate with a capacity to process around 390,000 tpa. Edmonton Sea Cadets operate from EcoPark House (with Wharf access) which would also be available for other community and education activities.
<i>Operational vehicles:</i>	2,302 vehicle movements per day (total, two-way) Operational vehicles access via Advent Way to serve ERF and RRF. Members of public and local businesses visiting the RRC element of RRF, EcoPark House and staff car park would access via the proposed Lee Park Way access. Deephams Farm Road access may also be used for some operational vehicle movements.

### 3.6 Decommissioning and demolition of the Project

- 3.6.1 In response to the Scoping Opinion<sup>6</sup> (Paragraph 1.3.2), an assessment is included on the effects of the future decommissioning and demolition of the ERF and RRF and the demolition of EcoPark House.
- 3.6.2 This section sets out the assumptions that have been made with regard to the decommissioning and demolition of the ERF and RRF and demolition of EcoPark House.

- 3.6.3 The decommissioning and demolition of the proposed facilities would take around 18 months with the majority of the facilities demolished using conventional measures assumed for the demolition of the existing EfW facility. This includes the implementation of measures set out within the CoCP (Vol 1 Appendix 3.1).
- 3.6.4 Traffic associated with the decommissioning and demolition of the Project would travel to and from the Application Site either via the southern site access on Advent Way, south-eastern access off Lee Park Way or the northern-western access leading onto Deephams Farm Road/Ardra Road.
- 3.6.5 Prior to removing the plant and equipment, all residues and operating chemicals would be cleaned out from the plant and disposed of in an appropriate manner.
- 3.6.6 The fuel storage areas would be sealed to contain any leaks or spillages.
- 3.6.7 Once the plant and equipment have been removed to ground level, it is expected that the hardstanding and sealed concrete areas would be left in place. Two assumptions have been made about the below ground structures (bunker associated with the ERF and below piles associated with the RRF/EcoPark House); they would either be removed or left in-situ.
- 3.6.8 The decommissioning and demolition of the Project would be considered at the detailed design stage as required by the Construction Design and Management Regulations and would take into consideration the need to minimise risk of pollution to the underlying aquifer and the any future buildings on the Application Site.
- 3.6.9 A decommissioning and demolition method statement would be produced and agreed with the EA, prior to decommissioning and demolition.

## 4 Alternatives

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- 4.1.1 This section describes the main alternatives considered by the Applicant and an indication of the main reasons for the choice made, taking into account the environmental effects, as required by the EIA Regulations.
- 4.1.2 The Alternatives Assessment Report (AD05.03) sets out the overall approach to technology and site selection that has been undertaken as part of the Project and this is summarised in this section. The section also considers the evolution of design and the detailed design options and response considered.
- 4.1.3 As set out in the Planning Statement (AD05.02), the Project is compliant with planning policy and waste strategy, nationally, regionally and locally. In order to ensure this compliance the Applicant is not considering a scheme based on landfill for operational management of residual waste arisings in the north London area.

### 4.2 Technology

- 4.2.1 There are three basic processes for thermal treatment of residual solid waste:
- 4.2.2 Combustion – complete oxidation with surplus oxygen. The combustion process does not require an external energy source (such as gas or electricity) because it releases heat and is self-supporting. The flue gas primarily comprises water vapour, CO<sub>2</sub>, hydrogen chloride (HCl), NO<sub>x</sub> and oxygen. Combustion type processes can be split into the following two types:
- a. advanced moving grate technology; and
  - b. fluidised bed technology
- 4.2.3 Pyrolysis – thermal breakdown of waste in the absence of oxygen. Waste is heated to high temperatures (>300°C) by an external energy source, without adding steam or oxygen. The products are char, pyrolysis oil and syngas (pyrolysis gas).
- 4.2.4 Gasification – thermal breakdown/partial oxidation of waste under a controlled oxygen atmosphere where the oxygen content is lower than necessary for combustion. Waste reacts chemically with steam or air at a high temperature (>750°C). The process requires, as for pyrolysis, an external energy source to heat the process.
- 4.2.5 In analysing these options the thermal treatment (combustion) of residual waste was evaluated the most highly in both technical and cost terms. The thermal treatment option technology review concluded that:
- a. advanced moving grate is the most well proven, reliable and cost effective means of providing thermal treatment technology for residual solid waste; and
  - b. none of the reviewed alternative technologies (pyrolysis or gasification) are able to match advanced moving grate facilities with regard to energy production efficiency or annual availability.



## 4.3 Sites

4.3.1 The following are essential site requirements for the Project:

- a. a site located in north London in order to meet policy requirements of management of waste within the sub-region, and to reduce the impact and cost of transport of waste;
- b. land ownership or access to the use of the land for the Applicant;
- c. sufficient land availability for the required footprint of facilities;
- d. established waste use, to manage planning risk associated with the development of proposed facilities;
- e. accessible location, with good road transport links for the delivery of waste from Constituent Boroughs; and
- f. sufficient site infrastructure, services and utilities for the required facilities and ongoing operations.

4.3.2 The Edmonton EcoPark meets the required criteria as follows:

- a. it is an existing waste management site of around 16 hectares, which is of a sufficient size to accommodate replacement energy recovery facilities and allow for transition from the existing EfW facility to the proposed ERF;
- b. the London Plan<sup>17</sup> (Paragraph 5.82) states that existing waste management sites such as the Edmonton EcoPark should be clearly identified and safeguarded for waste use, implying that ongoing/future waste uses at such sites should be encouraged;
- c. it has been identified as a key existing waste site in Draft North London Waste Plan<sup>18</sup>;
- d. the Upper Lee Valley Opportunity Area Planning Framework<sup>19</sup> strongly reinforces the Edmonton EcoPark as the preferred location of the supply hub for the Lee Valley Heat Network (LVHN);
- e. it has an established waste use which provides an appropriate planning policy framework for ongoing use for that purpose;
- f. it complies with the Mayor's strategic objective for self-sufficiency within London of waste management;
- g. it has good access to the Strategic Road Network;
- h. there is an existing connection to the grid, capable of being upgraded in line with the anticipated electricity output from the proposed ERF; and
- i. the Application Site is in north London and is available for use by the Applicant.

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<sup>17</sup> Mayor of London (2015) The London Plan: The Spatial Development Strategy for London (consolidated with alterations since 2011), March 2015.

<sup>18</sup> Draft North London Waste Plan, Regulation 18, July 2015.

<sup>19</sup> Mayor of London (2013) Upper Lee Valley Opportunity Area Planning Framework, July 2013.

4.3.3 There are no other sites available and suitable for the Project. The Applicant has therefore based the Project on use of the Edmonton EcoPark.

## 4.4 Engagement

### Outcome of Phase One Consultation

4.4.1 The feedback received at Phase One Consultation played an essential part in shaping the plans for the replacement facility. The topics commented on covered many areas including:

- a. the need for the Project;
- b. the design and appearance of the replacement facility and stack;
- c. landscaping;
- d. environment;
- e. the cooling system;
- f. traffic and transport;
- g. community benefits; and
- h. the consultation process itself.

4.4.2 In response the Project has been designed to respond to the surrounding context, and to minimise the visual impact of the building from the LVRP. Comments on the stack were in favour of both an incorporated stack and an independent stack; both two separate flues and a single flue. These comments have been considered during design development and on balance it is considered that the most commonly raised view is that the design should be as least visually intrusive as possible, therefore a single stack incorporating both flues which is the least visually intrusive option, has been selected.

4.4.3 Comments received during Phase One Consultation acknowledged landscaping to be essential to mitigate any visual and ecological impacts. Specific comments suggested that landscaped corridors should be maintained on the eastern and western boundaries, and that landscaping should enhance the setting of the development. In response the Project incorporates a green edge along the eastern boundary and high quality waterside areas with tree and scrub planting along Enfield Ditch and meadow planting along the western boundary. The Project also includes habitat enhancement and creation.

4.4.4 Some comments were in support of green and brown roofs whilst others had modified support for green walls because of maintenance issues. In response green and brown roofs have been incorporated into the design, but not green walls.

4.4.5 The written comments provided and the responses to that feedback are contained in the Consultation Report (AD05.01).

## Outcome of Phase Two Consultation

- 4.4.6 As a result of engagement EcoPark House has been reduced from three storeys to two storeys in response to comments that the top storey of the building was not appropriate for the surrounding context. Greater flexibility in the use of the space with an increase in shared areas has enabled the scale of the building to be reduced.
- 4.4.7 Some respondents considered the observation platform on the ERF to be too large and overly dominant. In response the scale of the observation platform has been reduced and it was relocated to the southern edge of the ERF to optimise views.
- 4.4.8 The written comments provided and the responses to that feedback have been published in the Consultation Report (AD05.01).

## 4.5 Design

- 4.5.1 The design has been subject to detailed process of masterplanning workshops with a technical design team. The design process sought to achieve the most appropriate development layout and form, taking account of Project design drivers (see the Design and Access Statement (AD05.07)), deliverability, functionality and environmental and contextual considerations.
- 4.5.2 The design response has to a large extent focused on identifying the key Application Site constraints and solutions to the technical requirements of the Project. These have placed certain constraints on the design options available. These technical factors are summarised below:
- a. Location: different locations for the proposed ERF within the Edmonton EcoPark were tested at a strategic level. This exercise concluded that the northern end of the Edmonton EcoPark is the only space within the Edmonton EcoPark that can accommodate the proposed ERF while the existing EfW facility remains operational (see Vol 1 Plate 4.1). This location is also the most suitable location owing to the depth of the clay layer in the northern area of the Application Site. There is a need to maintain a sufficiently thick London Clay layer below the facility to protect the underlying aquifer. The location of associated facilities on the Application Site was guided by their space and function requirements and the requirement to maintain an operational site and accommodate the ERF at the northern end of the Application Site;
  - b. Orientation: the orientation of the proposed ERF building (with the bunker at the eastern end) is fixed owing to the considerable depth of clay in the eastern section. The EA has recommended that 5-8m of London Clay is maintained between the base of the development and the deeper aquifers. At the deepest point of the proposed building design (the bunker), there is a recorded thickness of London Clay of approximately 8.5m to 10m. An earlier building design considered the location of the bunker in the north-west of the Application Site, but this was ruled out as the thickness of London Clay was not sufficient to maintain the recommended minimum exclusion zone of 5m, and therefore the currently proposed design is preferred. An east-west

configuration means that the tallest part of the proposed ERF is located to the west, away from the LVRP while retaining an area along the eastern edge for landscaping.

- c. Building form and mass: the dimensions of the ERF components are determined by technical and operational requirements to accommodate the appropriate plant and enable the processes within; and
- d. The need for a stack: a stack is required to disperse emissions from the building and its height is determined by these environmental requirements.



Vol 1 Plate 4.1: Potential locations for the ERF

**Built form and architectural response**

***The stack***

4.5.3 The stack forms one of the most visible components of the Project and the width and depth of stack can be developed differently. It can be formed of two independent flues for each process line or a single stack to encase the two flues. The potential location of the stack is firstly informed by technical requirements and site constraints. Within these, there is some flexibility in the position the stack. These considerations are set out as follows and illustrated in Vol 1 Plate 4.2.

- 1. the distance of the stack to the ERF is limited, defining a radius of possible locations around the proposed facility;

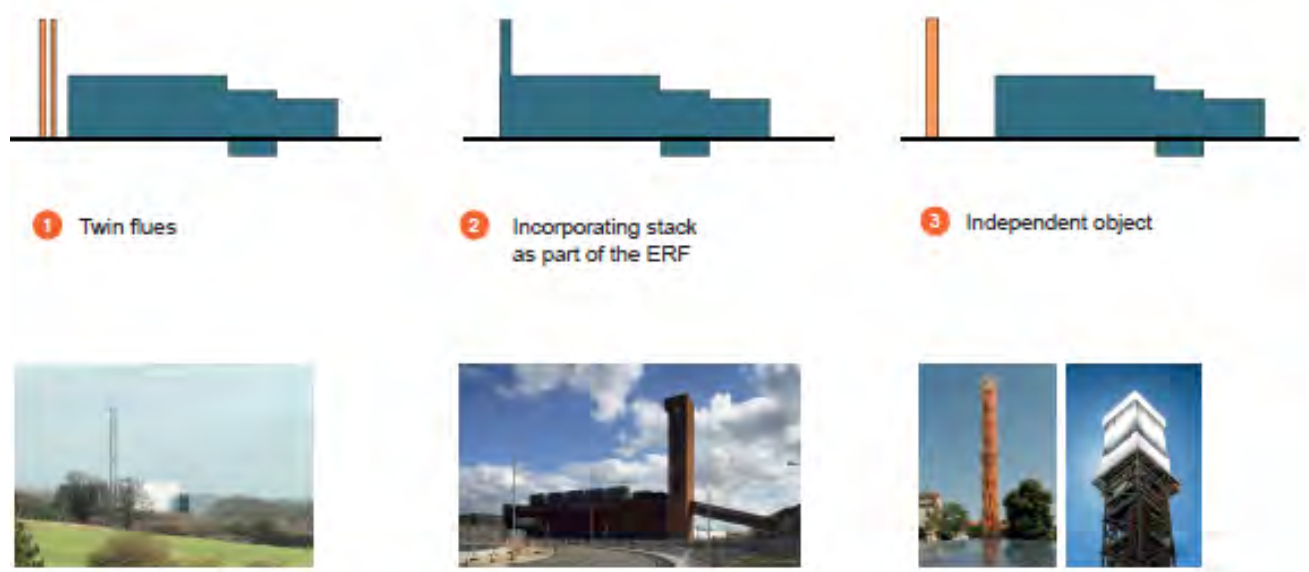
2. the stack has to be located within the boundary of the Edmonton EcoPark;
3. the position of the stack has to avoid existing constraints such as utility alignments or the existing EfW facility; and
4. to reduce visual impact the location of the stack should be located away from the LVRP. A location is required to the west of the process line, which runs from east to west because of location constraints on the bunker.



Vol 1 Plate 4.2: Stack location considerations

4.5.4 Different arrangements of the stack offer alternative design opportunities. These inform the look and feel of the stack and how it relates to the surrounding context. Three contrasting approaches have been considered as set out in Vol 1 Plate 4.3:

1. twin flues;
2. incorporating the stack as part of the ERF;
3. independent object.



Vol 1 Plate 4.3: Stack arrangement considerations

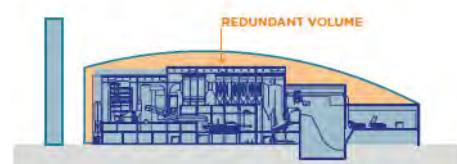
- 4.5.5 The final design of the stack has had consideration of the different visual receptors around the Application Site. This will inform among other things its colour, use of an appropriate material finish and location within the Application Site. The preferred approach is an independent object in the form of a rectangular clad structure around the flues, as this is the most sensitive approach to visual impact, with a minimal visual impact towards the east and west (residential areas). A larger expression to the north and south helps to reduce the industrial appearance of the stack and allows for an enhanced architectural treatment and use of materials.

#### ***The ERF building envelope***

- 4.5.6 The massing (size) and form (shape) of the proposed ERF building influences its visual impact. Three different building forms and their consequential visual impact were explored as shown in Vol 1 Plate 4.4:
- single enclosure: a building form that consolidates all of its components in a single entity;
  - expressive shape: a building form that gives a distinguished form to the plant components; and
  - composition of elements: a building form that expresses the different internal activities.

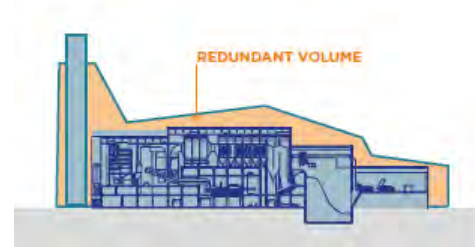
#### ***SINGLE ENCLOSURE:***

- greater roof area to the east;
- height of building increased; and
- building mass is monolithic.

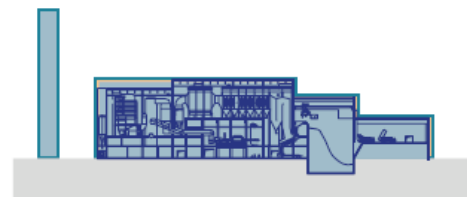


**EXPRESSIVE VOLUME:**

- visual presence greatly increased;
- higher stack for suitable air dispersion required; and
- highest building element to the west.

**MINIMUM OUTLINE:**

- uses minimum operational volume required to reduce height of the building;
- reduced visual impact from all directions; and
- more opportunities to further break down the scale of the building.



Vol 1 Plate 4.4: Building form considerations

- 4.5.7 The massing studies demonstrate that both the single enclosure and expressive shape building forms would produce a dominant, monolithic structure which does not successfully integrate with the Application Site's context. This is a result of the building form being inflated beyond the minimum plant requirements to deliver a particular shape, rather than breaking down the perceived massing of the building to express its different components. These forms would also create larger buildings with more expansive and prominent roof areas which would increase the visual extent of the built form. From a design perspective these approaches are more suited to where a building is located in less dense areas and can be seen as a 'landmark' within the landscape. By comparison the composition of elements building has a form that reflects the proposed ERF's internal activities and minimises the visual impact of the building.

**Scale of EcoPark House**

- 4.5.8 The layout of EcoPark House has been developed to face the River Lee Navigation supporting the activities of the Edmonton Sea Cadets and providing visitors with views of the LVRP and the Edmonton EcoPark. Considered layout options included a mix of uses within the EcoPark House building as well as options to separate Edmonton Sea Cadets from Edmonton EcoPark community and education uses. Part of this consideration was for a building of up to three storeys to be able to accommodate larger spaces for each proposed activity. The preferred approach is a mix of segregated and shared spaces which would optimise efficiency of the space for these uses and allow a two storey building to meet the Project requirements.

**Temporary Laydown Area site selection**

- 4.5.9 The development of the northern and southern portions of the Edmonton EcoPark, while maintaining operations of the existing EfW facility, results in

limited capacity for construction support activities and therefore the need for a temporary construction area. The likely size of site required for a Temporary Laydown Area comprising open parking and storage areas (with space for fabrication works), temporary offices/welfare facilities was identified. The key factors in the Temporary Laydown Area site selection were the ability to meet the size requirements, the proximity to the Edmonton EcoPark construction site and access to the road network and to the Edmonton EcoPark. The Eley Estate was considered immediately to the west of the Application Site. However, the estate does not currently have any vacant or open sites of sufficient size and therefore a location here would require at commencement the clearance of existing buildings and relocation of business's to amalgamate a suitable site. Sites within Deephams STWs to the north were also investigated with TWUL but are not available due to their rolling programme of works and the requirement to maintain operational flexibility of the facility. The proposed Temporary Laydown Area was selected due to its suitable size, direct connection to the highway network and potential for a direct connection for light traffic and pedestrian access to the Edmonton EcoPark construction site via Lee Park Way. This area of the Application Site is not currently or likely to be in another use, providing the opportunity for its temporary use for the Project.



## 5 Approach to the Assessment

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### 5.1 Introduction

- 5.1.1 This section sets out the approach to the EIA. It provides an overview of the stakeholder engagement undertaken for the EIA (Section 5.2) and details the general methodology followed by the environmental topic assessments (Section 5.3).
- 5.1.2 The approach to the environmental design of the Project has sought to prevent and reduce significant effects through active design input. This input is reflected in the application documents that have helped inform the development of works plans that provide sufficient definition for robust environmental assessment while providing the necessary flexibility for future detailed design of the proposed facility. This approach (described further in Section 5.3 below) ensures a reasonable worst-case assessment of environmental effects.

### 5.2 Engagement

- 5.2.1 The assessment of the proposed Project has been undertaken in accordance with the EIA Regulations, Planning Act 2008 (as amended), Infrastructure Planning (Applications: Prescribed Forms And Procedures) Regulations 2009 (as amended by the Consequential Amendments Regulations 2012) and relevant guidance including Planning Inspectorate Advice Notes. Section 5.3 sets out the general EIA methodology including legislation, guidance and policy which has informed the assessment.

#### Scoping

- 5.2.2 A Scoping Report was prepared in accordance with the EIA Regulations and submitted to the Planning Inspectorate in October 2014<sup>5</sup>. As the Scoping Report is publicly accessible on Planning Inspectorate's website<sup>20</sup> it is not appended to this ES.
- 5.2.3 The Scoping Report described the Project, and the topics scoped in and how these would be assessed as well as topics proposed to be scoped out on the basis that there was no potential for significant effects.
- 5.2.4 The Secretary of State issued a Scoping Opinion for the Project in November 2014<sup>6</sup>. This included comments received by the Secretary of State from statutory consultees<sup>21</sup>. The Scoping Opinion is provided in Vol 1 Appendix 1.1.
- 5.2.5 The Scoping Opinion included a number of general, cross-topic comments which related to the level of detail required in the ES about the Project, the structure of the ES, general assessment methodology and policy, link with the draft DCO and evidence required to enable topics to be scoped out. Vol

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<sup>20</sup> [http://infrastructure.planningportal.gov.uk/wp-content/ipc/uploads/projects/EN010071/1.%20Pre-Submission/EIA/Scoping/Scoping%20Request/EIA%20Scoping%20Report\\_Main%20Text.pdf](http://infrastructure.planningportal.gov.uk/wp-content/ipc/uploads/projects/EN010071/1.%20Pre-Submission/EIA/Scoping/Scoping%20Request/EIA%20Scoping%20Report_Main%20Text.pdf) (accessed July 2015).

<sup>21</sup> The Secretary of State undertook consultation under Regulation 8(6) of the EIA Regulations before adopting the Scoping Opinion.

1 Appendix 5.1 provides details of how all general, cross-topic comments received from stakeholders have been addressed. Details relating to topic-specific comments and how they have been addressed are provided in each topic section in Volume 2.

5.2.6 A summary of topics included and excluded from the ES is summarised in Vol 1 Table 5.1 below. This reflects comments raised in the Scoping Opinion, ongoing technical engagement and represents the content of this ES.

Vol 1 Table 5.1: Summary of topics included and excluded from the ES

Topic	Included	Excluded
Air Quality and Odour	✓	
Archaeology and Cultural Heritage*	✓	✓
Daylight, Sunlight and Overshadowing	✓	
Ecology	✓	
Environmental Wind	✓	
Ground Conditions and Contamination	✓	
Noise and Vibration	✓	
Socio-Economics	✓	
Transport	✓	
Water Resources and Flood Risk	✓	
Visual	✓	
Townscape		✓
Waste		✓

\* Agreed with Historic England that archaeology should be included in the ES but cultural heritage did not require assessment on the basis of no likely significant effects.

5.2.7 The rationale for not assessing cultural heritage, townscape and waste is described below.

### ***Cultural Heritage***

5.2.8 It was proposed in the Scoping Report<sup>5</sup> that Archaeology and Cultural Heritage be scoped out of the EIA on the basis a desk-based assessment (appended to the Scoping Report) concluding a low value of potential archaeological remains on-site and a negligible effect on this historic environment.

5.2.9 The Scoping Opinion<sup>6</sup> identified potential concerns in scoping out Archaeology and Cultural Heritage, suggesting that the conclusion was premature and that further assessment should be undertaken.

5.2.10 Following receipt of the Scoping Opinion, further engagement was held with Historic England/Greater London Archaeological Advisory Service during which it has been agreed that archaeology should be included in the ES but that cultural heritage did not need to be included. This is on the basis of the Project resulting in a negligible change in the setting of the Chingford Mill Pumping Station listed buildings, i.e. no significant effects.

### **Townscape**

- 5.2.11 It was proposed in the Scoping Report<sup>3</sup> that the townscape character assessment is scoped out on the basis that the townscape character is defined by the presence of the existing waste management facilities and the proposed development is not likely to significantly alter this. No comments were received on this in the Scoping Opinion<sup>4</sup> and on that basis it is concluded that agreement has been reached that Townscape is scoped out of the EIA. The Visual assessment is provided in Volume 3 of the ES.

### **Waste**

- 5.2.12 It was proposed in the Scoping Report<sup>3</sup> that waste is scoped out as a topic in the EIA on the following basis:
- a. a Site Waste Management Plan will be produced to manage construction waste on-site, details of which are contained in the CoCP (Vol 1 Appendix 3.1);
  - b. the Project is inherently concerned with waste management and the waste handled is considered to be part of the waste management process rather than an effect of the development; and
  - c. it is not considered that the operational waste generated by on-site operations (e.g. site workers) would result in a significant environmental effect on the existing waste management capacity.
- 5.2.13 Comments received in the Scoping Opinion<sup>4</sup>, and responses to those comments, are set out in Vol 1 Appendix 5.1. It is considered that through the provision of information regarding the wastes to be processed (and removed from the Application Site) provided in Vol 1 Section d and the environmental effects of this waste processing/removal in the EIA topic sections, this sufficiently assesses the environmental effects from waste and no separate Waste Assessment is required in the EIA.

### **Ongoing stakeholder engagement**

- 5.2.14 Following scoping, engagement continued with stakeholders to agree topic scopes and assessment methodologies. Details of this topic-specific engagement is contained within each topic section of Volume 2. Additionally, a technical note was issued to a number of stakeholders<sup>22</sup> in February 2015 including local planning authorities (LB Enfield, LB Waltham Forest and LB Haringey) and other relevant authorities (Planning Inspectorate, Greater London Authority (GLA) and Transport for London (TfL)) setting out the proposed approach to the cumulative effects assessment (as described in Paragraphs 5.3.18-5.3.31) and inviting comment on the proposed approach. The comments received in response to this technical note as well as responses to each of the comments are contained in Vol 1 Appendix 5.1. The comments demonstrated general agreement with the proposed approach to the cumulative effects assessment.

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<sup>22</sup> Selected as stakeholders with knowledge of future proposed developments in the vicinity of the Edmonton EcoPark site.

- 5.2.15 There have been ongoing meetings with the Planning Inspectorate at which EIA issues have been discussed. This includes the submission of several technical notes on EIA methodological aspects for the Project. Comments received in relation to these notes have informed the ES.
- 5.2.16 Formal public consultations have also taken place for the Project. Phase One Consultation was held from 28 November 2014 to 27 January 2015, during which a number of comments were received on environmental matters. These comments, along with Project responses are contained in the Consultation Report (AD05.01) and environmental topic assessments where appropriate. This was followed by Phase Two Consultation which was held from 18 May to 30 June 2015. A PEIR<sup>7</sup> was produced as part of the Phase Two Consultation material which provided information on the likely significant effects of the Project. Comments received relating to environmental issues are contained in the Consultation Report (AD05.01) and environmental topic assessments where appropriate. Additionally, Vol 1 Appendix 5.1 identifies the pertinent general EIA comments received from stakeholders during Phase Two Consultation and provides details of how these have been addressed in the ES.

## 5.3 EIA methodology

### Overview

- 5.3.1 This section sets out the general EIA methodology. The assessment methodology for each topic is contained in Volumes 2 and 3, and supporting appendices. This covers relevant legislation and guidance and the significance criteria applied to the topic assessments. Where the methodology varies between construction, operational and decommissioning effects for each Project stage this is explained. The assessment area varies from topic to topic and in each case is explained. The approach to gathering baseline information is described including sources of information and how this is used in the assessment. Assumptions made and any limitations in undertaking the assessment are identified. Where there are variations between the approach set out in the Scoping Report and the assessment presented in this ES, this is also explained.

### Legislation, guidance and policy context

- 5.3.2 The assessment has been undertaken in accordance with the EIA Regulations, Planning Act 2008 (as amended), Infrastructure Planning Regulations 2009 (as amended by the Consequential Amendments Regulations 2012) and relevant including Planning Inspectorate Advice Notes including:
- Planning Inspectorate Advice Note 3: EIA notification and consultation, version 5 (June 2015)<sup>23</sup>;

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<sup>23</sup> Planning Inspectorate. Advice note 3: EIA notification and consultation. Version 6 (June 2015). Available at: [http://infrastructure.planninginspectorate.gov.uk/wp-content/uploads/2013/07/advice\\_note\\_3\\_v5.pdf](http://infrastructure.planninginspectorate.gov.uk/wp-content/uploads/2013/07/advice_note_3_v5.pdf) (Accessed July 2015)

- b. Planning Inspectorate Advice Note 6: Preparation and submission of application documents, version 6 (October 2014)<sup>24</sup>;
- c. Planning Inspectorate Advice Note 7: Preliminary Environmental Impact Assessment, screening and scoping, version 5 (March 2015)<sup>8</sup>;
- d. Planning Inspectorate Advice Note 9: Using the 'Rochdale Envelope', version 2 (April 2012)<sup>16</sup>; and
- e. Planning Inspectorate Advice Note 12: Development with significant transboundary impacts consultation, version 3 (April 2012)<sup>25</sup>.

5.3.3 Requirements of NPS EN-1 and NPS EN-3 relating to the general EIA methodology are set out in Vol 1 Appendix 5.1; this includes details of how each requirement has been addressed.

### **ES structure**

5.3.4 The format for presenting the assessment is generally the same for each topic to allow ease of navigation through the ES. This is structured as follows:

- a. Introduction;
- b. Engagement – an overview of stakeholder engagement undertaken for each topic is given with details presented in the relevant assessment methodology appendix in Volume 2;
- c. Methodology – an overview of the assessment methodology for each topic is given with details presented in the relevant assessment methodology appendix in Volume 2;
- d. Assumptions and limitations;
- e. Baseline – this describes existing environmental conditions within the defined assessment area for each topic. Potential effects and good environmental design management – this explains on a topic specific basis key aspects of the development which may be the source of topics effects as well as measures which have been embedded into the design or CoCP (Vol 1 Appendix 3.1) for each topic;
- f. Assessment – this sets out the assessment for construction, operation and decommissioning as appropriate to each topic for each Project stage;
- g. Supplementary mitigation – this identifies measures above and beyond those contained in the CoCP (Vol 1 Appendix 3.1) and in the design which are recommended in response to significant adverse effects;

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<sup>24</sup> Planning Inspectorate. Advice note 6: Preparation and submission of application documents. Version 6 (October 2014). Available at: <http://infrastructure.planningportal.gov.uk/wp-content/uploads/2014/10/Advice-note-6-version-6.pdf>. (accessed July 2015).

<sup>25</sup> Planning Inspectorate. Advice note 12: Development with significant transboundary impacts consultation, version 3 (April 2012). Available at: <http://infrastructure.planningportal.gov.uk/wp-content/uploads/2013/04/Advice-note-12v2.pdf> (accessed July 2015)

- h. Residual effects – taking account of measures contained within the CoCP (Vol 1 Appendix 3.1), design and supplementary mitigation options, the residual effects are reported;
- i. Sensitivity test – this sets out the sensitivity test relating to a changed construction programme for the Project;
- j. Cumulative effects – this identifies whether effects may be elevated due to the combined effects of the Project with other specified developments; and
- k. Assessment summary tables – separate summary tables for construction, operation and decommissioning effects.

5.3.5 Further details of the approach to the assessment is provided below.

### **Baseline**

5.3.6 Prior to undertaking the impact assessments for each topic the current environmental conditions have been identified. Information about the existing environment has been obtained from field surveys, information provided by stakeholders and desk based information. This has allowed the existing and future environmental receptors to be identified and evaluated.

5.3.7 For each topic the future baseline is also set out. This describes how current baseline conditions may change in future years (in the absence of the Project) and for many topics forms the benchmark against which they assess the effects of the Project.

### **Assessment scenarios/years**

5.3.8 As explained in Section 3.4, in line with Planning Inspectorate Advice Note 9<sup>16</sup> a reasonable worst-case scenario for adverse effects is assessed within each topic area. This means that within a range of possible assumptions about an activity, the assessment is based on the higher level of likely impacts and effects. This applies both in terms of temporal scope and spatial scope.

5.3.9 The spatial scope of the assessment is defined as the area over which likely significant effects to the environmental receptors are considered likely to occur as a result of the Project. The spatial scope of the assessment varies between topics by virtue of the type of impacts and receptors considered. Assessment areas have been identified within each topic assessment. For EIA scoping<sup>3</sup> the Application Site boundary reflected the Edmonton EcoPark site boundary. Since then the Application Site boundary has been amended to incorporate the Temporary Laydown Area, northern access road and part of Lee Park Way as explained in Paragraphs 2.2.2. The scope of the EIA has therefore been updated accordingly, for example, additional ecological baseline surveys have been undertaken and topic assessment areas have been adjusted to reflect the amended Application Site boundary. This change in spatial scope was discussed with topic stakeholders where appropriate.

5.3.10 The temporal scope of the assessment varies from topic to topic. For some topics it is considered appropriate to use fixed assessment years for a

development stage such as the starting year of each development stage (e.g. air quality assessment where the starting years of each stage represent a worst-case), whereas as for other topics the assessment has been undertaken throughout longer periods of time e.g. entire development stages such as ecology which need to consider the activities undertaken through the whole of each development stage.

- 5.3.11 The topic assessments have been undertaken based on assumptions regarding the timescales of each of the development stages (set out in Section 3.5) which is the expected way in which the Project would be built out, i.e. the ‘most likely’ scenario. It is not considered that the sequencing or duration of the stages could differ significantly from that identified but in case of minor deviations, a qualitative commentary is included in topic assessments on the effect of a change in the construction programme by a year in either direction (as described in Paragraph 3.5.10). This will confirm that the topic assessments presented represent worst-case assessments and that environmental effects would be no worse than those presented as a result of a change in construction programme. Mindful also of the Rochdale ruling<sup>26</sup>, the approach to the assessment is of the reasonable worst-case. This includes the worst-case seasonally, for winter viewpoints when there is reduced vegetation and any plume formations would be visible. It is not considered helpful or necessary to include numerous scenarios which may make unclear the scheme being assessed.

### **Environmental design**

- 5.3.12 The approach to the assessment has sought to prevent and reduce significant adverse effects arising and where possible, to enhance beneficial effects. This has been achieved through the design and assessment process (for example, integrated design workshops which have resulted in Project landscaping proposals reflecting the landscaping, visual and ecological considerations) and will continue as part of the ongoing design of the Project.
- 5.3.13 The assessment is of the works plans as set out in Section 3.4. The assessment presented in this ES has assumed the application of the CoCP (Vol 1 Appendix 3.1), Design Code Principles (AD02.02) and Environmental Commitments and Mitigation (ECMS) (AD06.03) as identified in Section 3.4.

### **Significance criteria**

- 5.3.14 Effects are described as significant or not significant, beneficial or adverse, consistent with the EIA Regulations which requires: “A *description of the likely significant effects of the development on the environment...*” (Schedule 4 – Part 1 (20)). This encompasses all effects specified in Schedule 4 of the EIA Regulations (*‘...direct effects and any indirect, secondary, cumulative, short, medium and long-term, permanent and temporary, positive and negative effects of the development’*.)

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<sup>26</sup> R. v Rochdale MBC ex parte Milne (No. 1) and R. v Rochdale MBC ex parte Tew [1999] and R. v Rochdale MBC ex parte Milne (No. 2) [2000].

- 5.3.15 This takes into consideration the magnitude of an impact and sensitivity of a receptor. Each topic assessment identifies (with justification) what represents a significant effect (either beneficial or adverse during construction, operation or decommissioning of the Project) for their topic. This includes details of any graded scales of significance, e.g. major, moderate or minor beneficial or adverse, used within the topic assessments.

### **Supplementary mitigation and residual effects**

- 5.3.16 Any supplementary mitigation measures above and beyond those contained in the CoCP (Vol 1 Appendix 3.1) and in the defined Project which are recommended in response to significant adverse effects are set out in the topic assessments. The way in which these would be secured is set out in the ECMS (AD06.03). Taking account of measures contained within the CoCP (Vol 1 Appendix 3.1), design and supplementary mitigation options, the residual effects are reported.

### **Sensitivity test**

- 5.3.17 As described in Paragraph 3.5.10, the topic assessments also consider a variation in construction programme from that set out in Vol 1 Plate 3.4 by plus or minus 12 months. This sensitivity test assesses whether the environmental effects of the Project would be any different as a result of such a programme change.

### **Cumulative assessment**

- 5.3.18 Schedule 4, Part 1 of the EIA Regulations requires an ES to include an assessment of cumulative effects. 'Cumulative' is not defined in the EIA Directive or Regulations and there is no standard approach to the assessment of cumulative effects, with different projects adopting different approaches. The approach adopted by this Project is informed by Planning Inspectorate Advice Note 9<sup>16</sup>, with cumulative effects defined as those that arise from the Project with other nearby projects.
- 5.3.19 A review of nearby developments which may give rise to cumulative effects has been undertaken. Identified developments relevant to the cumulative effects assessment include planning applications from the last five years for developments of ten dwellings or more, or 1,000m<sup>2</sup> or more, as well as any NSIPs.
- 5.3.20 This review has identified developments within 600m of the Application Site that are either:
- projects that are under construction;
  - planning permission(s) (for major or EIA developments) not yet implemented;
  - submitted application(s) not yet determined;
  - all refusals subject to appeal procedures not yet determined; or



e. projects on the National Infrastructure's programme of projects<sup>27</sup>.

- 5.3.21 Planning Inspectorate Advice Note 9 also refers to the consideration of projects identified in relevant development plans (and emerging development plans). This is considered to be covered in the transport assessment (and therefore the air quality and noise assessments which are based on traffic data derived from the transport assessment). The transport assessment takes account of growth in traffic due to the committed and planned developments in the area as well as any additional background traffic growth applied through growth factors (taken from an appropriate source in agreement with the relevant authorities). As a result the models are inherently cumulative as they take into account a level of future growth and development, thus taking account of plans and policies set out in development plans.
- 5.3.22 Additionally, it is considered appropriate to specifically consider the Meridian Water redevelopment area to the south of the Application Site given its proximity and the fact it is designated in planning policy as a major redevelopment scheme in north London. The Meridian Water Masterplan<sup>10</sup> is used as a basis for the cumulative effects assessment which sets out the framework for the development. The individual planning applications for parts of the Meridian Water site are also taken into account in the assessment of the Meridian Water area.
- 5.3.23 Beyond the Meridian Water area however, it is concluded that while relevant policies can be identified in the development plans, little or no information is available on the design and timescales for implementation of the policies which is required for a robust assessment of cumulative effects to be undertaken. Equally, there is no guarantee that a proposal within a development plan will actually proceed as proposed and should development proposals come forward, where these generate potential to have significant effects on the environment, they would require an EIA themselves and assessment of cumulative effects. For these reasons development plans are generally not assessed for topics other than transport related topics beyond the Meridian Water area. It is noted that this approach is consistent with that taken on other NSIPs such as Thames Tideway Tunnel<sup>28</sup>, Hinkley Point C<sup>29</sup> and Rookery South<sup>30</sup>.
- 5.3.24 Additionally, while it does not fall into the above described categories, the cumulative effects assessment also considers the planned LVHN, a District Heating Energy Centre (DHEC) is proposed within the Application Site boundary to connect to the proposed LVHN. It is noted that while the DHEC

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<sup>27</sup> Programme of projects is listed on The Planning Inspectorate's website:

<http://infrastructure.planningportal.gov.uk/projects/> (accessed June 2015).

<sup>28</sup> Thames Water (2012) Thames Tideway Tunnel DCO application.

<http://infrastructure.planningportal.gov.uk/projects/london/thames-tideway-tunnel/?ipcsection=docs> (accessed July 2015).

<sup>29</sup> Covanta Rookery South Limited (2010) Rookery South Energy from Waste Generating Station DCO application. <http://infrastructure.planningportal.gov.uk/projects/eastern/rookery-south-energy-from-waste-generating-station/?ipcsection=docs> (accessed July 2015).

<sup>30</sup> EDF Energy (2011) Hinkley Point C New Nuclear Power Station DCO application.

<http://infrastructure.planningportal.gov.uk/projects/south-west/hinkley-point-c-new-nuclear-power-station/?ipcsection=docs> (accessed July 2015).

and proposed LVHN fall within the Application Site boundary, they will be subject to a separate planning application. It is therefore appropriate to include them so they can be included in the future baseline and combined operational effects can be considered.

5.3.25 The list of developments identified in categories (a) to (e) above (plus the Meridian Water Masterplan and LVHN/DHEC) are set out in a schedule in Vol 1 Appendix 5.2 and shown on Vol 1 Figure 5.1. The schedule identifies the following developments:

- a. North London (Electricity Line) Reinforcement;
- b. 1 and 2 Derby Road;
- c. Pegamoid Works;
- d. Kedco Waste Wood Biomass Plant;
- e. Deephams Sewage Works;
- f. 8 Eley Road;
- g. LVHN and DHEC;
- h. Meridian Water;
- i. 1A Towpath Road
- j. Edmonton Ikea;
- k. 2, 3A and 3B Stonehill Estate;
- l. Stonehill Estate
- m. The Triangle Site, Stonehill Estate;
- n. F R Shadbolt and Sons; and
- o. Pumping Station House.

5.3.26 This development schedule has been used as the basis of the cumulative effects assessment undertaken by each topic (as described in Volume 2). The development schedule also identifies future baseline receptors where appropriate, for example, if a new development is programmed to be completed and occupied when construction and demolition works are taking place for the Project, it is appropriate to assume their presence in the future baseline (as receptors in topic assessments where appropriate).

5.3.27 Vol 1 Appendix 5.2 does not include developments for which a planning application is expected but not yet submitted. This is because details of the proposals and their associated environmental effects are not known. Similarly, developments for which a planning application has been rejected are not considered as it is assumed that they would not be constructed. In summary, only submitted/permitted (and therefore 'live') applications are considered.

5.3.28 The approach to the cumulative effects assessment and developments set out in the schedule have been consulted upon with key stakeholders including local planning authorities (LB Enfield, LB Waltham Forest and LB Haringey) and other relevant authorities (Planning Inspectorate, GLA and TfL). Comments received are set out in Vol 1 Appendix 5.1. The latest

update to the schedule took place in July 2015 to ensure that the EIA was based on latest available development information.

- 5.3.29 A radius of 600m was selected for the consideration of cumulative developments during the scoping stage of the EIA on the basis of this being the distance from the Application Site boundary to the closest residential receptors (located on Zambezie Drive to the west and Lower Hall Lane to the east). The Application Site boundary has subsequently been expanded to include the Temporary Laydown Area and access road to the north (Deephams Farm Road). The radius of 600m has been retained for consistency (around the expanded Application Site boundary) and the development information contained Vol 1 Appendix 5.2 updated to reflect the Application Site boundary.
- 5.3.30 The information in the development schedule (Vol 1 Appendix 5.2) has been considered and assessed by the environmental topics. This has been undertaken using the same assessment years as used for the topic assessments. This involves considering future conditions with the Project and then evaluating if other developments are likely to give rise to elevated effects above and beyond those assessed for the Project.
- 5.3.31 While development information is provided within a 600m radius of the Application Site boundary, topics have only considered developments of relevance. Some topics, primarily Air Quality and Odour and Visual consider cumulative effects over a radius greater than 600m as explained in their topic methodologies in Volume 2.

#### **Interactive effects**

- 5.3.32 An assessment of multiple effects on a single receptor such as noise, dust, air quality and visual is often termed 'interactive effects'. The assessment of interactive effects draws upon other topic assessments and is presented in Vol 2 Section 12.

#### **Transboundary effects**

- 5.3.33 Regulation 24 of the EIA Regulations (Development with significant transboundary effects) applies where an ES is to be provided<sup>31</sup>. Regulation 24 requires the Planning Inspectorate to notify other European Economic Area (EEA) States and publicise an application for DCO if it is of the view that the proposed development is likely to have significant effects on the environment of another EEA Member State, and where relevant undertake consultation with the EEA State affected.
- 5.3.34 The ES considers the potential for transboundary effects, the assessment of which is contained in Vol 1 Appendix 5.3. This assessment has been undertaken in accordance with the screening matrix set out in Planning Inspectorate Advice Note 12<sup>25</sup>.

#### **Non technical summary**

- 5.3.35 As required by the EIA Regulations, a separate NTS volume (AD06.01) has been prepared. The NTS (AD06.01) provides a summary of the information

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<sup>31</sup> Notification of the provision of an ES will be provided under Regulation 6(1)(b).

provided in the ES in an easily accessible and understandable manner and makes extensive use of photographs and graphics to communicate as effectively as possible key information from the assessment.

## 6 Assessment Summary

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- 6.1.1 Significant residual temporary adverse Visual effects are identified at a number of receptors during construction and the transition stage (Stage 2), but not in the final operational scenario (Stage 4). During the decommissioning stage (of the proposed ERF and associated development), there would be some significant residual temporary adverse Visual effects during the decommissioning works followed by some significant residual beneficial effects once the site is cleared.
- 6.1.2 A temporary significant adverse effect has been assessed in relation to loss of breeding habitat for linnet due to scrub clearance and disturbance associated with the use of the Temporary Laydown Area.
- 6.1.3 Significant residual beneficial effects on Socio-economics are anticipated during construction through employment generation. All other effects, at all stages would be not significant.
- 6.1.4 No significant residual effects are anticipated at any stage (construction, operation or decommissioning) for the following topics:
- a. Air Quality and Odour;
  - b. Archaeology;
  - c. Daylight, Sunlight and Overshadowing;
  - d. Environmental Wind;
  - e. Ground Conditions and Contamination;
  - f. Noise and Vibration;
  - g. Transport; and
  - h. Water Resources and Flood Risk.
- 6.1.5 Mitigation measures are identified to ensure that suitable wind and daylight conditions are provided for during detailed design. The way in which this would be secured is confirmed in the ECMS (AD06.03).
- 6.1.6 A summary of the effects identified for each topic is contained in the assessment summary tables in the following section provided for construction, operation and decommissioning stages. These summary tables are the same as those set out at the end of each topic section in Volumes 2 and 3.

## Construction

Vol 1 Table 6.1: Assessment summary – construction

Aspect of the Project	Description of effect and significance	Supplementary mitigation	Residual effects summary
<b>Air Quality and Odour</b>			
<b>Stage 1</b>			
Dust emissions	With the application of the appropriate embedded mitigation measures outlined in the CoCP, the impact would be <b>not significant</b> .	None required	Effect unchanged <b>Not significant.</b>
Traffic emissions	Potential air quality impacts from construction and operational traffic emissions are predicted to be negligible, and so <b>not significant</b> .	None required	Effect unchanged <b>Not significant.</b>
Odour	The removal of the IVC may result in unpleasant odour, however this would be a one-off event and short in duration, therefore the effect would be low risk and <b>not significant</b> .	None required	Effect unchanged <b>Not significant.</b>
<b>Stage 2</b>			
Dust emissions	Based on the negligible risk summary and best practice mitigation measures contained in the CoCP, these effects would be <b>not significant</b> .	None required	Effect unchanged <b>Not significant.</b>
Traffic emissions	Potential air quality impacts from construction and operational traffic emissions are predicted to be negligible, and so <b>not significant</b> .	None required	Effect unchanged <b>Not significant.</b>
<b>Stage 3</b>			
Dust emissions	With the application of the appropriate embedded mitigation measures outlined in the CoCP, the impact would be <b>not significant</b> .	None required	Effect unchanged <b>Not significant.</b>

Aspect of the Project	Description of effect and significance	Supplementary mitigation	Residual effects summary
Traffic emissions	Potential air quality impacts from construction and operational traffic emissions are predicted to be negligible, and so <b>not significant</b> .	None required	Effect unchanged <b>Not significant.</b>
<b>Archaeology</b>			
<b>Stage 1</b>			
<b>Sub-stage 1b</b>			
RRF/EcoPark House excavation and slab construction	With the implantation of CoCP measures, the excavation and slab construction is unlikely to disturb upper floodplain deposits, therefore the effect would be <b>not significant</b> .	None required	Effect unchanged <b>Not significant.</b>
RRF/EcoPark House piled foundations	With the implantation of CoCP measures and low density and volume of piling, the piled foundations are unlikely to disturb any archaeology that may be in deeper part of the alluvial floodplain, therefore the effect would be <b>not significant</b> .	None required	Effect unchanged <b>Not significant.</b>
<b>Sub-stage 1d</b>			
Excavation of ERF storage bunker	With the implantation of CoCP measures, the effect of truncating the gravel layer, and the potential to come into contact with artice bed deposits would be <b>not significant</b> .	None required	Effect unchanged <b>Not significant.</b>
ERF slab construction	With the implantation of CoCP measures, the potential to disturb archaeology is very low, therefore the effect would be <b>not significant</b> .	None required	Effect unchanged <b>Not significant.</b>
ERF piled foundations	With the implantation of CoCP measures and low density and volume of piling, the potential to disturb the floodplain (which could contain archaeological remains) and the gravel layer would be <b>not significant</b> .	None required	Effect unchanged <b>Not significant.</b>

Aspect of the Project	Description of effect and significance	Supplementary mitigation	Residual effects summary
<b>Stage 3</b>			
Demolition of existing structures and removal of slabs and foundations	With the implantation of CoCP measures, the potential to disturb surrounding ground work of existing structures would be <b>not significant</b> .	None required	Effect unchanged <b>Not significant.</b>
<b>Ecology</b>			
<b>Stage 1</b>			
Lee Valley SPA and Ramsar	With the implementation of CoCP measures, effects on water resources and indirect effects associated with disturbance to shoveler at Chingford Reservoirs SSSI would be <b>not significant</b> .	None required	Effect unchanged <b>Not significant.</b>
Walthamstow Reservoirs SSSI	With the implementation of CoCP measures, effects on water resources would be <b>not significant</b> .	None required	Effect unchanged <b>Not significant.</b>
Chingford Reservoirs SSSI	With the implementation of CoCP measures, disturbance from lighting, dust, noise and effects on water resources would be <b>not significant</b> .	None required	Effect unchanged <b>Not significant.</b>
Lea Valley SMINC	The effect of clearance work and landscape reinstatement and enhancement along Lee Park Way and Enfield Ditch on habitat loss and creation would be <b>not significant</b> .	None required	Effect unchanged <b>Not significant.</b>
Lea Valley SMINC	With the implementation of CoCP measures, disturbance from construction related lighting, noise and effects on water resources would be <b>not significant</b> .	None required	Effect unchanged <b>Not significant.</b>
Bats	With the implementation of CoCP measures, disturbance would be <b>not significant</b> .	None required	Effect unchanged <b>Not significant.</b>
Starling	With the provision of artificial breeding sites as described in the CoCP, the effect on habitat loss and disturbance would be <b>not significant</b> .	None required	Effect unchanged <b>Not significant.</b>



Aspect of the Project	Description of effect and significance	Supplementary mitigation	Residual effects summary
Linnet	Loss of breeding habitat due to scrub clearance and disturbance associated with the operation of the Temporary Laydown Area would create a <b>significant temporary adverse</b> effect.	No further mitigation identified	Effect unchanged <b>Significant temporary adverse.</b>
<b>Stage 2</b>			
Lee Valley SPA and Ramsar	With the implementation of CoCP measures, effects on water resources and indirect effects associated with disturbance to shoveler at Chingford Reservoirs SSSI would be <b>not significant</b> .	None required	Effect unchanged <b>Not significant.</b>
Walthamstow Reservoirs SSSI	With the implementation of CoCP measures, effects on water resources would be <b>not significant</b> .	None required	Effect unchanged <b>Not significant.</b>
Chingford Reservoirs SSSI	With the implementation of CoCP measures, disturbance from lighting, dust and noise would be <b>not significant</b> .	None required	Effect unchanged <b>Not significant.</b>
Lea Valley SMINC	The completion of landscaping directly to the east of the ERF would cause a <b>not significant</b> effect on habitat creation.	None required	Effect unchanged <b>Not significant.</b>
Lea Valley SMINC	With the implementation of CoCP measures, disturbance from construction related lighting, noise and effects on water resources would be <b>not significant</b> .	None required	Effect unchanged <b>Not significant.</b>
Bats	With the implementation of CoCP measures, disturbance would be <b>not significant</b> .	None required	Effect unchanged <b>Not significant.</b>
Starling	With the implementation of CoCP measures, disturbance would be <b>not significant</b> .	None required	Effect unchanged <b>Not significant.</b>
Linnet	Loss of breeding habitat due to scrub clearance and disturbance associated with the operation of the Temporary Laydown Area would create a <b>significant temporary adverse</b> effect.	No further mitigation identified	Effect unchanged <b>Significant temporary adverse.</b>

Aspect of the Project	Description of effect and significance	Supplementary mitigation	Residual effects summary
<b>Stage 3</b>			
Lee Valley SPA and Ramsar	With the implementation of CoCP measures, effects on water resources and indirect effects associated with disturbance to shoveler at Chingford Reservoirs SSSI would be <b>not significant</b> .	None required	Effect unchanged <b>Not significant.</b>
Walthamstow Reservoirs SSSI	With the implementation of CoCP measures, effects on water resources would be <b>not significant</b> .	None required	Effect unchanged <b>Not significant.</b>
Chingford Reservoirs SSSI	With the implementation of CoCP measures, disturbance from noise, lighting and dust would be <b>not significant</b> .	None required	Effect unchanged <b>Not significant.</b>
Lea Valley SMINC	Completion of landscaping within the EfW facility footprint and Temporary Laydown Area would cause a <b>not significant</b> effect on habitat creation	None required	Effect unchanged <b>Not significant.</b>
Lea Valley SMINC	With the implementation of CoCP measures, disturbance from lighting and noise and effects on water resources would be <b>not significant</b> .	None required	Effect unchanged <b>Not significant.</b>
Bats	With the implementation of CoCP measures, disturbance would be <b>not significant</b> .	None required	Effect unchanged <b>Not significant.</b>
Starling	With the implementation of CoCP measures, disturbance would be <b>not significant</b> .	None required	Effect unchanged <b>Not significant.</b>
Linnet	Loss of breeding habitat due to scrub clearance and disturbance associated with the operation of the Temporary Laydown Area would create a <b>significant temporary adverse</b> effect	No further mitigation identified	Effect unchanged <b>Significant temporary adverse.</b>
<b>Ground Conditions and Contamination</b>			
<b>Stage 1</b>			
Piling works	With controlled piling design and methodology, the effect on groundwater pathways and groundwater	None required	Effect unchanged. <b>Not significant.</b>

Aspect of the Project	Description of effect and significance	Supplementary mitigation	Residual effects summary
	quality in sensitive groundwater receptors would be <b>not significant</b> .		
ERF bunker construction	With the implementation of CoCP measures, the potential to reduce the protection to underlying aquifers and affect groundwater quality in sensitive groundwater receptors would be <b>not significant</b> .	None required	Effects unchanged. <b>Not significant.</b>
Excavations and dewatering	With the implementation of CoCP measures, the potential to draw in contaminated groundwater from on-site or off-site sources and create or alter pathways affecting water quality in sensitive receptors would be <b>not significant</b> .	None required	Effects unchanged. <b>Not significant.</b>
Pumping station, underground services and pipework	With the implementation of CoCP measures, the effect of ground disturbance and the installation of underground pipes on groundwater pathways and sensitive groundwater receptors would be <b>not significant</b> .	None required	Effect unchanged. <b>Not significant.</b>
<b>Stage 3</b>			
EfW facility demolition	With the implementation of CoCP measures and design mitigation, the effect of the creation of groundwater pathways would be <b>not significant</b> .	None required	Effect unchanged. <b>Not significant.</b>
Piling for the bridge at Advent Way	With controlled piling design and measures from the Piling Method Statement, the potential to create groundwater pathways and affect groundwater quality in sensitive groundwater receptors would be <b>not significant</b> .	None required	Effects unchanged. <b>Not significant.</b>
Restoration of the ground to 'Like for Like' materials	With controlled demolition methodology and design developed in consultation with the EA, the potential effects of flow being returned to the Kempton Park Gravels and the removal of existing pathway close to the Lambeth Group would be <b>not significant</b> .	None required	Effects unchanged. <b>Not significant.</b>

Aspect of the Project	Description of effect and significance	Supplementary mitigation	Residual effects summary
<b>Noise and Vibration</b>			
<b>Stage 1-3</b>			
Construction noise	At the closest sensitive receptors, calculated noise levels from construction activities in the Temporary Laydown Area would be <b>not significant</b> .	None required	Effect unchanged. <b>Not significant.</b>
Construction vibration	At the nearest residential premises, there is no potential for adverse impact from vibration and therefore construction vibration would be <b>not significant</b> .	None required	Effect unchanged. <b>Not significant.</b>
Road traffic – construction and operation	Changes in traffic volumes would result in a noise increase of less than 1dB(A) for all stages which is not perceptible and therefore <b>not significant</b> .	None required	Effect unchanged. <b>Not significant.</b>
<b>Socio-Economics</b>			
<b>Stages 1-3</b>			
Construction employment	Construction employment of approximately 2,623 FTE net additional jobs across the UK of which 1,311 would be local, therefore there would be <b>significant temporary beneficial</b> effects	None required	Effects unchanged <b>Significant temporary beneficial.</b>
Temporary relocation of the Edmonton Sea Cadets	With the implementation of CoCP measures, the alternative accommodation provided on-site would cause some temporary disruption to the Edmonton Sea Cadets activities associated with access to the water due to construction, but the effects would be <b>not significant</b> .	None required	Effects unchanged. <b>Not significant.</b>
<b>Transport</b>			
<b>Stages 1-3</b>			
Road users	The effect of increased vehicle trips on the local road network in the vicinity of the Application Site would be <b>not significant</b> .	None required	Effect unchanged. <b>Not significant.</b>

Aspect of the Project	Description of effect and significance	Supplementary mitigation	Residual effects summary
Reconfiguration of Lee Park Way	The reconfiguration would narrow the available route width but would include segregated footways and cycle lanes, new surfacing and safe vehicle crossing points. A safe route during construction would also be provided, therefore the effects on pedestrians, cyclists and equestrians would be <b>not significant</b> .	None required	Effects unchanged. <b>Not significant.</b>
Temporary Laydown Area and the access to Lee Park Way	The loss of access to the Public Right of Way that connects Lower Hall Lane and the River Lee Navigation towpath would have an alternative route which is 40m longer than the existing route, therefore the effects on pedestrians, cyclists and equestrians would be <b>not significant</b> .	None required	Effect unchanged. <b>Not significant.</b>
Additional vehicles on the road network in the vicinity of the Application Site.	Due to the existing high volumes of traffic, the effect of additional vehicles on pedestrians, cyclists and equestrians would be <b>not significant</b> .	None required	Effect unchanged. <b>Not significant.</b>
Vulnerable pedestrian access to public transport	When moving around the Application Site, the overall length of the route for all pedestrians would not be significantly different from the existing route, therefore the effect would be <b>not significant</b> .	None required	Effect unchanged. <b>Not significant.</b>
<b>Visual</b>			
<b>Stage 1</b>			
<b>Sub-stage 1a</b>			
Visibility of construction works from viewpoints 1, 4-9, 11, 13, and 16-20	Construction activities would not be visible, therefore the effect would be <b>not significant</b> .	None required	Effects unchanged. <b>Not significant.</b>
Visibility of construction works from viewpoints 2, 10 and 14	Construction activities would be visible within close proximity and a large extent of the view would be affected, resulting in a <b>significant temporary adverse</b> effect.	No practical mitigation measures available	Effects unchanged. <b>Significant temporary adverse effect.</b>

Aspect of the Project	Description of effect and significance	Supplementary mitigation	Residual effects summary
Visibility of construction works from viewpoint 3	The construction works would only be partially visible and would only affect a small part of the view, therefore the effect would be <b>not significant</b> .	None required	Effects unchanged. <b>Not significant.</b>
Visibility of construction works from viewpoint 12	Due to the distance and low height of the works and the small extent of view affected, the effect would be <b>not significant</b> .	None required	Effects unchanged. <b>Not significant.</b>
Visibility of construction works from viewpoint 15	The temporary construction works would be visible from the upper storeys and only affect a small part of the view, therefore the effect would be <b>not significant</b> .	None required	Effects unchanged. <b>Not significant.</b>
<b>Sub-stage 1d</b>			
Visibility of construction works from viewpoints 1, 4- 9, 11 and 13	Due to the distance of the views and the small part of the views affected, the effect would be <b>not significant</b> .	None required	Effects unchanged. <b>Not significant.</b>
Visibility of construction works from viewpoint 2	Construction activities would be seen in the distance behind the existing buildings, therefore there would be a <b>significant temporary adverse effect</b> .	No practical mitigation measures available	Effects unchanged. <b>Significant temporary adverse effect.</b>
Visibility of construction works from viewpoint 3	The building works would be visible in the distance behind the A406 North Circular Road, therefore there would be a <b>significant temporary adverse effect</b> .	No practical mitigation measures available	Effects unchanged. <b>Significant temporary adverse effect.</b>
Visibility of construction works from viewpoint 10	The works would be visible in middle ground but would in part be screened by the existing EfW facility, therefore there would be a <b>significant temporary adverse effect</b> .	No practical mitigation measures available	Effects unchanged. <b>Significant temporary adverse effect.</b>
Visibility of construction works from viewpoints 12 and 17 - 20	Due to the distance of the works and the small extent of view affected, the effect would be <b>not significant</b> .	None required	Effects unchanged. <b>Not significant.</b>
Visibility of construction works from viewpoint 14	The building works would be visible in the distance beyond the activities within the Temporary Laydown	No practical mitigation measures available	Effects unchanged. <b>Significant temporary adverse effect.</b>

Aspect of the Project	Description of effect and significance	Supplementary mitigation	Residual effects summary
	Area, therefore there would be a <b>significant temporary adverse effect</b> .		
Visibility of construction works from viewpoint 15	The construction works would be partially screened by the existing EfW facility and only a small part of the view would be affected, however there would be a <b>significant temporary adverse effect</b> .	No practical mitigation measures available	Effects unchanged. <b>Significant temporary adverse effect.</b>
Visibility of construction works from viewpoint 16	The construction works would be partially screened by the existing EfW facility and only a small part of the view would be affected, however there would be a <b>significant temporary adverse effect</b> .	No practical mitigation measures available	Effects unchanged. <b>Significant temporary adverse effect.</b>
<b>Stage 2</b>			
Visibility of operational stage from viewpoints 1, 4, 5, 6, 9, 11 and 13	Only the upper parts of the two stacks and buildings would be visible. Due to the distance of the views and the small extent of view affected, the effect would be <b>not significant</b> .	None required	Effects unchanged. <b>Not significant.</b>
Visibility of operational stage from viewpoints 2 and 3	The proposed ERF would be visible behind the existing EfW facility and a small part of the view would be affected. This would result in a <b>significant temporary adverse effect</b> .	No further mitigation identified	Effects unchanged. <b>Significant temporary adverse effect.</b>
Visibility of operational stage from viewpoint 7	The proposed ERF building would be visible, however the building and stack would be partially screened by vegetation and seen in context of existing industrial buildings and therefore the effect would be <b>not significant</b> .	None required	Effects unchanged. <b>Not significant.</b>
Visibility of operational stage from viewpoint 8	The proposed ERF building would be noticeably larger than the existing facility and would be highly visible but largely characteristic of the existing view. Although some screening would be provided by vegetation, there would be a <b>significant temporary adverse effect</b> .	No further mitigation identified	Effects unchanged. <b>Significant temporary adverse effect.</b>

Aspect of the Project	Description of effect and significance	Supplementary mitigation	Residual effects summary
Visibility of operational stage from viewpoint 10	A large extent of the view would be affected by the proposed ERF. Although it would be characteristic of the industrial nature of the view, there would be a <b>significant temporary adverse effect</b> .	No further mitigation identified	Effects unchanged. <b>Significant temporary adverse effect.</b>
Visibility of operational stage from viewpoints 12 and 17 - 20	Due to the distance of the views, the temporary nature of the works, and the small extent of view affected, the effect would be <b>not significant</b> .	None required	Effects unchanged. <b>Not significant.</b>
Visibility of operational stage from viewpoint 14	Due to the large extent of view affected by both buildings and stacks, and the relative distance to the facilities, there would be a <b>significant temporary adverse effect</b> .	No further mitigation identified	Effects unchanged. <b>Significant temporary adverse effect.</b>
Visibility of operational stage from viewpoint 15	A small part of the view would be affected resulting in a <b>significant temporary adverse effect</b> .	No further mitigation identified	Effects unchanged. <b>Significant temporary adverse effect.</b>
Visibility of operational stage from viewpoint 16	A small part of the view would be affected resulting in a <b>significant temporary adverse effect</b> .	No further mitigation identified	Effects unchanged. <b>Significant temporary adverse effect.</b>
<b>Stage 3</b>			
Visibility of decommissioning works from viewpoints 1, 4, 5, 6, 9, 11 and 13	Only the crane movements and decommissioning works to the upper part of the building and stack would be visible. Due to the distance of the views and the small part of the views affected, the effect would be <b>not significant</b> .	None required	Effects unchanged. <b>Not significant.</b>
Visibility of decommissioning works from viewpoints 2, 3 and 14,	The decommissioning works would be visible in the distance beyond the activities within the Temporary Laydown Area, the A406 North Circular Road and existing buildings This would result in a <b>significant temporary adverse effect</b> .	No further mitigation identified	Effects unchanged. <b>Significant temporary adverse effect.</b>



Aspect of the Project	Description of effect and significance	Supplementary mitigation	Residual effects summary
Visibility of decommissioning works from viewpoint 7	Only the demolition of the EfW stack would be visible. The proposed ERF building and stack would be partially screened by vegetation and are seen in context of existing industrial buildings. Therefore the effect would be <b>not significant</b> .	None required	Effects unchanged. <b>Not significant.</b>
Visibility of decommissioning works from viewpoint 8	Only the demolition of the existing EfW stack would be seen. The proposed ERF would be highly visible but largely characteristic of the existing view with some screening provided by vegetation, resulting in a <b>significant temporary adverse effect</b>	No further mitigation identified	Effects unchanged. <b>Significant temporary adverse effect.</b>
Visibility of decommissioning works from viewpoint 10	A large extent of the view would be affected by the proposed ERF, however the new built form would be of good architectural design and would be characteristic of the industrial nature of the view and therefore there would be a <b>significant temporary adverse effect</b> .	No further mitigation identified	Effects unchanged. <b>Significant temporary adverse effect.</b>
Visibility of decommissioning works from viewpoints 12 and 17 - 20	Due to the distance of the works and the extent of view affected, the effect would be <b>not significant</b> .	None required	Effects unchanged. <b>Not significant.</b>
Visibility of decommissioning works from viewpoint 15	Although the works would be some distance away, they would result in a <b>significant temporary adverse effect</b> .	No further mitigation identified	Effects unchanged. <b>Significant temporary adverse effect.</b>
Visibility of decommissioning works from viewpoint 16	Although the works would be some distance away, they would result in a <b>significant temporary adverse effect</b> .	No further mitigation identified	Effects unchanged. <b>Significant temporary adverse effect.</b>
<b>Water Resources and Flood Risk</b>			
<b>Stage 1</b>			
Demolition, clearance, and construction	With the implementation of CoCP measures and the requirements of the FRA, localised changes in water	None required	Effects unchanged.

Aspect of the Project	Description of effect and significance	Supplementary mitigation	Residual effects summary
	quality reaching watercourses due to increased sediments in run-off and pollution incidents would be <b>not significant</b> .		<b>Not significant.</b>
Infill, construction, piling and excavation, and diversion of utilities and services	With the implementation of CoCP measures and the requirements of the FRA, localised changes in surface and subsurface flow patterns due to the infill of the artificial pond and landscaped area, construction of temporary Temporary Laydown Area, piling and excavation, construction of attenuation tanks, diversion of utilities and services, creation of access tracks, and construction of parking and facilities areas would be <b>not significant</b> .	None required	Effects unchanged. <b>Not significant.</b>
Construction traffic	With the implementation of measures including compliance with the CoCP and the requirements of the FRA, the potential for localised changes in water quality reaching watercourses due to pollution incidents would be <b>not significant</b> .	None required	Effects unchanged. <b>Not significant.</b>
<b>Stage 2</b>			
Weighbridge construction, excavation for weighbridges	With the implementation of measures including compliance with the CoCP and the requirements of the FRA, localised changes in water quality reaching watercourses, due to increased sediments in run-off and pollution incidents, and localised changes in surface and subsurface flow patterns would be <b>not significant</b> .	None required	Effects unchanged. <b>Not significant.</b>
Construction traffic	With the implementation of measures including compliance with the CoCP and the requirements of the FRA, the effect of localised changes in water quality reaching watercourses due to pollution incidents would be <b>not significant</b> .	None required	Effect unchanged. <b>Not significant.</b>

Aspect of the Project	Description of effect and significance	Supplementary mitigation	Residual effects summary
<b>Stage 3</b>			
Demolition of EfW facility and construction of attenuation tanks, access tracks, and parking and facilities areas	With the implementation of measures including compliance with the CoCP and the requirements of the FRA, the localised changes in water quality reaching watercourses from increased sediments in run-off and pollution incidents and localised changes in surface and subsurface flow patterns would be <b>not significant.</b>	None required	Effects unchanged. <b>Not significant.</b>
Construction traffic	With the implementation of measures including compliance with the CoCP and the requirements of the FRA, localised changes in water quality reaching watercourses due to pollution incidents would be <b>not significant.</b>	None required	Effects unchanged. <b>Not significant.</b>

## Operation

Vol 1 Table 6.2: Assessment summary – operation

Aspect of the Project	Description of effect and significance	Supplementary mitigation	Residual effects summary
<b>Air Quality and Odour</b>			
<b>Stage 1</b>			
Existing stack emissions	Emissions from the EfW facility – no assessment required.	None required	No assessment required
<b>Stage 2</b>			
Stack emissions from transition stage operation of the EfW facility and ERF	For process contributions, the magnitude of change for all pollutants would be small or imperceptible, and process results in Stage 2 would therefore be <b>not significant</b> .	None required	Effect unchanged <b>Not significant.</b>
Human health	For both non-carcinogenic and carcinogenic risks for allotment receptors and residential receptors, the impact of emissions in Stage 2 would be negligible. For adult farmers, the carcinogen risk would be slight adverse, based on worst-case assumptions.  For the total exposure to dioxins/furans and dioxin-like PCBs, the impact at the majority of receptors would be negligible. The impact on children of farmers would be moderate adverse, based on worst-case assumptions. The overall impact of the emissions from Stage 2 would be <b>not significant</b> .	None required	Effect unchanged <b>Not significant.</b>
<b>Stage 3</b>			
Stack emissions from operation of ERF	For process contributions, the magnitude of change for all pollutants would be small or imperceptible, and process results in Stage 3 would therefore be <b>not significant</b> .	None required	Effect unchanged <b>Not significant.</b>

Aspect of the Project	Description of effect and significance	Supplementary mitigation	Residual effects summary
Odour	The ERF would be designed to minimise odour. Therefore the Project would lead to an improvement in background odour, and the impact would be <b>not significant</b> .	None required	Effect unchanged <b>Not significant.</b>
Fugitive emissions and dust	With appropriate mitigation measures the risk of a significant effect for operational dust would be <b>not significant</b> , and the risk of a significant effect for all fugitive emissions and dust would be low risk and therefore <b>not significant</b> .	None required	Effect unchanged <b>Not significant.</b>
Human health	For non-carcinogenic risks and carcinogenic risk for allotment receptors and residential receptors, the impact of emissions from the ERF would be negligible. For adult farmers, the carcinogen risk would be slight adverse, based on worst-case assumptions. For the total exposure to dioxins/furans and dioxin-like PCBs, the impact at the majority of receptors would be negligible. The impact on children of farmers would be moderate adverse, based on worst-case assumptions. The impact of the emissions from the operation of the proposed ERF are <b>not significant</b> .	None required	Effect unchanged <b>Not significant.</b>
<b>Stage 4</b>			
As Stage 3: Stack emissions from operation of ERF	For process contributions, the magnitude of change for all pollutants would be small or imperceptible, and process results in Stage 4 can would be <b>not significant</b> .	None required	Effect unchanged <b>Not significant.</b>
As Stage 3: Odour	The ERF would be designed to minimise odour. Therefore the Project would lead to	None required	Effect unchanged <b>Not significant.</b>

Aspect of the Project	Description of effect and significance	Supplementary mitigation	Residual effects summary
	an improvement in background odour, and the impact would <b>not significant</b> .		
As Stage 3: Human health	For non-carcinogenic risks and carcinogenic risk for allotment receptors and residential receptors, the impact of emissions from the ERF would be negligible. For adult farmers, the carcinogen risk would be slight adverse, based on worst-case assumptions.  For the total exposure to dioxins/furans and dioxin-like PCBs, the impact at the majority of receptors would be negligible. The impact on children of farmers would be moderate adverse, based on worst-case assumptions. It is concluded that the impact of the emissions from the operation of the proposed ERF would be <b>not significant</b> .	None required	Effect unchanged <b>Not significant.</b>
Traffic emissions	Potential air quality impacts operational traffic emissions are predicted to be negligible and so <b>not significant</b> .	None required	Effect unchanged <b>Not significant.</b>
<b>Daylight, Sunlight and Overshadowing</b>			
<b>Stage 2</b>			
Massing of proposed ERF building and existing EfW facility.	For daylight and sunlight availability and overshadowing, the effects are <b>not significant</b> .	None required.	Effects unchanged. <b>Not significant.</b>
<b>Stage 4</b>			
Massing of proposed ERF building	For daylight and sunlight availability and overshadowing, the effects are <b>not significant</b> .	None required.	Effects unchanged. <b>Not significant.</b>

Aspect of the Project	Description of effect and significance	Supplementary mitigation	Residual effects summary
<b>Ecology</b>			
<b>Stage 1</b>			
No effects have been identified, this stage relates to operation of the EfW facility, which is baseline.			
<b>Stage 2, 3 and 4</b>			
Lee Valley SPA and Ramsar	The effect of decreasing deposition rates for PM <sub>10</sub> and nitrogen, and increasing deposition rates for sulphur, would not cause acidity to exceed the critical load and so would be <b>not significant</b>	None required	Effect unchanged. <b>Not significant.</b>
Epping Forest SAC and SSSI	The effect of decreasing deposition rates for PM <sub>10</sub> and nitrogen, and increasing deposition rates for sulphur, would not cause acidity to exceed the critical load, and so would be <b>not significant</b>	None required	Effect unchanged. <b>Not significant.</b>
Walthamstow Reservoirs SSSI	The effect of decreasing deposition rates for PM <sub>10</sub> and nitrogen, and increasing deposition rates for sulphur, would not cause acidity to exceed the critical load, and so would be <b>not significant</b>	None required	Effect unchanged. <b>Not significant.</b>
Chingford Reservoirs SSSI	The effect of decreasing deposition rates for PM <sub>10</sub> and nitrogen, and increasing deposition rates for sulphur, would not cause acidity to exceed the critical load, and so would be <b>not significant</b>	None required	Effect unchanged. <b>Not significant.</b>
Chingford Reservoirs SSSI	Lighting would not be directed towards the SSSI, therefore the effect would be <b>not significant.</b>	None required	Effect unchanged. <b>Not significant.</b>
Lea Valley SMINC	Sensitive lighting is proposed within the SMINC, therefore the effect would be <b>not significant.</b>	None required	Effect unchanged. <b>Not significant.</b>

Aspect of the Project	Description of effect and significance	Supplementary mitigation	Residual effects summary
Bats	Sensitive lighting along Lee Park Way and the dense planting of trees and scrub between Lee Park Way and the River Lee Navigation would minimise disturbance to foraging and commuting bats, therefore the effect would be <b>not significant</b> .	None required	Effect unchanged. <b>Not significant.</b>
Starling	Operational lighting, noise and activity are unlikely to deter nesting birds, therefore the effect would be <b>not significant</b>	None required	Effect unchanged. <b>Not significant.</b>
Linnet	Operational lighting, noise and activity are unlikely to deter nesting birds, therefore the effect would be <b>not significant</b>	None required	Effect unchanged. <b>Not significant.</b>
<b>Environmental Wind</b>			
<b>Stages 2 and 4</b>			
The passage between ERF and the cooling condensers	Conditions along the pedestrian route in the passage between the ERF and cooling condensers would not be suitable for use as a pedestrian route and access, therefore there would be a <b>significant permanent adverse</b> effect.	Local mitigation may be required – to be developed during detailed design stage.	<b>Not significant.</b>
The south-east corner of the proposed ERF	Conditions along the south-east corner of the ERF would not be suitable for use as a pedestrian route, therefore there would be a <b>significant permanent adverse</b> effect.	Local mitigation may be required – to be developed during detailed design stage.	<b>Not significant.</b>
Outside the Application boundary: amenity areas to the east and River Lee Navigation	Conditions along the east of the Application Site, used by the Edmonton Sea Cadets, would be in the Standing to Strolling range, therefore the effect on windiness would be <b>not significant</b> .	None required	Effect unchanged <b>Not significant.</b>



Aspect of the Project	Description of effect and significance	Supplementary mitigation	Residual effects summary
Outside the Application boundary: areas to the west and north, including Eley Industrial Estate	Due to the distance, direction of prevailing winds and geometry of buildings, the effect on windiness would be <b>not significant</b> .	None required	Effect unchanged <b>Not significant.</b>
<b>Ground Condition and Contamination</b>			
<b>Stages 2 and 4</b>			
ERF bunker and structures	With the implementation of CoCP measures and operational monitoring, the effect of structure or pipe degradation opening a pathway and changing the water quality in sensitive groundwater receptors would be <b>not significant</b> .	None required	Effect unchanged. <b>Not significant.</b>
<b>Noise and Vibration</b>			
<b>All stages</b>			
Operational industrial plant	With the implementation of measures to comply with noise limits defined in accordance with BS4142:2014 and the further requirements of Environmental Permitting, the effects of noise from the operation of the proposed ERF would be <b>not significant</b> .	None required	Effects unchanged. <b>Not significant.</b>
<b>Socio-Economics</b>			
<b>Stages 1-4</b>			
Changes to operational employment	The net reduction of on-site employment is unlikely to substantially change the level of employment in the local area from baseline conditions and therefore the effect would be <b>not significant</b> .	None required	Effect unchanged. <b>Not significant.</b>
EcoPark House	EcoPark House would be occupied by the Edmonton Sea Cadets and which would	None required	Effect unchanged. <b>Not significant.</b>

Aspect of the Project	Description of effect and significance	Supplementary mitigation	Residual effects summary
	include potential for use for other community uses. The effect on Edmonton Sea Cadets from operation would be <b>not significant</b> .		
<b>Transport</b>			
<b>Stages 1-4</b>			
Road users	The effect of increased vehicle trips on the local road network in the vicinity of the Application Site would be <b>not significant</b> .	None required	Effect unchanged. <b>Not significant.</b>
Public transport users	The effect of increased passenger numbers on public transport services would be <b>not significant</b> .	None required	Effect unchanged. <b>Not significant.</b>
Reconfiguration of Lee Park Way	The reconfiguration would narrow the available route width but would include segregated footways and cycle lanes, new surfacing and safe vehicle crossing points. A safe route during construction would also be provided, therefore the effects on pedestrians, cyclists and equestrians would be <b>not significant</b> .	None required	Effects unchanged. <b>Not significant.</b>
Use of Lee Park Way	With the implementation of CoCP measures and the safe crossing points, the presence of vehicles along the route would not impact route safety but would cause a very slight reduction in route amenity, therefore the effects on pedestrians, cyclists and equestrians would be <b>not significant</b> .	None required	Effects unchanged. <b>Not significant.</b>
Temporary Laydown Area and the access to Lee Park Way	The loss of access to the Public Right of Way that connects Lower Hall Lane and the River Lee Navigation towpath would have an alternative route which is 40m longer than the existing route, therefore the effects	None required	Effect unchanged. <b>Not significant.</b>

Aspect of the Project	Description of effect and significance	Supplementary mitigation	Residual effects summary
	on pedestrians, cyclists and equestrians would be <b>not significant</b> .		
Additional vehicles on the road network in the vicinity of the Application Site.	Due to the existing high volumes of traffic, the effect of additional vehicles on pedestrians, cyclists and equestrians would be <b>not significant</b> .	None required	Effect unchanged. <b>Not significant.</b>
Vulnerable pedestrian access to public transport	When moving around the Application Site, the overall length of the route for all pedestrians would not be significantly different from the existing route, therefore the effect would be <b>not significant</b> .	None required	Effect unchanged. <b>Not significant.</b>
<b>Visual</b>			
<b>Stage 4</b>			
Visibility of operational stage from viewpoints 1, 6, 9 and 11	Only the upper parts of the proposed ERF stack would be visible and the light colour of materials would reduce the visibility of the proposed stack in comparison to the existing stack. Therefore the effect would be <b>not significant</b> .	None required	Effects unchanged. <b>Not significant.</b>
Visibility of operational stage from viewpoint 2	The proposed ERF facility building would be noticeably larger than the existing EfW building (which would have been demolished) and would be seen beyond the new EcoPark House and RRF building. However it would be largely characteristic of the existing industrial units and the effect would be <b>not significant</b> .	None required	Effects unchanged. <b>Not significant.</b>
Visibility of operational stage from viewpoint 3	The proposed ERF building and stack would replace views of the existing EfW facility and would be partially screened by the A406	None required	Effects unchanged. <b>Not significant.</b>

Aspect of the Project	Description of effect and significance	Supplementary mitigation	Residual effects summary
	North Circular Road. Therefore the effect would be <b>not significant</b> .		
Visibility of operational stage from viewpoints 4, 5 and 13	Only the upper parts of the proposed ERF stack and building would be visible; this would be an inconspicuous change in the background and therefore the effect would be <b>not significant</b> .	None required	Effects unchanged. <b>Not significant.</b>
Visibility of operational stage from viewpoint 7	The proposed ERF building and stack would be visible to the north of the existing industrial units and extend the built form across the skyline. The proposed ERF building and stack would be partially screened by vegetation and seen in the context of existing industrial units. The existing EfW facility would have been demolished. The effect would be <b>not significant</b> .	None required	Effects unchanged. <b>Not significant.</b>
Visibility of operational stage from viewpoint 8	The proposed ERF building would be noticeably larger than the existing EfW facility and other industrial units. Some screening would be provided by vegetation and the ERF would be of a high architectural quality. Therefore the effect would be <b>not significant</b> .	None required	Effects unchanged. <b>Not significant.</b>
Visibility of operational stage from viewpoint 10	The proposed ERF building would be noticeably larger than the existing EfW building. However the ERF would be of a high architectural quality and therefore the effect would <b>not significant</b> .	None required	Effects unchanged. <b>Not significant.</b>

Aspect of the Project	Description of effect and significance	Supplementary mitigation	Residual effects summary
Visibility of operational stage from viewpoints 12, 15, 17 to 20	The proposed ERF facility building would be noticeably larger than the existing EfW building. However due to the distance of the view, the extent of the view affected and the fact that only a small part of a wider panoramic view would be affected, the effect would be <b>not significant</b> .	None required	Effects unchanged. <b>Not significant.</b>
Visibility of operational stage from viewpoint 14	Whilst the proposed ERF facility building would be noticeably larger than the existing EfW facility building, the change would be seen in the distance beyond the reinstated Temporary Laydown Area. The proposed ERF would be of a high architectural quality and would replace views of the existing EfW facility. Therefore the effect would be a <b>not significant</b> .	None required	Effects unchanged. <b>Not significant.</b>
Visibility of operational stage from viewpoint 16	Only a small part of the view would be affected and the development would be seen in the context of existing industrial units. The proposed ERF would be of a high architectural quality, and would replace views of the existing EfW facility. Therefore the effect would be <b>not significant</b> .	None required	Effects unchanged. <b>Not significant.</b>
<b>Water Resources and Flood Risk</b>			
<b>Stage 1</b>			
There are no new plant operational in Stage 1, this operational scenario would be the same as the baseline			
<b>Stage 2</b>			
Operational traffic, discharge from site operations	With the implementation of measures from the Operational Management Plan, the	None required	Effects unchanged. <b>Not significant.</b>

Aspect of the Project	Description of effect and significance	Supplementary mitigation	Residual effects summary
	localised changes in water quality reaching watercourses due to pollution incidents, or water quality changes at discharges from site operations would be <b>not significant</b> .		
Hardstanding areas	With run-off being discharged at a controlled rate into Enfield Ditch, the potential increased flood risk to people and property (downstream and on-site) and changes to channel morphology due to increased run-off would be <b>not significant</b> .	None required	Effects unchanged. <b>Not significant.</b>
Discharge from site operations	The effect of operation within agreed discharge consents would change water discharge quantities to Chingford Sewer and Enfield Ditch, but this would be <b>not significant</b> .	None required	Effect unchanged. <b>Not significant.</b>
Abstraction from watercourse (Deephams STW outflow channel upstream of Salmon's Brook)	Potential effect: (Option A1): Increased water available within Salmon's Brook (downstream of abstraction point). Potential effect (Option A2): No change in water available within Salmon's Brook (downstream of abstraction point). Control measures: Future operations optimised to minimise water requirements. Significance: Option A1 (air cooling): <b>not significant</b> Option A2 (air cooling): <b>not significant</b>	None required.	Option A1 (air cooling): <b>not significant</b> Option A2 (air cooling): <b>not significant</b>
Abstraction from WRZ	Using water collection techniques for activities such as non-potable uses and fire suppression, the effect of increased demand put on the London WRZ from increased	None required	Effects unchanged. <b>Not significant.</b>

Aspect of the Project	Description of effect and significance	Supplementary mitigation	Residual effects summary
	water use (operational and from workers) would be <b>not significant</b> .		
<b>Stage 3</b>			
Abstraction from watercourse (Deephams STW outflow channel upstream of Salmon's Brook)	Potential effect: As described for Stage 2 above. Control measures: Future operations optimised to minimise water requirements. Significance: Option A1 (air cooling): <b>not significant</b> Option A2 (air cooling): <b>not significant</b>	None required	Effects unchanged. Option A1 (air cooling): <b>not significant</b> Option A2 (air cooling): <b>not significant</b>
Discharge from site operations	The effect of operation within agreed discharge consents would change water discharge quantities to Chingford Sewer and Enfield Ditch, but this would be <b>not significant</b> .	None required	Effect unchanged. <b>Not significant.</b>
Abstraction from WRZ	Using water collection techniques for activities such as non-potable uses and fire suppression, the effect of increased demand on the London WRZ from increased water use (operational) would be <b>not significant</b> .	None required	Effects unchanged. <b>Not significant.</b>
<b>Stage 4</b>			
During this stage the ERF would be operating at full required capacity, while the RRF operates with a capacity to process of around 390,000 tonnes annually. This operation would be the same as the operation for Stage 3 and therefore assessment of effects on receptors would be the same as Stage 3 above.			

## Decommissioning

Vol 1 Table 6.3: Assessment summary– decommissioning

Aspect of the Project	Description of effect and significance	Supplementary mitigation	Residual effects summary
<b>Air Quality and Odour</b>			
Dust emissions	The impact would be similar to the construction stages, due to the risk of dust from demolition. With appropriate embedded mitigation measures, the impact would be <b>not significant</b> .	None required	Effect unchanged <b>Not significant.</b>
Traffic emissions	Potential air quality impacts from road traffic associated with construction stages are predicted to be negligible, and are similar or less to those experienced during decommissioning, and would therefore be <b>not significant</b> .	None required	Effect unchanged <b>Not significant.</b>
<b>Archaeology</b>			
Decommissioning and demolition of structures	With the implementation of standard control measures, the potential to disturb ground around decommissioned facilities would be <b>not significant</b> .	None required	Effect unchanged <b>Not significant.</b>
<b>Ecology</b>			
Lee Valley SPA and Ramsar	With the implementation of standard water, lighting and noise controls, the effects on water resources and indirect effects due to disturbance to shoveler at Chingford Reservoirs SSSI would be <b>not significant</b> .	None required	Effects unchanged. <b>Not significant.</b>
Walthamstow Reservoirs SSSI	With the implementation of the standard water controls, effects on water resources would be <b>not significant</b>	None required	Effects unchanged. <b>Not significant.</b>



Aspect of the Project	Description of effect and significance	Supplementary mitigation	Residual effects summary
Chingford Reservoirs SSSI	With the implementation of standard lighting and noise controls, the effects of disturbance from noise and lighting and associated with dust would be <b>not significant</b> .	None required	Effects unchanged. <b>Not significant.</b>
Lea Valley SMINC	With the implementation of standard lighting, dust, noise and water controls, the effects of disturbance from noise and lighting and effects on water resources and associated with dust would be <b>not significant</b> .	None required	Effects unchanged. <b>Not significant.</b>
Bats	With the implementation of standard lighting controls, the disturbance due to lighting would be <b>not significant</b> .	None required	Effect unchanged. <b>Not significant.</b>
Starling	With the implementation of standard lighting and noise controls, the disturbance due to lighting, noise and activity would be <b>not significant</b> .	None required	Effect unchanged. <b>Not significant.</b>
Linnet	With the implementation of standard lighting controls, the disturbance would be <b>not significant</b> .	None required	Effect unchanged. <b>Not significant.</b>
<b>Environmental Wind</b>			
The Application Site	Similar wind conditions as existing are generally anticipated following decommissioning and demolition of the facilities, therefore the effect would be <b>not significant</b> .	None required	Effect unchanged <b>Not significant.</b>
<b>Ground Condition and Contamination</b>			
Construction and demolition	With a Decommissioning and Demolition Method Statement developed in	None required	Effects unchanged. <b>Not significant.</b>

Aspect of the Project	Description of effect and significance	Supplementary mitigation	Residual effects summary
	consultation with the EA and the latest environmental measures and guidance at the time of decommissioning, the effects of decommissioning would be <b>not significant</b> .		
<b>Noise and Vibration</b>			
Construction	On the basis that construction and demolition works would be similar to that in Stage 3, the noise effects at the closest sensitive receptors would be <b>not significant</b> .	None required	Effects unchanged. <b>Not significant.</b>
<b>Socio-Economics</b>			
Decommissioning of ERF and RRF	Since the Application Site has been allocated for employment, in the long term the Application Site is likely to continue to support employment such that employment effects would be <b>not significant</b> .	None required	Effects unchanged. <b>Not significant.</b>
Demolition of EcoPark House	It has been assumed that suitable alternative facilities for the Edmonton Sea Cadets would be provided such that effects would be <b>not significant</b> .	None required	Effects unchanged. <b>Not significant.</b>
<b>Transport</b>			
The effects of decommissioning would be comparable to and no worse than those assessed for Stage 3 (operation of ERF, RRF and EcoPark House, demolition of EfW facility) of the Project.			
<b>Visual</b>			
Visibility of decommissioning works from viewpoints 1, 4 - 9, 11 and 13	From these locations only the decommissioning works to the upper part of the building and stack would be visible. Due to the distance of the views and the small	None required	Effects unchanged. <b>Not significant.</b>

Aspect of the Project	Description of effect and significance	Supplementary mitigation	Residual effects summary
	part of the views affected, the effect would be <b>not significant</b> .		
Visibility of decommissioning works from viewpoints 2 and 3	As the decommissioning works would be visible in the distance beyond the A406 North Circular Road or existing buildings in front, there would be a <b>significant temporary adverse effect</b> .	No further mitigation identified	Effects unchanged. <b>Significant temporary adverse effect.</b>
Visibility of decommissioning works from viewpoint 10	The activities associated with the demolition of the proposed ERF would be visible in the middle ground and would be partially filtered by vegetation. Therefore there would be a <b>significant temporary adverse effect</b> .	No further mitigation identified	Effects unchanged. <b>Significant temporary adverse effect.</b>
Visibility of decommissioning works from viewpoints 12, 15 and 17 to 20	Due to the distance of the works, the extent of view affected, the effect would be <b>not significant</b> .	None required	Effects unchanged. <b>Not significant.</b>
Visibility of decommissioning works from viewpoint 14	As the decommissioning works would be visible in the distance beyond the activities within the Temporary Laydown Area, there would be a <b>significant temporary adverse effect</b> .	No further mitigation identified	Effects unchanged. <b>Significant temporary adverse effect.</b>
Visibility of decommissioning works from viewpoint 16	Due to the distance of the works the effect would be <b>not significant</b> .	None required	Effects unchanged. <b>Not significant.</b>
Cleared site following decommissioning – viewpoints 1, 4, 5, 6, 9, 11 and 13	Only a small part of the view would be affected. The Meridian Water development may be obscure the view from viewpoint 11. There would be a <b>not significant</b> effect.	None required	Effects unchanged. <b>Not significant.</b>
Cleared site following decommissioning – viewpoints 2 and 3	Removal of the proposed ERF in relation to these high sensitivity receptors would result in a <b>significant permanent beneficial effect</b> .	None required	Effects unchanged. <b>Significant permanent beneficial effect.</b>

Aspect of the Project	Description of effect and significance	Supplementary mitigation	Residual effects summary
Cleared site following decommissioning – viewpoints 7, 8 and 14	Removal of the proposed ERF in relation to these high sensitivity receptors would result in a <b>significant permanent beneficial effect</b> .	None required	Effects unchanged. <b>Significant permanent beneficial effect.</b>
Cleared site following decommissioning – viewpoint 10	Removal of the proposed ERF in relation to this high sensitivity receptor would result in a <b>significant permanent beneficial effect</b> .	None required	Effects unchanged. <b>Significant permanent beneficial effect.</b>
Cleared site following decommissioning – viewpoints 12 and 15 - 20	Removal of the proposed ERF in relation to these high sensitivity receptors would result in a <b>significant permanent beneficial effect</b> .	None required	Effects unchanged. <b>Significant permanent beneficial effect.</b>
Water Resources and Flood Risk			
Removal of equipment including all residues and operating chemicals	Adhering to measures in the Decommissioning and Demolition Method Statement produced in consultation with the EA, changes to water quality or quantity in watercourses or groundwater from spills or leakage would be <b>not significant</b> .	None required	Effects unchanged. <b>Not significant.</b>
Demolition including in ground infrastructure	Adhering to measures in the Decommissioning and Demolition Method Statement produced in consultation with the EA, the effect of pollution to the underlying aquifer and the any future buildings on the Application Site would be <b>not significant</b> .	None required	Effects unchanged <b>Not significant.</b>
Traffic associated with the decommissioning and demolition of the Project	Adhering to standard control measures and guidance requirements, the effect of water quality changes to watercourses and groundwater from spills and leakage would be <b>not significant</b> .	None required	Effects unchanged. <b>Not significant.</b>



Series 06 Environmental  
Statement

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