

Viking CCS Pipeline

**Environmental
Statement Volume II –
Chapter 18: Materials
and Waste - Revision A
(Tracked)**

Document Reference: EN070008/APP/6.2.18

Applicant: Chrysaor Production (U.K.) Limited,
a Harbour Energy Company
PINS Reference: EN070008
Planning Act 2008 (as amended)
The Infrastructure Planning (Applications: Prescribed Forms
and Procedure) Regulations 2009 - Regulation 5(2)(a)
Date: May 2024

PINS Reference	Document Reference	Document Revision	Date
EN070008	EN070008/APP/6.2.18	Revision 1	October 2023
<u>EN070008</u>	<u>EN070008/APP/6.2.18</u>	<u>Revision A</u>	<u>May 2024</u>

- Formatted: Highlight
- Formatted: Highlight
- Formatted: Highlight
- Formatted: Highlight

Prepared by	Verified by	Approved by
LH	<u>KPMB</u>	MW
<u>Materials and Waste</u> Principal Consultant	<u>Materials and Waste</u> Technical Director	EIA Technical Director

Prepared by:

AECOM Limited
Exchange Station
Tithebarn Street
Liverpool
Merseyside
L2 2QP

© AECOM Limited. All rights reserved.

Table of Contents

18	Materials and Waste	18-1
18.1	Introduction.....	18-1
18.2	Legislation, Policy and Guidance.....	18-1
18.3	Scope of Assessment and Consultation	18-9
18.4	Assessment Methodology	18-19
18.5	Baseline Conditions and Study Area	18-24
18.6	Development Design and Embedded Mitigation.....	18-45
18.7	Potential Impacts and Assessment of Effects	18-46
18.8	Additional Mitigation and Enhancement	18-53
18.9	Residual Effects.....	18-56
18.10	Cumulative Effects.....	18-56
18.11	Summary	18-56
18.12	References	18-58

Figures

Figure 18-1:	Waste Sites (Permitted, Surrendered and Permit Applications)	18-35
Figure 18-2:	Historic Trend for Landfill Void Capacity in East Midlands and Yorkshire and the Humber	18-40
Figure 18-3:	Historic Trend for Landfill Void Capacity in England.....	18-40
Figure 18-4:	The Waste Hierarchy (Ref 18-42)	18-45

Tables

Table 18-1:	National Planning Policy Relevant to Materials and Waste	18-3
Table 18-2:	Local Planning Policies Relevant to Materials and Waste	18-7
Table 18-3:	Summary of the EIA Scoping Opinion in relation to Materials and Waste	18-11
Table 18-4:	Materials and Waste Feedback on PEIR	18-17
Table 18-5:	Materials Receptor Sensitivity	18-20
Table 18-6:	Inert and Non-hazardous Landfill Capacity Sensitivity.....	18-21
Table 18-7:	Hazardous Landfill Capacity Sensitivity	18-22
Table 18-8:	Materials Magnitude of Impacts	18-22
Table 18-9:	Inert and Non-hazardous Waste - Magnitude of Impact	18-23
Table 18-10:	Hazardous Waste - Magnitude of Impact.....	18-23
Table 18-11:	Significance of Effect Matrix.....	18-24
Table 18-12:	National Consumption of Key Construction Materials.....	18-27
Table 18-13:	Construction Material Sales by Region 2018 (Ref 18-34).....	18-27
Table 18-14:	Potential Recycled Content	18-28
Table 18-15:	Safeguarded Waste Facilities	18-29
Table 18-16:	Summary of Waste Inputs by Facility 2021	18-30
Table 18-17:	Local Permitted and Surrendered Waste Sites	18-31
Table 18-18:	Local Waste Site Permit Applications	18-33

Table 18-19: Landfill Capacity (2021) in East Midlands, Yorkshire and The Humber, and England	18-39
Table 18-20: Local Historic Landfill Sites.....	18-42
Table 18-21: Construction Material Use and Waste Types Arising from the Construction of the Proposed Development.....	18-47
Table 18-22 Estimated Construction Material Quantities and % of National and Regional Consumption.....	18-49
Table 18-23: Assessment of Materials and Waste during the Construction Phase	18-52
Table 18-24: Standard, Good and Best Practice Recovery Rates by Material	18-55

18 Materials and Waste

18.1 Introduction

18.1.1 This chapter of the Environment Statement (ES) presents the assessment of the likely significant effects of the Viking CCS Pipeline (hereafter referred to as the Proposed Development) on materials and waste. The assessment includes consideration of impacts to landfill void capacity, national and regional availability of key construction materials and safeguarded waste sites.

18.1.2 This chapter is supported by *Figure 18-1* and additional information contained in *ES Volume IV: Appendix 18.1: Outline Site Waste Management Plan (Application Document 6.4.18.1)*

18.1.1 This chapter follows the methodology set out in the Institute of Environmental Management and Assessment (IEMA) guide to: Materials and Waste in Environment Assessment, Guidance for a Proportionate Approach (referred from herein as the 'IEMA Guidance') ([Ref 18-1](#)[Ref 18-4](#)).

Formatted: Font: Not Bold

18.1.2 For the purpose of this ES, materials and waste comprise:

- The consumption of materials (key construction materials only); and
- The generation and management of waste.

18.1.3 Materials are defined in the IEMA Guidance as *“physical resources that are used across the lifecycle of a development. Examples include key construction materials such as concrete, aggregate, asphalt and steel.”* Other material assets considered include built assets such as landfill void capacity and safeguarded mineral and waste sites.

18.1.4 A safeguarded mineral site is defined as an operational site or sites identified within strategic planning documents for the extraction of minerals e.g., quarry, wharf, rail depot, concrete plant. Mineral Safeguarding Areas (MSAs) are not included in this definition. MSAs are not assessed in accordance with the IEMA Guidance and are defined in Guidance Minerals ([Ref 18-2](#)[Ref 18-2](#)) as *“an area designated by a Mineral Planning Authority (MPA) which covers known deposits of minerals which are desired to be kept safeguarded from unnecessary sterilisation by non-mineral development”*.

Formatted: Font: Not Bold

18.1.5 Waste is defined as per the Waste Framework Directive ([Ref 18-2](#)[Ref 18-2](#)) as *“any substance or object which the holder discards or intends or is required to discard”*.

Formatted: Font: Not Bold

18.2 Legislation, Policy and Guidance

Introduction

18.2.1 The Legislation, Policy and Guidance section of this chapter provides an overview of the relevant legislation, planning policy and technical guidance relevant to the materials and waste assessment.

Legislation

18.2.2 The following legislation is considered:

- Waste Framework Directive ([Ref 18-2](#)[Ref 18-2](#));
- The Environmental Protection Act 1990 ([Ref 18-3](#)[Ref 18-3](#));
- The Hazardous Waste (England and Wales) Regulations 2005 ([Ref 18-4](#)[Ref 18-4](#));

Formatted: Font: Not Bold

Formatted: Font: Not Bold

Formatted: Font: (Default) +Body (Arial), Not Bold, Font color: Auto

- The Waste (England and Wales) Regulations 2011 ([Ref 18-5](#)[Ref 18-5](#));
- The Environmental Permitting (England and Wales) Regulations 2016 ([Ref 18-6](#)[Ref 18-6](#)); and
- The Environment Act 2021 ([Ref 18-7](#)[Ref 18-7](#)).

Formatted: Font: (Default) +Body (Arial), Not Bold, Font color: Auto

Formatted: Font: (Default) +Body (Arial), Not Bold, Font color: Auto

Formatted: Font: (Default) +Body (Arial), Not Bold, Font color: Auto

Formatted: Font: (Default) +Headings (Arial), Not Bold, Font color: Auto

Formatted: Font: Not Bold

18.2.3 The Waste (England and Wales) Regulations 2011 ([Ref 18-5](#)[Ref 18-5](#)) transpose the requirements of the Waste Framework Directive ([Ref 18-2](#)[Ref 18-2](#)) in England and Wales and require the Secretary of State to establish waste prevention programmes and waste management plans that apply the waste hierarchy. The waste hierarchy is defined in the Waste Framework Directive and prioritises waste prevention, followed by preparing for reuse, recycling, recovery and finally disposal as means of management of waste.

18.2.4 The Waste (England and Wales) Regulations 2011 ([Ref 18-5](#)[Ref 18-5](#)) require businesses to apply the waste hierarchy when managing waste as a priority order (prevention, preparing for reuse, recycling, other recovery and disposal), and also require that measures are taken to ensure that, by the year 2020 and beyond, at least 70% by weight of non-hazardous construction and demolition waste is subjected to material recovery. The target specifically excludes naturally occurring materials with European Waste Catalogue (EWC) Code 17 05 04 (17 05 04 soil and stones other than those mentioned in 17 05 03* (soils and stone containing dangerous substances)).

Formatted: Font: Not Bold

18.2.5 A business may depart from the waste hierarchy priority order so as to achieve the best overall environmental outcome where this is justified by life cycle thinking on the overall impacts of the generation and management of the waste. The following considerations must also be considered:

- Environmental protection principles of precaution and sustainability;
- Proximity principle for treatment and disposal of waste to be as close to its source as possible;
- Technical feasibility and economic viability;
- Protection of resources; and
- Overall environmental, human health, economic and social impacts.

National Planning Policy

18.2.6 The following national policies are also relevant to the Proposed Development:

- Overarching National Policy Statement for Energy (EN-1) ([Ref 18-9](#)[Ref 18-9](#));
- Draft Overarching National Policy Statement for Energy (EN-1) ([Ref 18-10](#)[Ref 18-10](#));
- National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4) ([Ref 18-11](#)[Ref 18-11](#));
- Draft National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4) ([Ref 18-12](#)[Ref 18-12](#));
- National Planning Policy Framework (NPPF) (2023) ([Ref 18-13](#)[Ref 18-13](#));
- National Planning Practice Guidance for Minerals (2014) ([Ref 18-14](#)[Ref 18-14](#));
- National Planning Practice Guidance for Waste (2015) ([Ref 18-15](#)[Ref 18-15](#));
- National Planning Policy for Waste (2014) ([Ref 18-16](#)[Ref 18-16](#));
- Waste Management Plan for England (2021) ([Ref 18-17](#)[Ref 18-17](#));

Formatted: Font: Not Bold

Formatted: Font: Not Bold

Formatted: Font: Not Bold

Formatted: Font: Not Bold

Formatted: Font: (Default) +Body (Arial), Not Bold, Font color: Auto

Formatted: Font: (Default) +Body (Arial), Not Bold, Font color: Auto

Formatted: Font: (Default) +Body (Arial), Not Bold, Font color: Auto

Formatted: Font: (Default) +Body (Arial), Not Bold, Font color: Auto

Formatted: Font: (Default) +Body (Arial), Not Bold, Font color: Auto

- A Green Future: Our 25 Year Plan to Improve the Environment (2018) ([Ref 18-18](#)~~Ref 18-18~~);
- Our Waste, Our Resources, A Strategy for England (Resources and Waste Strategy for England) (2018) ([Ref 18-19](#)~~Ref 18-19~~); and
- Environmental Improvement Plan (2023) ([Ref 18-20](#)~~Ref 18-20~~).

Formatted: Font: (Default) +Body (Arial), Not Bold, Font color: Auto

Formatted: Font: (Default) +Body (Arial), Not Bold, Font color: Auto

Formatted: Font: Not Bold

Formatted: Font: Bold

18.2.7 National Planning Policy relevant to materials and waste is detailed in [Table 18-1](#)~~Table 18-1~~. An overview of how relevant national planning policy has been complied with is provided within the *Planning Statement (Application Document 7.1)*.

Table 18-1: National Planning Policy Relevant to Materials and Waste

Policy Reference	Policy Context
Overarching National Policy Statement for Energy (EN-1) (Ref 18-9Ref 18-9)	
Paragraph 5.14.6 of Section 5.14: Waste Management	<i>“The applicant should set out the arrangements that are proposed for managing any waste produced and prepare a Site Waste Management Plan. The arrangements described and Management Plan should include information on the proposed waste recovery and disposal system for all waste generated by the development, and an assessment of the impact of the waste arising from development on the capacity of waste management facilities to deal with other waste arising in the area for at least five years of operation. The applicant should seek to minimise the volume of waste produced and the volume of waste sent for disposal unless it can be demonstrated that this is the best overall environmental outcome.”</i>
Draft Overarching National Policy Statement for Energy (EN-1) (Ref 18-10Ref 18-10)	
Paragraph 5.15.6-5.15.8 of Section 5.15 Resource and Waste Management	<p><i>“The applicant should set out the arrangements that are proposed for managing any waste produced and prepare a Site Waste Management Plan. The arrangements described and Management Plan should include information on the proposed waste recovery and disposal system for all waste generated by the development, and an assessment of the impact of the waste arising from development on the capacity of waste management facilities to deal with other waste arising in the area for at least five years of operation. The applicant is encouraged to refer to the Waste Prevention Programme for England and should seek to minimise the volume of waste produced and the volume of waste sent for disposal unless it can be demonstrated that this is the best overall environmental outcome. If the applicant’s assessment includes dredged material, the assessment should also include other uses of such material before disposal to sea, for example through reuse in the construction process.</i></p> <p><i>Where possible, applicants are encouraged to source materials from recycled or reused sources and use low carbon materials, sustainable sources and local suppliers. Construction best practices should be used to ensure that material is reused or recycled onsite where possible.</i></p> <p><i>Applicants are also encouraged to use construction best practices in relation to storing materials in an adequate and protected place on site to prevent waste, for example, from damage or vandalism. The use of Building Information Management tools (or similar) to record the materials used in construction can</i></p>

Formatted: Font: (Default) +Body (Arial), 11 pt, Font color: Background 1

Formatted: Font: (Default) +Body (Arial), 11 pt, Font color: Background 1

Policy Reference	Policy Context
	<i>help to reduce waste in future decommissioning of facilities, by identifying materials that can be recycled or reused."</i>
National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4) (Ref 18-11Ref 18-14)	
N/A	No relevant sections for the construction phase.
Draft National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4) (Ref 18-12Ref 18-12)	
N/A	No relevant sections for the construction phase.
NPPF (Ref 18-13Ref 18-13)	
	<p>The NPPF does not contain specific waste policies as these are detailed within the revised Waste Management Plan for England (2021) and the National Planning Policy for Waste, however the following overarching policies are relevant to waste and resources:</p> <p>a. The environmental objective set out at paragraph 8 of the NPPF is <i>"to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy."</i></p> <p>b. The environmental objective set out in paragraph 210 of the NPPF is to <i>"so far as practicable, take account of the contribution that substitute or secondary and recycled materials and minerals waste would make to the supply of materials, before considering extraction of primary materials, whilst aiming to source minerals sustainably."</i></p>
National Planning Practice Guidance (PPG) for Minerals and Waste (Ref 18-14Ref 18-14, Ref 18-15Ref 18-15)	
	<p>Published to provide more in-depth guidance to the NPPF. The PPG for Minerals and PPG for Waste aim to make planning guidance more accessible and ensures that the guidance is kept up to date.</p> <p>The PPG for Waste outlines the consideration local planning authorities should give towards waste management, both within Local Plans and with regards to the Waste Hierarchy. This includes guidance on considerations to be included within development planning applications:</p> <ul style="list-style-type: none"> - The promotion of the <i>sound management of waste from any proposed development, such as encouraging internal management of waste where this is appropriate, or including a planning condition to encourage or require the developer to set out how waste arising from the development is to be dealt with;</i> - That steps are taken to <i>ensure effective segregation of wastes at source including, as appropriate, the provision of waste sorting, storage, recovery and recycling facilities;</i> and - That it will be useful for proposals that are likely to generate significant volumes of waste through the development or operational phases to include a waste audit. <i>This audit should demonstrate that in both</i>

Formatted: Font: (Default) +Body (Arial), 11 pt, Font color: Background 1

Formatted: Font: (Default) +Body (Arial), 11 pt, Font color: Background 1

Formatted: Font: (Default) +Body (Arial), 11 pt, Font color: Background 1

Formatted: Font: (Default) +Body (Arial), 11 pt, Font color: Background 1

Formatted: Font: (Default) +Body (Arial), 11 pt, Font color: Background 1

Policy Reference	Policy Context
	<p><i>construction and operational phases of a proposed development, waste will be minimised as far as possible and that such waste as is generated will be managed in an appropriate manner in accordance with the Waste Hierarchy.</i></p> <p>The PPG for Minerals outlines the consideration local planning authorities should give towards mineral safeguarding, planning for aggregate minerals, and planning for industrial minerals. This includes guidance on considerations to be included within development planning applications:</p> <ul style="list-style-type: none"> – <i>Minerals can only be worked (i.e., extracted) where they naturally occur, so location options for the economically viable and environmentally acceptable extraction of minerals may be limited. This means that it is necessary to consider protecting minerals from non-minerals development and has implications for the preparation of minerals plans and approving non-mineral development in defined mineral safeguarding areas.</i>
	<p>National Planning Policy for Waste (Ref 18-16Ref-18-16)</p> <p>The National Planning Policy for Waste sets out detailed waste planning policies to be applied in conjunction with the NPPF. It states:</p> <p>“when determining planning applications for non-waste development, local planning authorities should, to the extent appropriate to their responsibilities, ensure that:</p> <ul style="list-style-type: none"> – <i>The likely impact of proposed, non-waste related development on existing waste management facilities, and on sites and areas allocated for waste management, is acceptable and does not prejudice the implementation of the waste hierarchy and/or the efficient operation of such facilities;</i> – <i>New, non-waste development makes sufficient provision for waste management and promotes good design to secure the integration of waste management facilities with the rest of the development, and;</i> – <i>The handling of waste arising from the construction and operation of development maximises reuse/recovery opportunities and minimises off-site disposal”.</i>
	<p>Waste Management Plan for England (Ref 18-17Ref-18-17)</p> <p>Provides an overview of waste management in England and reiterates the requirement for all waste producers and waste management providers to implement the waste hierarchy. It also highlights the need for waste to be managed using the proximity principle and confirms England’s commitment to recovering at least 70% by weight of non-hazardous construction and demolition waste by 2020 (excluding soils and stones). Recovery is assumed in the context of this policy to include reuse, recycling and incineration with energy recovery.</p>
	<p>A Green Future: Our 25 Year Plan to Improve the Environment (Ref 18-18Ref-18-18)</p> <p>Plan to Improve the Environment’ published in 2018, “sets out goals for improving the environment within a generation and leaving it in a better state than we found it”. It details how the government will work with communities and businesses to do this. The following policies are relevant:</p>

Formatted: Font: (Default) +Body (Arial), 11 pt, Font color: Background 1

Formatted: Font: (Default) +Body (Arial), 11 pt, Font color: Background 1

Formatted: Font: (Default) +Body (Arial), 11 pt, Font color: Background 1

Policy Reference	Policy Context
	<ul style="list-style-type: none"> - Make sure that resources are used more efficiently and kept in use for longer to minimise waste and reduce its environmental impacts by promoting reuse, remanufacturing and recycling. - Work towards eliminating all avoidable waste by 2050 and all avoidable plastic waste by end of 2042. - Reducing food supply chain emissions and waste. - Reducing litter and littering. - Improving management of residual waste.
<p>Our Waste, Our Resources, A Strategy for England (Resources and Waste Strategy for England) (Ref 18-19Ref 18-19)</p>	
	<p>The strategy published in 2018 will help the government to meet the commitments outlined in the 25 Year Plan and <i>“sets out how we will preserve our stock of material resources by minimising waste, promoting resource efficiency and moving towards a circular economy. At the same time, we will minimise the damage caused to our natural environment by reducing and managing waste safely and carefully, and by tackling waste crime.”</i> The strategy combines actions to be taken now and commitments for the coming years. Key targets and milestones and targets, which could be relevant to the Proposed Development, include:</p> <ul style="list-style-type: none"> - Roll out of a deposit return scheme (subject to consultation) – 2023; - Legislation for mandatory separate food waste collections (subject to consultation) – 2023; - 75% recycling rate for packaging (subject to consultation) – 2023; - 65% recycling rate for municipal solid waste – 2035; and - Municipal waste to landfill 10% or less – 2035.
<p>Environmental Improvement Plan (Ref 18-20Ref 18-20)</p>	
	<p>The Environmental Improvement Plan (EIP) builds on the 25 Year Environment Plan (Ref 18-18Ref 18-18), which covered topics including waste and resources.</p> <p>The EIP confirms that the Department for Environment, Food and Rural Affairs (Defra) will publish the new maximising resources and minimising waste programme in England. The programme will set out the Government’s priorities for action across seven key sectors, including construction, to manage resources and waste in accordance with the waste hierarchy.</p> <p>The Government is also working to publish a revised Code of Practice for the sustainable use of soil on construction sites, which will help to reduce the amount of soil sent to landfill.</p> <p>In addition, a Soil Reuse and Storage Depot scheme will be developed to help prevent soil that would otherwise be classified as waste going to landfill and encourage remediation and reuse of soil. The scheme will be piloted by 2026.</p> <p>In the longer term, there are commitments in the EIP to eliminate avoidable plastic waste by 2042 and avoidable waste by 2050.</p>

Formatted: Font: (Default) +Body (Arial), 11 pt, Font color: Background 1

Formatted: Font: (Default) +Body (Arial), Font color: Background 1

Formatted: Font: (Default) +Body (Arial), Not Bold, Font color: Auto

Policy Reference	Policy Context
	<p data-bbox="240 506 1059 539">Strategy for Hazardous Waste Management in England (Ref 18-21, Ref 18-24)</p> <p data-bbox="240 539 1059 627">Sets out important principles that aim to encourage reductions in hazardous waste arisings and the wider application of the waste hierarchy to the management of hazardous waste.</p>

Formatted: Font: (Default) +Body (Arial), Font color: Background 2, Pattern: Clear (Accent 3)

Local Planning Policies

18.2.8 The following local planning documents are relevant to the Proposed Development:

- Lincolnshire Minerals and Waste Local Plan – Core Strategy and Development Management Policies (adopted 2016) (Ref 18-22Ref 18-22);
- Lincolnshire Minerals and Waste Local Plan – Site Locations (2017) (Ref 18-23Ref 18-23);
- The North Lincolnshire Local Development Framework (adopted 2011) (Ref 18-24Ref 18-24);
- North Lincolnshire Local Plan Publication Draft (2021) (Ref 18-25Ref 18-25);
- North East Lincolnshire Local Plan 2013 to 2032 (adopted 2018) (Ref 18-26Ref 18-26);
- North East Lincolnshire Policies Map (Ref 18-27Ref 18-27);
- East Lindsey Local Plan Core Strategy (adopted 2018) (Ref 18-28Ref 18-28); and
- Central Lincolnshire Local Plan (replaced the West Lindsey Local Plan in 2017) (Ref 18-29Ref 18-29).

18.2.9 Local Planning Policies relevant to materials and waste is detailed in Table 18-2Table 18-2. An overview of how relevant local planning policy has been complied with is provided within the Planning Statement (Application Document 7.1).

Formatted: Font: (Default) +Body (Arial), Not Bold, Font color: Auto

Formatted: Font: (Default) +Body (Arial), Not Bold, Font color: Auto

Formatted: Font: (Default) +Body (Arial), Not Bold, Font color: Auto

Formatted: Font: (Default) +Body (Arial), Not Bold, Font color: Auto

Formatted: Font: (Default) +Body (Arial), Not Bold, Font color: Auto

Formatted: Font: (Default) +Body (Arial), Not Bold, Font color: Auto

Formatted: Font: (Default) +Body (Arial), Not Bold, Font color: Auto

Formatted: Font: (Default) +Body (Arial), Not Bold, Font color: Auto

Formatted: Font: Bold

Table 18-2: Local Planning Policies Relevant to Materials and Waste

Policy Reference	Policy Context
Lincolnshire Minerals and Waste Local Plan – Core Strategy and Development Management Policies (adopted 2016) (Ref 18-22Ref 18-22)	<p>The first part of the Lincolnshire Minerals and Waste Local Plan is the Core Strategy and Development Management Policies document. This document sets out the key principles to guide the future winning and working of minerals and the form of waste management development in the County up to 2031. The plan also sets out the development management policies against which planning applications for minerals and waste development will be considered.</p> <p>Relevant policies include:</p> <ul style="list-style-type: none"> – Policy M10 – Underground Gas Storage – Policy M11 – Safeguarding of Mineral Resources – Policy M12 – Safeguarding of Existing Mineral Sites and Associated Minerals Infrastructure – Policy W8 – Safeguarding Waste Management Sites – Policy DM1 – Presumption in favour of sustainable development <p>The Lincolnshire Minerals and Waste Local Plan figures show safeguarded mineral resources, existing mineral sites and associated minerals infrastructure and safeguarded waste management sites:</p> <p>Figure 1: Lincolnshire Minerals Safeguarding Areas (MSAs) Map shows the extent of Limestone, sand and gravel and windblown sand MSAs. The DCO Site Boundary does not pass through any Lincolnshire County Council MSAs.</p> <p>Figure 3: Lincolnshire Site Specific Minerals Safeguarding Area Map shows the extent of site specific MSAs. The DCO Site Boundary does not pass through any of these site specific MSAs.</p>

Formatted: Font: (Default) +Body (Arial), Not Bold, Font color: Auto

Policy Reference	Policy Context
	<p>Figure 4: Key Diagram shows the extent of sand and gravel areas of search. The DCO Site Boundary does not pass through any of these areas of search.</p> <p>Figure 6: Existing Minerals and Waste Sites West Lindsey District shows existing sites. The DCO Site Boundary does not pass through any of these sites.</p> <p>Figure 7: Existing Minerals and Waste Sites East Lindsey District shows existing sites. The DCO Site Boundary does not pass through any of these sites.</p>
<p>Lincolnshire Minerals and Waste Local Plan – Site Locations (2017) (Ref 18-23Ref 18-23)</p>	<p>The second part of the Lincolnshire Minerals and Waste Local Plan is the Site Locations document which includes specific proposals and policies for the provision of land for mineral and waste development.</p> <p>Relevant policies include:</p> <ul style="list-style-type: none"> – Policy SL1 – Mineral Site Allocations – Policy SL2 – Safeguarding Mineral Allocations – Policy SL4 – Waste Site and Area Allocations <p>Figure 1: Site Locations Policies Map show the extent of allocated mineral sites, allocated waste sites and allocated waste areas. The DCO Site Boundary does not pass through any of these sites.</p>
<p>The North Lincolnshire Local Development Framework (adopted 2011) (Ref 18-24Ref 18-24)</p>	<p>Replaced the North Lincolnshire Local Plan and includes the Core Strategy which contains chapters regarding Sustainable waste management (Chapter 12) and Minerals (Chapter 13).</p> <p>Relevant policies include:</p> <ul style="list-style-type: none"> – CS20 – Sustainable Waste Management – CS21 – Minerals
<p>North Lincolnshire Local Plan Publication Draft (2021) (Ref 18-25Ref 18-25)</p>	<p>North Lincolnshire is preparing a new single Local Plan for North Lincolnshire. Once agreed (formally adopted), it will replace the current North Lincolnshire Core Strategy and the Housing and Employment Land Allocations Development Plan Documents (DPDs). The Publication Draft contains chapters regarding planning for a sustainable supply of minerals (Chapter 12) and sustainable waste management (Chapter 13).</p> <p>Relevant policies include:</p> <ul style="list-style-type: none"> – Policy MIN4 – Recycle and Secondary Aggregates – Policy WAS1 – Waste Management Principles – Policy WAS4 – Safeguarding Existing Waste Sites and Infrastructure – Policy WAS6 – Waste Management in Development – Policy WAS7 – Restoration and Aftercare <p>The associated policy map shows the extent of waste sites and infrastructure, MSAs, and mineral sites and infrastructure. The DCO Site Boundary does not pass through any of these sites or areas.</p>
<p>North East Lincolnshire Local Plan 2013 to 2032</p>	<p>Sets out the Council's approach to accommodating future requirements in relation to the demands on North East Lincolnshire's mineral resource and waste needs.</p> <p>Relevant policies include:</p>

Formatted: Font: (Default) +Body (Arial), Not Bold, Font color: Auto

Formatted: Font: (Default) +Body (Arial), Not Bold, Font color: Auto

Formatted: Font: (Default) +Body (Arial), Not Bold, Font color: Auto

Policy Reference	Policy Context
(adopted 2018) (Ref 18-26 Ref 18-26)	<ul style="list-style-type: none"> – Policy 44 – Safeguarding minerals and related infrastructure – Policy 45 – Future mineral extraction and Secondary Aggregates – Policy 47 – Future requirements for waste facilities – Policy 48 – Safeguarding waste facilities and related infrastructure – Policy 49 – Restoration and aftercare (waste) <p>The Policy Map (Ref 18-27Ref 18-27) shows the extent of MSAs for sand and gravel and blown sand and existing waste management facilities. The DCO Site Boundary passes through the MSA for sand and gravel. The DCO Site Boundary does not pass through any waste sites although one site is recorded as being adjacent (Policy 48).</p>
East Lindsey Local Plan Core Strategy (adopted 2018) (Ref 18-28 Ref 18-28)	<p>East Lindsey is one of the seven districts covered by the Lincolnshire Minerals and Waste Local Plan – Core Strategy and Development Management Policies (2016).</p> <p>The East Lindsey Local Plan Core Strategy includes a MSAs Policies Map (Annex 4). The DCO Site Boundary does not pass through any MSAs.</p>
Central Lincolnshire Local Plan (replaced the West Lindsey Local Plan in 2017) (Ref 18-29 Ref 18-29)	<p>West Lindsey is one of the seven districts covered by the Lincolnshire Minerals and Waste Local Plan – Core Strategy and Development Management Policies (2016).</p> <p>Relevant policies in the Central Lincolnshire Local Plan include:</p> <p>Policy LP18 – Climate Change and Low Carbon Living “<i>Resource efficiency: development should (a) take opportunities to use sustainable materials in the construction process, avoiding products with a high embodied energy content and (b) minimize construction waste</i>”.</p> <p>Policy LP26 - Design and Amenity “<i>Adequate storage, sorting and collection of household and commercial waste, including provision for increasing recyclable waste</i>”.</p>

Formatted: Font: (Default) +Body (Arial), Not Bold, Font color: Auto

Formatted: Font: (Default) +Body (Arial), 11 pt, Not Bold, Font color: Auto

Formatted: Font: (Default) +Body (Arial), Not Bold, Font color: Auto

Formatted: Font: (Default) +Body (Arial), Not Bold, Font color: Auto

Guidance

18.2.10 The materials and waste assessment has been carried out in accordance with the following:

- IEMA Guidance ([Ref 18-1](#)[Ref 18-4](#));
- Contaminated Land: Applications in Real Environments (CL:AIRE) Definition of Waste: Development Industry Code of Practice (DoWCoP), v2 (2011) ([Ref 18-30](#)[Ref 18-30](#)); and
- Waste and Resources Action Programme (WRAP) Designing Out Waste: A Design Team Guide for Civil Engineering ([Ref 18-31](#)[Ref 18-34](#)).

Formatted: Font: Not Bold

Formatted: Font: (Default) +Body (Arial), Not Bold, Font color: Auto

Formatted: Font: (Default) +Body (Arial), Not Bold, Font color: Auto

18.3 Scope of Assessment and Consultation

Scoping Report and Scoping Opinion

18.3.1 A scoping exercise was undertaken in early 2022 to establish the content of the materials and waste assessment and the approach and methods to be followed.

18.3.2 The Scoping Report (*ES Volume IV: Appendix 5.1 (Application Document 6.4.5.1)*) records the findings of the scoping exercise and details the technical guidance, standards, best practice and criteria to be applied in the assessment to identify and evaluate the likely significant effects of the Proposed Development on materials and waste.

18.3.3 The comments received in the Scoping Opinion relevant to materials and waste are presented in ~~Table 18-3~~**Table 18-3** and full copy of the Scoping Opinion is included in *ES Volume IV: Appendix 5.2 (Application Document 6.4.5.2)*.

Formatted: Font: Bold

Table 18-3: Summary of the EIA Scoping Opinion in relation to Materials and Waste

Section Reference to Scoping Opinion	Applicant's proposed matter	Planning Inspectorate / prescribed consultee comments	Response
<p>Planning Inspectorate: Paragraph 17.3.12 / Table 17-16</p>	<p>Changes and direct impacts to safeguarded mineral sites. Changes and direct impacts to safeguarded allocated waste sites.</p>	<p>Paragraph 17.2.14 states that the Scoping Boundary does not pass through any other Mineral Safeguarding Areas (MSAs), however Chapter 9, Paragraph 9.2.10 states that no information is available for Lincolnshire County Council (LCC), and Table 17-16 states that the Proposed Development passes through an MSA. In its scoping response, LCC has indicated that this information is available and that this can be supplied to the Applicant.</p> <p>Additionally, in its scoping response, the Environment Agency have identified several waste sites in the surrounding area which are not included within the Scoping Report and the Inspectorate highlights the need for the ES to identify whether these are safeguarded sites. It is also noted that the Lincolnshire Minerals and Waste Local Plan is currently being updated and will require consideration if published during the preparation of the ES. The Inspectorate therefore considers that the impacts on mineral safeguarding areas, and safeguarded allocated waste sites, should be assessed in the ES.</p>	<p>All relevant documents have been reviewed including the Lincolnshire Minerals and Waste Local Plan which includes Figure 1: Lincolnshire MSAs Map. MSAs in proximity to the DCO Site Boundary have been reviewed and information is included in the ES in paragraphs 18.5.17 and 18.5.19.</p> <p>Allocated/safeguarded waste sites within the DCO Site Boundary and 1.5km of the DCO Site Boundary are described in paragraph 18.5.21.</p> <p>Other waste sites and applications within 1.5km of the DCO Site Boundary have been reviewed included the ES in Table 18-17Table 18-17 and Table 18-18Table 18-18.</p> <p>Policy and legislation considered for this ES chapter is presented in Section 18.2. At the time of preparation of the ES the Lincolnshire Minerals and Waste Local Plan has not been adopted.</p> <p>The IEMA Guidance does not include assessment of impacts on MSAs in a materials and waste assessment, although</p>

Section Reference to Scoping Opinion	Applicant's proposed matter	Planning Inspectorate / prescribed consultee comments	Response
			MSAs are identified in this chapter to provide context. MSAs are considered in the Planning Statement submitted with the development consent order (DCO) application (<i>Application Document 7.1</i>).
Planning Inspectorate: Table 17-16	Aspects proposed to scope out: <ul style="list-style-type: none"> – Changes in demand for materials during operation and decommissioning; – Changes in available landfill capacity during operation and decommissioning; and – Waste arising from construction components during extraction/processing/manufacture 	The Inspectorate is in agreement that these matters can be scoped out of the ES as significant effects are unlikely to arise.	Noted.
Planning Inspectorate: Table 17-16	Other environmental effects from waste	The Inspectorate accepts that the effects referred to can be appropriately addressed in other aspect chapters e.g., Air Quality, and as such this topic is not required to be assessed within the material assets and waste chapter.	Noted.

Section Reference to Scoping Opinion	Applicant's proposed matter	Planning Inspectorate / prescribed consultee comments	Response
Environment Agency (EA)	Waste and Resources Action Programme (WRAP)	<p>Paragraphs 17.2.12 and 13 (of the Scoping Report) discuss the material required and possible recycling rates for it based on WRAP. We have seen the installation of several long-distance pipelines /cables in this area over the last three years. None of these installations have had a particularly good plan regarding the recycling of the haul road material (which has been 'virgin' in all cases). Problems have included lack of forethought regarding environmental permits, contamination by geotextile material, waste sites not being able to receive the material as classified etc. We, therefore, strongly urge the applicant to ensure there is a good plan for the material recycling once the project is finished, and ideally large-scale use of recycled aggregate for haul roads and yards.</p>	<p>It is intended that the majority of haul roads will be directly onto the sub-soil, other than an apron behind the tarmacked bellmouth to the point where the track will be subsoil only. However, depending on ground conditions and weather conditions a geotextile membrane and stone surface and/or bog-mats may be used in selected areas to enable traffic movements. Management of large quantities of aggregates at the end of construction is not anticipated. More information can be found in <i>ES Volume II Chapter 3: Description of the Proposed Development (Application Document 6.2.3)</i>.</p> <p>The contractor will be required to produce a Site Waste Management Plan (SWMP) before the commencement of works as part of the Construction Environment Management Plan (CEMP) submitted for approval to the local planning authority under the DCO. An Outline Site Waste Management Plan (OSWMP) is submitted with the DCO application (<i>ES Volume IV: Appendix 18.1 (Application Document 6.4.18.1)</i>). Project targets for materials and waste including waste recovery and recycled content are outlined in Paragraph 18.8.10.</p>

Section Reference to Scoping Opinion	Applicant's proposed matter	Planning Inspectorate / prescribed consultee comments	Response
	Safeguarded waste facilities	<p>Table 17-4 (under paragraph 17.2.17) (of the Scoping Report) lists just one Safeguarded Waste Facility. There are other facilities as follows:</p> <ul style="list-style-type: none"> • JA Young Plastics, site is less than 100m from the corridor (one access road runs through the corridor); • Donald Ward, two sites (one permitted and one exempt permit application currently under consideration), one is 100m from the corridor; • SAR Metals Recycling Ltd, 2 sites, one is 500m from the corridor; • SAR Recycling Ltd, approximately 1km from the corridor; • ENVA Battery Recycling Ltd, 1km from the corridor; • Clarkson's, approximately 1.5km from the corridor. 	<p>Only allocated/safeguarded sites were included in the scoping report. All waste sites within the DCO Site Boundary are now included. Allocated/safeguarded waste sites within the DCO Site Boundary and 1.5km of the DCO Site Boundary are described in paragraph 18.5.21.</p> <p>Other waste sites and applications within 1.5km of the DCO Site Boundary have been reviewed and included in the ES in Table 18-17Table 18-17 and Table 18-18Table 18-18.</p>
	Historic landfill sites	<p>Paragraph 17.2.25 (of the Scoping Report) lists two historic landfills. We hold a record of two sites within the scoping boundary:</p> <ul style="list-style-type: none"> • Killingholme Refinery (TA1697416252 & TA1708716047) two sites - hazardous sludges from oil refining. <p>We also hold a record of three sites on the edge of the scoping boundary:</p> <ul style="list-style-type: none"> • Mill Lane, Immingham (TA1690215114) - industrial, commercial, and household waste; 	<p>Information about Historic landfill sites has been reviewed and included in the ES as appropriate. "OS Field No 9000" is listed in the EA's Historic Landfill Dataset and included in Table 18-20Table 18-20.</p> <p>Historic landfills within the DCO Site Boundary are outlined in Paragraph 18.5.24. Historic landfills within 1 km of the DCO Site Boundary are outlined in Table 18-20Table 18-20.</p>

Section Reference to Scoping Opinion	Applicant's proposed matter	Planning Inspectorate / prescribed consultee comments	Response
		<ul style="list-style-type: none"> • South of West Haven Way (TA1746416549) - Industrial waste; • Aylesby, Cleethorpes (TA2003206752) – non-hazardous waste arising from the construction industry, factory solids and demolition waste. <p>However, we have been unable to find records relating to the site mentioned in paragraph 17.2.26 as “OS Field No 9000”. We strongly recommend that where possible the route should seek to avoid these landfill sites; where this would not be possible the applicant would need to consider remediation measures, alongside issues relating to landfill gas and contaminated ground</p>	<p>Potential contamination from historic landfills is considered in <i>Chapter 9: Geology and Hydrogeology</i>.</p> <p>Two historic landfill sites fall within the boundaries of the DCO Site Boundary. The first of which is over two distinct areas. This is referred to as “Conoco” (holder reference EAHL01519 and EAHL01518). Works within this historic landfill are not anticipated.</p> <p>“Aylesby” (EAHL01582) lies south of Aylesby, adjacent to Barton Street. Works within the historic landfill are not anticipated and will be limited to the pathway located between the historic landfill and Barton Street.</p>
	Materials Management Plan (MMP)	Paragraph 17.4.5 (of the Scoping Report) states that a Materials Management Plan (MMP) will be developed under CL:AIRE Definition of Waste. For clarity, the MMP must be written before the Definition of Waste: Code of Practice (DoWCoP) is submitted. Planning is key before this (‘certainty of use’). The plan should include detailed contingencies, tracking systems and evidence of inspection.	The contractor will be required to produce a MMP before the commencement of works as part of the CEMP submitted for approval to the local planning authority under the DCO. This is a commitment in the Draft CEMP in <i>ES Volume IV: Appendix 3.1 (Application Document 6.4.3.1)</i> .

Section Reference to Scoping Opinion	Applicant's proposed matter	Planning Inspectorate / prescribed consultee comments	Response
	Lincolnshire M&W Local Plan	Appendix G: A review of the Lincolnshire Minerals and Waste Local Plan is being undertaken and the applicant should ensure appropriate consideration is given to this, during the development of the Proposed Development	At the time of preparation of the ES), the new Lincolnshire Minerals and Waste Local Plan has not yet been adopted. All extant policy and legislation has been reviewed and is included in the ES.
Lincolnshire County Council	Information from LCC	At paragraph 9.2.10 states that no mineral safeguarding information is available from the County Council. This is not the case and contact should be made with the County Council to obtain this information to ensure this issue has been addressed before the ES is produced.	All relevant documents have been reviewed including the Lincolnshire Minerals and Waste Local Plan which includes Figure 1: Lincolnshire MSAs Map.

Feedback on the Preliminary Environmental Information Report (PEIR)

18.3.4 A summary of stakeholder engagement specific to materials and waste has been provided in **Table 18-4**.

Formatted: Font: Bold

Table 18-4: Materials and Waste Feedback on PEIR

Stakeholder	Date of meeting / communication	Summary of discussions	Response
Environment Agency	22 December 2022 letter	The EA notes that JA Young Plastics has been added to the PEIR as a safeguarded waste site. The route change now crosses both access roads for Autby House, JA Young Plastics, very close to the site, and only 100-250 metres apart. It is essential that access to such a high-risk storage area is available at all times for emergency services etc and we would be pleased to see assurances regarding this in the EIA.	Permanent and significant impacts on the Autby House Materials Recycling Facility/JA Young Plastics/JAY PLAS are not anticipated; any impacts on site access would be of limited duration (during construction only). Pipeline road crossings would be by Auger Bore and no roads would be closed. Plant and materials would be moved from one side of the road to the other with a banksman controlling traffic who would stop construction vehicles if an emergency vehicle needed access. Access to the Autby House Materials Recycling Facility/JA Young Plastics would be maintained at all times, for emergency vehicle use, which forms mitigation item M18 in the draft Mitigation Register within the <i>Draft Construction Environmental Management Plan (CEMP) (ES Volume IV Appendix 3.1 (Application Document 6.4))</i> .

Additional Consultation

18.3.5 No additional materials and waste consultation has been undertaken.

Scope of Assessment

Aspects scoped into the assessment

18.3.6 Following receipt of the Scoping Opinion (*ES Volume IV: Appendix 5.2 (Application Document 6.4.5.2)*) the following have also been considered of as part of the Materials and Waste assessment:

- Changes in demand for materials during construction;

- Changes in available landfill capacity during construction; and
- Impacts on safeguarded waste sites.

Aspects scoped out of the assessment

18.3.7 Following receipt of the Scoping Opinion (*ES Volume IV: Appendix 5.2 (Application Document 6.4.5.2)*), the following items were confirmed by the Planning Inspectorate to be scoped out of the materials and waste assessment.

- Waste arising from extraction, processing and manufacture of construction components and products. This assumes that these products and materials are being developed in a manufacturing environment with their own waste management plans, facilities, and supply chain, which are potentially in different regions of the UK or the world and therefore outside of the geographical scope of this study. Such matters cannot be accurately predicted and assessed as they relate to procurement decisions that cannot be assured;
- Other environmental impacts associated with the management of waste from the Proposed Development e.g., on water resources, air quality, noise or traffic resulting from the generation, handling, on-site temporary storage or off-site transport of materials and waste are addressed separately in other relevant chapters;
- Impacts on safeguarded mineral sites. The DCO Site Boundary (also referred to as the Order Limits in some documents) do not pass through any such sites therefore this aspect is scoped out of the assessment;
- Direct impacts on MSAs. The DCO Site Boundary does pass through an MSA for sand and gravel; however, in accordance with the IEMA Guidance impacts are not assessed in the materials and waste assessment. MSAs are included for context in the baseline since MSAs are a planning consideration and further consultation and assessment in accordance with MPA policies may be required at a later stage. MSAs are considered in the Planning Statement which will accompany the DCO application (*Planning Application Ref 7.1*);
- Effects on the availability of materials during the operational phase of the Proposed Development: forecast effects are (using professional judgement) considered negligible in relation to the scale and nature of the development, since only very small quantities of materials would be required on an intermittent basis;
- Effects of the Proposed Development on regional inert and non-hazardous waste landfill capacity and national hazardous waste landfill capacity during the operational phase of the Proposed Development. Effects associated with the operational phase are scoped out due to the nature of the Proposed Development, and knowledge of similar Proposed Developments' limited operational material usage and waste disposal requirements; and
- Effects associated with decommissioning as the Proposed Development. The Proposed Development has an initial design life of 25 years and when appropriate, the pipeline and associated infrastructure would be decommissioned. As stated in the *Draft CEMP (ES Volume IV Appendix 3.1 (Application Document 6.4.3.1))*, a Decommissioning Environmental Management Plan (DEMP) will be produced prior to the decommissioning phase. In order to minimise impact of the decommissioning programme the majority of the pipeline would likely remain in-situ and, as such, no significant effects upon materials and waste are anticipated. However, in a worst-case scenario which is not expected to occur, where the pipeline will be fully removed along with the facilities and Block Valve Stations, the potential impacts during the decommissioning phase will be no greater than those detailed during construction phase.

18.4 Assessment Methodology

18.4.1 This section outlines the methodology employed for assessing the likely significant effects associated with materials and waste. The IEMA Guidance offers two methods for the assessment of waste. Method W1 – void capacity has been selected as this is a more detailed methodology and is appropriate for larger and more complex projects.

Overview

18.4.2 The assessment of materials and waste will consider the following:

- Waste producers have a legal duty of care to manage their waste in accordance with regulations and to ensure that any waste leaving the site where it is generated is transferred to a suitably licensed facility for further treatment or disposal;
- Facilities transferring, treating, or disposing of waste must be either licensed or apply for an exemption from a licence, and impacts arising from the operation of waste management facilities are considered as part of the planning and permitting process for these facilities themselves;
- As part of their planning function, Waste Planning Authorities (WPAs) are required to ensure that sufficient land is available to accommodate facilities for the treatment of all waste arising in the area, either within the WPA area, or through export to suitable facilities in other areas; and
- Minerals Planning Authorities (MPAs) are similarly required to ensure an adequate supply of minerals, sufficient to meet the needs of national and regional supply policies, and local development needs.

18.4.3 The sensitive receptors for this assessment of construction impacts are:

- Landfill void capacity in the Study Areas of East Midlands and Yorkshire and the Humber (non-hazardous landfill void capacity) and England (hazardous landfill void capacity) – as defined in the IEMA Guidance *“landfill is a finite resource, and hence – through the ongoing disposal of waste – there is a continued need to expand existing and develop new facilities. This requires the depletion of natural and other resources which, in turn, adversely impacts the environment.”*
- Materials, national consumption of key construction materials – as outlined in the IEMA Guidance *“materials are, in their own right, sensitive receptors. Consuming materials impacts upon their immediate and (in the case of primary material) long-term availability; this results in the depletion of natural resources and adversely impacts the environment.”*

18.4.4 The IEMA Guidance *“does not consider waste processing and recovery facilities as sensitive receptors, rather: they are part of a system that has the potential to reduce the magnitude of adverse impacts associated with waste generation and disposal. Waste processing and recovery facilities are, hence, different to landfills, in that the latter are finite resources.”*

18.4.5 The sensitivity of receptors and magnitude of impacts on materials and waste is assessed through the following:

Materials

- Establishing the baseline for national consumption of key materials (construction materials) by weight;
- Assessing the sensitivity of materials as related to the availability and types of materials to be consumed by the Proposed Development in construction;

- Establishing the quantities of key construction materials required for the construction of the Proposed Development; and
- Comparing the total quantities of key construction materials with the most recent national demand (utilising a percentage approach).

Waste

- Establishing the baseline landfill void capacity in the Study Areas;
- Assessing the sensitivity of landfill void capacity;
- Establishing the quantities of construction, demolition and excavation waste to be generated during the construction of the Proposed Development; and
- Comparing the total waste arising from the construction of the Proposed Development against the landfill void capacity (utilising a percentage approach).

Receptor Sensitivity

18.4.6 The sensitivity of materials relates to the availability and type of construction material to be consumed by the Proposed Development. The IEMA Guidance criteria described within ~~Table 18-5~~ **Table 18-5** are used to determine the sensitivity of materials.

Formatted: Font: Bold

Table 18-5: Materials Receptor Sensitivity

Effects	Criteria for materials receptor sensitivity
Negligible	On balance, the key materials required for the construction of the Proposed Development are forecast (through trend analysis and other information) to be free from known issues regarding supply and stock. <i>And/or</i> are available comprising a very high proportion of sustainable features and benefits compared to industry-standard materials*
Low	On balance, the key materials required for the construction of the Proposed Development are forecast (through trend analysis and other information) to be generally free from known issues regarding supply and stock. <i>And/or</i> are available comprising a high proportion of sustainable features and benefits compared to industry-standard materials.
Medium	On balance, the key materials required for the construction of the Proposed Development are forecast (through trend analysis and other information) to suffer from some potential issues regarding supply and stock. <i>And/or</i> are available comprising some sustainable features and benefits compared to industry-standard materials.
High	On balance, the key materials required for the construction of the Proposed Development are forecast (through trend analysis and other information) to suffer from known issues regarding supply and stock. <i>And/or</i> Comprise little or no sustainable features and benefits compared to industry-standard materials.

Effects	Criteria for materials receptor sensitivity
Very High	On balance, the key materials required for the construction of the Proposed Development are forecast are known to be insufficient in terms of production, supply and/or stock. <i>And/or</i> Comprise no sustainable features and benefits compared to industry-standard materials.
* Subject to supporting evidence, sustainable features and benefits could include, for example, materials or products that: comprise reused, secondary or recycled content (including excavated and other arisings); support the drive to a circular economy; or in some other way reduce lifetime environmental impacts.	

18.4.7 The sensitivity of waste relates to availability of landfill capacity in the absence of the Proposed Development. As outlined in the IEMA Guidance “landfill capacity is recognised as an unsustainable and increasingly scarce option for managing waste”. The sensitivity of landfill capacity is assessed based on a review of historic landfill void capacity trends where available and information from relevant policy documents.

18.4.8 The criteria described within **Table 18-6** and **Table 18-7** are used to determine the sensitivity of landfill capacity.

Formatted: Font: Bold

Formatted: Font: Bold

Table 18-6: Inert and Non-hazardous Landfill Capacity Sensitivity

Effects	Criteria for inert and non-hazardous landfill capacity sensitivity
Across construction and/or operation phases, the baseline/future baseline (i.e., without the Proposed Development) of regional inert and non-hazardous landfill capacity is expected to:	
Negligible	remain unchanged or is expected to increase through a committed change in capacity.
Low	reduce minimally by <1% as a result of wastes forecast.
Medium	reduce noticeably by 1-5% as a result of wastes forecast.
High	reduce considerably: by 6-10% as a result of wastes forecast.
Very High	reduce very considerably (by >10%); end during construction or operation; is already known to be unavailable; or, would require new capacity or infrastructure to be put in place to meet forecast demand.

Table 18-7: Hazardous Landfill Capacity Sensitivity

Effects	Criteria for hazardous landfill capacity sensitivity
Across the construction and/or operation phases, the baseline/future baseline (i.e., without the Proposed Development) of regional (or where justified, national) hazardous landfill capacity is expected to:	
Negligible	remain unchanged or is expected to increase through a committed change in capacity.
Low	reduce minimally: by <0.1% as a result of wastes forecast.
Medium	reduce noticeably: by 0.1-0.5% as a result of wastes forecast.
High	reduce considerably: by 0.5-1% as a result of wastes forecast.
Very High	reduce very considerably (by >1%); end during construction or operation: is already known to be unavailable; or, would require new capacity or infrastructure to be put in place to meet forecast demand.

Magnitude

18.4.9 The magnitude of impact describes the degree of variation from the baseline conditions as result of the Proposed Development. The methodology for assessing the magnitude of impact on materials comprises a percentage-based approach that determines the influence of construction materials use on the baseline national demand from the construction of the Proposed Development. The criteria used to assess the magnitude of impact for materials are provided within **Table 18-8**.

Table 18-8: Materials Magnitude of Impacts

Effects	Criteria for materials magnitude of impacts
No change	No consumption of materials is required.
Negligible	Consumption of no individual material type is equal to or greater than 1% by volume of the national* baseline availability.
Low	Consumption of one or more materials is between 1-5% by volume of the national* baseline availability.
Medium	Consumption of one or more materials is between 6-10% by volume of the national* baseline availability.
High	Consumption of one or more materials is >10% by volume of the national* baseline availability.
<i>*a national baseline is used in the absence of regional construction material consumption data for all key materials</i>	

18.4.10 The methodology for assessing the magnitude of impact for waste comprises a percentage-based approach that determines the influence of waste generation from the construction phase of the Proposed Development on the baseline landfill capacity. The criteria used to assess the magnitude of impact for resources and waste are provided within **Table 18-9** and **Table 18-10**.

Formatted: Font: Bold

Formatted: Font: Bold

Formatted: Font: Bold

Table 18-9: Inert and Non-hazardous Waste - Magnitude of Impact

Effects	Criteria for waste magnitude of impacts
No change	Zero waste generation and disposal from the development.
Negligible	Waste generated by the development will reduce Study Area landfill capacity baseline [#] by <1%
Low	Waste generated by the development will reduce Study Area landfill capacity baseline [#] by 1-5%
Medium	Waste generated by the development will reduce Study Area landfill capacity baseline [#] by 6-10%.
High	Waste generated by the development will reduce Study Area landfill capacity baseline [#] by >10%

Forecast as the worst-case scenario, during a defined construction and/or operational phase.

Table 18-10: Hazardous Waste - Magnitude of Impact

Effects	Criteria for waste magnitude of impacts
No change	Zero waste generation and disposal from the development.
Negligible	Waste generated by the development will reduce Study Area landfill capacity baseline [#] by <0.1%
Low	Waste generated by the development will reduce Study Area landfill capacity baseline [#] by <0.1-0.5%
Medium	Waste generated by the development will reduce Study Area landfill capacity baseline [#] by <0.5-1%
High	Waste generated by the development will reduce Study Area landfill capacity baseline [#] by >1%

Forecast as the worst-case scenario, during a defined construction and/or operational phase.

Significance Criteria

18.4.11 **Table 18-11** ~~Table 18-11~~ describes the effect thresholds used in determining the significance of potential effects as reproduced from the IEMA Guidance and so differs slightly from the terminology presented within *ES Volume II Chapter 5: EIA Methodology (Application Document 6.2.5)*.

Formatted: Font: Bold

Table 18-11: Significance of Effect Matrix

		Magnitude of Impact				
		No change	Negligible	Minor	Moderate	Major
Sensitivity of Receptor	Very High	Neutral	Slight	Moderate or Large	Large or Very Large	Very Large
	High	Neutral	Slight	Slight or Moderate	Moderate or Large	Large or Very Large
	Medium	Neutral	Neutral or Slight	Slight	Moderate	Moderate or Large
	Low	Neutral	Neutral or Slight	Neutral or Slight	Slight	Slight or Moderate
	Negligible	Neutral	Neutral	Neutral or slight	Neutral or slight	Slight

18.4.12 Any effects which are considered to be either Neutral or Slight are not considered to be significant. Effects which are classed as either Moderate, Large or Very Large are considered to be significant effects for the purposes of this assessment.

Assumptions and Limitations

18.4.13 A 5 % wastage rate has been applied to all construction materials. However, it is anticipated that a number of items would not produce wastage.

18.4.14 It is assumed that all waste would be disposed of to landfill, however in practice a large proportion of non-hazardous and inert waste from the Proposed Development is likely to be recovered rather than disposed of to landfill, further reducing the overall quantities of waste for disposal.

18.4.15 The material and waste assessment has been undertaken on the basis of information available at the time of the assessment.

18.5 Baseline Conditions and Study Area

Study Areas

18.5.1 The Study Areas for the assessment of impacts related to materials and waste have been defined in line with the IEMA Guidance.

18.5.2 Within this section, Study Areas are defined for the following:

- Construction waste generation;
- Use of construction materials (key construction materials only);
- Non-hazardous, inert, and hazardous construction waste management;
- Availability of key construction materials;
- Impacts on safeguarded mineral and waste sites;

- Presence of MSAs for context (a study area for MSAs is not defined in the IEMA Guidance); and
- Presence of historic landfills within 1km of the DCO Site Boundary (a study area for historic landfills is not defined in the IEMA Guidance, 1km is deemed to be an appropriate buffer to take account of minor changes to the DCO Site Boundary).

Study Area for the use of construction materials

18.5.3 The Study Area is defined by the location in which construction materials would be used. The Study Area for the use of construction and operation materials (key construction materials only) therefore comprises the DCO Site Boundary.

Study Area for construction waste generation

18.5.4 The Study Area is defined by the location in which construction waste would be generated. The Study Area for construction waste generation therefore comprises the DCO Site Boundary.

18.5.5 The DCO Site Boundary are used as the Study Area for the assessment of impacts on safeguarded mineral and waste sites as the only potential impacts are direct impacts.

Study Area for non-hazardous and inert waste management

18.5.6 The Study Area for non-hazardous waste management comprises the East Midlands and Yorkshire and the Humber. The Study Area includes the following sub-regions as outlined in the EA's 2020 Waste Summary Tables for England - Version 2 last updated in May 2022 ([Ref 18-8](#)~~Ref 18-8~~):

- Lincolnshire, Derbyshire, Leicestershire, Northamptonshire and Nottinghamshire; and
- Former Humberside, North Yorkshire, South Yorkshire, West Yorkshire.

18.5.7 The Study Area for non-hazardous and inert waste management is defined based on professional judgement and informed by consideration of the proximity principle. The proximity principle requires waste to be disposed as close to the place of production as possible. This avoids passing the environmental costs of waste management to communities which are not responsible for its generation and reduces the environmental costs of transporting waste. The Study Area has been determined to comprise the wider region within which landfill capacity is located i.e., East Midlands region and the Yorkshire and the Humber region since the Proposed Development is located close to the northern border of the East Midlands and waste could be managed in either region.

Study Area for hazardous waste management

18.5.8 The Study Area for hazardous waste management is England. The Study Area is defined based on professional judgement and informed by consideration of the proximity principle. The proximity principle for hazardous waste in England is outlined in Principle 2 - Infrastructure Provision in the Strategy for Hazardous Waste Management in England *"We look to the market for the development of hazardous waste infrastructure, which implements the hierarchy for the management of hazardous waste and meets the needs of the UK to ensure that the country as a whole is self sufficient in hazardous waste disposal, facilities are put in place for hazardous waste recovery in England, and the proximity principle is met"* ([Ref 18-21](#)~~Ref 18-24~~). Planning for hazardous waste management is also undertaken at a national level.

Study Area for availability of key construction materials

18.5.9 The Study Area for availability of key construction materials (aggregates, asphalt, concrete and steel) is national (United Kingdom (UK) or Great Britain (GB)) dependent on baseline

Formatted: Font: (Default) +Headings (Arial), Not Bold, Font color: Auto

Formatted: Font: (Default) +Headings (Arial), Not Bold, Font color: Auto

information availability) and regional (aggregates, asphalt and concrete). The assessment is conducted at both a national and regional level because construction materials could be sourced with the region or nationally depending on construction material type.

Baseline Conditions

Sensitive receptors

18.5.10 The sensitive receptors for this assessment of construction impacts are:

- Materials, national consumption of key construction materials – as outlined in the IEMA guidance *“materials are, in their own right, sensitive receptors. Consuming materials impacts upon their immediate and (in the case of primary material) long-term availability; this results in the depletion of natural resources and adversely impacts the environment.”*
- Landfill void capacity in the Study Areas of East Midlands and Yorkshire and the Humber (non-hazardous landfill void capacity) and England (hazardous landfill void capacity) – as defined in the IEMA guidance *“landfill is a finite resource, and hence – through the ongoing disposal of waste – there is a continued need to expand existing and develop new facilities, this requires the depletion of natural and other resources which, in turn, adversely impacts the environment.”*

Sections of the DCO Site Boundary

18.5.11 Due to the length of the Proposed Development, to aid in providing a suitable description of the existing baseline conditions, the DCO Site Boundary has been split in to five sections:

- Section 1 Rosper Road to A180;
- Section 2 A180 to A46;
- Section 3 A46 to Pear Tree Lane;
- Section 4 Pear Tree Lane to Manby Middlegate (B1200); and
- Section 5 Manby Middlegate (B1200) to Theddlethorpe and down to Mean Low Water Spring (MLWS).

National and Regional Availability of Key Construction Materials

18.5.12 At the time of writing, the exact quantities of key construction materials required for the Proposed Development cannot be specified as the design is outline only and Front-End Engineering Design (FEED) has not been undertaken. Consequently, reasonable worst-case estimates have therefore been used in the assessment provided by the engineering team and based upon previous pipeline construction experience.

18.5.13 Data from the UK and GB has been used to establish a quantitative national and regional baseline of the consumption for key construction materials.

~~18.5.13~~

18.5.14 ~~Table 18-12~~~~Table 18-12~~ summarises national consumption in 2018 for aggregates, asphalt, concrete and steel (the most recent years for which data is available), which are the key construction materials expected to be used during the construction of the Proposed Development. Regional data, sourced from the Profile of the UK Mineral Products Industry (2020 Edition) (~~Ref 18-33~~~~Ref 18-33~~), is presented in ~~Table 18-13~~~~Table 18-13~~. Construction material sales by region are provided for the regions surrounding the Proposed Development.

Formatted: Font: Bold

Formatted: Font: Not Bold

Formatted: Font: Bold

Table 18-12: National Consumption of Key Construction Materials

Material	National consumption/ sales (million tonnes, year)	Baseline data year	Data description	1% of national consumption/sales (tonnes)
Steel	17	2018	UK total consumption (Ref 18-32 Ref 48-32)	170,000
Aggregates of which:	251	2018	Minerals and mineral products sales in Great Britain (Ref 18-33 Ref 48-33)	2,510,000
Crushed rock	117.3			1,173,000
Sand and gravel - land won	48.9			489,000
Sand and gravel - marine	13.7			137,000
Recycled and secondary	71			710,000
Asphalt	25.4			254,000
Concrete of which:	86.2			862,000
Ready-Mixed Concrete	54.2			542,000
Concrete products	32			320,000

Formatted: Font: (Default) +Body (Arial), Not Bold, Font color: Black

Formatted: Font: (Default) +Body (Arial), Not Bold, Font color: Black

Table 18-13: Construction Material Sales by Region 2018 ([Ref 18-33](#)[Ref 48-33](#))

Construction material	East Midlands	Yorkshire and the Humber	Total	1% of regional material sales
Crushed rock (million tonnes)	26.5	11.5	38	380,000 tonnes
Sand and gravel (million tonnes)	6.1	2.3	8.4	84,000 tonnes
Ready-mixed concrete (million m ³ converted to tonnes based on a density of 2.4 tonnes/m ³)	3.4	2.9	6.2	62,400 tonnes
Asphalt (million tonnes)	2.8	2.1	4.9	49,000 tonnes

Formatted: Font: (Default) +Headings (Arial), Font color: Accent 1

Formatted: Font: (Default) +Headings (Arial), Bold, Font color: Accent 1, Check spelling and grammar

Formatted: Font: (Default) +Headings (Arial), Font color: Accent 1

Formatted: Font: (Default) +Headings (Arial), Bold, Font color: Accent 1, Check spelling and grammar

18.5.15 Potential recycled contents for the main construction materials are outlined in **Table 18-14**.

Formatted: Font: Bold

18.5.16 These “good practice” rates are derived from WRAP’s Designing Out Waste Tool for Civil Engineering (Ref 18-34) and demonstrate potential recycled contents for key construction materials to provide an indication of material sensitivity as outlined in paragraph 18.7.4.

Formatted: Font: (Default) +Headings (Arial), Not Bold, Font color: Auto

Table 18-14: Potential Recycled Content

Material type	Potential recycled content (% by weight)
Concrete	16
Asphalt	25
Aggregates	50
Steel reinforcement	100
Structural steel	60
Steel pipework	0

Mineral Safeguarding Areas

18.5.17 All relevant documents have been reviewed including the Lincolnshire Minerals and Waste Local Plan which includes Figure 1: Lincolnshire MSAs Map. MSAs in proximity to the DCO Site Boundary have been reviewed.

18.5.18 The IEMA Guidance does not include assessment of impacts on MSAs in a materials and waste assessment, although MSAs are identified in this chapter to provide context. MSAs are considered in the Planning Statement submitted with the development consent order (DCO) application (Application Document 7.1).

18.5.19 In North East Lincolnshire the DCO Site Boundary passes through a MSA for sand and gravel. The DCO Site Boundary does not pass through any other MSAs in any other local authorities (Lincolnshire County Council, East Lindsey District Council, West Lindsey District Council, or North Lincolnshire Council).

Safeguarded Mineral Sites

18.5.20 The DCO Site Boundary does not pass through any safeguarded mineral sites.

Safeguarded Waste Sites

18.5.21 SAR Recycling Ltd / SAR Metals is a safeguarded waste site in the North East Lincolnshire Local Plan (Ref 18-26). The location on the associated polices map is not within the DCO Site Boundary.

Formatted: Font: (Default) +Headings (Arial), Not Bold, Font color: Auto

18.5.22 Autby House Materials Recycling Facility/JA Young Plastics/JAY PLAS is a safeguarded waste site in the Lincolnshire Minerals and Waste Local Plan (Ref 18-22) within 244m of the DCO Site Boundary that has two access routes that pass through the DCO Site Boundary.

Formatted: Font: (Default) +Headings (Arial), Not Bold, Font color: Auto

18.5.23 Details are presented in **Table 18-15** below for both sites.

Formatted: Font: Bold

Table 18-15: Safeguarded Waste Facilities

Local Plan reference	Licence Number	Site Name	Site location	Licence Type	Operator	Licence Status	Distance from DCO Site Boundary
North East Lincolnshire WM04, Policy 48 (Ref 18-26Ref 18-26)	SAR005 and SAR001	SAR Recycling Ltd / SAR Metals	RJA House, Manby Rd, South Killingholme, Immingham, DN40 2DW	A20: Metal Recycling Site (mixed MRS's)	SAR Recycling Ltd / SAR. Metals Limited	Modified and Pollution Prevention and Control (PPC)	1,196m and 1,216m (Section 1)
Lincolnshire Waste Site Number 58 (Ref 18-22Ref 18-22)	YOU022	Autby House Materials Recycling Facility / JA Young Plastics / JAY PLAS	Autby House, Autby Drive, North Thoresby, Grimsby, N E Lincs, DN36 5SB	A15: Material Recycling Treatment Facility	J And A Young (Leicester) Ltd	Modified	244m– access routes pass within DCO Site Boundary (Section 3)

Formatted: Font: 11 pt, Not Bold, Font color: Black, English (United States)

Formatted: Font: 11 pt, Font color: Black, English (United States)

Formatted: Font: 11 pt, Not Bold, Font color: Black, English (United States), Do not check spelling or grammar

Formatted: Font: 11 pt, Font color: Black, English (United States)

Formatted: Font: 11 pt, Not Bold, Font color: Black, English (United States)

Formatted: Font: 11 pt, Font color: Black, English (United States)

Formatted: Font: 11 pt, Not Bold, Font color: Black, English (United States), Do not check spelling or grammar

Formatted: Font: 11 pt, Font color: Black, English (United States)

18.5.24 Humber Refinery, Conoco Ltd (Licence Number CON001, now operated by Phillips 66) is a permitted waste site within the DCO Site Boundary. The site is not safeguarded.

18.5.25 A further twelve waste sites are located in close proximity (less than 1.5km) to the DCO Site Boundary as outlined in Environmental Permitting Regulations - Waste Sites (Ref 18-35Ref 18-35). These sites are not safeguarded. The details of these sites are presented in **Table 18-17Table 18-17**.

Formatted: Font: Not Bold

Formatted: Font: Bold

Waste Management Infrastructure

18.5.26 The IEMA Guidance (page 14) “does not consider waste processing and recovery facilities as sensitive receptors, rather: they are part of a system that has the potential to reduce the magnitude of adverse impacts associated with waste generation and disposal. Waste processing and recovery facilities are, hence, different to landfills, in that the latter are finite resources.” Therefore, a full list of waste management infrastructure in the region is not included in the baseline. A summary of waste inputs in the region is included to demonstrate capacity is available to receive waste that may not be suitable for landfill disposal e.g., liquids.

18.5.27 The permitted capacity of waste infrastructure is publicly available (e.g., Environmental Permitting Regulations - Waste Sites (Ref 18-35Ref 18-35), however the permitted capacity is not necessarily representative of the actual operational capacity of the infrastructure. Therefore data are collated for the Study Areas from the EA's Waste Data Interrogator 2021 – Waste Received (Excel) – Version 1 last updated September 2022 (Ref 18-35Ref 18-35) and presented in **Table 18-16Table 18-16**.

Formatted: Font: (Default) +Headings (Arial), Not Bold, Font color: Auto

Formatted: Font: (Default) +Headings (Arial), Not Bold, Font color: Auto

Formatted: Font: Bold

18.5.28 Inputs are not totalled since there will be double counting of waste in the Waste Data Interrogator as waste is transferred between different facilities.

Table 18-16: Summary of Waste Inputs by Facility 2021

Facility type	East Midlands (tonnes received)	Yorkshire and the Humber (tonnes received)
Landfill	4,238,163	4,501,192
Metal Recovery Sites	843,958	1,817,180
On/In Land	551,542	1,397,745
Transfer	4,588,886	5,394,163
Treatment	7,389,323	14,703,527
Combustion	72,986	71,810
Incineration	1,006,895	2,908,832
Mining	4,575	752
Storage	146,905	315,692
Processing	185,618	534,065

18.5.29 Waste sites (permitted and surrendered) and waste site permit applications as outline in the Environmental Permitting Regulations - Waste Sites (~~Ref 18-35~~~~Ref 18-35~~) located in close proximity (less than 1.5km) to the DCO Site Boundary are presented in ~~Table 18-17~~~~Table 18-17~~, ~~Table 18-18~~~~Table 18-18~~ and ~~Figure 18-1~~~~Figure 18-4~~ below.

Formatted: Font: (Default) +Headings (Arial), Not Bold, Font color: Auto

Formatted: Font: Bold

Formatted: Font: Bold

Formatted: Font: Bold

Table 18-17: Local Permitted and Surrendered Waste Sites

Licence Number	Site Name	Site location	Licence Type	Operator	Licence Status	Distance from DCO Site Boundary (m) and Section
LIN013	Lindsey Oil Refinery	Humber Refinery, South Killingholme, Grimsby, N E Lincs, DN40 3DW	A23: Biological Treatment Facility	Lindsey Oil Refinery Ltd	Surrendered	573m Section 1
EUR092	Kiln Lane Wellsite	Land At Mauxhall Farm, Off Stallingborough Road, Immingham, postcode not provided	A30: Mining Waste Operations	Europa Oil & Gas Limited	Surrendered	1,303m Section 1
LIN014	Total Lindsey Oil Refinery	Lindsey Oil Refinery, North Killingholme, Immingham, DN40 3LW	A07: Industrial Waste Landfill (Factory Curtilage)	Prax Lindsey Oil Refinery Ltd	Modified	1,463m Section 1
IPC024	Lindsey Oil Refinery Site A & C	Lindsey Oil Refinery, North Killingholme, Immingham, DN40 3LW	A04: Household, Commercial & Industrial Waste Landfill	Lindsey Oil Refinery Ltd	To Pollution Prevention Control (PPC)	1,463m Section 1
WAS004	South Killingholme C A Site	Eastfield Road, South Killingholme, Grimsby, N E Lincs, DN40 3NB	A13: Household Waste Amenity Site	Wastewise Waste Management Services Ltd	Surrendered	1,156m Section 1
DFD001	DFDS Seaways Plc	Nordic House, Western Access Road, Immingham Dock, N E Lincs, DN40 2LZ	A11: Household, Commercial and Industrial Waste Transfer Station	DFDS Seaways Plc	Modified	1,057m Section 1
TIO003	Landfill Site - South Killingholme Tioxide Europe Ltd	Humber Road, Grimsby, N E Lincs	A07: Industrial Waste Landfill (Factory Curtilage)	Tioxide Europe Ltd	Surrendered	108m Section 1

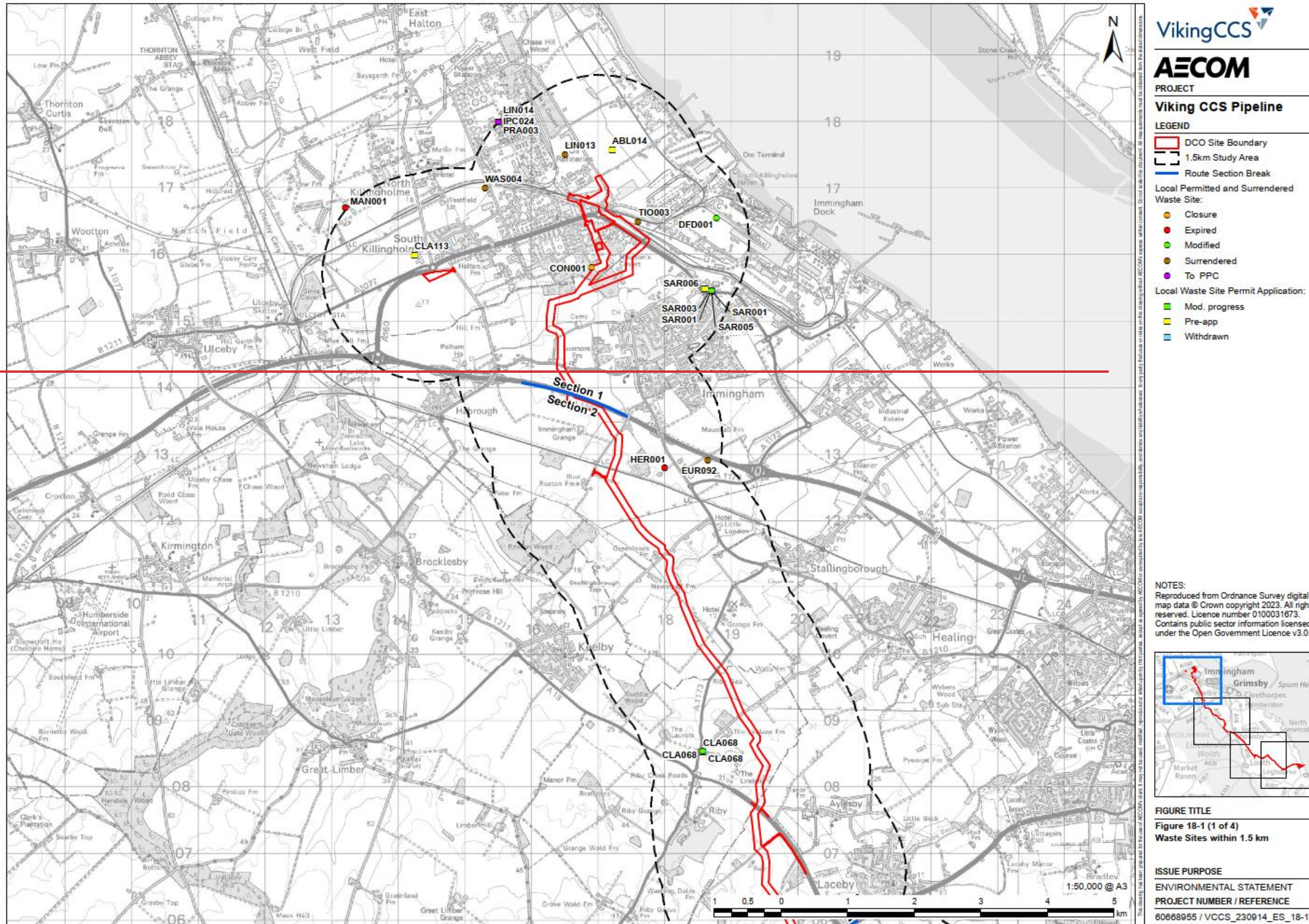
Licence Number	Site Name	Site location	Licence Type	Operator	Licence Status	Distance from DCO Site Boundary (m) and Section
CON001	Humber Refinery, Conoco Ltd	Humber Refinery, South Killingholme, Grimsby, N E Lincs, DN40 3DW	A23: Biological Treatment Facility	Phillips 66 Limited	Closure	0m Section 1
HER001	Tara's Pet Crematorium	Land/premises At Immingham Road, Stallingborough, N E Lincs, DN37 8BP	A18: Incinerator	Mr V M Herbert & Mrs G E Herbert	Expired	678m Section 2
CLA068	Clarkeson Organic Recycling	Clarkeson Recycling, Wells Road, Riby, Grimsby, N E Lincs, DN37 8NQ	A22: Composting Facility	Clarkeson Recycling	Modified	714m Section 2
BRI264	Willow Lakes	Barton Street, Ashby cum Fenby, N E Lincs, DN31 2TG	SR/08: Inert & Excavation Waste Transfer Station and Treatment	Brianplant (Humberside) Ltd	Surrendered	1,215m Section 2
SCA001	Mr R. Scaman, Little Grimsby	Grange Farm, Little Grimsby, Louth, Lincolnshire, LN11 0TZ	A18: Incinerator	Scaman R	Surrendered	239m Section 4

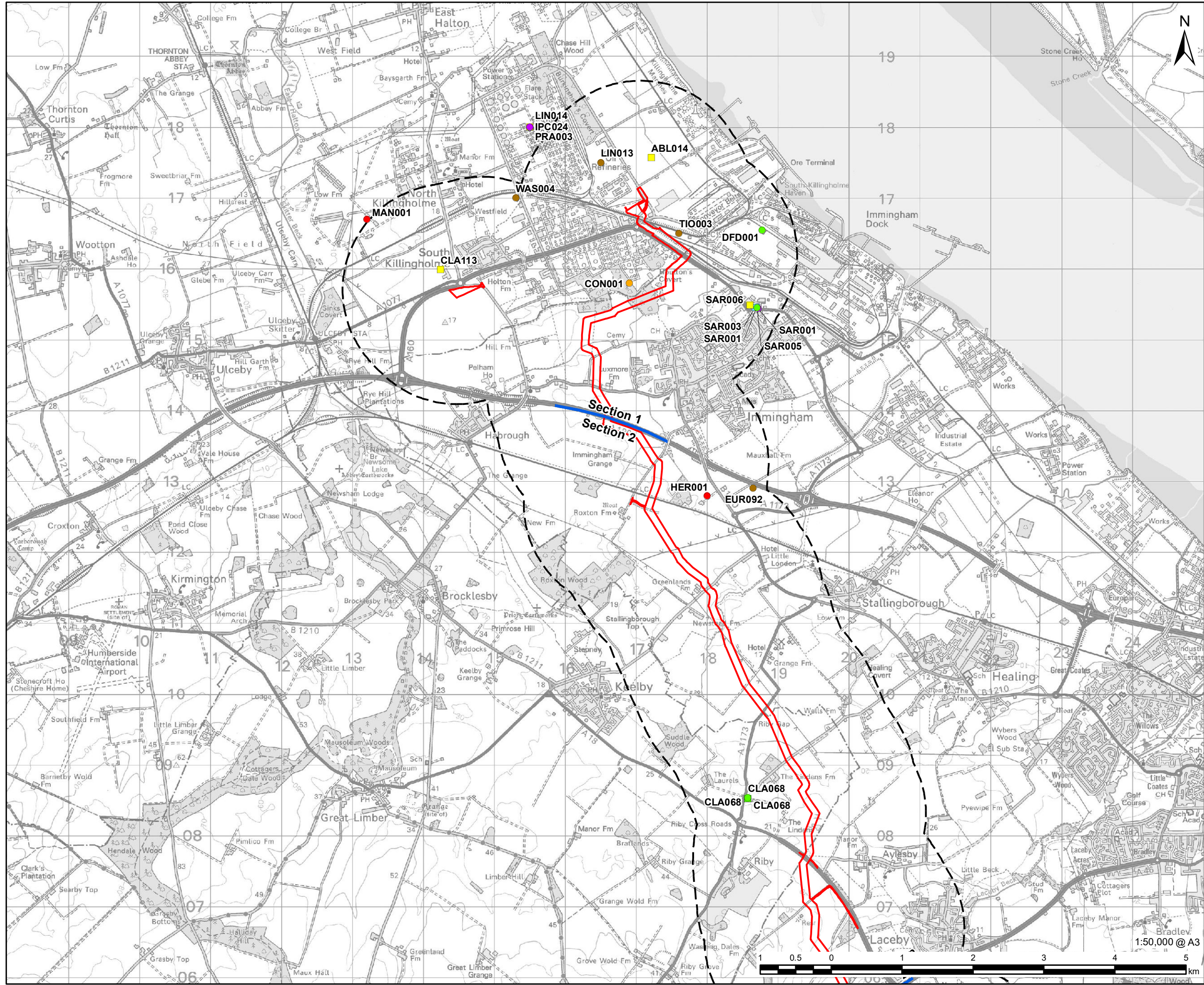
Table 18-18: Local Waste Site Permit Applications

Ref.	Site Name	Site location	Licence Type	Operator	Licence Status	Dist. from DCO Site Boundary and route Section
ABL014	Able Humber Ports	Rosper Road, South Killingholme, Immingham, N E Lincs, DN40 3DZ	Not listed	Able UK Ltd	Pre-application (Pre-app)	416m Section 1
CLA113	The Poplars	The Poplars, Ulceby Rd, South Killingholme, Immingham DN40 3JB	Not listed	Clarkeson Recycling Limited	Pre-app	312m Section 1
SAR006	S A R Metals Limited	Unit 1, Pelham Industrial Estate, Manby Road Industrial Estate, Immingham, N E Lincs, DN40 2LF	Not listed	S A R Metals Limited	Pre-app	1,090m Section 1
SAR003	S A R Metals Limited	Phoenix House, Manby Road Industrial Estate, Immingham, N E Lincs, DN40 2LG	S1517: Vehicle Depollution Facility	S A R Metals Limited	Withdrawn	1,172m Section 1
SAR001	S A R Recycling Ltd	Units 1 & 2, Pelham Industrial Estate, Manby Road Industrial Estate, Immingham, N E Lincs, DN40 2LF	A15: Material Recycling Treatment Facility	S A R Recycling Limited	Withdrawn	1,188m Section 1

Ref.	Site Name	Site location	Licence Type	Operator	Licence Status	Dist. from DCO Site Boundary and route Section
PRA003	Total Lindsey Oil Refinery	Not listed	A07: Industrial Waste Landfill (Factory curtilage)	Prax Lindsey Oil Refinery Limited	Pre-app	1,463m Section 1
CLA068 and CLA068	Clarkeson Organic Recycling	Wells Road, Riby, Grimsby, N E Lincs, DN37 8NQ	S0816 and A22: Composting in Open Windrows	Clarkeson Recycling Ltd	Withdrawn / Modification in Progress	719m Section 2
PET575	Barton Street Pit	Barton Street, East Ravendale	A05: Landfill taking Non-Biodegradable Wastes	Peter Strawson Limited	Pre-app	1,240m Section 3
NOB001	Vilamoura	Meadow Ln, North Cockerington, Louth LN11 7ER	Not listed	Noble Matthew	Pre-app	851m Section 4

Figure 18-1: Waste Sites (Permitted, Surrendered and Permit Applications)





- LEGEND**
- DCO Site Boundary
 - 1.5km Study Area
 - Route Section Break
- Local Permitted and Surrendered Waste Site:
- Closure
 - Expired
 - Modified
 - Surrendered
 - To PPC
- Local Waste Site Permit Application:
- Mod. progress
 - Pre-app
 - Withdrawn

NOTES:
 Reproduced from Ordnance Survey digital map data © Crown copyright 2024. All rights reserved. Licence number 0100031673.
 Contains public sector information licensed under the Open Government Licence v3.0.

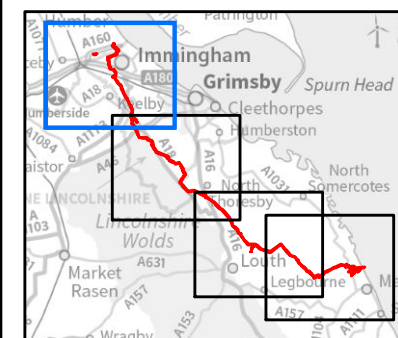
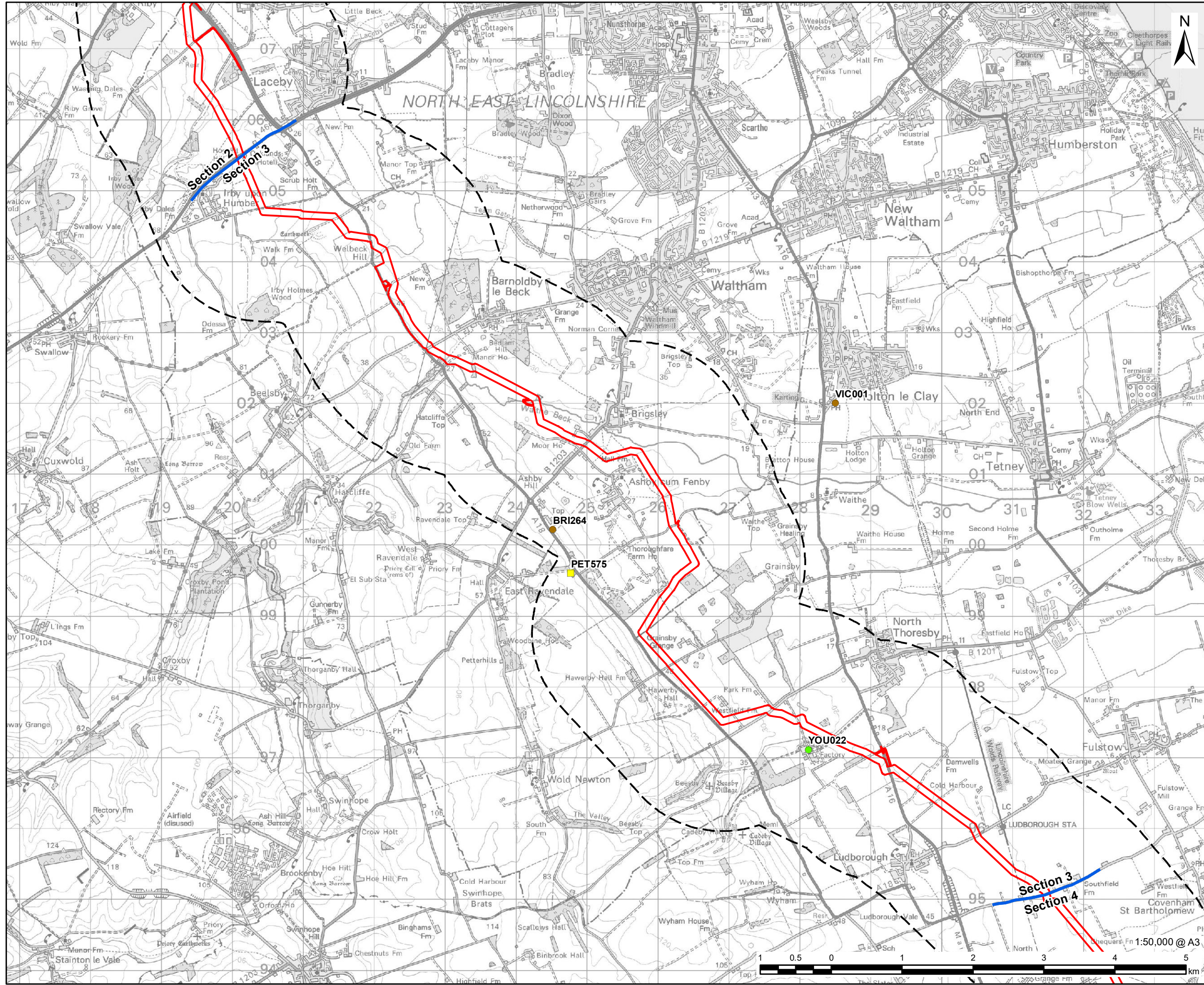


FIGURE TITLE

Figure 18-1 (1 of 4)

Waste Sites within 1.5 km

This drawing has been prepared for the use of AECOM's client. It may not be used, modified, reproduced or relied upon by third parties, except as signed by AECOM or as required by law. AECOM accepts no responsibility, and denies any liability whatsoever, to any party that uses or relies on this drawing without AECOM's express written consent. Do not scale this document. All measurements must be obtained from the stated dimensions.



LEGEND

- DCO Site Boundary
- 1.5km Study Area
- Route Section Break

Local Permitted and Surrendered Waste Site:

- Modified
- Surrendered

Local Waste Site Permit Application:

- Pre-app

NOTES:
 Reproduced from Ordnance Survey digital map data © Crown copyright 2024. All rights reserved. Licence number 0100031673. Contains public sector information licensed under the Open Government Licence v3.0.

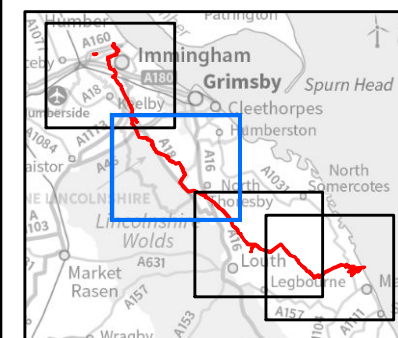
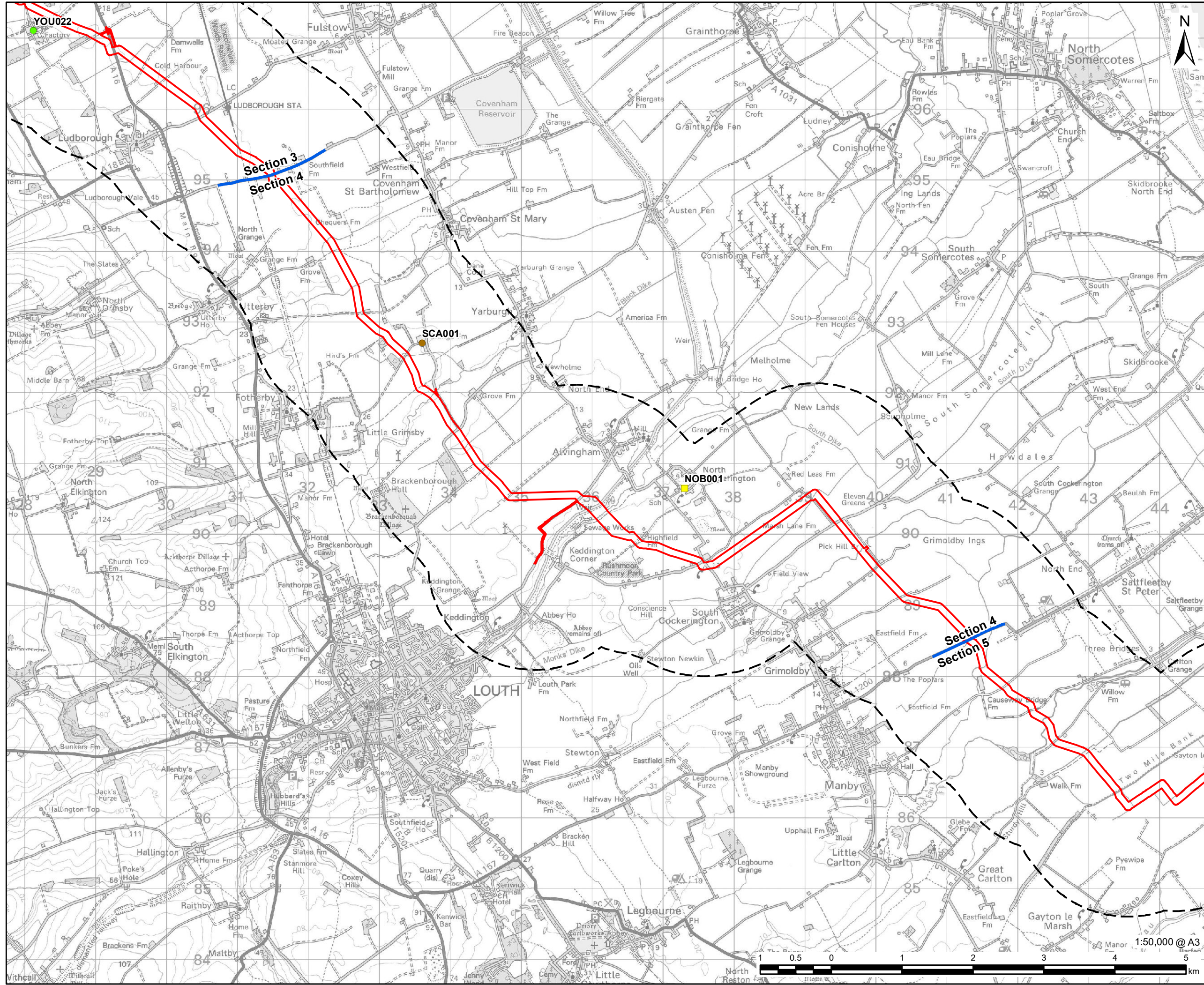


FIGURE TITLE

Figure 18-1 (2 of 4)
Waste Sites within 1.5 km

This drawing has been prepared for the use of AECOM's client. It may not be used, modified, reproduced or relied upon by third parties, except as signed by AECOM or as required by law. AECOM accepts no responsibility, and denies any liability whatsoever, to any party that uses or relies on this drawing without AECOM's express written consent. Do not scale this document. All measurements must be obtained from the stated dimensions.



LEGEND

- DCO Site Boundary
- 1.5km Study Area
- Route Section Break
- Local Permitted and Surrendered Waste Site:
 - Modified
 - Surrendered
- Local Waste Site Permit Application:
 - Pre-app

NOTES:
 Reproduced from Ordnance Survey digital map data © Crown copyright 2024. All rights reserved. Licence number 0100031673.
 Contains public sector information licensed under the Open Government Licence v3.0.

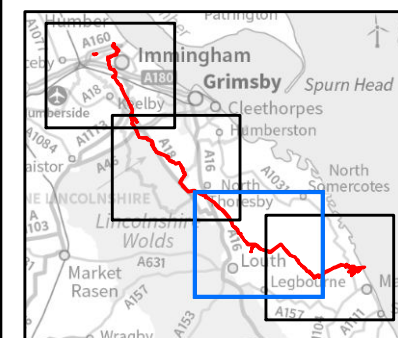
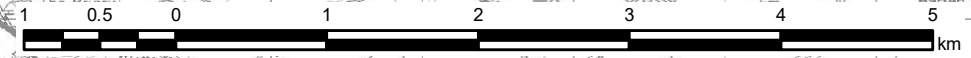
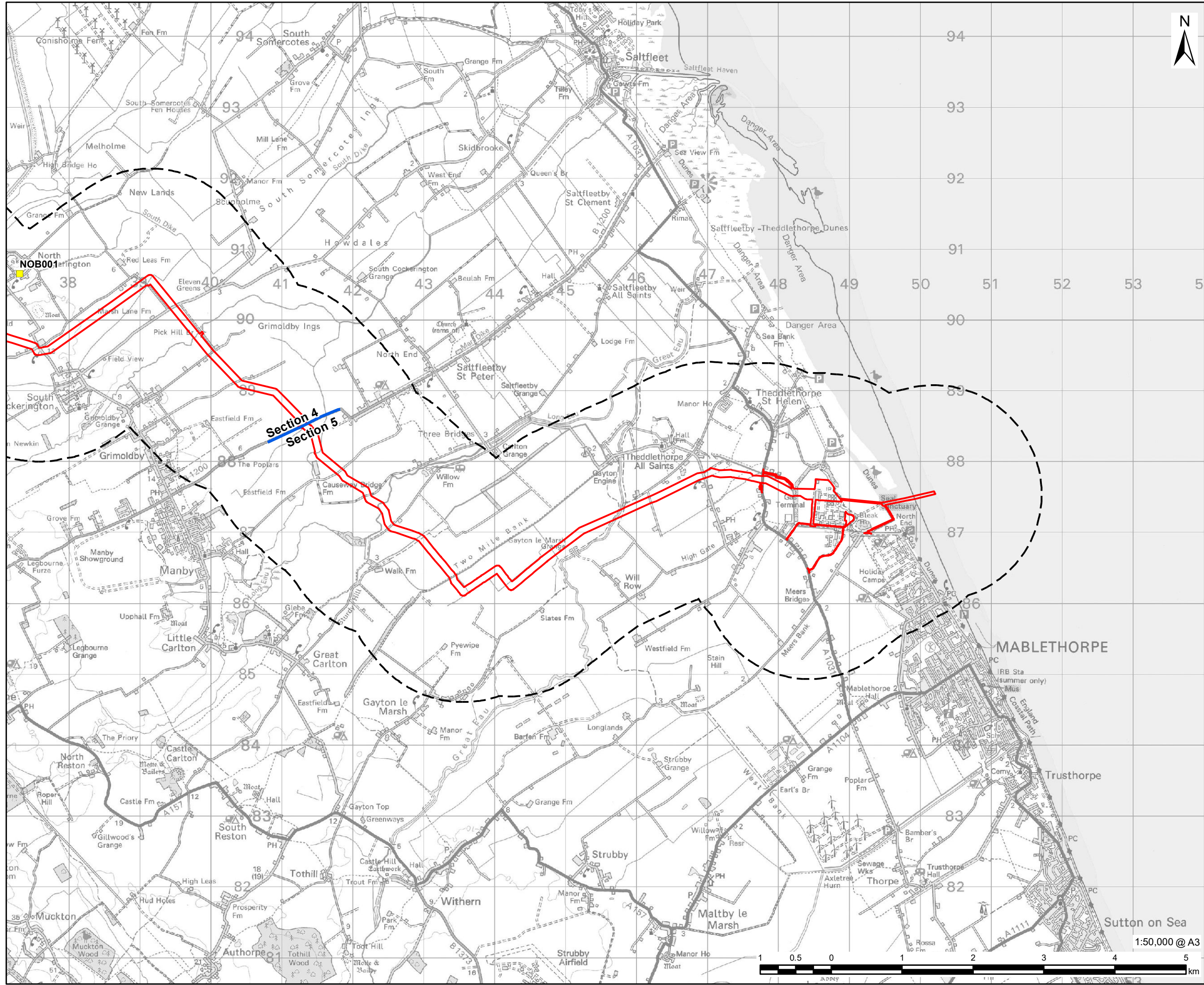


FIGURE TITLE
Figure 18-1 (3 of 4)
Waste Sites within 1.5 km

This drawing has been prepared for the use of AECOM's client. It may not be used, modified, reproduced or relied upon by third parties, except as signed by AECOM or as required by law. AECOM accepts no responsibility, and denies any liability whatsoever, to any party that uses or relies on this drawing without AECOM's express written consent. Do not scale this document. All measurements must be obtained from the stated dimensions.





LEGEND

- DCO Site Boundary
- 1.5km Study Area
- Route Section Break
- Local Waste Site Permit Application: Pre-app

NOTES:
 Reproduced from Ordnance Survey digital map data © Crown copyright 2024. All rights reserved. Licence number 0100031673.
 Contains public sector information licensed under the Open Government Licence v3.0.

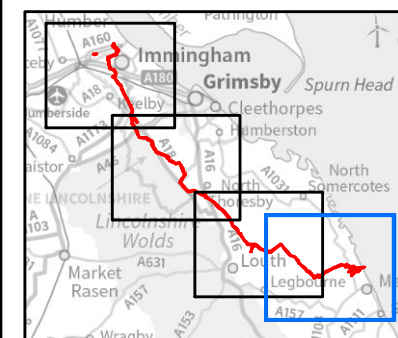


FIGURE TITLE
Figure 18-1 (4 of 4)
Waste Sites within 1.5 km

This drawing has been prepared for the use of AECOM's client. It may not be used, modified, reproduced or relied upon by third parties, except as signed by AECOM or as required by law. AECOM accepts no responsibility, and denies any liability whatsoever, to any party that uses or relies on this drawing without AECOM's express written consent. Do not scale this document. All measurements must be obtained from the stated dimensions.

Landfill capacity

18.5.30 **Table 18-19** details the remaining landfill capacity at the end of 2021 as outlined on the EA's 2021 Waste Summary Tables for England – Version 1 (Ref 18-8) for the non-hazardous and inert waste Study Area (East Midlands and Yorkshire and the Humber) and the hazardous waste study area (England).

Formatted: Font: Bold, English (United States)

Formatted: Font: (Default) +Headings (Arial), Not Bold, Font color: Auto

18.5.31 Merchant landfills are operated for commercial purposes accepting waste from construction projects and operating businesses; merchant landfills are therefore considered to form the baseline. In contrast, 'restricted' landfills are sites that deal with their own produced waste and are not available to third parties; therefore, additional capacity from restricted landfills is excluded from the baseline. Some non-hazardous landfills also have a Stable Non-Reactive Hazardous Waste Cell (SNHRW) e.g., for asbestos, meaning they can also accept particular hazardous waste types but only if certain criteria are met.

Table 18-19: Landfill Capacity (2021) in East Midlands, Yorkshire and The Humber, and England

Landfill type	East Midlands	Yorkshire and the Humber	Total in East Midlands and Yorkshire and the Humber	1% Total landfill capacity in East Midlands and Yorkshire and the Humber	England	0.1% Total landfill capacity in England
Capacity ('000s m ³) unless otherwise stated						
Hazardous merchant	800	700	1,500	Not applicable hazardous landfill considered at a national level.	12,107	12,107 m ³
Non-hazardous with SNHRW cell	15,884	1,243	17,127	171,270 m ³	Not applicable - non-hazardous and inert landfill considered at a regional level.	
Non-hazardous	17,571	45,196	62,767	627,670 m ³		
Inert	21,574	25,283	46,857	468,570 m ³		
Total non-hazardous	55,029	25,283,717.22	80,312,126.751	803,120,126.751 m ³		

Formatted Table

18.5.32 In 2022 the EA published landfill capacity trends for 2004 to 2021 in the 2021 Waste Summary Tables for England (Ref 18-8). Figure 18-2 presents the historic trend for remaining landfill capacity for the East Midlands and Yorkshire and the Humber. Figure 18-3 presents the historic trend for remaining landfill capacity for England. Data are only available for "Inert" (inert landfill only) and "Non-Inert" (non-hazardous landfill sites, non-hazardous landfill sites with a SNHRW cell and merchant

Formatted: Font: (Default) +Headings (Arial), Not Bold, Font color: Auto

Formatted: Font: Not Bold, Font color: Auto

Formatted: Font: Bold

Formatted: Font: Bold

hazardous landfill sites) therefore the categories do not align with the 2021 landfill capacity data which are split by hazardous, non-hazardous and inert.

Figure 18-2: Historic Trend for Landfill Void Capacity in East Midlands and Yorkshire and the Humber

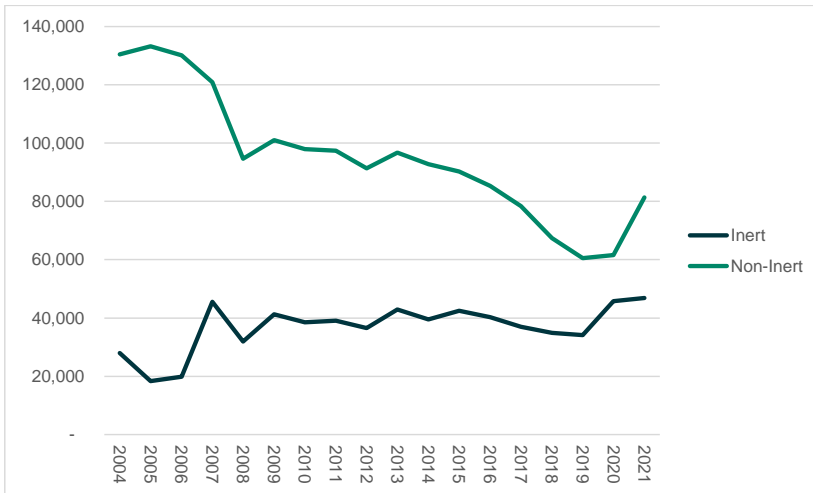
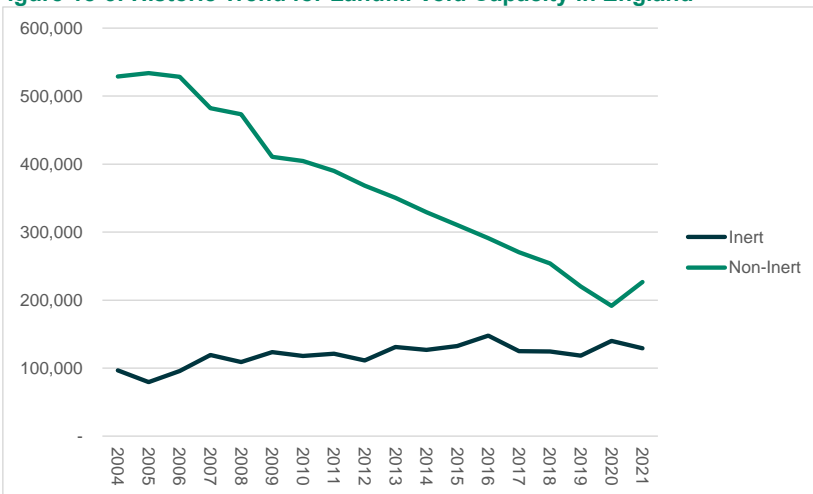


Figure 18-3: Historic Trend for Landfill Void Capacity in England



Historic and Permitted Landfills

18.5.33 The DCO Site Boundary does not pass through any “*Authorised Landfill Permitted Waste Sites*” as outlined in the EA’s Permitted Waste Sites - Authorised Landfill Site Boundaries spatial data (Ref 18-37Ref 18-37).

18.5.34 Historic landfills are relevant to this assessment since excavations in historic landfills can give rise to waste that would then require management. The EA’s Historic Landfill Sites spatial data (Ref 18-38Ref 18-38) identifies two historic landfill sites that fall within the

Formatted: Font: (Default) +Headings (Arial), Not Bold, Font color: Auto

Formatted: Font: Not Bold, Font color: Auto

Formatted: Font: (Default) +Headings (Arial), Not Bold, Font color: Auto

Formatted: Font: Not Bold, Font color: Auto

boundaries of the DCO Site Boundary, the first of which is over two distinct areas. This is referred to as “Conoco” (holder reference EAHL01519 and EAHL01518) and lies towards the northern extent of the DCO Site Boundary at approximate grid reference TA 17120 416024 and appears to lie within the site of the Phillips 66 Humber Refinery. The first input date is given as 30/06/1975 and the waste type is listed as industrial and liquid sludge. This site may be connected to a permitted waste site (A23: Biological Treatment Facility) with a status of being in closure (reference PW9 in Table 18-15 above). The second historic landfill site is referred to a “Aylesby” (EAHL01582) and lies south of Aylesby at approximate grid reference TA 20040 06837 adjacent to Barton Street. The first input date is given as 31/12/1984 and the waste type is listed as inert.

18.5.35 Works within these areas of historic landfill are not anticipated therefore no excavated material requiring waste management is expected to be generated from the historic landfills.

18.5.36 Several further historic landfill sites are located within close proximity (within 1km) of the DCO Site Boundary, the details of which are presented in **Table 18-20** below, listed from North to South.

Formatted: Font: Bold

Future Baseline

National and Regional Availability of Key Construction Materials

18.5.37 There is no publicly available information on any potential long-term changes to this national demand by the time the Proposed Development will be constructed. Construction material demand such as ready mixed concrete is closely aligned to both the quantity of construction taking place and the general economy, therefore based on professional judgement it is deemed inappropriate to forecast future demand as the demand is unlikely to be linear. It is therefore not possible to set a future baseline for resources. Therefore, future consumption is assumed to be the same as the current baseline as outlined in **Table 18-12** and **Table 18-13**.

Formatted: Font: Bold

Formatted: Font: Bold

Landfill Capacity

18.5.38 There is no publicly available information on any potential changes to this landfill capacity by the time of the construction of the Proposed Development. Due to the fluctuating nature of inert and hazardous landfill capacity, as shown in **Figure 18-2** and **Figure 18-3** respectively, it is not appropriate to forecast future landfill capacity since landfill capacity is unlikely to be linear and a forecast may result in an increase in landfill capacity which would not be considered a worst case scenario. On a precautionary basis a worst-case scenario is taken in the assessment. Therefore, inert landfill capacity is assumed to be the same as the current baseline as outlined in **Table 18-19**. For non-hazardous landfill capacity, using the current rate of decline of landfill capacity and forecasting into the future would lead to the inevitable conclusion that there would be no void space remaining. However, this is not a credible scenario: if there is still a need for landfill, then the WPA will need to consent new landfill capacity to replace that which has been used up. As part of their planning function, WPA are required to ensure that sufficient land is available to accommodate facilities for the treatment of all waste arising in the area, either within the WPA area, or through export to suitable facilities in other areas. Therefore, non-hazardous landfill capacity is also assumed to be the same as the current baseline as outlined in **Table 18-19**.

Formatted: Font: Bold

Formatted: Font: Bold

Formatted: Font: Bold

Formatted: Font: Bold

Table 18-20: Local Historic Landfill Sites

Holder Reference	Site Name	Site Location	Licence Type	Operator	Licence Status	Distance from DCO Site Boundary and route Section
EAHLD015 15	Lindsey Oil Refinery	Rosper Road, South Killingholme, Immingham DN40 3LW	Liquid sludge		Licensed - surrendered	411m Section 1
EAHLD015 93	Marsh Lane	South Killingholme, Immingham, South Humberside	Inert	Geostore Limited		604m Section 1
EAHLD015 76	Eastfield Road Landfill Site	Eastfield Road, South Killingholme, Grimsby, N E Lincs, DN40 3NB	Inert, industrial, commercial, household, special, liquid sludge	J W Stanley	Licensed - surrendered (gas control)	842m Section 1
EAHLD357 82	Landfill Site - South Killingholme	Humber Road, Grimsby, Lincolnshire	Industrial	Landfill Site - South Killingholme	Licensed - surrendered	26m Section 1
EAHLD344 15	South Killingholme Conoco	Southern Way, South Killingholme, Immingham DN40 2QN				668m Section 1
EAHLD008 86	Immingham West	Immingham West DN40 2QX	Inert, Household			999m Section 1
EAHLD015 19 and EAHLD015 18	Conoco	Manby Road, South Killingholme, Immingham DN40 3DX	Industrial, liquid sludge		Licensed - surrendered	0m Within DCO Site Boundary Section 1

Holder Reference	Site Name	Site Location	Licence Type	Operator	Licence Status	Distance from DCO Site Boundary and route Section
EAHLD009 35	Mill Lane	Mill Lane, Immingham	Industrial, commercial, household			189m Section 1
EAHLD008 94	Washingdales	Land Near Barton Street, Irby on Humber	Inert, industrial, household, liquid sludge			335m Section 2
EAHLD015 82	Aylesby	Land Near Barton Street, Aylesby, Cleethorpes	Inert - non-hazardous waste arising from the construction industry, factory solids and demolition waste	J Hurdiss Limited	Licensed - surrendered	0m Within DCO Site Boundary Section 2
EAHLD009 17	Cooper Lane	Cooper Ln, Laceby, Grimsby DN37 7AS	Industrial, household			723m Section 2
EAHLD009 06	Irby Upon Humber	Trunkass Lane, Irby Upon Humber, Cleethorpes	Industrial (exempt)			952m Section 3
EAHLD015 87	Barton Street	Barton Street, Waterdell, Hatcliffe, Grimsby	Inert, household, liquid sludge	Barton Street Tipping Comp-any	Licensed - surrendered	117m Section 3
EAHLD008 99	Hatcliffe Top	Hatcliffe Top, Grimsby DN37 0SG	Industrial, household (exempt)			436m Section 3

Holder Reference	Site Name	Site Location	Licence Type	Operator	Licence Status	Distance from DCO Site Boundary and route Section
EAHLD34546	Cadeby Hall B	Hawerby cum Beesby, Grimsby DN36 5PX	Industrial, household	Louth Rural District Council		522m Section 3
EAHLD01589	Beesby Farm	Barton Street, Hawerby cum Beesby, North Thorseby	Inert, industrial, commercial, household	Lincolnshire County Council	Licensed - surrendered	645m Section 3
EAHLD00026	OS Field No 9000	Off Station Road, Ludborough, Lincolnshire	Inert	J E Churchill Earthworks Limited	Licensed - surrendered	272m Section 4
EAHLD00028	The Old Cut	Theddlethorpe Hall Farm, Mablethorpe	Inert			511m Section 5

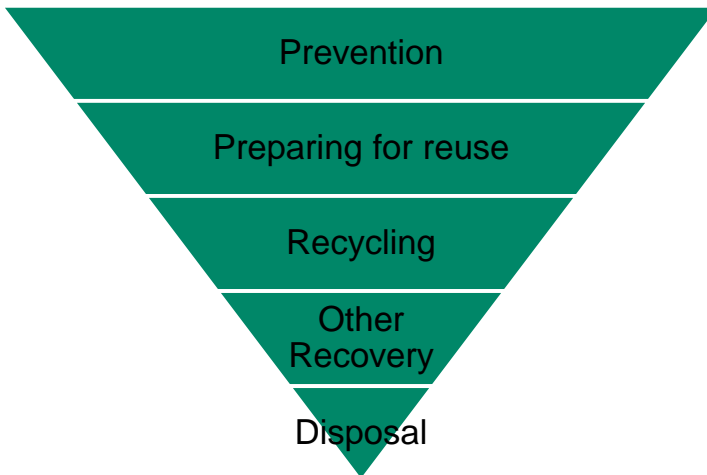
18.6 Development Design and Embedded Mitigation

- 18.6.1 EIA is an iterative process which informs the development of a project's design. Where the outputs of the preliminary assessment identify likely significant effects, changes to the design can be made or mitigation measures can be built-in to the proposal to reduce these effects.
- 18.6.2 This type of mitigation is defined as embedded mitigation, as mitigation measures that have been identified and adopted as part of the evolution of a project's design ("embedded" into the design).
- 18.6.3 The design of the Proposed Development has been further developed to reflect the findings of ongoing environmental studies, comments raised during the statutory consultation and ongoing engagement with stakeholders. As the design has developed, embedded mitigation measures have been refined as part of an iterative process.
- 18.6.4 Those embedded mitigations relevant to materials and waste are detailed below.

Embedded Mitigation

- 18.6.5 As described in the IEMA Guidance, embedded (primary) mitigation is the prevention or reduction of adverse effects through the resource-efficient design, construction and/or lifetime operation of a development.
- 18.6.6 Embedded mitigation measures are an intrinsic part of the Proposed Development. Such measures are often identified as a result of the interaction between the EIA and engineering specialists within a development team, who are able to identify and agree, by consensus, resource-efficient design solutions.
- 18.6.7 The Proposed Development will prioritise waste prevention, followed by preparing for reuse, recycling and recovery and lastly disposal to landfill as per the waste hierarchy (**Figure 18-4**).

Figure 18-4: The Waste Hierarchy (Ref 18-41Ref 18-41)



- 18.6.8 The following mitigation principles will be considered and implemented where applicable during the design phases and subsequent construction work:
- Design for reuse and recovery: identifying, securing and using materials that already exist on site, or can be sourced from other projects;

Formatted: Font: Bold

Formatted: Font: (Default) +Headings (Arial), Font color: Accent 1

Formatted: Font: Bold, Font color: Accent 1

Formatted: Font color: Accent 1, Do not check spelling or grammar

Formatted: Font: Bold, Font color: Accent 1

- Design for materials optimisation: simplifying layout and form to minimise material use, using standard design parameters, balancing cut and fill, maximising the use of renewable materials and materials with recycled content;
- Design for off-site construction: maximising the use of pre-fabricated structure and components, encouraging a process of assembly rather than construction;
- Design for the future (deconstruction and flexibility): identify how materials can be designed to be more easily adapted over an asset lifetime and how deconstructability and demountability of elements can be maximised at end of first life; and
- Design for waste and material asset efficient procurement: identify and specify materials that can be acquired responsibly, in accordance with a recognised industry standard.

18.6.9 Embedded measures are considered prior to the assessment of effects to avoid considering assessment scenarios that are unrealistic in practice, i.e., do not take account of such measures even though they are standard practice (additional mitigation) and/or form part of the design of the Proposed Development (embedded mitigation). These are then followed through the assessment to ensure that realistic likely environmental effects are identified. Where likely significant adverse effects are identified after considering these embedded measures, 'Additional Mitigation and Enhancement Measures' is considered, developed and proposed, where possible (see section below).

18.7 Potential Impacts and Assessment of Effects

Introduction

18.7.1 The assessment of effects has been carried out on the Proposed Development, wide basis.

Sensitivity analysis

18.7.2 A 5 % wastage rate has been applied to key construction materials. However, it is anticipated that a number of items would not produce wastage.

18.7.3 It is assumed that all waste would be disposed of to landfill, however in practice a large proportion of non-hazardous and inert waste from the Proposed Development is likely to be recovered rather than disposed of to landfill, further reducing the overall quantities of waste for disposal.

Sensitivity of receptors

18.7.4 Material receptor sensitivity is determined as 'medium'. On balance, the key materials required for the construction of the Proposed Development are forecast (through trend analysis and other information) to suffer from some potential issues regarding supply and stock. This sensitivity is based on professional judgement and acknowledgement that there have been some construction material supply issues during 2020-2023.

18.7.5 Key materials are available comprising some sustainable features and benefits compared to industry-standard materials (e.g., recycled content). The following target is set for material: at least 25% (by weight) of materials imported to site for use within the Proposed Development will comprise alternative (reused, recycled or secondary) content, for those applications where it is technically and economically feasible to substitute these alternatives to primary materials.

18.7.6 Potential recycled content for the main construction materials are outlined in **Table 18-14**.

18.7.7 Waste receptor sensitivity is determined as 'very high'. This is because, as there is no publicly available information on any potential changes to landfill capacity by the time of the

Formatted: Font: Bold

construction or operation of the Proposed Development a worst scenario is considered, namely that:

- Without the Proposed Development, non-hazardous landfill void capacity in the Study Area is expected to:
 - Reduce very considerably (by >10%);
 - End during construction and operation;
 - Is already known to be unavailable; or,
 - Would require new capacity or infrastructure to be put in place to meet forecast demand.
- Without the Proposed Development, hazardous landfill void capacity in the Study Area is expected to:
 - Reduce very considerably (by >1%), in the past there has been >1% reduction in landfill capacity;
 - End during construction and operation;
 - Is already known to be unavailable; or,
 - Would require new capacity or infrastructure to be put in place to meet forecast demand.

Construction

18.7.8 ~~Table 18-21~~ **Table 18-24** summarises the likely types of materials that will be used and wastes that are likely to be generated during the construction of the Proposed Development.

Formatted: Font: Bold

Table 18-21: Construction Material Use and Waste Types Arising from the Construction of the Proposed Development

Construction Activity	Materials Used	Waste Types Generated
Site remediation / preparation / earthworks	Fill material for construction purposes. Primary / secondary / recycled aggregates for ground stabilisation. Topsoil and subsoil for landscaping and restoration.	Surplus excavated materials. Surplus topsoil and subsoil. Unsuitable and contaminated soils and excavated materials. Vegetation from site clearance.
Demolition	Materials are not required for demolition works.	Demolition works are not anticipated. The former Theddlethorpe Gas Terminal (TGT) site is already fully demolished (Theddlethorpe Facility Option 1) and other land required for the Proposed Development is brownfield or greenfield.
Site construction	Main construction materials including: Aggregates; Asphalt and bituminous materials; In-situ cast concrete; Precast concrete products (structural components, kerbs, drainage	Excess, offcuts and broken / damaged construction materials. Existing infrastructure removed during works. Packaging from materials delivered to site.

Construction Activity	Materials Used	Waste Types Generated
	pipes, chambers and channels); and Steel.	Construction worker wastes from offices and welfare areas / canteens. Waste oils from construction plant.

Construction materials

- 18.7.9 An indicative list of the materials required for the Proposed Development is presented in Section 12 of *ES Volume II - Chapter 3: The Viking CCS Pipeline, with an initial Bill of Quantities estimate provided in ES Volume IV: Appendix 3.4 (Application Document 6.4.3.4)*
- 18.7.10 The estimated main types and quantities of construction materials (e.g., aggregates, asphalt, steel and concrete) anticipated to be used during construction of the Proposed Development are outlined in **Table 18-22**.
- 18.7.11 Materials required for Proposed Development construction are determined to be receptors of 'medium' sensitivity (in accordance with **Table 18-5**) and paragraphs 18.7.4-18.7.6.
- 18.7.12 As outlined in Table 18-22 on a national and regional scale, no individual construction material requirement is equal to or greater than 1% by weight of the baseline national consumption (UK/GB) or regional consumption.
- 18.7.13 The magnitude of impact is considered to be 'negligible' (in accordance with **Table 18-8**). The overall effect is therefore assessed to be Slight Adverse which is not considered significant.

Formatted: Font: Bold

Formatted: Font: Bold

Formatted: Font: Bold

Construction waste

- 18.7.14 The exact wastage from construction material is unknown; however, a worst case 5% wastage for all material identified in the Proposed Development bill of quantities would be approximately 371 m³ (1,700 tonnes).
- 18.7.15 It is intended that the haul road will be directly onto the sub-soil but depending on ground conditions and weather conditions a geotextile membrane and stone surface and/or bog-mats may be used in selected areas to enable traffic movements. Management of large quantities of aggregate waste at the end of construction is not anticipated.
- 18.7.16 A worst-case scenario, where all waste is disposed of to landfill has been applied. This equates to between 0.0003% of the 127 million m³ of inert and non-hazardous landfill capacity within the waste management study area (East Midlands and Yorkshire and the Humber). In practice a large proportion of non-hazardous and inert waste from the Proposed Development is likely to be recovered rather than disposed of to landfill, further reducing the overall quantities of waste for disposal. The waste recovery target for the Proposed Development is: at least 90% (by weight) recovery of non-hazardous C&D waste. The target specifically excludes naturally occurring materials with EWC Code 17 05 04 (17 05 04 soil and stones other than those mentioned in 17 05 03* (soils and stone containing dangerous substances)). Recovery is deemed to include reuse, recycling and other recovery e.g., energy recovery.
- 18.7.17 Based on the above, the construction of the Proposed Development is likely to result in less than a 1% reduction of landfill capacity within the waste management study area, which equates to a 'negligible' magnitude of impact.
- 18.7.18 The sensitivity of the receptor (landfill capacity) is classified as 'very high', therefore when also considering a 'negligible' magnitude of impact, the significance of effect is assessed to result in a 'Slight Adverse' effect which is considered to be not significant.

Table 18-22 Estimated Construction Material Quantities and % of National and Regional Consumption

Material Type	Quantity (tonnes)	Quantity (m ³)	National Material Consumption (million tonnes)	% of National Material Consumption	Magnitude of Impact	Sensitivity	Effect	Regional Material Consumption (million tonnes)	% of Regional Material Consumption	Magnitude of Impact	Sensitivity	Effect
Steel	26,40747 2	3,301 309	17	0.2	Negligible	Medium	Slight	n/a	n/a	n/a	n/a	n/a
Concrete	896	374	86.2	0.001				6.2	0.01	Negligible	Medium	Slight
Aggregate	6,655	3,213	251	0.003				8.4	0.08			
Asphalt	1,236	537	25.4	0.005				4.9	0.03			

- Formatted: Not Highlight
- Formatted: Highlight
- Formatted: Highlight
- Formatted Table
- Formatted: Not Highlight
- Formatted: Highlight

18.7.19 The quantities of hazardous waste e.g., oils, batteries, aerosol cans etc., are anticipated to be small compared to the overall construction waste arisings. SmartWaste's Data and Reporting distribution of waste products (~~Ref.18-43~~~~Ref 18-43~~) outlines that hazardous waste is less than 1% of total construction waste estimate (e.g. ~~55.4~~ m³ of the construction waste estimate outlined above) which is less than 0.1% (12,107 m³) of the hazardous waste landfill capacity in England, equating to a 'negligible' magnitude of impact.

Formatted: Font: (Default) +Headings (Arial), Not Bold, Font color: Auto

Formatted: Font: Not Bold, Font color: Auto

18.7.20 A worst-case scenario, where all waste is disposed of to landfill has been applied, however many hazardous waste types have well defined waste management routes including recovery and are unlikely to be sent directly to landfill. Procedures for the storage and management of these wastes will be set out in the in the Principal Contractor's SWMP.

18.7.21 For hazardous waste, the sensitivity of the receptor is classified as 'very high', therefore when also considering a 'negligible' magnitude of impact, the significance of effect is assessed to result in a 'Slight Adverse' effect which is considered to be **not significant**.

Excavated material

18.7.22 The Proposed Development design team aim is to achieve a cut-fill balance, however predicted cut and fill is currently imbalanced with a cut volume of approximately 2,200 m³. A worst-case scenario where all waste is disposed of to landfill has been applied. This equates to between 0.002% of the 127 million m³ of inert and non-hazardous landfill capacity within the waste management study area (East Midlands and Yorkshire and the Humber).

18.7.23 In practice, it is likely that some of the excavated material could be reused on-site or recovered, rather than being disposed of to landfill.

18.7.24 Based on the above, the construction of the Proposed Development is likely to result in less than a 1% reduction of landfill capacity within the waste management study area, which equates to a 'negligible' magnitude of impact.

18.7.25 The sensitivity of the receptor is classified as 'very high', therefore when also considering a 'negligible' magnitude of impact, the significance of effect is assessed to result in a 'Slight Adverse' effect which is considered to be **not significant**.

Demolition and clearance waste (as part of site preparation works)

18.7.26 Demolition is not anticipated, as the former TGT site is now fully demolished (Theddlethorpe Facility Option 1) and other land required for the Proposed Development is brownfield or greenfield. Therefore, quantities of waste generated during any clearance of materials are anticipated to be small.

18.7.27 The quantity of waste estimated to arise from vegetation clearance is not yet known, however the clearance will include trimming of existing trees and shrubs and removal of vegetation during site clearance. It is assumed that this waste would have a high recovery rate and is likely be recovered (due to the lower cost of this option) rather than sent to landfill.

18.7.28 Based on the above, the clearance associated with the Proposed Development is likely to result in less than a 1% reduction of landfill capacity within the waste management study area, a 'negligible' magnitude of impact.

18.7.29 The sensitivity of the receptor is classified as 'very high', therefore when also considering a 'negligible' magnitude of impact, the significance of effect is assessed to result in a 'Slight Adverse' effect which is considered to be **not significant**.

18.7.30 The assessment for the construction phase is summarised in ~~Table 18-23~~~~Table 18-23~~.

Formatted: Font: Bold

Field Code Changed

Safeguarded waste sites

18.7.31 Lincolnshire County Council will seek to safeguard existing and allocated waste management facilities from redevelopment to a non-waste use and/ or the encroachment of incompatible development unless:

- Alternative provision in the vicinity can be made in accordance with the Development Plan; or
- It can be demonstrated that there is no longer a need for a waste facility at that location.

18.7.32 Autby House Materials Recycling Facility/JA Young Plastics/JAY PLAS is a safeguarded waste site in the Lincolnshire Minerals and Waste Local Plan (~~Ref. 18-22~~~~Ref 18-22~~) within 250m of the DCO Site Boundary that has two access routes that pass through the DCO Site Boundary.

18.7.33 Permanent and significant impacts on the Autby House Materials Recycling Facility/JA Young Plastics/JAY PLAS are not anticipated; any impacts on site access would be of limited duration (during construction only). Pipeline road crossings would be by Auger Bore and no roads would be closed. Plant and materials would be moved from one side of the road to the other with a banksman controlling traffic who would stop construction vehicles if an emergency vehicle needed access. Access to the Autby House Materials Recycling Facility/JA Young Plastics would be maintained at all times, for emergency vehicle use.

Operational

18.7.34 As agreed with the Planning Inspectorate, effects associated with the operational phase are scoped out of the assessment due to the nature of the Proposed Development, and knowledge of similar projects' limited operational material use and waste management requirements.

Formatted: Font: (Default) +Headings (Arial), Not Bold, Font color: Auto

Formatted: Font: Not Bold, Font color: Auto

Table 18-23: Assessment of Materials and Waste during the Construction Phase

Receptor	Potential Impact	Duration	Mitigation	Likely significance of effect
Materials - national and regional consumption of key construction materials.	Changes in demand for materials.	<u>Long term impacts:</u> Impacts from Proposed Development activities whose effects will occur longer than 2 year.	Mitigation is outlined in Section 18.8.	The sensitivity of the receptor is classified as 'medium', with a 'negligible' magnitude of impact which is assessed to result in a 'Slight Adverse' effect which is considered to be not significant .
Waste - Non-hazardous landfill void capacity in the Study Area of East Midlands and Yorkshire and the Humber.	Changes in available landfill capacity.	<u>Long term impacts:</u> Impacts from Proposed Development activities whose effects will occur longer than 2 year.	Mitigation is outlined in Section 18.8	The sensitivity of the receptor is classified as 'very high', with a 'negligible' magnitude of impact which is assessed to result in a 'Slight Adverse' effect which is considered to be not significant .
Waste - Hazardous landfill void capacity in the Study Area of England.	Changes in available landfill capacity.	<u>Long term impacts:</u> Impacts from Proposed Development activities whose effects will occur longer than 2 year.	Mitigation is outlined in Section 18.8.	The sensitivity of the receptor is classified as 'very high', with a 'negligible' magnitude of impact which is assessed to result in a 'Slight Adverse' effect which is considered to be not significant .
Waste – Safeguarded waste sites.	Impacts on safeguarded waste sites and associated access.	<u>Medium term impacts:</u> Impacts from Proposed Development activities that will last more than 3 month, and whose effects may continue after the completion of the Proposed Development activity but will in total be less than 2 years.	Mitigation not required, no permanent and significant impacts anticipated.	Permanent and significant impacts on the Autby House Materials Recycling Facility/JA Young Plastics/JAY PLAS are not anticipated; any impacts on site access would be of limited duration (during construction only). Pipeline road crossings would be by Auger Bore and no roads would be closed. Plant and materials would be moved from one side of the road to the other with a banksman controlling traffic who would stop construction vehicles if an emergency vehicle needed access. Access to the Autby House Materials Recycling Facility/JA Young Plastics would be maintained at all times, for emergency vehicle use.

18.8 Additional Mitigation and Enhancement

Additional Mitigation and Enhancement – Construction Phase

- 18.8.1 As described in the IEMA Guidance, additional (secondary) mitigation measures are actions that will require further activity during construction in order to achieve the anticipated outcome.
- 18.8.2 Construction of the Proposed Development would be subject to measures and procedures defined within a CEMP, which would be produced prior to the commencement of construction by the Principal Contractor. This would be produced in accordance with the Draft CEMP and OSWMP which will be certified documents under the DCO, and will follow other industry standard practices, control measures and targets in place at the time as necessary.
- 18.8.3 A Draft CEMP has been prepared as part of this ES and is provided in *ES Volume IV: Appendix 3.1 (Application Document 6.4.3.1)*. An OSWMP has also been developed for the Proposed Development and is included within *ES Volume IV: Appendix 18.1 (Application Document 6.4.18.1)*. These set out the additional mitigation measures which have been identified during the assessment process. The mitigation presented in the Draft CEMP is secured through a requirement within the DCO, which requires a CEMP to be submitted for approval by the planning authority prior to commencement of development. As the SWMP forms part of that, the mitigation measures within that are also secured.
- 18.8.4 The Draft CEMP sets out the additional mitigation measures identified in this assessment of likely significant effects within a Mitigation Register. This section summarises the mitigation measures that are considered to help mitigate against the effects on materials and waste. Each entry in the Mitigation Register has an alpha-numerical reference e.g., "M1" to provide a cross reference to the secured commitment. These measures will be adopted during the construction phase. Key mitigation measures of relevance to materials and waste, include:
- **M1:** Adopting the Considerate Constructors Scheme to assist in reducing pollution, including GHGs, from the Project by employing best practice measures which go beyond the statutory requirements;
 - **M2:** Appoint a Waste Manager or Champion who would oversee the implementation of the waste control strategy and the handling of any waste material;
 - **M3:** Wherever possible ensure the procurement process orders material resources so that the timing of the delivery (e.g., 'just in time' deliveries), the quantities delivered, and the storage are optimised to reduce the potential for oversupply and damage onsite;
 - **M4:** Develop sustainability targets and monitor during construction;
 - **M5:** Sort and segregate waste into different waste streams (where technically and economically feasible);
 - **M6:** Wherever possible and where specification allows, construction materials would include a measurable recycled content in their manufacture;
 - **M7:** Wherever possible, standardisation of materials and elements would be incorporated in order to minimise required material resources and the production of waste. For example, the use of prefabricated components;
 - **M8:** Consider using local sources for aggregate supplies and explore agreements with suppliers to reduce the amount of packaging used to protect materials or to participate in a packaging take back scheme;
 - **M9:** Promote opportunities for the potential reusing and recycling of all material resources and waste;

- **M10:** Manage material use to maximise the environmental and benefits from the use of surplus materials;
- **M11:** Excavated material would be targeted for fill and landscaping where this is feasible, and the material is suitable. Excavated materials, such as soils, would be carefully stored in segregated piles for subsequent reuse on the site, where possible. If the material is contaminated then it would be kept separate from clean material and sent for either treatment, recycling or recovery, where appropriate, or disposal at appropriately permitted facilities;
- **M12:** Surplus inert excavated materials (e.g., soils, stone, bricks, clay, rubble, rock) may be suitable for use in land reclamation projects. This would require compliance with the criteria and thresholds for an exemption or a permit under the Environmental Permitting Regulations 2010 (as amended). The CL:AIRE DoWCoP ([Ref 18-30](#)~~Ref 18-30~~) may also be applicable for the reuse of this material;
- **M13:** The waste management area would be established within the main construction compound to handle incoming waste from construction activities. This would be designed to facilitate the segregation of key waste streams to maximise the opportunity to reuse, recycle and return wastes generated onsite;
- **M14:** The waste management contractors will be consulted in order to determine the best techniques for managing waste and ensure a high level of recovery of materials for recycling. An area would be established for spoil classification at the DCO Site Boundary;
- **M15:** Shelter would be provided to prevent materials such as cardboard and paper from deteriorating while being sorted or awaiting collection. Space would be provided to accommodate skips and the storage of reusable materials;
- **M16:** A MMP will be developed under the CL:AIRE DoWCoP (Ref 18 31) by the construction contractor to support the reuse of excavated materials, minimise off-site disposal; and to demonstrate the necessary lines of evidence to support the proper reuse/offsite disposal of materials and ensure compliance with regulatory guidance. The Principal Contractor would be responsible for preparing the MMP prior to the commencement of construction and for obtaining all necessary approvals.
- **M17:** Develop a detailed SWMP based on the Outline SWMP (*ES Volume IV Appendix 18.1, Application Document 6.4.18.1*). This will be required to include measures to ensure waste produced or held on a site is disposed of safely, efficiently and lawfully, and meets all of Harbour Energy's environmental targets.

Formatted: Font: Not Bold, Font color: Auto

18.8.5 No enhancement measures for materials and waste have been identified to date.

Targets

18.8.6 The national target for recovery of construction and demolition waste is 70% by weight, as set out in the Waste Framework Directive ([Ref 18-2](#)~~Ref 18-2~~) and the Waste Management Plan for England ([Ref 18-17](#)~~Ref 18-17~~). The target specifically excludes naturally occurring materials with European Waste Catalogue (EWC) Code 17 05 04 (17 05 04 soil and stones other than those mentioned in 17 05 03* (soils and stone containing dangerous substances)). Recovery is deemed to include reuse, recycling and other recovery e.g., energy recovery.

Formatted: Font: Not Bold

Formatted: Font: Not Bold

18.8.7 A good practice landfill diversion target of 90% has been achieved and exceeded by major UK developments as outlined in the IEMA Guidance. In 2020, the UK generated 59.1 million tonnes of non-hazardous C&D waste, of which 54.8 million tonnes was recovered. This represents a recovery rate of 92.6% ([Ref 18-38](#)~~Ref 18-38~~).

Formatted: Font: Not Bold

18.8.8 Standard, good and best practice recovery rates by material are provided by WRAP ([Ref 18-40](#)~~Ref 18-40~~). Recovery rates for key construction materials and other construction wastes relevant to the Proposed Development are provided in [Table 18-24](#)~~Table 18-24~~.

18.8.9 Potential recycled contents for the main construction materials are outlined in [Table 18-14](#)~~Table 18-14~~.

18.8.10 Targets for materials and waste for the Proposed Development are as follows and are secured in the Draft CEMP (*ES Volume IV Appendix 3.1 (Application Document 6.4.3.1)*):

- **M18:** at least 90% (by weight) recovery of non-hazardous C&D waste. The target specifically excludes naturally occurring materials with EWC Code 17 05 04 (17 05 04 soil and stones other than those mentioned in 17 05 03* (soils and stone containing dangerous substances)). Recovery is deemed to include reuse, recycling and other recovery e.g., energy recovery; and
- **M19:** at least 25% (by weight) of materials imported to site for use within the Proposed Development will comprise alternative (reused, recycled or secondary) content, for those applications where it is technically and economically feasible to substitute these alternatives to primary materials.

Table 18-24: Standard, Good and Best Practice Recovery Rates by Material

Material	Standard Practice Recovery (%)	Good Practice Recovery (%)	Best Practice Recovery (%)
Metals	95	100	100
Packaging	60	85	95
Concrete	75	95	100
Inert	75	95	100
Plastics	60	80	95
Miscellaneous	12	50	75
Electrical equipment	Limited information	70	95
Cement	Limited information	75	95
Liquids and oils	100	100	100
Hazardous	50	Limited information, cannot be 100% since some hazardous waste e.g., asbestos must be landfilled.	

Additional Mitigation and Enhancement – Operational and Decommissioning Phases

18.8.11 An assessment for the operational and decommissioning phases of the Proposed Development has been scoped out of the assessment and thus no additional mitigation measures have been identified. It should be noted however that the management of waste during the operational and decommissioning phases would be handled in accordance with best practice and with all applicable regulations which are in place at the time.

Formatted: Font: (Default) +Headings (Arial), Not Bold, Font color: Auto

Formatted: Font: Not Bold, Font color: Auto

Formatted: Font: Bold

Formatted: Font: Bold

18.9 Residual Effects

Assessment of Residual Effects: Construction Phase

18.9.1 The residual effects would be the same as the effects as reported in section 18.7. Effects of a Slight Adverse significance have been identified for both waste and materials. However, **no significant effects** have been identified upon materials to waste during the construction phase.

Assessment of Residual Effects: Operational and Decommissioning Phases

18.9.2 An assessment for the operational and decommissioning phases of the Proposed Development has been scoped out of the assessment.

18.10 Cumulative Effects

Assessment of Intra-Project Effects

18.10.1 No intra-Project effects are anticipated.

Assessment of Inter-Project Effects

18.1.1 For Materials and Waste, a detailed cumulative effects assessment has not been undertaken due to the following reasons:

- As part of their planning function, WPAs are required to ensure that enough land is available to accommodate facilities for the treatment of all waste arising in the area, either within the WPA area, or through export to suitable facilities in other areas;
- It is not necessary or feasible for each development within the region to, in effect, duplicate the function of the WPA as part of the EIA process;
- MPAs are similarly required to ensure an adequate supply of minerals, sufficient to meet the needs of national and regional supply policies, and local development needs;
- The landfill void capacity remaining (which is used to evaluate the effects of the Proposed Development) already considers the cumulative effects of waste generated by other developments (landfill inputs); and
- Only limited materials and waste information is available for some of the other developments, and some are deemed to be relatively small in scale development and will not require large quantities of construction materials or generate large quantities of construction waste and operational waste. Where materials and waste information is available for projects the quantities of waste are relatively small in the national or regional context and no significant effects have been identified.

18.1.2 Since the quantities of construction materials required and the quantity of waste generated by the Proposed Development will result in no likely significant effects, and the timescales for some of the other large project waste generation do not align there are not expected to be any cumulative waste and resources impacts as a result of the Proposed Development together with the identified other developments in the surrounding area.

18.1.3 The complete cumulative assessment is set out within *ES Volume II: Cumulative Effects Assessment (Application Document 6.2.20)*.

18.11 Summary

18.11.1 This chapter has assessed the likely significant effects of the Proposed Development in relation to materials and waste, namely changes in available landfill capacity, changes in demand for materials and impacts on safeguarded waste sites and associated access.

- 18.11.2 Embedded Mitigation is presented in section 18.6, additional mitigation is presented in section 18.8.
- 18.11.3 The assessment has shown that the effect on available landfill capacity and demand for materials is **not significant**.
- 18.11.4 Permanent and significant impacts on the Autby House Materials Recycling Facility/JA Young Plastics/JAY PLAS are not anticipated; any impacts on site access would be of limited duration (during construction only). Access to the Autby House Materials Recycling Facility/JA Young Plastics would be maintained at all times, for emergency vehicle use.
- 18.11.5 Overall, **no significant effects** are anticipated in relation to materials and waste.

18.12 References

Ref 18-1 (*IEMA, 2020*). Guide to: Materials and Waste in Environment Impact Assessment, Guidance for a Proportionate Approach. [Available online to IEMA members].

Ref 18-2 (*European Union, 2008*). Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives (2008/98/EC). Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32008L0098>

Ref 18-3 (*His Majesty's Stationary Office (HMSO), 1990*). Environmental Protection Act 1990 (as amended). Available at: <https://www.legislation.gov.uk/ukpga/1990/43/contents>

Ref 18-4 (*HMSO, 2005*). Hazardous Waste (England and Wales) Regulations 2005 (as amended). Available at: <https://www.legislation.gov.uk/ukSI/2005/894/contents/made>

Ref 18-5 (*HMSO, 2011*). The Waste (England and Wales) Regulations 2011 as amended, SI 1889. Available at: <https://www.legislation.gov.uk/ukSI/2011/988>

Ref 18-6 (*HMSO, 2016*). The Environmental Permitting (England and Wales) Regulations 2016. Available at: <https://www.legislation.gov.uk/ukSI/2016/1154/contents/made>

Ref 18-7 (*HMSO, 2021*). The Environment Act 2021. Available at: <https://www.legislation.gov.uk/ukpga/2021/30/contents/enacted>

Ref 18-8 (*Environment Agency, 2022*). 2020 Waste Summary Tables for England - Version 2. Available at: <https://environment.data.gov.uk/portalstg/home/item.html?id=ae41a10bedef480f9dd070b29e031cc5>

Ref 18-9 (*Department of Energy and Climate Change (DECC), 2011*). Overarching National Policy Statement for Energy (EN-1). Available at: <https://assets.publishing.service.gov.uk/media/5a79522de5274a2acd18bd53/1938-overarching-nps-for-energy-en1.pdf>

Ref 18-10 (*Department for Energy Security and Net Zero (DESNZ), (2023)*). Draft Overarching National Policy Statement for Energy (EN-1). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1147380/NPS_EN-1.pdf

Ref 18-11 (*DECC, 2011*). National Policy Statement for National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4). Available at: <https://assets.publishing.service.gov.uk/media/5a78c52140f0b62b22cbcaa4/1941-nps-gas-supply-oil-en4.pdf>

Ref 18-12 (*DEZNZ, (2023)*). Draft National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1147383/NPS_EN-4.pdf

Ref 18-13 (*Ministry of Housing, Communities & Local Government (MLCLG, 2023)*). Revised National Planning Policy Framework (NPPF). Available at: [National Planning Policy Framework \(publishing.service.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/1147383/NPPF.pdf). Accessed 13/09/2023

Ref 18-14 (*MLCLG, 2014*). Planning Policy Guidance for Minerals. Available at: <https://www.gov.uk/guidance/minerals>

- Ref 18-15** (*MLCLG 2015*). Planning Policy Guidance for Waste. Available at: <https://www.gov.uk/guidance/waste>
- Ref 18-16** (*MLCLG, 2014*). National Planning Policy for Waste. Available at: <https://www.gov.uk/government/publications/national-planning-policy-for-waste>
- Ref 18-17** (*Department for Environment, Food & Rural Affairs (Defra), 2021*). The Waste Management Plan for England 2021. Available at: <https://www.gov.uk/government/publications/waste-management-plan-for-england-2021>
- Ref 18-18** (*HM Government, 2018*). A Green Future: Our 25 Year Plan to Improve the Environment. Available at: <https://assets.publishing.service.gov.uk/media/5ab3a67840f0b65bb584297e/25-year-environment-plan.pdf>
- Ref 18-19** (*HM Government, 2018*). Our Waste, Our Resources: A Strategy for England. Available at: <https://assets.publishing.service.gov.uk/media/5c18f11740f0b60bbee0d827/resources-waste-strategy-dec-2018.pdf>
- Ref 18-20** (*Defra, 2023*). Environmental Improvement Plan. Available at: <https://www.gov.uk/government/publications/environmental-improvement-plan>
- Ref 18-21** (*Defra, 2010*). The Strategy for Hazardous Waste Management in England. Available at: <https://webarchive.nationalarchives.gov.uk/ukgwa/20130505065433/http://archive.defra.gov.uk/environment/waste/topics/hazwaste/documents/policy.pdf>
- Ref 18-22** (*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/minerals-and-waste-local-plan-core-strategy-and-development-management-policies>
- Ref 18-23** (*Lincolnshire County Council, 2017*). Lincolnshire Minerals and Waste Local Plan – Site Locations. Available at: <https://www.lincolnshire.gov.uk/directory-record/63740/minerals-and-waste-local-plan-site-locations>
- Ref 18-24** (*North Lincolnshire Council, 2011*). The North Lincolnshire Local Development Framework – Core Strategy. Available at: <https://www.northlincs.gov.uk/planning-and-environment/planning-policy-local-development-framework/#:~:text=The%20Core%20Strategy%2C%20which%20was,North%20Lincolnshire%20Local%20Development%20Framework.>
- Ref 18-25** (*North Lincolnshire Council, 2021*). The North Lincolnshire Local Plan Publication Draft. Available at: <https://localplan.northlincs.gov.uk/>
- Ref 18-26** (*North East Lincolnshire Council, 2018*). North East Lincolnshire Local Plan 2013 to 2032. Available at: <https://www.nelincs.gov.uk/assets/uploads/2020/10/The-NEL-Local-Plan-adopted-2018.pdf>
- Ref 18-27** (*North East Lincolnshire Council, 2018*). Minerals Policy Map. Available at: <https://www.nelincs.gov.uk/planning-and-building-control/planning-policy/the-local-plan/>
- Ref 18-28** (*East Lindsey District Council, 2018*). East Lindsey Local Plan Core Strategy. Available at: https://www.e-lindsey.gov.uk/media/9791/Core-Strategy/pdf/Core_Strategy_adopted_version_for_web.pdf

Ref 18-29 (*Central Lincolnshire Joint Strategic Planning Committee, 2017*). Central Lincolnshire Local Plan. Available at: <https://www.n-kesteven.gov.uk/central-lincolnshire>

Ref 18-30 (*Contaminated Land: Applications in Real Environments (CL:AIRE), 2011*). Definition of Waste: Development Industry Code of Practice (DoWCoP), Version 2. Available at: [REDACTED]

Ref 18-31 (*WRAP, undated*). Designing Out Waste: A Design Team Guide for Civil Engineering. Available at: [REDACTED]

Ref 18-32 (*Make UK, 2019*). A new deal for steel: laying the foundations for a vibrant UK steel industry (published July 2019). Available at: [REDACTED]

Ref 18-33 (*MPA, 2020*). Profile of the UK Mineral Products Industry (2020 Edition). Available at: [REDACTED]

Ref 18-34 (*WRAP, undated*). Designing Out Waste Tool for Civil Engineering (no longer available online).

Ref 18-35 (*Environment Agency, 2022*). Environmental Permitting Regulations - Waste Sites. Available at: <https://www.data.gov.uk/dataset/e2cc8101-d8b7-434d-a26a-9115061bb57c/environmental-permitting-regulations-waste-sites>

Ref 18-36 (*Environment Agency, 2022*). 2021 Waste Data Interrogator. Available at: <https://www.data.gov.uk/dataset/d8a12b93-03ef-4fbf-9a43-1ca7a054479c/2021-waste-data-interrogator>

Ref 18-37 (*Environment Agency, 2021*). Permitted Waste Sites - Authorised Landfill Site Boundaries. Available at: <https://www.data.gov.uk/dataset/ad695596-d71d-4cbb-8e32-99108371c0ee/permitted-waste-sites-authorized-landfill-site-boundaries>

Ref 18-38 (*Environment Agency, 2021*). Historic Landfill Sites. Available at: <https://www.data.gov.uk/dataset/17edf94f-6de3-4034-b66b-004ebd0dd010/historic-landfill-sites>

Ref 18-39 (*Defra, 2021*). UK Statistics on Waste. Available at: [https://www.gov.uk/government/statistics/uk-waste-data/uk-statistics-on-waste#:~:text=The%20latest%20estimates%20for%20England,tonnes\)%20of%20the%20UK%20total.](https://www.gov.uk/government/statistics/uk-waste-data/uk-statistics-on-waste#:~:text=The%20latest%20estimates%20for%20England,tonnes)%20of%20the%20UK%20total.)

Ref 18-40 (*WRAP, 2007*). Waste Recovery Quick Wins. Improving Recovery Rates without Increasing Costs. Available at: [REDACTED]

Ref 18-41 (*Defra, 2011*). Guidance on Applying the Waste Hierarchy. Available at: <https://assets.publishing.service.gov.uk/media/5a795abde5274a2acd18c223/pb13530-waste-hierarchy-guidance.pdf>

Ref 18-42 (*WRAP, undated*). SmartWaste Data and Reporting (projects completed at the end of November 2012)

Ref 18-43 (*Construction Resources and Waste Platform, 2010*). Benchmarks and Baselines 2009 (no longer available online)

