

Viking CCS Pipeline

**Environmental
Statement Volume II -
Chapter 16: Socio-
economics**

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16 Socio-economics

16.1 Introduction

16.1.1 This chapter of the Environmental Statement (ES) presents the assessment of the likely significant effects of the Viking CCS Pipeline (hereafter referred to as the Proposed Development) on socio-economics during construction and decommissioning. The assessment includes consideration of impacts on the following:

- Employment (including training and apprenticeship opportunities) and local economy (Gross Value Added);
- Users of recreational routes and Public Rights of Way (PRoW);
- Community severance; and
- Private assets (including residential properties, development land, local businesses, community facilities, open space and visitor attractions relevant for tourism).

16.1.2 Socio-economic impacts are interrelated with other environmental effects and so this chapter should be read in conjunction with the following *ES Volume II Chapters (Application Document 6.2)*:

- *Chapter 7: Landscape and Visual;*
- *Chapter 12: Traffic and Transport;*
- *Chapter 13: Noise and Vibration;* and
- *Chapter 14: Air Quality.*

16.1.3 This chapter describes:

- the legislation, policy and technical guidance that has informed the assessment (*Section 16.2*);
- the scoping exercise and consultation on PEIR and how comments from the Planning Inspectorate and consultees relating to socio-economics have been addressed (*Section 16.3*);
- the methods used for the assessment (*Section 16.4*);
- the baseline environment and study areas (*Section 16.5*);
- embedded mitigation measures relevant to socio-economics (*Section 16.6*);
- the assessment of socio-economic effects (*Section 16.7*);
- additional mitigation and enhancement measures (*Section 16.8*); and
- the assessment of residual effects (*Section 16.9*).

16.1.4 This chapter is supported by **Figure 16-1**, **Figure 16-2** and **Figure 16-3**.

16.2 Legislation, Policy and Guidance

Introduction

16.2.1 The *Legislation, Policy and Guidance* section of this chapter provides an overview of the legislation, planning policy and technical guidance relevant to the socio-economics assessment.

National Planning Policy

National Policy Statement for Energy (EN-1) (2011)

16.2.2 The National Policy Statement for Energy (EN-1) (Ref 16-1) was published by the former Department of Energy and Climate Change (later part of the Department for Business, Energy and Industrial Strategy, and then Department for Energy Security and Net Zero) in July 2011. This document sets out the Government's overarching policy on energy infrastructure and provides guidance in the planning application for proposed projects, including Carbon Capture and Storage (CCS). Socio-economic and Land Use impacts under consideration are also outlined.

Draft Overarching National Policy Statement for Energy (EN-1) (2023)

16.2.3 An updated Draft Overarching National Policy Statement for Energy (EN-1) (Ref 16-2) was published in March 2023 by the Department for Energy Security and Net Zero with a view to updating the existing Statement, although consultation is ongoing at the time of writing. Socio-economic impacts under consideration are also expanded on.

National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4) (2011)

16.2.4 The NPS for Gas Supply and Infrastructure and Gas and Oil Pipelines (EN-4) was released in July 2011 and provides guidance on gas and oil pipeline development, which may be broadly applicable to the Proposed Development. Although no specific guidance relating to socio-economics is available, the Policy Statement points to the importance of consideration of noise and vibration, and landscape and visual impacts with regard to sensitive receptors. The NPS (EN-4) should be read in conjunction with the Overarching NPS (EN-1) (Ref 16-3).

Draft National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4) (2023)

16.2.5 The Draft NPS for Renewable Energy Infrastructure (EN-3) was released in March 2023 and also provides guidance on gas and oil pipeline developments. The Draft NPS for Renewable Energy Infrastructure (EN-3) should be read in conjunction with the Draft Overarching NPS for Energy (EN-1) (Ref 16-4).

National Planning Policy Framework (NPPF) (2023)

16.2.6 The National Planning Policy Framework (NPPF) (Ref 16-5) was most recently updated in July 2021 and sets out the Government's planning policies in a single document. It places emphasis on its overarching economic, social and environmental objectives and presumption in favour of sustainable development.

16.2.7 National planning policy relevant to socio-economics is detailed in **Table 16-1**. An overview of how relevant national planning policy has been complied with is provided within the *Planning Statement (Application Document 7.1)*.

Table 16-1: National Planning Policy Relevant to Socio-economics

Policy Reference	Policy Context
National Policy Statement	
<i>National Policy Statement for Energy (EN-1) (2011)</i>	
Part 4, paragraph 4.1.3	States that the consideration of any proposed development should <i>'take into account its potential benefits including its contribution to meeting the need for...job creation'</i> .
Part 4, paragraph 4.1.4	Continues that <i>'environmental, social and economic benefits and adverse impacts'</i> be taken into account.
Part 4, paragraph 4.2.1	Requires that proposals are accompanied by an Environmental Statement that makes reference to <i>'effects on human beings...material assets and cultural heritage'</i> .
Part 4, paragraph 4.2.2	Suggests the <i>'applicant sets out information on the likely significance of social and economic effects of the development'</i> including <i>'matters such as employment...community cohesion and well-being'</i> .
Part 5, paragraph 5.1.1	States that <i>'an energy infrastructure project will have direct effects on the existing use of the proposed site and may have indirect effects on the use, or planned use, of land in the vicinity for other types of development. Given the likely locations of energy infrastructure projects there may be particular effects on open space including green infrastructure'</i> . In this context, open space is defined as any space with public value and green infrastructure is defined as a network of multi-functional green spaces that service ecological processes are <i>'integral to the health and quality of life of sustainable communities'</i> .
Part 5, paragraph 5.10.2	States that <i>'the Government's policy is to ensure there is an adequate provision of high-quality open space (including green infrastructure) and sports and recreation facilities to meet the needs of local communities. Open spaces, sports and recreational facilities all help to underpin people's quality of life and have a vital role to play in promoting healthy living. Green infrastructure in particular will also play an increasingly important role in mitigating or adapting to the impacts of climate change.'</i> This paragraph stresses that the provision of open space and green infrastructure is a means to achieve these outcomes.
Part 5, paragraph 5.10.20	Requires that the connectivity of, and access to, green infrastructure is maintained.
Part 5, paragraph 5.10.24	Outlines that <i>'rights of way, National Trails and other rights of access to land are important recreational facilities for example for walkers, cyclists and horse riders'</i> and that appropriate mitigation efforts address any adverse impact on their use.
Part 5, paragraph 5.12.3	Requires the consideration of: <i>'the creation of jobs and training opportunities'</i> , <i>'effects on tourism'</i> , and <i>'effects on social cohesion'</i> .
Part 5, paragraph 5.12.4	Requires the description of <i>'the existing socio-economic conditions in the areas surrounding the proposed development and should also refer to how</i>

Policy Reference	Policy Context
	<i>the development's socio-economic impacts correlate with local planning policies'.</i>
Draft Overarching National Policy Statement for Energy (EN-1) (2023)	
Paragraph 5.13.3	In addition to adopted policies, this paragraph extends that <i>'applicants may wish to provide information on the sustainability of jobs created, including where they will help to develop the skills needed for the UK's transition to Net Zero; the contribution to the development of low-carbon industries at the local and regional level as well as nationally; improvements to local infrastructure, including the provision of educational and visitor facilities; and any direct beneficial impacts for the region hosting the infrastructure, in particular in relation to use of local support services and supply chains'.</i>
National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4) (2011)	
Paragraph 2.19.8	States that <i>'when designing the route of new pipelines applicants should research relevant constraints including proximity of existing and planned residential properties, schools and hospitals...'</i>
Draft National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4) (2023)	
Paragraph 2.21.1	Retains reference from the adopted NPS EN-4 to identification of <i>'existing and planned residential properties, schools and hospitals...'</i>
Paragraph 2.21.17	Sets out that <i>'the applicant will need to identify all the noise and vibration sensitive receptors...likely to be affected'</i>
Paragraphs 2.21.23 to 2.21.33	Highlights the necessary considerations of biodiversity, landscape and visual impacts required of the applicant.
National Planning Policy Framework	
National Planning Policy Framework (NPPF) (2023)	
Paragraph 8	Sets out the overarching presumption in favour of sustainable development which incorporates economic, social and environmental objectives. The economic objective is <i>'to help build a strong, responsive and competitive economy...to support growth, innovation and improved productivity...and by identifying and coordinating the provision of infrastructure'</i> . The environmental objective is partly about <i>'mitigating and adapting to climate change, including moving to a low carbon future'</i>
Paragraph 81	Emphasises that planning decisions should <i>'help create the conditions in which businesses can invest, expand and adapt. Significant weight should be placed on the need to support economic growth and productivity, taking into account local business needs and wider opportunities for development'</i> .
Paragraph 155, 156	Emphasises the need to support the use and supply of renewable and low carbon energy.

Local Planning Policies

North East Lincolnshire Local Plan 2013 to 2032 (2018)

16.2.8 The North East Lincolnshire Local Plan (Ref 16-6) provides a framework for, and guides, planning decisions in the local authority area. The Plan was published in 2018 and covers the period to 2032.

North East Lincolnshire Natural Assets Plan (2021)

16.2.9 The North East Lincolnshire Natural Assets Plan (Ref 16-7) was published in 2021 and sets out the Council’s eight areas of focus to make improvements to the natural environment of North East Lincolnshire.

North Lincolnshire Core Strategy Local Plan (2011)

16.2.10 The North Lincolnshire Core Strategy Local Plan (Ref 16-8) was adopted in June 2011 and sets out the long-term spatial planning framework for the development of North Lincolnshire up to 2026.

North Lincolnshire Draft Local Plan 2020 to 2038 (2021)

16.2.11 The North Lincolnshire Draft Local Plan (Ref 16-9) will update, once adopted, the previous 2011 Local Plan detailed above. It identifies a number of key challenges in addressing the development of the local authority area, including but not limited to economic development and employment.

North Lincolnshire Economic Growth Plan

16.2.12 The Economic Growth Plan for North Lincolnshire (Ref 16-10) sets out ambitions to create 14,000 new jobs. Amongst ‘ideas’ which frame the plan, Idea 2 is to support growth and diversification of the Humber chemical and energy cluster.

East Lindsey District Council Core Strategy Local Plan (2018)

16.2.13 The East Lindsey District Council Core Strategy Local Plan (Ref 16-11) was published in 2018 and provides a planning framework for the development of the local authority area. In particular the Plan highlights issues to be addressed over the Plan period, namely communities, housing, transport, economy, environment, and climate change.

Central Lincolnshire Local Plan (2023)

16.2.14 The Central Lincolnshire Local Plan (Ref 16-12) provides an overarching planning framework to guide decision making in the combined areas of the City of Lincoln, North Kesteven and West Lindsey.

16.2.15 Local planning policies relevant to socio-economics are detailed in **Table 16-2**. An overview of how relevant local planning policy has been complied with is provided within the *Planning Statement (Application Document 7.1)*.

Table 16-2: Local Planning Policies Relevant to Socio-economics

Policy Reference	Policy Context
North East Lincolnshire	
<i>North East Lincolnshire Local Plan 2013 to 2032 (2018)</i>	
7	Policy 7 ‘Employment allocations’ sets out a number of locations across the local authority area which are designated for specific employment generating uses. Those of relevance to the Proposed Development are: <ul style="list-style-type: none"> • South Humber Bank Existing Employment Area.

Policy Reference	Policy Context
8	Policy 8 ‘Existing employment areas’ sets out in addition to allocated sites, existing areas which will be safeguarded for employment generating uses.
11	Policy 11 ‘Skills and training’ states that the <i>‘Council will support development proposals that relate directly to the development of local skills, and training opportunities, focusing on existing facilities and town centre locations’</i> .
13	Policy 13 ‘Housing allocations’ sets out a number of locations which are identified and allocated for the purpose of housing development, in order to facilitate the delivery of housing over the Plan period as per delivery targets. Of relevance to the Proposed Development are: <ul style="list-style-type: none"> • HOU002; • HOU006; • HOU233; and • HOU004.
31	Policy 31 ‘Renewable and low carbon infrastructure’ that <i>‘North Lincolnshire Council will support opportunities to maximise renewable energy capacity within North Lincolnshire’</i> subject to impact considerations on local amenity.
40	Policy 40 ‘Developing a green infrastructure network’ states that <i>‘proposals that would result in the loss or reduction in quality of existing public rights of way (PRoWs) will not be permitted unless acceptable alternative provision is made. Where diversions are proposed, these should be convenient and attractive to users and not increase disturbance on protected wildlife sites’</i> .
North East Lincolnshire Natural Assets Plan (2021)	
Managing our open spaces	The ‘managing our open spaces’ area of focus sets out intended outcomes that <i>‘open spaces...and other open land support the wellbeing of...[communities]’</i> and <i>‘land contributes to the recovery of nature at every opportunity’</i> .
Protecting health and wellbeing	The ‘protecting health and wellbeing’ area of focus sets out intended outcomes of the Plan that <i>‘health and wellbeing benefits of engaging in and enjoying [the] natural environment are promoted and recognised’</i> and <i>‘inequalities in access to a good quality environment are addressed’</i> .
Education, involvement and enjoyment	The ‘education, involvement and enjoyment’ area of focus sets out intended outcomes of the Plan that <i>‘residents and visitors understand [relevant] environmental issues and enjoy nature without causing damage’</i> .
North Lincolnshire	
North Lincolnshire Core Strategy Local Plan (2011)	
SO2	Spatial Objective SO2 ‘Delivering the Global Gateway’ sets out the objective to <i>‘secure North Lincolnshire’s major growth potential in the Yorkshire and Humber region based on the unique opportunities provided by the South Humber Bank ports’</i> .

Policy Reference	Policy Context
SO4	Spatial Objective SO4 ‘Creating Greater Economic Success’ states the ambition to <i>‘create a strong, competitive and diverse economy by encouraging business growth and employment opportunities’</i> .
CS2	Core Strategy CS2 ‘Delivering more sustainable development’ states that all future development proposals will be required to contribute towards achieving sustainable development.
CS18	Core Strategy CS18 ‘Sustainable resource use and climate change’ states that the Council will actively promote development that utilises natural resources as efficiently and sustainably as possible. This includes <i>‘supporting renewable sources of energy in appropriate locations, where possible’</i> and <i>‘supporting new technology and development for carbon capture and the best available clean and efficient energy technology’</i> .
<i>North Lincolnshire Draft Local Plan 2020 to 2038 (2021)</i>	
SO1	Spatial Objective SO1 ‘Growing Our Economy’ details a spatial objective of the Local Plan <i>‘to promote economic growth in North Lincolnshire that increases the area’s prosperity through supporting business growth and investment, enterprise and job creation’</i> .
SO4	Spatial Objective SO4 ‘Delivering Infrastructure for Growth (A Connected North Lincolnshire)’ details a spatial objective of the Local Plan <i>‘to identify and deliver the wide range of...physical...and environmental...infrastructure needed to support...ambitions for growth and development...’</i> .
SS1	Policy SS1 ‘Presumption in Favour of Sustainable Development’ confirms the adoption of the NPPF’s presumption in favour of sustainable development whereby the Council will work proactively <i>‘to secure development that improves the economic, social and environmental conditions in North Lincolnshire’</i> .
SS2	Policy SS2 ‘Spatial Strategy for North Lincolnshire’ supports <i>‘the creation of 11,500 new jobs in...priority sectors and encouraging innovation’</i> .
SS10	Policy SS10 ‘Strategic Site Allocation – South Humber Bank’ describes the importance of the South Humber Bank employment area including the favoured developments associated with port activities and energy generation proposals.
EC2	Policy EC2 ‘Existing Employment Areas’ is to safeguard existing employment uses and promote development and reuse of vacant sites. Of relevance to the Proposed Development is the South Humber Bank location.
DQE8	Policy DQE8 ‘Renewable Energy Proposals’ states that <i>‘North Lincolnshire Council will support opportunities to maximise renewable energy capacity within North Lincolnshire’</i> and <i>‘subject to the following impact considerations:...local amenity...[and] Public Rights of Way’</i> .
East Lindsey	
<i>East Lindsey District Council Core Strategy Local Plan (2018)</i>	

Policy Reference	Policy Context
SP2	Strategic Policy 2 ‘Sustainable Development’ confirms the adoption of the NPPF’s presumption in favour of sustainable development whereby the Council will work proactively to <i>‘secure development that improves the economic, social and environmental conditions in the area’</i> .
SP26	Strategic Policy 26 ‘Open Space, Sport and Recreation’ states that the <i>‘Council will safeguard, expand, enhance and promote access to...recreational facilities and open spaces’</i> .
SP25	Strategic Policy 25 ‘Green Infrastructure’ states that the <i>‘Council will safeguard and deliver a network of accessible green infrastructure’</i> and <i>‘development will only be permitted on open spaces provided unacceptable harm will not be caused to their appearance, character or role’</i> .
SP27	Strategic Policy 27 ‘Renewable and Low Carbon Energy’ sets out that <i>‘large-scale renewable and low carbon energy development, development for the transmission and interconnection of electricity, and infrastructure required to support such development, will be supported where their individual and cumulative impacts, when weighed against the benefits, are considered to be acceptable in relation to...residential amenity...[and] the local economy’</i> .
Central Lincolnshire	
<i>Central Lincolnshire Local Plan (2023)</i>	
S14	Policy S14 ‘Renewable Energy’ states that <i>‘proposals for renewable energy schemes...will be supported where the...impacts on...the amenity of sensitive neighbouring uses (including local residents)...are or will be made acceptable’</i> .
S16	Policy S16 ‘Wider Energy Infrastructure’ sets out with reference to the recognised commitment to supporting the transition to net zero, that the authority will support <i>‘proposals which are necessary for, or form part of, the transition to a net zero sub-region...which could include energy storage facilities and upgraded or new electricity facilities’</i> .
S50	Policy S50 ‘Community Facilities’ recognises that <i>‘community facilities...are an integral component in achieving and maintaining sustainable, well integrated and inclusive development’</i> .

Guidance

16.2.16 The socio-economics assessment has been carried out in accordance with the following guidance:

- *National Planning Practice Guidance (Ref 16-13); and*
- *Homes and Communities Agency Additionality Guide (Ref 16-14).*

16.3 Scope of Assessment and Consultation

Introduction

16.3.1 This section sets out a summary of the scoping of the assessment, including details on consultation undertaken to date with respect to the Scoping Opinion and the Preliminary Environmental Information Report (PEIR).

Scoping Report and Scoping Opinion

16.3.2 A scoping exercise was undertaken in early 2022, to establish the content of the socio-economic assessment and the approach and methods to be followed.

16.3.3 The Scoping Report 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 socio-economics.

16.3.4 A Scoping Opinion (*ES Volume IV: Appendix 5.2 (Application Document 6.4.5.2)*) was subsequently received from the Planning Inspectorate. The results of the consultation, which engaged a range of stakeholders to obtain their views, are presented in **Table 16-3**, along with an explanation of how comments specific to socio-economics were taken into account within the EIA, both as part of the PEIR and this ES.

Table 16-3: Socio-economics Scoping Opinion

Section Reference to Scoping Opinion	Applicant's proposed matter	Planning Inspectorate/ prescribed consultee comments	Response
Planning Inspectorate Paragraphs 15.5.11 and 15.5.12 Table 15-2	Socio-economic effects on employment, economic growth and training during operation	The Scoping Report states that the potential for the creation of training opportunities is considered to be limited based on the scale of the operational employment generated as a result of the Proposed Development. Therefore, all effects on employment, economic growth and training during operation of the Proposed Development have been scoped out of the ES. The Inspectorate is content for these matters to be scoped out of the ES as the operation of the Proposed Development is unlikely to result in any significant effects on employment,	This is noted.

Section Reference to Scoping Opinion	Applicant's proposed matter	Planning Inspectorate/ prescribed consultee comments	Response
		economic growth and training.	
Planning Inspectorate 15.5.13 Table 15-2	Socio-economic effects on recreational routes and Public Rights of Way (PRoW) during operation	The Scoping Report states that operation of the pipeline and associated above ground infrastructure would not lead to any potential impacts in terms of PRoWs, National Cycle Network (NCN) or other recreational routes. The Inspectorate is content with this approach. However, the ES should include an assessment of the potential operational effects as a result of permanently redirecting any recreational routes of PRoWs during the construction phase of the Proposed Development, where significant effects could occur.	No recreational routes or PRoWs will be permanently redirected during the construction phase of the Proposed Development. Any temporary diversions will be reinstated to their original route on completion of the relevant construction works.
Planning Inspectorate Paragraph 15.5.14 and 15.5.16 Table 15-2	Socio-economic effects on 'community severance' and 'development land' during operation	The Scoping Report states that impacts to community severance and development land during construction of the Proposed Development would not be anticipated to extend to the operational phase. Therefore, effects on community severance and development land have been scoped out of the ES. The Inspectorate is content for these matters to be scoped out of the ES as the operation of the Proposed Development	This is noted.

Section Reference to Scoping Opinion	Applicant's proposed matter	Planning Inspectorate/ prescribed consultee comments	Response
		is unlikely to result in significant effects on community severance and development land.	
Planning Inspectorate Paragraph 15.5.15 Table 15-2	Effects on private assets during operation of the pipeline	The Applicant intends to scope out effects on private assets during operation of the pipeline as it would be buried and would have no effect on private assets. The Inspectorate is content for this matter to be scoped out of the ES as the operation of the pipeline is unlikely to result in significant effects on private assets.	This is noted.
Planning Inspectorate Table 15-2	Decommissioning effects	<p>The effects of decommissioning of the Proposed Development have not been considered for recreational routes and PRowWs, community severance, private assets or development land.</p> <p>It is noted that the specific decommissioning methodology is not known at this stage. However, in the absence of more detailed information relating to the decommissioning phase of the Proposed Development, the Inspectorate is not in a position to agree to scope these matters from the assessment. Therefore, the ES should include an assessment of</p>	<p>Socio-economic effects on employment, economic growth and training, recreational routes and PRowWs, community severance, and private assets during the decommissioning phase have been assessed within this chapter, refer to section 16.7.</p> <p>Decommissioning effects on development land (allocations of land for future housing and employment development, as set out within local planning policy, and other existing and/or approved developments derived from the shortlist of cumulative schemes) have been scoped out as it is not possible to identify what extant development land would be available</p>

Section Reference to Scoping Opinion	Applicant's proposed matter	Planning Inspectorate/ prescribed consultee comments	Response
		decommissioning effects on socio-economic elements or provide information to identify or demonstrate the absence of any likely significant effects.	during the decommissioning phase. The Proposed Development has a minimum operational life of 25 years, with the potential to be extended further. Therefore, the current Local Plan periods for each of the local authorities in which the Proposed Development is located will have expired: North East Lincolnshire (2023), North Lincolnshire (2038), East Lindsey (2031) and West Lindsey/Central Lincolnshire (2040). It is also considered highly certain that at the point of decommissioning any currently unimplemented permissions will have been implemented or expired.
East Lindsey District Council	Tourism	The EIA should address impacts to Tourism including on seasonal traffic.	Impacts on tourism have been assessed in section 16.7 of this socio-economics chapter. Impacts on seasonal traffic have been assessed in <i>ES Volume II Chapter 12: Traffic and Transport (Application Document 6.2.12)</i> .
East Lindsey District Council	Schools	In Section 15, Socio-Economic several schools in East Lindsey are listed, please note Tennyson High School in Mablethorpe has closed and has been demolished although there is a private school	This has been noted. The schools which fall within the community facilities study area of 1km from the DCO Site Boundary have been identified and presented in Section 16.5. It should be noted that

Section Reference to Scoping Opinion	Applicant's proposed matter	Planning Inspectorate/ prescribed consultee comments	Response
		<p>adjacent (Springwell Alternative Academy). Also, there are primary schools in Fulstow, North Thoresby, Grimoldby, North Cockerington and Theddlethorpe.</p>	<p>Springwell Alternative Academy, and the primary schools in Fulstow, North Thoresby, and Grimoldby fall outside of the study area. North Cockerington Church of England Primary School in North Cockerington and Theddlethorpe Academy in Theddlethorpe are identified in Section 16.5, as they fall within the applicable study area.</p>
<p>Lincolnshire County Council</p>	<p>PRoW</p>	<p>From an economic growth perspective, the range of topics in the scoping document appears reasonable, and we will be able to comment in further detail as the project progresses. It is considered that Public Rights of Way and Access are adequately covered at this stage and that necessary temporary diversions will be treated sympathetically during construction. Await further detail of which routes will be affected but in the meantime are, on request, able to provide location details of both recorded rights of way and applications for additional routes within the selected corridor area as necessary. Detailed analysis of affected</p>	<p>An assessment of the affected PRoW, as identified within Section 16.5, has been undertaken within Section 16.7, taking into account the temporary diversion strategy set out in the Outline PRoW Management Plan (Application Document 6.11).</p>

Section Reference to Scoping Opinion	Applicant's proposed matter	Planning Inspectorate/ prescribed consultee comments	Response
		routes will follow once known.	
Natural England	Connecting People with Nature	<p>The ES should consider potential impacts on access land, common land, public rights of way and, where appropriate, the England Coast Path and coastal access routes and coastal margin in the vicinity of the development in line with NPPF paragraph 100. It should assess the scope to mitigate for any adverse impacts. Rights of Way Improvement Plans (ROWIP) can be used to identify public rights of way within or adjacent to the proposed site that should be maintained or enhanced.</p>	<p>This chapter considers the potential impacts on public rights of way in section 16.7.</p> <p>There is no common land in the Study Area. The Proposed Development does not intersect with the England Coast Path, coastal access routes or the coastal margin.</p> <p>There is an area of Countryside Right of Way access land near Theddlethorpe which is identified in the relevant sections below and assessed as part of the development land assessment undertaken in this chapter.</p> <p>An Outline PRow Management Plan has been included in the DCO application, refer to Application Document 6.11.</p>
Natural England		The application is within the Protected Landscape Impact Risk Zone of the English Coast Path – Mablethorpe to Humber Bridge (in progress).	This is acknowledged. Due reference is made to it in <i>ES Volume II: Chapter 7: Landscape and Visual Assessment</i> (Application Document 6.2.7).
Natural England		Measures to help people to better access the countryside for quiet enjoyment and opportunities to connect with nature should be considered. Such measures could include reinstating existing footpaths or the	The approach to the reinstatement of existing Public Rights of Way following construction works is discussed in <i>ES Volume II Chapter 3: Description of the Proposed Development</i> (Application Document 6.2.3).

Section Reference to Scoping Opinion	Applicant's proposed matter	Planning Inspectorate/ prescribed consultee comments	Response
		<p>creation of new footpaths, cycleways, and bridleways. Links to other green networks and, where appropriate, urban fringe areas should also be explored to help promote the creation of wider green infrastructure.</p>	
<p>Natural England</p>		<p>Relevant aspects of local authority green infrastructure strategies should be incorporated where appropriate.</p>	<p>Local Authority green infrastructure strategies/policies have been referenced in Table 16-2. The assessment of the impact of the Proposed Development on Public Rights of Way within this chapter takes into account, where applicable, the requirement that PRowS are protected and maintained. The policy context also informs the assignment of the sensitivity of the receptor.</p>
<p>Natural England</p>		<p>The ES should include details of the decommissioning and after-use of the site and how it will be restored.</p>	<p>Socio-economic effects during the decommissioning phase have been included within the socio-economics assessment in section 16.7. Details of the decommissioning strategy are provided in <i>ES Volume IV: Appendix 3.5 (Application Document 6.4.3.5)</i> and include that: the Immingham and Theddlethorpe Facilities will be reinstated as brownfield land and covered with Ministry of Transport Type 1</p>

Section Reference to Scoping Opinion	Applicant's proposed matter	Planning Inspectorate/ prescribed consultee comments	Response
			material; Block Valve Stations will likely be reinstated for agricultural use including the spreading of topsoil, and the pipeline will remain in situ. On this basis, given the reinstatement and restoration of land, an assessment of the after-use of the site is not deemed necessary given the unlikelihood of significant effects occurring.

Feedback on the Preliminary Environmental Information Report

16.3.5 Additionally, consultation was sought on the findings and approach of the PEIR. A summary of stakeholder engagement specific to socio-economics has been provided in **Table 16-4**.

Table 16-4: Socio-economics Feedback on PEIR

Stakeholder	Topic	Comment	How addressed in ES
Natural England	Green Infrastructure	We welcome that Green Infrastructure will be noted within the socio-economics chapter where applicable, the benefits of which were noted in our previous scoping response. Natural England will be happy to provide detailed comment on receipt of the ES. We also recommend the use of Biodiversity Opportunity Mapping (BOM) to identify key areas of habitat creation and network expansion. However, we would also encourage greater enhancements outside these areas, to go above and beyond the BOM to create additional habitat, where this is possible/appropriate.	<i>Section 16.7</i> of this socio-economics chapter considers the impact of the Proposed Development on users of PRow, of which footpaths, bridleways and other National Trails comprise elements of the green infrastructure in the relevant study areas. <i>ES Volume II Chapter 6: Ecology and Biodiversity (Application Document 6.2.6)</i> presents a specific assessment of the ecology and biodiversity impacts of

			the Proposed Development.
North Lincolnshire Council	Socio-economics	Having considered Chapter 16 of the PEIR, it is noted that the impacts range from beneficial negative in respect of loss of agricultural land and risks of fire NLC do not have any objections to the approach set out in the PEIR at this stage.	No further comments.

Additional Consultation

16.3.6 No additional consultation specific to socio-economics has been undertaken to date.

Scope of Assessment

16.3.7 The Proposed Development has the potential to result in a wide range of effects during the construction and decommissioning stages. For the purposes of this chapter, an assessment has been provided for the following effects during the construction and decommissioning phases:

- Employment (including training and apprenticeship opportunities) and local economy (Gross Value Added);
- Users of recreational routes and Public Rights of Way (PRoW);
- Community severance; and
- Private assets (including residential properties, development land, local businesses, community facilities, open space and visitor attractions relevant for tourism).

Aspects scoped out of the assessment

16.3.8 Socio-economic effects during the operation phase have been scoped out of the assessment based on scoping opinion received, and the understanding that the operation of the Proposed Development is unlikely to result in any significant socio-economic effects.

16.3.9 During the decommissioning phase, socio-economic effects on development land have been scoped out on the basis that it is not possible to anticipate which development allocations will have either been built out, or retained, at the time of decommissioning, and therefore a robust assessment is not possible. This is related to the applicable periods covered by the respective Local Plans of the local authority areas in which the Proposed Development is located: North East Lincolnshire (to 2032), North Lincolnshire (to 2038), East Lindsey (to 2031), and West Lindsey/Central Lincolnshire (to 2040). Given the minimum operational period of the Proposed Development of 25 years, with the possibility of extension, it is therefore not possible to confirm which allocations if any, derived from respective Local Plans, will be applicable beyond the Plan periods such as to assess impacts on them. Similarly, as any currently extant planning permissions will have been implemented by the point of decommissioning, or their planning permission expired, any relevant other approved/shortlisted developments will no longer be development land to be relevant for assessment.

16.4 Assessment Methodology

16.4.1 There is currently no industry-recognised guidance on methodology for undertaking assessments of socio-economic effects. The assessment follows best practice methodology from other assessments undertaken on comparable energy infrastructure schemes., and is

conducted in accordance with applicable supporting guidance such as National Planning Practice Guidance (Ref 16-13) and Homes and Communities Agency Additionality Guide (Ref 16-14).

Overview

16.4.2 An assessment of potential impacts will use policy thresholds and professional judgment to assess the scale and nature of the impacts of the Proposed Development against the established baseline. The methodology for assessing socio-economic impacts follows standard EIA guidance provided by IEMA (Ref 16-15) and will entail:

- an assessment of the likely scale, permanence and significance of effects associated with socio-economics receptors; and
- an assessment of the potential cumulative impacts with other schemes within the surrounding area.

16.4.3 For socio-economics there is no accepted definition of what constitutes a significant (or not significant) socio-economic effect. It is however recognised that effects are categorised based upon the relationship between the scale (or magnitude) of impact and the sensitivity (or value) of the affected resource or receptor.

16.4.4 As such, the socio-economic effects will be assessed on the basis of:

- *consideration of sensitivity of receptors*: the sensitivity of socio-economic resources/receptors is not attributed with reference to quantitative thresholds due to their diverse nature and scale, however the assessment takes account of the qualitative (rather than quantitative) 'sensitivity' of each receptor and, in particular, their ability to respond to change based on recent rates of change (if appropriate);
- *scale of impact*: this entails consideration of the size of the impact on people or businesses in the context of the area in which effects will be experienced; and
- *scope for adjustment or mitigation*: the socio-economic study is concerned in part with economies. These adjust themselves continually to changes in supply and demand, and the scope for the changes brought about by the Proposed Development to be accommodated by market adjustment will therefore be a criterion in assessing significance.

16.4.5 The assessment aims to be objective and quantifies effects as far as possible. However, some effects can only be evaluated on a qualitative basis. Effects are defined as follows:

- *beneficial classifications of effect*: indicate an advantageous effect on an area, which may be minor, moderate, or major in effect;
- *negligible classifications of effect*: indicate imperceptible effects on an area;
- *adverse classifications of effect*: indicate a disadvantageous effect on an area, which may be minor, moderate or major in effect; and
- *no effect classifications*: indicate that there are no effects on an area.

16.4.6 Based on consideration of the above, where an effect is assessed as being beneficial or adverse, the significance of the effect has been assigned using the below criteria:

- *minor*: a small number of receptors are beneficially or adversely affected. The effect will make a small measurable positive or negative difference on receptors at the relevant area(s) of effect;
- *moderate*: a noticeable number of receptors are beneficially or adversely affected. The effect will make a measurable positive or negative difference on receptors at the relevant area(s) of effect; and

- *major*: all or a large number of receptors are beneficially or adversely affected. The effect will make a measurable positive or negative difference on receptors at the relevant area(s) of effect.

16.4.7 Those effects which are found to be moderate or major are considered to be ‘significant’ and those which are minor or negligible are ‘not significant’.

16.4.8 Duration of impact is also considered, with a greater magnitude of impact attributed to reversible long-term or permanent changes than to short-swiftly ceased short term or temporary ones. Temporary impacts are considered to be those associated with the construction works, and are likely to be short term (less than 3 months) or medium term (between 3 months and 2 years) in duration. Long-term reversible impacts are generally those associated with the completed and operational development (and are likely to last longer than 2 years).

Economic Impact

16.4.9 The following criteria have been set out to assess the effects on receptors in relation to employment, economic growth, and training and apprenticeship opportunities which have been grouped together as economic impacts. Effects on employment are assessed in terms of the generation of employment (i.e., the number of jobs created) by the Proposed Development, taking into account direct, and indirect and induced employment opportunities created. Economic growth is assessed in terms of the Gross Value Added (GVA) resulting from the employment generated by the Proposed Development in order to quantify the economic impact on the local economy more widely. Training and apprenticeship opportunities have been assessed in terms of commitments by the Applicant to providing such opportunities given the potential for these to result in benefits to the local population. **Table 16-5** identifies the sensitivity criteria that have been applied to economic receptors.

Table 16-5: Economic Receptor Sensitivity Criteria

Sensitivity	Description
High	Businesses, workers or residents who have little or no capacity to experience impacts without incurring an economic loss or have capacity to experience an economic gain.
Medium	Businesses, workers or residents that have a moderate or average capacity to experience impacts without incurring a change in their economic well-being.
Low	Businesses, workers or residents that generally have adequate capacity to experience impacts without incurring a change in their economic well-being.
Very low	Businesses, workers or residents that are unlikely to experience impacts on their economic well-being.

16.4.10 **Table 16-6** identifies the magnitude of impact criteria.

Table 16-6: Economic Impact Magnitude Criteria

Magnitude	Description
High	An impact that is expected to have considerable adverse or beneficial socio-economic effects. Such impacts will typically affect large numbers of businesses, workers or residents.
Medium	An impact that will typically have a noticeable effect on a moderate number of businesses, workers or residents, and will lead to a small change to the study area’s baseline socio-economic conditions.
Low	An impact that is expected to affect a small number of businesses, workers or residents; or an impact that may affect a larger number of receptors but does not materially alter the study area’s baseline socio-economic conditions.
Very low	An impact which has very little change from baseline conditions where the change is barely distinguishable, approximating to a ‘no change’ situation.

Methodology for determining construction employment effects

- 16.4.11 The economic impact of the Proposed Development, with respect to employment and employment-derived GVA, is considered relative to an economic impact study area (reflecting a 60-minute travel time (car) to the Proposed Development). This is considered to be reflective of a reasonable timeframe within which workers would commute to the Proposed Development and therefore represents the principal labour market catchment area. The economic impact (60-minute drive time) study area is shown in **Figure 16-1**. See *Section 16.5* below for more details on the definitions of study areas such this which apply in this chapter.
- 16.4.12 Additionality has been calculated by considering the overall impact of job gains to the area, taking into account the level of leakage, number of displaced jobs and multiplier effects (such as supply chain and worker spending-related jobs). These assumptions have been informed by the Homes and Communities Agency (HCA) Additionality Guidance (Ref 16-14).
- 16.4.13 **Table 16-7** below outlines the values that have been allocated within the construction and decommissioning phases’ additionality formula, enabling the tailored calculation of the net additional employment and economic impacts. Justifications for the values have been considered and are summarised in the right-hand column of the table.

Table 16-7: Calculation of Employment Generation Assumptions

Additionality Factor	Value	Justification
Leakage (% of jobs that benefit those residents outside the Proposed Development's identified target area)	70%	Relating to employment from outside the target area – this is the proportion of jobs taken by people who live outside of the study area as described as a 60-minute travel area. This value is considered appropriate based on professional judgement and experience of similar schemes.
Displacement (% of jobs that account for a reduction in related jobs in the Proposed Development's identified target areas)	25%	For the purpose of this assessment, a low level of displacement (25%) has been assumed, in line with the HCA Additionality Guidance (Ref 16-14).
Multiplier (further economic activity associated with the additional local income, supplier purchase and longer-term development effects)	1.5	The multiplier is a composite figure which takes into account both the indirect jobs created across the study area based on supply chain activity but also the induced employment created through increased spending across the study area. The HCA Additionality Guidance (Ref 16-14) provides a 'ready reckoner' of composite multipliers. The study area is likely to have 'average' supply linkages and induced effects based on the scale of its economy. Therefore, a 'medium' multiplier of 1.5 is determined from the HCA guidance to be the most appropriate measure.

Methodology for determining Gross Value Added (GVA) effect

16.4.14 The methodology for determining the Gross Value Added (GVA) of the Proposed Development takes into account the calculation of construction employment generation. GVA is deemed to derive from the productivity output of the labour workforce during the construction phase. Therefore, the GVA per worker, as derived from the latest available data, is applied to the calculated number of employees to estimate overall GVA of the Proposed Development. This is considered to be a beneficial effect in terms of a positive effect on the local economy. Leakage (as described in Table 16-7) is also taken into account in the assessment, in order to indicate the impact within, and outside of, the economic impact study area.

Public Rights of Way Impact

16.4.15 The following criteria have been set out to assess the effects on users of PRow, including recreational routes and National Cycle Network (NCN) routes, focussing on the impact of severance of existing routes and the resulting changes in journey lengths and times, and local travel patterns.

16.4.16 **Table 16-8** identifies the sensitivity criteria that have been used to inform the assessment of PRow, in conjunction with the magnitude criteria set out below, to establish the significance of the identified effects.

Table 16-8: Public Rights of Way Sensitivity Criteria

Sensitivity	Description
High	PRoW is of high importance (for example, it has a national designation or is very well used) with limited potential to substitute with other route options to access the wider network or community infrastructure.
Medium	PRoW is of medium importance with moderate potential to substitute with other route options to access the wider network or community infrastructure; or PRoW is of high importance with alternative routes available; or PRoW is of low importance with limited potential to substitute with other route options to access the wider network or community infrastructure.
Low	PRoW is of low importance with alternative routes available; or PRoW is of very low importance with moderate potential to substitute with other route options to access the wider network or community infrastructure.
Very low	PRoW is of very low importance with alternative routes available.

16.4.17 **Table 16-9** identifies the magnitude of impact criteria which have been used to assess the impacts on PRoW.

Table 16-9: Public Rights of Way Magnitude Criteria

Magnitude	Description
High	Substantial increase/decrease (+/- 800m) in journey length and/or change in travel patterns and increased/decreased opportunities for users to access the wider network and/or community infrastructure.
Medium	Noticeable increase/decrease (+/- 400 – 800m) in journey length and/or change in travel patterns and increased/decreased opportunities for users to access the wider network and/or community infrastructure.
Low	Slight increase/decrease (+/- 50 – 400 m) in journey length and/or change in travel patterns and increased/decreased opportunities for users to access the wider network and/or community infrastructure.
Very low	No increase or decrease (< 50m) in journey length and/or change in travel patterns and no increase or decrease in opportunities for users to access the wider network and/or community infrastructure.

Community Severance Impact

16.4.18 The methodology used to assess community severance effects reflects that used for the traffic and transport assessment of severance effects in *Chapter 12: Traffic and Transport*, whereby severance is considered in the context of severance effects on drivers when there is difficulty accessing a heavily trafficked road due to increases in traffic flows or HGV flows. The assessment will also consider significant effects on users of PRoW, as determined by the specific public rights of way assessment within this chapter. The implication of these potential severance effects regards potential effects on the accessibility of community facilities and other social infrastructure, and therein users of these facilities. The assessment

approach to the sensitivity of receptors and magnitude of impact criteria is set out in *Section 12.4 of ES Volume II Chapter 12: Traffic and Transport (Application Document 6.2.12)*.

16.4.19 The community severance assessment considers temporary severance of access via roads, PRowS and/or the National Cycle Network (NCN) to community facilities and healthcare services. Where ‘community facilities’ are assessed as part of the private assets category of receptors, as described in the following paragraphs, this considers the potential disruption from noise and vibration, air quality and visual effects to impact on the amenity of community facilities.

Private Assets (Residential Properties, Development Land, Local Businesses, Community Facilities, Visitor Attractions, Open Space)

16.4.20 The following criteria have been set out to assess the effects on private assets comprising residential properties, business premises, community facilities, visitor attractions and open space, as well as any impacts on development land.

16.4.21 In the assessment of development land, planning applications are included if: they are within the development land study area (1 km as described in *Section 16.5*); are of relevance to the receptors in this socio-economic assessment; and are of significant scale.

16.4.22 Private assets are assessed both in terms of effects due to land take, and amenity effects. The amenity effects assessment considers the findings of the traffic and transport, noise and vibration, air quality, and landscape and visual assessments. It is considered that there is the potential for a significant effect on the amenity of private assets to result from two or more significant residual effects, as derived from the respective assessments, occurring at the same time on a single receptor.

16.4.23 **Table 16-10** identifies the sensitivity criteria that have been used to inform the assessment of effects relating to private assets, which in conjunction with the magnitude criteria set out below, establish the significance of the identified effects.

Table 16-10: Private Assets Sensitivity Criteria

Sensitivity	Description
High	Private asset or development land is of high importance and rarity with limited potential for substitution or access to alternatives.
Medium	Private asset or development land is of medium importance and rarity with moderate potential for substitution or access to alternatives.
Low	Private asset or development land is of low importance and rarity with alternatives available.
Very low	Private asset or development land is of very low importance and rarity with alternatives available.

16.4.24 The magnitude of change on private assets and development land is assessed by appraising the level of impact on the receptor and the permanence of change arising from the Proposed Development. **Table 16-11** identifies the magnitude of impact criteria which have been used to assess the impacts on private assets and development land.

Table 16-11: Private Assets Magnitude Criteria

Magnitude	Description
High	An impact that permanently affects the integrity and value of a private asset or development land or an impact that considerably enhances its value and quality.
Medium	An impact that negatively affects the value of a private asset or development land, but a recovery is possible with no permanent impacts; or an impact that improves its key characteristics and features.
Low	An impact that negatively affects the value of a private asset or development land, but a recovery is expected in the short-term with no change to its integrity; or an impact that has some beneficial impact on the attributes of the private asset or development land.
Very low	An impact which is a very minor loss or benefit from baseline conditions where the change is barely distinguishable, approximating to a 'no change' situation.

Significance Criteria

16.4.25 Socio-economic effects are a reflection of the relationship between the sensitivity of the affected receptor (**Table 16-5, Table 16-8, Table 16-10**) and the magnitude of impact (**Table 16-6, Table 16-9, Table 16-11**). The determination of significance is given in **Table 16-12**.

Table 16-12: Impact Assessment and Significance

Magnitude of Impact	Sensitivity of Receptor			
	High	Medium	Low	Very low
High	Major	Major	Moderate	Minor
Medium	Major	Moderate	Minor	Negligible
Low	Moderate	Minor	Negligible	Negligible
Very low	Minor	Negligible	Negligible	Negligible

Assumptions and Limitations

16.4.26 The information presented in this assessment reflects that obtained and evaluated at the time of reporting, assessed within the context of the study areas, as set out in **Table 16-13**.

16.4.27 Baseline conditions reported in Section 16.5 regarding population, labour force and the local economy are based on the latest data available at the time of writing. The assessment of the significance of effects has been carried out against a benchmark of current socio-economic baseline conditions prevailing around the Proposed Development, as far as is possible within the limitations of such a dataset. Baseline data is subject to a time lag between collection and publication. As with any dataset, these conditions may be subject to change over time which may influence the findings of the assessment. The assessment of effects reported in Section 16.7, is based on the latest available data and existing receptors identified.

16.4.28 The assessment of amenity effects takes into consideration the potential for in-combination results from other environmental studies to lead to socio-economic effects. These studies comprise the transport and access, noise and vibration, air quality, and landscape and visual amenity assessments. Where these assessments indicate that receptors are likely to experience two or more significant effects at the same time, this is assessed to comprise a

significant amenity effect on that receptor. Therefore, the assumptions and limitations of the respective assessments referenced are also assumed to be relevant to this assessment. Further detail on the assumptions and limitations of the respective assessments is available within Section 12.4, Section 13.4, Section 14.4, and Section 7.4 of *ES Volume II*.

16.5 Baseline Conditions and Study Area

Study Area

16.5.1 The study area varies depending on the effect or type of resource being assessed, as discussed further below. The study area considered for each effect or type of resource is presented in **Table 16-13**.

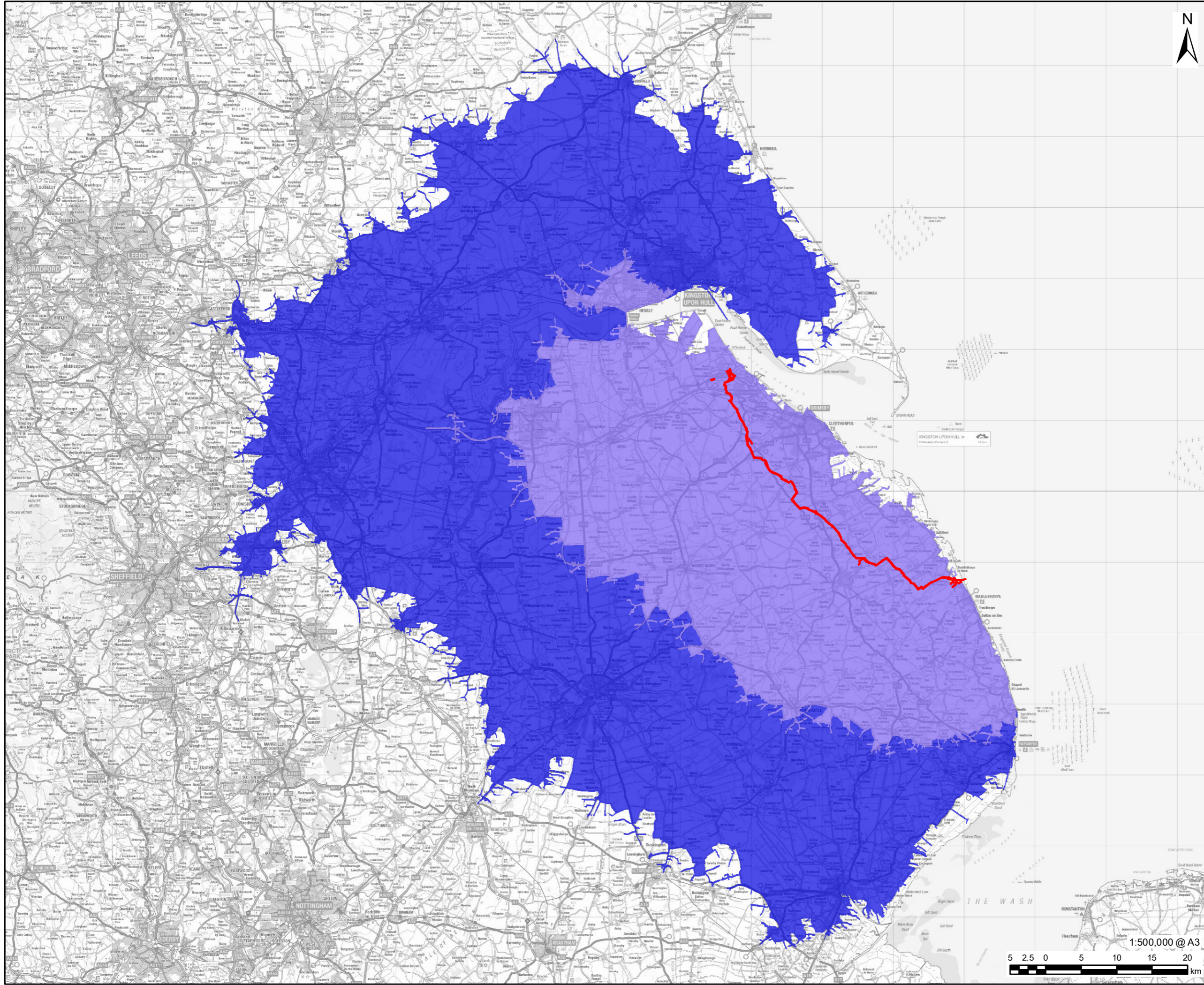
Table 16-13: Geographical Scale of Study Area

Receptor	Geographical Scale	Rationale
Employment generation	Labour market catchment area reflecting a 60-minute drive time radius of the Proposed Development	Professional judgement and experience from other schemes.
Economic growth (GVA)		Research by the Chartered Institute of Personnel and Development (CIPD) found that 90% of national employees commuted for 60 minutes or less each way. This was reported by CIPD in the 2017 Employee outlook 'Employee views on working life' (Ref 16-15).
Training and apprenticeship opportunities		
PRoW	All PRoWs directly affected because they lie within the DCO Site Boundary.	The assessment of effects on users of recreational routes and PRoWs considers all such resources likely to be affected by alterations in distribution and flows. The types of resources considered includes PRoWs themselves, National Cycle Network (NCN) routes and long-distance walking routes located within the DCO Site Boundary.
Community severance (access)	1 km radius of the DCO Site Boundary and those communities with significant connections that traverse the DCO Site Boundary	The study area is defined as a 1 km buffer either side of the DCO Site Boundary in order to include communities that may potentially be directly and indirectly affected by the Proposed Development through severance effects. These will include communities directly connected by the recreational routes and PRoW. Community facilities in larger

Receptor	Geographical Scale	Rationale
		settlements are also considered as access to these facilities for residents of communities in the study area may be impacted by the Proposed Development.
Private assets – residential properties, business premises, community facilities, visitor attractions, open space	Land take – defined as within the DCO Site Boundary	The study area is defined as the DCO Site Boundary (i.e., the land parcels required to accommodate the Proposed Development during both construction and operation).
	Amenity – defined as 1 km radius of the DCO Site Boundary	The study area is defined as a 1 km buffer either side of the DCO Site Boundary and has been informed by the study areas used in the relevant chapters, <i>Chapter 7: Landscape and Visual</i> , <i>Chapter 13: Noise and Vibration</i> , and <i>Chapter 14: Air Quality</i> of this ES.
	Community severance (amenity)	The study area is defined as a 1 km buffer either side of the DCO Site Boundary in order to include communities that may potentially be directly and indirectly affected by the Proposed Development through severance effects. These will include communities directly connected by the recreational routes and PRow. Community facilities in larger towns and cities beyond the study area are also considered as access to these facilities for residents of communities in the study area may be impacted by the Proposed Development.
Private assets – development land	1 km radius of the DCO Site Boundary	The study area is defined as a 1 km buffer either side of the DCO Site Boundary in order to include development land that may potentially be impacted by temporary or permanent land take and potential severance or disruption to access.

Baseline Conditions

- 16.5.2 This section presents the baseline environment for receptors that have the potential to experience effects from the Proposed Development. The information in this section presents the findings of a desktop study. The following baseline conditions are considered across the economic impact study area (**Figure 16-1**) (the 60-minute drive time area which, in line with the rationale described in *Section 16.4*, represents the relevant labour market for the Proposed Development), the local authority areas and surrounding region:
- Population and employment characteristics;
 - Qualifications and occupational profile; and
 - Deprivation
- 16.5.3 The following baseline conditions will be considered for the smaller 1 km radius study area (shown in **Figure 16-2**), and presented for different geographical sections of the Proposed Development:
- The existing site and land use;
 - Private assets, including: residential properties, development land, business premises, community facilities, and visitor attractions;
 - Community severance; and
 - PRow.
- 16.5.4 As noted in **Table 16-13** above, for community severance, community facilities in larger towns and cities beyond the study area are also considered as access to these facilities for residents of communities in the study area may be impacted by the Proposed Development.
- 16.5.5 For the purposes of ease of interpretation and to facilitate the assessment of receptors logically with regard to their location along the pipeline route, receptors are organised and identified within this section of the chapter according to the appropriate section of the pipeline in which they are located.



LEGEND

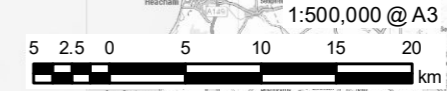
- DCO Site Boundary
- Drive Time (Average for Wednesday at 9:30am)
- 0 - 30 Minutes
- 30 - 60 Minutes

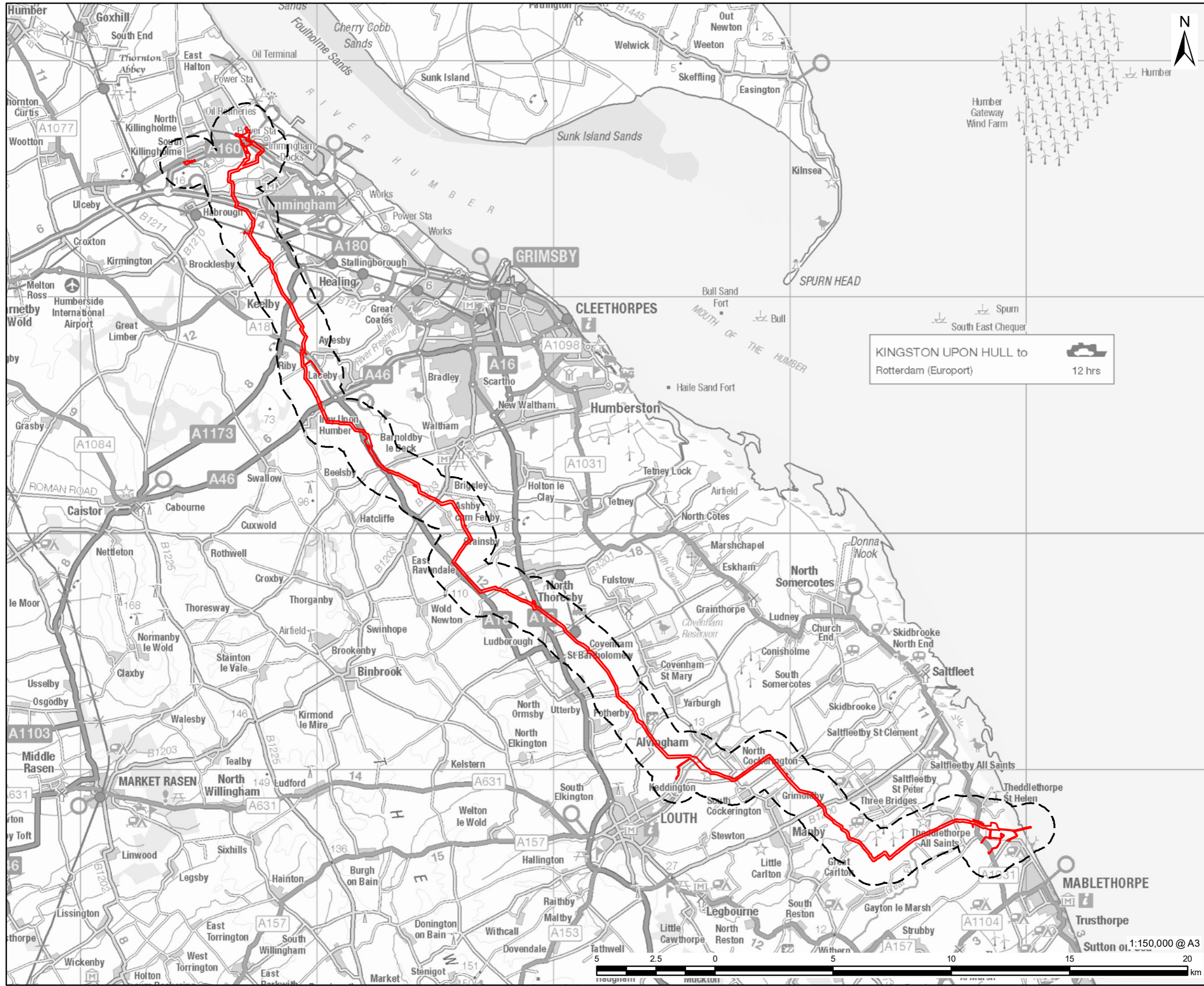
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FIGURE TITLE
Figure 16-1
Drive Time Catchment
(60 Minute Drive Time)

ISSUE PURPOSE
ENVIRONMENTAL STATEMENT
PROJECT NUMBER / REFERENCE
 60668955 / VCCS_230921_ES_16-1





KINGSTON UPON HULL to
Rotterdam (Europort)

12 hrs

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FIGURE TITLE

Figure 16-2
1km Study Area

ISSUE PURPOSE

ENVIRONMENTAL STATEMENT

PROJECT NUMBER / REFERENCE

60668955 / VCCS_230921_ES_16-2

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Population

- 16.5.6 The Proposed Development is located in the Yorkshire and the Humber region, which has an estimated population of 5,480,774, and the East Midlands region, which has an estimated population of 4,880,054 (Ref 16-17). In 2021, the population of the economic impact study area was 2,128,103.
- 16.5.7 The Proposed Development is located within the local authorities of North Lincolnshire, North East Lincolnshire, East Lindsey and West Lindsey. Part of the pipeline also passes through the Lincolnshire County Council area.
- 16.5.8 In 2021, North Lincolnshire was estimated to have a population of 169,680. The percentage of North Lincolnshire's population aged between 16-64 (60.2%) is slightly lower than that of the Yorkshire and the Humber region (62.4%) and England and Wales (62.9%) (Ref 16-17).
- 16.5.9 In 2021, North East Lincolnshire was estimated to have a population of 156,966. The percentage of North East Lincolnshire's population aged between 16-64 (60.3%) is slightly lower than that of the Yorkshire and the Humber region (62.4%) and England and Wales (62.9%).
- 16.5.10 In 2021, East Lindsey was estimated to have a population of 142,292. The percentage of East Lindsey's population aged between 16-64 (54.9%) is lower than the East Midlands region (62.4%) and England and Wales (62.9%).
- 16.5.11 In 2021, West Lindsey was estimated to have a population of 95,152. The percentage of West Lindsey's population aged between 16-64 (57.9%) is slightly lower than that of the East Midlands region (62.4%) and England and Wales (62.9%).
- 16.5.12 The percentage of economic impact study area's population aged between 16-64 (60.9%) is slightly lower than that of the Yorkshire and the Humber region (62.4%), the East Midlands region (62.4%) and England and Wales (62.9%).
- 16.5.13 Historic population trends given by the ONS show that in the period between 2011 and 2021 the population in North Lincolnshire has grown by 1.3% while the population of North East Lincolnshire has declined by 1.7%, compared to growth of 3.7% in the Yorkshire and the Humber region and 6.3% across England and Wales. Over the same period, the population in East Lindsey and West Lindsey has grown by 4.3% and 6.6% respectively, compared to growth of 7.7% in the East Midlands region and 6.3% across England and Wales. The population growth in the economic impact study area over the same period was approximately 6.0% (Ref 16-18, Ref 16-17).

Table 16-14: Population characteristics

Population indicator	North Lincolnshire	North East Lincolnshire	East Lindsey	West Lindsey	Economic impact study area	Yorkshire and The Humber	East Midlands	England and Wales
Population	169,680	156,966	142,292	95,152	2,128,103	5,480,774	4,880,054	59,597,546
Working age population (% aged 16 to 64)	60.2%	60.3%	54.9%	57.9%	60.9%	62.4%	62.4%	62.9%
Population change (% 2011 – 2021)	+1.3%	-1.7%	+4.3%	+6.6%	N/A ¹	+3.7%	+7.7%	+6.3%

Source: Office for National Statistics, (2022); Census 2021. Office for National Statistics, (2012); Census 2011.

Employment

16.5.14 In 2021, the unemployment rates² in North Lincolnshire (2.6%), North East Lincolnshire (2.8%), East Lindsey (2.7%) and West Lindsey (2.2%) were broadly comparable to the average recorded rates for Yorkshire and the Humber (2.7%), the East Midlands (2.4%), and England and Wales (2.8%) (Ref 16-17). Similarly, the unemployment rate in the economic impact study area (2.7%) is broadly comparable to the regional and national rates.

16.5.15 In 2021, the economic activity rates³ in North Lincolnshire (55.9%), North East Lincolnshire (55.4%), East Lindsey (47.6%), and West Lindsey (54.4%) were lower than the average recorded rates for Yorkshire and the Humber (56.2%), the East Midlands (57.5%), and England and Wales (58.3%) (Ref 16-17). Similarly, the economic activity rate in the economic impact study area (56.0%) was lower than the regional and national rates.

16.5.16 More recently, the claimant count⁴ (as a proportion of residents aged 16-64 years) recorded in December 2022 in North Lincolnshire was 3.5%, lower than the average for Yorkshire and the Humber (4.0%) and England and Wales (3.7%), whereas the rate recorded in North East Lincolnshire was 4.2%, slightly higher than the average for the region and England and Wales. The claimant count recorded in East Lindsey (3.4%) and West Lindsey (3.2%) was lower than the average for the East Midlands (3.3%) and England and Wales (3.7%)

¹ It is not possible to robustly identify the population in the economic impact study area (reflecting the 60-minute drive time radius) as the area has been defined using LSOAs, which have changed in extent over the period between the publication of the previous and latest Census.

² The unemployment rate is indicated by the 'Economically active (excluding full-time students): Unemployed' Census category, pertaining to the usual resident population aged 16 years or over.

³ The economic activity rate is indicated by the 'Economically active (excluding full-time students)' Census category, pertaining the usual resident population aged 16 years or over.

⁴ The 'claimant count' indicates the number of people claiming Jobseeker's Allowance plus those who claim Universal Credit and are required to seek and be available for work.

Table 16-15: Employment characteristics

Employment indicator	North Lincolnshire	North East Lincolnshire	East Lindsey	West Lindsey	Economic impact study area	Yorkshire and The Humber	East Midlands	England and Wales
Unemployment rate (aged 16 years and over)	2.6%	2.8%	2.7%	2.2%	2.6%	2.7%	2.4%	2.8%
Economic activity rate (aged 16 years and over)	55.9%	55.4%	47.6%	54.4%	56.0%	56.2%	57.5%	58.3%
Claimant count (aged 16 to 64)	3.5%	4.2%	3.4%	3.2%	N/A	4.0%	3.3%	3.7%

Source: Office for National Statistics, (2022); Census 2011. Office for National Statistics, (2023); Claimant count. Qualifications and Occupational Profile

16.5.17 In 2021, the proportion of the population⁵ that held an NVQ Level 4 qualification or above in North Lincolnshire (23.9%), North East Lincolnshire (21.6%) and East Lindsey (21.5%) was significantly lower than the average rates for Yorkshire and The Humber (29.5%), the East Midlands (29.1%), and England and Wales (33.8%), although West Lindsey recorded a rate (29.3%) broadly comparable with the wider regional geographies (Ref 16-17).

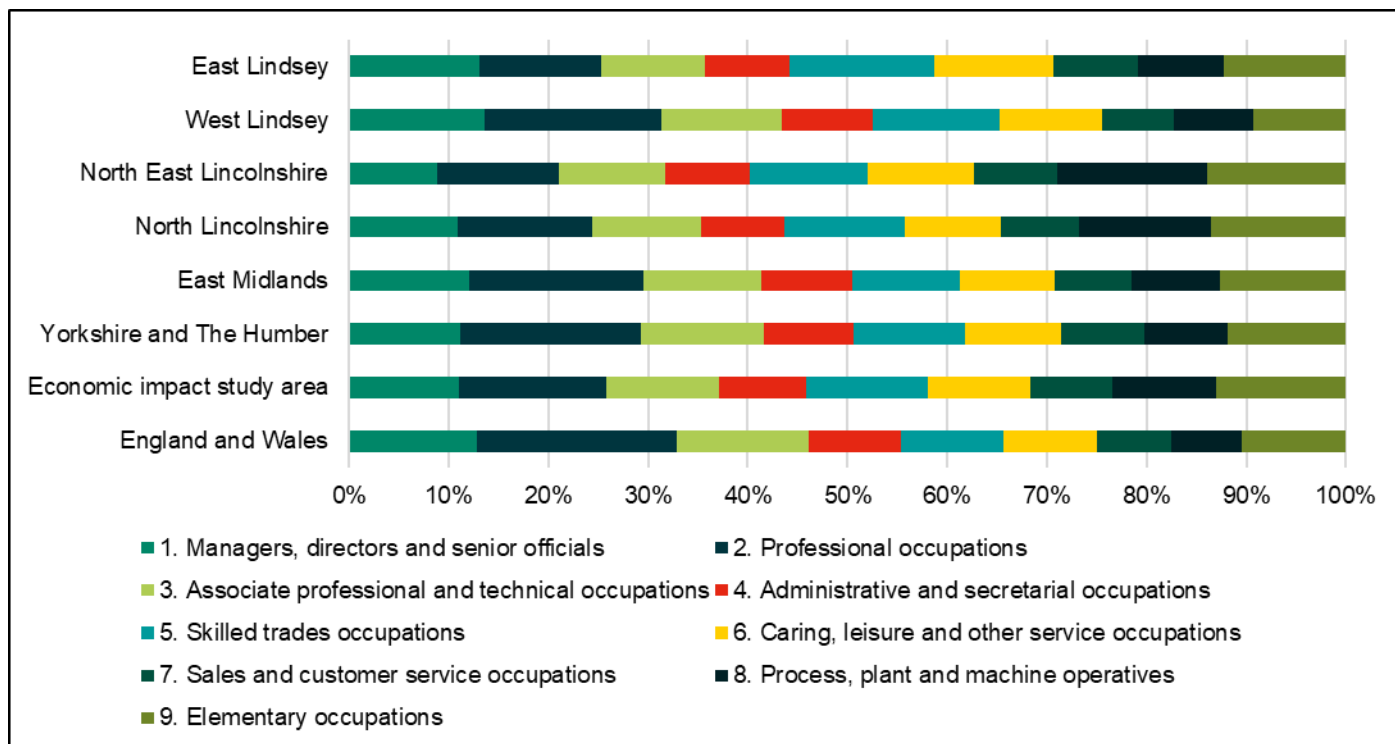
16.5.18 The proportion of the population with no formal qualifications in North Lincolnshire (21.8%), North East Lincolnshire (24.2%), and East Lindsey (25.2%) is higher than the average rate for Yorkshire and The Humber (20.6%), the East Midlands (19.5%) and England and Wales (18.2%), whereas West Lindsey recorded a rate (18.1%) broadly comparable with the wider national geography. (**Figure 16-3**).

16.5.19 **Figure 16-3** presents the occupational profile of each of the geographies considered. It shows the proportion of overall jobs represented by each occupation⁶. The proportion of jobs in an area represented by each occupation is compared to the other geographies.

⁵ Qualification data pertains to the usual resident population aged 16 years or over.

⁶ Occupation data pertains to the usual resident population aged 16 years or over.

Figure 16-3: Occupational Profile



Source: Office for National Statistics, (2022); Census 2021.

16.5.20 The most significant occupation category in North Lincolnshire (13.6%) is ‘elementary occupations’, while in North East Lincolnshire (15.1%) it is ‘process, plant and machine operatives’, in West Lindsey (13.6%) it is ‘professional occupations’, and in East Lindsey it is ‘skilled trades occupations’. ‘Professional occupations’ represent the highest proportion of employment in Yorkshire and the Humber (18.1%), the East Midlands (17.5%), the 60-minute drive time study area (14.8%) and England and Wales (20.2%).

16.5.21 The occupation categories that employ the fewest people in East Lindsey are the ‘process, plant and machine operatives’ and ‘administrative and secretarial occupations’, employing 8.5% each. ‘Sales and customer service’ occupations employ the fewest people in West Lindsey (7.3%), North East Lincolnshire (8.3%) and North Lincolnshire (7.9%), which is also the case in the Yorkshire and Humber (8.3%) and East Midlands (7.7%) regions, and the 60-minute drive time study area (8.3%).

16.5.22 **Table 16-16** shows the proportion of employment in each broad industrial group, derived from the number of jobs at businesses in the relevant geographies according to Census 2021 data for those aged over 16 (Ref 16-17).

Table 16-16: Jobs by Broad Industrial Group (%)

Broad Industrial Group	North Lincolnshire	North East Lincolnshire	East Lindsey	West Lindsey	Economic impact study area	Yorkshire and the Humber	East Midlands	England and Wales
A: Agriculture, forestry and fishing	1.7	0.5	5.0	4.1	1.8	1.0	1.1	0.9

Broad Industrial Group	North Lincolnshire	North East Lincolnshire	East Lindsey	West Lindsey	Economic impact study area	Yorkshire and the Humber	East Midlands	England and Wales
B: Mining and quarrying	0.4	0.7	0.2	0.3	0.3	0.2	0.2	0.2
C: Manufacturing	17.4	13.9	7.8	9.4	11.3	9.4	10.6	7.3
D: Electricity, gas, steam and air conditioning supply	0.8	1.1	0.5	1.0	0.8	0.6	0.8	0.6
E: Water supply; Sewerage, Waste management and Remediation activities	0.8	0.6	1.0	1.2	0.9	0.8	0.8	0.7
F: Construction	8.3	8.4	8.8	9.5	9.3	8.6	8.8	8.7
G: Wholesale and retail trade; repair of motor vehicles and motorcycles	17.2	18.2	16.8	15.0	17.7	16.7	17.6	15.0
H: Transport and storage	6.7	8.0	3.9	4.5	5.7	5.2	5.8	5.0
I: Accommodation and food service activities	4.4	5.0	8.1	3.6	4.6	4.9	4.4	4.9
J: Information and communication	1.6	1.3	1.5	2.1	2.3	3.1	3.1	4.6
K: Financial and insurance activities	1.1	0.9	0.8	1.2	1.5	3.0	2.2	3.8
L: Real estate activities	1.0	1.0	1.4	1.2	1.1	1.2	1.2	1.5
M: Professional, scientific and technical activities	3.2	3.6	3.7	4.4	3.9	5.2	4.8	6.6

Broad Industrial Group	North Lincolnshire	North East Lincolnshire	East Lindsey	West Lindsey	Economic impact study area	Yorkshire and the Humber	East Midlands	England and Wales
N: Administrative and support service activities	4.5	5.3	5.1	4.5	4.9	4.9	4.8	5.2
O: Public administration and defence; compulsory social security	5.1	4.1	6.7	7.4	6.2	5.9	5.5	5.9
P: Education	8.0	8.3	8.8	10.9	8.9	10.0	9.8	9.8
Q: Human health and social work activities	14.3	15.3	14.4	15.6	14.9	15.3	14.5	14.7
R, S, T, U Other	3.5	3.6	5.6	4.1	3.8	4.1	4.0	4.6

Source: Office for National Statistics, (2022); Census 2021.

16.5.23 **Table 16-16** shows that ‘Manufacturing’ is the most significant industrial group, in terms of the number of jobs it accounts for, in North Lincolnshire (17.4%). The ‘Wholesale and Retail’ industrial group accounts for the largest percentage of jobs in North East Lincolnshire (18.2%) and East Lindsey (16.8%), whereas the ‘Human health’ sector accounts for the most amount of jobs in West Lindsey (15.6%). The ‘Wholesale and Retail’ industrial group also accounts for the most amount of jobs of any sector across the wider geographies of the East Midlands region (17.6%), the Yorkshire and the Humber region (16.7%) and England and Wales (15.0%).

16.5.24 Employment in ‘Construction’ accounts for 8.3% of jobs in North Lincolnshire, 8.4% of jobs in North East Lincolnshire, 8.8% of jobs in East Lindsey, and 9.5% of jobs in West Lindsey. In comparison, ‘Construction’ accounts for 8.6% of jobs in Yorkshire and the Humber, 8.87% of jobs in the East Midlands, and 8.7% of jobs in England and Wales (Table 16-17). Within the four local authority areas passed through by the Proposed Development, there are approximately 12,750 jobs in the construction sector. Within the economic impact study area, there are approximately 89,844 jobs in the construction sector.

GVA

16.5.25 In 2021, regional gross value added (balanced) by industry for all industries totalled £118.4 billion in the East Midlands region and £133.4 billion in the Yorkshire and Humber region. In the same year the equivalent total was £2.4 billion in East Lindsey, £1.7 billion in West Lindsey, £3.4 billion in North East Lincolnshire and £5.4 billion in North Lincolnshire.

16.5.26 In 2021, GVA per head for all industries in East Lindsey was approximately £53,085, in West Lindsey was £62,371, in North East Lincolnshire was £48,588 and in North Lincolnshire was £69,662. GVA per head in the East Midlands region was £55,796 and in the Yorkshire and the Humber region was £54,657.

16.5.27 With regard to the construction industry, regional gross value added (balanced) totalled £8.0 billion in the East Midlands region and £7.6 billion in the Yorkshire and the Humber region. The equivalent total was £112 million in East Lindsey, £193 million in West Lindsey, £145 million in North East Lincolnshire and £346 million in North Lincolnshire.

16.5.28 in 2021 GVA per head in the construction industry in East Lindsey was approximately £56,000, in West Lindsey was approximately £85,778, in North East Lincolnshire was approximately £58,000 and in North Lincolnshire was approximately £57,667. For the construction industry GVA per head was £81,020 in the East Midlands and £68,393 in the Yorkshire and the Humber region.

Table 16-17: GVA: All Industries and Construction Sector

Area	Regional GVA (balanced, £ millions, all industries)	Regional GVA (balanced, £ millions, construction sector)	GVA per head (£, all industries)	GVA per head (£, construction sector)
East Lindsey	2,418	112	53,085	56,000
West Lindsey	1,723	193	62,371	85,778
North Lincolnshire	3,372	145	48,588	58,000
North East Lincolnshire	5,357	346	69,662	57,667
Total/average of four local authorities in which the Proposed Development is located	12,870	796	58,640	62,431
East Midlands	118,400	8,021	55,796	81,020
Yorkshire and the Humber	133,362	7,660	54,657	68,393

Source: Office for National Statistics, (2023); Regional gross value added (balanced) by industry: local authorities by ITL1 region.

Deprivation

16.5.29 The Ministry of Housing, Communities and Local Government publishes data at the Lower Super Output Area (LSOA)⁷ level ranking relative deprivation across England⁸ (Ref 16-21). In 2019, North East Lincolnshire and East Lindsey ranked as the 29th and 39th most deprived local authorities (where 1st is the most deprived) respectively. In the same year, North Lincolnshire and West Lindsey ranked as the 115th and 136th most deprived local authorities respectively, showing they are relatively less deprived.

16.5.30 **Table 16-18** shows the proportion of LSOAs in the local authority classified by percentile of relative deprivation, where the top percentile represents the most deprived in England.

16.5.31 As shown in **Table 16-18**, in Yorkshire and the Humber and the East Midlands 19% and 8% of LSOAs respectively are amongst the 10% most deprived in England, whereas in the 60-

⁷ Lower Super Output Areas (LSOAs) are small geographical units with broadly similar population sizes used in the reporting of statistics at high levels of spatial granularity.

⁸ The extent of deprivation is measured by the 2019 English Indices of Deprivation. It provides a set of relative measures of deprivation for LSOAs across England. These statistics provide a measure of 'relative deprivation', not affluence. As such, it is important to recognise that not every person in a highly deprived area will themselves be deprived and likewise, that there will be some deprived people living in the least deprived areas.

minute drive time study area, 17% of LSOAs are ranked amongst the 10% most deprived. In North Lincolnshire (11%) and West Lindsey (8%), the proportion of LSOAs in the 10% most deprived in England is similar to each local authorities' respective regional proportion. In North East Lincolnshire (30%) and East Lindsey (16%), the proportion of LSOAs in the 10% most deprived in England is higher than each local authorities' respective regional proportion.

16.5.32 The majority of LSOAs in North Lincolnshire (51%), North East Lincolnshire (63%), East Lindsey (75%), and Yorkshire and the Humber (56%) are in the top 50% most deprived in England, whereas 46% of LSOAs in West Lindsey and 47% of LSOAs the East Midlands are in the top 50% most deprived in England.

Table 16-18: Deprivation

IMD Percentile	Percentage of LSOAs in each percentile							Relative Deprivation
	North Lincolnshire	North East Lincolnshire	East Lindsey	West Lindsey	Economic impact study area	Yorkshire and the Humber	East Midlands	
Top 10%	11%	30%	16%	8%	17%	19%	8%	Most deprived
10 to 20%	9%	8%	20%	10%	10%	11%	10%	↑
20 to 30%	8%	12%	16%	6%	10%	10%	10%	
30 to 40%	9%	8%	17%	10%	10%	8%	9%	
40 to 50%	14%	6%	6%	14%	9%	8%	9%	
50 to 60%	11%	5%	6%	14%	10%	9%	10%	
60 to 70%	15%	12%	10%	12%	11%	10%	10%	
70 to 80%	11%	7%	4%	8%	9%	9%	12%	
80 to 90%	10%	10%	5%	15%	9%	8%	12%	↓
Bottom 10%	3%	3%	0%	6%	6%	8%	11%	Least deprived

Source: Ministry of Housing, Communities and Local Government, (2020); English indices of deprivation (2019).

Section 1 – Immingham to A180

Overview

16.5.33 Section 1 describes the portion of the Proposed Development between the Immingham Facility near South Killingholme and the town of Immingham. The portion is within North Lincolnshire and North East Lincolnshire. Section 1 consists primarily of agricultural land and is traversed by public footpaths, local access roads and two major roads. The wider setting of the DCO Site Boundary in this section is characterised by heavy industrial activities. Within this section of the ES, receptors are described as they are located within the study area broadly following the DCO Site Boundary from the Immingham Facility southwards.

Recreational Routes and PRow (Section 1)

16.5.34 The PRowS which intersect the DCO Site Boundary are identified in **Table 16-19** and shown on *Figure 3-31 (ES Volume II Chapter 3: Description of the Proposed Development)*. Four

PRoWs, serving South Killingholme, Immingham and Habrough traverse Section 1 and there are also a number of other PRoWs outside of, but in proximity to, the DCO Site Boundary.

16.5.35 The DCO Site Boundary is also within the proposed Protected Landscape Impact Risk Zone of the English Coastal Path – Mablethorpe to Humber Bridge.

Table 16-19: Public Rights of Way within the DCO Site Boundary (Section 1)

Public Right of Way	Type	Local authority
91	Footpath	North Lincolnshire
100	Footpath	
13	Footpath	North East Lincolnshire
11	Footpath	

Community severance

16.5.36 There are no community facilities within the DCO Site Boundary in Section 1. **Table 16-20** shows the community facilities and social infrastructure within the study area (i.e., within 1km of the DCO Site Boundary), wherein two primary schools are identified. **Table 16-21** shows the community facilities considered in the wider area where access to these facilities for residents of the communities within the study area may be impacted by the Proposed Development, wherein four additional primary schools, two GP surgeries, one secondary school, and one library are identified.

Table 16-20: Community Facilities within the Study Area (Section 1)

Settlement	Type	Details
South Killingholme	Primary schools	<ul style="list-style-type: none"> • Killingholme Primary School
Immingham	Primary schools	<ul style="list-style-type: none"> • Coomb Briggs Primary School

Table 16-21: Community Facilities in the Wider Area (Section 1)

Settlement	Type	Details
South Killingholme	GP surgeries	<ul style="list-style-type: none"> • The Killingholme Surgery
Immingham	Primary schools	<ul style="list-style-type: none"> • Allerton Primary School • Eastfield Primary Academy • The Canon Peter Hall Church of England Primary School
		<ul style="list-style-type: none"> • Oasis Academy
		<ul style="list-style-type: none"> • Pilgrim Primary Care Centre
	Libraries	<ul style="list-style-type: none"> • Immingham Library

Private assets

Residential properties

16.5.37 There are no residential properties within the DCO Site Boundary in Section 1. Within the 1km study area, the nearest properties to the DCO Site Boundary (approximately 50 m) are those located at the junction of Mill Lane and Immingham Road. Additionally, a number of residential properties in South Killingholme, and the north west of Immingham are situated

within the 1km study area. There are also a number of rural properties and farmhouses, associated within agricultural buildings, located sparsely across the study area.

Business premises

16.5.38 There are a number of industrial buildings within the DCO Site Boundary associated with Humber Refinery. Additionally, within the 1km study area there are a number of industrial buildings, storage and distribution facilities, truck parking, and utilities infrastructure. There are also a number of business premises serving agricultural, retail, commercial and tourism purposes within the study area.

Community facilities

16.5.39 There are no community facilities within the DCO Site Boundary in Section 1. In addition to the community facilities listed in **Table 16-20**, within the 1km study area, Immingham West Fire Station is located adjacent to the DCO Site Boundary near the Immingham Facility area. Additionally, South Killingholme Community Centre is located approximately 650 m from the DCO Site Boundary. Also, outside of the study area, Bert Boyden Community Centre is located in Immingham, approximately 2 km south of the DCO Site Boundary.

Visitor attractions

16.5.40 There are no visitor attractions within the DCO Site Boundary in Section 1. There are no substantial visitor attractions within the 1km study area, although there are a number of business premises offering accommodation, and food and beverage premises serving the visitor economy.

Open space

16.5.41 The DCO Site Boundary traverses a portion of a former golf course and an area of woodland however it is unclear to what extent these open spaces are publicly accessible, if at all. As such, potential impacts of these receptors will be assessed to ensure a worst-case assessment is undertaken. Additionally, within the study area are: an area of open space adjacent to South Killingholme Community Centre in South Killingholme, Homestead Park, Immingham Skate Park, and Woodlands Sports Ground.

Development land

16.5.42 With respect to employment or housing allocations, as set out in respective planning policy, the northernmost portion of Section 1 of the pipeline route within North Lincolnshire lies within the South Humber Bank Strategic Site Allocation (Policy SHBE) (Ref 16-8) and IN2-6 Proposed Industry allocation (Ref 16-25). Within the study area in North East Lincolnshire, are the South Humber Bank Existing Employment Area, HOU002, HOU006, and HOU233 Proposed Housing Allocations, and HOU004 Proposed Housing Allocation (Under Construction) (Ref 16-6).

16.5.43 The following relevant 'other existing developments and/or approved developments' are identified in Section 1 and derived from the shortlist of cumulative schemes. The methodology for their identification is set out in *Chapter 20: Cumulative Effects*. The following developments are further refined for the assessment of socio-economic effects on development land by considering that they lie within the applicable study area (1km from DCO Site Boundary), are potentially of sufficient scale to lead to significant socio-economic effects and/or relate to the receptors considered in this chapter:

- PA/2022/1223: Land Adjacent to the Westgate Entrance, Port of Immingham (Associated British Ports) (for port related employment uses);
- PA/2022/1548: VPI Immingham Pilot Carbon Capture Plant (VPI Immingham);

- PA/SCO/2022/13: Gigastack Project (Orsted Gigastack Ltd. and Philips 66 Ltd.) (100MV hydrogen electrolyser and underground electrical cable connection, water discharge and hydrogen export pipeline);
- PA/2023/422: Humber Zero Project (Phillips-66 Carbon Capture Plant);
- PA/2023/421: Humber Zero Project (VPI Immingham LLP Carbon Capture Plant);
- PA/SCO/2023/1: Immingham Onshore Wind (Associated British Ports) (up to three wind turbines);
- PA/SCO/2023/2: Immingham Onshore Wind (Associated British Ports) (up to three wind turbines);
- PA/2023/612: Vitol (VPI Immingham) (VEV Services Ltd.) (71.28 kwp solar carport and infrastructure for renewable energy generation);
- PA/2018/918: New gas-fired power station (with gross electrical output of up to 49.9 megawatts);
- PA/2023/502: Site Enabling Works, Land East of Rosper Road, Killingholme (Able UK Ltd.);
- PA/2021/1525: Monopile Manufacturing Facility at Land at Able Marine Energy Park, south of Station Road, South Humber Bank, South Killingholme (Able UK Ltd.) (monopile manufacturing facility of approximately 25 ha in size);
- DM/1175/17/FUL: Residential development at Brocklesby Avenue, Habrough Road (Peter Ward Homes) (of 145 dwellings);
- DM/0728/18/OUT: Residential development on Land East of Stallingborough Road, Immingham (Brocklesby Estate) (of up to 525 dwellings and extra care facility for the elderly with up to 80 units);
- DM/1145/19/FUL: NEL Energy Park (Engie) (energy park comprising photovoltaic panels and energy battery storage);

Section 2 – A18 to A46

Overview

16.5.44 Section 2 describes the portion of the Proposed Development between the town of Immingham and the village of Laceby. This portion is within North East Lincolnshire and West Lindsey. Section 2 consists of primarily agricultural land and is traversed by public footpaths, local access roads and three major roads. Within this section, receptors are described as they are located within the study areas following a transect from the town of Immingham southwards.

Recreational Routes and PRowS

16.5.45 The PRowS which intersect the DCO Site Boundary are identified in **Table 16-22** and shown on *Figure 3-31 (ES Volume II Chapter 3: Description of the Proposed Development)*. There are six PRowS serving Habrough, Stallingborough, Keelby, Laceby, and Irby upon Humber which intersect the DCO Site Boundary in Section 2, of which five traverse the DCO Site Boundary. There are also a number of other PRowS outside of, but close to, the DCO Site Boundary in Section 2.

16.5.46 The DCO Site Boundary is also within the proposed Protected Landscape Impact Risk Zone of the English Coastal Path – Mablethorpe to Humber Bridge.

Table 16-22: Public Rights of Way within the DCO Site Boundary (Section 2)

Public Right of Way	Type	Local authority
4	Footpath	North East Lincolnshire
24	Footpath	
26	Footpath	
116	Footpath	
130	Bridleway	
119	Footpath	

Community severance

16.5.47 There are no community facilities and social infrastructure within the DCO Site Boundary in Section 2. Furthermore, there are no community facilities within the Study area. **Table 16-23** shows the community facilities considered in the wider area where access to these facilities for residents of the communities in the study area may be impacted by the Proposed Development. Numerous primary and secondary schools are identified, along with two hospitals, eight GP surgeries and a library.

Table 16-23: Community Facilities in the Wider Area (Section 2)

Settlement	Type	Details
Laceby	Primary schools	<ul style="list-style-type: none"> Stanford Junior and Infants Schools
Grimsby	Primary schools	<ul style="list-style-type: none"> Littlecoats Primary School Macaulay Academy Ormiston South Parade Academy Strand Community School St Mary’s First and Middle School Weelsby Primary School Great Coates Primary School Wybers Wood Primary School Willows Primary School Laceby Acres Academy Western Primary School Grange Primary School Cambridge Park Academy Nunsthorpe Community School Woodlands Primary School St James’ School St Martin’s Preparatory School Scartho Infant School Lisle Marsden C of E Primary Academy Welhome Academy Edward Heneage Primary School Old Clee Primary Academy Queen Mary Avenue Infant and Nursery School William Barcroft Junior School

Settlement	Type	Details
		<ul style="list-style-type: none"> • St Joseph’s Roman Catholic Primary Voluntary Academy
	Secondary schools	<ul style="list-style-type: none"> • John Whitgift Academy • Franklin College • The East Coast School of Art and Design • Ormiston Marine Academy • Grimsby Institute of Further and Higher Education • The Orchard School • St James School • Sevenhills Academy • Oasis Academy Wintringham • Linkage College • Havelock Academy
	Hospital	<ul style="list-style-type: none"> • Diana, Princess of Wales Hospital • St Hugh’s Hospital
	GP Surgeries	<ul style="list-style-type: none"> • Stirling Medical Centre • Quayside Medical Centre • Weelsby View Health Centre • Birkwood Surgery • Cromwell Primary Care Centre • Church View Health Centre • Freshney Green Primary Care Centre • Little Coates Road Medical Surgery
	Libraries	<ul style="list-style-type: none"> • Grimsby Central Library

Private assets

Residential properties

16.5.48 There are no residential properties within the DCO Site Boundary in Section 2. Within the study area, the nearest properties to the DCO Site Boundary are those nearby to Greenlands Farm (approximately 50 m from the DCO Site Boundary), The Old Vicarage on Barton Street/A18 (less than 50 m from the DCO Site Boundary), and The Crofts (approximately 75 m from the DCO Site Boundary). Additionally, there are some properties in the south of Immingham, the west of Aylesby, and the west of Laceby. There are also a number of rural properties and farmhouses, with associated agricultural buildings located within the study area.

Business premises

16.5.49 There are no business premises within the DCO Site Boundary in Section 2. There are however a number of business premises within the study area serving agricultural, commercial and tourism purposes.

Community facilities

16.5.50 There are no community facilities within the DCO Site Boundary or study area in Section 2. In addition to the community facilities in the wider area listed in **Table 16-23**, community

facilities are identified Grimsby each approximately 4 km from the DCO Site Boundary: West Marsh Community Centre, City Church Community Hall, Coates Community Centre, Scartho Village Community Centre and St Hugh's Centre. There are no community centres in the nearby villages of Laceby or Aylesby.

Visitor attractions

16.5.51 There are no significant visitor attractions within the DCO Site Boundary in Section 2. There are no substantial visitor attractions within the study area, although there are a number of business premises offering accommodation, and food and beverage premises serving the visitor economy.

Open space

16.5.52 There are no significant open spaces within the DCO Site Boundary in Section 2. Within the study area, identified open spaces include Butt Lane Park in Laceby.

Development land

16.5.53 There are no development land allocations within the DCO Site Boundary in Section 2. Within the study area are housing allocations HOU068A and HOU075A; both are within North East Lincolnshire.

16.5.54 The following relevant 'other existing developments and/or approved developments' are identified in Section 2 and derived from the shortlist of cumulative schemes. The methodology for their identification is set out in *Chapter 20: Cumulative Effects*. The following developments are further refined for the assessment of socio-economic effects on development land by considering that they lie within the applicable study area (1km from DCO Site Boundary), are potentially of sufficient scale to lead to significant socio-economic effects and/or relate to the receptors considered in this chapter:

- DM/0899/21/FUL: Grimsby Solar Farm (Aura Power);
- DM/1133/17/OUT: Residential development in Laceby (Humberside Land Developers Ltd.) (of up to 152 dwellings);
- DM/0118/23/FUL: Residential development at Land off Field Head Road, Laceby (Land Developers (Lincs) Ltd.) (of 60 dwellings);

Section 3 – A46 to Pear Tree Lane

Overview

16.5.55 Section 3 describes the portion of the Proposed Development between the village of Laceby and the village of Ludborough. This portion is within North East Lincolnshire and East Lindsey. Section 3 consists primarily of agricultural land and is traversed by public footpaths, local access roads and two major roads. Within this section, receptors are described as they are found within the study area following a transect from the village of Laceby south-eastwards.

Recreational Routes and PRow

16.5.56 The PRowS which intersect the DCO Site Boundary are identified in **Table 16-24** and shown on *Figure 3-31 (ES Volume II Chapter 3: Description of the Proposed Development)*. There are eight PRowS and NCN route 110 serving Irby upon Humber, Barnoldby le Beck, Brigsey, Ashby cum Fenby, and North Thoresby within Section 3, of which seven PRowS and NCN route 110 traverse the DCO Site Boundary. There are also a number of other PRowS outside of, but close to, the DCO Site Boundary in Section 3.

16.5.57 The DCO Site Boundary is also within the proposed Protected Landscape Impact Risk Zone of the English Coastal Path – Mablethorpe to Humber Bridge.

Table 16-24: Public Rights of Way within the DCO Site Boundary (Section 3)

Public Right of Way	Type	Local Authority
94	Footpath	North East Lincolnshire
81	Footpath	
85	Footpath	
87	Bridleway	
124	Footpath	
161a	Bridleway	
NTho/113/1	Bridleway	East Lindsey

Community Severance

16.5.58 There are no community facilities or social infrastructure facilities within the DCO Site Boundary or study area in section 3.

Private assets

Residential properties

16.5.59 There are no residential properties within the DCO Site Boundary in Section 3. The nearest residential properties to the DCO Site Boundary are: at Wickster House on Barton Street/A18 (approximately 80 m from the DCO Site Boundary), at Moorhouse Farm (less than 50 m from the DCO Site Boundary), and at Westfield Farm (approximately 80 m from the DCO Site Boundary). Additionally, some properties in Irby on Humber, Barnoldby le Beck, Brigsley, Ashby cum Fenby, and the east of Ludborough are located within the study area in Section 3. There are also a number of rural properties and farmhouses, with associated agricultural buildings located within the study area.

Business premises

16.5.60 There are no business premises within the DCO Site Boundary in Section 3. Laceby Manor Golf Club is located within the study area, and there are additionally a number of business premises within the study area serving agricultural, commercial and tourism purposes.

Community facilities

16.5.61 There are no community facilities within the DCO Site Boundary in Section 3. Within the 1 km study area, Brigsley Village Hall in Brigsley is located approximately 850 m from the DCO Site Boundary.

Visitor attractions

16.5.62 There are no visitor attractions within the DCO Site Boundary in Section 3. Within the study area, Bellsby Model Flying Club (located approximately 1 km west of the DCO Site Boundary) and the Ludborough station of the Lincolnshire Wolds Railway (located approximately 500 m east of the DCO Site Boundary) are identified. Additionally, there are a number of business premises offering accommodation, and food and beverage premises serving the visitor economy within the study area.

Open space

16.5.63 There are no open spaces within the DCO Site Boundary in Section 3, and no substantial publicly accessible open spaces in the study area.

Development land

16.5.64 There are no development land allocations within the DCO Site Boundary in Section 3. Within the study area are housing allocations NTH307, NTH308 and NTH313, which are all located in East Lindsey.

16.5.65 The following relevant ‘other existing developments and/or approved developments’ are identified in Section 3 and derived from the shortlist of cumulative schemes. The methodology for their identification is set out in *Chapter 20: Cumulative Effects*. The following developments are further refined for the assessment of socio-economic effects on development land by considering that they lie within the applicable study area (1km from DCO Site Boundary), are potentially of sufficient scale to lead to significant socio-economic effects and/or relate to the receptors considered in this chapter:

- N/144/01413/21: Residential development at Ludborough Road (Cyden Homes) (of 198 dwellings);
- DM/0769/22/FUL: The Willows (CHI Investments) (new foul sewer and associated works);
- N/085/00883/15: Residential development (of up to 300 dwellings);

Section 4 – Pear Tree Lane to B1200

Overview

16.5.66 Section 4 describes the portion of the Proposed Development between the village of Ludborough and the village of Grimoldby. This portion is wholly within East Lindsey. Section 4 consists primarily of agricultural land and is traversed by public footpaths and local access roads. Within this section receptors are described as they are located within the Study Area following a transect from the village of Ludborough south-eastwards.

Recreational Routes and PRowS

16.5.67 The PRowS which intersect the DCO Site Boundary are identified in **Table 16-25** and shown in *ES Volume II Chapter 3: Description of the Proposed Development on Figure 3-31 (ES Volume II Chapter 3: Description of the Proposed Development)*. There are six PRow, serving Covenham St Bartholomew, Covenham St Mary, Little Grimsby, Alvingham, North Cockerington, and Louth, in Section 4, of which five traverse the DCO Site Boundary. There are also a number of other PRowS outside of, but close to, the DCO Site Boundary in Section 4.

16.5.68 The DCO Site Boundary is also within the proposed Protected Landscape Impact Risk Zone of the English Coastal Path – Mablethorpe to Humber Bridge.

Table 16-25: Public Rights of Way within the DCO Site Boundary (Section 4)

Public Right of Way	Type	Local authority
Utte/83/1 (forms part of Utte/83)	Bridleway	East Lindsey
Utte/83/2 (forms part of Utte/83)	Bridleway	
LGri/77/1	Bridleway	
Alvi/343/4	Footpath	
NCoc/67/1	Bridleway	
NCoc/68/1	Footpath	

Community severance

16.5.69 There are no community facilities within the DCO Site Boundary in Section 4. **Table 16-26** shows the community facilities and social infrastructure within the study area in Section 4, whereas **Table 16-27** shows the community facilities in the wider area, including those in Louth, as residents of communities in the Study area may utilise these facilities and access may be impacted by the Proposed Development. It is shown that two primary schools have been identified within the study area, and in the wider area an additional six primary schools, two secondary schools, a hospital, two GP surgeries and a library are identified.

Table 16-26: Community Facilities within the Study Area (Section 4)

Settlement	Type	Details
Alvingham	Primary schools	Puddleducks Pre-school
North Cockerington	Primary schools	North Cockerington Church of England Primary School

Table 16-27: Community Facilities in the Wider Area (Section 4)

Settlement	Type	Details
Louth	Primary schools	<ul style="list-style-type: none"> Greenwich House Independent School Louth Kidgate Primary School St Michael's Church of England School Lacey Gardens Junior School Louth Eastfield Infants' and Nursery School St Bernard's School
	Secondary schools	<ul style="list-style-type: none"> Louth Academy St Bernard's School
	Hospital	<ul style="list-style-type: none"> County Hospital Louth
	GP surgeries	<ul style="list-style-type: none"> James Street Surgery Newmarket Medical Practice
	Libraries	<ul style="list-style-type: none"> Louth Library

Private assets

Residential properties

16.5.70 There are no residential properties within the DCO Site Boundary in Section 4. The nearest residential properties to the DCO Site Boundary are: at Yew Tree Cottage (located less than 50 m from the DCO Site Boundary), The Lodge at Alvingham Lakes (approximately 50 m from the DCO Site Boundary), properties at North Cockerington (less than 50m from the DCO Site Boundary), and at Corner Farm (approximately 50 m from the DCO Site Boundary). Additionally, properties in the south of Alvingham, in South Cockerington, and the north of Grimoldby are located within the study area in Section 4. There are also a number of rural properties and farmhouses, with associated agricultural buildings located within the study area.

Business premises

16.5.71 There are no business premises within the DCO Site Boundary in Section 4. There are however a number of business premises within the study area serving agricultural, commercial and tourism purposes.

Community facilities

16.5.72 There are no community facilities within the DCO Site Boundary in Section 4. In addition to the community facilities set out in **Table 16-27**, Alvingham Village Hall and Social Club is located 750 m north east of the DCO Site Boundary. Outside of the study area, Welbeck Way Community Centre is located in Louth, approximately 3 km south west of the DCO Site Boundary.

Visitor attractions

16.5.73 There are no visitor attractions within the DCO Site Boundary in Section 4. Within the study area, Alvingham Fishing Lakes is located adjacent to the DCO Site Boundary. Additionally, Rushmoor Farm Park is located approximately 500 m south of the DCO Site Boundary. There are no substantial visitor attractions within the study area, although there are a number of business premises serving the visitor economy, including accommodation and food and beverage facilities.

Open space

16.5.74 There are no open spaces within the DCO Site Boundary or study area within Section 4.

Development land

16.5.75 There are no development land allocations within the DCO Site Boundary or study area in Section 4.

16.5.76 There are no relevant 'other existing developments and/or approved developments' identified in Section 4 as derived from the shortlist of cumulative schemes which are located within the applicable study area (1 km from DCO Site Boundary) and/or are potentially of sufficient scale to lead to significant socio-economic effects and/or relate to the receptors considered in this chapter.

Section 5 – B1200 to reception facility at Theddlethorpe

Overview

16.5.77 Section 5 describes the portion of the Proposed Development between the village of Grimoldby and the Reception Facility for the Onshore and Offshore Pipeline tie-in and outlet, at Theddlethorpe. This portion is wholly within East Lindsey. Section 5 consists primarily of agricultural land and is traversed by public footpaths and local access roads. Within this section receptors are described as they are located within the Study area following a transect from the village of Grimoldby eastwards.

Recreational Routes and PRowS

16.5.78 The PRowS which intersect the DCO Site Boundary are identified in **Table 16-28** and shown on *Figure 3-31 (ES Volume II Chapter 3: Description of the Proposed Development)*. Four PRowS servicing Gayton le Marsh, Theddlethorpe All Saints, Theddlethorpe St Helen, and Mablethorpe traverse the DCO Site Boundary in Section 5. There are also a number of other PRowS outside of, but close to, the DCO Site Boundary in Section 5.

16.5.79 The DCO Site Boundary is also within the proposed Protected Landscape Impact Risk Zone of the English Coastal Path – Mablethorpe to Humber Bridge.

Table 16-28: Public Rights of Way within the DCO Site Boundary (Section 5)

Public Right of Way	Type	Local authority
GayM/193/1	Footpath	East Lindsey
ThSH/250/2	Footpath	
ThSH/249/1	Footpath	
ThSH/253/1	Footpath	

Community severance

16.5.80 There are no community facilities within the DCO Site Boundary in Section 5. **Table 16-29** shows the community facilities and social infrastructure within the study area in Section 5. **Table 16-30** shows the community facilities considered in the wider area where access to these facilities for residents of communities in the study area may be impacted by the Proposed Development. It is shown that one primary school is identified in the study area, and an additional primary school, secondary school, GP surgery and library are identified in the wider area.

Table 16-29: Community Facilities within the Study Area (Section 5)

Settlement	Type	Details
Theddlethorpe All Saints	Primary schools	<ul style="list-style-type: none"> Theddlethorpe Academy

Table 16-30: Community Facilities within the Wider Area (Section 5)

Settlement	Type	Details
Mablethorpe	Primary schools	<ul style="list-style-type: none"> Mablethorpe Primary Academy
	Secondary schools	<ul style="list-style-type: none"> The Mablethorpe Tennyson High School
	GP surgeries	<ul style="list-style-type: none"> The Marisco Medical Practice
	Libraries	<ul style="list-style-type: none"> Mablethorpe Library

Private assets

Residential properties

16.5.81 There are no residential properties within the DCO Site Boundary in Section 5. The nearest residential properties to the DCO Site Boundary are: at Lordship Farm (approximately 80 m from the DCO Site Boundary), at Country View Farm (less than 50 m from the DCO Site Boundary), at Ashleigh Farm (less than 50 m from the DCO Site Boundary), at Olcote House (less than 50 m from the DCO Site Boundary), and at Meers Bank (less than 50 m from the DCO Site Boundary). Additionally, there are residential properties within the settlements of Theddlethorpe All Saints, Theddlethorpe St Helens, and Mablethorpe. There are also a number of rural properties and farmhouses, with associated agricultural buildings located within the study area.

Business premises

16.5.82 There are some industrial properties associated with the utilities / energy infrastructure works north of Mablethorpe which are located within the DCO Site Boundary in Section 5. Additionally, there are a number of business premises within the study area serving agricultural, commercial and tourism purposes within the study area.

Community facilities

16.5.83 There are no community facilities within the DCO Site Boundary in Section 5. In addition to the community facilities listed in **Table 16-30**, Theddlethorpe Village Hall is located within the study area (approximately 930 m from the DCO Site Boundary).

Visitor attractions

16.5.84 There are no visitor attractions within the DCO Site Boundary in Section 5. There are a number of visitor attractions within the study area comprised primarily of holiday accommodation and facilities in the north of Mablethorpe, including Haven Golden Sands Holiday Park, Swallow Park, Golden Sands Campsite and Arklow House Farm Camping and Caravan Site. The Seal Sanctuary Wildlife Centre is located approximately 900 m south of the DCO Site Boundary.

Open space

16.5.85 A small portion of the large open space at Mablethorpe Beach lies within the DCO Site Boundary, as does a small portion of the adjacent nature reserve. There are no further open spaces in within the DCO Site Boundary or study area in Section 5.

Development land

16.5.86 There is an area of Countryside Right of Way (CRoW) access land (Section 16 Dedicated Land) between Mablethorpe and Theddlethorpe. There are no development land allocations within the DCO Site Boundary or study area in Section 5.

16.5.87 There are no relevant 'other existing developments and/or approved developments' identified in Section 5 as derived from the shortlist of cumulative schemes which are located within the applicable study area (1 km from DCO Site Boundary) and/or are potentially of sufficient scale to lead to significant socio-economic effects and/or relate to the receptors considered in this chapter.

Future Baseline

16.5.88 The future baseline is anticipated to be largely the same as the existing baseline for socio-economics and land use in terms of demographics, although it would be reasonable to expect that the population will increase. Anticipated population change in the relevant geographies is shown in **Table 16-31**, whereby it is shown that between the commencement of preparation works and 15 years after the start of operation the population is expected to increase in all local authority areas, except North East Lincolnshire where a small reduction in population is projected. Population change over this period in North Lincolnshire (+1.7%) and North East Lincolnshire (-0.7%) is subdued in comparison to the Yorkshire and the Humber regional equivalent rate (+4.5%). East Lindsey records a higher population change (+8.3%), however this broadly aligns with the East Midlands regional rate (+8.6%) in which it is located.

16.5.89 With regard to the local economy, it would be reasonable to expect that employment and GVA would increase, associated with the expected increase in population. It is expected that PRoWs will continue to be used. Businesses and community facilities may open and close. These changes are not considered to constitute significant changes to baseline. It is not expected that there will be any perceptible changes to the local economic baseline assessment and the Proposed Development should be assessed against current baseline conditions and policies.

Table 16-31: Population Projections

Geography	2025 (Preparation works commence)	2026 (Construction works commence)	2027 (Operations commence)	2042 (After 15 years of operation)	Change (2025-2042)
North Lincolnshire	175,145	175,377	175,572	178,133	+1.7%
North East Lincolnshire	159,842	159,735	159,621	158,787	-0.7%
East Lindsey	148,571	149,559	150,487	161,124	+8.4%
West Lindsey	98,191	98,563	98,905	102,710	+4.6%
East Midlands	5,048,383	5,079,139	5,109,145	5,468,967	+8.3%
Yorkshire and the Humber	5,623,325	5,640,706	5,657,799	5,876,063	+4.5%
England	58,060,237	58,297,239	58,527,723	61,549,624	+6.0%

Source: Office for National Statistics, (20); Population projections 2018.

16.6 Development Design and Embedded Mitigation

- 16.6.1 EIA is an iterative process which informs the development of the project 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 into the proposal to reduce these effects.
- 16.6.2 This type of mitigation is defined as embedded mitigation, as mitigations measures which have been identified and adopted as part of the evolution of the project design (“embedded into the project design”).
- 16.6.3 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. In terms of the socio-economics assessment in this ES, the Proposed Development has been designed to take into account sensitive receptors, including human receptors, such as by positioning infrastructure to avoid receptors such as PRow, residential properties, business premises, visitor attractions, community facilities, open spaces and development land allocations as far as possible.
- 16.6.4 There are no design measures specific to socio-economics incorporated within the Proposed Development.
- 16.6.5 With regard to other construction and operational effects (such as noise and vibration, air quality, traffic and transport, landscape and visual), embedded mitigation measures are incorporated into the Proposed Development as set out in the respective assessment chapters. These measures will in turn mitigate the potential for amenity effects on residential receptors from a socio-economics perspective.
- 16.6.6 The socio-economics assessment is presented in Section 16.7 of this ES chapter. Where there are assessed to be adverse socio-economics impacts in the assessment, the implementation of additional mitigation measures has been considered in order to avoid or minimise the socio-economic impact.

16.7 Potential Impacts and Assessment of Effects

Introduction

- 16.7.1 This section identifies the potential likely significant effects of the Proposed Development on socio-economic receptors.
- 16.7.2 This section first presents the assessed effects during the construction phase before presenting the assessment of effects pertaining to the decommissioning phase. For both construction and decommissioning effects, project-wide effects will be addressed, followed by remaining effects which will be organised according to pipeline sections. As agreed with the Planning Inspectorate, potential effects linked to the operational phase have been scoped out of the assessment.

Assessment of Potential Impacts: Construction Phase

General Overview

- 16.7.3 This section considers potential likely significant effects during construction of the Proposed Development. It should be noted that impacts associated with the installation of the pipeline would be temporary in nature as it would be buried, with above ground infrastructure (which is therefore considered to be more permanent in nature) only located in limited locations at either end of the pipeline and at block valve stations, and therefore unlikely to result in impacts on socio-economics receptors.

Construction employment

- 16.7.4 The estimated construction period is expected to last approximately 12 months. Therefore, the likely effects will be of a medium-term temporary nature. Although construction jobs are temporary, they represent an economic effect for a substantial period that can be estimated as the function of the scale and type of construction.
- 16.7.5 It is estimated that the Proposed Development will require an average of 197 gross full-time equivalent (FTE) construction jobs on site per day over the construction period. The peak number of staff during the construction period is expected to be much higher.

Leakage

- 16.7.6 Leakage refers to the benefits to those outside the effect area, defined as the principal labour market catchment area (60-minute drive time) as shown in **Table 16-7**. It is estimated based on professional judgement that approximately 70% of the construction workforce would be sourced from outside of the principal labour market catchment area (60-minute drive time). This assumption derives from experience from other similar schemes and reflects that a number of Nationally Significant Infrastructure Projects in the vicinity of the DCO Site Boundary will be competing for similar skills and labour, as well as the fact that there are a few large settlements nearby to provide a large labour pool. This leakage rate implies that although a notable proportion of employment opportunities will be retained in the effect area, a reasonably high proportion of jobs will be taken up by people living outside of the area. Whilst it is not a specific consideration of the assessment, it is noted that a larger proportion of the jobs taken up by people living outside of the area will likely be in more specialised professions owing to the scarcity of such resources within local areas.
- 16.7.7 An adjustment of 70% has therefore been applied to the estimated 197 gross construction jobs. Thus, it is estimated that the construction period of the Proposed Development will create 59 jobs for residents within the labour market catchment and 138 jobs for residents outside of this area.

Displacement

- 16.7.8 Displacement measures the extent to which the benefits of a development are off-set by reductions in output or employment elsewhere. Any additional demand for labour cannot simply be treated as a net benefit since it has the potential to displace workers from other positions and the net benefit is reduced to the extent that this occurs.
- 16.7.9 Construction workers typically move between construction projects when delays occur or to help the workforce meet construction deadlines. Due to the flexibility of the labour market, construction labour force displacement has been assumed to be low.
- 16.7.10 The HCA Additionality Guide (Ref 16-14) provides standards (or ‘ready reckoners’) for displacement. Within the context of a construction project in the labour market catchment area, a low displacement factor of 25% is considered appropriate according to the HCA. This factor is a best practice approach in the absence of special local information that might provide a defensible justification for a different level of displacement being used. Applying this level of displacement to the total gross direct employment figure results in a total net direct employment figure of 148 jobs per year during the construction period.

Multiplier effect

- 16.7.11 In addition to the direct employment generated by the construction of the Proposed Development, there will be an increase in local employment arising from indirect and induced effects of the construction activity. Employment growth will arise locally through manufacturing services and suppliers to the construction process (indirect or supply linkage multipliers). Additionally, it is assumed part of the income of the construction workers and suppliers will be spent in the labour market catchment area, generating further employment (in terms of induced or income multipliers). This could benefit a range of additional sectors including, but not limited to, retail, hospitality, accommodation and food services.
- 16.7.12 The effect of the multiplier depends on the size of the geographical area that is being considered, the local supply linkages and income leakage from the area. As the effect area being considered is the 60-minute drive time area, which approximates to a regional scale, and local supply linkages are likely to be average rather than particularly strong or particularly limited, a multiplier effect of 1.5 has been considered appropriate, in line with HCA guidance (Ref 16-14). Applying the 1.5 multiplier to the total net direct employment figure of 148 workers results in net indirect and induced employment of 74 jobs per annum during the construction period, together generating 222 total net jobs per annum.

Net construction employment

- 16.7.13 **Table 16-32** presents the temporary employment generated by the Proposed Development identified above, accounting for leakage, displacement and multiplier effects. The Proposed Development will support, on average, 222 total net jobs per annum during the construction period. Of these, 66 jobs per annum will be expected to be taken-up by residents within the labour market catchment area, whilst 156 jobs will likely be taken-up by workers living outside the effect area.

Table 16-32 Net Additional Construction Employment from the Proposed Development

	60-minute travel study area	Outside study area	Total
Gross direct employment	59	138	197
Displacement	-15	-34	-49
Net direct employment	44	104	148

	60-minute travel study area	Outside study area	Total
Indirect and induced employment	22	52	74
Total net employment	66	156	222

16.7.14 The sensitivity of the local workforce to additional employment is assessed to be medium, given that the unemployment rate in the economic impact study area is broadly comparable with that across Yorkshire and the Humber, the East Midlands and England and Wales. The economic activity rate in the economic impact study area is marginally lower than the regional and national average. On the whole, this reflects a moderate to average capacity to experience impacts without incurring a change in overall economic wellbeing. The impact of the additional 222 jobs is considered to be low, given that across the economic impact area there are a total of 89,844 jobs in the construction sector. The generation of jobs during the construction phase is therefore assessed to result in a temporary **minor beneficial effect**, which is considered not significant.

Gross Value Added

16.7.15 Applying the average Gross Value Added (GVA) per construction worker in the area to the total number of construction workers generated from the Proposed Development gives the total GVA arising from the construction period. It should be noted that in order to derive GVA per worker at an appropriate geography rounded employment figures have used, therefore total GVA may be different to that reported here. Also, average GVA derives from data dated 2021 and therefore GVA may be different at the time of construction.

16.7.16 As previously stated, the average GVA per worker in the construction sector in each of the local authorities in which the Proposed Development is located in 2021 was £58,000 in North Lincolnshire, £57,667 in North East Lincolnshire, £85,778 in West Lindsey, and £56,000 in East Lindsey. When considering these areas in aggregate the average GVA per worker is £62,431. By applying this figure to the total number of construction workers generated by the Proposed Development, it is estimated that the construction phase will contribute £13,859,682 to the economy, of which £4,157,570 is within the labour market catchment area, as shown in **Table 16-33**.

Table 16-33 Gross Value Added Per Annum from the Proposed Development during the Construction Phase

	60-minute travel study area	Outside study area	Total
GVA during the construction phase	£4,157,905	£9,701,777	£13,859,682

Source: Office for National Statistics, (2023); Regional gross value added (balanced) by industry: local authorities by ITL1 region.

16.7.17 The sensitivity of the local economy to the generation of GVA impacts during construction has been assessed as high given the local policy impetus to improve productivity and that the current GVA per worker of the host local authority areas on average lags behind that of the regional economy, meaning the local economy is highly receptive to any intervention that would improve productivity and output. As a result, the sensitivity of the local economy to GVA effects is deemed to be high. The GVA generation during the construction phase within the economic impact study area represents a relatively small amount that would not materially alter the size of the economy. Therefore, in the context of the total GVA resulting

from construction activity in the local authority and regional economies, and by extension the economy of the economic impact study area, the magnitude is assessed to be very low.

16.7.18 Therefore, the assessment of GVA generation during the construction phase results in a temporary **minor beneficial effect**, which is considered not significant.

Training and Apprenticeships

16.7.19 The sensitivity of the local population to benefits associated with new training and apprenticeships is assessed to be high. This is because the baseline indicates that the proportion of the population in the four local authorities that holds an NVQ Level 4 qualification or above is in general less than the regional and national average. Also, the proportion of the population with no formal qualifications is in general higher than the regional and national average.

16.7.20 There is potential for the creation of training and upskilling opportunities, including apprenticeships, during the construction of the Scheme. However, at this stage it is not possible to confirm that such opportunities will be created. Based on the currently available information and as a worst-case scenario, it is assessed that there will be no effect on the provision of training and apprenticeships.

16.7.21 The Principal Contractor will develop a Skills, Employment and Supply Chain Plan in liaison with the four Local Authorities, which will identify measures by which the potential economic benefits of the Proposed Development for local people and businesses might be maximised. This will include seeking to develop links with education and employment establishments in the locality if appropriate (for example, schools, colleges, employment agencies, and business groups). There is therefore potential for the scheme to have a beneficial effect on the provision of training and apprenticeships and the local workforce.

Community Severance

16.7.22 The construction of the Proposed Development will require land take for construction compounds, the installation of the pipeline, the construction of Block Valve Stations, Dune Isolation Valve, and facilities at Immingham and Theddlethorpe. The construction of the Proposed Development will also introduce traffic to the local road network. These activities have the potential to lead to temporary severance of access to community facilities for residents leading to the deterioration of social cohesion or affecting mental health, and temporary severance of access to healthcare and other social infrastructure.

16.7.23 However, the traffic and transport assessment (in *Chapter 12: Traffic and Transport*) finds that there will be no significant effects on severance across the entire Proposed Development. This is with the exception of one road link at Thacker Bank, however there are multiple alternative routes available in this location to connect the communities of Saltfleetby St Peter, Saltfleetby All Saints, Theddlethorpe All Saints, Theddlethorpe St Helens and Manby/Grimoldby.

16.7.24 As detailed in *Chapter 3: Description of the Proposed Development*, PRoWs would only be temporarily diverted or closed to allow for construction works to be carried out safely. At identified points where PRoW intersect the Site Boundary there would be, a fence with gates that can be temporarily closed to allow construction traffic to flow. A diversion would be set up approximately 20 m to 50 m along the pipeline centreline with a walkway placed across the trench and fenced off. The diversion would be removed and the original PRoW route would likely be reopened within 48 hours. Therefore, based on the provision of diversions of PRoWs, and given that no permanent closures will be required, it is assessed that there will be no effect on community severance as a result of the construction of the Proposed Development.

16.7.25 The communities and community facilities with the potential to experience severance effects are assessed to be of high sensitivity, and the magnitude of impact resulting from severance

effects is very low. Therefore, the effects on community severance arising from the Proposed Development is assessed to be **minor adverse**, which is considered not significant.

Section 1

Construction Compound North

PRoW

16.7.26 There are no recreational routes or PRoW within the applicable study area (i.e., within the DCO Site Boundary) at the Construction Compound North. Therefore, the socio-economic effect on recreational routes and PRoW at this element during the construction phase is likely to be no effect.

Private assets

16.7.27 There are no residential properties, business premises, community facilities, visitor attractions, or open spaces identified within the private asset land take study area of the Construction Compound North. Therefore, the socio-economic effect on residential properties, business premises, community facilities, visitor attractions, and open spaces of this element during the construction phase due to land take is likely to be no effect.

16.7.28 There are no visitor attractions identified within the private asset amenity study area of the Construction Compound North. Therefore, the socio-economic effect on visitor attractions of this element during the construction phase due to amenity effects is likely to be no effect.

16.7.29 Due to the activities associated with the Construction Compound North, including use of pipe storage areas (also known as pipe dumps), welfare facilities, and plant storage and maintenance areas, there is the potential for amenity effects to occur. There is the potential for noise and vibration, traffic and transport, landscape and visual amenity, or air quality effects arising from the Proposed Development to impact on the amenity of residential properties, business premises, community facilities, and open spaces which have been identified within the private asset amenity study area of the Construction Compound North. This pertains to: residential properties in South Killingholme; business premises including Tallon Motocross, Immingham Boarding Kennels and Rehoming, businesses on Town Street, Killingholme Animal Feeds, Casper Shipping, SPR Trailer Services, Den Hartogh Logistics, Immingham Transport Limited, DFDS Logistics, DSV Road, and Humber Refinery; community facilities including The Killingholme Surgery, South Killingholme Community Centre, and Killingholme Primary School; and an area of open space adjacent to South Killingholme Community Centre. The sensitivity of these receptors is deemed to be variable: low (business premises), medium (community facilities and open space) and high (residential properties). Taking into account the results of the noise and vibration, traffic and transport, landscape and visual amenity, and air quality assessments, there are no groups of residential properties, businesses, community facilities, or open spaces that would likely experience two or more significant effects, as concluded by these assessments, at the same time which would result in an effect on their amenity during construction. Therefore, the magnitude of impact is assessed to be very low and the overall effect on these receptors is assessed to be **negligible**, which is considered not significant.

16.7.30 Development land, including 'other existing developments and/or approved developments' has the potential to be impacted by the construction of the Proposed Development due to temporary or permanent land take and/or severance or disruptions to access during construction. The identified allocations, as set out in paragraph 16.5.42, are deemed to be of medium sensitivity given the moderate potential for substitution and access to alternatives. There are no housing or employment land allocations in the relevant study area whose viability would be impacted by land take or disruption to access during construction,

therefore the magnitude of impact is very low. Overall, the effect on development land allocations is assessed to be **negligible**, which is considered not significant.

16.7.31 As there are no identified relevant existing or approved development land receptors pertinent to the socio-economics assessment and applicable study area, the socio-economic effect on development land due to the construction of the Proposed Development at the Construction Compound North element is likely to be no effect.

Immingham Facility

PRoW

16.7.32 There are no recreational routes or PRoW within the applicable study area (i.e., within the DCO Site Boundary) at the Immingham Facility location. Therefore, the socio-economic effect on recreational routes and PRoW at this element during the construction phase is likely to be no effect.

Private Assets

16.7.33 There are no residential properties, business premises, community facilities, visitor attractions, or open spaces identified within the private asset land take study area of the Immingham Facility. Therefore, the socio-economic effect on residential properties, business premises, community facilities, visitor attractions, and open spaces of this element during the construction phase due to land take is likely to be no effect.

16.7.34 There are no residential properties or visitor attractions within the private asset amenity study area of the Immingham Facility. Therefore, the socio-economic effect on residential properties, community facilities, and visitor attractions of this element during the construction phase due to amenity effects is likely to be no effect.

16.7.35 Due to the construction of the above-ground infrastructure at the Immingham Facility, there is the potential for noise and vibration, traffic and transport, landscape and visual amenity, or air quality effects to arise from the Proposed Development. These could impact on the amenity of business premises, community facilities and open space due to such assets being identified within the private asset amenity study area of the Immingham Facility. This pertains to business premises associated with Humber Refinery operated by Philips 66, VPI Immingham, ABP, Immingham Calor Cylinder Distribution, and Brand Energy and Infrastructure Services; Immingham West Fire Station; and a small portion of the former Immingham Golf Club golf course located west of Homestead Park (however it is understood this is no longer operational). These receptors are deemed to be of variable sensitivity: from low (industrial business premises associated with Humber Refinery) to medium (fire station and former golf course open space area). Taking into account the results of the noise and vibration, traffic and transport, landscape and visual amenity, and air quality assessments, there are no businesses, community facilities, or open spaces that would likely experience two or more significant effects, as concluded by these assessments, at the same time which would result in effects on their amenity during construction, therefore the magnitude of impact is assessed to be very low. Overall, the socio-economic effect on these receptors is assessed to be **negligible**, which is not significant.

16.7.36 Development land, including 'other existing developments and/or approved developments' has the potential to be impacted by the construction of the Proposed Development due to temporary or permanent land take and/or severance or disruptions to access during construction.

16.7.37 The viability of the proposed industrial and housing allocations, as set out in paragraph 16.5.42, in the vicinity of or overlapping with the Immingham Facility are unlikely to be impacted by the construction of the Proposed Development. Therefore, the magnitude of impact of the construction of the Immingham Facility is low. The sensitivity of these allocations, given they are not yet developed, is also low. Overall, the socio-economic effect

on development land allocations due to the construction of the Immingham Facility is assessed to be **negligible**, which is considered not significant.

16.7.38 Of the 'other existing developments and/or approved developments' identified in paragraph 16.5.43, two existing or approved development receptors may potentially require overlapping land take with the Immingham Facility element given their intersecting boundaries:

- Humber Zero Project (Phillips-66 Carbon Capture Plant); and
- Humber Zero Project (VPI Immingham Carbon Capture Plant).

16.7.39 The Humber Zero Project has submitted two planning applications (PA/2023/422 and PA/2023/421) for the construction, operation and maintenance of two Carbon Capture developments and associated facilities for the two applicants Phillips 66 and VPI Immingham LLP.

16.7.40 If approved, there is the potential for the construction period of these schemes to coincide with that of the Proposed Development. However, it is not clear whether activities will directly coincide in terms of time or location. It is assessed that the sensitivity of these receptors is medium given the importance and rarity of the proposed schemes, with moderate potential for substitution. If the overlapping land take affects the integrity or value of the proposed schemes, the magnitude of impact is assessed to be low, given the proportionally small areas of overlapping land take against the scale of respective schemes. Therefore, the potential impact on development land due to the construction of the Immingham Facility in the worst-case scenario that construction activities overlap is assessed to be **minor adverse**, which is considered not significant.

Pipeline (Section 1)

PRoW

16.7.41 There are four recreational routes and PRoW within the applicable study area (i.e., within the DCO Site Boundary) in this section of the pipeline route, as detailed in **Table 16-19**. As users of these four routes could therefore be potentially subject to journey disruption, effects on each are considered. PRoWs would only be temporarily diverted or closed to allow for construction works to be carried out safely. As such, the nature of diversion at identified points where PRoW intersect the Site Boundary would comprise a fence with gates that can temporarily closed to allow construction traffic to flow. A diversion would be set up at approximately 20 m to 50 m along the pipeline centreline with a walkway placed across the trench and fenced off. The diversion would be removed, and the original PRoW route would likely be reopened within 48 hours. PRoWs 91 and 100 (in North Lincolnshire), and 13 and 11 (in North East Lincolnshire) are assessed to be receptors of medium sensitivity given that they are of medium importance (in terms of providing pedestrian connectivity between South Killingholme and Immingham, and South Killingholme and coastal routes) yet there is moderate potential to substitute to other route options to access the wider network or community infrastructure. Given that any required diversions would be temporary in nature, the short increase in journey length would approximate to a very slight increase in journey time and opportunities to access the wider network would not be affected, the magnitude of impact is assessed to be very low. Therefore, the overall effect on PRoWs in Section 1 of the pipeline route is assessed to be **negligible**, which is considered not significant.

Private Assets

16.7.42 There are no residential properties, community facilities, or visitor attractions identified within the private asset land take study area in Section 1 of the pipeline route. Therefore, the socio-economic effect on residential properties, community facilities and visitor attractions in this Section during the construction phase due to land take is likely to be no effect.

- 16.7.43 Depending on the pipeline routeing in Section 1, the construction of the Proposed Development may require land take from a portion of the Humber Refinery business premises operated by Philips 66. However, this would be subject to prior agreement with Philips 66. Furthermore, land take required for the installation of the pipeline would be temporary in duration, and there are no business premises which would need to be demolished or which would be displaced by the Proposed Development. The sensitivity of this receptor is assessed to be medium given its moderate importance. However, the magnitude of impact resulting from temporary land take is deemed to be very low. Overall, the socio-economic effect on this receptor is assessed to be **negligible**, which is considered not significant.
- 16.7.44 The pipeline routeing, similarly dependent on its final alignment, may require temporary land take from the area of open space formerly open to the public as Immingham Golf Club. However, it is understood that the golf club is no longer operational, and therefore the construction of the Proposed Development would not displace or prevent use of the open space considering it is now closed. The sensitivity of this receptor is assessed to be very low given it is no longer operational. The magnitude of impact resulting from temporary land take is also deemed to be very low. Therefore, overall the socio-economic effect on this receptor is assessed to be **negligible**, which is considered not significant.
- 16.7.45 There are no visitor attractions identified within the private asset amenity study area in Section 1 of the pipeline route, therefore the socio-economic effect on visitor attractions in this Section during the construction phase is likely to be no effect.
- 16.7.46 Due to the construction activities required for the installation of the buried pipeline in this Section, including open cut and trenchless crossings, there is the potential for noise and vibration, traffic and transport, landscape and visual amenity, or air quality effects to occur. These could arise arising from potential impact on the amenity of residential properties, business premises, community facilities and open space due to such assets being identified within the private asset amenity study area of Section 1 of the pipeline route. This pertains to the private assets identified in paragraphs 16.5.37 to 16.5.41. These receptors are deemed to be of variable sensitivity: high (residential properties, open spaces, and community facilities) and low (business premises). Taking into account the results of the noise and vibration, traffic and transport, landscape and visual amenity, and air quality assessments, there are no residential properties, businesses, community facilities, or open spaces that would likely experience two or more significant effects, as concluded by these assessments, at the same time which would result in effects on their amenity during construction, therefore the magnitude of impact is assessed to be very low. Overall, the socio-economic effect on these receptors is assessed to be **negligible**, which is not significant.
- 16.7.47 Development land, including 'other existing developments and/or approved developments' has the potential to be impacted by the construction of the Proposed Development due to temporary or permanent land take and/or severance or disruptions to access during construction.
- 16.7.48 The proposed industrial and housing allocations, as set out in paragraph 16.5.42, in the vicinity of or overlapping with the pipeline route in Section 1 are compatible with the uses, functions and activities of the Proposed Development. Therefore, the magnitude of impact of the installation of the pipeline route in Section 1 is low. The sensitivity of these allocations, given they are not yet developed and therein is a high substitution potential, is also low. Overall, the socio-economic effect on development land allocations due to the installation of the pipeline route in Section 1 is assessed to be **negligible**, which is considered not significant.

16.7.49 Of the 'other existing developments and/or approved developments' identified in paragraph 16.5.43, two development land receptors may potentially require overlapping land take with the Immingham Facility element given their intersecting boundaries:

- Humber Zero Project (Phillips-66 Carbon Capture Plant); and
- Humber Zero Project (VPI Immingham Carbon Capture Plant).

16.7.50 If approved, there is the potential for the construction period of these schemes to coincide with that of the Proposed Development. However, it is not clear whether activities will directly coincide in terms of time or location. It is assessed that the sensitivity of these receptors is medium given the importance of the proposed schemes, with moderate potential for substitution. If the overlapping land take affects the integrity or value of the proposed schemes, the magnitude of impact is assessed to be low. The traffic and transport assessment finds that at all assessed links in Section 1 of the pipeline route, there are likely no significant effects due to severance. Therefore, in terms of the socio-economic assessment of development land in the applicable study area, the effect of the construction phase of the Proposed Development on disruption to access is likely to be no effect.

16.7.51 Therefore, the potential impact on existing or approved development receptors due to the installation of the pipeline in Section 1 in the worst-case scenario that construction activities overlap is assessed to be **minor adverse**, which is considered not significant.

Section 2

Pipeline (Section 2)

PRoW

16.7.52 There are six recreational routes and PRoW within the applicable study area (i.e., within the DCO Site Boundary) in this section of the pipeline route, as detailed in **Table 16-22**. As users of these six routes could therefore be potentially subject to journey disruption, effects on each are considered. PRoWs would only be temporarily diverted or closed to allow for construction works to be carried out safely. As such, the nature of diversion at identified points where PRoW intersect the Site Boundary would comprise a fence with gates that can temporarily closed to allow construction traffic to flow. A diversion would be set up at approximately 20 m to 50 m along the pipeline centreline with a walkway placed across the trench and fenced off. The diversion would be removed and the original PRoW route would likely be reopened within 48 hours. PRoW 4 and 24/26 are assessed to be of high sensitivity given they are of high importance, in terms of providing pedestrian connectivity between Habrough and Stallingborough, and Keelby and Stallingborough respectively, with limited potential for substitution with alternative routes between these locations. Given that any required diversions would be temporary in nature, the increase in journey length would be very slight, and opportunities to access the wider network would not be affected, the magnitude of impact on PRoWs 4 and 24/26 is assessed to be very low. Therefore, the overall effect on PRoWs 4 and 24/26, is assessed to be **minor adverse** which is considered not significant. With respect to PRoWs 116, 130, and 119, the sensitivity of receptor is assessed to be medium given the medium importance, in terms of providing connectivity between Aylesby, Laceby, and Irby upon Humber, yet high substitution potential with alternative routes available. The magnitude of impact is, as per the PRoWs considered above given the implementation of the same measures, very low. Therefore, the overall effect on PRoWs 116, 130, and 119 is assessed to be **negligible**, which is considered not significant.

Private Assets

16.7.53 There are no residential properties, business premises, community facilities, visitor attractions, or open spaces identified within the private asset land take study area in Section 2 of the pipeline route. Therefore, the socio-economic effect on residential properties,

business premises, community facilities, visitor attractions and open spaces in this Section during the construction phase due to land take is likely to be no effect.

- 16.7.54 There are no community facilities or visitor attractions identified within the private asset amenity study area in Section 2 of the pipeline route. Therefore, the socio-economic effect on community facilities and visitor attractions in this Section during the construction phase due to amenity effects is likely to be no effect.
- 16.7.55 Due to the construction activities required for the installation of the buried pipeline in this Section, including open cut and trenchless crossings, there is the potential for noise and vibration, traffic and transport, landscape and visual amenity, or air quality effects to arise. These could impact on the amenity of residential properties, business premises, and open spaces due to such assets being identified within the private asset amenity study area of Section 2 of the pipeline route. This pertains to private assets identified within paragraphs 16.5.48 to 16.5.52. These receptors are deemed to be of variable sensitivity: low (business premises and open space) and high (residential properties) sensitivity. Taking into account the results of the noise and vibration, traffic and transport, landscape and visual amenity, and air quality assessments, there are no groups of residential properties, businesses, or open spaces that would likely experience two or more significant effects, as concluded by these assessments, at the same time which would result in effects on their amenity during construction, therefore the magnitude of impact is assessed to be very low. Overall, the socio-economic effect on these receptors is assessed to be **negligible**, which is considered not significant.
- 16.7.56 Development land, including 'other existing developments and/or approved developments' has the potential to be impacted by the construction of the Proposed Development due to temporary or permanent land take and/or severance or disruptions to access during construction. The viability of development land housing allocations HOU068A and HOU075A identified within the applicable study area is unlikely to be affected by land take or disruptions to access during construction. The traffic and transport assessment finds that at all assessed links in Section 2 of the pipeline route, there are likely no significant effects due to severance, and therein disruption to access is also unlikely. Therefore, the magnitude of impact on these development land allocations is likely to be very low. The sensitivity of these allocations, given they are not yet developed and therein is a high substitution potential, is low. Overall, the socio-economic effect on development land allocations due to the installation of the pipeline route in Section 2 is assessed to be **negligible**, which is considered not significant.

Section 3

Pipeline (Section 3)

PRoW

- 16.7.57 There are seven recreational routes and PRoW within the applicable study area (i.e., within the DCO Site Boundary) in this section of the pipeline route, as detailed in **Table 16-24**. As users of these seven routes could therefore be potentially subject to journey disruption, effects on each are considered. PRoWs would only be temporarily diverted or closed to allow for construction works to be carried out safely. The nature of diversion at identified points where PRoW intersect the Site Boundary would comprise a fence with gates that can temporarily closed to allow construction traffic to flow. A diversion would be set up at approximately 20 m to 50 m along the pipeline centreline with a walkway placed across the trench and fenced off. The diversion would be removed and the original PRoW route would likely be reopened within 48 hours. PRoW 94, 81/85, and NTho/113/1 are assessed to be of high sensitivity given they are of high importance, in terms of providing pedestrian connectivity between Barnoldby le Beck and Hatcliffe, Ashby cum Fenby and Brigsley, and North Thoresby and the A18 respectively, with limited potential for substitution with

alternative routes between these locations. Given that any required diversions would be temporary in nature, the short increase in journey length would approximate to a very slight increase in journey time, and opportunities to access the wider network would not be affected, the magnitude of impact of PRowS is assessed to be very low. Therefore, the overall effect on PRowS 94, 81/85, and NTho/113/1 is assessed to be **minor adverse** which is not considered significant. With respect to PRowS 161a and 124, and 87, the sensitivity of receptor is assessed to be medium given the medium importance, in terms of providing connectivity between Irby upon Humber and Laceby, and south of Ashby cum Fenby respectively, yet there is high substitution potential with alternative routes available. The magnitude of impact is as per the PRowS considered above given the implementation of the same measures, very low. Therefore, the overall effect on PRowS 161a, 124, and 87 is assessed to be **negligible**, which is considered not significant.

Private Assets

- 16.7.58 There are no residential properties, business premises, community facilities, visitor attractions, or open spaces identified within the private asset land take study area in Section 3 of the pipeline route. Therefore, the socio-economic effect on residential properties, business premises, community facilities, visitor attractions, and open spaces in this Section during the construction phase due to land take is likely to be no effect.
- 16.7.59 Due to the construction activities required for the installation of the buried pipeline in this Section, including open cut and trenchless crossings, there is the potential for noise and vibration, traffic and transport, landscape and visual amenity, or air quality effects to arise. These could impact on the amenity of residential properties, business premises, community facilities, visitor attractions and open space due to such assets being identified within the private asset amenity study area of Section 3 of the pipeline route. This pertains to the assets identified in paragraphs 16.5.59 to 16.5.63. These receptors are deemed to be of variable sensitivity: low (business premises), medium (community facilities, visitor attractions) and high (residential properties). Taking into account the results of the noise and vibration, traffic and transport, landscape and visual amenity, and air quality assessments, there are no groups of residential properties, businesses, community facilities, visitor attractions or open spaces that would likely experience two or more significant effects, as concluded by these assessments, at the same time which would result in effects on their amenity during construction, therefore the magnitude of impact is assessed to be very low. Overall, the socio-economic effect on these receptors is assessed to be **negligible**, which is considered not significant.
- 16.7.60 Development land, including 'other existing developments and/or approved developments' has the potential to be impacted by the construction of the Proposed Development due to temporary or permanent land take and/or severance or disruptions to access during construction. The viability of development land housing allocations NTH307, NTH308, and NTH313 identified within the applicable study area is unlikely to be affected by land take or disruptions to access during construction. The traffic and transport assessment finds that at all assessed links in Section 3 of the pipeline route there are likely no significant effects due to severance. Therefore, the magnitude of impact on these development land allocations is likely to be very low. The sensitivity of these allocations, given they are not yet developed and therein is a high substitution potential, is low. Overall, the socio-economic effect on development land allocations due to the installation of the pipeline route in Section 3 is assessed to be **negligible**, which is considered not significant.
- 16.7.61 Of the identified existing or approved development receptors set out in paragraph 16.5.65, overlapping land take will not be required and therefore the socio-economic effect on development land due to land take during the construction of the Proposed Development is likely to be no effect. As above, there will similarly be no significant effect due to severance. The magnitude of impact on these receptors is therefore assessed to be very low. These

residential developments and foul sewer works are deemed to be of medium sensitivity, given their moderate importance and moderate capacity for substitution with alternatives. Therefore, the potential impact on existing or approved development receptors due to the installation of the pipeline in Section 3 in the worst-case scenario that construction activities overlap is assessed to be **negligible**, which is considered not significant.

Construction Compound Central

PRoW

16.7.62 There are no recreational routes or PRoW within the applicable study area (i.e., within the DCO Site Boundary) at the Construction Compound Central. Therefore, the socio-economic effect on recreational routes and PRoW at this element during the construction phase is likely to be no effect.

Private Assets

16.7.63 There are no residential properties, business premises, community facilities, visitor attractions, or open spaces identified within the private asset land take study area of the Construction Compound Central element. Therefore, the socio-economic effect on residential properties, business premises, community facilities, visitor attractions, and open spaces of this element during the construction phase due to land take is likely to be no effect.

16.7.64 There are no residential properties, community facilities, visitor attractions, or open spaces identified within the private asset amenity study area of Construction Compound Central. Therefore, the socio-economic effect on residential properties, community facilities, and open spaces of this element during the construction phase due to amenity effects is likely to be no effect.

16.7.65 Due to the activities associated with the Construction Compound Central, including use of pipe storage areas (also known as pipe dumps), welfare facilities, and plant storage and maintenance areas, there is the potential for amenity effects to occur. There is the potential for noise and vibration, traffic and transport, landscape and visual amenity, or air quality effects arising from the Proposed Development to impact on the amenity of business premises due to such assets being identified within the private asset amenity study area of the Construction Compound Central. This pertains to The Willows Camping and Caravan Site and Laceby Manor Golf Course. These receptors are assessed to be of medium sensitivity given their rarity, despite the moderate potential to access alternatives. Taking into account the results of the noise and vibration, traffic and transport, landscape and visual amenity, and air quality assessments, there are no businesses that would likely experience two or more significant effects, as concluded by these assessments, at the same time which would result in effects on their amenity during construction, therefore the magnitude of impact is assessed to be very low. Overall, the socio-economic effect on these receptors is assessed to be **negligible**, which is not significant.

16.7.66 Development land, including 'other existing developments and/or approved developments', has the potential to be impacted by the construction of the Proposed Development due to temporary or permanent land take and/or severance or disruptions to access during construction. There are no applicable housing or employment development land allocations within the study area at this element or identified existing or approved development receptors which potentially require temporary or permanent overlapping land take at this element. Therefore, the socio-economic effect on development land due to land take during the construction of the Proposed Development is likely to be no effect.

16.7.67 Only application_DM/0769/22/FUL for the construction of a foul sewer and associated works is pertinent to the socio-economic assessment of development land at this asset, as it lies within the applicable study area, which is deemed to be of low sensitivity. The traffic and

transport assessment finds that at all assessed links in Section 3 of the pipeline route there are likely no significant effects due to severance. The magnitude of impact is therefore deemed to be very low. Overall, in terms of the socio-economic assessment of development land, the effect of this element during the construction phase of the Proposed Development is likely to be **negligible**, which is considered not significant.

Section 4

Pipeline (Section 4)

PRoW

16.7.68 There are six recreational routes and PRoW within the applicable study area (i.e., within the DCO Site Boundary) in this section, as detailed in **Table 16-25**. As users of these six routes could therefore be potentially subject to journey disruption, effects on each are considered. PRoWs would only be temporarily diverted or closed to allow for construction works to be carried out safely. The nature of diversion at identified points where PRoW intersect the Site Boundary would comprise a fence with gates that can temporarily closed to allow construction traffic to flow. A diversion would be set up at approximately 20 m to 50 m along the pipeline centreline with a walkway placed across the trench and fenced off. The diversion would be removed and the original PRoW route would likely be reopened within 48 hours. PRoWs Utte/83/1 and Utte/83/2, LGri/77/1, and Alvi/343/4 are assessed to be of high sensitivity given they are of high importance, in terms of providing pedestrian connectivity between Covenham St Bartholomew/Covenham St Mary and Utterby, Little Grimsby/Fotherby and Yarburgh, and Louth and Alvingham, respectively. There is limited potential for substitution with alternative routes between these locations. Given that the required diversions would be temporary in nature, the short increase in journey length would approximate to a very slight increase in journey time, and opportunities to access the wider network would not be affected, the magnitude of impact of PRoWs is assessed to be very low. Therefore, the overall effect on PRoWs Utte/83/1, Utte/83/2, LGri/77/1, Alvi/343/4, is assessed to be **minor adverse**, which is considered not significant. With respect to PRoWs NCoc/67/1 and NCoc/68/1, the sensitivity of receptors is assessed to be medium given the medium importance, in terms of providing connectivity between North Cockerington and Rushmoor Country Park, yet there is high substitution potential with alternative routes available. The magnitude of impact is as per the PRoWs considered above given the implementation of the same measures, very low. Therefore, the overall effect on PRoWs NCoc/67/1 and NCoc/68/1 is assessed to be **negligible**, which is considered not significant.

Private Assets

16.7.69 There are no residential properties, business premises, community facilities, visitor attractions, or open spaces identified within the private asset land take study area in Section 4 of the pipeline route. Therefore, the socio-economic effect on residential properties, business premises, community facilities, visitor attractions, and open spaces in this Section during the construction phase due to land take is likely to be no effect.

16.7.70 There are no open spaces identified within the private asset amenity study area in Section 4 of the pipeline route. Therefore, the socio-economic effect on open spaces in this Section during the construction phase due to amenity effects is likely to be no effect.

16.7.71 Due to the construction activities required for the installation of the buried pipeline in this Section, including open cut and trenchless crossings, there is the potential for noise and vibration, traffic and transport, landscape and visual amenity, or air quality effects arising from the Proposed Development to occur. This could impact on the amenity of residential properties, business premises, community facilities, and visitor attractions due to such assets being identified within the private asset amenity study area of Section 4 of the pipeline route. This pertains to the private assets identified in paragraphs 16.5.70 to 16.5.74. These receptors are deemed to be of variable sensitivity: low (business premises) and high

(residential properties, visitor attractions, and community facilities). Taking into account the results of the noise and vibration, traffic and transport, landscape and visual amenity, and air quality assessments, there are no groups of residential properties, businesses, community facilities, or visitor attractions that would likely experience two or more significant effects, as concluded by these assessments, at the same time which would result in effects on their amenity during construction, therefore the magnitude of impact is assessed to be very low. Overall, the socio-economic effect on these receptors is assessed to be **negligible**, which is considered not significant.

16.7.72 Development land, including 'other existing developments and/or approved developments' has the potential to be impacted by the construction of the Proposed Development due to temporary or permanent land take and/or severance or disruptions to access during construction. As there are no identified relevant development land receptors pertinent to the socio-economics assessment and applicable study area, the socio-economic effect on development land due to the construction of the Proposed Development in Section 4 of the pipeline route is likely to be no effect.

Section 5

Pipeline (Section 5)

PRoW

16.7.73 There are four recreational routes and PRoW within the applicable study area (i.e., within the DCO Site Boundary) in this section, as detailed in **Table 16-28**. As users of these four routes could therefore be potentially subject to journey disruption, effects on each are considered. PRoWs would only be temporarily diverted or closed to allow for construction works to be carried out safely. As such, the nature of diversion at identified points where PRoW intersect the Site Boundary would comprise a fence with gates that can temporarily closed to allow construction traffic to flow. A diversion would be set up at approximately 20 m to 50 m along the pipeline centreline with a walkway placed across the trench and fenced off. The diversion would be removed and the original PRoW route would likely be reopened within 48 hours. PRoWs GayM/193/1 and ThSH/253/1 are assessed to be of high sensitivity given they are of high importance, in terms of providing pedestrian connectivity between residential properties in Gayton le Marsh/Great Carlton and Theddlethorpe All Saints, and Rotten Row/Mablethorpe Road and Mablethorpe, respectively, with limited potential for substitution with alternative routes between these locations. Given that the required diversions would be temporary in nature, the short increase in journey length would approximate to a very slight increase in journey time, and opportunities to access the wider network would not be affected, the magnitude of impact on PRoW GayM/193/1 and ThSH/253/1 is assessed to be very low. Therefore, the overall effect on PRoW GayM/193/1 and ThSH/253/1 is assessed to be **minor adverse**, which is considered not significant. With respect to PRoWs ThSH/249/1 and ThSH/250/2 the sensitivity of receptors is assessed to be medium given the medium importance, in terms of providing connectivity between residences on High Gate and the A1031, yet there is high substitution potential with alternative routes available. The magnitude of impact is as per PRoWs above, given the implementation of the same measures, very low. Therefore, the overall effect on PRoWs ThSH/249/1 and ThSH/250/2 is assessed to be **negligible**, which is considered not significant.

Private Assets

16.7.74 There are no residential properties, community facilities, or visitor attractions identified within the private asset land take study area in Section 5 of the pipeline route. Therefore, the socio-economic effect on residential properties, community facilities, and visitor attractions in this Section during the construction phase due to land take is likely to be no effect.

16.7.75 Depending on the pipeline routeing in Section 5, and the chosen location for the Theddlethorpe Facility, the construction of the Proposed Development may require land take from a portion of the former Theddlethorpe Gas Terminal. However, this site is disused and cleared, and therefore its sensitivity as a business premises is very low. Land take required for the installation of the pipeline would be temporary in duration, and there are no business premises which would need to be demolished or which would be displaced by the Proposed Development. Therefore, the magnitude of impact is also very low. Overall, the socio-economic effect on this receptor during the construction phase is **negligible**, which is considered not significant.

16.7.76 Although the area of open space associated with Mablethorpe Beach and adjacent nature reserve lies within the DCO Site Boundary, no construction works will be required in this area. Therefore, there will be no effect due to land take on these areas of open space, and the magnitude of impact is deemed to be very low. These receptors are deemed to be of medium sensitivity. Overall, the socio-economic impact on these receptors during the construction phase is assessed to be **negligible**, which is considered not significant.

16.7.77 Due to the construction activities required for the installation of the buried pipeline in this Section, there is the potential for noise and vibration, traffic and transport, landscape and visual amenity, or air quality effects to occur. These could impact on the amenity of residential properties, business premises, community facilities, visitor attractions, and open spaces due to such assets being identified within the private asset amenity study area of Section 5 of the pipeline route. This pertains to the assets identified in paragraphs 16.5.81 to 16.5.85. These receptors are deemed to be of variable sensitivity: low (open spaces), medium (visitor attractions and business premises) and high (residential properties and community facilities). Taking into account the results of the noise and vibration, traffic and transport, landscape and visual amenity, and air quality assessments, there are no groups of residential properties, businesses, community facilities, or visitor attractions that would likely experience two or more significant effects, as concluded by these assessments, at the same time which would result in effects on their amenity during construction, therefore the magnitude of impact is assessed to be very low. Overall, the socio-economic effect on these receptors is assessed to be **negligible**, which is considered not significant.

16.7.78 Development land, including 'other existing developments and/or approved developments' has the potential to be impacted by the construction of the Proposed Development due to temporary or permanent land take and/or severance or disruptions to access during construction. As there are no identified relevant development land receptors pertinent to the socio-economics assessment and applicable study area, the socio-economic effect on development land due to the construction of the Proposed Development in Section 5 of the pipeline route is likely to be no effect.

Construction Compound South

PRoW

16.7.79 There are no recreational routes or PRoW within the applicable study area (i.e., within the DCO Site Boundary) at the Construction Compound South. Therefore, the socio-economic effect on recreational routes and PRoW at this element during the construction phase is likely to be no effect.

Private Assets

16.7.80 There are no residential properties, business premises, community facilities, visitor attractions, or open spaces identified within the private asset land take study area of the Construction Compound South element. Therefore, the socio-economic effect on residential properties, business premises, community facilities, visitor attractions, and open spaces of this element during the construction phase due to land take is likely to be no effect.

- 16.7.81 There are no community facilities identified within the private asset amenity study area of the Construction Compound South. Therefore, the socio-economic effect on community facilities and open spaces of this element during the construction phase due to amenity effects is likely to be no effect.
- 16.7.82 Due to the activities associated with the Construction Compound Central, including use of pipe storage areas (also known as pipe dumps), welfare facilities, and plant storage and maintenance areas, there is the potential for amenity effects to occur. There is the potential for noise and vibration, traffic and transport, landscape and visual amenity, or air quality effects arising from the Proposed Development to impact on the amenity of residential properties, business premises, visitor attractions, and open spaces due to such assets being identified within the private asset amenity study area of the Construction Compound South. This pertains to residential properties on Meers Bank, Kent Avenue, Crook Bank, and Mablethorpe Road in Mablethorpe; business premises including Quayside Café Bar and Restaurant and The Ferryboat Inn; visitor attractions including holiday accommodations and The Seal Sanctuary Wildlife Centre; and open spaces at Mablethorpe Beach and the adjacent nature reserve. These receptors are deemed to be of variable sensitivity: low (open spaces), medium (visitor attractions and business premises), and high (residential properties). Taking into account the results of the noise and vibration, traffic and transport, landscape and visual amenity, and air quality assessments, there are no groups of residential properties, businesses, or visitor attractions that would likely experience two or more significant effects, as concluded by these assessments, at the same time which would result in effects on their amenity during construction, therefore the magnitude of impact is assessed to be very low. Overall, the socio-economic effect on these receptors is assessed to be **negligible**, which is not significant.
- 16.7.83 Development land, including 'other existing developments and/or approved developments' has the potential to be impacted by the construction of the Proposed Development due to temporary or permanent land take and/or severance or disruptions to access during construction. There are no housing or employment land allocations in the relevant study area whose viability would be impacted by land take or disruption to access during construction. As there are no identified relevant existing or approved development receptors pertinent to the socio-economics assessment and applicable study area, the socio-economic effect on development land due to the construction of the Proposed Development at the Construction Compound South element is likely to be no effect.

Theddlethorpe Option 1

PRoW

- 16.7.84 There are no recreational routes or PRoW within the applicable study area (i.e., within the DCO Site Boundary) at the Theddlethorpe Facility Option 1 location. Therefore, the socio-economic effect on recreational routes and PRoW at this element during the construction phase is likely to be no effect.

Private Assets

- 16.7.85 There are no residential properties, community facilities, visitor attractions, or open spaces identified within the private asset land take study area of the Theddlethorpe Facility Option 1. Therefore, the socio-economic effect on residential properties, business premises, community facilities, visitor attractions, and open spaces of this element during the construction phase due to land take is likely to be no effect.
- 16.7.86 The construction of the Theddlethorpe Facility Option 1 would require land take from the site of the former Theddlethorpe Gas Terminal, however demolition of this industrial/utilities infrastructure was completed in 2021. Therefore, this premises is not assessed to be employment generating and future development of the site would not affect or impact on the operations of any business, and therein the sensitivity of this receptor as a business

premises is very low. As such, the construction of this element would not require that any business premises were demolished or displaced by the construction of the Proposed Development, therefore the magnitude of impact resulting from the construction of the Theddlethorpe Facility Option 1 would be very low. Therefore, the socio-economic effect on business premises during the construction phase at this element is likely to be **negligible**, which is considered not significant.

16.7.87 There are no community facilities within the private asset amenity study area of the Theddlethorpe Facility Option 1. Therefore, the socio-economic effect on community facilities during the construction phase due to amenity effects is likely to be no effect.

16.7.88 Construction activities required for the above-ground infrastructure of the Theddlethorpe Facility have the potential to result in noise and vibration, traffic and transport, landscape and visual amenity, or air quality effects. These could impact on the amenity of residential properties, business premises, visitor attractions and open spaces due to such assets being identified within the private asset amenity study area of the Theddlethorpe Facility Option 1. This pertains to residential properties on Meers Bank, Kent Avenue, Crook Bank, and Mablethorpe Road in Mablethorpe and some properties to the south of Theddlethorpe St Helens; business premises including Quayside Café Bar and Restaurant and The Ferryboat Inn; visitor attractions including holiday accommodations and The Seal Sanctuary Wildlife Centre; and areas of open space at Mablethorpe Beach and adjacent nature reserve. These receptors are deemed to be of variable sensitivity: low (open spaces), medium (visitor attractions and business premises), and high (residential properties). Taking into account the results of the noise and vibration, traffic and transport, landscape and visual amenity, and air quality assessments, there are no groups of residential properties, businesses, or visitor attractions that would likely experience two or more significant effects, as concluded by these assessments, at the same time which would result in effects on their amenity during construction, therefore the magnitude of impact is assessed to be very low. Overall, the socio-economic effect on these receptors is assessed to be **negligible**, which is considered not significant.

16.7.89 Development land, including 'other existing developments and/or approved developments' has the potential to be impacted by the construction of the Proposed Development due to temporary or permanent land take and/or severance or disruptions to access during construction. As there are no identified relevant development land receptors pertinent to the socio-economics assessment and applicable study area, the socio-economic effect on development land due to the construction of the Proposed Development at this element is likely to be no effect.

Theddlethorpe Option 2

PRoW

16.7.90 There are no recreational routes or PRoW within the applicable study area (i.e., within the DCO Site Boundary) at the Theddlethorpe Facility Option 2 location. Therefore, the socio-economic effect on recreational routes and PRoW at this element during the construction phase is likely to be no effect.

Private Assets

16.7.91 There are no residential properties, business premises, community facilities, visitor attractions, or open spaces identified within the private asset land take study area of the Theddlethorpe Facility Option 2. Therefore, the socio-economic effect on residential properties, business premises, community facilities, visitor attractions, and open spaces of this element during the construction phase due to land take is likely to be no effect.

- 16.7.92 There are no community facilities within the private asset amenity study area of the Theddlethorpe Facility Option 2. Therefore, the socio-economic effect on community facilities during the construction phase due to amenity effects is likely to be no effect.
- 16.7.93 Construction activities required for the above-ground infrastructure of the Theddlethorpe Facility have the potential to result in noise and vibration, traffic and transport, landscape and visual amenity, or air quality effects. These could impact on the amenity of residential properties, business premises, visitor attractions and open spaces due to such assets being identified within the private asset amenity study area of the Theddlethorpe Facility Option 2. This pertains to residential properties on Meers Bank, Kent Avenue, Crook Bank, and Mablethorpe Road in Mablethorpe and some properties to the south of Theddlethorpe St Helens; business premises including Quayside Café Bar and Restaurant and The Ferryboat Inn; visitor attractions including holiday accommodations and The Seal Sanctuary Wildlife Centre; and areas of open space at Mablethorpe Beach and adjacent nature reserve. These receptors are deemed to be of variable sensitivity: low (open spaces), medium (visitor attractions and business premises) and high (residential properties). Taking into account the results of the noise and vibration, traffic and transport, landscape and visual amenity, and air quality assessments, there are no groups of residential properties, businesses, or visitor attractions that would likely experience two or more significant effects, as concluded by these assessments, at the same time which would result in effects on their amenity during construction, therefore the magnitude of impact is assessed to be very low. Overall, the socio-economic effect on these receptors is assessed to be **negligible**, which is considered not significant.
- 16.7.94 Development land, including 'other existing developments and/or approved developments' has the potential to be impacted by the construction of the Proposed Development due to temporary or permanent land take and/or severance or disruptions to access during construction. As there are no identified relevant development land receptors pertinent to the socio-economics assessment and applicable study area, the socio-economic effect on development land due to the construction of the Proposed Development at this element is likely to be no effect.

Dune Isolation Valve

PRoW

- 16.7.95 There are no recreational routes or PRoW within the applicable study area (i.e., within the DCO Site Boundary) at the Dune Isolation Valve location. Therefore, the socio-economic effect on recreational routes and PRoW at this element during the construction phase is likely to be no effect.

Private Assets

- 16.7.96 There are no residential properties, business premises, community facilities, visitor attractions, or open spaces identified within the private asset land take study area of the Dune Isolation Valve. Therefore, the socio-economic effect on residential properties, business premises, community facilities, visitor attractions, and open spaces of this element during the construction phase due to land take is likely to be no effect.
- 16.7.97 There are no community facilities identified within the private asset amenity study area of the Construction Compound South. Therefore, the socio-economic effect on community facilities and open spaces of this element during the construction phase due to amenity effects is likely to be no effect.
- 16.7.98 Construction activities required for the above-ground infrastructure of the Dune Isolation Valve have the potential to result in noise and vibration, traffic and transport, landscape and visual amenity, or air quality effects. These could impact on the amenity of residential properties, business premises, visitor attractions, and open spaces due to such assets being

identified within the private asset amenity study area of the Dune Isolation Valve. This pertains to residential properties on Meers Bank, Kent Avenue, Crook Bank, and Mablethorpe Road in Mablethorpe; business premises including Quayside Café Bar and Restaurant and The Ferryboat Inn; visitor attractions including holiday accommodations and The Seal Sanctuary Wildlife Centre; and open spaces at Mablethorpe Beach and the adjacent nature reserve. These receptors are deemed to be of variable sensitivity: low (open spaces), medium (visitor attractions and business premises) and high (residential properties). Taking into account the results of the noise and vibration, traffic and transport, landscape and visual amenity, and air quality assessments, there are no groups of residential properties, businesses, or visitor attractions that would likely experience two or more significant effects, as concluded by these assessments, at the same time which would result in effects on their amenity during construction, therefore the magnitude of impact is assessed to be very low. Overall, the socio-economic effect on these receptors is assessed to be **negligible**, which is considered not significant.

16.7.99 Development land, including 'other existing developments and/or approved developments' has the potential to be impacted by the construction of the Proposed Development due to temporary or permanent land take and/or severance or disruptions to access during construction. As there are no identified relevant development land receptors pertinent to the socio-economics assessment and applicable study area, the socio-economic effect on development land due to the construction of the Proposed Development at this element is likely to be no effect.

Block Valve Stations & Cathodic Protection

PRoW

16.7.100 There are no recreational routes or PRoW within the applicable study area (i.e., within the DCO Site Boundary) at the Block Valve Station locations. Therefore, the socio-economic effect on recreational routes and PRoW at these elements during the construction phase is likely to be no effect.

Private Assets

16.7.101 There are no residential properties, business premises, community facilities, visitor attractions, or open spaces identified within the private asset land take study areas of the Block Valve Station locations (Washingdales Land Block Valve Station, Thoroughfare Block Valve Station, and Louth Road Block Valve Station). Therefore, the socio-economic effect on residential properties, business premises, community facilities, visitor attractions, and open spaces of these elements during the construction phase due to land take is likely to be no effect.

16.7.102 There are no visitor attractions or open spaces within the private asset amenity study areas of the Block Valve Stations. Therefore, the socio-economic effect on visitor attractions and open spaces during the construction phase due to amenity effects is likely to be no effect.

16.7.103 Construction activities required for the above-ground infrastructure of the Block Valve Stations have the potential to result in noise and vibration, traffic and transport, landscape and visual amenity, or air quality effects. These could impact on the amenity of residential properties, business premises and community facilities due to such assets being identified within the private asset amenity study area of the Block Valve Stations. This pertains to residential properties towards the western edge of the settlement of Aylesby (Washingdales Lane Block Valve Station), residential properties towards the eastern edge of the settlement of Ashby cum Fenby (Thoroughfare Block Valve Station), residential properties in Alvingham, business premises at Alvingham Fishing Lakes, and the community facility of Alvingham Village Hall and Social Club (Louth Road Block Valve Station). These receptors are deemed to be of variable sensitivity: medium (business premises and community

facilities) and high (residential properties). Taking into account the results of the noise and vibration, traffic and transport, landscape and visual amenity, and air quality assessments, there are no groups of residential properties, businesses, or community facilities that would likely experience two or more significant effects, as concluded by these assessments, at the same time which would result in effects on their amenity during construction, therefore the magnitude of impact is assessed to be very low. Overall, the socio-economic effect on these receptors is assessed to be **negligible**, which is considered not significant.

16.7.104 Development land, including 'other existing developments and/or approved developments', has the potential to be impacted by the construction of the Proposed Development due to temporary or permanent land take and/or severance or disruptions to access during construction. Of the identified development land receptors, overlapping land take will not be required at these elements, and therefore the socio-economic effect on development due to land take at these elements during the construction of the Proposed Development is likely to be no effect. The traffic and transport assessment finds that at all assessed links in the respective sections of the pipeline route in which the Block Valve Stations are located there are likely no significant effects due to severance.

Assessment of Potential Impacts: Decommissioning Phase

16.7.105 This section considers the likely significant effects occurring during the decommissioning phase.

Project-wide Effects

Decommissioning Employment

16.7.106 It is assumed that the decommissioning works required during the decommissioning phase will be smaller in magnitude and extent to those required during the construction phase as a result of elements including the pipeline remaining in situ and Block Valve Stations and facilities at Immingham and Theddlethorpe being removed. For the purposes of calculating decommissioning employment, it is assumed that a third of the construction employment will be generated given the reduced amount of works involved.

16.7.107 In order to assess the likely decommissioning employment associated with the decommissioning phase, additionality effects have been considered in the same way as applied during the construction phase, as set out in paragraphs 16.7.6 to 16.7.12. Although it is not possible to anticipate the precise characteristics of the labour market catchment area and economy at the time of decommissioning given the length of the operational period, the assumptions adopted above regarding leakage, displacement and multiplier effects are considered to be sufficiently representative of the local economy at the time of decommissioning.

16.7.108 Decommissioning employment will be temporary in nature. It is estimated that the Proposed Development will require an average of 66 gross full-time equivalent (FTE) construction jobs on site per day over the decommissioning period. The peak number of staff during the decommissioning period is expected to be higher.

16.7.109 An adjustment of 70% has been applied to the estimated 66 gross construction jobs to calculate the jobs created outside the labour market catchment area. Thus, it is estimated that the construction period of the Proposed Development will create 20 jobs for residents within the labour market catchment and 46 jobs for residents outside of this area.

16.7.110 Applying a low displacement factor of 25% to the total gross direct employment figure results in a total net direct employment figure of 49 jobs per year during the construction period.

16.7.111 Applying the 1.5 multiplier to the total net direct employment figure of 49 workers results in net indirect and induced employment of 25 jobs per annum during the construction period, together generating 74 total net jobs per annum.

16.7.112 **Table 16-34** presents the temporary employment generated by the Proposed Development during decommissioning, taking into account leakage, displacement and multiplier effects described above. The Proposed Development will support, on average 74 jobs per annum during the decommissioning period. Of these, 23 jobs per annum will be expected to be taken-up by residents within the labour market catchment area, whilst 51 jobs will likely be taken up by workers living outside the effect area.

Table 16-34: Net Additional Decommissioning Employment from the Proposed Development

	60-minute travel study area	Outside study area	Total
Gross direct employment	20	46	66
Displacement	-5	-12	-17
Net direct employment	15	34	49
Indirect and induced employment	8	17	25
Total net employment	23	51	74

16.7.113 As previously stated, due to the relatively low recorded economic activity rate in the 60-minute drive time study area, albeit with broadly comparable unemployment rate to wider geographies, the sensitivity of the local economy is assessed to be medium. Given the scale of the economy in terms of the number of jobs in the construction sector (89,844), the magnitude of impact of the additional 74 decommissioning jobs is assessed to be low. Therefore, the generation of jobs during the decommissioning phase is assessed to result in a temporary **minor beneficial effect**, which is considered not significant.

Gross Value Added

16.7.114 Applying the average gross value added per construction worker in the area to the total number of construction workers generated during the decommissioning phase of the Proposed Development gives the total GVA arising from the decommissioning phase. It should be noted that in order to derive GVA per worker at an appropriate geography rounded employment figures have been used, therefore total GVA may be different to that reported here. Also, average GVA derives from data dated 2021, and therefore GVA is likely to be different at the time of decommissioning.

16.7.115 As previously stated, the average GVA per worker in the construction sector in each of the local authorities in which the Proposed Development is located in 2021 was £58,000 in North Lincolnshire, £57,667 in North East Lincolnshire, £85,778 in West Lindsey, and £56,000 in East Lindsey. When considering these areas in aggregate the average GVA per worker is £62,431. By applying this figure to the total number of construction workers generated by the Proposed Development, it is estimated that the decommissioning phase will contribute £4,619,894 to the local economy, of which £1,435,913 is within the labour market catchment area, as shown in **Table 16-35**.

Table 16-35: Gross Value Added Per Annum from the Proposed Development during the Decommissioning Phase

	60-minute drive time study area	Outside study area	Total
GVA during the decommissioning phase	£1,435,913	£3,183,981	£4,619,894

16.7.116 As previously stated, the sensitivity of the local economy to the generation of GVA impacts during decommissioning is assessed to be high given the local policy impetus to improve productivity and that current GVA per worker of the host local authorities on average lags behind that of the regional economy, meaning the local economy is highly receptive to any intervention that would improve productivity and output. As a result, the sensitivity of the local economy to GVA effects is deemed to be high. Given the GVA generation during the decommissioning phase within the 60-minute drive time area represents a relatively small amount that would not materially alter to size of the economy, in the context of the total GVA resulting from construction activity in the local authority, regional economies, and by extension the economy of the 60-minute drive time study area, the magnitude is assessed to be very low. Therefore, the assessment of the effect of GVA generation during the decommissioning phase results in a temporary **minor beneficial effect**, which is considered not significant.

Training and Apprenticeships

16.7.117 There is potential for the creation of training and upskilling opportunities, including apprenticeships, during the decommissioning of the Proposed Development.

16.7.118 The sensitivity of the local population to benefits associated with new training and apprenticeships is assessed to be high. This is because the baseline indicates that the proportion of the population in the four local authorities that holds an NVQ Level 4 qualification or above is in general less than the regional and national average. Also, the proportion of the population with no formal qualifications is in general higher than the regional and national average.

16.7.119 At this stage, it is not known how many training places and apprenticeships will be created during the decommissioning phase, although in line with the smaller magnitude of decommissioning employment compared to construction employment, any training places and apprenticeships are also similarly considered to likely be of a lower magnitude. However, the Principal Contractor will develop a Skills, Employment and Supply Chain Plan in liaison with the four Local Authorities, which will identify measures by which the potential economic benefits of the Proposed Development during the decommissioning stage for local people and businesses might be maximised. This will include seeking to develop links with education and employment establishments in the locality if appropriate (for example, schools, colleges, employment agencies, and business groups). Based on the available information at this stage, the impact on training and apprenticeships is assessed to be of low magnitude.

16.7.120 This results in a temporary **minor beneficial effect**, which is considered not significant.

Community Severance

16.7.121 The decommissioning of the Proposed Development may require land take for the removal of the Block Valve Stations, and facilities at Immingham and Theddlethorpe, and potentially for minor works on the pipeline. These activities will introduce traffic to the local

road network, which has the potential to lead to temporary severance of access to community facilities for residents leading to the deterioration of social cohesion or affecting mental health, and temporary severance of access to healthcare and other social infrastructure.

16.7.122 The traffic and transport assessment (*Chapter 12: Traffic and Transport*) anticipates that the decommissioning phase will have a similar impact to the construction phase and sets out that an appropriate CTMP and CWTPPO will be prepared to cover this phase at an appropriate time. However, no assessment of the effects, including on severance, is provided for this phase given the uncertainties around the future baseline.

16.7.123 On the basis that the pipeline is anticipated to be left in-situ, no land take would be required such that PRoW would be temporarily or permanently diverted or closed. Therefore, there will be no effect on community severance resulting from disruptions to users of PRoW during the decommissioning phase.

Immingham Facility

16.7.124 The decommissioning of the Proposed Development will involve the removal of the Immingham Facility. A detailed decommissioning strategy will be developed nearer the time of decommissioning. It is assumed for the purpose of this assessment that the receptors identified and assessed during the construction phase will reflect those in-situ at the time of decommissioning, although it is not possible to confirm this given that the 25 year (or more) operational period could give rise to variation in the socio-economic baseline. A Draft Decommissioning Strategy has been developed and is presented within *ES Volume IV: Appendix 3.5 (Application Document 6.4.3.5)*.

16.7.125 There are no recreational routes or PRoW within the applicable study area (i.e., within the DCO Site Boundary) at the Immingham Facility element. Therefore, there is likely to be no socio-economic effect on recreational routes and PRoW at this element during the decommissioning phase.

16.7.126 There are no residential properties, business premises, community facilities, visitor attractions, or open spaces identified within the private asset land take study area of the Immingham Facility. Therefore, the socio-economic effect on residential properties, business premises, community facilities, visitor attractions, and open spaces of this element during the decommissioning phase due to land take is likely to be no effect.

16.7.127 There are no residential properties, or visitor attractions within the private asset amenity study area of the Immingham Facility. Therefore, the socio-economic effect on residential properties, and visitor attractions of this element during the decommissioning phase is likely to be no effect.

16.7.128 On the assumption that the works involved in the decommissioning of the Immingham Facility are likely to be smaller in magnitude and extent than the construction phase, the effect on the identified business premises, community facilities and open space resulting from amenity effects is assumed to reflect in a worst-case scenario, the same effect as that reported for the construction phase. Therefore, the effect on private assets due to amenity effects is assumed to be **negligible**, which is not considered significant.

Pipeline

16.7.129 The decommissioning of the Proposed Development is intended to involve leaving the pipeline length in-situ along its entire length. Some minor works may be required to ensure safety including cutting out or grouting sections of the pipeline and capping any open ends. A detailed decommissioning strategy would be developed nearer the time, however this assessment is based on the assumption that any minor works required would not involve land take from any private assets or PRoW. Therefore, it is assessed that there will be no socio-economic effect on private assets (including residential properties, business

premises, community facilities, visitor attractions or open space) or PRoW and recreational routes during the decommissioning phase of the Proposed Development within the private asset land take or amenity study areas of the pipeline length.

Block Valve Stations

- 16.7.130 The decommissioning of the Proposed Development will involve the removal of the Block Valve Stations. A detailed decommissioning strategy will be developed nearer the time of decommissioning. It is assumed for the purpose of this assessment that the receptors identified and assessed during the construction phase will reflect those in-situ at the time of decommissioning, although it is not possible to confirm this given that the 25 year (or more) operational period could give rise to variation in the socio-economic baseline. A Draft Decommissioning Strategy has been developed and is presented within *ES Volume IV: Appendix 3.5 (Application Document 6.4.3.5)*.
- 16.7.131 There are no recreational routes or PRoW within the applicable study area (i.e., within the DCO Site Boundary) at the Block Valve Station locations. Therefore, there is likely to be no socio-economic effect on recreational routes and PRoW at these elements during the decommissioning phase.
- 16.7.132 There are no residential properties, business premises, community facilities, visitor attractions, or open spaces identified within the private asset land take study areas of the Block Valve Station locations (Washingdales Land Block Valve Station, Thoroughfare Block Valve Station, and Louth Road Block Valve Station). Therefore, the socio-economic effect on residential properties, business premises, community facilities, visitor attractions, and open spaces of these elements during the decommissioning phase due to land take is likely to be no effect.
- 16.7.133 There are no visitor attractions or open spaces within the private asset amenity study areas of the Block Valve Stations. Therefore, the socio-economic effect on visitor attractions and open spaces of these elements during the decommissioning phase is likely to be no effect.
- 16.7.134 On the assumption that the works involved in the decommissioning of the Block Valve Stations are likely to be smaller in magnitude and extent than the construction phase, the effect on the identified residential properties, business premises and community facilities due resulting from amenity effects is assumed to reflect in a worst-case scenario, the same effect as that reported for the construction phase. Therefore, the effect on private assets due to amenity effects is assumed to be **negligible**, which is not considered significant.

Theddlethorpe Facility

- 16.7.135 The decommissioning of the Proposed Development will involve the removal of the Theddlethorpe Facility. A detailed decommissioning strategy will be developed nearer the time of decommissioning. It is assumed for the purpose of this assessment that the receptors identified and assessed during the construction phase will reflect those in-situ at the time of decommissioning, although it is not possible to confirm this given that the 25 year (or more) operational period could give rise to variation in the socio-economic baseline. A Draft Decommissioning Strategy has been developed and is presented within *ES Volume IV: Appendix 3.5 (Application Document 6.4.3.5)*.
- 16.7.136 There are no recreational routes or PRoW within the applicable study area (i.e., within the DCO Site Boundary) at the Theddlethorpe Facility location. Therefore, the socio-economic effect on recreational routes and PRoW at this element during the decommissioning phase is likely to be no effect.
- 16.7.137 There are no residential properties, business premises, community facilities, visitor attractions, or open spaces identified within the private asset land take study area of the Theddlethorpe Facility Preferred Option. Therefore, the socio-economic effect on residential

properties, business premises, community facilities, visitor attractions, and open spaces of this element during the decommissioning phase due to land take is likely to be no effect.

16.7.138 There are no community facilities within the private asset amenity study area of the Theddlethorpe Facility Option 1. Therefore, the socio-economic effect on community facilities of this element during the decommissioning phase is likely to be no effect.

16.7.139 On the assumption that the works involved in the decommissioning of the Theddlethorpe Facility Option 1 are likely to be smaller in magnitude and extent than the construction phase, the effect on the identified residential properties, business premises, visitor attractions and open spaces resulting from amenity effects is assumed to reflect in a worst-case scenario, the same effect as that reported for the construction phase. Therefore, the effect on private assets due to amenity effects is assumed to be **negligible**, which is not considered significant.

16.8 Additional Mitigation and Enhancement Measures

16.8.1 The Draft Construction Environmental Management Plan (CEMP), a copy of which is included in *ES Volume IV: Appendix 3.1 (Application Document 6.4.3.1)* sets out the additional mitigation measures identified in this assessment of likely significant effects. Each entry in the Mitigation Register included within the Draft CEMP has an alpha-numerical reference e.g., “B1” to provide a cross reference to the secured commitment. This mitigation measure will be adopted during the pre-construction phase:

- **L1:** The Contractor will develop a Skills, Employment and Supply Chain Plan in liaison with the four Local Authorities, which will identify measures by which the potential economic benefits of the Proposed Development for local people and businesses might be maximised. This will include seeking to develop links with education and employment establishments in the locality if appropriate (for example, schools, colleges, employment agencies, and business groups). This will increase the potential for the Proposed Development to have a beneficial effect on the provision of training and apprenticeships and the local workforce.
- **L2:** The Contractor will develop the Draft PRow Management Plan (*Application Document 6.11*) which has been established in order to reduce the adverse impacts of potential temporary PRow closures/diversions and ensure safety of users of PRow during construction works. The Plan sets out the nature, length and duration of potential temporary closures/diversions such that access to PRow impacted by the construction works is minimised as far as possible.

16.8.2 Furthermore, a Draft Construction Traffic Management Plan (*ES Volume IV: Appendix 12.5, Application Document 6.4.12.5*) has been established to reduce the adverse impacts of increased traffic flow on all parts of the Proposed Development, including potential community severance effects on users of community facilities and other social infrastructure nearby to the Proposed Development.

16.8.3 This assessment has concluded that there will be no potential significant adverse socio-economic effects during the construction or decommissioning of the Proposed Development and therefore no other additional mitigation measures are required.

16.9 Residual Effects

16.9.1 Due to the embedding of design mitigation and construction mitigation into the planning application boundary, the residual effects of the Proposed Development on socio-economics remain unchanged from the potential effects outlined in Section 16.7 above. This is because all design mitigation and construction mitigation has been taken into account when assessing potential effects.

Assessment of Residual Effects: Construction Phase

16.9.2 A summary of the assessment of socio-economics effects, including residual effects, during the construction phase is shown in **Table 16-36**.

Assessment of Residual Effects: Decommissioning Phase

16.9.3 A summary of the assessment of socio-economics effects, including residual effects, during the construction phase is shown in

16.9.4 **Table 16-37.**

Table 16-36: Summary of Construction Phase Residual Effects

Receptor	Sensitivity	Description of Potential Impact	Magnitude	Significance	Mitigation Measure(s)	Residual Effect	
						Magnitude	Significance
Employment	Medium	Employment generation through the construction phase	Low	Minor beneficial (not significant)	None required	Low	Minor beneficial (not significant)
GVA	High	GVA generation through the construction phase	Very low	Minor beneficial (not significant)	None required	Very low	Minor beneficial (not significant)
Training and apprenticeships	High	Provision of training and apprenticeship opportunities during the construction phase	N/A	No effect	None required	N/A	No effect
Community severance	High	Severance/disruption of access to users of community facilities/residents of nearby settlements due to impacts from construction activities on the road network and/or PRow during the construction phase	Very low	Minor adverse (not significant)	None required	Very low	Minor adverse (not significant)
Construction Compounds							
Northern Construction Compound							
PRow	N/A	Impacts on users of public rights of way during the construction phase	N/A	No effect	None required	N/A	No effect

Receptor	Sensitivity	Description of Potential Impact	Magnitude	Significance	Mitigation Measure(s)	Residual Effect	
						Magnitude	Significance
Residential properties, business premises, community facilities, visitor attractions, open space	N/A	Direct impacts in respect of land take on residential properties, business premises, community facilities, visitor attractions during the construction phase	N/A	No effect	None required	N/A	No effect
Visitor attractions	N/A	In-combination impacts on amenity of visitor attractions during the construction phase	N/A	No effect	None required	N/A	No effect
Residential properties, business premises, community facilities, open space	Variable	In-combination impacts on amenity of residential properties, business premises, community facilities, and open space during the construction phase	Very low	Negligible (not significant)	None required	Very low	Negligible (not significant)
Development land	Medium	Impacts on viability of development land (due to temporary or permanent land take, or severance or disruption to access) during the construction phase	Very low	Negligible (not significant)	None required	Very low	No effect
Development land	N/A	Impacts on viability of 'other existing developments and/or approved developments'	N/A	No effect	None required	N/A	No effect

Receptor	Sensitivity	Description of Potential Impact	Magnitude	Significance	Mitigation Measure(s)	Residual Effect	
						Magnitude	Significance
		(due to temporary or permanent land take, or severance or disruption to access) during the construction phase					
Immingham Facility							
PRoW	N/A	Impacts on users of public rights of way during the construction phase	N/A	No effect	None required	N/A	No effect
Residential properties, business premises, community facilities, visitor attractions, open space	N/A	Direct impacts in respect of land take on residential properties, business premises, community facilities, visitor attractions and open space during the construction phase	N/A	No effect	None required	N/A	No effect
Residential properties and visitor attractions	N/A	In-combination effects on the amenity of residential properties and visitor attractions during the construction phase	N/A	No effect	None required	N/A	No effect
Business premises, community facilities and open space	Variable	In-combination effects on the amenity of business premises, community facilities and open space during the construction phase	Very low	Negligible (not significant)	None required	Very low	Negligible (not significant)

Receptor	Sensitivity	Description of Potential Impact	Magnitude	Significance	Mitigation Measure(s)	Residual Effect	
						Magnitude	Significance
Development land	Low	Impacts on viability of development land (due to temporary or permanent land take, or severance or disruption to access) during the construction phase	Low	Negligible (not significant)	None required	Low	Negligible (not significant)
Development land	Medium	Impacts on viability of 'other existing developments and/or approved developments' (due to temporary or permanent land take, or severance or disruption to access) during the construction phase	Low	Negligible (not significant)	None required	Low	Negligible (not significant)
Pipeline (Section 1)							
PRoW	Medium	Impacts on users of public rights of way: 91, 100 (NLC), 13, 11 (NELC)	Very low	Negligible (not significant)	Temporary diversion (circa. 48 hours) of short length (additional circa. 40 to 100m) with appropriate safety measures. Further details are	Very low	Negligible (not significant)

Receptor	Sensitivity	Description of Potential Impact	Magnitude	Significance	Mitigation Measure(s)	Residual Effect	
						Magnitude	Significance
					included in the PRoW Management Plan (<i>Application Document 6.11</i>).		
Residential properties, community facilities, and visitor attractions	N/A	Direct impacts in respect of land take on residential properties, community facilities, and visitor attractions during the construction phase	N/A	No effect	None required	N/A	No effect
Business premises	Medium	Direct impacts in respect of land take on business premises: Humber Refinery	Very low	Negligible (not significant)	None required	Very low	Negligible (not significant)
Open space	Very low	Direct impacts in respect of land take on open spaces: Immingham Golf Club	Very low	Negligible (not significant)	None required	Very low	Negligible (not significant)
Visitor attractions	N/A	In-combination effects on the amenity of visitor attractions during the construction phase	N/A	No effect	None required	N/A	No effect
Residential properties, business premises, community	Variable	In-combination effects on the amenity of residential properties, community facilities, and open space during the construction phase	Very low	Negligible (not significant)	None required	Very low	Negligible (not significant)

Receptor	Sensitivity	Description of Potential Impact	Magnitude	Significance	Mitigation Measure(s)	Residual Effect	
						Magnitude	Significance
facilities and open space							
Development land	Low	Impacts on viability of development land (due to temporary or permanent land take, or severance or disruption to access) during the construction phase	Low	Negligible (not significant)	None required	Low	Negligible (not significant)
Development land	Medium	Impacts on viability of 'other existing developments and/or approved developments (due to temporary or permanent land take, or severance or disruption to access): Humber Zero Project Carbon Capture Plants (Phillips 66 and VPI Immingham LLP).	Low	Minor adverse (not significant)	None required	Low	Minor adverse (not significant)
Pipeline (Section 2)							
PRoW	High	Impacts on users of public rights of way: 4, 24, 26	Very low	Minor adverse (not significant)	Temporary diversion (circa. 48 hours) of short length (additional circa. 40 to 100m) with appropriate	Very low	Minor adverse (not significant)

Receptor	Sensitivity	Description of Potential Impact	Magnitude	Significance	Mitigation Measure(s)	Residual Effect	
						Magnitude	Significance
					safety measures. Further details are included in the PRow Management Plan (<i>Application Document 6.11</i>).		
PRow	Medium	Impacts on users of public rights of way: 116, 130, 119	Very low	Negligible (not significant)	Temporary diversion (circa. 48 hours) of short length (additional circa. 40 to 100m) with appropriate safety measures. Further details are included in the PRow Management Plan (<i>Application Document 6.11</i>).	Very low	Negligible (not significant)

Receptor	Sensitivity	Description of Potential Impact	Magnitude	Significance	Mitigation Measure(s)	Residual Effect	
						Magnitude	Significance
Residential properties, business premises, community facilities, visitor attractions and open space	N/A	Direct impacts in respect of land take on residential properties, business premises, community facilities, visitor attractions and open space during the construction phase	N/A	No effect	None required	N/A	No effect
Community facilities and visitor attractions	N/A	In-combination amenity effects on community facilities and visitor attractions during the construction phase	N/A	No effect	None required	N/A	No effect
Residential properties, business premises, and open spaces	Variable	In-combination amenity effects on residential properties, business premises and open spaces during the construction phase	Very low	Negligible (not significant)	None required	Very low	Negligible (not significant)
Development land	Low	Impacts on viability of development land (due to temporary or permanent land take, or severance or disruption to access): HOU068A, HOU075A	Very low	Negligible (not significant)	None required	Very low	Negligible (not significant)
Pipeline (Section 3)							
PRoW	High	Impacts on users of public rights of way: 94, 81, 85, and NTho/113/1	Very low	Minor adverse (not significant)	Temporary diversion (circa. 48 hours) of	Very low	Minor adverse (not significant)

Receptor	Sensitivity	Description of Potential Impact	Magnitude	Significance	Mitigation Measure(s)	Residual Effect	
						Magnitude	Significance
					short length (additional circa. 40 to 100m) with appropriate safety measures. Further details are included in the PRow Management Plan (<i>Application Document 6.11</i>).		
PRow	Medium	Impacts on users of public rights of way: 161a, 124, and 87	Very low	Minor adverse (not significant)	Temporary diversion (circa. 48 hours) of short length (additional circa. 40 to 100m) with appropriate safety measures. Further details are included in the PRow	Very low	Minor adverse (not significant)

Receptor	Sensitivity	Description of Potential Impact	Magnitude	Significance	Mitigation Measure(s)	Residual Effect	
						Magnitude	Significance
					Management Plan (<i>Application Document 6.11</i>).		
Residential properties, business premises, community facilities, visitor attractions	N/A	Direct impacts in respect of land take on residential properties, business premises, community facilities, visitor attractions and open space during the construction phase	N/A	No effect	None required	N/A	No effect
Residential properties, business premises, community facilities, visitor attractions	Variable	In-combination effects on amenity of residential properties, business premises, community facilities, visitor attractions and open space during the construction phase	Very low	Negligible (not significant)	None required	Very low	Negligible (not significant)
Development land	Low	Impacts on viability of development land (due to temporary or permanent land take, or severance or disruption to access): NTH307, NTH308, and NTH313	Very low	Negligible (not significant)	None required	Very low	Negligible (not significant)
Development land	Medium	Impacts on viability of 'other existing developments and/or approved developments'	Very low	Negligible (not significant)	None required	Very low	Negligible (not significant)

Receptor	Sensitivity	Description of Potential Impact	Magnitude	Significance	Mitigation Measure(s)	Residual Effect	
						Magnitude	Significance
		(due to temporary or permanent land take, or severance or disruption to access) during the construction phase					
Central Construction Compound							
PRoW	N/A	Impacts on users of public rights of way during the construction phase	N/A	No effect	None required	N/A	No effect
Residential properties, business premises, community facilities, visitor attractions, open space	N/A	Direct impacts in respect of land take on residential properties, business premises, community facilities, visitor attractions during the construction phase	N/A	No effect	None required	N/A	No effect
Residential properties, community facilities, visitor attractions, open space	N/A	In-combination effects on the amenity of residential properties, community facilities, visitor attractions, and open space during the construction phase	N/A	No effect	None required	N/A	No effect
Business premises	Medium	In-combination impacts on amenity of business premises during the construction phase	Very low	Negligible (not significant)	None required	Very low	Negligible (not significant)
Development land	N/A	Impacts on viability of development land (due to	N/A	No effect	None required	N/A	No effect

Receptor	Sensitivity	Description of Potential Impact	Magnitude	Significance	Mitigation Measure(s)	Residual Effect	
						Magnitude	Significance
		temporary or permanent land take, or severance or disruption to access) during the construction phase					
Development land	Low	Impacts on viability of 'other existing developments and/or approved developments' (due to temporary or permanent land take, or severance or disruption to access) during the construction phase	Very low	Negligible (not significant)	None required	Very low	Negligible (not significant)
Pipeline (Section 4)							
PRoW	High	Impacts on users of public rights of way: Utte/83/1, Utte/83/2, LGri/77/1, Alvi/343/4	Very low	Minor adverse (not significant)	Temporary diversion (circa. 48 hours) of short length (additional circa. 40 to 100m) with appropriate safety measures. Further details are included in the PRoW	Very low	Minor adverse (not significant)

Receptor	Sensitivity	Description of Potential Impact	Magnitude	Significance	Mitigation Measure(s)	Residual Effect	
						Magnitude	Significance
					Management Plan (<i>Application Document 6.11</i>).		
PRoW	Medium	Impacts on users of public rights of way: NCoc/67/1, NCoc/68/1	Very low	Negligible (not significant)	Temporary diversion (circa. 48 hours) of short length (additional circa. 40 to 100m) with appropriate safety measures. Further details are included in the PRoW Management Plan (<i>Application Document 6.11</i>).	Very low	Negligible (not significant)
Residential properties, business premises, community facilities, visitor	N/A	Direct impacts in respect of land take on residential properties, business premises, community facilities, visitor attractions	N/A	No effect	None required	N/A	No effect

Receptor	Sensitivity	Description of Potential Impact	Magnitude	Significance	Mitigation Measure(s)	Residual Effect	
						Magnitude	Significance
attractions, open spaces		and open space during the construction phase					
Open spaces	N/A	In-combination effects on amenity of open spaces during the construction phase	N/A	No effect	None required	N/A	No effect
Residential properties, business premises, community facilities, visitor attractions	Variable	In-combination effects on amenity of open spaces during the construction phase	Very low	Negligible (not significant)	None required	Very low	Negligible (not significant)
Development land	N/A	Impacts on viability of development land (due to temporary or permanent land take, or severance or disruption to access) during the construction phase	N/A	No effect	None required	N/A	No effect
Development land	N/A	Impacts on viability of 'other existing developments and/or approved developments (due to temporary or permanent land take, or severance or disruption to access) during the construction phase	N/A	No effect	None required	N/A	No effect

Receptor	Sensitivity	Description of Potential Impact	Magnitude	Significance	Mitigation Measure(s)	Residual Effect	
						Magnitude	Significance
Pipeline (Section 5)							
PRoW	High	Impacts on users of public rights of way: GayM/193/1, ThSH/253/1	Very low	Minor adverse (not significant)	Temporary diversion (circa. 48 hours) of short length (additional circa. 40 to 100m) with appropriate safety measures. Further details are included in the PRoW Management Plan (<i>Application Document 6.11</i>).	Very low	Minor adverse (not significant)
PRoW	Medium	Impacts on users of public rights of way: ThSH/249/1, ThSH/250/2	Very low	Negligible (not significant)	Temporary diversion (circa. 48 hours) of short length (additional circa. 40 to 100m) with appropriate safety	Very low	Negligible (not significant)

Receptor	Sensitivity	Description of Potential Impact	Magnitude	Significance	Mitigation Measure(s)	Residual Effect	
						Magnitude	Significance
					measures. Further details are included in the PRow Management Plan (<i>Application Document 6.11</i>).		
Residential properties, community facilities, visitor attractions	N/A	Direct impacts in respect of land take on residential properties, community facilities, and visitor attractions during the construction phase	N/A	No effect	None required	N/A	No effect
Business premises	Very low	Direct impacts in respect of land take on business premises during the construction phase: former Theddlethorpe Gas Terminal	Very low	Negligible (not significant)	None required	Very low	Negligible (not significant)
Open spaces	Medium	Direct impacts in respect of land take on open spaces during the construction phase	Very low	Negligible (not significant)	None required	Very low	Negligible (not significant)
Residential properties, business premises,	Variable	In-combination effects on amenity of residential properties, business premises, community	Very low	Negligible (not significant)	None required	Very low	Negligible (not significant)

Receptor	Sensitivity	Description of Potential Impact	Magnitude	Significance	Mitigation Measure(s)	Residual Effect	
						Magnitude	Significance
community facilities, visitor attractions, and open spaces		facilities, visitor attractions, and open spaces during the construction phase					
Development land	N/A	Impacts on viability of development land (due to temporary or permanent land take, or severance or disruption to access) during the construction phase	N/A	No effect	None required	N/A	No effect
Development land	N/A	Impacts on viability of 'other existing developments and/or approved developments (due to temporary or permanent land take, or severance or disruption to access) during the construction phase	N/A	No effect	None required	N/A	No effect
Southern Construction Compound							
PRoW	N/A	Impacts on users of public rights of way during the construction phase	N/A	No effect	None required	N/A	No effect
Residential properties, business premises, community facilities, visitor	N/A	Direct impacts in respect of land take on residential properties, business premises, community facilities, visitor attractions	N/A	No effect	None required	N/A	No effect

Receptor	Sensitivity	Description of Potential Impact	Magnitude	Significance	Mitigation Measure(s)	Residual Effect	
						Magnitude	Significance
attractions, open space		and open space during the construction phase					
Community facilities	N/A	In-combination effects on the amenity of community facilities during the construction phase	N/A	No effect	None required	N/A	No effect
Residential properties, business premises, visitor attractions, and open spaces	Variable	In-combination effects on the amenity of residential properties, business premises, visitor attractions, and open spaces during the construction phase	Very low	Negligible (not significant)	None required	Very low	Negligible (not significant)
Development land	N/A	Impacts on viability of development land (due to temporary or permanent land take, or severance or disruption to access) during the construction phase	N/A	No effect	None required	N/A	No effect
Development land	N/A	Impacts on viability of 'other existing developments and/or approved developments (due to temporary or permanent land take, or severance or disruption to access) during the construction phase	N/A	No effect	None required	N/A	No effect

Receptor	Sensitivity	Description of Potential Impact	Magnitude	Significance	Mitigation Measure(s)	Residual Effect	
						Magnitude	Significance
Theddlethorpe Option 1							
PRoW	N/A	Impacts on users of public rights of way during the construction phase	N/A	No effect	None required	N/A	No effect
Residential properties, community facilities, visitor attractions, open spaces	N/A	Direct impacts in respect of land take on residential properties, community facilities, visitor attractions and open spaces during the construction phase	N/A	No effect	None required	N/A	No effect
Business premises	Very low	Direct impacts in respect of land take on business premises during the construction phase: former Theddlethorpe Gas Terminal	Very low	Negligible (not significant)	None required	Very low	Negligible (not significant)
Community facilities	N/A	In-combination effects on amenity of community facilities during the construction phase	N/A	Negligible (not significant)	None required	N/A	Negligible (not significant)
Residential properties, business premises, visitor attractions and open spaces	Variable	In-combination effects on amenity of residential properties, business premises, visitor attractions and open spaces during the construction phase	Very low	Negligible (not significant)	None required	N/A	Negligible (not significant)
Development land	N/A	Impacts on viability of development land (due to	N/A	No effect	None required	N/A	No effect

Receptor	Sensitivity	Description of Potential Impact	Magnitude	Significance	Mitigation Measure(s)	Residual Effect	
						Magnitude	Significance
		temporary or permanent land take, or severance or disruption to access) during the construction phase					
Development land	N/A	Impacts on viability of 'other existing developments and/or approved developments (due to temporary or permanent land take, or severance or disruption to access) during the construction phase	N/A	No effect	None required	N/A	No effect
Theddlethorpe Option 2							
PRoW	N/A	Impacts on users of public rights of way during the construction phase	N/A	No effect	None required	N/A	No effect
Residential properties, business premises, community facilities, visitor attractions, and open spaces	N/A	Direct impacts in respect of land take on residential properties, business premises community facilities, visitor attractions and open spaces during the construction phase	N/A	No effect	None required	N/A	No effect
Community facilities	N/A	In-combination effects on amenity of community facilities during the construction phase	N/A	No effect	None required	N/A	No effect

Receptor	Sensitivity	Description of Potential Impact	Magnitude	Significance	Mitigation Measure(s)	Residual Effect	
						Magnitude	Significance
Residential properties, business premises, visitor attractions, and open spaces	Variable	In-combination effects on amenity of residential properties, business premises, visitor attractions, and open spaces during the construction phase	Very low	Negligible (not significant)	None required	Very low	Negligible (not significant)
Development land	N/A	Impacts on viability of development land (due to temporary or permanent land take, or severance or disruption to access) during the construction phase	N/A	No effect	None required	N/A	No effect
Development land	N/A	Impacts on viability of 'other existing developments and/or approved developments (due to temporary or permanent land take, or severance or disruption to access) during the construction phase	N/A	No effect	None required	N/A	No effect
Dune Isolation Valve							
PRoW	N/A	Impacts on users of public rights of way	N/A	No effect	None required	N/A	No effect
Residential properties, business premises,	N/A	Direct impacts in respect of land take on residential properties, business premises community	N/A	No effect	None required	N/A	No effect

Receptor	Sensitivity	Description of Potential Impact	Magnitude	Significance	Mitigation Measure(s)	Residual Effect	
						Magnitude	Significance
community facilities, visitor attractions, and open spaces		facilities, visitor attractions and open spaces during the construction phase					
Community facilities	N/A	In-combination effects on amenity of community facilities during the construction phase	N/A	No effect	None required	N/A	No effect
Residential properties, business premises, visitor attractions, and open spaces	Variable	In-combination effects on amenity of residential properties, business premises, visitor attractions, and open spaces during the construction phase	Very low	Negligible (not significant)	None required	Very low	Negligible (not significant)
Development land	N/A	Impacts on viability of development land (due to temporary or permanent land take, or severance or disruption to access) during the construction phase	N/A	No effect	None required	N/A	No effect
Development land	N/A	Impacts on viability of 'other existing developments and/or approved developments' (due to temporary or permanent land take, or severance or disruption to	N/A	No effect	None required	N/A	No effect

Receptor	Sensitivity	Description of Potential Impact	Magnitude	Significance	Mitigation Measure(s)	Residual Effect	
						Magnitude	Significance
		access) during the construction phase					
Block Valve Stations							
PRoW	N/A	Impacts on users of public rights of way during the construction phase	N/A	No effect	None required	N/A	No effect
Residential properties, business premises, community facilities, visitor attractions, open spaces	N/A	Direct impacts in respect of land take on residential properties, business premises, community facilities, visitor attractions and open spaces during the construction phase	N/A	No effect	None required	N/A	No effect
Visitor attractions and open spaces	N/A	In-combination effects on amenity of visitor attractions and open spaces during the construction phase	N/A	No effect	None required	N/A	No effect
Residential properties, business premises and community facilities	Variable	In-combination effects on amenity of residential properties, business premises and community facilities during the construction phase	Very low	Negligible (not significant)	None required	Very low	Negligible (not significant)
Development land	N/A	Impacts on viability of development land (due to temporary or permanent land take, or severance or	N/A	No effect	None required	N/A	No effect

Receptor	Sensitivity	Description of Potential Impact	Magnitude	Significance	Mitigation Measure(s)	Residual Effect	
						Magnitude	Significance
		disruption to access) during the construction phase					
Development land	N/A	Impacts on viability of 'other existing developments' and/or approved developments (due to temporary or permanent land take, or severance or disruption to access) during the construction phase	N/A	No effect	None required	N/A	No effect

Table 16-37: Summary of Decommissioning Phase Residual Effects

Receptor	Sensitivity	Description of Potential Impact	Magnitude	Significance	Mitigation Measure(s)	Residual Effect	
						Magnitude	Significance
Employment	Medium	Employment generation through the decommissioning phase	Low	Minor beneficial (not significant)	None required	Low	Minor beneficial (not significant)
GVA	High	GVA generation through the decommissioning phase	Very low	Minor beneficial (not significant)	None required	Very low	Minor beneficial (not significant)
Training and apprenticeships	High	Provision of training and apprenticeship opportunities during the decommissioning phase	Low	Minor beneficial (not significant)	None required	N/A	Minor beneficial (not significant)
Community severance	N/A	Severance/disruption of access to users of community facilities/residents of nearby settlements due to impacts from decommissioning activities on the road network and/or PRow during the decommissioning phase	N/A	No effect	None required	N/A	No effect
Immingham Facility							
PRow	N/A	Impacts on users of PRow during the	N/A	No effect	None required	N/A	No effect

Receptor	Sensitivity	Description of Potential Impact	Magnitude	Significance	Mitigation Measure(s)	Residual Effect	
						Magnitude	Significance
		decommissioning phase					
Residential properties, business premises, community facilities, visitor attractions, open spaces	Medium	Direct impacts in respect of land take on residential properties, business premises, community facilities, visitor attractions and open spaces during the decommissioning phase	Very low	Negligible (not significant)	None required	Very low	Negligible (not significant)
Residential properties and visitor attractions	N/A	In-combination effects on amenity of residential properties and visitor attractions during the decommissioning phase	N/A	No effect	None required	N/A	No effect
Business premises, community facilities, open space	Medium	In-combination effects on amenity of business premises, community facilities, and open space during the decommissioning phase	Very low	Negligible (not significant)	None required	N/A	No effect
Pipeline							

Receptor	Sensitivity	Description of Potential Impact	Magnitude	Significance	Mitigation Measure(s)	Residual Effect	
						Magnitude	Significance
PRoW	N/A	Impacts on users of PRoW during the decommissioning phase	N/A	No effect	None required	N/A	No effect
Residential properties, business premises, community facilities, visitor attractions, open space	N/A	Direct impacts in respect of land take on residential properties, business premises, community facilities, visitor attractions and open spaces during the decommissioning phase	N/A	No effect	None required	N/A	No effect
Residential properties, business premises, community facilities, visitor attractions, open space	N/A	In-combination effects on amenity of residential properties, business premises, community facilities, visitor attractions, open space during the decommissioning phase	N/A	No effect	None required	N/A	No effect
Block Valve Stations							
PRoW	N/A	Impacts on users of PRoW during the decommissioning phase	N/A	No effect	None required	N/A	No effect

Receptor	Sensitivity	Description of Potential Impact	Magnitude	Significance	Mitigation Measure(s)	Residual Effect	
						Magnitude	Significance
Residential properties, business premises, community facilities, visitor attractions, open spaces	N/A	Direct impacts in respect of land take on residential properties, business premises, community facilities, visitor attractions and open spaces during the decommissioning phase	N/A	No effect	None required	N/A	No effect
Visitor attractions and open spaces	N/A	In-combination effects on amenity of visitor attractions and open spaces during the decommissioning phase	N/A	No effect	None required	N/A	No effect
Residential properties, business premises, community facilities	Variable	In-combination effects on amenity of residential properties, business premises and community facilities during the decommissioning phase	Very low	Negligible (not significant)	None required	Very low	Negligible (not significant)
Theddlethorpe Facility							
PRoW	N/A	Impacts on users of public rights of way	N/A	No effect	None required	N/A	No effect

Receptor	Sensitivity	Description of Potential Impact	Magnitude	Significance	Mitigation Measure(s)	Residual Effect	
						Magnitude	Significance
		during the decommissioning phase					
Residential properties, business premises, community facilities, visitor attractions, open spaces	N/A	Direct impacts in respect of land take on residential properties, business premises, community facilities, visitor attractions and open spaces during the decommissioning phase	N/A	No effect	None required	N/A	No effect
Community facilities	N/A	In-combination impacts on amenity of community facilities during the decommissioning phase	N/A	No effect	None required	N/A	No effect
Residential properties, business premises, visitor attractions and open spaces	Variable	In-combination effects on amenity of residential properties, business premises, visitor attractions and open spaces during the decommissioning phase	Very low	Negligible (not significant)	None required	Very low	Negligible (not significant)

16.10 Cumulative Effects

Assessment of Intra-project Cumulative Effects

16.10.1 The assessment of amenity and community severance effects within this socio-economics chapter has already taken into account the intra-project cumulative effects. The assessment within this chapter has been undertaken for the Proposed Development as a whole and therefore already takes into account the intra-project effects between different components of the Proposed Development (i.e., the Immingham Facility, the pipeline route, the Block Valve Stations, the Theddlethorpe Facility, and the Dune Isolation Valve). On the whole, these components are unlikely to result in significant effects on the same receptor, due in part to the distances between elements of the Proposed Development.

Assessment of Inter-project Cumulative Effects

16.10.2 This section of the chapter assesses the potential effects of the Proposed Development in combination with the potential effects of other development schemes (referred to as 'cumulative schemes') within the surrounding area, as listed within ES Volume II *Chapter 20: Cumulative Effects (Application Document 6.2.20)*.

16.10.3 The schemes which are considered in the assessment of inter-project cumulative effects have been identified because they are relevant to the receptors assessed in this chapter and are located within the applicable 1 km study area.

Construction

16.10.4 All of the approved cumulative schemes and submitted applications listed in *Chapter 20: Cumulative Effects* will generate additional construction related employment in the surrounding areas if they were to go ahead. The scale of construction employment cannot be readily quantified as this information required for each scheme is commercially sensitive and not available, in most instances. Applying an assumption that 2 direct temporary construction jobs are generated for every residential unit to the available scheme information results in at least 2,616 jobs generated. However, as this figure does not take into consideration other non-residential cumulative schemes such as energy farms, offshore windfarms or other commercial and industrial developments, it is likely that this figure would be much greater. For example, for the non-residential schemes for which information is available, this reflects an additional 1,727 jobs. Therefore, cumulative construction employment in addition to the number of construction jobs, 222, generated by the Proposed Development represents a temporary minor beneficial effect on the local economy, which remains not significant.

16.10.5 The overall inter-project cumulative effect from the generation of GVA from construction activities is likely to remain temporary minor beneficial, which is considered not significant.

16.10.6 The overall inter-project cumulative effect on PRoWs has the potential to increase disruption to users via longer journey times or community severance effects. However, as these schemes are unlikely to involve disruption to users of the same PRoWs, there will be no additional cumulative impact on users of PRoW. Therefore, the overall cumulative assessment on public rights of way is assessed to remain as minor adverse which is considered not significant.

16.10.7 The overall cumulative effect on residential properties, business premises, community facilities, visitor attractions and open space is likely to remain as a negligible effect, which is considered not significant, as the cumulative schemes in proximity to the Proposed Development are not likely to have an additional adverse impact on the amenity of these private assets.

16.10.8 The overall cumulative construction effect on development land is likely to remain as negligible, which is considered not significant.

Decommissioning

16.10.9 It is inherently difficult to anticipate the operational lifetime of those schemes which are intended to also be decommissioned, although it is unlikely that decommissioning periods of respective cumulative schemes will overlap with the decommissioning of the Proposed Development. Therefore, the cumulative decommissioning socio-economic effects, in a worst-case scenario that any occur, would reflect the cumulative effects assessment for the construction phase.

16.11 Summary

16.11.1 The population of the labour market catchment area (60-minute drive time area) is approximately 2,128,103; in North Lincolnshire the population is 169,680, in North East Lincolnshire the population is 156,966, in West Lindsey the population is 95,152, and in East Lindsey the population is 142,292. Between 2011 and 2021, the population has grown in the 60-minute drive time area (by 6.0%) in North Lincolnshire (by 1.3%), in West Lindsey (by 6.6%), and in East Lindsey (by 4.3%). However, in North East Lincolnshire the population has declined by 1.7%. The economic activity rate of working age individuals in the 60-minute drive time area is 56.0%, in North Lincolnshire it is 55.9%, in North East Lincolnshire it is 55.4%, in West Lindsey it is 54.4%, and East Lindsey it is 57.5%. 'Wholesale and retail; repair of motor vehicles' represents the most significant sector in terms of amount of employment in the 60-minute drive time area (17.7%). There is a relatively lower incidence of deprivation in North Lincolnshire and West Lindsey local authority areas, compared to a relatively higher incidence of deprivation in North East Lincolnshire and East Lindsey local authority areas when compared against respective regional deciles.

16.11.2 The location of the route of the Proposed Development is largely rural in nature. The socio-economics assessment considers receptors that lie within the study area, noting that the study area is variable depending on the receptor being assessed. The findings of the assessment of impacts on socio-economics receptors during the construction phase, where an effect is found, are presented below:

- The Proposed Development will generate employment during the construction phase. It is estimated that the average workforce, after taking into account leakage, displacement, and multiplier effects, is calculated to be 222. Therefore, the effect on the local economy from construction generated as a result of the Proposed Development is assessed to be minor beneficial, which is considered not significant.
- The construction phase will result in GVA generation in the local economy. It is calculated that approximately £4.2 million within the 60-minute drive time area and £9.7 million elsewhere will be generated, resulting in a total of £13.9 million. Therefore, the effect on the local economy from GVA generated as a result of the Proposed Development is assessed to be minor beneficial, which is considered not significant.
- The Proposed Development traverses a number of existing PRow. It is anticipated that no closures of PRow will be required as a result of construction activities. Due to the implementation of management measures which involve the temporary diversion of PRows for a short duration necessitating a very slight increase in journey length, the impact is of very low magnitude in all cases. Depending on the sensitivity of PRow, ranging from medium to high, the overall effect on users of PRow ranges from negligible to minor adverse, both of which are considered not significant.

- Due to the introduction of construction traffic to the local road network, the construction of the Proposed Development has the potential to lead to community severance effects. This may also result from effects on users of PRow. As set out in the traffic and transport assessment, no significant effects on severance are expected. Likewise, this chapter finds that no significant effects on users of PRow are expected. Therefore, the overall socio-economic effect on community severance is assessed to be minor adverse, which is not considered significant.
- The Proposed Development may require land take from business premises at the Humber Refinery and former Theddlethorpe Gas Terminal. In both instances, the socio-economic effect is assessed to be negligible, which is not significant.
- The Proposed Development may require land take from the disused open space at the former Immingham Golf Club. The socio-economic effect is assessed to be negligible, which is not significant.
- It is assessed that the construction of the Proposed Development will likely have no effect on development land allocations. With regard to the potential for overlapping land take with other existing and/or approved developments, it is also assessed that in the worst-case scenario that the construction periods overlap, only a minor adverse effect would be expected, which is not considered significant.

16.11.3 Due to the decommissioning activities being of smaller magnitude and extent, the socio-economics effects are in a worst-case scenario equivalent to those identified and assessed during the construction phase.

16.11.4 This assessment has concluded that there will be no potential significant adverse socio-economic effects during the construction or decommissioning phases of the Proposed Development, and therefore no additional mitigation measures are required.

16.11.5 There are no residual significant socio-economic effects of the Proposed Development during the construction or decommissioning phases, as no significant effects have been identified.

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