REPORT

Boston Alternative Energy Facility

Design and Access Statement

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Boston Alternative Energy Facility

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1 Introduction

1.1.1 The Design and Access Statement (DAS) has been prepared on behalf of Alternative Use Boston Projects Limited (AUBP or the Applicant) in relation to an application to be made to the Secretary of State under Section 37 of the Planning Act 2008 for a Development Consent Order (DCO) authorising the construction, operation and maintenance of a power-generation plant, known as the Boston Alternative Energy Facility (herein 'the Facility').

1.1.2 The Facility constitutes a Nationally Significant Infrastructure Project (NSIP) under the Planning Act 2008 by virtue of the Facility requiring the building, commissioning and operating of a generating station with an energy generating capacity greater than 50 megawatts electric (MWe). As the Facility is a NSIP, the Applicant is required to make an application for a DCO to the Planning Inspectorate, which will be decided by the Secretary of State.

1.1.3 The application will be accompanied by this DAS, prepared in accordance with the Town and Country Planning (Development Management Procedure) (England) Order 2015 (the DMPO) and will be a certified document under the DCO.

1.2 Developer and Project Team

1.2.1 The Applicant is undertaking the development and securing funding for the Facility. AUBP is a privately-owned company with core business in Energy from Waste, specifically renewable electricity projects producing "Green Energy".

1.2.2 The company team has been involved in industrial development at Riverside Industrial Estate, Boston, Lincolnshire since 2004. In March 2005, planning consent was obtained for a Special & Clinical Waste Processing Plant, with conditions discharged and commencement of construction.

1.2.3 In 2010, consent was obtained for a 12 MWe Gasification Power Station that would process waste wood (known as Biomass UK No. 3 Ltd) with enabling works carried out during 2013. This facility was sold to Aviva Investors in November 2015, along with the right to develop the facility, and in September 2016 it was transferred to Biomass UK No. 3 Ltd. The Biomass UK No. 3 Ltd facility is entirely separate to the proposed Facility.

1.2.4 Royal HaskoningDHV was commissioned by the Applicant to coordinate the DCO application process and produce the documentation necessary to consider the Facility's impacts on all environmental receptors.

2 Policy and Legislation

2.1 Purpose of this Design and Access Statement

2.1.1 The purpose of this DAS is to explain the design principles and concepts, the steps taken to appraise the context and the design development and response to context as well as the approach to access.

2.1.2 The legislative framework for a DAS is set out in Article 9(3) of the DMPO which states:

"A design and access statement must –

(a) Explain the design principles and concepts that have been applied to the development;
(b) Demonstrate the steps taken to appraise the context of the development and how the design of the development takes that context into account;
(c) Explain the policy adopted as to access, and how policies relating to access in relevant local development documents have been taken into account;
(d) State what, if any, consultation has been undertaken on issues relating to access to the development and what account has been taken of the outcome of any such consultation; and
(e) Explain how any specific issues which might affect access to the development have been addressed."

2.1.3 National Policy Statements for Energy (NPS EN-1) (Department of Energy and Climate Change (DECC), 2011a) and for Renewable Energy Infrastructure (NPS EN-3) (DECC, 2011b) outline criteria for good design which should be followed in applications for energy infrastructure including functionality, fitness for purpose, sustainability alongside good aesthetics. Section 4.5 of NPS EN-1 sets out the requirement to demonstrate in application documents how the design process was conducted and how the design process evolved;

2.1.4 'Guidance on information requirements and validation' (Ministry of Housing, Communities and Local Government, 2010) advises that a DAS should cover the following:

a) The Design Element
To show the process undertaken to explain the scheme in terms of:
i) Amount: how much is to be built on the site;
ii) Layout: how the buildings and public and private spaces will be arranged and how they interact with the site;
iii) Scale: how large the buildings and spaces will be (their height, width and length);

iv) Landscaping: how open spaces will be treated to enhance and protect the character of the area;
v) Appearance: what the building and spaces will look like, for example, building materials and architectural details;
vi) Appraising the Context: an assessment of the site's immediate and wider context in terms of physical, social and economic characteristics and relevant planning policies; and
vii) Use: what the buildings and spaces will be used for.

b) The Access Element
This should include an explanation of:
i) Vehicular and Transport Links: why the access points and routes have been chosen, and how the site responds to road layout and public transport provision; and
ii) Inclusive Access: how everyone can get to and move through the place on equal terms regardless of age, disability, ethnicity or social grouping.

2.1.5 The guidance states that the design process should explain how the physical characteristics of the development have been informed by "assessment, involvement and evaluation".

2.1.6 The National Planning Policy Framework (NPPF) states (at paragraph 6):

"*The purpose of the planning system is to contribute to the achievement of sustainable development".*

2.1.7 Paragraph 56 of the NPPF expands on this aim noting that:

"*Good design is a key aspect of sustainable development…".*

2.2 Local Planning Policy

The Lincolnshire Minerals and Waste Local Plan, Adopted June 2016

2.2.1 The Lincolnshire Mineral and Waste Local Plan (LMWLP) (Lincolnshire County Council, 2016) relates to waste management and its policies are relevant to the proposed Facility. Under the Site Locations (December 2017) document the site is located within Allocated Waste Area WA22-BO. The area is identified as having a variety of waste management uses including the potential for 'Energy Recovery'. The Core Strategy and Development Management Policies document (Adopted June 2016) includes the following policies.

2.2.2 Policy DM3: Quality of Life and Amenity refers to the importance of reducing visual

intrusion '*to an absolute minimum'*. It states:

> *'Planning permission will be granted for minerals and waste development provided that it does not generate unacceptable adverse impacts arising from…visual intrusion... to occupants of nearby dwellings and other sensitive receptors'.*

2.2.3 Measures to make living near to a 'waste site' acceptable include the creation of bunds and natural vegetation for screening. Waste development should be well designed and contribute positively to the character and quality of the area.

2.2.4 Policy DM6: Impact on Landscape and Townscape states:

> '*Planning permission will be granted for minerals and waste development provided that due regard has been given to the likely impact of the proposed facility on landscape and townscape, including landscape character, valued or distinctive landscape features and elements, and important views. If considered necessary by the County Council, additional design, landscaping, planting and screening will be required. Where planting is required it will be subject to a minimum 10-year maintenance period.*
> *Development that would result in residual, adverse landscape and visual impacts will only be approved if the impacts are acceptable when weighed against the benefits of the scheme. Where there would be significant adverse impacts on a valued landscape considerable weight will be given to conservation of that landscape'.*

Land Allocation

2.2.5 As described in **Chapter 3 Policy and Legislation** of the Environmental Statement (ES) (document reference 6.2.3), the adopted Lincolnshire Minerals and Waste Local Plan Site Allocations document, adopted in December 2017 identifies the Application Site as substantially falling within 119 ha of land allocated as WA22-BO: Riverside Industrial Estate Waste Area (Lincolnshire County Council, 2017). The accompanying Sustainability Appraisal undertaken for the 'Site Locations' report confirms that **the site is suitable for potential waste uses including, Energy from Waste (EfW) projects**. See **Plate 2-1** below for the allocation taken from the Lincolnshire Minerals and Waste Local Plan.

WA22-BO Riverside Industrial Estate, Boston
Development Brief

Grid Reference: E 533482 N 342188
District: Boston Borough Council
Parish: Boston
Area of Site: 119 ha
Potential Uses: Resource Recovery Park, Treatment Facility, Waste Transfer, Materials Recycling Facility, Household Waste Recycling Centre, Metal Recycling / End of Life Vehicles, Re-Use Facility, C&D Recycling, Energy Recovery

WA22-BO Riverside Industrial Estate

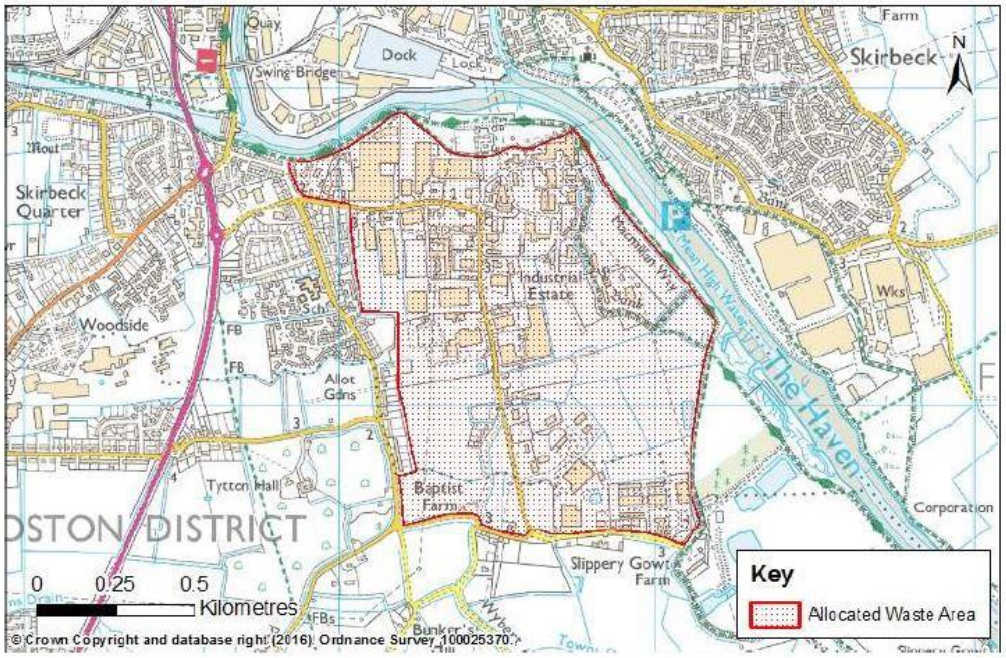

Plate 2-1 Riverside Industrial Estate Land Allocation. Source: https://www.lincolnshire.gov.uk/residents/environment-and-planning/planning-and-development/minerals-and-waste/

South East Lincolnshire Local Plan

2.2.6 Other (non-waste or minerals development-led proposals) planning decisions within Boston Borough are guided by the South-East Lincolnshire Local Plan 2011-2036 (Adopted March 2019) ('SELLP') (South-East Lincolnshire Joint Strategic Planning Committee, 2019).

2.2.7 The Plan identifies 89.7 ha of land as BO006 within the Riverside Industrial Estate, allocated for the purposes of Business (B1), General industrial (B2) and Storage or distribution (B8). The Application Site falls within this Local Plan allocation, with the remainder designated as Countryside. See **Plate 2-2** for the relevant section of the Policies Map from the South-East Lincolnshire Local Plan.

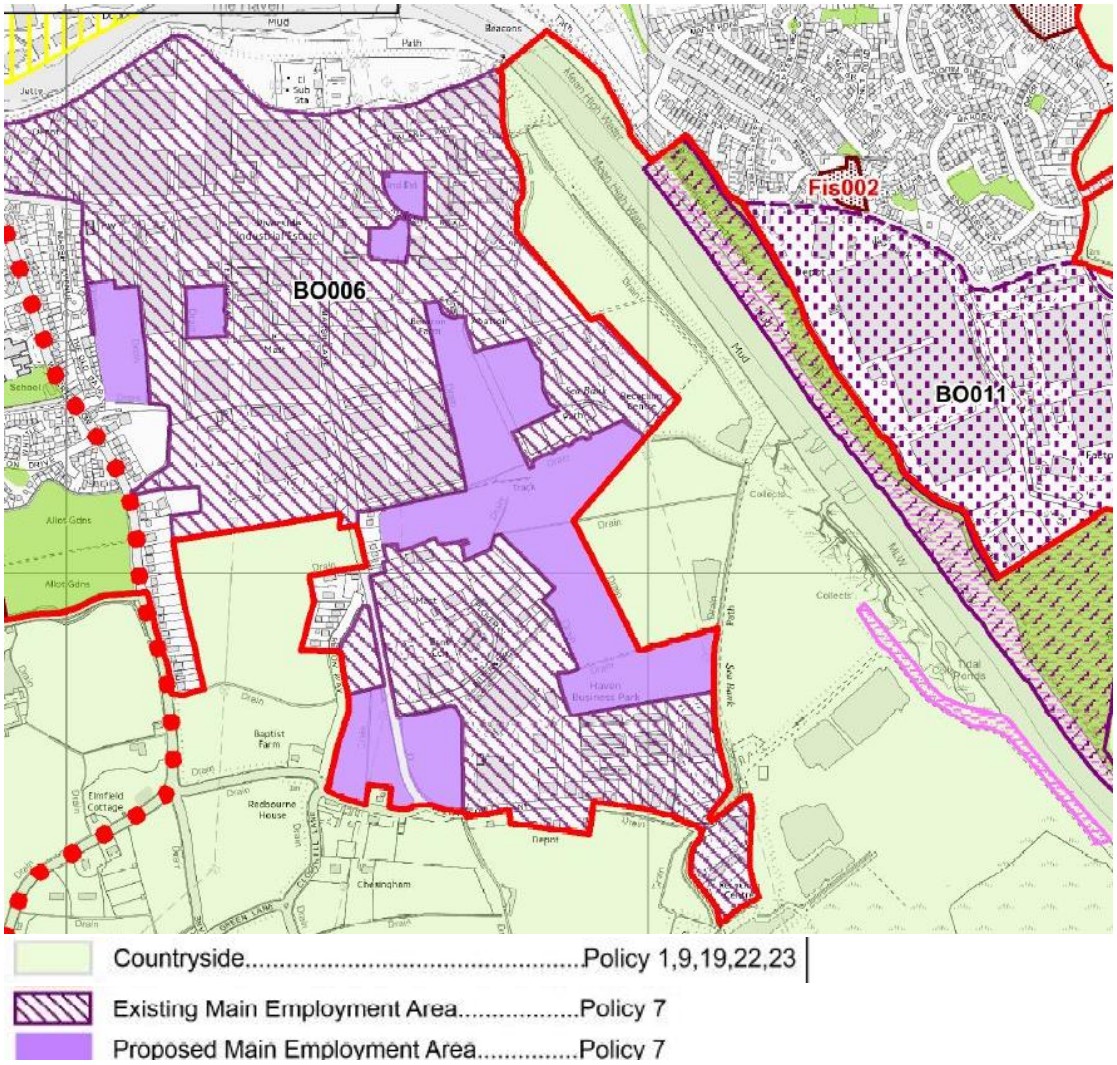

Plate 2-2 Land allocation South-East Lincolnshire Local Plan (March 2019) Source: http://www.southeastlincslocalplan.org/wp-content/uploads/2019/02/1-Boston.pdf

2.2.8 In considering attributes of sustainable development Policy 2: Development Management states that:

> '*Proposals requiring planning permission for development will be permitted provided that sustainable development considerations are met, specifically in relation to:*
> *1. size, scale, layout, density and impact on the amenity, trees, character and appearance of the area and the relationship to existing development and land uses;*
> *2. quality of design and orientation;…*
> *6. impact upon neighbouring land uses by reason of noise, odour, disturbance or visual intrusion;...'*

2.2.9 Policy 2 is considered relevant to '*any type of proposal whether large or small*'.

2.2.10 Policy 3: Design of New Development, effectively provides a list of issues to be considered, consistent with NPPF.

> *All development will create distinctive places... Design which is inappropriate to the local area, or which fails to maximise opportunities for improving the character and quality of an area, will not be acceptable.*
> *Development proposals will demonstrate how the following issues, where they are relevant to the proposal, will be secured:*
> *1. creating a sense of place by complementing and enhancing designated and non-designated heritage assets; historic street patterns; respecting the density, scale, visual closure, landmarks, views, massing of neighbouring buildings and the surrounding area;…*
> *3. the landscape character of the location;…*
> *10. the appropriate treatment of facades to public places…*
> *11. residential amenity;…*
> *14. the incorporation of existing hedgerows and trees and the provision of appropriate new landscaping to enhance biodiversity, green infrastructure, flood risk mitigation and urban cooling;…*

2.2.11 Policy 31: Climate Change and Renewable and Low Carbon Energy

> *'A. Climate Change*
> *All development proposals will be required to demonstrate that the consequences of current climate change has been addressed, minimised and mitigated by:*
> *1. employing a high-quality design;...*
> *5. incorporating measures which promote and enhance green infrastructure and provide an overall net gain in biodiversity as required by Policy 28 to improve the resilience of ecosystems within and beyond the site…*
> *B. Renewable Energy*
> *With the exception of Wind Energy the development of renewable energy facilities, associated infrastructure and the integration of decentralised technologies on existing or proposed structures will be permitted provided, individually, or cumulatively, there would be no significant harm to:*
> *1. visual amenity, landscape character or quality, or skyscape considerations;...'*

2.2.12 The relevant proposals in the SELLP are considered where they complement the

relevant policies in the LMWLP.

3 Site Overview

3.1 Site Location

3.1.1 The Application Site is located approximately 2 km to the south east of Boston town centre (NGR TF339424) as shown on the Location Plan (document reference 4.1). The Application Site covers 26.8 hectares (ha) and comprises two components:

- the Principal Application Site (NGR TF33950 42241), which covers 25.3 ha and will contain all of the operational infrastructure; and
- the Habitat Mitigation Area, which covers 1.5 ha and is located approximately 170 m to the south east of the Principal Application Site, encompassing an area of saltmarsh and small creeks at the margins of The Haven that will be enhanced.

3.1.2 Only very minor, low level and naturalistic habitat works are proposed at the Habitat Mitigation Area over the course of one week in advance of construction of the wharf, using one excavator (which may be brought to this site via The Haven). Maintenance of this area during operation of the Facility will be infrequent and minor. Therefore this Design and Access statement concentrates on the Principal Application Site, where the industrial infrastructure is to be constructed and operated.

3.1.3 The Principal Application Site is neighboured to the west by the Riverside Industrial Estate and to the east by The Haven, a tidal waterway of the River Witham between The Wash and the town of Boston. The A16 public highway is approximately 1.3 km to the west.

3.1.4 The Principal Application Site is accessed by road via the Riverside Industrial Estate's existing road network from Nursery Road. Access to the site from the west to Marsh Lane is gained from Bittern Way. The access points from Nursery Road and Bittern Way are private roads.

3.1.5 The Boston Biomass UK No.3 Ltd gasification plant is located on the eastern boundary of the Principal Application Site, and a waste management facility (previously operated by Mick George, but having ceased operation at the time of submission) which processed construction and demolition waste is located to the east of Nursery Road and is bounded by the Principal Application Site on all sides (but not included within the proposed Principal Application Site itself).

3.1.6 A Household Waste Recycling Centre (HWRC) (built in 2018) is located to the west of the Principal Application Site, south of the junction with Nursery Road/Callen Road. Public access to the HWRC is on the private road from Bittern Way.

3.1.7 A Waste Transfer Station (WTS) operated by Lincolnshire County Council (LCC)[1] is located to the south of the Principal Application Site, off Slippery Gowt Lane.

3.2 Site Suitability

3.2.1 The Application Site was considered to be highly advantageous because of the following factors and meant that the consideration of alternative site locations (as identified in ES **Chapter 4 Site Selection and Alternatives**, (document reference 6.2.4)) was not deemed necessary:

- The Principal Application Site is directly adjacent to a navigable watercourse and the proposal includes importing of feedstock and exporting of finished aggregate product entirely by ship.
- The location benefits from being allocated within the Lincolnshire Mineral and Waste Local Plan (LMWLP) (Lincolnshire County Council, 2016) as identified in The Lincolnshire Minerals and Waste Local Plan Site Allocations document adopted in December 2017. This identifies the Application Site as substantially falling within 119 ha of land allocated as WA22-BO: Riverside Industrial Estate Waste Area. The allocation identifies a range of potential uses for the site comprising: Resource Recovery Park; Treatment Facility, Waste Transfer; Materials Recycling Facility; Household Waste Recycling Centre; Metal Recycling / End of Life Vehicles; Reuse Facility; Construction and Demolition Recycling; and Energy Recovery (Lincolnshire County Council, 2017).
- The location has the significant benefit of an existing on-site grid connection directly into the 132 kV overhead line, thus avoiding a lengthy off-site connection to a suitable sub-station.
- The Applicant has the benefit of experience and history in the development of power generation in Riverside Industrial Estate, having originally secured planning permission for the adjacent gasification plant now run by Boston Biomass UK No. 3 Ltd.
- The Applicant has strong and established links with the sole onshore landowner where the proposed Facility will be located. As a result, the Applicant has been able to secure the land and rights necessary to construct

[1] *The WTS receives all of the residual household waste from Boston Borough Council (BBC) and South Holland District Council (SHDC) areas, and some residual household waste from East Lindsey Council area. This waste is bulked and transferred to the North Hykeham energy from waste incineration facility (Lincoln).*

and operate the Facility and no further third-party land / rights acquisitions will be required.

3.2.2 The location of the site and available land has played an important part in the design, as described in **Section 5** and **Section 6** below.

3.3 Site Description

3.3.1 The Principal Application Site comprises both undeveloped and previously developed land enclosed by a network of drainage ditches and forms part of a wider emerging industrial/commercial area.

3.3.2 The eastern site margins are defined in part by a primary flood defence bank along The Haven. Large and small industrial business units are located to the north, west and south of the site. A 132 kV overhead powerline on pylons traverses the site from north to south and bisects the Principal Application Site.

3.3.3 There are several public rights of way that cross the Facility area. The Boston Public Footpath No.14 starts in Boston and follows the A16 (London Road) south over The Haven and merges with the existing footpaths along The Haven (BOST/14/12, BOST/14/2, BOST/14/4, BOST/14/5 and BOST/14/7). Footpaths BOST14/4 and BOST14/5 follow the crest of the primary flood bank that routes in parallel to The Haven. Footpath BOST/14/11 and BOST/14/9, follow the route of Roman Bank (also known as 'Sea Bank'), which bisects the Principal Application Site then continues south from the Principal Application Site.

3.3.4 The part of the Principal Application Site which will accommodate the proposed wharf is approximately 750 m downstream from the existing Port of Boston (measured from the entrance to the impounded basin, the Wet Dock, to the approximate centre of the site).

3.3.5 The Haven is contained within flood banks (in good condition) which are located within the Principal Application Site boundary, currently at approximately 6.3 m Above Ordnance Datum (AOD). Typical dimensions across the River directly to the east of the site, are as below and illustrated in **Plate 3-1**:

- From the edge of the flood defence to the centre of the channel – 80 m;
- Width of base of channel – 20 m; and
- From edge of flood defence to Mean High Water Spring (MHWS) – 30 m.

3.3.6 The navigation channel is not dredged at this point. The bed level changes over time. Under normal conditions it gradually silts up, but erodes when large water volumes are discharged from the sluices upstream. This will not occur at high tides, so will not affect vessel manoeuvring. See **Chapter 16 Estuarine**

Processes of the ES (document reference 6.2.16) for a more detailed description.

3.3.7 The site is located within National Character Area 46: The Fens (Natural England, 2013), the Reclaimed Saltmarsh Landscape Character Type and Welland to Haven Reclaimed Saltmarsh Landscape Character Area (LCA) (ECUS Ltd, 2009). However, the area is significantly influenced by urban/industrial features including electricity pylons, industrial units, cranes and gantries at the Port of Boston.

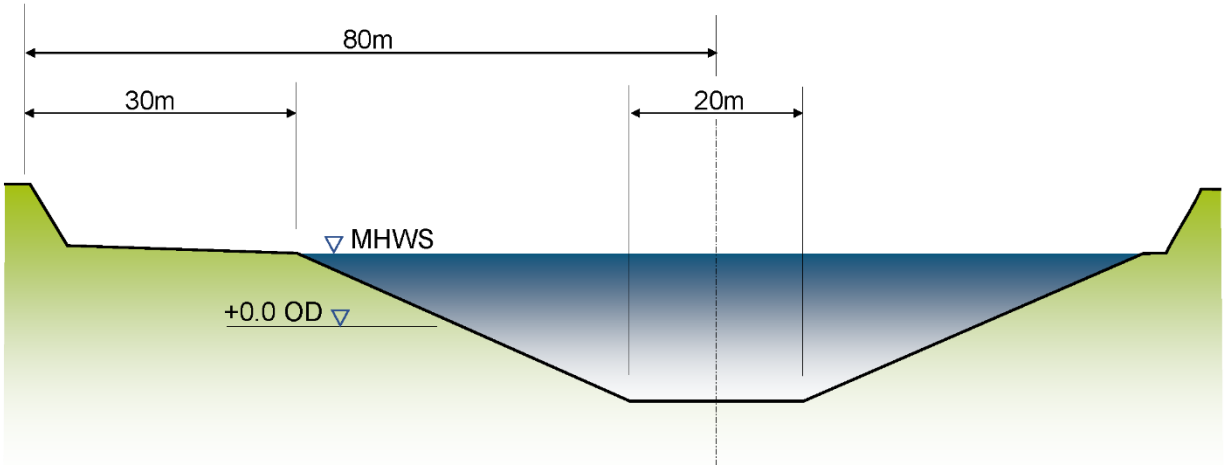

Plate 3-1 Indicative cross section through river to the east of the site. Note that vertical scale is different to horizontal.

3.4 The Proposed Development

3.4.1 The Facility is a proposed EfW plant that would generate approximately 102 MWe (gross) of renewable energy, and would deliver approximately 80 MWe (net) to the National Grid. The energy recovery plant would be a thermal treatment facility using Refuse Derived Fuel (RDF) as the feedstock to generate energy. A full project description is given in **Chapter 5 Project Description** of the ES (document reference 6.2.5). This technology provides significant environmental benefits compared to landfilling residual waste and contributes to Government sustainable energy targets to achieve a 100% reduction in carbon emissions by 2050.

3.4.2 The main elements of the Facility are:

- a wharf and associated infrastructure (including re-baling facility, workshop, transformer pen and welfare facilities);
- a RDF bale contingency storage area, including sealed drainage, with automated crane system for transferring bales;

- conveyor system running in parallel to the wharf between the RDF storage area and the RDF bale shredding plant. Part of the conveyor system is open and part of which is under cover (including thermal cameras);
- bale shredding plant;
- RDF bunker building;
- thermal treatment plant comprising three nominal 34 MWe combustion lines (circa 120 MWth) and associated ductwork and piping, transformer pens, diesel generators, three stacks, ash silos and ash transfer network; and air pollution control residues (APCr) silo and transfer network;
- turbine plant comprising steam turbine generators, make-up water facility and associated piping and ductwork;
- air-cooled condenser structure, transformer pen and associated piping and ductwork;
- Lightweight Aggregate (LWA) manufacturing plant comprising four kiln lines, two filter banks with stacks, storage silos for incoming ash, APCr, and binder material (clay and silt), a dedicated berthing point at the wharf, silt storage and drainage facility, clay storage and drainage facility, LWA workshop, interceptor tank, LWA control room, aggregate storage facility and plant for loading aggregate / offloading clay or silt;
- electrical export infrastructure;
- two carbon dioxide (CO_2) recovery plants and associated infrastructure, including chiller units;
- associated site infrastructure, including site roads, pedestrian routes, car parking, site workshop and storage, security gate, control room with visitor centre and site weighbridge; and
- Habitat Mitigation Works for redshank and other bird species comprising of improvements to the existing habitat through the creation of small features such as pools/scrapes and introduction of small boulders (Habitat Mitigation Works) within the Habitat Mitigation Area.

3.4.3 A schematic site layout of the Principal Application Site once the Facility is constructed is provided in **Plate 3-3** and an overview of the process in **Plate 3-3**.

3.4.4 The construction period for the whole development, including commissioning, is anticipated to be between 46 to 48 months.

3.4.5 The Facility would be designed to operate for an expected period of at least 25 years, after which ongoing operation will be reviewed and if it is not appropriate to continue operation the plant will be decommissioned. The wharf structure would replace a section of the current primary flood defence bank (without impacting on the integrity of the bank) and would form a permanent structure that is not anticipated to be decommissioned.

3.4.6 The Facility would comprise a range of buildings and structures, shown in the Indicative Generating Station Plans (document reference 4.9) for the site layout plan, the tallest of which are the three thermal treatment plant exhaust stacks and the two proposed LWA plant stacks which are each anticipated to be approximately 80 m. The approximate maximum heights of the main buildings are listed in **Section 6.4**. The Indicative Generating Station Plans (document reference 4.9) provides elevations and cross sections of the Facility. The Indicative Wharf Plans (document reference 4.11) provide an indicative layout of the wharf and cross sections.

3.4.7 The extent of deviation of the Facility footprint is provided in the Works Plans (document reference 4.3).

Site Layout

Not to Scale

Plate 3-2 Schematic layout

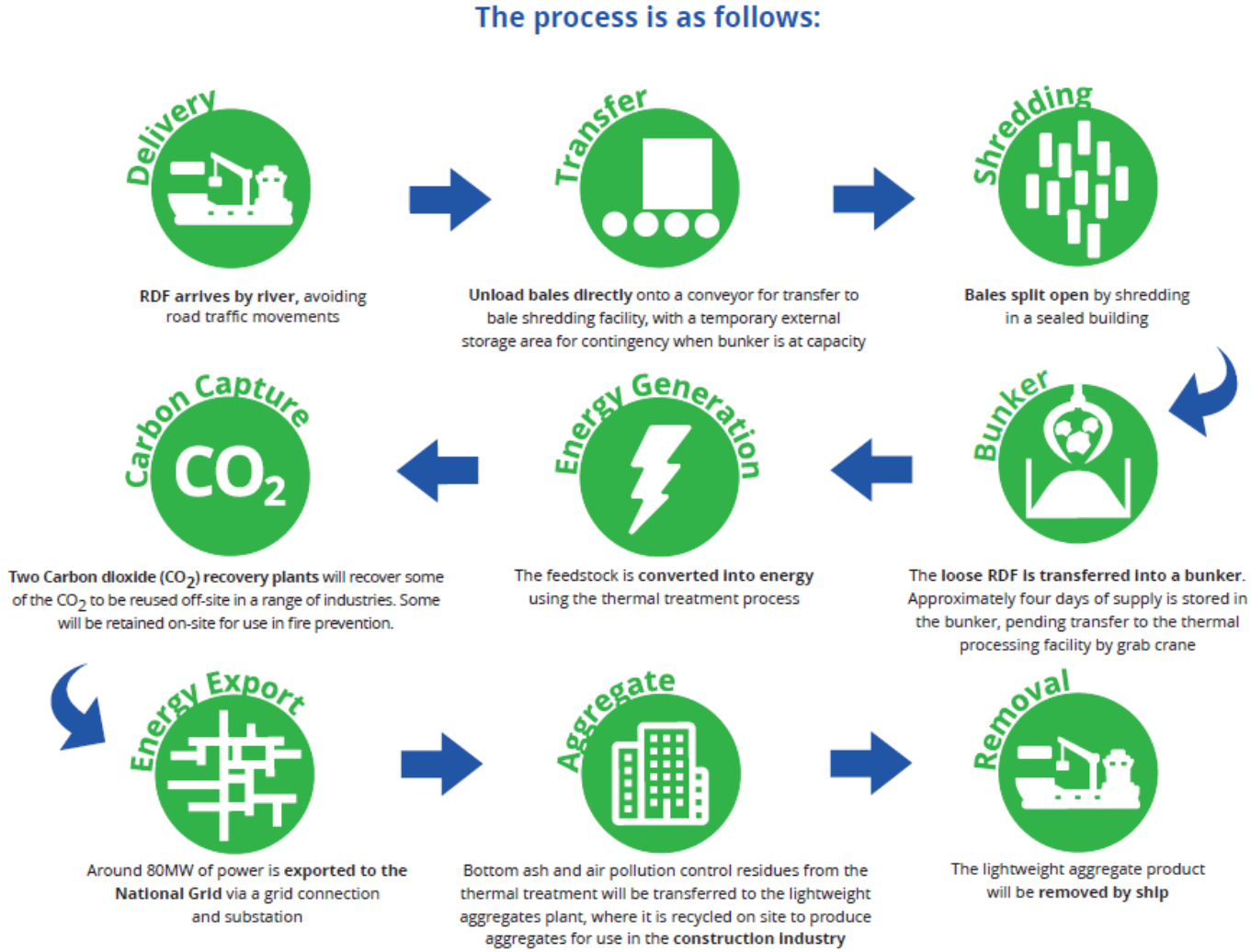

Plate 3-3 Process Flow Diagram

4 Existing Site Context

4.1 Landscape

4.1.1 The Principal Application Site is located to the south of Boston town on the eastern side of the Riverside Industrial Estate. The eastern boundary of the Principal Application Site extends along The Haven river channel for approximately 550 m. The south-eastern Order limits are adjacent to the existing Biomass UK No. 3 Ltd gasification plant and extend along the densely vegetated sea bank and boundary to the adjoining landfill site. The southern boundary abuts industrial and workshop units within the adjoining Haven Business Park and western margins adjoin development within Riverside Industrial Estate. The central, western Principal Application Site Order limits follows a section of the vegetated sea bank (called Roman Bank (or 'Sea Bank')) and wraps around an existing waste management facility.

4.1.2 The Principal Application Site covers an area of approximately 25.3 hectares (ha). The north-eastern area includes the existing riverbank along The Haven. There are access tracks to areas of rough open grassland that include temporary material stockpiles. Roman Bank is included within the central eastern Principal Application Site boundary; a sinuous route through the industrial estate from across the southern Principal Application Site and a public right of way follows the route. The southern Principal Application Site area encompasses agricultural fields bounded by drainage ditches. The central western portion of the Principal Application Site includes areas of rough grassland either side of Nursery Road; areas to the east of the road are bounded by galvanised steel security fencing. The area includes temporary compounds and material stockpiles.

4.1.3 The Principal Application Site location forms part of a wider emerging industrial / commercial area, as defined by local planning documents. An eclectic mixture of large and small industrial / business units is located to the north-west, west and south of the site. There are occasional pockets of scrub and emerging woodland areas in 'vacant' parcels of land between buildings. Certain boundaries are defined by tall conifer hedges. An overhead powerline on pylons traverses the site from north to south and bisects Biomass UK No. 3 Ltd and the Facility. There are large industrial units to the east of the site (Metsä Wood and the former Fogarty's employment area) along the opposite bank of The Haven off Fishtoft Road.

Wider Area Context

4.1.4 The landscape is dominated by Boston town towards the north and north west of the Principal Application Site and the adjoining settlement of Wyberton. Areas to the east and south of the Principal Application Site are predominantly expansive areas of flat, arable farmland, criss-crossed by numerous lanes and minor roads.

4.1.5 A key component of the flat landscape are the numerous drainage dykes and ditches that connect to large scale drainage channels. The River Witham and The Haven (the tidal waterway of the River Witham between The Wash to the east and Boston town) bisect Boston and runs adjacent to the Principal Application Site north-west to south-east.

Topography and Watercourses

4.1.6 The Principal Application Site and surrounding area is essentially flat, with topography varying only very slightly in elevation; typically between two or three metres Above Ordnance Datum (mAOD). Localised topographical features are often characterised by flood defence banks; those flanking The Haven are at an elevation of approximately 6.3 mAOD. Smaller scale flood defences, 'sea banks', are found meandering through landscape areas to the east and west of The Haven. They are often densely vegetated and provide slightly elevated routes for public footpaths.

4.1.7 A notable topographical feature is the landform of the Boston Landfill Site to the south-east of the Principal Application Site. The landfill site lies alongside the west bank of The Haven and comprises two raised landforms separated by open water lagoons and excavated ground. The northern capped, rough grass landform abuts the south-eastern site boundary and rises to approximately 20 mAOD on relatively steep 1 in 10 slopes. The southern landform rises to approximately 17 mAOD.

4.1.8 Man-made, rectilinear drains and dykes are a key characteristic of the area with an absence of natural, meandering watercourses. The primary watercourse is the River Witham runs adjacent to the Principal Application Site from the north-west, through Boston and on to the south-east as The Haven; the tidal section of the river leading to The Wash. The river banks are raised as engineered flood defences. Other substantial drains include South Forty Foot Drain, Maud Foster Drain and Hobhole Drain.

4.1.9 Arable fields are often bounded by a network of drains and ditches; generally irregular and organic in pattern, particularly to the south and east of the Principal Application Site.

Communications and Infrastructure

4.1.10 Major roads near to the Application Site are:

- The A52, which is a major road across the East Midlands running between the east Lincolnshire coast and Stoke on Trent;
- The A16, which is the major north – south link across Lincolnshire; and
- The B1397, located to the west of the A16, links Kirton to Boston.

4.1.11 The Riverside Industrial Estate is accessed from the east of the A16 via Marsh Lane. Marsh Lane then heads south through the industrial estate, with the existing link into the Principal Application Site via Nursery Road, which becomes a private road immediately north of the Principal Application Site Order limits. Wyberton Low Road heads south from Skirbeck Quarter, running parallel with Marsh Lane to the south, towards agricultural areas with a dense pattern of narrow lanes. Lanes to the south of the site, between the A16 road corridor and The Haven include:

- Low Road, leads from Wyberton Low Road to Wyberton / Wyberton Park;
- Heron Way from Marsh Lane leading on to Slippery Gowt Lane;
- Closshill Lane, Green Lane, Wybert Lane, Bunkers Hill Lane, Causeway (East), Church Lane, Silt Pit Lane and Rowdyke Lane are short, interconnected lanes to the north and east of Wyberton Park;
- Saundergate Lane East, Streetway and Wyberton Roads form a west to east link south of the Principal Application Site;
- Millfield Lane East, Hall Lane and Frampton Roads traverse south of the Principal Application Site between Frampton and The Wash.

4.1.12 To the east of the Principal Application Site, Fishtoft Road links Skirbeck to the village of Fishtoft. Church Green Road, Gaysfield Road and Scalp Road provide north-south links to the village.

Settlements, Industry, Commerce and Leisure

4.1.13 The town of Boston is the primary settlement area, historically an important river port serviced from the North Sea via The Wash and The Haven. Outlying areas of the town include Skirbeck, located to the north-east of the Principal Application Site on the east bank of The Haven. Skirbeck Quarter is located to the west of the site, beyond the Riverside Industrial Estate; the area extends along the B1397 road corridor and is effectively contiguous with Wyberton to the south-west.

4.1.14 A number of smaller village settlements surround the Principal Application Site

and include properties at Wyberton Park, approximately 1.5 km to the south-west of the site, and the village of Fishtoft 2 km to the east. The village of Kirton is located south-west of the Principal Application Site and Frampton approximately 3 km to the south of the Principal Application Site. Haltoft End and Freiston lie beyond the densely vegetated banks of Hobhole Drain north-east of the Principal Application Site.

4.1.15 There are numerous individual properties and clusters of properties distributed along narrow country lanes throughout the area, in particular across open farmland to the south and east of the site, and to the east of The Haven along approach lanes to Fishtoft, including Scalp Road. Two properties lie in immediate proximity to the site; Beeston Farm, off Nursey Road on the western Principal Application Site boundary and Ivy House, within the southern area of Haven Business Park to the south. There are clusters of residential properties along Marsh Lane and Wyberton Low Road to the west of the site.

4.1.16 Industrial development is widespread and conspicuous to the south of Boston. The Port of Boston and associated docks are located to the north-west of the site, north of The Haven. The port area includes large industrial units, very tall storage silos and lifting cranes. To the west of the port area, between South Forty Foot Drain and the A16, is Redstone Industrial Estate comprising of medium-sized industrial and workshop units.

4.1.17 The largest industrial zone in the vicinity of the Principal Application Site is the Riverside Industrial Estate. The estate covers a large tract of land between Skirbeck Quarter and The Haven and includes large scale industrial units. The industrial estate is identified as an ‘Allocated Waste Area’. A household waste recycling centre is located to the south-west of the Principal Application Site, accessed on a private road via Bittern Way. Land to the south-east of the industrial estate includes a landfill site, designated under planning as a waste disposal site. The Haven Business Park is located to the south of the Principal Application Site.

4.1.18 The largest industrial buildings are located to the east of The Haven and south of Skirbeck on the Metsä Wood and the former Fogarty’s employment area. There are other large works areas within Skirbeck Quarter, including a timber products factory (Calders and Grandidge). There are retail and business areas to the west of Boston alongside South Forty Foot Drain.

4.1.19 Within agricultural areas there are food processing and packaging plants. Large glasshouse buildings are located to the west of Fishtoft.

Designated Landscape

4.1.20 The nearest designated landscape is Boston Cemetery, which is located to the north of Boston and is listed in the Historic England Register of Historic Parks and Gardens for its special historic interest. It is almost 4 km in a straight line from the centre of the Principal Application Site. There is no intervisibility between the two sites, therefore there are no designated landscape features required to be considered further in the DAS.

Landscape Character

4.1.21 There are no designated areas of high landscape value within the vicinity of the Application Site (as defined within **Chapter 9 Landscape and Visual Impact Assessment** of the ES (document reference 6.2.9).

National / Regional Scale Landscape Character

4.1.22 The site and surrounding area falls within National Character Area (NCA) 46 The Fens, as identified by Natural England in the England-wide mapping of landscape character at a broad, regional scale.

4.1.23 Several key characteristics identified for NCA 46 are relevant to the LVIA, as follows:

> 'Expansive, flat, open, low-lying wetland landscape influenced by the Wash estuary, and *offering extensive vistas to level horizons and huge skies throughout, provides a sense of rural remoteness and tranquillity.*
> *Overall, woodland cover is sparse, notably a few small woodland blocks, occasional avenues alongside roads, isolated field trees and shelterbelts of poplar, willow and occasionally leylandii hedges around farmsteads, and numerous orchards around Wisbech. Various alders, notably grey alder, are also used in shelterbelts and roadside avenues.*
> *The predominant land use is arable – wheat, root crops, bulbs, vegetables and market gardening made possible by actively draining reclaimed land areas. Associated horticultural glasshouses are a significant feature. Beef cattle graze narrow enclosures along the banks of rivers and dykes and on parts of the salt marsh and sea banks.*
> *Open fields, bounded by a network of drains and the distinctive hierarchy of rivers (some embanked), have a strong influence on the*

geometric/rectilinear landscape pattern. The structures create local enclosure and a slightly raised landform, which is mirrored in the road network that largely follows the edges of the system of large fields. The drains and ditches are also an important ecological network…

Large, built structures exhibit a strong vertical visual influence, such as the 83 m high octagonal tower of 'Boston Stump' (St Botolph's Church), Ely Cathedral on the highest part of the Isle of Ely dominating its surrounding fen, wind farms and other modern large-scale industrial and agricultural buildings, while drainage and flood storage structures and embanked rail and road routes interrupt the horizontal fen plain.

Settlements and isolated farmsteads are mostly located on the modestly elevated 'geological islands' and the low, sinuous roddon banks (infilled ancient watercourses within fens). Elsewhere, villages tend to be dispersed ribbon settlements along the main arterial routes through the settled fens, and scattered farms remain as relics of earlier agricultural settlements. Domestic architecture mostly dates from after 1750 and comprises a mix of late Georgian-style brick houses and 20th century bungalows'.

4.1.24 Descriptive commentary in NCA 46 relating to 'recent landscape change' identifies that:

'There has been a significant increase in the number of larger industrial scale units, mainly related to the agricultural / horticultural industry with minimal screening to assimilate the structures into the open landscape'. In addition, 'Light pollution is an increasing issue but this may decrease with new, energy-efficient more directional lighting technology'.

Local Scale Landscape Character

4.1.25 At the local scale, landscape character within Boston Borough was assessed in the 'Landscape Character Assessment of Boston Borough', July 2009.

4.1.26 **Table 4-1** details the four Landscape Character Types (LCT's) that are subdivided into seven Landscape Character Areas (LCA's), found within the Principal Application Site (as defined within **Chapter 9 Landscape and Visual Impact Assessment** of the ES (document reference 6.2.9). The Principal Application Site lies within LCA's B1 and C1. LCA B3 is located immediately to the east of the Site (refer to **Plate 4-1**). These LCA's are described and considered in **Chapter 9**.

Table 4-1 Landscape Character Types & Areas

Landscape Character Types:	Landscape Character Areas:
A - Reclaimed Fen	A1 - Holland Reclaimed Fen
B - Settled Fen	B1 - Bicker to Wyberton Settled Fen B2 - Frampton to Fosdyke Settled Fen B3 - Wrangle to Cowbridge Settled Fen
C - Reclaimed Saltmarsh	C1 - Welland to Haven Reclaimed Saltmarsh C2 - Glebe Farm Reclaimed Saltmarsh
D - Wash Saltmarsh	D1 - Welland to Haven Wash Saltmarsh

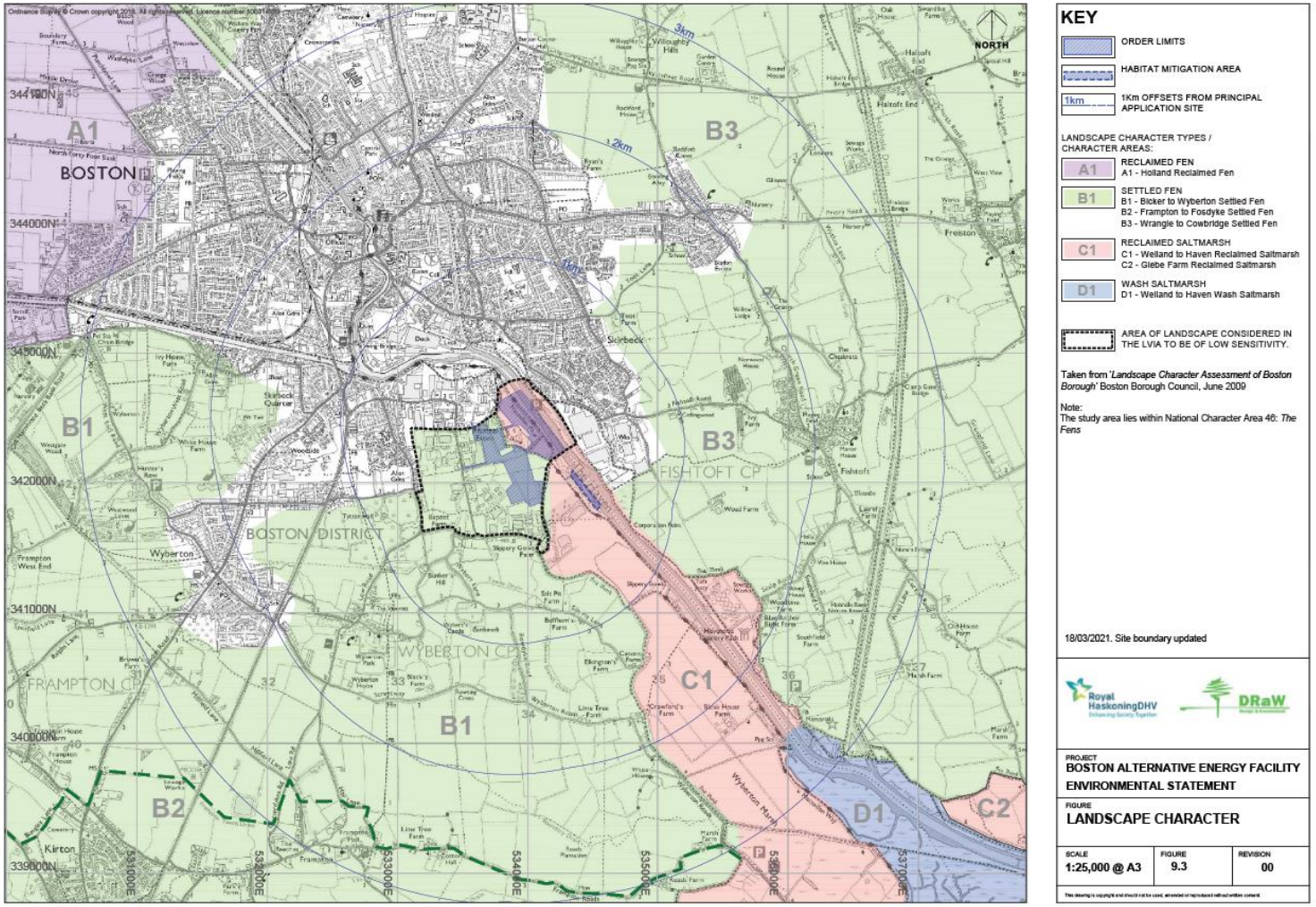

Plate 4-1 Landscape character

4.2 Transport and Access

Existing Site Access

4.2.1 The existing transport and access arrangements for the Principal Application Site are important considerations for the design of the Facility in terms of layout and access to allow effective continued operation as well as opportunities to connect the wider area for different types of users accessing the Facility and the surrounding areas.

4.2.2 Additionally, the link via the navigable waterway is one of the most prominent design features of the Principal Application Site to reduce road impacts as part of the operational access requirements. However, the site cannot be accessed via the river at present.

Road Users

4.2.3 The A52 and A16 are primary routes near the Principal Application Site. The A52 routes in a predominantly west to east direction and connects Grantham with Skegness. The A16 routes in a south to north direction linking Peterborough and Spalding with Grimsby. Both the A16 and A52 are of good standard and accommodate large volumes of HGV movements.

Public Transport Users

4.2.4 The nearest bus stops to the Facility are the Boston Middlecott Close and the St Thomas Church bus stops stop which are located 1.3 km from the Facility.

4.2.5 Details of the approximate daytime frequency of buses for the Boston Middlecott Close and St Thomas Church stops is set out in **Chapter 19 Traffic and Transport** of the ES (document reference 6.2.19).

Pedestrians

4.2.6 Walking represents the most sustainable mode of travel. The Chartered Institution of Highways and Transportation (CIHT) document ‘Guidelines for Providing for Journeys on Foot’, notes that an average walking speed of three miles per hour could be assumed. By this measure, in 15 minutes, a pedestrian could walk approximately 1,200 metres (m) (1.2 km) and in 25 minutes, up to 2,000 m (2 km).

4.2.7 A walking distance of 2km is the maximum desirable commuting distance stated by the CIHT. The 2km walking catchment covers the entirety of central Boston town centre as well as south and north western areas of nearby settlements. In total, approximately 65% of Boston is within walking distance of the Facility work areas.

4.2.8 As a general observation, footpath routes along the western bank of The Haven (in proximity to the site) and those within the site appear to be infrequently used. Paths appear to be overgrown with little sign of surface wear. In contrast, footpaths to the east of The Haven appear well used, with frequent observations of pedestrian activity.

4.2.9 The presence of continuous footways and Public Rights of Way within the Principal Application Site suggests that the Facility is accessible on foot. However, there are no pavements provided on the private roads of Bittern Way, Nursery Road and Callen Road.

Public Rights of Way

4.2.10 There are several public rights of way that cross the Facility area. The Boston Public Footpath No.14 starts in Boston and follows the A16 (London Road) south over The Haven and merges with the existing footpaths along The Haven: BOST/14/12, BOST/14/2, BOST/14/4, BOST/14/5 and BOST/14/7). Footpaths 'BOST14/4' and 'BOST14/5' follow the crest of the primary flood bank that routes in parallel to The Haven and form part of the Macmillan Way. Footpaths 'BOST/14/11' and 'BOST14/9' follow the route of Roman Bank (also known as 'Sea Bank'), which continues along the banks heading south from the Principal Application Site.

4.2.11 The public rights of way network is concentrated along The Haven corridor, with continuous footpath routes following both riverside banks and outer, sea bank defences to the east and west of the river. There are continuous footpath links between The Haven and Fishtoft and between Skirbeck Quarter and Frampton in the south.

4.2.12 The emerging England Coast Path route that follows the coastal margins of The Wash to Skegness is affected by the Facility. The initiative is part of the Natural England project to create a new National Trail around all of England's coast. Part of the route uses public rights of way that front The Haven through the Principal Application Site. These routes will be closed and an alternative route will be provided via the existing Bost/14/11 public right of way.

4.2.13 The Sustrans National Cycle Network Route 1 (also named as the North Sea Cycle Route) passes through the centre of Boston and south of the Principal Application Site following minor roads to Frampton.

5 Access

5.1.1 This section describes the access to the Principal Application Site proposed for the construction and operation of the Facility. **Plate 5-1** and **Plate 5-2** shows the different access routes and sensitive road links for the Facility.

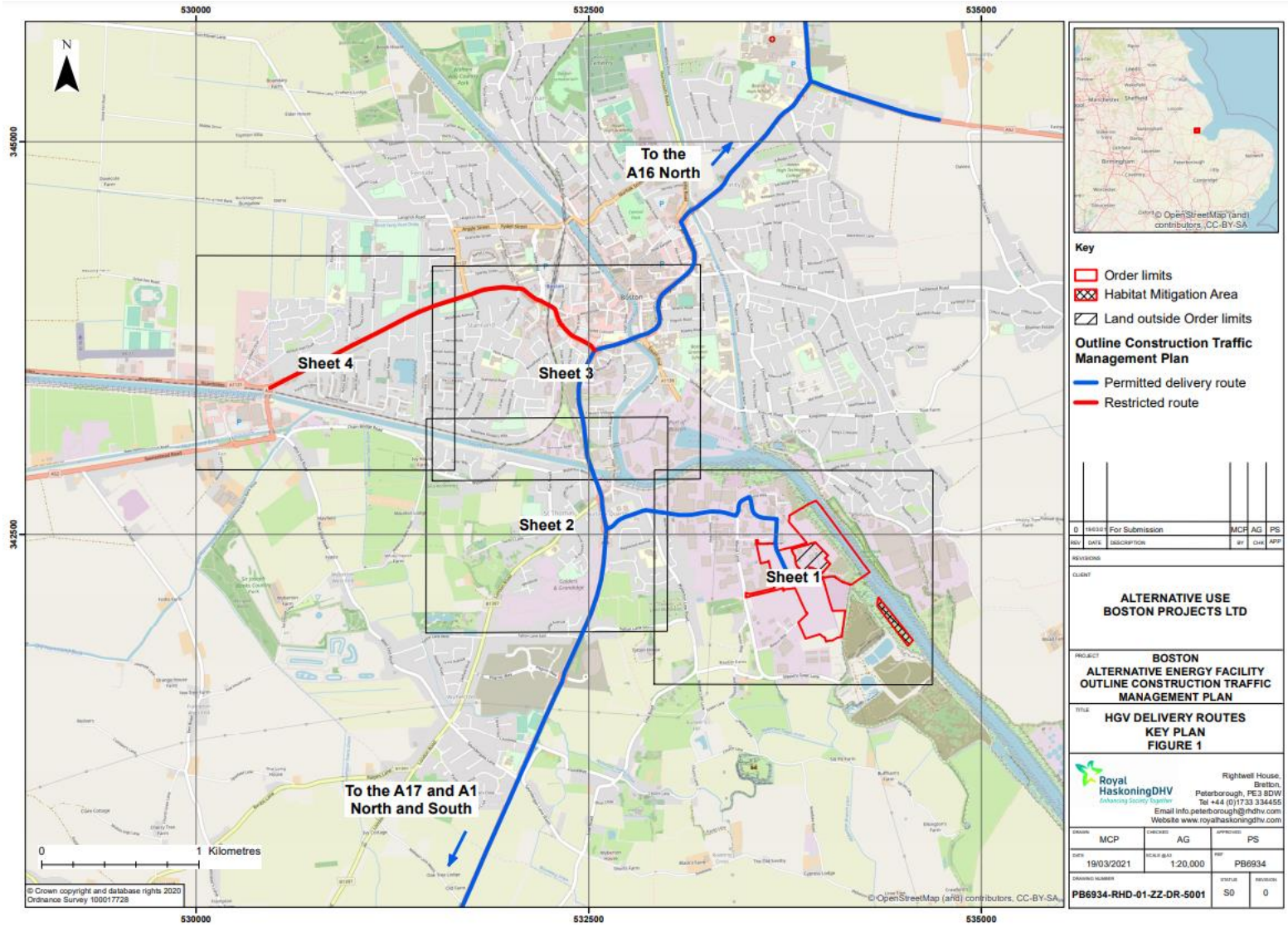

Plate 5-1 Access routes

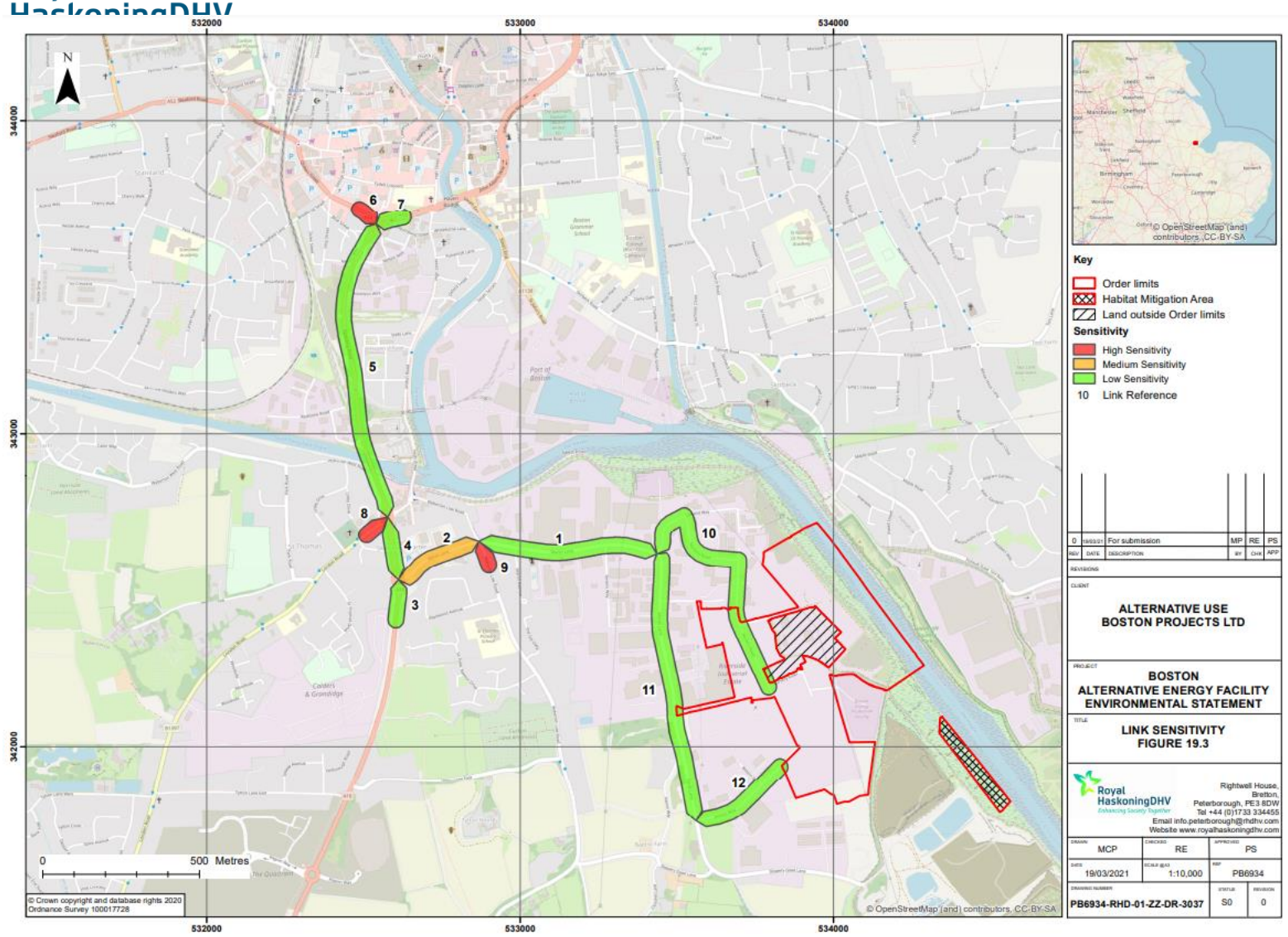

Plate 5-2 Local access and sensitive links

5.2 Relevant policy influencing Access

5.2.1 The following policy considerations impact access to the site and have been considered as part of the evolution of the Facility's design:

"Rights of Way, National Trails and other rights of access to land are important recreational facilities for example for walkers, cyclists and horse riders. The [SoS] should expect applicants to take appropriate mitigation measures to address adverse effects on… National Trails and other Rights of Way" NPS EN-1 (para. 5.10.24).

"Proposals for mineral and waste development should seek to minimise road based transport and seek to maximise where possible the use of the most sustainable transport option" LMWLP (Policy DM13).

SELLP ensures that the accessibility of The Haven is maintained for both recreational and commercial uses through policies: Policy 2: Development Management, Policy 3: Design of New Development, Policy 7: Improving South-East Lincolnshire's Employment Land Portfolio, Policy 28: The Natural Environment, Policy 30: Pollution, and Policy 33: Delivering a More Sustainable Transport Network.

5.2.2 During construction and operation outdoor amenity, physical activity and access to biodiversity effects may be impacted due to the closure of public footpaths which traverse the site. However, it is important to consider the health and safety of the public that would be associated with an active construction and operational site. Further design iteration through public consultation and engagement with the local authority influenced the provision of a footbridge that would span an existing gap in Roman Bank, following the line of the public footpath network. Previous considerations required a secure and supervised crossing of the Facility's internal road. However, the provision of a footbridge provides for a safer crossing for pedestrians and more security for the Facility during construction and operation to prevent unauthorised access.

5.2.3 Although the route of the public footpath alongside the west bank of The Haven would be permanently closed to accommodate a wharf, the diverted access would be via an existing footpath route. Therefore, key health outcomes relevant to outdoor amenity, and therefore physical activity, are not being prevented and these effects when assessed are considered to not be significant in EIA terms.

Location

5.2.4 The proposed Facility will be located on the Riverside Industrial Estate. The LMWLP, Site Locations Document identifies the Application Site as substantially within land allocated for waste management development (WA22-BO), identifying Energy Recovery as a potential land use. This use is further identified as Energy from Waste within the accompanying sustainability appraisal. The proposal is consistent with this allocation and accords with Policy SAD policy SL3. The SELLP which also allocates land within the Riverside Industrial Estate (SELLP policy 7) for employment development, though this only encompasses part of the Application Site with the remainder, including the proposed wharf infrastructure falling within land, designated as countryside associated with riverbank, foreshore and mudflats. Both plan documents form part of the development plan and the Facility accords with the development plan when read as a whole.

5.2.5 The SELLP refers to principles that the DCO application for the Facility can take into account. Policy 3: Design of New Development, seeks to ensure that development would not be wasteful in its use of energy or in its depletion of natural resources.

5.2.6 A multi-modal approach to transport was a fundamental consideration in the design for the Facility, to conform to the requirements of NPS EN-3 paragraph 2.5.25 ("*Government policy encourages multi-modal transport and the IPC should expect materials (fuel and residues) to be transported by water or rail routes where possible. (See Section 5.13 of EN-1 on transport impacts). Applicants should locate new biomass or waste combustion generating stations in the vicinity of existing transport routes wherever possible*."). This is achieved by the wharf facility that will allow delivery of RDF by ship and dispatch of lightweight aggregate by ship.

5.2.7 The Facility has proposed a different approach to routing the supply of waste fuel via ship compared to traditional road movements and this opens up the potential for receiving fuel supplies from a wider national area. It is considered that the Facility would also be capable of meeting part of the wider need for waste recovery, as well as some of the national need for additional energy generation capacity, the urgent need for which is set out in the Overarching National Policy Statement EN-1 at paragraph 3.1.3.

Consultation on issues relating to access

5.2.8 Consultation has been undertaken with the local public and Boston Borough Council on transport issues that will affect access and design and events are recorded in the Consultation Report (document reference 5.1). Further details on

how consultation has shaped design and access considerations is provided in **Section 6** below.

5.3 Specific issues which might affect access

5.3.1 Boston town centre is constrained by transport links that run through the town centre and are often heavily congested. A significant primary concern from the outset of the design development of the Facility has been traffic considerations to avoid further burdening the traffic links through the town by causing significant effects and increases to journey dimes caused by driver delay.

5.3.2 This led to the early adoption of all RDF deliveries to come to the Facility by ship. However, further design evolution has occurred due to the consideration of transport effects.

5.3.3 A summary of access requirements and potential traffic movements generated as a result of the construction and operation of the Facility have been considered in detail as part of the EIA within **Chapter 19 Traffic and Transport** of the ES (document reference 6.2.19).

5.3.4 With respect to journey times during both construction and operation, reduced access and safety effects due to an increase in HGV traffic or employee vehicles on the road and traffic management at certain locations are assessed to be not significant in EIA terms.

Access During Construction

Peak HGV Construction Demand

5.3.5 The highest levels of HGV demand occur in week 41 of Year 1 of the construction programme with 293 daily movements. The majority of these movements relate to the delivery of Ready Mixed Concrete (RMC) and are forecast to last for one week only. This period of intensification of HGV movements is to allow for the Phase 1 Wharf construction which is a critical establishing phase for future delivery of raw materials by water.

5.3.6 During this intensified period of activity, there will be some requirement to operate 24 hour working due to the construction method of slip forming.

5.3.7 The Average WCS would occur in Year 3 with an average of 70 daily HGV movements. This figure would reduce year on year until Year 5 when the Facility would generate on average, 9 daily HGV construction movements.

5.3.8 The Year 3 average figure of 70 daily HGV movements represents a decrease of 223 movements from week 41 of Year 1 peak figure of 293 daily HGV movements.

Thus to ensure the assessment considers the short term worst case impacts and the medium term average impacts, this DAS presents the Peak WCS of 293 daily HGV and Average WCS of 70 daily HGV movements. This set the level at which the access arrangements would be required to cope with the demand.

HGV Distribution

5.3.9 During the Peak WCS, the majority of the HGV traffic movements would comprise of RMC trucks for the phase one construction of the wharf. The Developer's Principal Contractor has indicated that these are likely to be sourced within the county of Lincolnshire. Given that these form the bulk traffic volume, the Construction Transport Management Plan will be developed to inform the appropriate routing into site, avoiding heavily congested road links , for example A52, Liquorpond Street.

5.3.10 The appointed engineers have indicated that the a large contingent of cement will be required for the onsite batching plant once the phase 1 wharf construction has been completed and will run through the remaining period of the construction programme. This cement will either come from the Ketton Cement works, or if that is unavailable, then the Purfleet or Tyneside alternative cement deposits. It has been considered not practicable to deliver cement via ship due to two reasons:

- The larger size of vessel required being too large for navigation on the Haven.
- Vessels would need to be booked approximately two years in advance, with a required flexibility of two weeks for deliveries.

5.3.11 Aggregate supply for use in the concrete batching plant will be delivered via ship once the early part of the wharf has been constructed to facilitate this and is considered in further detail below. This was an important design evolution from earlier stages of the project which had no construction materials being delivered by ship. It means that considerable reductions can be made on road traffic during construction.

5.3.12 At this stage, as definitive sources of materials (RMC) and plant are unknown therefore, the respective traffic demands have been assigned equally to both the A16 originating from the north and the A16 originating from the south.

Delivery of Raw Materials

5.3.13 Access for delivery of raw materials will be via both river (using ships) and road (using HGVs). The first phase of the wharf construction will be undertaken to allow a proportion of the raw materials to be delivered by ship rather than transportation

by local roads. It is estimated that it will take approximately six months to construct the first section of the wharf to allow raw materials to be received by ship. The remaining section of the wharf will take a further 12 months (approximately) to complete. However, the design principle for the wharf has influenced the construction programme so that wharf construction will be one of the earliest phases, to minimise the amount of time that raw materials would be delivered by road.

5.3.14 An additional design evolution that was implemented as part of the consideration of wider access impacts caused by transport movements was the introduction of a concrete batching plant. This was also following consultation feedback from the public and local stakeholder (Boston Borough Council) during public information events.

5.3.15 The concrete batching plant will be installed within the Principal Application Site to reduce transport movements associated with concrete. Aggregate brought in via ship will then be transferred from the wharf via an overland temporary conveyor to the concrete batching plant. The concrete batching plant will take approximately four days to install. The temporary aggregate conveyor will take around five months to install and will be completed before the completion of the first phase of the wharf ready to receive raw materials. This will be deconstructed when the need for aggregate supply by ship has come to an end before the end of the completed construction process.

5.3.16 Other bulk loads including reinforcement materials such as steel and fibre will also be brought in via ship, with on-site vehicle transport to lay-down areas within the site.

5.3.17 It is anticipated that there will be approximately 89 shipments of raw materials during the construction period.

Employee Traffic Demand

5.3.18 The Developer's Principal Contractor has provided details of the expected resourcing requirements during the construction programme. Based on this input, it is estimated that a workforce of 300 employees will be required during construction peaks.

5.3.19 The 2011 'method to travel to work' census data identified that 63% of employees travel to work by Single Occupancy Vehicle (SOV) within the Boston area. This equates to 188 out of 300 employees using a car to travel to the Facility with the remaining employees utilising sustainable transport.

5.3.20 Within the formal consultation on the Preliminary Environmental Information Report (PEIR), the appointed engineers proposed to operate a Park and Ride scheme linking to car parks in Boston to control the available parking during the Facility's construction and to minimise the employee movements to the facility. However, based on comments received from stakeholders during consultation, a revised employee strategy has been proposed. All employees are now proposed to travel directly to the Facility and park at one of two onsite construction car parks.

5.3.21 A northern and southern car park will be provided at the Facility. The northern car park will be accessed and egressed from the private Nursery Road. The southern (over-spill) car park will be accessed via an 'entry only' access off Marsh Lane and exit provided onto the private Nursery Road. The location of the car parks is identified in **Plate 5-3**. The northern car park will be for employee's light vehicles only with an area allotted to visitors to the Facility. The southern car park will provide larger spaces (4m x 7m) for worker vans.

5.3.22 Employees will transfer into 11 seater mini buses from the car parks and transported to their place of work via the site entrance on the private Nursery Road, or via the secondary access provided at the end of the un-named spur road leading to the wharf. This will allow employees to get to the relevant parts on site quicker and increases operational safety on the Principal Application Site by minimising pedestrian traffic.

5.3.23 188 employees would drive directly to the Facility's onsite car parks. The remaining 112 employees are assumed to use sustainable modes of transport to travel directly to the Facility construction car park for onward transfer into the Principal Application Site.

5.3.24 A commitment within the Construction Traffic Management Plan (CTMP) to undertake daily recording of employee travel methods is to be included, this will continually monitor staff modes of travel during construction. The CTMP is secured in a requirement of the DCO. An Outline CTMP (OCTMP) is provided with this application (document reference 7.2).

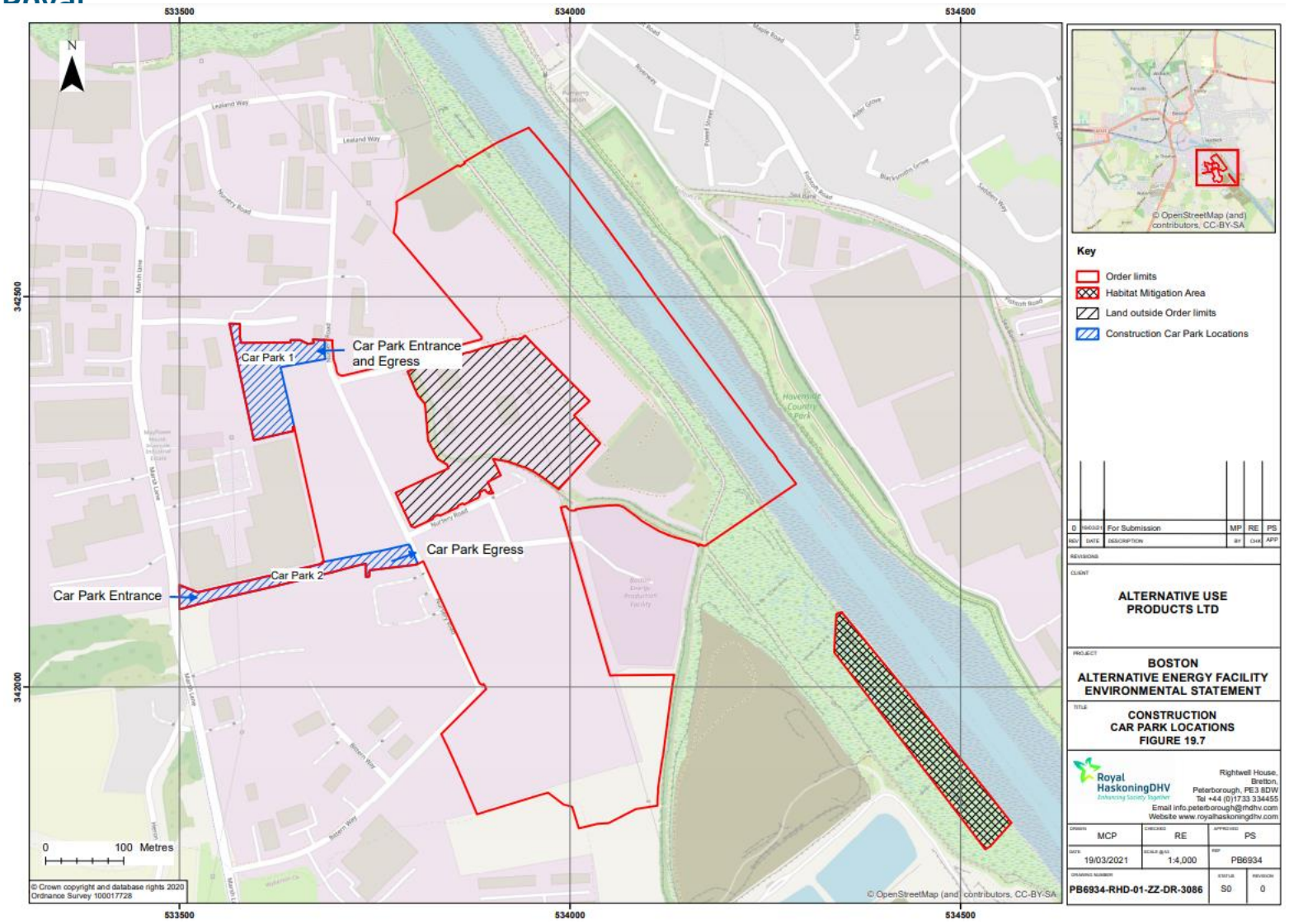

Plate 5-3 Construction Car Parks

5.3.25 An OCTMP has been submitted in support of this DCO application (document reference 7.2). The DCO will include a requirement for the final CTMP to be approved by the relevant local authorities prior to commencement of construction. This will help to actively manage any potential impacts of the proposed construction works to local and regional traffic and infrastructure and will include a travel plan. This will require authorisation from the relevant authorities prior to construction, therefore further consultation with stakeholders is anticipated on the evolution of this document after submissions before construction can start.

5.3.26 As part of the CTMP, the Applicant will seek to implement sustainable transport mode-share targets for construction personnel to reduce the number of vehicles anticipated to visit the Facility. This will include additional use of public transport where possible and car sharing will be encouraged.

Footbridge and Footpath Closures

5.3.27 A footbridge will be installed early in the construction programme to allow safe passing for the public on public rights of way affected by the site. This will be installed on the current public right of way which follows the route of Roman Bank (also known as 'Sea Bank') along footpath sections BOST/14/11 and BOST/14/9 where it crosses the site. Further information on footpath diversion is within **Chapter 5 Project Description** of the ES**, paragraph 5.5.118** (document reference 6.2.5). The footpaths BOST/14/9, BOST14/10 and BOST 14/11 will be temporarily closed prior to construction to install the footbridge (see Access and Rights of Way Plan, document reference 4.5).

5.3.28 When the footbridge is installed, permanent closures of BOST14/4 (at the intersection with BOST/14/2, BOST14/11 and BOST/14/12), BOST14/10 (at the intersection with BOST/14/11 and BOST/14/9) and BOST/14/5 (at the intersection with BOST/14/9, BOST/14/7 and BOST/14/8) will be made. The permanent diverted route following closure will follow the existing footpath network via BOST/14/11 and BOST/14/9 to the intersection with BOST/14/7 and BOST/14/8.

5.3.29 The closure would also affect the England Coast Path route which follows these footpaths and would be diverted as described above.

5.4 Access During Operation

HGV Access Strategy

5.4.1 The operational access was derived using a foundation design strategy that underpinned the development of the Facility from the outset: requiring the delivery of RDF by ship. This was later evolved to also accommodate the dispatch of aggregate product manufactured at the Facility by ship.

5.4.2 The Principal Application Site is accessed from the A16 / Marsh Lane roundabout to the south of Boston town centre into the Riverside Industrial Estate's existing road network using Marsh Lane. The final route to the site is on private roads: from the north via Nursery Road from Lealand Way / Marsh Road; and from the west via Bittern Way from Marsh Lane.

5.4.3 The land-based access strategy consists of three access / egress points on the private roads and was developed to reduce HGV conflicts at the main site entrance and along Nursery Road, thereby increasing site safety and reducing traffic delay. This was informed by the transport assessment in the PEIR that subsequently evolved following public and stakeholder consultation in the third round of public consultation events in July 2019, leading to **Chapter 19 Traffic and Transport** of the ES (document reference 6.2.19).

5.4.4 The main secure site access from the private Nursery Road / Callen Road for employees and HGVs and an 'Exit Only' turning left egress is provided on Bittern Way leading to Marsh Lane for HGVs only. There will be a one-way system through the site for HGVs.

5.4.5 A secondary access is provided at the end of the un-named spur road leading to the wharf and will only be utilised for very infrequent maintenance vehicles at the wharf and LWA Plant.

5.4.6 An employee car park is provided opposite the Nursery Road / Callen Road junction.

5.4.7 In summary, approximately 30 HGV daily movements are predicted to be required during operation of the Facility. Most HGV movements involve removal of materials to local sites which are within 1 km of the Facility. The HGVs have been assumed to travel outside of the immediate Boston area into the wider Lincolnshire county as a worst case scenario.

<u>Employee Traffic Assumptions</u>

5.4.8 The anticipated resourcing requirements during operation estimate that the

operational workforce would comprise 108 employees. Details of the current predicted workforce and likely shift patterns are provided in **Table 5-1.** These have a bearing on the access strategy for the Facility and the shift patterns will be set to miss peak demand on local roads**.**

Table 5-1 Employee Demand and Shift Patterns

Operational Activity	Shift Pattern	Quantum of Operatives
Wharf and RDF bale storage area	24/7 utilising a three shift pattern	22
Conveyor systems	No employees required	
Bale Shredding plant	24/7 utilising a three shift pattern	6
Thermal Treatment plant	Monday to Friday Dayshift – general site roles	16
	24/7 utilising a three shift pattern	32
Air Cooled Condensers	No employees required	
Carbon Recovery Plants	9 hour day - Monday to Saturday	4
LWA Plant	24/7 utilising a three shift pattern	28
Totals		108

5.4.9 The 2011 'method to travel to work' census data identified that 63% of employees travel to work by Single Occupancy Vehicle (SOV) within the Boston area. This equates to 68 out of 108 employees using a car to travel to the Facility. To cover uncertainties in operatives travel, a 28% contingency factor has been applied to the SOV employees equating to 173 vehicle trips (rounded up) (86 arrivals and 86 departures). This fact will influence the size of the Operational car park and the provision of means for sustainable transport.

5.4.10 Distribution of employees has been estimated to be 70% arriving from the north of the Facility from in and around the town centre and 30% from the south. It is assumed that most of the operational workforce will live locally within Boston and thus distribution is weighted to the north of the Facility where the majority of the residential areas are currently located and this will influence final design considerations in terms of sustainable transport provision.

Vessel Movements

5.4.11 The Facility would receive approximately 1,200,000 tonnes of RDF per year. The RDF feedstock would be delivered by ship to the Facility sealed in plastic-wrapped bales. There will be up to ten RDF deliveries by ship per week assuming each vessel has a 2,500 tonne payload.

5.4.12 Residual ash and air pollution control residues (APCr) would be processed on site

to produce a marketable lightweight construction aggregate product. This would be exported via ship from the dedicated berth at the wharf. The ships that deliver clay as binder to the wharf can also be used to remove the aggregate. These ships would not be used for the incoming RDF supply.

5.4.13 It is estimated that approximately 480 vessels will import RDF to the Facility per year, and 100 vessels per year will be required to export the aggregate by-product, totalling 580 vessels per year.

6 Design Process

6.1.1 The design process has been iterative. The design process has evolved over the pre-application stage. The design process has been shaped by stakeholder input, consultation events (refer to the Consultation Report, document reference 5.1) and the changes in technology from gasification to conventional combustion-based thermal treatment EfW (see **Section 6.5.4**). This process will continue following development consent being granted and detailed design is finalised.

6.2 Policy considerations relevant to the design

6.2.1 With respect to combined heat and power (CHP), the LMWLP provides: "*The objective of reducing greenhouse gas emissions will be achieved by encouraging:*

- *waste treatment processes that reduce the amount of waste going to landfill (with all waste management facilities being required to provide evidence of how much waste will be diverted from landfill);*
- *decentralised, low-carbon/renewable energy generation and carbon reduction measures at new mineral working sites and waste management developments (including landfill gas collection);*
- *low carbon energy recovery facilities, such as combined heat and power (CHP), where possible, to be suitably sited in close proximity to suitable potential heat customers to enable the utilisation of the heat produced as an energy source;*
- *increased energy efficiency measures in plant, buildings and operations; and*
- *good practice in transport related matters to reduce vehicle miles*."

6.2.2 A CHP Assessment accompanies this application (document reference 5.7). The Assessment concludes (paragraph 5.14) "*based on the low heat demand in the surrounding area and taking into account the distance and sparse nature of heat users resulting in technical and commercial challenges for proposed routes, the Facility will be designed as CHP Ready and will not be developed as a CHP*

scheme until such loads become available that running with CHP is considered economically feasible"

6.2.3 The Facility has a generating capacity of 102MWe, some way below the threshold to identify as 'carbon capture ready', but nevertheless makes provision for this important requirement.

6.2.4 The facility will include the connection of the flue-gas system from the two outer thermal treatment plant lines to carbon dioxide (CO_2) recovery plants, which will recover CO_2 (to food-grade) for off-site reuse in various industries. Some of the CO_2 will also be retained on-site for use in fire prevention.

Climate change design

6.2.5 In accordance with NPS EN-1, climate change has been considered throughout the design stage of the Facility. The Facility includes key design features that will help reduce the amount of greenhouse gas (GHG) emissions associated with its operation compared to the alternatives for the RDF – export abroad to northern Europe for energy recovery in incineration facilities; or disposal via landfill. The Facility includes the connection of two of the three thermal treatment lines to CO_2 recovery plants.

6.2.6 The Facility has been designed so that waste is transported to the Principal Application Site via sea going vessel rather than by road, thereby reducing emissions, whilst expanding multi-modal transport potential.

6.2.7 The Facility will incorporate flood resilient design measures. The wharf at the Facility will have a flood defence line of 7.2 m AOD, which will also complement the flood defence regime for Boston formed by the new Boston Barrier and the Haven Banks Project and protect the town against future sea level rises attributed to climate change. The Facility therefore accords with EN-1 paragraph 5.7.18 and 5.7.24 in that the satisfactorily flood risk management measures will be in place to manage surface water with respect to impact of the natural water cycle on people and property

Landscape and Heritage

6.2.8 SELLP: Policy 29 states: "*To respect the historical legacy, varied character and appearance of South East Lincolnshire's historic environment, development proposals will conserve and enhance the character and appearance of designated and non-designated heritage assets, such as important known archaeology or that found during development, historic buildings, conservation areas, scheduled monuments, street patterns, streetscapes, landscapes, parks (including Registered Parks and Gardens), river frontages, structures and their settings*

through high-quality sensitive design."

6.2.9 Heritage input into the design of the layout of the facility has been provided, to ensure avoidance of impact to the historic environment where possible. The proposed development has been designed with historic environment in mind, particularly in minimising any potential impacts to the setting of nearby heritage assets.

6.2.10 LMWLP Policy DM6: Impact on Landscape and Townscape states:

"Planning permission will be granted for minerals and waste development provided that due regard has been given to the likely impact of the proposed facility on landscape and townscape, including landscape character, valued or distinctive landscape features and elements, and important views. If considered necessary by the County Council, additional design, landscaping, planting and screening will be required. Where planting is required it will be subject to a minimum 10-year maintenance period. "

Development that would result in residual, adverse landscape and visual impacts will only be approved if the impacts are acceptable when weighed against the benefits of the scheme. Where there would be significant adverse impacts on a valued landscape considerable weight will be given to conservation of that landscape".

6.2.11 NPS documents provide the following design considerations:

Reducing the scale of a project can help mitigate the visual and landscape effects of a proposed project. However, reducing the scale or otherwise amending the design…. may result in a significant operational constraint and reduction in function" NPS-EN1 (para. 5.9.21)
"The overall size of the building will be dependent on design and fuel throughput, although it is unlikely to be less than 25m in height. External to the building there may be cooling towers, the size of which will also be dependent on the throughput of the generating station." NPS EN-3 (para. 2.5.49).
"The [SoS] should expect applicants to seek to landscape [the facility] to visually enclose them at low level as seen from surrounding external viewpoints" NPS EN-3 (para. 2.5.52)
"Earth bunds and mounds, tree planting or both may be used for softening the visual intrusion and may also help to attenuate noise from site activities" NPS EN-3 (para. 2.5.52)"

6.2.12 The location of the Facility was selected to be immediately to the west of the existing Biomass UK No. 3 Ltd energy facility; therefore, massing of proposed buildings will appear contiguous with existing tall structures at the Biomass UK

No. 3 Ltd site.

6.2.13 Existing woodland will be retained and reinforced. The colour palette for the external cladding will be based around a complementary series of muted 'grey / greens', or other similar colour palette agreed with the local authority. The stacks will be a light grey to reduce their prominence when seen against the sky.

6.2.14 The landscaping and ecological provisions are provided in the Outline Landscape and Ecological Mitigation Strategy (OLEMS), which is submitted with the DCO application (document reference 7.4) and is secured by a requirement in the DCO. The LEMS provides a commitment to landscaping, planting and ecological features that are proposed to soften landscaping and ecological effects.

6.2.15 The long term objective of landscape planting is to filter or screen local views to lower level structures and ground activity, including vehicular movements and potential effects of night-time lighting. Planting will not be effective in screening upper sections of taller buildings and structures but will provide a visual framework to the Facility, visual separation to neighbouring industrial units and reduce the perceived scale of the Facility.

6.2.16 Proposed mitigation measures to be included in the LEMS include the following:

- Retention and reinforcement of existing woodland / scrub and hedgerow along Roman Bank. Existing vegetation provides some visual structure to the Principal Application Site acting as a screen or filter to views to ground level features and activity. Existing vegetation belts will be reinforced by the introduction of tree planting to improve screening.
- Establish mixed native species woodland planting along the southern, western and northern margins of the Principal Application Site (refer to **Illustrative Landscape Plans** (document reference 4.4)) and **Table 6-1** below. Planting along southern and western margins would be on low earth mounds to enhance screening.
- Establish native species hedgerow with hedgerow trees along selected boundaries of the Principal Application Site.
- Other measures include the introduction of species rich grassland, scrub and enhancement of existing ditches and waterbodies. These measures will further increase biodiversity and landscape value.

6.2.17 The landscape will be managed for the operational life of the development. The LEMS covers a period of 30 years, including the initial establishment period and long-term management objectives, which including construction, is longer than the lifespan of the Facility (construction period is approximately four years and the

anticipated operational life of the Facility is 25 years).

6.2.18 The management and aftercare operations will be reviewed annually and where necessary amended to ensure the long-term landscape and ecological objectives are achieved. The LEMS will be comprehensively reviewed every five years (refer to Monitoring and Review below) and submitted to the competent authority and other parties, as required.

6.2.19 It is intended that the LEMS will function as a live 'working document' for the Applicant or whoever the Applicant delegates as maintaining agents of the site during operation of the Facility. The LEMS will therefore evolve over time to respond to the establishment of the soft estate in both landscape and ecological terms and will be expanded and adapted as necessary to address future changes.

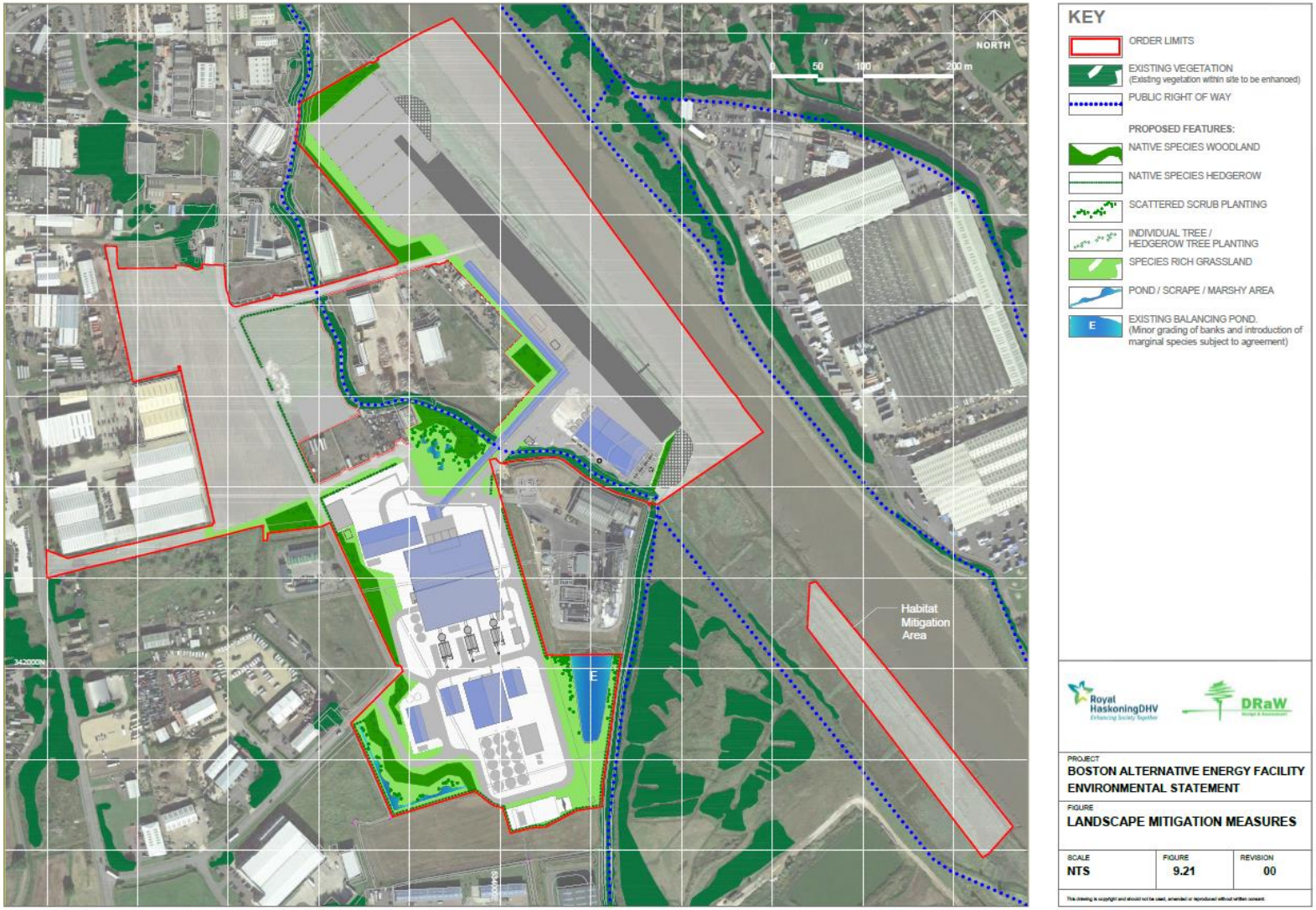

Plate 6-1 Landscaping Plan

Emissions

6.2.20 LMWLP Policy DM3 states: "*Planning permission will be granted for minerals and waste development provided that it does not generate unacceptable adverse impacts arising from: noise, dust, vibration, odour, litter, emissions, the migration of contamination, illumination, visual intrusion, run off to protected waters, traffic, tip- and quarry- slope stability, differential settlement of quarry backfill, or mining subsidence to occupants of nearby dwellings and other sensitive receptors. And in respect of waste development is well designed and contributes positively to the character and quality of the area in which it is to be located. Where unacceptable impacts are identified, which cannot be addressed through appropriate mitigation measures, planning permission will be refused*."

6.2.21 NPS EN-1 (para 5.11.8) provides: *The project should demonstrate good design through selection of the quietest cost-effective plant available; containment of noise within buildings wherever possible; optimisation of plant layout to minimise noise emissions; and where possible, the use of landscaping, bunds or noise barriers to reduce noise transmission*"

6.2.22 The Facility has been designed to incorporate standard industry practices for this type of development. The principles of Best Available Techniques (BAT) have been applied in designing the facility and for any sound emitting mobile and fixed plant. The principle of BAT ensures that suitable mitigation measures are embedded into the design and operation of the installation. During construction, an Outline Code of Construction Practice and a Construction Management Plan will be implemented in line with British Standards by the principal contractor for adoption during construction.

6.2.23 In summary, LWMLP Policy DM1 Presumption in favour of sustainable development states the following, which has been accounted for as part of the Facility:

"Waste management is significant in tackling greenhouse gas emissions because the treatment and disposal of waste generates carbon dioxide and methane. Methane emissions from biodegradable waste in landfill accounts for around 40% of all UK methane emissions. This equals about 3% of UK greenhouse gas emissions. Methane is more damaging than carbon dioxide as a greenhouse gas. Waste management therefore has an important role in mitigating the levels of greenhouse gases emitted into the atmosphere.

The Waste Hierarchy is a key policy objective in terms of mitigating impacts on climate change by focusing on reducing the amount of waste produced, and increasing the amount of waste that is reused, recycled, composted or has

energy recovered. This is important in terms of diverting biodegradable waste from landfill and reducing associated methane emissions. In addition, in terms of maximising the potential for reuse, recycling and recovery of resources, it also helps to minimise the demand for new resources and the greenhouse gases generated in their production.

Maintaining high recycling rates is therefore a key part of the Council's climate change strategy in order to divert as much biodegradable waste away from landfill as possible to lower methane emissions. The Council will also encourage proposals for new waste technologies/processes which bring about reduced levels of biodegradable waste being disposed of to landfill.

The objective of minimising impacts on climate change will be focused on carbon reduction/capture measures, efficient use of resources and renewable energy (where practicable and viable), and on minimising traffic generation. It will be important that proposals demonstrate how these factors have been taken into account in their design.

The objective of reducing greenhouse gas emissions will be achieved by encouraging:

- *waste treatment processes that reduce the amount of waste going to landfill (with all waste management facilities being required to provide evidence of how much waste will be diverted from landfill);*
- *decentralised, low-carbon/renewable energy generation and carbon reduction measures at new mineral working sites and waste management developments (including landfill gas collection);*
- *low carbon energy recovery facilities, such as combined heat and power (CHP), where possible, to be suitably sited in close proximity to suitable potential heat customers to enable the utilisation of the heat produced as an energy source;*
- *increased energy efficiency measures in plant,* buildings and operations; and
- *good practice in transport related matters to reduce vehicle miles."*

6.2.24 The Facility has been designed to meet these objective as follows:

- Residual waste is being diverted from landfill (7.22 and 7.24) and energy recovered from it (7.23);
- CO_2 is being directly recovered from the Facility and converted into food-grade CO_2 for industrial use (7.22, 7.23, 7.25 and 7.26);

- The Facility will be built to use its own heat as part of the processes, however, will also be capable of distributing low-grade heat should an external off-site use for it be available (7.25 and 7.26);
- LWA is being manufactured from residues from the thermal treatment process rather than disposal (7.23, 7.24, 7.25 and 7.26); and
- RDF and LWA are being transported by ship (7.25 and 7.26).

6.3 Good Design Principles

6.3.1 There are several important principles underpinning good design. These broadly include robustness or durability; usefulness or efficiency; and an aesthetically pleasing appearance. The three broader principles above can be broken down into tangible criteria to review buildings and public spaces against:

- are they useful, built to last and easy to care for;
- can you find your way around easily, regardless of whether or not you are disabled, in a place in which you feel safe;
- do they relate well to the place where they are built;
- are they environmentally efficient;
- are they effective to use; and
- do they have identity and character within their context?

6.3.2 This demonstrates how factors other than the appearance of the building will feed into the overall ‘good design’ of a project.

6.3.3 The NPS recognises the importance of good design including aesthetics, functionality, fitness for purpose and sustainability. Applying good design to energy projects should produce sustainable infrastructure sensitive to places, efficient in the natural resources and energy used in their construction and operation, matched by appearance as far as possible. It recognises that the nature of energy infrastructure is often limited to the extent of which it can contribute to the area. This section is used to show how the design process was conducted and how the proposed design evolved including why the favoured design has been selected.

6.3.4 The process elements required for the function of the Facility would be designed in accordance with the following basic principles:

- resource efficiency in construction methods and use of materials and the reduction of materials needed for construction through the design of simple

low technology structures and the use of recycled materials and easily de-constructible techniques where possible;

- ensuring the Facility is built on whole life cost principles – built to last and easy to maintain
- energy efficiency, including greenhouse gas emissions reduction (minimising landfill of residual household waste and maximising carbon capture potential using carbon dioxide extraction techniques from the thermal treatment exhaust stacks and providing photovoltaic panels on large-expanse flat or sloping roof surfaces to increase energy efficiency);
- pollution prevention, including indoor air quality and noise abatement, using best available abatement technology and maximising cladding and noise/vibration insulation;
- minimising transport impacts during the construction and operation of the Facility by allowing import and export from the navigable river;
- allowing for the optimised movement requirements of large HGVs through the site;
- maximising the waste hierarchy potential for the site potential for recycling thermal treatment bottom ash and air pollution control residues into an aggregate product in the lightweight aggregates plant;
- minimising the land take, excavation and fill requirements of the base level of the Facility and wharf including promoting on-site use of excavated material;
- provision of footbridge to allow safe and unhindered passage of pedestrians using the local public rights of way;
- providing staff, visitor parking and disabled parking close to the entry point and gatehouse in the interest of safety and providing a visitor centre to allow public access and views of the operation of the Facility for educational purposes;
- harmonisation with the environment, including environmental mitigation for landscaping and ecological planting (see OLEMS (document reference 5.15) and the visual impact of a large scale facility on local people living in the villages around the site, the height of the EfW, in particular the prominence of the lightweight aggregates plant and the stacks within the visual envelope; and
- keeping the building form simple to respond to the scale and form of the surroundings and distant views of the site.

6.4 Design Parameters

6.4.1 The Principal Application Site should provide sufficient flexibility to allow for changes in technology and process requirements during the design process.

6.4.2 While flexibility in design is required, a level of detail appropriate to the submitted application, and satisfying the concept of the Rochdale Envelope, has been set out, assessed and presented within the ES (document reference 6.2). This ensures that a robust assessment of the likely significant environmental effects of the Facility has been undertaken.

6.4.3 Maximum parameters have been applied based upon the design principles identified above and assessed in the design of the Facility, to enable a precautionary assessment to be undertaken, in accordance with the principles of the Rochdale Envelope and are presented in the Works Plans (document reference 4.3) and the Indicative Generating Station Plans (document reference 4.9).

6.4.4 These maximum ('reasonable worst case') design parameters have then been used for the purposes of the assessments undertaken in the EIA.

6.4.5 As mentioned in **Section 3.4.6**, the Facility would comprise a range of buildings and structures (including elevations), shown on the Indicative Generating Station Plan (document reference 4.9), the tallest of which are the three Thermal Treatment plant exhaust stacks and the two proposed LWA plant stacks which are each anticipated to be approximately 80 m. The approximate maximum heights of the main buildings are as follows:

- Bale shredding plant: 20 m;
- Thermal treatment plants: 44 m;
- Turbine hall: 20 m;
- Air-cooled condensers: 30 m;
- LWA manufacturing plant: 44 m; and
- CO_2 recovery plant: 12 m.

Application of design principles

6.4.6 The application of design principles were influenced by:

- technology that is capable of beneficially recovering renewable energy from RDF that would be otherwise exported or sent to landfill;

- technology that can generate sufficient power from RDF feedstock and perform at the required efficiency to meet the definition of 'Recovery, R1' according to the definition in the Waste Framework Directive (See Fuel Availability and Waste Hierarchy Assessment (document reference 5.8));
- minimising the impacts of transport by providing access to the site for delivery of RDF by ships and removal of lightweight aggregate by ship;
- the EU Circular Economy Action Plan and associated UK resource efficiency and waste reduction targets that will be implemented following The Environment Bill;
- potential for CO_2 capture for reuse;
- available site footprint; and
- economy of scale.

6.4.7 The Facility will be designed to operate for an expected period of at least 25 years, after which ongoing operation will be reviewed and if it is not appropriate to continue operation the plant will be decommissioned. The wharf structure will replace a section of the current primary flood defence bank (without impacting on the integrity of the bank) and will form a permanent structure that is not anticipated to be decommissioned.

6.4.8 The scale of development is dictated by the best available technology that could be accommodated within the available land to process the desired amount of fuel. The system consideration starts with the availability of the fuel; and the principle concept was to design to process 1,000,000 tonnes per year, at 125 tonnes per hour of prepared RDF (with an indicative annual operational capacity of 8,000 hours) for feedstock to the process.

6.4.9 This starting point, combined with the land availability and an indicative reference-point calorific value for the RDF from the suppliers of 10.9 kJ/kg at 125 tonnes/hour, led to an indicative power output of 102 MWe.

6.4.10 Three EfW lines were proposed to offer the most efficient long-term operation that will constantly deliver power; and will enable two lines to remain in operation whilst one is undergoing planned annual, or unplanned, maintenance or repair.

6.4.11 The Principal Application Site shape dictates the arrangement of the main thermal treatment units given that this plant has the largest combined footprint. Design iterations associated with the Order limits have been made, with the final Order limits associated with the DCO submission reduced to more closely fit the operational requirements of the site at the southern end by the substation to

connect to the grid; and also at the northern end of the wharf to contract the boundary to avoid conflict with a mains sewer line, which is now outside of the Order limits compared to PEIR stage.

6.4.12 The site layout has been optimised for the Facility to enable the movement of waste throughout the facility to the thermal treatment plant.

6.4.13 The aggregate facility is positioned next to The Haven to facilitate export of lightweight aggregate and import of the clay for use in the lightweight aggregate manufacturing process. The approximate location of the thermal treatment facility; the lightweight aggregate facility and the proposed wharf have been essentially fixed by the site boundary.

6.4.14 The lightweight aggregates facility was included to prevent the disposal of the residues from the thermal treatment process. The alternative options to this facility require sending waste incinerator bottom ash and air pollution control residues off site. This will require significant vehicle movements to remove just over 182,750 tonnes of bottom ash and almost 16,700 tonnes of air pollution control residues to be sent off site.

6.4.15 While there is an active market for the recovery or recycling of bottom ash, much of the air pollution control residues, which are hazardous waste, are sent for waste treatment followed by hazardous waste landfill disposal.

6.4.16 Therefore, the Applicant identified the need to retain and process these residues within the facility to generate a useable lightweight aggregate. This promotes the waste hierarchy (recycling compared to disposal or recovery); the proximity principle (dealing with waste as close to the source of production) and promotes a sustainable use of aggregate (by reducing reliance on virgin aggregate).

6.4.17 The design of the Facility has evolved to include a series of embedded mitigation measures to militate against potential impact on receptors from dust and odour. The control of odour is integral to the Facility. With respect to potential odour, the assessment highlights that potential odour impacts associated with construction phase of works are not significant.

6.4.18 Heritage input into the design of the layout of the Facility has been provided, to ensure avoidance of impact to the historic environment where possible. The proposed development has been designed with the historic environment in mind, particularly in minimising any potential impacts to the setting of nearby heritage assets, noting that although there are no designated assets within the Application Site there are a six Listed Buildings are within 1 km and four Scheduled Monuments and a further 22 Grade II* and I Listed structures within 3 km.

6.4.19 The Facility has been designed to incorporate standard industry practices for this type of development. The principles of BAT have been applied in designing the facility and for any sound emitting mobile and fixed plant. The principle of BAT ensures that suitable mitigation measures are embedded into the design and operation of the installation.

6.4.20 The proposed facility has been designed to incorporate BAT by carefully choosing equipment that filters and manages air quality. Best practise measures, such as Dust Management Plans and Construction Logistics Plans, will also be adopted throughout both the construction and operational phases of the development to limit the impacts associated with dust, exhaust pollutants and emissions from mobile machinery. Abatement systems will also be implemented to ensure the Facility meets the relevant emission limit values. The proposed facility is designed to be compliant with the requirements of the Industrial Emissions Directive (2010/75/EU) (IED), which replaced the Waste Incineration Directive ('WID') in 2010.

6.4.21 Operation of the Facility is not predicted to produce significant vibrational impacts due to embedded engineering design to minimise vibrational effects on the plant at source, thus minimising transmission of vibration to the surrounding structures and environment.

6.5 Alternative Technology Considerations and Influence on Layout and Design following Consultation

6.5.1 The choice of technology has determined the overall layout and composition of component plant necessary to operate the facility to the proposed specification. The design of the proposed facility has been considered through a comprehensive design evolution process and the Applicant has consulted with statutory consultees and the local planning authorities to seek feedback.

Consultation on issues relating to access and design

6.5.2 Consultation has been undertaken with the local public and Boston Borough Council on transport issues that will affect access. Round table meetings were held to specifically discuss transport and access issues. Public Information Days were held with the public to discuss wider impacts associated with the Facility, including access and design. Details of these meetings and events are recorded in the Consultation Report (document reference 5.1).

6.5.3 Extracts of information boards used at the public events demonstrate the capture of public concerns and how the project evolved and was communicated to the public are presented in **Plate 6-2** to **Plate 6-4** below. Full details of the media used

in the public information days are presented in the Consultation Report (document reference 5.1).

Plate 6-2 Phase 2 - Public Information Day – Information Boards showing public feedback and how the project has evolved in accordance with feedback

Royal HaskoningDHV

baef
Boston Alternative Energy Facility

PROJECT UPDATE AND YOUR VIEWS

We last undertook public consultation (Phase 3) on the proposals in June and July 2019. Copies of the documents provided for that consultation, including the Preliminary Environmental Information Report (PEIR), are available on the project website: **www.bostonaef.co.uk**.

Since the Phase 3 consultation there have been changes proposed to the project. These are due to several reasons including; a project review and ongoing iterative design work, the feedback received during earlier consultations, and input from specialist bodies. Because of this we are undertaking an additional round of consultation (Phase 4), of which this newsletter forms part of.

This newsletter provides an overview of the changes made since the previous consultation and provides preliminary information on the impact of those changes. The Phase 4 consultation only refers to the changes made to the proposal since the Phase 3 consultation.

The Facility remains an Energy from Waste (EfW) facility, although the technology used to treat the waste has now switched from gasification to traditional EfW technology. We have summarised this change and others later on in this document. The changes are anticipated to have minor effects, resulting in an overall reduction in potential negative impacts.

We welcome your feedback on these changes to help us as we begin to finalise our proposal before we submit the application for a DCO later this year. We also welcome any questions you might have on the changes to the proposed scheme. We detail how you can ask questions and share feedback at the end of this newsletter.

Following submission of the Application there will be a further opportunity for any person to make representations on the proposals and to engage during the Examination process.

Site Layout

CHANGES DURING CONSTRUCTION

Previous Proposal

CONCRETE TRANSPORTED BY ROAD

High volumes of concrete were needed to be supplied to the site in the early stages of construction to construct the six large silos (each were 48,000m3) for storing processed RDF.

This was to be transported by road. The predicted construction traffic comprised 26 separate weeks where the number of HGV movements would exceed 10 per hour (all within the first 18 months of construction), this included 15 weeks where the number exceeded 15 per hour and seven weeks exceeding 20 per hour. The peak was at 41 movements per hour at the beginning of the second year of construction.

Project Change

CONCRETE BATCHING PLANT ON SITE

The six concrete silos are no longer required because there is no need to process and store the RDF before the EfW thermal treatment process.

There will be a concrete batching plant on site. The raw materials for making concrete can be transported in larger quantities, thus **reducing vehicle movements**. The predicted construction traffic comprises only two separate weeks where the number of HGV movements exceeds 10 per hour, peaking at 15 movements per hour mid-way through year two of construction.

However, 40% of these movements in the peak week will be within the site boundary; 17% will be movements on local private roads next to the site within the industrial estate and 43% of movements outside the local area.

To reduce road transport movements, there will also be delivery of aggregate (for making concrete) via ship. To make this possible, **an early part of the wharf** at the site will be constructed to allow ships to deliver raw materials whilst the site is being constructed.

It is estimated that 132 shipments of aggregate would be required over the construction period.

CHANGES DURING OPERATION

The process is as follows:

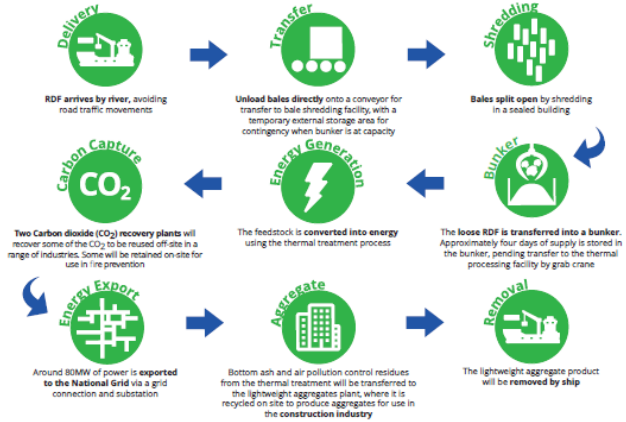

Plate 6-3 Phase 4 – Brochure extract 1 – Information showing how the project has evolved in accordance with feedback

KEY MESSAGES AND OUTCOMES

RDF SUPPLY

All RDF supplied will be from UK based sources; this has not changed. This reduces the amount of RDF to be exported to Europe or taken to landfill.

The amount of RDF required is less compared to gasification because the EfW system is not as sensitive to variations in the calorific value of the RDF. This means fewer ship movements are required each year.

RDF STORAGE AND ODOUR

The amount of RDF stored outside will be reduced to between 25% and 50% of the previous requirement.

The internal bunker storage is a fully enclosed building with the air over the shredded RDF continually extracted and fed into the thermal treatment process for use as combustion air. Therefore, all odours will be treated at a high temperature (850°C) and will not be released.

VEHICLE MOVEMENTS

During construction – a concrete batching plant on site and deliveries of aggregate via ship has reduced road vehicle movements.

During operation - vehicle movements are significantly reduced because there is no need to segregate material before the thermal process and take it off site.

THERMAL TREATMENT

Energy Generation

Previous Proposal

GASIFICATION TECHNOLOGY

- Gasification technology was proposed.
- Three individual gasification units formed the total thermal treatment system ('a three line' system).
- Each line had a stack, but this was combined in one large stack approximately 5m in width with three cores within, estimated to be 70m in height.

Project Change

THERMAL TREATMENT (ENERGY FROM WASTE) TECHNOLOGY

- Thermal Treatment (Energy from Waste) technology (still three lines). See enclosed images for typical EfW facilities.
- Emissions for the EfW will have to comply with the same standards as for Gasification. New (more stringent) standards were issued in December 2019. The EfW facility will have to comply with these standards which will be controlled through an environmental permit issued by the Environment Agency.
- The reconfiguration has allowed for repositioning of the air cooled condenser (ACC) and turbine buildings to a central point which could **reduce noise impact** from the site.
- Three lines but one individual stack per line, these stacks will be the same height (currently estimated to be 70m) but narrower than the previous design.
- The EfW building is slightly taller (by approximately 4-6m).
- There will also be more cladding around the main EfW building which is likely to **reduce the noise impact**.
- A greater amount of ash (and therefore ash processing) will be ground and sent to the on-site Lightweight Aggregate (LWA) Facility. **Around 10% more aggregate would be produced and transported off-site via ship for use in the construction industry.**

CARBON CAPTURE

Carbon Capture CO_2

Previous Proposal

ONE CARBON DIOXIDE CAPTURE UNIT

Project Change

TWO CARBON DIOXIDE CAPTURE UNITS

KEY MESSAGES AND OUTCOMES

LANDSCAPE ASSESSMENT

There will be an updated Landscape and Visual Impact Assessment to account for the change in scheme design.

AIR QUALITY

The EfW will be required to comply with the same stringent industry standard limits on emissions as the gasification facility.

Twice as much carbon dioxide will be captured, thus lowering emissions.

VEHICLE MOVEMENTS

There will be a reduction in the number of HGV movements in operation compared to previously because the facility does not need to segregate metals and inert material from the RDF before thermal treatment.

POWER OUTPUT

Power output will remain the same.

A typical Thermal Treatment (Energy from Waste) facility

OTHER PROJECT CHANGES

PUBLIC FOOTPATH

A public footpath currently runs along the Roman Bank embankment running through the site. At present there is a gap within the embankment. Previously, the plan was to route pedestrians down across the gap safely and back up the bank. Instead we are now proposing a footbridge over the gap in the bank.

Plate 6-4 Phase 4 – Brochure extract 2 – Information showing how the project has evolved in accordance with feedback

6.5.4 For the PEIR the Facility was assumed to use gasification technology. However, the gasification technology provider divested its business. No alternative gasification technology provider was found that was capable of delivering the required power output. Therefore, the Applicant decided to change the technology to conventional combustion-based thermal treatment EfW. The supplier of this technology has several reference plants across the UK and the world. Conventional combustion-based thermal treatment EfW is proven at the required scale.

6.5.5 Following this decision, further consideration was made as to how potential impacts associated with the Facility could be reduced. Further design changes were made to the scheme, with the final description of the Facility covered in **Chapter 5 Project Description** of the ES (document reference 6.2.5)**.** The key changes in the scheme from the PEIR are highlighted in **Table 6-1** below, with a brief discussion of potential reduction in impacts. Details of how these changes have influenced the impact assessment are provided in each relevant topic chapter in the ES.

6.5.6 The change from gasification to conventional EfW also allowed for stakeholder feedback to be incorporated into the scheme, notably reductions to traffic, air quality considerations, use of ships to deliver construction materials and management of odour as shown in **Table 6-1**.

Table 6-1 Design optimisation following technology change

Previous Proposal (as assessed in the PEIR)	Project Change (part of DCO submission)
Construction	
Concrete transported by road High volumes of concrete were needed to be supplied to the Principal Application Site in the early stages of construction to construct six large concrete silos (each were 48,000m^3) for storing processed RDF. This was to be transported by road and meant significant peak traffic numbers in the early stages of construction.	**Concrete batching plant on site** The six concrete silos are no longer required because there is no need to process and store the RDF before the EfW thermal treatment process. A concrete batching plant will be set up on the Principal Application Site. The raw materials for making concrete can be transported in larger quantities, thus reducing vehicle movements associated with concrete mixer lorries. To further reduce road transport movements, which was a concern of the public and Boston Borough Council, there will also be delivery of aggregate (for making concrete) via ship. The PEIR did not consider any movements by ship during the construction phase, because it was assumed all deliveries would be received into the site by road. To

Previous Proposal (as assessed in the PEIR)	Project Change (part of DCO submission)
	make this possible, part of the wharf will be constructed at an early stage in the construction to allow ships to deliver raw materials whilst the Facility is being constructed.
Operation	
Supply of Feedstock	
Quantity A worst-case estimate required 1.3 million tonnes of RDF to be supplied to the Facility in the Preliminary Environmental Impact Report (PEIR). However, after publication of the PEIR, discussions with technology providers and RDF suppliers identified that a worst-case position of up to 1.5 million tonnes was considered necessary to cope with variance in RDF composition and calorific value. This is because gasification facilities require input material to be within a very narrow specification range and they have a very low tolerance of non-biogenic material.	Quantity A revised worst-case estimate requires 1.2 million tonnes of RDF to be supplied to the Facility. This reduction can be found because conventional EfW is more tolerant to wide variations in the calorific value of the incoming RDF. Therefore, the EfW facility does not need rigorous processing of the incoming raw RDF prior to thermal treatment. The reduction will mean the number of operational RDF shipments to the site in operation will be reduced.
RDF supply from three ports Previously the RDF was expected to be transported (by ship) from three east coast UK ports.	RDF supply from several ports The RDF supply is now expected to come from a wider range of UK ports (approximately 12).
RDF Processing	
A large RDF processing facility (135m x 94m x 20m high) was required for separating out items that were not suitable for the gasification process but were potentially recyclable. These recyclable items (approximately 300,000 tonnes per annum) were segregated within the RDF processing building into recyclable waste streams (ferrous and non-ferrous metal, glass, medium and high-density inert material, such as stones). These materials were to be transported off-site by HGV for distribution into regional recycling network. Processed RDF (meeting the rigorous biogenic specification for the gasification facility) would be stored in six large (48,000m^3) concrete silos pending gasification).	There is now no requirement for the incoming raw RDF to undergo rigorous pre-processing prior to the combustion-based thermal treatment process. Pre-treatment actions will be limited to a shredding facility to split the bales open and reduce particle size and remove any massive particles too large for combustion. Bales will be conveyed from the wharf to a small shredding facility (footprint 8m x 15m) then transferred to the EfW bunker. No silos are required and there will be no segregation of potential recyclables prior to thermal treatment. The consequence of this change means that there is a reduction in the number of operational-phase HGV movements because there is no need to remove segregated material off-site.

Previous Proposal (as assessed in the PEIR)	Project Change (part of DCO submission)
	Furthermore, there is increased space on site by removing the large RDF pre-processing building and storage silos. This increased space means that the layout can be changed to a simple linear layout compared to that identified in the PEIR, which will allow for more efficient and safer construction. It also means fewer bales will be stored behind the wharf, thus reducing potential odour issues, which were a public concern.
Thermal Treatment	
<u>Gasification Technology</u> • Gasification technology was proposed. • Three individual gasification units formed the total thermal treatment system ('a three line' system). • Each line had a stack, but this was combined in one large stack approximately 5m in width with three cores within, estimated to be 70m in height.	<u>Thermal Treatment (EfW) Technology</u> • Combustion-based Thermal Treatment (EfW) technology using three lines. • The reconfiguration has allowed for repositioning of the air cooled condenser (ACC) and turbine buildings to linear layout. Both are also located further from the nearest residential receptors, which has enabled potential noise effects from this source to be reduced at the nearest receptor – noise being a key public concern. • One individual stack will be provided per line, these stacks are anticipated to be at 80 m tall compared to the previous height of 70 m, to allow for more effective dispersion of the exhaust gases (please see **Chapter 14 Air Quality** of the ES (document reference 6.2.14) for more details). The stacks are not combined in one core (as previously), and) and will be narrower than the combined core stack in the previous design, thus managing public concerns about effective dispersion of the exhaust gases from the stack. • The EfW building is taller from base to highest point by approximately 8 m. • The design will feature more cladding around the main EfW building which may will contribute to reducing the noise impact of sources within the clad structure building. This will which has enable potential noise effects from this source to be reduced at the nearest receptor – noise being a key public concern. • A greater amount of ash (and therefore ash processing) will be produced because there

Previous Proposal (as assessed in the PEIR)	Project Change (part of DCO submission)
	is no pre-processing of the RDF prior to combustion. • It is anticipated that approximately 5,000 tonnes of ferrous metal will be removed from the bottom ash which will be sent off-site for recycling. • The residual ash will be ground down to a fine particle size and conveyed to the on-site Lightweight Aggregate (LWA) Facility. This will produce an aggregate product from the waste ash and air pollution control residues. Around 10% more aggregate would be produced and transported off-site via ship for use in the construction industry.

6.6 Other design considerations - Lighting

Lighting Requirements for Navigational Safety

6.6.1 Both construction and operational lighting will be designed to reduce light spill up or down the Haven to avoid reducing visibility and impacting navigational safety.

6.6.2 Lighting will have to comply with the minimum safety standards required on a construction site and as required for a working Facility, however, mitigation can be employed to reduce the significance of this impact by:

- the careful locating of lighting columns within the Facility;
- the careful design of the lighting columns to ensure that they are no taller than needed;
- angling the face of lights downwards, away from the river and avoiding angling them up or downstream to prevent light spilling down The Haven;
- ensuring the lighting is passive, i.e. it automatically dims when there is no movement within the Facility such as when there is no construction activity at night; and
- restricting the use of mobile lighting that is taller than any fixed lighting columns and not operating such lighting outside of normal construction hours.

6.6.3 In addition to the measures outlined above there will be regular communication between the contractor and river users to ensure that any concerns of the lighting are shared at the earliest opportunity and can therefore be remedied as soon as possible to prevent any navigational issues. Communication routes for complaints

relating to navigational safety will be provided within the Navigational Management Plan and the Code of Construction Practice, both of which are secured by requirements in the DCO.

Lighting Requirements for Reducing Impacts on Bats

6.6.4 Lighting requirements with regards to reducing impacts on bats could include the following:

- Low pressure sodium lighting should be used in locations away from areas that could be used by bat/bird species (i.e. hedgerow and woodland habitats) where possible.
- All lighting should be pointed away from areas that could be used by bat/bird species and designed in accordance with the Bat Conservation Trust (BCT) guidance relating to bats and artificial lighting.
- All temporary lighting to be designed in line with the BCT Bats and Lighting in the UK guidance (2016). This is to include the use of directional lighting during construction.
- Construction phase lighting will be limited to between 8am to 8pm (with an option of 7am to 7pm) in low light conditions, with lower level security lighting outside these times
- Need to ensure that dark corridors remain in place during the construction phase.

Outline Lighting Strategy

6.6.5 An Outline Lighting Strategy (document reference 7.5) has been prepared to support the DCO application. The Outline Lighting Strategy deals with limiting the potential for obtrusive light from the Facility during the operational phase and establishes design objectives for the lighting design to minimise the effects of obtrusive light to within guideline levels.

6.6.6 The Outline Lighting Strategy recommends design principles to limit obtrusive light. These design principles are taken from BS standards recommended lighting techniques.

6.6.7 It is envisaged that providing these principles are followed, there is not anticipated to be significant levels of obtrusive light generated by the Facility during operation.

7 Conclusion

7.1.1 The Design and Access Statement has been prepared to present how the design and access arrangements for the Facility have been developed and is submitted with the DCO application.

7.1.2 The draft DCO includes a requirement for the Facility to be designed in detail and carried out in accordance with the design principles contained in this DAS, and the preliminary scheme design shown on the plans, unless otherwise agreed with the relevant authority, provided the relevant planning authority is satisfied any amendments do not give rise to any materially new or different environmental effects to those reported in the ES. The DCO also includes a requirement containing parameters (relating to height, length and width) within which the elements of the development must not exceed.

7.1.3 The approach used has been informed by the site's context and both the opportunities and constraints this presents for development and has considered the points in article 9(3) of the DMPO and the design principles.

7.1.4 The process elements required for the function of the Facility would be designed in accordance with the following basic principles:

- resource efficiency in construction methods and use of materials and the reduction of materials needed for construction through the design of simple low technology structures and the use of recycled materials and easily de-constructible techniques where possible;
- ensuring the Facility is built on whole life cost principles – built to last and easy to maintain
- energy efficiency, including greenhouse gas emissions reduction (minimising landfill of residual household waste and maximising carbon capture potential using carbon dioxide extraction techniques from the thermal treatment exhaust stacks and providing photovoltaic panels on large-expanse flat or sloping roof surfaces to increase energy efficiency);
- pollution prevention, including indoor air quality and noise abatement, using best available abatement technology and maximising cladding and noise/vibration insulation;
- minimising transport impacts during the construction and operation of the Facility by allowing import and export from the navigable river;
- allowing for the optimised movement requirements of large HGVs through the site;

- maximising the waste hierarchy potential for the site potential for recycling thermal treatment bottom ash and air pollution control residues into an aggregate product in the lightweight aggregates plant;
- minimising the land take, excavation and fill requirements of the base level of the Facility and wharf including promoting on-site use of excavated material;
- provision of footbridge to allow safe and unhindered passage of pedestrians using the local public rights of way;
- providing staff, visitor parking and disabled parking close to the entry point and gatehouse in the interest of safety and providing a visitor centre to allow public access and views of the operation of the Facility for educational purposes;
- harmonisation with the environment, including environmental mitigation for landscaping and ecological planting (see OLEMS (document reference 7.4) and the visual impact of a large scale facility on local people living in the villages around the site, the height of the EfW, in particular the prominence of the lightweight aggregates plant and the stacks within the visual envelope; and
- keeping the building form simple to respond to the scale and form of the surroundings and distant views of the site.

7.1.5 These principles of good design include robustness, durability, usefulness and aesthetically pleasing appearance. Maximum parameters have been applied and assessed in the design of the Facility and are presented in the Works Plans (document reference 4.3) and the Indicative Generating Station Plans (document reference 4.9), and Indicative Wharf Plans (document reference 4.11) to enable a precautionary assessment to be undertaken, in accordance with the principles of the Rochdale Envelope.

7.1.6 The process has involved extensive consultation (refer to the Consultation Report, document reference 5.1) from the Facility's inception to the submission of this application. The consultation process has been crucial for informing key stakeholders on the Facility. It has been used to influence the design evolution of the scheme and the approach to technical work and assessments undertaken for the application.

7.1.7 The design process has been iterative with the design evolving over the pre-application stage. The design process has been shaped by stakeholder input, consultation events and the changes in technology from gasification to conventional combustion-based thermal treatment EfW and the opportunities this

provided to accommodate further public and regulatory stakeholder feedback into the design of the scheme.

7.1.8 The proposed Facility will be located on the Riverside Industrial Estate. The LMWLP, Site Locations Document identifies the Principal Application Site as within land allocated for waste management development (WA22-BO), identifying Energy Recovery as a potential land use. This use is further identified as Energy from Waste within the accompanying sustainability appraisal. The proposal is consistent with this allocation and accords with Policy SAD policy SL3. The SELLP refers to principles that the DCO application for the Facility can take into account. Policy 3: Design of New Development, seeks to ensure that development would not be wasteful in its use of energy or in its depletion of natural resources.

7.1.9 A multi-modal approach to transport was a fundamental consideration in the design for the Facility, to conform to the requirements of NPS EN-3 paragraph 2.5.25 ("*Government policy encourages multi-modal transport and the IPC should expect materials (fuel and residues) to be transported by water or rail routes where possible. (See Section 5.13 of EN-1 on transport impacts). Applicants should locate new biomass or waste combustion generating stations in the vicinity of existing transport routes wherever possible*."). This is achieved by the wharf facility that will allow delivery of RDF by ship and dispatch of lightweight aggregate by ship.

7.1.10 The Facility has proposed a different approach to routing the supply of waste fuel via ship compared to traditional road movements and this opens up the potential for receiving fuel supplies from a wider national area. It is considered that the Facility would also be capable of meeting part of the wider need for waste recovery, as well as some of the national need for additional energy generation capacity, the urgent need for which is set out in NPS EN-1 at paragraph 3.1.3.

7.1.11 Boston town centre is constrained by transport links that run through the town centre and are often heavily congested. A significant primary concern from the outset of the design development of the Facility has been traffic considerations to avoid further burdening the traffic links through the town by causing significant effects and increases to journey dimes caused by driver delay.

7.1.12 This led to the early adoption of all RDF deliveries to come to the Facility by ship. However, further design evolution has occurred due to the consideration of transport effects.

7.1.13 A summary of access requirements and potential traffic movements generated as a result of the construction and operation of the Facility have been considered in

detail as part of the EIA within **Chapter 19 Traffic and Transport** of the ES (document reference 6.2.19).

7.1.14 With respect to journey times during both construction and operation, reduced access and safety effects due to an increase in HGV traffic or employee vehicles on the road and traffic management at certain locations are assessed to be not significant.

7.1.15 An OCTMP has been submitted in support of this DCO application (document reference 7.2). The DCO will include a requirement for a CTMP to be approved by the relevant local authorities prior to commencement of construction. This will help to actively manage potential effects on access associated with the proposed construction works to local and regional traffic and infrastructure and will include a travel plan. This will require authorisation from the relevant authorities prior to construction, therefore further consultation with stakeholders is anticipated on the evolution of this document after submissions before construction can start.

7.1.16 As part of the CTMP (document reference 7.2), the Applicant will seek to implement sustainable transport mode-share targets for construction personnel to reduce the number of vehicles anticipated to visit the Facility. This will include additional use of public transport where possible and car sharing will be encouraged.

7.1.17 During construction and operation outdoor amenity, physical activity and access to biodiversity effects may be impacted due to the closure of public footpaths which traverse the site. However, it is important to consider the health and safety of the public that would be associated with an active construction and operational site. Although the route of the public footpath alongside the west bank of The Haven would be permanently closed to accommodate a wharf, the diverted access would be via an existing footpath route. The provision of a footbridge provides for a safer crossing for pedestrians and more security for the Facility during construction and operation to prevent unauthorised access. Therefore, key health outcomes relevant to outdoor amenity, and therefore physical activity, are not being prevented.

7.1.18 The Facility has been designed so as to ensure air quality considerations in terms of emissions, odour and dust are controlled through design, and operational control.

7.1.19 Noise and vibration are controlled through the design of the facility and its cladding.

7.1.20 Building facades were designed to be clean and uncluttered. The colour palette

for the external cladding will be based around a complementary series of muted ‘grey / greens’, or other similar colour palette agreed with the local authority. The stacks will be a light grey to reduce their prominence when seen against the sky.

7.1.21 The proposed facility includes a series of embedded mitigation measures which are designed to reduce the impact on existing biodiversity. These measures are considered standard industry practices for this type of development. It has been designed, where possible, to avoid sensitive ecological receptors. Lighting used within the development will include low pressure sodium lighting located away from areas that could be used by bat and bird species. A reptile sensitive clearing methodology will be implemented during construction and vegetation will be removed outside of nesting seasons. The proposed facility will include a varied planting programme comprising a mixture of vegetation designed to provide foraging and nesting areas for invertebrates.

7.1.22 In summary, it is considered that the Facility represents ‘good design’ for the purposes of energy infrastructure and policy set out in NPS EN-1 and EN-3.

7.1.23 All access arrangements will be discussed with the relevant authorities and other relevant stakeholders prior to the commencement of construction.

8 References

Bat Conservation Trust and Institute of Lighting Engineers, (2018) Bats and Lighting in the UK

Department for Energy and Climate Change (DECC) (2011a). The overarching NPS for Energy (EN-1),

Department for Energy and Climate Change (DECC) (2011b). The NPS for Renewable Energy Infrastructure (EN-3).

Lincolnshire County Council (2016). Lincolnshire Minerals and Waste Local Plan Core Strategy and Development Management Policies. Available at: https://www.lincolnshire.gov.uk/directory-record/61697/core-strategy-and-development-management-policies [Accessed: 25/06/2020].

Lincolnshire County Council (2017). Lincolnshire Minerals and Waste Local Plan Site Locations. Available at: https://www.lincolnshire.gov.uk/directory-record/63740/site-locations [Accessed: 25/06/2020].

Office for National Statistics (ONS) (2018). Business Register and Employment Survey. Available at: https://www.nomisweb.co.uk/datasets/newbrespub [Accessed: 03/08/2020].

Office for National Statistics (ONS) (2019). UK Business Counts. Available at: https://www.nomisweb.co.uk/datasets/idbrent [Accessed: 03/08/2020].

Office for National Statistics (ONS) (2020). National population projections: 2018-based. Available at: https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections/datasets/householdprojectionsforengland [Accessed: 03/08/2020].

South East Lincolnshire Joint Strategic Planning Committee (2019). Available at: http://www.southeastlincslocalplan.org/ [Accessed: 04/02/2019].