

Norfolk Boreas Offshore Wind Farm

Chapter 30

Tourism and Recreation

Environmental Statement

Volume 1

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Glossary of Acronyms

AONB	Area of Outstanding Natural Beauty
AMP	Access Management Plan
B&B	Bed and Breakfast
BSAC	British Sub Aqua Club
CoCP	Code of Construction Practice
CRoW	Countryside and Rights of Way
dB	Decibels
DCO	Development Consent Order
DECC	Department of Energy and Climate Change
DPD	Development Plan Documents
DTI	Department of Trade and Industry
EIA	Environmental Impact Assessment
EN-1	Overarching National Policy Statement for Energy
ES	Environmental Statement
ETG	Expert Topic Group
FP	Footpath
HDD	Horizontal Directional Drilling
HVDC	High Voltage Direct Current
LCT	Landscape Character Types
LCU	Landscape Character Units
LEP	Local Enterprise Partnership
NNDC	North Norfolk District Council
NPPF	National Planning Policy Framework
NPS	National Policy Statement
NSIP	Nationally Significant Infrastructure Projects
OLEMS	Outline Landscape and Environmental Management Strategy
O&M	Operations and Maintenance
PEIR	Preliminary Environmental Information Report
PPG	Planning Policy Guidance Notes
PPS	Planning Policy Statement
PRoW	Public Right of Way
RNLI	Royal National Lifeboat Institution
RYA	Royal Yacht Association
SAC	Special Area of Conservation
SoS	Secretary of State
SPA	Special Protection Area
SPD	Supplementary Planning Document
SSSI	Site of Special Scientific Interest
TMP	Traffic Management Plan
WFD	Water Framework Directive
VWPL	Vattenfall Wind Power Limited

Glossary of Terminology

Array cables	Cables which link wind turbine to wind turbine, and wind turbine to offshore electrical platforms.
Cable pulling	Installation of cables within pre-installed ducts from jointing pits located along the onshore cable route.
Ducts	A duct is a length of underground piping, which is used to house electrical and communications cables.
Evidence Plan Process	A voluntary consultation process with specialist stakeholders to agree the approach to the EIA and information to support the HRA.
Jointing pit	Underground structures constructed at regular intervals along the onshore cable route to join sections of cable and facilitate installation of the cables into the buried ducts.
Landfall	Where the offshore cables come ashore at Happisburgh South.
Link boxes	Underground chambers or above ground cabinets next to the cable trench housing low voltage electrical earthing links.
Mobilisation area	Areas approx. 100 x 100m used as access points to the running track for duct installation. Required to store equipment and provide welfare facilities. Located adjacent to the onshore cable route, accessible from local highways network suitable for the delivery of heavy and oversized materials and equipment.
National Grid substation extension	The permanent footprint of the National Grid substation extension.
Necton National Grid substation	The grid connection location for Norfolk Boreas and Norfolk Vanguard.
Offshore cable corridor	The corridor of seabed from the Norfolk Boreas site to the landfall site within which the offshore export cables will be located.
Offshore electrical platform	A fixed structure located within the Norfolk Boreas site, containing electrical equipment to aggregate the power from the wind turbines and convert it into a suitable form for export to shore.
Offshore export cables	The cables which transmit power from the offshore electrical platform to the landfall.
Offshore project area	The area including the Norfolk Boreas site, project interconnector search area and offshore cable corridor.
Offshore service platform	A platform to house workers offshore and/or provide helicopter refuelling facilities. An accommodation vessel may be used as an alternative for housing workers.
Onshore cable route	The up to 35m working width within a 45m wide corridor which will contain the buried export cables as well as the temporary running track, topsoil storage and excavated material during construction.
Onshore cables	The cables which take power and communications from landfall to the onshore project substation.
Onshore project area	The area of the onshore infrastructure (landfall, onshore cable route, accesses, trenchless crossing zones and mobilisation areas; onshore project substation and extension to the Necton National Grid substation and overhead line modifications).
Onshore infrastructure	The combined name for all onshore infrastructure associated with the project from landfall to grid connection.
Onshore project substation	A compound containing electrical equipment to enable connection to the National Grid. The substation will convert the exported power from HVDC to

	HVAC, to 400kV (grid voltage). This also contains equipment to help maintain stable grid voltage.
Running track	The track along the onshore cable route which the construction traffic would use to access workfronts.
Rochdale Envelope	The Rochdale Envelope is an approach to consenting and environmental impact which allows a project description to be broadly defined, within a number of agreed parameters, for the purposes of a consent application.
Safety zones	An area around a vessel which should be avoided during offshore construction
The Norfolk Boreas site	The Norfolk Boreas wind farm boundary. Located offshore, this will contain all the wind farm array.
The project	Norfolk Boreas Wind Farm including the onshore and offshore infrastructure.
Transition pit	Underground structures that house the joints between the offshore export cables and the onshore cables
Workfront	A length of onshore cable route within which duct installation works will occur, approximately 150m.

30 TOURISM AND RECREATION

30.1 Introduction

1. This chapter of the Environmental Statement (ES) considers the potential impacts of the proposed Norfolk Boreas Offshore Wind Farm (hereafter ‘the project’) on tourism and recreation. The chapter provides an overview of the existing tourism and recreational assets where the onshore project area is proposed, followed by an assessment of the potential impacts and associated mitigation for the construction, operation and decommissioning of the project.
2. The assessment also considers cumulative impacts of the project with other proposed projects. The proposed methodology adhered to for the Environmental Impact Assessment (EIA) and Cumulative Impact Assessment (CIA) is discussed in section 30.4.
3. Vattenfall Wind Power Limited (VWPL) (the parent company of Norfolk Boreas Limited) is also developing Norfolk Vanguard, a ‘sister project’ to Norfolk Boreas. In order to minimise impacts associated with onshore construction works for the two projects, Norfolk Vanguard are seeking to obtain consent to undertake enabling works for both projects at the same time. Whilst it is anticipated that Norfolk Vanguard will proceed to construction, Norfolk Boreas also needs to consider the possibility that Norfolk Vanguard does not proceed.
4. The EIA will therefore be undertaken using the following two alternative scenarios (further details are presented in Chapter 5 Project Description) and an assessment of potential impacts has been undertaken for each scenario:
 - **Scenario 1** – Norfolk Vanguard proceeds to construction, and installs ducts and other shared enabling works for Norfolk Boreas.
 - **Scenario 2** – Norfolk Vanguard does not proceed to construction and Norfolk Boreas proceeds alone. Norfolk Boreas undertakes all works required as an independent project.
5. The tourism industry is dependent upon tourists choosing to visit a region. Visitors’ choices can be influenced by changes in the landscape, physical disturbances such as noise or vibration, obstructions to the access routes and areas they use for recreation, and the availability of accommodation. As the majority of the offshore elements of the project are beyond the visual range of people at the coast, only the onshore and nearshore aspects of the project will be considered within this chapter.
6. Because of the close association between tourism, fisheries, land use, traffic, noise, health, landscape and socio-economic topics, this chapter should also be read in conjunction with the other related ES chapters (and their appendices and supporting documents). The relevant chapters are as follows:

- Chapter 14 Commercial Fisheries;
- Chapter 15 Shipping and Navigation;
- Chapter 21 Land Use and Agriculture;
- Chapter 24 Traffic and Transport;
- Chapter 25 Noise and Vibration;
- Chapter 27 Human Health;
- Chapter 29 Landscape and Visual Impact Assessment; and
- Chapter 31 Socio-Economics.

30.2 Legislation, Guidance and Policy

7. There are a number of pieces of legislation, policy and guidance applicable to tourism and recreation. The following sections provide detail on key pieces of international and UK legislation, policy and guidance which are relevant to this chapter.

30.2.1 National Planning Policy

8. The assessment of potential impacts upon recreational assets and socio-economics has been made with specific reference to the relevant National Policy Statements (NPS). These are the principal decision-making documents for Nationally Significant Infrastructure Projects (NSIPs). Those relevant to the project are:
 - Overarching NPS for Energy (EN-1) (Department of Energy and Climate Change (DECC) 2011a);
 - NPS for Renewable Energy Infrastructure (EN-3) (DECC 2011b); and
 - NPS for Electricity Networks Infrastructure (EN-5) (DECC 2011c).
9. The Overarching NPS for Energy (EN-1) (DECC, 2011a) is the only NPS relevant to the tourism and recreational aspects of the project¹. Further detail on legislation and policy in relation to the wider project is provided in Chapter 3 Policy and Legislative Context.
10. The tourist economy is a subset of the wider socio-economy that gains financial benefit from recreational assets due to expenditure of visitors. Therefore, reference to impacts on recreation and socio-economics implies impacts to the tourist economy.
11. The specific requirements of the NPS in relation to tourism and recreation are summarised in
12. Table 30.1, together with an indication of the section or paragraph number of this chapter where each is addressed. Where any part of the NPS has not been followed

¹ The NPS for Renewable Energy Infrastructure (EN-3) and NPS for Electricity Networks Infrastructure (EN-5) do not specifically include details on the assessment of impacts on tourism and recreation

within the assessment, an explanation as to why the requirement was not considered relevant, or has been met in another manner, is provided.

Table 30.1 NPS assessment requirements

NPS Requirement	NPS Reference	ES Reference
<p>The ES) (see section 4.2) should include an assessment of the effects on the coast. In particular, applicants should assess the effects of the proposed project on maintaining coastal recreation sites and features.</p>	<p>EN-1 section 5.5.7</p>	<p>One of the objectives of the site selection process was to avoid valuable natural assets such as the North Norfolk Coast Area of Outstanding Natural Beauty (AONB) and the Broads National Park. This allowed it to avoid corresponding clusters of tourism and recreation assets.</p> <p>In response to consultation with stakeholders a horizontal direct drilling (HDD) design has been developed for duct installation at the landfall that will not require closure of either the coastal footpaths or the beach.</p> <p>An assessment of impact on coastal processes, marine water, and water resources is undertaken in:</p> <ul style="list-style-type: none"> • Chapter 8 Marine geology, oceanography and physical processes • Chapter 9 Marine water and sediment quality; and • Chapter 20 Water Resources and Flood Risk, respectively.
<p>Applicants will need to consult the local community on their proposals to build on open space, sports or recreational buildings and land. Taking account of the consultations, applicants should consider providing new or additional open space including green infrastructure, sport or recreation facilities, to substitute for any losses as a result of their proposal.</p> <p>Applicants should use any up-to-date local authority assessment or, if there is none, provide an independent assessment to show whether the existing open space, sports and recreational buildings and land is surplus to requirements.</p>	<p>EN-1 paragraph 5.10.6</p>	<p>As part of the consultation process the project has consulted with statutory and non-statutory stakeholders, local communities, and the public. Their responses have been instrumental in the development of the project and embedded mitigation. This is detailed in Chapter 4 Site Selection and Assessment of Alternatives, Chapter 7 Technical Consultation and is detailed with regards Tourism and Recreation in section 30.3.</p> <p>The project will not build permanent above ground infrastructure on publicly accessible open space, or on the site of sports and recreational buildings/land.</p>
<p>This assessment should consider all relevant socio-economic impacts, which</p>	<p>EN-1 section 5.12.3</p>	<p>This chapter considers impacts to tourism and recreation receptors. Chapter 31 Socio-Economics discusses impacts to socio-economic receptors. Both short and long-term</p>

NPS Requirement	NPS Reference	ES Reference
may include: the provision of additional local services and improvements to local infrastructure, including the provision of educational and visitor facilities; and effects on tourism.		obstructions are considered in section 30.8 and Chapter 31 Socio-Economics.

13. In section 4.1.5 of the NPS EN-1, it is stated that:

“The energy NPSs have taken account of relevant Planning Policy Statements (PPSs) and older style Planning Policy Guidance Notes (PPGs) in England where appropriate”.

30.2.1.1 National Planning Policy Framework (NPPF)

14. The revised NPPF, published in July 2018 (Ministry of Housing, Communities and Local Government, 2018) is the first revision of the framework since 2012. From its outset, the document makes plain that it is concerned with Sustainable Development, and paragraph 8 states that there are three dimensions to sustainable development: economic, social and environmental, and that all three are mutually dependent and gains for all should be sought jointly and simultaneously through the planning system.

15. Section 6 – *Building a strong, competitive economy* has a subsection on *Supporting a prosperous rural economy*. This discusses the importance of sustainable rural tourism, in paragraph 83, which respects the character of the countryside.

16. Section 8 – *Promoting healthy and safe communities* has a subsection on *Open space and recreation*. This states that planning decisions should protect and enhance public rights of way and access in paragraph 98.

30.2.2 Local Planning Policy

17. EN-1 states that the Planning Inspectorate will also consider Development Plan Documents (DPD) or other documents in the Local Development Framework to be relevant to its decision making.

18. The onshore project area falls under the jurisdiction of Norfolk County Council and the following local authorities:

- Broadland District Council;
- North Norfolk District Council; and
- Breckland Council.

19. Local planning policy documents relevant to tourism and recreation include:

- Broadland, Norwich and South Norfolk Joint Core Strategy (2014);
- Broadland District Council Development Management Development Plan (2015);

- North Norfolk District Council (NNDC) Core Strategy (2008); and
- Breckland Council Emerging Local Plan.

20. The relevant existing DPD documents are summarised in Table 30.2.

Table 30.2 Relevant local planning policies

Document	Policy/guidance	Policy/guidance purpose	ES reference
Broadland, Norwich and South Norfolk			
Broadland, Norwich and South Norfolk Joint Core Strategy (2014)	Policy 5	Tourism, leisure, environmental and cultural industries will be promoted.	Impacts to tourism and leisure activities are considered in section 30.7.
	Policy 6	Significant improvement to the bus, cycling and walking network, including Bus Rapid Transit on key routes in the Norwich area; and Concentration of development close to essential services and facilities to encourage walking and cycling as the primary means of travel with public transport for wider access.	Impacts to cycling and walking paths and networks are considered in section 30.7. Impacts on traffic are also considered in Chapter 24 Traffic and Transport.
	Policy 8	The cultural offer is an important and valued part of the area. Existing cultural assets and leisure facilities will be maintained and enhanced.	Impacts to leisure facilities and assets are considered in section 30.7.
	Policy 18	In areas in close proximity to the Broads Authority area particular regard will be applied to maintaining and enhancing the economy, environment, tranquillity, setting, visual amenity, recreational value and navigational use of the Broads. Opportunities will be taken to make better use of the benefits of the Broads, and to support its protection and enhancement while ensuring no detrimental impact on the Broadland Special Protection Area (SPA), Broadland Ramsar and Broads Special Area of Conservation (SAC).	Impacts to the Broads are considered in section 30.7, Chapter 20 Water Resources and Flood Risk and Chapter 22 Onshore Ecology.
Broadland District Council			
Broadland District Development Management Development	Section 2.28	It is important to ensure sufficient protection for the particularly distinctive and sensitive biodiversity and landscape areas. The impact of renewable energy projects upon such	Impacts relevant to landscape and biodiversity and effects on tourism and recreation are discussed in section

Document	Policy/guidance	Policy/guidance purpose	ES reference
Plan (adopted August 2015)		areas should therefore be considered carefully taking account of the Landscape Character Assessment Supplementary Planning Document (SPD) and biodiversity information.	30.7. Impacts to biodiversity are further discussed in Chapter 22 Onshore Ecology and landscape in Chapter 29 Landscape and Visual Impact Assessment
	Section 5.7	The Council is committed to improving the quality and range of tourist attractions and accommodation throughout the district and this is identified as a priority within the Council's strategy on economic development.	Impacts to accommodation and tourist attractions are considered in section 30.7.
North Norfolk District Council			
North Norfolk Core Strategy (2008) to 2021	Policy SS1	The North Norfolk countryside is a principal element in the rural character of North Norfolk and is enjoyed by residents and visitors. The quality and character of this area should be protected and where possible enhanced, whilst enabling those who earn a living from, and maintain and manage, the countryside to continue to do so. Therefore, while some development is restricted in the Countryside, particular other uses will be permitted in order to support the rural economy, meet local housing needs and provide for particular uses such as renewable energy and community uses.	Impacts to recreational use of the area are considered in section 30.7. Impacts to landscape are discussed in Chapter 29 Landscape and Visual Assessment.
	Policy SS2	In areas designated as Countryside development will be limited to that which requires a rural location and is for...renewable energy projects.	Impacts to recreational use of the area are considered in section 30.7. Impacts to landscape are discussed in Chapter 29 Landscape and Visual Impact Assessment.
		Regional policy requires that local authorities seek to provide networks of accessible greenspace linking urban areas to the countryside and to set targets for the provision of green space in new development. Therefore, Core Strategy policies: <ul style="list-style-type: none"> Protect existing open space and areas designated for environmental purposes; 	Impacts to cycling and walking paths and networks are considered in section 30.7. Impacts to biodiversity are discussed in Chapter 22 Onshore Ecology.

Document	Policy/guidance	Policy/guidance purpose	ES reference
		<ul style="list-style-type: none"> Require that new development includes open space to meet locally defined targets (see Appendix A: 'Open Space Standards') Requires that development makes links to the surrounding countryside; and Seeks to create an ecological network. 	
	Policy SS4	Renewable energy proposals will be supported where impacts on amenity, wildlife and landscape are acceptable.	Impacts on recreational use of the area are considered in section 30.7. Impacts on biodiversity are discussed in Chapter 22 Onshore Ecology. Impacts on landscape are discussed in Chapter 29 Landscape and Visual Impact Assessment.
	Policy SS4	<p>Open spaces and areas of biodiversity interest will be protected from harm, and the restoration, enhancement, expansion and linking of these areas to create green networks will be encouraged through a variety of measures such as:</p> <ul style="list-style-type: none"> Maximising opportunities for creation of new green infrastructure and networks in sites allocated for development; Creating green networks to link urban areas to the countryside; The designation of Local Nature Reserves and County Wildlife Sites; Appropriate management of valuable areas, such as County Wildlife Sites; Minimising the fragmentation of habitats, creation of new habitats and connection of existing areas to create an ecological network as identified in the North Norfolk ecological network report; Progress towards Biodiversity Action Plan targets; and Conservation and enhancement of Sites of Special Scientific Interest (SSSI) in accordance with the Wildlife and Countryside Act. 	Impacts to wildlife appreciation and recreational use of wildlife areas are discussed in section 30.7. Impacts to biodiversity are considered in Chapter 22 Onshore Ecology.
	Section 3.1: Policy SS4:	North Norfolk has a distinctive architectural heritage and attractive	Impacts on tourism, leisure and recreation are

Document	Policy/guidance	Policy/guidance purpose	ES reference
		rural landscapes and the Council wishes to ensure that development proposals conserve and enhance these features wherever possible.	discussed in section . Impacts on architectural heritage are discussed in Chapter 28 Onshore Archaeology and Cultural Heritage. Impacts on landscape are discussed in Chapter 29 Landscape and Visual Impact Assessment.
Breckland Council			
Breckland Adopted Core Strategy and Development Control Policies Development Plan Document	Section 2.3 Spatial Vision	Along the A11 corridor significant employment growth will have been achieved in advanced engineering, motor sport, research and development and logistics, building on the emerging employment base and taking advantage of the excellent highway network and linkages to other centres of business. In the rest of Breckland, employment will meet local needs with the important cultural, heritage, landscape and natural assets forming the basis for tourism, leisure and recreation.	Impacts on tourism, leisure and recreation are discussed in section 30.7 Impacts relating to employment are further discussed in Chapter 31 Socio-economics.
	Section 3.2.1 Natural Environment - Regional and Local Sites: Policy CP10	A full environmental appraisal will be required for development that may have a direct or indirect impact upon any site of regional or local biodiversity, or geological interest identified.... when considering exceptional circumstances, regard will be had to: <ul style="list-style-type: none"> The regional and local importance of the site in terms of its contribution to biodiversity, scientific and educational interest, geodiversity, visual amenity and recreational value. The benefit that will be provided by the development in relation to the public interest. 	Opportunities for public engagement with the Ancient Humans of Britain Project are discussed in Chapter 28 Onshore Archaeology and Cultural Heritage.
	Section 3.2.2 Protection and Enhancement of the Landscape: Policy CP11	The landscape of the District will be protected for the sake of its own intrinsic beauty and its benefit to the rural character and in the interests of biodiversity, geodiversity and historic conservation. Justification 3.86: The attractiveness of the District's landscape and the large areas which are already accessible to the public place recreational and	Impacts to tourism assets are discussed in section 30.7 Impacts relating to landscape are further discussed in Chapter 29 Landscape and Visual Impact Assessment. Impacts relating to biodiversity are further

Document	Policy/guidance	Policy/guidance purpose	ES reference
		<p>visitor demands on the countryside. A number of strategies seek to promote tourism and healthy lifestyles, utilising the opportunities which a rural district like Breckland offers. In the Breckland SPA area of the District there is a need to ensure sustainable levels of recreation in the countryside to prevent recreational pressure having an adverse impact on Annex 1 bird species. Breckland Council is committed through this Core Strategy, its other Development Plan Documents and wider corporate activities to manage sustainable access in those parts of the District.</p>	discussed in Chapter 22, Onshore Ecology.
	Section 3.4.1 Accessibility: Policy CP 13	<p>New growth in Breckland will be delivered to promote accessibility improvements..... The development of schools and other training facilities will need to be developed in conjunction with education and training services to accommodate the needs of the growing populations..... In addition to education facilities, health, community, sports and recreation facilities (including public open space) will also need to be provided to meet the needs of the growing population.</p>	Impacts to Public Rights of Way (PRoWs), cycle tracks, footpaths and non-motorised routes are considered in section 30.7
	Section 4.3.1 Open Space: Policy DC11	<p>Development that would result in the loss of existing sport, recreational or amenity open space will only be permitted if:</p> <ul style="list-style-type: none"> • It can be demonstrated (through a local assessment) that there is an excess of recreational or amenity open space in the settlement and the proposed loss will not result in a current or likely shortfall during the plan period; and • Recreational facilities within the open space will be enhanced by the proposed development on an appropriate portion of the open space; or • The community would gain greater benefit from the developer providing a suitable alternative recreational or amenity open space in an equally 	Impacts to PRoWs, cycle tracks, footpaths and non-motorised routes are considered in section 30.7

Document	Policy/guidance	Policy/guidance purpose	ES reference
		<p>accessible and convenient location.</p> <p>The development of existing open space with an ecological value (a known biodiversity or nature conservation interest) will not be permitted.</p>	

30.3 Consultation and Engagement

21. Consultation and engagement with stakeholders and communities is a key driver of the EIA process, and is ongoing throughout the lifecycle of the project, from the initial stages through to consent and post-consent. Full details of the project consultation process to date are presented in the Consultation Report (Document reference 5.1), which has been submitted with the Development Consent Order (DCO) application.
22. As discussed in section 30.1 VWPL are progressing both the Norfolk Boreas and Norfolk Vanguard projects and as such engagement and consultation responses have been gathered and due regard taken in relation to both projects.

30.3.1 Community Engagement

23. Managing impacts on the tourism sector and people's enjoyment of recreational facilities is a process, much like any other social impact management. Informed by good practice for managing social impacts outlined by the International Association for Impact Assessment (IAIA) (Vanclay et al, 2015) and their own Principles of Engagement², VWPL have undertaken community consultation and engagement to inform the development of both the Norfolk Vanguard and Norfolk Boreas projects. This allowed early identification of recreational and tourism assets that were important to stakeholders so that where possible the project could avoid impacts on these as part of the design process.
24. Since October 2016 consultation has been undertaken with local communities, varied organisations (including tourism bodies) and businesses (including tourist businesses) within Norfolk and particularly within the footprint of the onshore cable route. To date this has included the following activities:
 - Drop in Exhibitions held at locations within and adjacent to the onshore project area;
 - October 2016;
 - March and April 2017;

² Available on the Vattenfall Wind Power Limited corporate website at:
<https://corporate.vattenfall.co.uk/globalassets/uk/communities/principles-of-engagement.pdf>

- November 2017; and
 - November 2018
 - Reports summarising community feedback shared with all registered participants, key local and community stakeholders, and on the project website³;
 - Hearing your Views, I, II, III and IV
 - Community engagement events (see Table 30.3);
 - Newsletters distributed throughout the Scoping Area (October 2017), and subsequently provided to those within a more focussed area closer to the onshore project area. These newsletters were distributed on the following dates:
 - October 2016;
 - March 2017;
 - June 2017;
 - June 2018;
 - October 2018; and
 - February 2019.
 - Provision of a dedicated project website³.
25. The project has employed a Local Liaison Officer who is also the Skills and Education Champion, based full time in Norfolk. The project has continued engagement with organisations that support and represent the interests of people, communities and businesses local to the onshore project area, and more generally in the region. This has been enabled through meetings and events held by the LLO and other team members as described below in Table 30.3.

Table 30.3: Local Liaison Officer meetings to date

Category	Period	Number	Description
County and District Councils	Q1 2017 to Q4 2018	16	Update and information.
Parish Councils	Q3 2017 to Q1 2019	32	Update and information.
Other community groups and academic forum	Q1 2017 to Q2 2018	52	Update and exploration of community concerns.
Skills and Education meetings	Q1 2017 to Q2 2019	105	Exploration of skills and training opportunities.
Individuals or representatives	Q1 2017 to Q4 2018	34	Individual discussion and response to concerns
Other	Q1 2017 to Q4 2018	19	Variety of individual stakeholder meetings to explore concerns and opportunities.

26. The evidence above demonstrates that the project has been implementing a comprehensive process of effective community engagement with communities who

³ <https://corporate.vattenfall.co.uk/norfolkvanguard> and <https://corporate.vattenfall.co.uk/norfolkboreas>

may be affected by the project and a process of logging and considering the project related social issues raised during the consultation.

27. It is likely that this trend in community engagement will continue as part of the construction process. This would support the various management practices relating to the mitigation of potential tourism impact determinants such as temporary noise, traffic, or visual change.

30.3.2 Technical Consultation

28. To date, consultation regarding Tourism and Recreation impact assessment has been conducted through the Scoping Report (Royal HaskoningDHV, 2017) and the Evidence Plan Process (EPP), namely the Socio-economics and Tourism and Recreation Method Statement (Royal HaskoningDHV, 2018, unpublished) and the Preliminary Environmental Information Report (PEIR) (Norfolk Boreas Limited, 2018).
29. Full details of the project Technical Consultation process are presented within Chapter 7 Technical Consultation.
30. In addition to the Statutory Consultation taken specifically in relation to Norfolk Boreas, a programme of pre-application consultation was undertaken by Norfolk Vanguard and Norfolk Boreas. As the majority of the onshore infrastructure for the projects are co-located the consultation is relevant to both projects and has informed the approach to both EIA. In addition, account has also been taken of information submitted as part of the Norfolk Vanguard examination, up to Deadline 5 (20th March 2019).
31. A summary of the technical consultation which has driven forward the development of this tourism and recreation assessment is provided in Table 30.4.

Table 30.4 Consultation responses

Consultee	Date, document	Comment	Response / where addressed in the ES
Norfolk Boreas			
Secretary of State (SoS)	June 2017, Scoping Opinion	The Scoping Report proposes to scope out the potential for visual impacts on recreation and tourism from the landfall and onshore cable route during operation. The SoS agrees this can be scoped out.	Noted
Secretary of State	June 2017, Scoping Opinion	Paragraph 1595 of the Scoping Report notes the potential for obstruction or disturbance to tourism assets from maintenance works at various	Section 30.7.5 assesses impacts during the operation of Norfolk Boreas, which considers routine maintenance.

Consultee	Date, document	Comment	Response / where addressed in the ES
		onshore locations; however, Table 4.10 proposes to scope this out. The SoS considers there is the potential for reductions in visitor numbers and that this should not be scoped out.	
Secretary of State	June 2017, Scoping Opinion	The Scoping Report has not set out the methodology for assessing impacts; although it is noted and welcomed that the approach will be discussed as part of the Evidence Plan Process. The methodology should be set out within the ES.	This is included in section 30.4
East Rushton Council	June 2017, Scoping Opinion	All the rural sites proposed would result in industrialisation of unspoilt countryside and would have an unacceptable impact on the community and on farming and tourism - both an important source of income for the area. East Ruston specifically is closely situated between the Norfolk Broads National Park and the designated "Undeveloped Coast" of North Norfolk. We have received concerns from a number of our parishioners about the proposed AC solution which requires associated cable relay stations and a larger number of cables.	Since the scoping report was published Norfolk Boreas Limited has committed to high voltage direct current (HVDC) transmission removing the need for infrastructure associated with an "AC" solution such as the cable relay stations.
North Norfolk Council	June 2017, Scoping Opinion	The EIA/PEIR will need to address the impact of the wind farm on tourism, including tourism occurring in neighbouring counties, which may be affected if the natural landscape is altered sufficiently.	Section 30.7 considers the potential impacts using a source pathway receptor model. Due to the very limited change in the landscape around high value tourism assets it is considered unlikely that the project would have an effect on neighbouring counties.
North Norfolk Council	June 2017, Scoping Opinion	The EIA should consider the likely impacts on Norfolk's tourism sector	These are considered in section 30.7 and section 30.8.
Expert Topic Group (ETG)	January 2018, Norfolk Boreas	No comments on the proposed methodology received.	No action required

Consultee	Date, document	Comment	Response / where addressed in the ES
(Norfolk County Council, Breckland Council, Broadland District Council, North Norfolk District Council)	Method Statement		
Norfolk County Council (NCC)	October 2018, PEIR	This chapter of the PEIR describes appropriate mitigation for impacts on PRoWs. As with the Vanguard project, mitigation for potential impacts will be addressed through and Outline Code of Construction Practice which will be agreed in consultation with NCC and all relevant stakeholders as part of the final Development Consent Order (DCO) submission.	PRoWs and associated mitigation measures as presented at PEIR are included in section 30.7.4.4.
Norfolk Vanguard			
Secretary of State	November 2016, Scoping Opinion	The Secretary of State welcomes the proposed tourism and recreation assessment and notes the North Norfolk Water Framework Directive (WFD) bathing waters and blue flag beaches in the vicinity of the proposed development. Potential impacts on water quality at these locations and the resultant impacts on tourism and recreation should be considered. Appropriate cross reference should be made to the Marine Water and Sediment Quality chapter.	Potential impact on water quality at Blue Flag beaches is considered in section 30.7
Secretary of State	November 2016, Scoping Opinion	Consideration should be given as to what impact the use of accommodation for the mobile workforce would have in the short, medium and long term	Consideration of the use of accommodation for the mobile work force is considered in section 30.7

Consultee	Date, document	Comment	Response / where addressed in the ES
		situation for the local tourist industry.	
Norfolk County Council	November 2016, Scoping Opinion	<p>"Where reference is made to PRow and The Norfolk Coast Path (e.g. para. 902, para. 1,174), other Norfolk long-distance Trails should also be acknowledged (e.g. Paston Way which runs from Cromer to North Walsham and The Weavers Way which runs from North Walsham to Great Yarmouth). These long-distance trails also have promoted circular walks along their length, and all promoted routes might require mitigation if the cable route impacts them.</p> <p>There is large publicly-accessible Forestry Commission woodland, Bacton Woods, in the area where the cable may come ashore, which may need consideration. Seal-watching on the East coast, mostly at Horsey but now also elsewhere, is a major tourist attraction in winter, with a likely significant contribution to the local economy. A recent survey recorded >100 visitors per hour on the coast path during peak periods at Horsey (Visitor Surveys at European Protected Sites in Norfolk during 2015-2016; Norfolk County Council/ Norfolk Biodiversity Partnership/ Footprint Ecology; July 2016). The EIA will need to consider the above recreational issues and the potential impacts arising from the planned onshore proposals."</p>	<p>All long distance PRowS interacted with by Norfolk Boreas under both scenarios are considered in section 30.7.</p> <p>Site selection is described in Chapter 04 Site Selection and Assessment of Alternatives. The site selection process has resulted in the avoidance of Bacton Woods.</p> <p>Visitor Surveys at European Protected Sites have been considered in 30.6</p>
Eastern Inshore Fisheries Conservation Association	October 2017, PEIR	The proposed works must strive to avoid displacement of other legitimate uses of the sea, including recreational and commercial fishing. The section of the cable corridor and	<p>Impact to commercial fisheries is assessed in Chapter 14.</p> <p>Chapter 15 Shipping and Navigation concludes that there will be no impact to recreational</p>

Consultee	Date, document	Comment	Response / where addressed in the ES
		surrounding areas that are within the Eastern IFCA district lie in important fishing grounds, particularly for crab, lobster and whelk potting.	<p>vessels within the offshore cable corridor. Therefore, it can be concluded that there will be no impact to recreational fishing from vessels.</p> <p>Due to Norfolk Boreas undertaking Long HDD at the landfall there will be no impact recreational fishing occurring off the beach because the landfall exit point will be several hundred metres offshore.</p>
Norfolk County Council	June 2018, Relevant Representation in respect of ES	Mitigation for impacts on the majority of the PRoW and Trails network will be addressed by two documents: A Public Right of Way Strategy, and a Code of Construction Practice (CoCP), draft versions of which have been submitted with the DCO application. The Council believes these documents should result in appropriate measures to manage impacts in relation to cable-laying.	PRoWs and associated mitigation measures are detailed in section 30.7.4.4 and are consistent with those for Norfolk Vanguard. Draft Public Rights of Way and outline CoCP have been submitted with the DCO application.
Norfolk County Council	June 2018, Relevant Representation in respect of ES	Where Norfolk Trails would be affected, it would additionally be helpful if information could be provided for inclusion on the Norfolk Trails website.	<p>The outline CoCP (document 8.1) and Public Rights of Way Strategy (document 8.4) outline potential control measures to be applied to public rights of way during construction. Includes that consideration will also be given to publishing the temporary closures via additional alternative methods such as websites</p> <p>The exact management method in relation to specific routes will be agreed in advance with the Local Authority and detailed within the final Code of Construction Practice for that stage of the works (secured through DCO Requirement 20).</p>

30.4 Assessment Methodology

30.4.1 Impact Assessment Methodology

32. Chapter 6 EIA Methodology details the general method undertaken to assess potential impacts of the project. Within the Evidence Plan Process described in Chapter 7 Technical Consultation, this methodology and the relevant study areas considered have been consulted on and agreed with the relevant stakeholders.
33. There are no specific statutory guidelines which inform the assessment of development impacts upon tourism and recreation receptors. The approach taken is therefore based on best practice for social impact assessment (Vanclay, 2015 and Office for National Statistics (ONS), 2013). The assessment is compliant with the Infrastructure Planning (EIA) Regulations 2017.
34. As discussed below, the assessment takes the position that the tourism economy is driven by tourism demand; that is how much visitors spend whilst in an area. Tourism supply meets this demand through the provision of goods and services by businesses such as hotels, restaurants, museums, etc. For the purpose of assessment, it is considered that a change in demand leads to a change in supply (i.e. fewer tourists would spend less money and businesses would experience a fall in revenue), however this has not been financially quantified due to the speculative assumptions needed at the current stage of assessment. Therefore, the assessment focusses on the factors that have the potential to reduce the number of tourists visiting or returning to an area.
35. It is considered that the main attraction of an area to tourists is its recreational assets, such as Areas of Outstanding Natural Beauty (AONB). These assets may also be enjoyed by local (recreational) users but it is assumed these people would not spend money in the tourism supply sector at a rate above their average (i.e. locals are unlikely to stay in hotels and would frequent local restaurants all year round). Therefore, impacts to these recreational assets are considered with regards to how the impacts would change the users' experience of the asset (e.g. high mechanical noise levels would reduce the enjoyment of a natural area).
36. The baseline has been developed through consideration at a county, district, and local level. Firstly, a broad overview of the tourism sector of the County of Norfolk is presented to understand the main character and trends in tourism and recreation. Tourism trends and character are then considered at a district level for North Norfolk, Broadland, and Breckland (those district councils in which the project is located) to understand the main tourism draws to each area. Tourism and recreation assets are then considered within zones relative to the footprint of the project. This allows the assessment to consider the potential pathway from source to receptor category.

37. Patterns used to assess the tourism baseline include visitor numbers, visitor origin, expenditure, secondary benefits from tourism, and the timing of visitor periods.
38. As with other topics the assessment uses a source – pathway – receptor model to demonstrate the mechanism of a potential impact.
39. This analysis is based upon desk-based assessment reviewing facilities on websites such as Visit England, Visit Norfolk, and publicly available research at a District level, AONB, or National Park level. Through the consultation process described in section 30.3, it was agreed with Norfolk County Council that specific public perception surveys would be disproportionate to the potential impacts considering the proactive community engagement that VWPL is undertaking as part of the development process of both the Norfolk Vanguard and Norfolk Boreas projects.

30.4.1.1 Tourism

40. The tourism economy is a subset of the wider socio-economy and gains financial value from the use of recreational assets. It is driven by how much visitors spend, referred to as tourism demand (ONS, 2013). Therefore, an assessment of the impact on tourism is dependent on information relating to visitor expenditure and on the impact a project may have on recreational or tourism assets.
41. Visitors spend money on products and services provided by a combination of industries such as accommodation services, food and drink serving activities, and passenger transport services. This combination of industries creates the tourism supply side of the tourism economy (ONS, 2013).
42. Visitor expenditure is driven by the attractiveness of various recreational or tourist assets. These include but are not limited to:
 - Natural assets such as national parks or coastal areas;
 - Cultural, religious, or historic assets such theatres, churches or castles;
 - Sports or recreational assets such as amusement parks or sports venues; and
 - Service assets such as hotels, caravan parks, food or drink serving businesses.
43. Real or perceived impacts to these assets may lead to a reduction in visitor numbers, length of stay, and expenditure. Therefore, the assessment will consider these assets as the main tourism receptors.
44. The potential impact of the project on tourism is based on the receptor sensitivity and magnitude of effect definitions identified in
45. Table 30.5 and Table 30.6.
46. Consideration will also be given to trends that may increase or reduce the sensitivity of the receptors. For instance, although some towns may be regionally important

and therefore of medium sensitivity, if the recent trend in visitor numbers has been declining then the people represented by these receptors will be more sensitive to disruption.

Table 30.5 Sensitivity / value of tourism receptors

Sensitivity / value	Definition
High	Nationally recognised tourist destinations such as National Parks or AONB
Medium	Regionally recognised tourist destinations and sites identified as important for future tourism regionally e.g. within the Development Plan Documents, for example towns and villages along the coastline.
Low	Sites that are not tourist attractions in their own right but remain important for local tourism, such as local hotels, caravan parks and campsites.
Negligible	Sites with limited or no tourist attractions.

Table 30.6 Magnitude of effect on tourism receptors

Magnitude	Adverse / Beneficial	Definition
High	Adverse	Permanent disruption to a known tourist attraction.
High	Beneficial	Large scale or major improvement of a known tourist attraction.
Medium	Adverse	Temporary disruption to a known tourist attraction e.g. increased traffic congestion on roads serving the attraction.
Medium	Beneficial	Benefit to, or addition of, key characteristics, features, or elements or improvement of receptor's quality.
Low	Adverse	Works are visible from the tourist attraction but there are no direct impacts.
Low	Beneficial	Minor benefit to, or addition of, key characteristics, features or elements; some beneficial impact on the receptor or a reduction in the risk of a negative impact occurring.
Negligible	Adverse	Work that is unlikely to directly or indirectly negatively affect the attraction.
Negligible	Beneficial	Work that is unlikely to directly or indirectly positively affect the attraction.

30.4.1.2 Recreation

47. The same recreational assets enjoyed by visitors can be enjoyed by the local population, but this is more associated with quality of life of the local population rather than economic benefit (although these concepts are interrelated). For clarity, this assessment has categorised tourism assets as those that attract visitors (e.g. national parks) or supply visitors (e.g. food and accommodation businesses) and recreational assets as those that anybody can use to enjoy a natural asset (e.g. foot

paths). The potential impact of the project on recreation is based on the receptor sensitivity and magnitude of effect definitions identified in Table 30.7 and Table 30.8.

Table 30.7 Sensitivity / value of recreation receptors

Sensitivity / value	Definition
High	Recreational features of national value such as National trails or paths e.g. Norfolk Coastal Path.
Medium	Recreational features of regional value, such as PRoW (footpaths, bridleways and byways) and stewardship bridleways.
Low	Recreational features of local value, e.g. local permissive pathways, open access land and local beaches used for recreation such as angling and walking.
Negligible	Recreational features with limited or no recreational value.

48. Recreation impacts are considered with regard to the proximity of recreational assets to the footprint of the project and the duration of effect. Spatial datasets are used to understand where the project may disturb spaces that have been assigned for recreation or PRoW. This is supported with access and recreation studies of notable areas such as the Norfolk AONB, and the Norfolk Broads.

Table 30.8 Magnitude of effect on recreation receptors

Magnitude	Adverse/beneficial	Definition
High	Adverse	Permanent closure of a recreation feature or permanent reduction in amenity value.
	Beneficial	Large scale or major improvement of the facilities quality; extensive restoration or enhancement; major improvement of receptor quality.
Medium	Adverse	Temporary closure or disruption to a recreation feature or temporary reduction in amenity value (works within 100m of the feature).
	Beneficial	Benefit to, or addition of, key characteristics, features, or elements or improvement of receptors quality.
Low	Adverse	Temporary reduction in amenity value of a recreation feature (works between 100m and 250m).
	Beneficial	Minor benefit to, or addition of key characteristics, features or elements; some beneficial impact on the receptor or a reduction in the risk of a negative impact occurring.
Negligible	Adverse	No direct impact to feature and no amenity loss (works in excess of 250m distance separation).
	Beneficial	Minimal benefit.

30.4.1.3 Impact significance

49. Following the identification of receptor sensitivity and magnitude of the effect, the significance of the impact will be considered using the matrix presented in Table 30.9.

Table 30.9 Impact significance matrix

		Negative magnitude			Beneficial magnitude				
		High	Medium	Low	Negligible	Negligible	Low	Medium	High
Sensitivity	High	Major	Major	Moderate	Minor	Minor	Moderate	Major	Major
	Medium	Major	Moderate	Minor	Minor	Minor	Minor	Moderate	Major
	Low	Moderate	Minor	Minor	Negligible	Negligible	Minor	Minor	Moderate
	Negligible	Minor	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible	Minor

50. Table 30.10 details the definitions of each impact significance.

Table 30.10 Impact significance definitions

Impact Significance	Definition
Major	Very large or large change in receptor condition, both adverse or beneficial, which are likely to be important considerations at a regional or district level because they contribute to achieving national, regional or local objectives, or, could result in exceedance of statutory objectives and / or breaches of legislation.
Moderate	Intermediate change in receptor condition, which are likely to be important considerations at a local level.
Minor	Small change in receptor condition, which may be raised as local issues but are unlikely to be important in the decision-making process.
Negligible	No discernible change in receptor condition.
No impact	No change, therefore no impact on receptor condition.

51. Potential impacts identified as major or moderate are regarded as significant in the impact assessment and have been avoided or reduced through mitigation where possible. In addition, whilst minor impacts are not significant in their own right, it is important to distinguish these from other non-significant impacts as they may contribute to significant impacts cumulatively or through interactions.

30.4.2 Cumulative Impact Assessment

52. As detailed in Chapter 6 EIA Methodology, a comprehensive Cumulative Impact Assessment (CIA) has been prepared for the project. This has taken account of the potential adverse and beneficial impacts of constructing the project in the same construction period as other major infrastructure projects planned in the area. The CIA for Norfolk Boreas has been undertaken in consultation with Norfolk County Council, and full details on CIA are discussed in Chapter 6 EIA Methodology.

53. The cumulative assessment for the operational phase only considers the effect of the presence of onshore infrastructure from multiple projects (e.g. noise and visual impact). There will not be effects from the presence of the offshore wind turbines on onshore receptors as they are located 73km from the coast and are beyond the visual range of people standing on the coast. A cumulative assessment for the decommissioning phases has also been included although a full assessment for the decommissioning phase would require knowledge of future projects to a granularity that is currently unavailable and so professional judgement has been applied.

30.4.3 Transboundary Impact Assessment

54. The project is required to consider the possibility of significant transboundary effects on another European Economic Area member states under the Espoo Convention (see Chapter 6 EIA Methodology). However, given that any tourism and recreation effects will be purely within the east of England area there is no potential for transboundary impacts. Transboundary impacts are therefore scoped out of this assessment and will not be considered further.

30.5 Scope

30.5.1 Study Area

55. A tourism and recreation baseline has been developed for the county of Norfolk.
56. The study areas for assessment will include:
- Direct impacts (such as noise, air quality, traffic, visual disturbance, closures and other disruptions) to the area within 500m of the landfall, onshore project substation, onshore cable route and National Grid substation extension including the National Grid overhead line temporary work area. A distance of 500m is considered to be conservative and direct impacts to tourism and recreation assets are not anticipated to occur beyond this distance;
 - Indirect impacts to the county of Norfolk and districts of North Norfolk, Broadland, and Breckland, based on the location of landfall, onshore cable route, and onshore project substation;
 - Accommodation impacts in relation to the county of Norfolk due to the assumed commuter times for in-migrant workers outlined in Chapter 24 Traffic and Transport; and
 - Marine tourism and recreation impacts by considering businesses or water sport facilities from Lowestoft up to Wells-next-the-Sea.
57. Note that the potential for landscape and visual impacts of the offshore elements of the project upon onshore receptors was considered (in Chapter 29 Landscape and Visual Impact), however these have been scoped out as the project would be located

an approximate distance of 73km (closest point) from the coast; this would be well beyond the 35km limit of visual significance identified in Department of Trade and Industry (DTI) guidance and more than double the recommended distance in the UK Offshore Energy Strategic Environmental Assessment 3. Disturbances to marine tourism due to the construction of the offshore cable corridor have however been included. Further details on this subject can be found in Chapter 15, Shipping and Navigation.

58. The Norfolk Broads and the North Norfolk Coastline warrant special attention because they are nationally important areas. Although the project has been specifically designed to avoid the largest tourism assets, construction works may have an indirect impact. The potential pathways for impacts on these receptors have been considered.

30.5.2 Data Sources

59. Data sources have been reviewed and used to characterise the baseline for the assessment. These are shown in Table 30.11 and a degree of confidence in the data source has been assigned.

Table 30.11 Data sources

Data	Year	Coverage	Confidence	Notes
Tourism, and recreation research commissioned by tourism authorities	2005 to 2017	Norfolk as a whole and divided by districts	High	Research from Norfolk Council District Councils Visit Norfolk and Visit England
Economic Data for Norfolk	2011 to 2019, where applicable	Norfolk as a whole and divided by districts	High	ONS data collated by collated by Norfolk Insight at http://www.norfolkinsight.org.uk/
Norfolk Limited	2016 and 2017	Norfolk as a whole	High	Summary of annual analysis conducted by Grant Thornton
Visit England Accommodation Stock Audit	2016	Norfolk	High	Source: Visit Britain
Geospatial information	2016	Norfolk	High	From Ordnance Survey and Norfolk Open Data portal showing PRoW
Blue flag beaches	2018	Norfolk	High	Source: Foundation for Environmental Education
Accommodation locations by survey of online booking websites such as Expedia or Booking.com	2017	Norfolk	Medium	Some hotels and Bed and Breakfasts (B&Bs) may be missing however the data still shows the trend of locations within Norfolk

Data	Year	Coverage	Confidence	Notes
www.visitnorfolk.co.uk	2019	Norfolk	High	Details of tourist activities
www.broads-authority.gov.uk	2019	Norfolk and Suffolk Broads	High	Details of Broad activities
www.tournorfolk.co.uk	2019	Norfolk	High	Details of tourist activities
www.seapalling.com	2019	Sea Palling	High	Details of local events and activities at Sea Palling
https://www.visitbritain.org/annual-survey-visits-visitor-attractions-latest-results	2017	UK	High	Details of tourist activities

30.5.3 Limitations

60. Publicly available studies of the economic impact of tourism on the economy of Norfolk have been undertaken by third parties (unrelated to the project and listed in Table 30.11 above) and have generally used the Cambridge Economic Model (see section 30.5.3). This is a computer-based model developed to calculate estimates of the volume, value and economic impact of tourism on a county or district basis. The model relies on using information from a range of sources. It also does not take account of leakage of expenditure of tourists taking day trips out of the area in which they stay, although it is assumed these balance out. As the methodology and accuracy of these sources varies, the estimates can only be regarded as indicative of the scale and importance of visitor activity in the local area.
61. Many of the impacts to tourism and recreation are based on qualitative assessment, using a predicted perception of how local communities and tourists might change their activities particularly during construction. This can be complicated to predict as different individuals will perceive things in different ways but it is assumed that differences in opinion would balance on average. The ongoing community engagement (section 30.3.1) as part of the project development is supporting Norfolk Boreas Limited's understanding of these potential effects.

30.5.4 Assumptions

62. Based on the assessment in Chapter 24 Traffic and Transport, it is estimated that the required work force resource, across the onshore project area under Scenario 2, would peak to 250-420 operatives during the two-year duct installation works depending on the scheduling of works. Under Scenario 1 the work force would peak at approximately 170 during the cable pulling works.
63. Non-resident workers are assumed to stay within a 45 minute commute of the onshore works; broadly the Norfolk area. Although Norfolk Boreas Limited has

committed to 50% UK content in the project as a whole, for the purposes of this assessment the worst case assumption is considered to be that 70% of the onshore construction work force will be non-resident (i.e. from outside the New Anglia Local Enterprise Partnership (LEP) area as described in Chapter 31 Socio-economics).

64. The level of local procurement during construction is described in Chapter 31 Socio-Economics. The likelihood that the project will be able to procure staff locally will depend on the specificity of technical expertise required. For example, it is assumed that there are a higher number of contractors that could provide duct installation services than could provide substation construction services. Therefore, in Chapter 31 the level of local content has been varied below 70%. However, for the purposes of a worst case assumption for impacts on accommodation availability an average of 70% at peak construction has been assumed.
65. Supply Chain analysis in Chapter 31 Socio-Economics shows that it is unlikely that a significant proportion of the offshore works could be procured in the New Anglia LEP region or in the vicinity of the cable route. Therefore, it is assumed that offshore construction workers would travel in from other locations and operational workers would be locally based; impacts due to these workers have therefore not been included.
66. The baseline is informed by the data that is available at the time of writing and has been checked and updated since the submission of the PEIR. It should be noted that the data is used to identify trends in the local and regional tourism industry across a statistically relevant time period and that there is no evidence of significant change in trends. Unless there is a catastrophic change to the wider economy it is assumed that these trends will generally be maintained and are therefore valid for assessment. As an unknown factor, the UK's exit from the European Union has not been considered in the baseline.

30.6 Existing Environment

67. The following section provides a tourism and recreation baseline profile for the project. The baseline gives an overview of tourism trends in Norfolk, before focussing on key tourism and recreation assets offshore, at the coast, and onshore.

30.6.1 Tourism in Norfolk

68. The tourism industry is important for supporting employment across Norfolk where it accounted for 18.4% of all employment in 2017. It is especially important along the north Norfolk coast where it accounts for 28% of employment. It is also important in Norwich, the Broads and the east coast resorts of Great Yarmouth and Lowestoft (Visit Norfolk, 2016).

69. Norfolk has a rural character punctuated by market towns and villages. The coastline has long sandy beaches and quaint coastal towns. There is a strong sense of heritage and conservation in the area demonstrated by the Visit Norfolk marketing (Visit Norfolk, 2019). Visitor surveys show that the majority of visitors travel from within the UK and come to enjoy being in the countryside.
70. Norfolk is situated within reasonable distance of major urban centres such as Peterborough, Cambridge, Milton Keynes, and London. This appears to be supporting a steady increase in day trips to Norfolk since 2010 and accompanying expenditure (Table 30.12).
71. This combination of positive factors is reflected in strong business confidence, and a significant level of employment in supplying the tourism industry.

30.6.1.1 Tourism statistics in Norfolk

72. Tourism in Norfolk supported over 65,398 jobs in 2017 (18.4% of employment) and contributed £3.25 billion to the county's economy⁴ during the same period. Although the value of the tourism continues to grow across the region (Larking Gowen, 2017), the industry faces challenges and opportunities including unreliability of good weather, introduction of the National Living Wage for employees and the implications to the value of the pound through the UK's exit from the European Union affecting holiday choices of domestic and foreign tourists. The New Anglia Local Enterprise Partnership (New Anglia LEP) recognises tourism as one of nine sectors of genuine strength and economic opportunity to engage with and support. The site selection process for Norfolk Boreas has ensured that key tourist locations in the county (including the Broads and tourist beaches) have been avoided.
73. Visit Norfolk publishes annual Economic Impact studies for Norfolk. Key trends from these studies are shown in Table 30.12 for the period 2010 to 2017 (the latest available data at the time of writing). The trend shows that visitor numbers and expenditure are generally increasing year on year, however the number of overnight trips is decreasing. It should also be noted that of the overnight visitors, the majority are also from the UK. In combination with day visitors, this shows the majority of Norfolk tourism results from residents of the UK.

Table 30.12 Tourism trends in Norfolk

	2011*	2012	2013	2014	2015	2016	2017
Number of day trips	31,228	30,058	36,074	39,982	39,665	40,993	43,443
Day trip expenditure (£)	1,241,684	1,207,439	1,264,767	1,359,621	1,425,355	1,488,072	1,531,461
Number of overnight stay trips	3,399	3,373	3,034	3,008	3,083	3,058	3,266

⁴ <http://www.visitnorfolk.co.uk/tourism-info-and-stats.aspx>

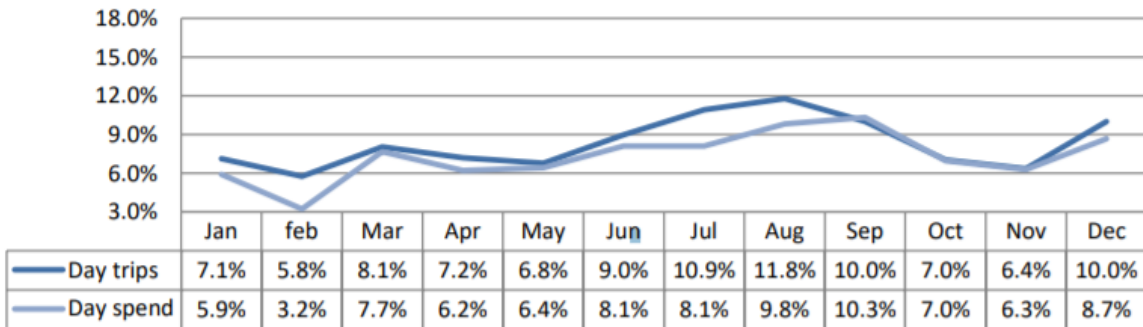
	2011*	2012	2013	2014	2015	2016	2017
Overnight stay trip expenditure (£)	685,971	709,000	642,392	711,910	717,510	727,244	747,682
Total (no. of trips)	34,627	33,431	39,108	42,990	42,748	44,051	46,709
Total expenditure (£)	1,953	2,056,208	2,046,322	2,093,804	2,163,973	2,234,041	2,300,033
Induced spend (£)	833,292	837,105	802,698	867,241	891,132	917,853	945,103
Tourism value (£)	2,786,197	2,781,197	2,740,672	2,961,045	3,055,105	3,151,894	3,245,136
Total tourism employment (no. of people)	54	54	55	60	62	64	65
Proportion of employment in Norfolk County	15.30%	15%	15%	16.80%	17.30%	17.9%	18.4

Source: Visit Norfolk

*All figures are in 1,000's (except %)

74. The 2017 report also provides an overview of the seasonality of visitors to Norfolk (Plate 30.1). This shows that there is a general increase in both day and overnight visits across the summer months, as can be expected. It also shows a spike in expenditure around March and a decrease around September (Visit Norfolk, 2017).
75. As shown in Plate 30.2 the majority of visitors are coming on holiday and staying in paid accommodation. The majority of their expenditure is on shopping, food and drink. Comparison with economic impact assessments of Breckland and North Norfolk show the same trend at a district level.
76. The Visit Norfolk economic assessments also provide UK figures for reference. These suggest that overnight visitors in the UK tend to stay with friends and relatives (28%), in serviced accommodation (27%), or in static caravans (17%). People also tend to stay more nights with friends and relatives or in static caravans (both 23%) but spend considerably more when staying in serviced accommodation (31%). As shown in Plate 30.2, this is not because they spend more on accommodation but because they spend more on other items like food or shopping. This shows that impact on overnight visitors would lead to a subsequent impact elsewhere in the tourism supply economy.

Seasonality - Day visitors



Seasonality - Overnight visitors

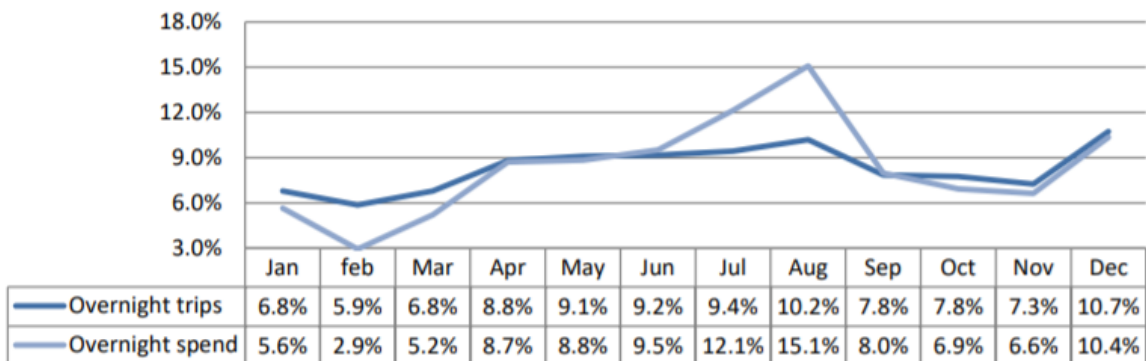


Plate 30.1 Seasonality of Norfolk visitors (Source: Destination Research, 2017)

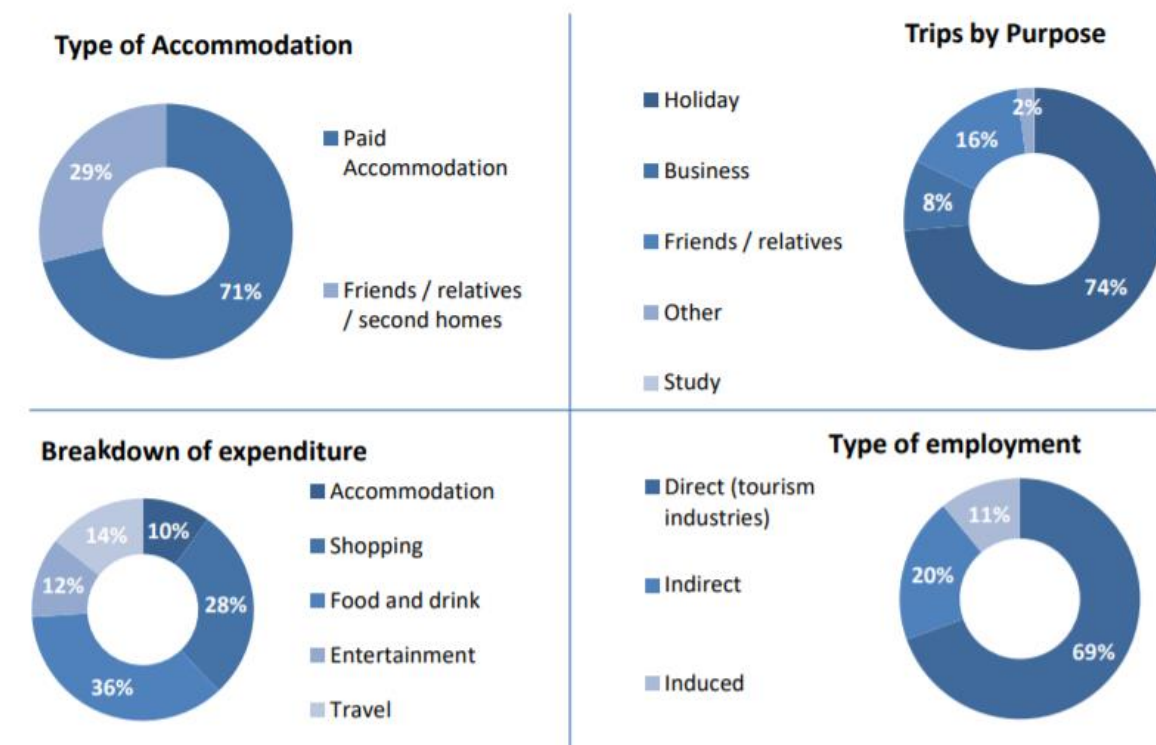


Plate 30.2 Breakdown of Norfolk visitors (Source: Destination Research, 2016)

77. Visit Norfolk also produces Business Confidence data on a quarterly basis. Although the report for December 2018 (published in January 2019) is available, it does not lend itself to comparison to previous quarters in 2018 as the parameters are different; reflecting an end of year report. Therefore, March 2018 data will be compared to data from September 2018 in Table 30.13.

Table 30.13 Business Confidence data

March 2018	September 2018	Change
80% were “satisfied with their performance since the start of the year”	95% were “satisfied with their performance during the summer months”	An increase of 15%
75% are “confident about their prospects for Easter”	89% are “positive about the immediate future”	An increase of 14%
37% report “good levels of advanced bookings”	81% report “good levels of advanced bookings”	A significant decrease increase maybe explained due to the time of year (i.e. early in the season in March, late in September).
38% “expect to generate growth this year”	67% “expect to generate growth this year”	

78. This level of confidence is mirrored in Business Confidence reports per quarter up to June 2015 (the oldest published by Visit Norfolk). This confidence mirrors the annual growth trend shown in the economic impact assessment in Table 30.12.
79. Of the districts in Norfolk, the most popular destination is Norwich with 30% of visits and 49% of expenditure. This is due to large secondary expenditure from shopping and food and drink. As the area affected by the project (i.e. the onshore cable route and project substation) is primarily rural, Norwich skews the data and therefore has been omitted from Plate 30.3 and Plate 30.4. These show that North Norfolk receives the most visitors per year of any of the districts and generates the second highest expenditure after Great Yarmouth. This is most likely because Great Yarmouth receives the most overnight visitors which generates a larger induced expenditure from food and drink or shopping.

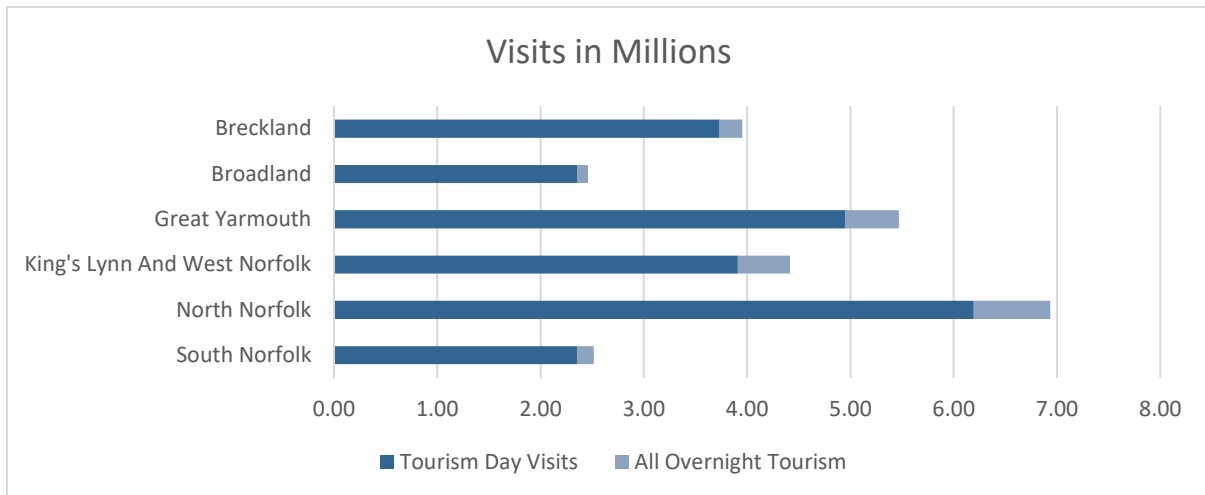


Plate 30.3 Average visits per district from 2014 to 2016 (Source: Visit Britain)

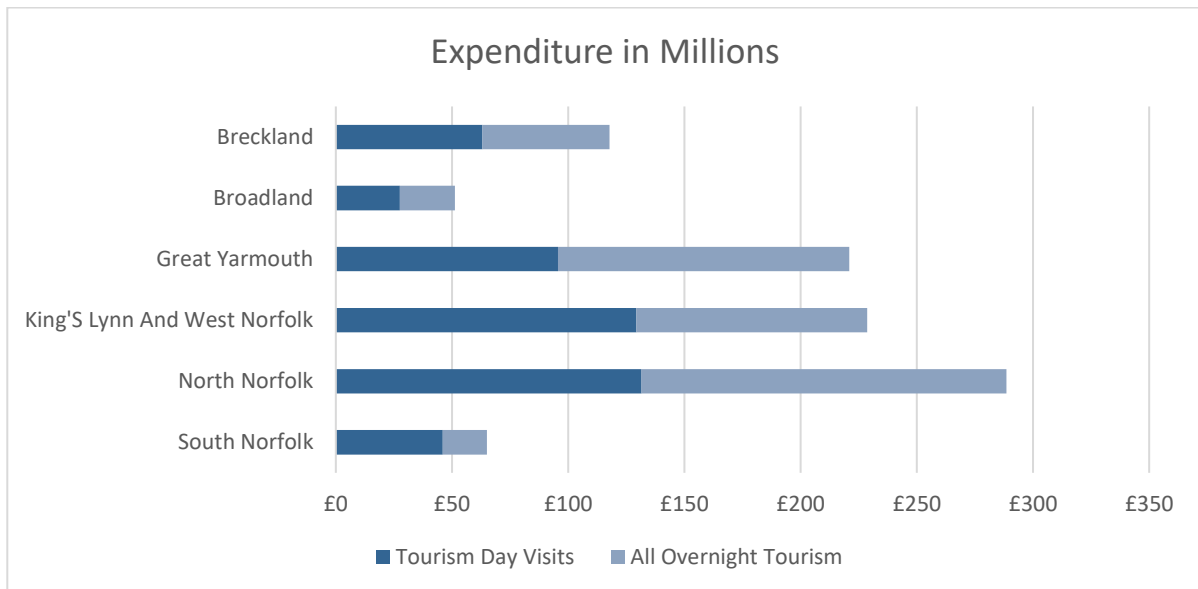


Plate 30.4 Average expenditure per district from 2014 to 2016 (Source: Visit Britain)

80. Visit Norfolk's 2014 Perceptions Study (Visit Norfolk, 2014) indicates the following points about Norfolk:

- Visitors are most likely from East Midlands and East of England;
- These visitors are more likely than non-visitors to like the outdoors, history and 'hands-on' activities;
- Holiday parks and hotels are the most popular types of accommodation;
- More recent visitors are also the more frequent visitors, and also usually return to the same areas;
- With regards to towns or cities, visitors are most likely to visit Norwich, Great Yarmouth, and then Cromer;
- The Broads stands out as a particularly popular area;

- More rural areas are less appealing;
 - Being a coastal county seems to be Norfolk’s biggest asset; and
 - The ‘great outdoors’ is also key to Norfolk’s appeal.
81. However, the same report also indicates the following barriers to tourism in Norfolk;
- Poor transport links and accessibility are the main barriers to visiting, or visiting more frequently;
 - Once in Norfolk, some feel there is not much to do;
 - Norfolk is seen as “similar to counties on the South coast... but perhaps less appealing”;
 - Visits are typically quite short; and
 - Tourism is strongly weighted to the summer months.
82. Visitor numbers in Norfolk are increasing and it is tourists’ perception that activities such as walking, using the beach, or enjoying the scenery have the greatest appeal. Therefore, tourism assets relating to outdoor activities can be considered more sensitive than those relating to indoor activities.
83. The primary driver of the tourism sectors in North Norfolk, Broadland, and Breckland is the unspoilt countryside. Therefore, the following key assets will be explored:
- Norfolk Coast AONB which is managed by the Norfolk Coast Partnership, which is primarily in North Norfolk;
 - The Norfolk Broads National Park which is managed by the Broads Authority and is primarily in Broadland but has a catchment that extends much further than this; and
 - Thetford Forest in Breckland that is managed by the Forestry Commission.

30.6.1.2 North Norfolk assets

84. North Norfolk has six Blue Flag Beaches and two Seaside Award beaches, historic villages, seaside resort villages, outstandingly beautiful coastal countryside, and businesses geared towards promoting the natural value of the area. Although its tourism industry is dominated by coastal regions, the quality of the landscape inland is high and is enjoyed for recreation (as described in section 30.6.4).
85. The Norfolk Coast AONB is an area designated by Natural England for conservation due to its significant landscape value. It covers over 450km² of coastal and agricultural land from The Wash in the west through coastal marshes and cliffs to the sand dunes at Winterton in the east, and comprises three separate areas, extending to mean low water and including coastal hinterland up to about 6km inland that has a visual and functional relationship with the coast. The AONB provides many activities for visitors, including bird watching, cycling, walking, history and heritage, nature reserves, craft shops and galleries. The AONB is located 4.9km from the landfall at its closest point

and therefore direct impacts of the project upon The Norfolk Coast AONB have been avoided.

86. The Norfolk Coast Partnership lists around 380 individual tourism assets split across the following 20 categories:

- Beaches;
- Cycle hire;
- Cycle Routes;
- Eating Out;
- Farmers Markets;
- Local Food Producers;
- Public Toilets;
- Horse Friendly Accommodation;
- Horse Riding;
- Historic Sites;
- Local Shops;
- Nature Focus;
- Arts and Crafts;
- Tourist Information;
- Walks;
- Walks, Easy Access;
- Parishes;
- School/Group Visits;
- Transport; and
- AONB Office.

30.6.1.3 Broadland assets

87. The Norfolk Broads National Park is Britain's largest protected wetland and an important tourist attraction for activities such as wildlife spotting, boating and scenic walks, the most northern extent of The Broads is East Ruston. The Norfolk Broads National Park is over 2km from the onshore cable route and therefore direct impacts upon The Broads will be avoided. However, construction for the onshore cable route will cross several rivers that flow towards The Broads. These are detailed in Chapter 20 Water Resources and Flood Risk and summarised in section 30.6.4.1.

30.6.1.4 Breckland assets

88. Breckland is so called because of The Brecks, which are areas of heath and lowland forest. The Brecks span an area of 1,019km² across Norfolk and Suffolk. Thetford Forest and Kings Forest, collectively the largest lowland forest in the UK, have miles of tranquil trackways and paths for walkers.

89. Visit Norfolk lists the following 'Highlights of Breckland', shown below with approximate distance from the onshore project substation:
- Thetford Forest – 17km;
 - Oxburgh Hall – 16km;
 - St George's Distillery – 24km;
 - Pingo Trail – 14km;
 - Grime's Graves – 21km; and
 - Thetford – 26km.
90. Therefore, the project will have no impact on these as they are over 10km from the onshore project area.
91. The Breckland Partnership lists the following local attractions (included with distance from the onshore cable route):
- Brandon Country Park – 27km;
 - Ancient House Museum – 26km; and
 - West Stow Anglo Saxon Village and Museum – 40km.
92. The Bure Valley narrow gauge railway, which runs through the Norfolk Broads between Aylsham and Wroxham, is Norfolk's longest narrow-gauge railway. This has been avoided through site selection.
93. The National Trust's Blickling Estate, with 384ha of woodland and parkland and 1,410ha of farmland, has been avoided through the site selection process.
94. Gressenhall Farm and Workhouse, located 3km north east of Dereham, is situated 1km from the onshore cable route. It hosts a museum, a traditional farm and an adventure playground within its grounds and holds public events and activities throughout the year. The site selection process has ensured that these assets are not directly affected.
95. Hunters Hall provides a wedding venue in Dereham.
96. Scheduled monuments, discussed further in Chapter 28 Onshore Archaeology and Cultural Heritage, have been avoided through the site selection.
97. The site selection process has taken account of the locations of key accommodation facilities including camping and caravanning sites, hotels and bed and breakfasts to minimise disturbance to these facilities. Therefore, none of these assets have been directly affected by the project.

30.6.1.5 Visitor surveys of European Protected Sites across Norfolk

98. In January 2017, Footprint Ecology published findings of a survey of European protected sites across Norfolk. This identified the following sites in the vicinity of the onshore project area that can be used to help characterise visitors to the area:

- Paston Great Barn;
- Norfolk Valley Fens;
- North Norfolk Coast;
- River Wensum; and
- The Broads.

99. The survey makes the following key findings that are pertinent to this project:

- Over half (52%) of interviewees were visiting from home and resident within Norfolk.
- Dog walking (41%) and walking (26%) were the most popular activities overall, but with large variations depending on the sites.
- Two thirds (66%) of interviewees were on a short trip from home and around a third (32%) of interviewees were on holiday.
- Holiday-makers were typically staying in self-catering accommodation (31%) or campsite/caravan sites (29%).
- In the Broads over half (59%) of the holiday makers interviewed were staying on a boat.
- The most commonly reported duration on site was 1 to 2 hours (31%), closely followed by between 30 and 60 minutes (27%).
- Over three quarters (77%) of all interviewees had arrived at the interview location by car.
- 'Close to home' was one of the main reasons people gave for choosing the site where interviewed that day.

100. These results show that more visitors to European protected sites are visiting for recreational purposes (walking, dog walking, etc.) than for tourism. Negative impacts on these areas will reduce the quality of recreational facilities for local residents as well as reducing the attractiveness of the area to potential tourists.

30.6.2 Nearshore Tourism and Recreation Receptors

101. As the site of the wind farm is 73km offshore (to the nearest point of Norfolk Boreas offshore wind farm), recreational and tourism related activities at the wind farm site are limited. Therefore, consideration will be focused on potential impacts as a result of construction at the landfall.

30.6.2.1 Sailing

102. There are nine sailing clubs from The Wash around to Lowestoft, of which eight clubs sail dinghies close to the shore and on the Broads. One club at Lowestoft has the facilities for yachts that would be capable of travelling far enough out to sea to interact with the wind farm area. This topic is further discussed in Chapter 15, Shipping and Navigation.
103. Chapter 15 Shipping and Navigation states that recreational activity within the Norfolk Boreas site was observed to be limited, with approximately one vessel per three days recorded as intersecting the site during the summer survey, and none recorded during winter. It is noted that consultation has indicated that recreational vessels on passage from the UK to Scandinavia will transit the area, however given the distance from the coast the traffic will be spread, and is therefore considered light.
104. There were approximately two recreational vessels per day recorded within the offshore cable corridor during summer, with the majority of this activity being coastal (correlating well with the Royal Yachting Association (RYA) Coastal Atlas (RYA, 2016)). No activity was recorded within the offshore cable corridor during the winter survey; however it should be noted that the offshore cable corridor surveys are AIS only, and therefore recreational traffic may be underrepresented. The impacts associated with the offshore cable corridor relating to sailing activities are assessed in detail in Chapter 15, Shipping and Navigation.

Table 30.14 Sailing clubs in North Norfolk

Name	Location	Type
Ouse Amateur Sailing Club	King's Lynn	Dinghy
Hunstanton Sailing Club	Hunstanton	Dinghy
Brancaster Staithe Sailing Club	Brancaster Estate	Dinghy
Wells Sailing Club	Wells-next-the--sea	Dinghy
Norfolk sailing school	Holt	Dinghy
Hickling Broad Sailing Club	Hickling	Dinghy
Rollesby Broad Sailing Club	Great Yarmouth	Dinghy
Great Yarmouth & Gorleston Sailing Club	Great Yarmouth	Dinghy
Royal Norfolk & Suffolk Yacht Club	Lowestoft	Yachts

30.6.2.2 Diving

105. There are no known dive sites in the Norfolk Boreas site or the offshore cable corridor, with diving in Norfolk focused on gullies and wreck sites off Blakeney, Sheringham and West Runton in North Norfolk.
106. Anglian Divers launch from the beach at Sea Palling to visit the Norfolk chalk reef which runs from Cley-next-the-Sea to Trimingham, and wreck sites along the coast (British Sub Aqua Club (BSAC), 2016). Both are outside of the offshore cable route. This is not regarded as a nationally important dive site in the UK. There are nine offshore reefs and several wrecks at various depths between 18m and 40m including the

Walkure which ran aground on the Haisborough Sand Bank (BSAC, 2003). Offshore archaeology is considered further in Chapter 17 Offshore and Intertidal Archaeology and Cultural Heritage.

30.6.2.3 Other marine activities

107. There are no hire facilities for other marine activities (such as kayaking, jet skiing, or dinghy sailing) in close proximity to the landfall. Sea Palling has a jet ski and boat launching facility which includes the launch of dive vessels (Beach Rock Leisure, 2015). There are no scheduled boat trips which cross the Norfolk Boreas site.
108. With regards recreational sea fishing, Chapter 15 Shipping and Navigation concludes that there will be no impact to recreational vessels in the vicinity of the offshore cable route. Therefore, it can be concluded that it is unlikely that people fishing from recreational vessels will be affected by the project.
109. With respect to recreational sea angling which may occur from the beach at the landfall location, Norfolk Boreas will undertake a long HDD at the landfall, therefore, there will be no impact on recreational fishing occurring off the beach because the landfall exit point will be several hundred metres offshore.

30.6.3 Coastal Tourism and Recreation Receptors

110. The North Norfolk Coast is highly regarded for its unspoiled beaches and as such, has been designated as an AONB. The landfall search area has been located south of the AONB to remove direct impacts. There are, however, some receptors that have the potential to be indirectly impacted.
111. There are six Blue Flag beaches in Norfolk, as shown on Figure 30.1, three of which are considered in this assessment. These are Sea Palling, Mundesley and Cromer which are located approximately 5.5km southeast, 8.5km northwest and 20km northwest of the Happisburgh South landfall respectively (Explore Norfolk, 2017). The beach at Mundesley has also been noted as one of Norfolk's top ten beaches by Visit Norfolk (2019). There are ten Designated Bathing beaches between Great Yarmouth and Sheringham (the closest being Mundesley and Sea Palling), all of which have been classed as excellent (Environment Agency, 2017).
112. Seal watching on the east coast (mostly at Horsey but also other locations along the coast including Sea Palling) is a major tourist attraction in the winter, and a recent survey recorded more than 100 visitors per hour on the coast path during peak periods at Horsey. The same surveys noted that along the North Coast and East Coast of Norfolk, the main activities were dog walking, walking and wildlife/scenery viewing (Footprint Ecology, 2016).

30.6.3.1 Landfall

113. The beach at Happisburgh is accessible via public car parks and concrete ramps, however, access is sometimes temporarily affected by coastal erosion. The beach and coastal path are regularly used locally by walkers and dog walkers.
114. The beach consists of clean sands, with some areas of cobble and gravel. A series of wooden groynes are present on the beach, including short broken sections protruding from the sand at low tide which would make swimming and paddling activities hazardous at certain sections of the beach.
115. The Happisburgh Conservation Area (assessed in Chapter 28 Onshore Archaeology and Cultural Heritage) includes the distinctive red and white striped Happisburgh Lighthouse. This is 26m tall and is the oldest working lighthouse in East Anglia, and the only independently run lighthouse in Great Britain. The lighthouse is open to the public on occasional Sundays and Bank Holidays throughout the summer months.
116. The Royal National Lifeboat Institution (RNLI) Happisburgh Lifeboat Station is located to the southern end of the landfall location at Cart Gap and includes a gift shop. An annual Lifeboat Day Fete is held each summer.
117. Smallsticks Café is located on farmland along Cart Gap Road, to the south of the landfall search area. A number of pubs and other cafes are also present in the local area. Six hotels/Bed and Breakfast establishments are present in Happisburgh.
118. Sussex Crafts is a small business producing collectable miniatures located in Rollesby Way, off Cart Gap Road.
119. St Mary's church, situated to the north of the Village of Happisburgh was built in the 15th century and includes a tall tower. The church is active in the community, and events include a summer fete.
120. A small family run bird of prey establishment, Happisburgh Owls, offers private visits for owl experiences, and works with organisations for educational visits.
121. Happisburgh beach is also frequented by archaeology enthusiasts investigating the site for further evidence of early human activity. Archaeology at Happisburgh beach is discussed further in Chapter 28 Onshore Archaeology and Cultural Heritage.
122. Bacton Woods are publicly accessible with a dedicated car park, and are located within the 500m study area south of Eddingthorpe Green.
123. There are no golf courses in or near Happisburgh South. However, there is the Mundesley Golf club approximately 9.5km from the landfall, which is a nine hole course for local use.

124. *North of the landfall:*

- Bacton and Walcott provide five hotels and bed and breakfast establishments, and a caravan park. Sandy beaches, clifftop walking, St Andrews 15th century church, pubs, Bromholm Priory, an ancient forest, and a spa are also key tourist attractions here. The site selection process discussed in Chapter 4 Site Selection and Assessment of Alternatives has avoided direct impacts to these sites as landfall will occur at Happisburgh South.
- Mundesley provides a cinema, pubs, a caravan park and an outdoor gym, along with 25 hotel and bed and breakfast establishments. The surrounding area is popular with walkers.

125. *South of the landfall:*

- Eccles-on-Sea supports a caravan park and Eccles Church Tower.
- Sea Palling supports 22 hotel and bed and breakfast establishments, pubs, cycle hire, amusements, Waxham 16th century barn and Beach Rock leisure.

30.6.4 Onshore Receptors in the Vicinity of the Onshore Cable Route and Onshore Project Substation

126. The onshore cable route crosses a number of watercourses, paths, long distance trails and PRoW.

30.6.4.1 Water courses

127. The project is located within three main surface water catchments as described in Chapter 20 Water Resources and Flood Risk. Some areas of these rivers are used for recreational purposes such as fishing, kayaking and swimming. The rivers flow into the Norfolk Broads National Park. The three main catchments shown in Figure 20.2 are:

- The River Bure catchment;
- The River Wensum catchment; and
- The River Wissey catchment.

128. The River Bure and several of its tributaries, including the King's Beck, would be crossed by the onshore cable route. The river rises near Briston, from where it flows in an easterly direction until it reaches Aylsham. From here, it continues to flow to the south east until it enters the sea at Great Yarmouth. The downstream reaches of the river include a wide range of wetland features, including Hoveton Great Broad and Marshes, Woodbastwick Fens and Marshes, Bure Marshes and the Norfolk Broads.

129. The North Walsham and Dilham Canal also forms a tributary of the River Bure, and would be crossed by the proposed onshore cable route at North Walsham. The canal commences at Antingham, from where it flows in an easterly direction towards

Swafield. The canal is joined by several natural watercourses, including Fox's Beck. The watercourse then continues south-east through North Walsham, to Wayford Bridge, near Dilham, where it joins the tidal River Ant. The River Ant continues to flow in a southerly direction until it joins the River Bure at Horning.

130. The River Wensum and several of its tributaries, including the Wendling Beck and Blackwater Drain, would be crossed by the proposed onshore cable route. The river rises near Whissonsett, from where it flows north towards Fakenham before continuing in a broadly south easterly direction towards Norwich. The River Wensum is designated as a Special Area of Conservation (SAC) and Site of Special Scientific Interest (SSSI).
131. The onshore project substation and National Grid substation extension is located within the headwaters of the River Wissey. The Wissey rises to the south of Dereham, from where it drains in a westerly direction towards Necton, eventually joining the River Great Ouse at Denver Sluice, near Downham Market.

30.6.4.2 Paths and non-motorised routes

132. The onshore elements of the project interact with footpaths, cycle routes, and bridleways 45 times. These are described in Appendix 30.1, shown in Figure 30.3 and discussed in section 30.8.2.

30.6.4.3 Long distance trails

133. The Norfolk Coast Path follows the clifftops at the landfall location. The Path runs for approximately 135km through the Norfolk Coast AONB from Hunstanton in west Norfolk round to Sea Palling on the North Norfolk coast and is split into a series of circular walks, short linear walks and long linear walks. It includes a section of the England Coast Path, and also connects with the Peddars Way, Paston Way and Weaver's Way.
134. The Weavers Way and Paston Way long distance trails cross the onshore cable route. The onshore cable route runs parallel to the Marriott's Way for several kilometres near to the town of Reepham and twice crosses it. The Wensum Way is also crossed twice. The Bure Valley Way runs from Aylsham to Hoveton but is not intersected by the onshore cable route at any point. Long distance trails are shown on Figure 30.3.

30.6.4.4 Public Rights of Way and cycle routes

135. The onshore cable route interacts with PROWs and cycle routes in the following ways:
 - Three interactions with Bridleways, which may require a controlled crossing or a temporary closure or diversion;
 - Once with the Coastal Path, which will not require a closure due to the use of HDD duct installation;

- Six interactions with cycle routes, none of which would require closure, diversion, or controlled crossings;
- 28 interactions with footpaths, 24 of which may require temporary closure or diversion or a temporary controlled crossing;
- Seven times with long distance trails, four would not require closure, three may require temporary closure or controlled crossings; and
- One partial overlap with a restricted byway which may require temporary closure or controlled crossing.

136. These are shown on Figure 30.3 and listed in Appendix 30.1.

30.6.4.5 Open access and common land

137. Under the Countryside and Rights of Way (CRoW) Act 2000, the public are not restricted to paths, but can freely walk on mapped areas of mountain, moor, heath, downland and registered common land, known as open access land.

138. There are small areas of open access land adjacent to the onshore cable route, at Bacton Wood, near Hoveton along the A140 and along the River Wensum.

30.6.4.6 Quiet lanes

139. Norfolk was the first country in Britain to introduce Quiet Lanes⁵. These are country lanes where motorists are encouraged to take particular care in the presence of cyclists, walkers and horse riders. These quiet country lanes occupy a triangle of North East Norfolk, from Cromer to Bacton along the coastal area, and inland to North Walsham. Covering some 36 miles they are not a continuous network, but link with many other lightly trafficked lanes, bridle ways, farm tracks and footpaths for users to create their own routes.

140. The entry and exit points of each Quiet Lane are clearly signed and no Heavy Goods Vehicle (HGV) routes are planned along them. The southernmost area is between North Walsham and Bacton, therefore the project does not interact with these lanes.

30.6.4.7 Dark Sky Areas

141. A Dark Sky Area is one with a low level of light pollution where the night sky can be observed for the purpose of star gazing or astronomy. The International Dark-Sky Association (IDA) describes the problem as: *“light pollution is the result of outdoor lighting that is not properly shielded, allowing light to be directed into the eyes and the night sky. Light that shines into the eyes is called glare and light shining into the night sky above the horizon causes sky glow. Lighting can also cause light trespass when it is directed into areas that it is not wanted.”* (IDA, 2018)

⁵ <http://www.norfolkcoastalb.org.uk/mediaps/pdfuploads/pd002116.pdf>

142. The IDA officially recognises 8 Dark Sky Places and Reserves in the UK, none of which are located in Norfolk. However, the Dark Sky Discovery Partnership also lists a significant number of sites across the UK, of which three are located in Norfolk. Two are within the Norfolk Coast AONB. These are at Kelling Heath Holiday Park and Wiveton Downs (Norfolk Coast AONB, 2019) which are 28km and 36km (respectively) from the landfall area. The third is near Attleborough, which is 22km south east of the onshore project substation (Dark Sky Discovery, 2018).

30.6.5 Accommodation in Norfolk

143. An audit of 'Accommodation Stock in English Counties' shows that there are 2,137 serviced and non-serviced establishments in Norfolk County. This equates to 16,654 rooms and 47,935 bed spaces across the county (Visit Britain, 2016). A breakdown per district is provided in Table 30.15, and Table 30.16.

144. The majority of holiday accommodation is centred in and around Norwich, approximately 18km from the nearest point of the onshore cable route. These hotels and guest houses also have the greatest number of rooms. There are over 700 hotels in Norfolk with a total of around 8,000 rooms, with prices averaging about £70 per night. Over half of the available accommodation has 10 rooms or less.

Table 30.15 Room stock in Norfolk districts by rooms

County & districts	Total serviced and non-serviced establishments	Serviced accommodation		Non-serviced accommodation ("collective accommodation establishments")		
		Hotels and similar establishments	Total non-serviced	Holiday dwellings	Tourist campsites	Other collective accommodation
Norfolk	16654	8387	8267	1722	6426	119
Norwich	2489	2399	90	28	0	62
South Norfolk	816	708	108	69	39	0
Great Yarmouth	4139	1474	2665	181	2483	1
Broadland	845	720	125	84	32	9
North Norfolk	4367	1483	2884	906	1949	29
Kings Lynn and West Norfolk	2511	1197	1314	337	959	18
Breckland	1487	406	1081	117	964	0

Table 30.16 Bed space stock in Norfolk districts by accommodation type

County & districts	Total serviced and non-serviced establishments	Serviced accommodation Hotels and similar establishments	Non-serviced accommodation ("collective accommodation establishments")			
			Total Non-serviced	Holiday dwellings	Tourist campsites	Other collective accommodation
Norfolk	47935	18870	29065	10757	17576	732
Norwich	6073	5802	271	127	50	94
South Norfolk	2076	1627	449	366	77	6
Great Yarmouth	13166	3129	10037	3051	6970	16
Broadland	2311	1755	556	467	64	25
North Norfolk	14204	3124	11080	4257	6316	507
Kings Lynn and West Norfolk	7058	2501	4557	1901	2572	84
Breckland	3045	930	2115	588	1527	0

145. There are caravan parks and campsites (shown on Figure 30.2) at Fransham, Two Mills, Mill's Farm, North Walsham, Park Farm, Spring Meadow, Stoneybrook and Lyng. A number of serviced accommodation establishments (primarily guest houses and B&Bs) are present throughout the onshore cable route (Figures 30.2 and 30.4), including at Reepham, North Walsham, Dereham, Aylsham, Necton, Weston Park and around Swanton Morley as well as rural B&Bs and pubs in the surrounding area. Those located around Swanton Morley and Reepham are closest to the onshore cable route, with four situated within the 500m study area. An 18-room hotel is present at North Walsham. Figure 30.4 shows the distribution of serviced accommodation in Norfolk.
146. Self-catering accommodation is present at the coast, including White Cottage, The Paddocks, the Gig House and Orchard Cottage in the vicinity of the Landfall (as shown on Figure 30.2). Along the onshore cable route, self-catering accommodation is located at Boundary Stables, East Rushton Cottages, Twizzle Tree and The Old Rectory in the vicinity of the cable route. Scarning Dale, Cawston, Aylsham, and North Walsham (as shown on Figure 30.2).
147. As part of the local consultation undertaken for the project to date (section 30.3.1), local accommodation providers have been asked to sign-up to express an interest in the project for providing local accommodation to the project teams working in the area, as a means of ensuring people associated with the project are directed to invest locally where appropriate.

30.6.6 Tourist Perceptions of Wind Farms

148. The offshore wind turbines are located far enough from the coast to be beyond the visible range of tourism visitors or recreational users of the coast. However, there still remains a concern that the development of onshore electrical infrastructure would deter visitors and change recreational users' behaviour.
149. To explore this a literature review and study of Trip Advisor reviews has been conducted to identify trends in the perception of tourists of wind farm development.

30.6.6.1 Perceptions of electrical infrastructure

150. There is a very low volume of studies of recreational users' perception of electrical infrastructure. The most comprehensive study found was conducted by the National Grid.
151. In 2014 National Grid commissioned a Business and Recreational User Survey to understand the effect of major infrastructure projects on socio-economic factors. This included surveys in relation to five projects that are in operation, two projects in development, and two control locations where projects neither existed or were planned. Both businesses and recreational users (including local residents and visitors/tourists) were surveyed.
152. The majority of businesses surveyed stated "that they anticipated no impact to their business operations following the commencement of a National Grid Project" (National Grid, 2014).
153. The majority of recreational users surveyed stated that "a National Grid project would not affect their behaviour or spend in an area." (National Grid, 2014)
154. Both survey groups indicated that they felt the main impact was to the area itself due to landscape and visual impacts. However, neither group indicated that this impact would affect their behaviour or the expected performance of their business.

30.6.6.2 Perceptions of wind farm development

155. Although the majority of development in East Anglia is offshore, the visual impact of onshore wind farms is greater and the resulting change in tourist numbers would therefore be assumed to be greater. Any trends in available literature may indicate the potential impact of wind farm development on the tourism industry in East Anglia.
156. Studies found that between 75% (Glasgow Caledonian University, 2008) and 78% (NFO World Group, 2003) of tourists surveyed either had a neutral or positive view of wind farms. As such, between 86.7% (Aitchison, 2004) and 99% (Glasgow Caledonian University, 2008) of people said the construction of wind farms would not affect their decision to return or go to the area in the future. This includes onshore and offshore wind farms. Biggar Economics (2016) undertook a study of sites where onshore wind

farms have been operational for around 10 years and found that there was no measurable change in the performance of the tourism sector at these locations.

157. Studies also considered the size of wind farms and found no common trend. Some people preferred many smaller wind farms and some people fewer larger ones. It is assumed this is to do with locality. All surveys showed concern around cumulative impacts of continued development (NFO World Group, 2003, Glasgow Caledonian University, 2008, and Northumbria University, 2014).

30.6.6.3 Perceptions expressed in review comments

158. Although the project's offshore wind turbines will not be visible from the shore it is worth considering whether wind farm development is leading to an overall negative perception by visitors and if this is being expressed through relevant media.
159. The National Coastal Tourism Academy (NCTA) conducted research into why visitors choose to visit coastal areas (NCTA, 2015). Nearly half of the respondents indicated that they used information from the internet to inform their decision. Therefore, tourists who have not visited an area may be discouraged if negative opinions are expressed through tourism review sites such as Trip Advisor.
160. To understand this, a survey of Trip Advisor reviews has been conducted for coastal assets where there is currently a view of offshore wind turbines (Table 30.17).
161. Total reviews per coastal asset were searched using the terms "windfarm" and "wind turbine". The corresponding reviews were then assessed to understand if the reviewer was expressing a positive, negative, or neutral view. To do this the reviewer had to specifically refer to the windfarm in a positive or negative manner. If they remarked that it was there then they were classed as neutral. The findings of the review are shown in Table 30.18 and summarised in Table 30.19.
162. This search of independent reviews of coastal assets with a view of offshore wind farms shows that of 12,278 reviews (as of 31st of August 2018) only 81 reviewers mention windfarms or wind turbines at all. The opinions are relatively evenly split with 21 positive, 30 negative and 30 neutral.
163. Eighty-one of 12,278 reviewers equates to 0.66% of reviews mentioning wind farms or wind turbines. Thirty of 12,278 reviewers equates to 0.24% reviews expressing a negative opinion of wind farms. This indicates that the majority of visitors (99.44%) to the coast of England do not hold strong enough opinions about the sight of offshore wind farms to comment on them at all. This indicates that people using the internet to research where to visit would not find significant negative opinions of areas where wind farms are being developed.

Table 30.17: Coastal assets with a view of offshore wind farms around England

Windfarm	Coastal assets
Barrow: 7km off Walney Island coast of Cumbria. 30 turbines Ormonde: off Walney Island. 30 turbines West of Duddon Sands Walney Phase 1 and 2	South Walney Nature Reserve
	Earnse Bay
	Silecroft Beach
Burbo Bank + extension, 57 turbines	Ainsdale Beach
	Hilbre Island
	Wallasey Beach
	Wirral Coastal Path
	Leasowe Lighthouse
Teesside: 1.5 km from NE Teesmouth, 27 turbines	Redcar Beach
	Seaton Carew Beach
Westermost Rough: 8km from the coast, approx. 25 km north of Spurn Head, 35 turbines Humber Gateway: 8km off the Holderness Coast, 73 turbines	Withernsea Lighthouse Museum
	Spurn Point
	Hornsea Beach
Lynn and Inner Dowsing: 5km off Skegness, 54 turbines Lincs: 8km off Skegness, 75 turbines	Gibraltar Point
	Skegness Beach
	Ingoldmells Beach
	Anderby Creek
Scroby Sands: 3km NE of Great Yarmouth, 30 turbines	Caister-on-Sea Beach
	Hemsby Beach
	Gorleston Beach
Gunfleet Sands 1 and 2: 7km off Clacton-On-Sea, 48 turbines	Clacton-On-Sea Beach
	Frinton-On-Sea Beach
	Jaywick Beach
Kentish Flats: 8.5km off Whitstable, 30 turbines	Tankerton Beach
	West Beach
	Herne Bay
	Leysdown Beach
Rampion: 13-23km off the Sussex Coast, 116 turbines	Brighton Beach
	Undercliff Walk
	Seaford Beach

Table 30.18: Reviews of coastal assets within sight of an offshore wind farm around England

Beach	Total reviews	Positive	Negative	Neutral	Total
South Walney Nature Reserve	65	1			1
Earnse Bay	75		2		2
Silecroft Beach	20		1		1
Ainsdale Beach	394			1	1
Hilbre Island	90			1	1

Wallasey Beach	7				0
Wirral Coastal Path	5				0
Leasowe Lighthouse	22				0
Redcar Beach	50	2	4	1	7
Seaton Carew Beach	312			4	4
Withernsea Lighthouse Museum	167				0
Spurn Point	193			3	3
Hornsea Beach	228				0
Gibraltar Point	637			1	1
Skegness Beach	645	3	10	4	17
Ingoldmells Beach	27				0
Anderby Creek	141				0
Caister-on-Sea Beach	247	5			5
Hemsby Beach	274				0
Gorleston-on-Sea Beach	1,853	1	1	1	3
Clacton-On-Sea Beach	800	3	4	2	9
Frinton-On-Sea Beach	406	1	5	2	8
Jaywick Beach	165		2		2
Tankerton Beach	170	2	1	5	8
West Beach	29			1	1
Herne Bay	204	1		1	2
Leysdown Beach	143	2			2
Brighton Beach	3,907			2	2
Undercliff Walk	686				0
Seaford Beach	316			1	1
Total	12,278	21	30	30	81

Table 30.19: Opinions expressed by reviewers of coastal assets with a view of offshore wind farms

Factor	Value
Total comments	12,278
Average comments per beach	409
Mention Wind Farms or Wind Turbines	81 (0.66%)

Positive	21 (0.17%)
Negative	30 (0.24%)
Neutral	30 (0.24%)

30.6.6.4 Summary of tourist perceptions

164. Perceptions of tourism visitors and recreational users of an area that are subjected to different aspects of wind farm development have been reviewed. This includes the development of distribution infrastructure, the development of onshore turbines, and the development of offshore turbines. It can be seen that visitors do hold a more negative view of distribution infrastructure than wind turbines and are concerned about the cumulation of impacts to an area. However, there is no evidence to suggest that tourism visitors or recreational users would change their behaviour due to the presence of wind turbines or the infrastructure that supports them.

30.6.7 Anticipated Trends in Baseline Conditions

165. The baseline review of tourism and recreation in section 30.6 provides a clear indication that there are important tourism and recreational assets in the onshore and offshore project areas. The main tourism and recreation assets are protected areas due to their ecological importance or natural beauty. This has led to the development of a confident tourism economy where businesses supplying tourism services rely upon the attractiveness of rural and coastal areas to maintain tourism demand. Considering the emphasis that Visit Norfolk puts on the unspoilt rural and coastal character of the area, it is likely that tourism businesses will continue to rely upon natural assets for their tourism demand.

166. The majority of tourism demand is from UK visitors on day trips or short overnight trips. Demand is seasonal and weather dependent, especially for visitors that are close enough to make a day trip. Visitor surveys show that trips are made to enjoy natural assets. Therefore, it is unlikely that this seasonal relationship will change significantly.

30.6.8 Summary

167. Tourism in Norfolk supports over 65,398 jobs (18.4% of employment) and contributes £3.25 billion to the county's economy. The majority of visitors are from the UK and enjoy outdoor activities. They come to Norfolk because they are attracted by the coastal and natural environment.

168. The majority of the areas that attract these types of visitors are along the coast and just inland. The most significant attractions are Norfolk Coast AONB and The Norfolk Broads National Park. The area between these is also well frequented and contains multiple PRoW, long distance trails and cycle networks enabling people to enjoy the

countryside and coast line. These outdoor attractions also receive a greater proportion of local residents and can therefore be considered important recreational assets as well.

169. The tourism industry in Norfolk is generally confident about future prospects and has a substantial stock (over 700 hotels in Norfolk with a total of around 8,000 rooms) of accommodation available to facilitate it. However, as the majority of people visit for a short duration (mainly during the summer) and predominantly travel from neighbouring areas, Norfolk tourism faces competition from other coastal destinations in South East England. People also perceive that there is a limited amount to do other than outdoor activities. Therefore, the tourism industry is largely reliant on elements that could be significantly affected by the cumulative impact of infrastructure development.
170. Under Scenario 2 the onshore project area crosses five long distance trails, four cycle paths, 23 PRoW footpaths, three PRoW bridleways and three restricted PRoW bridleways. The embedded mitigation developed during the site selection process for the project has resulted in designated sites, heritage assets and urban centres being avoided, as a result potential impacts on tourism and recreational assets are largely avoided. Under Scenario 1 the project will not interact with any PRoWs.
171. The Norfolk Boreas site is at least 73km offshore at its closest point to land and therefore of sufficient distance away to entirely avoid visual impacts on coastal tourism. Further details relating to marine activities are outlined in Chapter 14 Commercial Fisheries, Chapter 15 Shipping and Navigation and Chapter 18 Infrastructure and Other Users. There is potential for some interaction with coastal activities during construction along the offshore cable corridor and at the landfall, although the Norfolk coast does not have a high density of sailing clubs or other marine activity centres.

30.7 Potential Impacts

172. Based on the existing baseline environment for tourism and recreation as presented in section 30.6, this section introduces the potential impacts associated with the project, which could affect the tourism economy as discussed in section 30.4.1. In addition, this section details the embedded mitigation in place to minimise impacts as much as possible.
173. The EIA is being undertaken for the following two alternative scenarios. Therefore, an assessment of potential impacts has been undertaken for each scenario:
 - **Scenario 1** – Norfolk Vanguard proceeds to construction, and installs ducts and other shared enabling works for Norfolk Boreas.

- **Scenario 2** – Norfolk Vanguard does not proceed to construction and Norfolk Boreas proceeds alone. Norfolk Boreas undertakes all works required as an independent project.

174. Where the assessment of the impact is different for Scenario 1 and Scenario 2 a separate assessment is presented under each impact heading. Where this is relevant, Scenario 2 is presented first as it would generally result in the more significant impacts.

30.7.1 Embedded Mitigation

175. Norfolk Boreas Limited has committed to a number of techniques and engineering designs/modifications inherent as part of the project, during the pre-application phase, in order to avoid or reduce a number of impacts as far as possible. Embedding mitigation into the project design is a type of primary mitigation and is an inherent aspect of the EIA process.

176. A range of different information sources has been considered as part of embedding mitigation into the design of the project (for further details see Chapter 5 Project Description, Chapter 4 Site Selection and Assessment of Alternatives, Consultation Report (document reference 5.1) including engineering requirements, feedback from community and landowners, ongoing discussions with stakeholders and regulators, commercial considerations and environmental best practice.

177. The following sections outline the key embedded mitigation measures relevant for this assessment. The project wide embedded mitigation measures are presented in Table 30.20. Where embedded mitigation measures have been included in the design of the project with specific regard to tourism and recreation these are described in Table 30.21.

Table 30.20 Embedded mitigation

Parameter	Mitigation measures embedded into the project design	Notes
Project Wide		
Commitment to High Voltage Direct Current (HVDC) technology	<p>Commitment to HVDC technology minimises environmental impacts through the following design considerations;</p> <ul style="list-style-type: none"> • HVDC requires fewer cables than the HVAC solution. During the duct installation phase under Scenario 2 this reduces the cable route working width for Norfolk Boreas to 35m from the previously identified worst case of 50m. As a result, the overall footprint of the onshore cable route required for the duct installation phase is reduced from approx. 300ha to 210ha; • The width of permanent cable easement is also reduced from 25m to 13m; 	Norfolk Boreas Limited has reviewed consultation received and in light of the feedback, has made a number of decisions in relation to the project design. One of these decisions is to deploy HVDC technology as the export system.

Parameter	Mitigation measures embedded into the project design	Notes
	<ul style="list-style-type: none"> Removes the requirement for a cable relay station as permanent above ground infrastructure; Reduces the maximum duration of the cable pulling phase from three years down to two years; Reduces the total number of jointing pits for Norfolk Boreas from 450 to 150; and Reduces the number of drills needed at trenchless crossings (including landfall). 	
Site Selection	<p>The project has undergone an extensive site selection process which has involved incorporating environmental considerations in collaboration with the engineering design requirements. Considerations include (but are not limited to) adhering to the Horlock Rules (for explanation see Chapter 4 Site Selection and Alternatives) for the onshore project substation and associated infrastructure, a preference for the shortest route length (where practical) and developing construction methodologies to minimise potential impacts.</p> <p>Key design principles from the outset were followed (wherever practical) and further refined during the EIA process, including;</p> <ul style="list-style-type: none"> Avoiding proximity to residential dwellings; Avoiding proximity to historic buildings; Avoiding designated sites; Minimising impacts to local residents in relation to access to services and road usage, including footpath closures; Utilising open agricultural land, therefore reducing road carriageway works; Minimising requirement for complex crossing arrangements, e.g. road, river and rail crossings; Avoiding areas of important habitat, trees, ponds and agricultural ditches; Installing cables in flat terrain maintaining a straight route where possible for ease of pulling cables through ducts; Avoiding other services (e.g. gas pipelines) but aiming to cross at close to right angles where crossings are required; Minimising the number of hedgerow crossings, utilising existing gaps in field boundaries; Avoiding rendering parcels of agricultural land inaccessible; and Utilising and upgrading existing accesses where possible to avoid impacting undisturbed ground. 	<p>Constraints mapping and sensitive site selection to avoid a number of impacts, or to reduce impacts as far as possible, is a type of primary mitigation and is an inherent aspect of the EIA process. Norfolk Boreas Limited has reviewed consultation received to inform the site selection process (including from local communities, landowners and regulators) and in response to feedback, has made a number of decisions in relation to the siting of project infrastructure. The site selection process is set out in Chapter 4 Site Selection and Assessment of Alternatives.</p>
Long HDD at landfall	Use of long HDD at landfall to avoid restrictions or closures to Happisburgh beach and retain open access to the beach during construction. Norfolk Boreas Limited	Norfolk Boreas Limited has reviewed consultation received and in response to feedback, has made a number of

Parameter	Mitigation measures embedded into the project design	Notes
	have also agreed to not use the beach car park at Happisburgh South.	decisions in relation to the project design. One of those decisions is to use long HDD at landfill.
Scenario 1		
Strategic approach to delivering Norfolk Boreas and Norfolk Vanguard	<p>Under Scenario 1, onshore ducts will be installed for both projects at the same time, as part of the Norfolk Vanguard construction works. This would allow the main civil works for the cable route to be completed in one construction period and in advance of cable delivery, preventing the requirement to reopen the land in order to minimise disruption. Onshore cables would then be pulled through the pre-installed ducts in a phased approach at later stages.</p> <p>In accordance with the Horlock Rules, the co-location of Norfolk Boreas and Norfolk Vanguard onshore project substations will keep these developments contained within a localised area and, in so doing, will contain the extent of potential impacts.</p>	The strategic approach to delivering Norfolk Boreas and Norfolk Vanguard in order to minimise environmental impacts has been a consideration from the outset.
Scenario 2		
Duct Installation Strategy	The onshore cable duct installation strategy is proposed to be conducted in a sectionalised approach in order to minimise impacts. Construction teams would work on a short section (approximately 150m length) and once the cable ducts have been installed, the section would be back filled and the top soil reinstated before moving onto the next section. This would minimise the amount of land being worked on at any one time and would also minimise overall disruption.	This has been a very early project commitment. Chapter 5 Project Description provides a detailed description of the process.
Trenchless Crossings	<p>Commitment to trenchless crossing techniques to minimise impacts to the following specific features;</p> <ul style="list-style-type: none"> • Wendling Carr County Wildlife Site; • Little Wood County Wildlife Site; • Land South of Dillington Carr County Wildlife Site; • Kerdiston proposed County Wildlife Site; • Marriott's Way County Wildlife Site / Public Right of Way (PRoW); • Paston Way and Knapton Cutting County Wildlife Site; • Norfolk Coast Path; • Witton Hall Plantation along Old Hall Road; • King's Beck; • River Wensum; • River Bure; • Wendling Beck; • Wendling Carr; 	A commitment to a number of trenchless crossings at certain sensitive locations was identified at the outset. However, Norfolk Boreas Limited has committed to certain additional trenchless crossings as a direct response to stakeholder requests.

Parameter	Mitigation measures embedded into the project design	Notes
	<ul style="list-style-type: none"> • North Walsham and Dilham Canal; • Network Rail line at North Walsham that runs from Norwich to Cromer; • Mid-Norfolk Railway line at Dereham that runs from Wymondham to North Elmham; and • Trunk Roads including A47, A140, A149. 	

Table 30.21 Embedded mitigation for tourism and recreation

Parameter	Mitigation measures embedded into the project design	Notes
Commitment to no overhead lines	The commitment to use underground cable systems for the onshore cable route over the 60km route between the landfall and electrical connection point, avoids the requirement to construct new overhead lines. The mitigation embedded in this approach will lead to notably reduced impacts on landscape and visual receptors during the construction phase and practically no impacts during the operational phase. It also notably reduces the potential for the onshore cable route to contribute to significant cumulative effects. The construction works will be notably smaller scale than those required to install new overhead lines and post construction the onshore cable route will have a negligible impact on landscape and visual receptors as the components will be buried under ground, with the exception of the small scale link boxes.	
Site selection	<p>Tourism and recreation receptors were considered as part of the constraints mapping process. Through constraints mapping and site selection, overlap and direct interaction with the following key sites has been avoided where practicable:</p> <ul style="list-style-type: none"> • Major settlements; • Tourism assets including: <ul style="list-style-type: none"> ○ Designated sites (including European Protected Sites, The Broads National Park, Local Nature Reserves, National Nature Reserves, The North Norfolk AONB and the Heritage Coast); ○ Heritage assets; ○ Caravan parks; ○ Blue flag beaches; ○ Places of worship; and ○ Golf courses. 	
Lighting	The onshore project substation has been designed so that it does not require permanent lighting, other than during infrequent inspection and maintenance activities (within working hours only)	
Community Engagement	<p>Community engagement is ongoing and will continue after submission of the DCO and throughout the development of the project.</p> <p>Stakeholders in relation to tourism and recreation that have already been engaged with include:</p> <ul style="list-style-type: none"> • Local Authorities; • Landowners; • Local communities; and • Business owners in the vicinity of the onshore infrastructure. 	Section 30.3 details the community consultation undertaken by the project thus far.

30.7.2 Monitoring

178. Tourism impacts potentially arise due to effects outlined in other chapters such as Chapter 25 Noise and Vibration or Chapter 26 Air Quality. Therefore, managing impacts to community infrastructure will be reliant upon managing these impacts.
179. The development of the detailed design and a Code of Construction Practice (CoCP) (DCO Requirement 20) (an outline CoCP (Document reference has been submitted as part of the final DCO submission) will refine the impacts of the worst case assumptions assessed in this EIA for these associated impacts. It is recognised that monitoring of these impacts determinants is an important element in the management and verification of the actual project impacts. The requirement for and appropriate design and scope of monitoring will be agreed with the appropriate stakeholders and included within the CoCP and the Construction Method Statement (CMS) commitments (DCO Requirement 20(2)(g)) prior to construction works commencing.

30.7.3 Worst Case

180. Chapter 5 Project Description details the design parameters of the project using the Project Design Envelope (also known as the Rochdale Envelope) approach for the ES. This section identifies those parameters during construction, operation and decommissioning relevant to potential impacts on tourism and recreation. Where the worst case differs between Scenario 1 or Scenario 2, this is detailed below.
181. Through consultation with Norfolk County Council, it has been agreed that the tourism and recreation assessment will only consider impacts due to onshore works. As described in section 30.5 this is because it is assumed offshore workers would be housed offshore during construction and will likely access the offshore site from areas other than Norfolk. This assumption is supported by the supply chain analysis included in Chapter 31 Socio-Economics.
182. During offshore construction, there will be a requirement for a dockside marshalling facility, where components for the offshore infrastructure will be stored prior to loading onto construction barges or vessels. These facilities will be chosen with regard to the location of fabricators and original equipment manufacturers (to minimise transportation requirements) and availability of suitable dockside space. A decision on these primary facilities for the project has not yet been made and this would be decided post-consent.
183. The primary base for the operations and maintenance (O&M) facility for Norfolk Boreas and Norfolk Vanguard would likely be a suitable port facility on the coast of East Anglia. At present Norfolk Boreas Limited and Norfolk Vanguard Limited are in

negotiations with Peel Ports about a strategic wind farm investment for an offshore operations base on the Norfolk coast; however, at time of writing the precise port is yet to be confirmed.

184. Effects due to the O&M facility have not been considered in this assessment as these will be subject to a separate consent application.

30.7.3.1 Scenario 1

185. Under Scenario 1, the offshore and onshore cabling infrastructure for Norfolk Boreas and Norfolk Vanguard will be co-located. Details of this are provided in Table 30.23. During construction for Norfolk Vanguard the onshore cable ducts for Norfolk Boreas will be installed. This will avoid reopening cable trenches, and also allow for re-use of some shared infrastructure (such as mobilisation areas) and enabling works, thereby minimising overall impacts and disruption. Norfolk Boreas will however still be required to undertake its own Long Horizontal Directional Drilling at Landfall.
186. Based on the transport modelling in Chapter 24 Traffic and Transport, a worst case assumption assumes that the primary works stage will be during 2024 and 2025 with peak employment of 100 people per week during the first three quarters (Q1 to Q3) of 2025. Cable pulling is assumed to be undertaken during 2026 and 2027 with an expected peak employment of 170 during the second quarter (Q2) of 2026. Indicative employee requirements at different parts of the onshore project area are as shown Table 30.22 in below.

Table 30.22 Assumed number of employees at different locations of onshore project area

Location	Indicative number of employees
National Grid extension	50
Onshore project substation	50
Each cable pulling section	10

Table 30.23 Worst case assumptions Scenario 1

Worst case assumptions			
Parameter	Worst case criteria	Worst case definition	Notes
Norfolk Boreas site			
Construction	Location i.e. closest point to shore	72km (closest point) from the coast	
Offshore cable corridor			
Construction	Maximum number of export cables	4 (2 x HVDC pairs in 2 trenches)	
	Maximum export cable corridor length	100km	
	Duration	Approximately 24 months spanning over a 3 year period (excluding preconstruction activities which could	

Worst case assumptions			
Parameter	Worst case criteria	Worst case definition	Notes
		last approximately 9 months)	
	Minimum safe passing distance around cable installation vessels	500m construction vessel safety	
Landfall			
Construction	Maximum temporary works duration	20 weeks	Similar to location of Norfolk Vanguard but cannot share compounds Assumes 2 drilling rigs working in parallel
	Working hours	7am-7pm, 7 days a week.	
	Expected noise level	See Chapter 25 Noise and Vibration, section 25.8.5	
	Length of drill	1,000m	Indicative length
	Minimum safe passing distance around cable installation vessels	500m construction vessel safety	Shallow draft vessel will be located beyond intertidal area.
Onshore cable route			
Construction	Maximum onshore cable route length	60km	
	Onshore construction employment	70% of workers from outside Norfolk/Suffolk area	
	Total cable pulling construction window	2026 - 2027	
Permanent jointing pits	Maximum number and required dimensions	Assume 150 at 90m ² and 2m deep each	Spaced approximately one per circuit per 800m cable.
Permanent link boxes	Maximum number	Assumes 24	1 link box per circuit typically placed at 5km intervals.
	Access	Periodic access to installed link boxes may be required for inspection, estimated to be annually.	
Onshore project substation			
Construction	Peak onshore construction employment	Peak employment of 170 during Q2 of 2026 100% from outside the Norfolk / Suffolk area	It is expected that during standard construction works, the onshore workforce will be an average of 100 people.
	Maximum land take for construction works at the onshore project substation	95,000m ²	Operational area for Substation 250m x 300m = 75,000m ² plus additional temporary

Worst case assumptions			
Parameter	Worst case criteria	Worst case definition	Notes
			construction compound 20,000m ² .
	Maximum land take for temporary works area at Spicers Corner	10,000m ²	Spicers Corner compound 100m x 100m
	Maximum duration of construction works	30 months	Indicative construction window 24 months. Assumes piling might be required during construction of foundations
Operation	Maximum land take for permanent footprint area	75,000m ²	Operational footprint 250m x 300m No illumination at night
	Maximum height of onshore project substation	19m buildings with 25m lightning protection masts, fences 3.4m high.	
	Maximum access requirement to onshore project substation	1 visit per week, site lighting required during maintenance visits only	
	Expected noise level	See Chapter 25 Noise and Vibration section 25.8.5.	
Decommissioning	No decision has been made regarding the final decommissioning policy for the onshore project substation, as it is recognised that industry best practice, rules and legislation change over time. However, the onshore project equipment will likely be removed and reused or recycled. The detail and scope of the decommissioning works will be determined by the relevant legislation and guidance at the time of decommissioning and agreed with the regulator. A decommissioning plan will be provided. As such, for the purposes of a worst case assumption, impacts as for the construction phase are assumed.		
National Grid extension and overhead line modification			
Construction	Maximum land take for construction works at substation extension	95,250m ²	Operational area (135m x 150m) plus temporary compound adjacent to eastern extension site (150m x 200m) and compound adjacent to the Norfolk Vanguard Extension (300m x 150m).
	Maximum duration of construction works	30 months	Indicative construction timing 24 months
Operation	Maximum land take for substation extension - permanent footprint	20,250m ²	Permanent extension footprint to the east 135m x 150m
	Maximum height of equipment	15m	Not normally illuminated other than

Worst case assumptions			
Parameter	Worst case criteria	Worst case definition	Notes
	Maximum height of perimeter fencing	4m	infrequent inspection and maintenance activities (during working hours only). No illumination required at night.
	1 visit per month, site lighting required during maintenance visits only	1 visit per month, site lighting required during maintenance visits only	

30.7.3.2 Scenario 2

187. Under Scenario 2 Norfolk Boreas will be responsible for constructing the entire onshore infrastructure for the project. Details of this are presented in Table 30.25. It is expected that the onshore cable route will be constructed through 2023 and 2026. The sequencing of these works and the level of parallel work dictate the upper and lower limits of peak employment. It is expected that peak employment may vary between 250 and 420 people during the summer months of these years depending on how the works are sequenced and how many tasks are conducted in parallel (Chapter 31 Socio-Economics provides indicative labour requirements throughout the onshore works). Indicative employee requirements at different parts of the onshore project area are as shown in Table 30.24 below.

Table 30.24 Assumed number of employees at different locations of onshore project area

Location	Indicative number of employees
National Grid extension	50
Onshore project substation	50
Each route section being worked for duct installation	20
Each trenchless crossing site setup and strip down	10
Each trenchless crossing during the drilling operation	5

188. As a worst case, it is assumed that works will be undertaken between February and November which is when tourism and recreation activities are likely to be highest. As a worst case assumption for impacts on accommodation availability, a peak of 420 people during the third quarter of 2023 will be used.

Table 30.25 Worst case assumptions Scenario 2

Worst case assumptions			
Parameter	Worst case criteria	Worst case definition	Notes
Offshore wind farm sites			
Construction	Location i.e. closest point to shore	72km (closest point) from the coast	
Offshore cable corridor			
Construction	Maximum number of export cables	4 (2 x HVDC pairs in 2 trenches)	
	Maximum export cable corridor length	100km	
	Duration	Approximately 14 months	

Worst case assumptions			
Parameter	Worst case criteria	Worst case definition	Notes
	Minimum safe passing distance around cable installation vessels	500m construction vessel safety	
Landfall			
Construction	Maximum temporary works duration	20 weeks	Similar to location of Norfolk Vanguard but cannot share compounds
	Working hours	7am-7pm, 7 days a week.	
	Expected noise level	See Chapter 25 Noise and Vibration, section 25.8.5	
	Length of HDD	1,000m	Indicative length
	Minimum safe passing distance around cable installation vessels	500m construction vessel safety	Shallow draft vessel will be located beyond intertidal area.
Onshore cable route			
Construction	Maximum onshore cable route length	60km	It is expected that during most construction works the onshore workforce will be an average of 20-30 people per week per location.
	Maximum onshore cable working width	35m	
	Onshore construction employment	70% of workers from outside Norfolk/Suffolk area	
	Pre-construction works	2021-2022	
	Total window of ducting installation	2023-2024	
	Total cable pulling, jointing and commissioning window	2025-2026	
	Total maximum onshore construction window	2021-2026 Approximately 6 years	
Mobilisation Areas	Maximum number and required dimensions	Assumes 14 at 10,000m ²	Dimensions 100m x 100m. 14 including area at Spicers Corner to be used for substation.
Permanent jointing pits	Maximum number and required dimensions	Assume 150 at 90m ² and 2m deep each	Spaced approximately one per circuit per 800m cable.
Permanent link boxes	Maximum number	Assumes 24	1 link box per circuit typically placed at 5km intervals.
	Access	Periodic access to installed link boxes may	

Worst case assumptions			
Parameter	Worst case criteria	Worst case definition	Notes
		be required for inspection, estimated to be annually.	
Onshore project substation			
Construction	Onshore construction employment	100% from outside the Norfolk / Suffolk area	It is expected that during standard construction works, the onshore workforce will be an average of 100 people.
	Maximum land take for construction works at onshore project substation	95,000m ²	Substation compound 250m x 300m = 75,000m ² plus additional temporary construction compound 20,000m ² .
	Maximum duration of construction works	30 months	Indicative construction window is 24 months
	Maximum land take for access road	10,800m ²	Dimensions 1.8km x 6m
Operation	Maximum land take for permanent footprint area	75,000m ²	Land requirement to the perimeter fence is 250m x 300m. No illumination at night
	Maximum height of onshore project substation	19m building with 25m lightning protection masts, fences 3.4m high.	
	Maximum access requirement to onshore project substation	1 visit per week, site lighting required during maintenance visits only	
	Expected noise level	See Chapter 25 Noise and Vibration, section 25.8.5.	
Decommissioning	No decision has been made regarding the final decommissioning policy for the onshore project substation, as it is recognised that industry best practice, rules and legislation change over time. However, the onshore project equipment will likely be removed and reused or recycled. The detail and scope of the decommissioning works will be determined by the relevant legislation and guidance at the time of decommissioning and agreed with the regulator. A decommissioning plan will be provided. As such, for the purposes of a worst case assumption, impacts as for the construction phase are assumed.		
National Grid extension and overhead line modification			
Construction	Maximum land take for construction works area at substation extension	97,500m ²	Operational area (200m x 150m) plus temporary compounds (150m x 150m and 300m x 150m).
	Maximum land take for temporary works area – overhead line	176,310m ²	
	Maximum duration of construction works	30 months	Indicative construction timing 24 months
	Maximum height of temporary towers	45m	3 No.

Worst case assumptions			
Parameter	Worst case criteria	Worst case definition	Notes
Operation	Maximum land take for substation extension - permanent footprint	30,000m ²	Permanent western extension footprint 200m x 150m
	Maximum height of equipment	15m	Not normally illuminated other than infrequent inspection and maintenance activities (during working hours only). No illumination required at night.
	Maximum height of perimeter fencing	4m	
	Maximum land take for overhead line permanent footprint	Up to 1,000m ²	
	Maximum height of new/replacement towers	55m	2 No.
	Access		1 visit per month, site lighting required during maintenance visits only

189. Chapter 5 Project Description outlines the timings to be assessed in relation to the phasing of the works. In all cases for socioeconomic; the two phase option, where cables are installed in two consecutive years to facilitate the commissioning of the offshore wind turbine planting, is assumed to be the worst case. This is due to the increased length of time that receptors will be potentially impacted by the project.

30.7.4 Potential Impacts during Construction

190. Within this section, all potential impacts that are common to both scenarios have been assessed. Where the assessment of the impact is different for Scenario 1 and Scenario 2, a separate assessment is presented under each impact heading. Where this is relevant, Scenario 2 is presented first as it requires the most construction works and therefore has the greatest potential for impacts.

30.7.4.1 Impact 1: Increased marine construction traffic affecting attractiveness of the coastline for tourism and recreation.

30.7.4.1.1 Scenario 1 and Scenario 2

191. Perception of shipping by visitors can be negative, viewed as a man-made addition to the environment. In other cases, the presence of shipping offshore can be viewed by some observers as a positive feature of interest. The potential impact in this instance is the same under each scenario.

192. There is the potential for temporary presence of construction vessels on passage to or from the offshore project area and loadout port to pass the North Norfolk coast and hence be visible to tourists and recreational users off the coast. Construction vessels may be travelling from Great Yarmouth, Lowestoft, or from sites outside of Norfolk. If

vessels travel from Great Yarmouth, Lowestoft or ports in Suffolk and further south, they would not pass the North Norfolk Coast. If vessels travel from ports to the north (such as Hull or Grimsby), it is assumed they would be outside the visual range of tourists on the North Norfolk Coast due to the distance offshore of the Norfolk Boreas site.

193. To enable long HDD at the landfall (selected so as to remove the need for beach and coast path closure), there will be a requirement for vessels located approximately 200 to 300m offshore. The closest vessels to shore would be one cable laying vessel and one guard vessel at the cable pulling area for approximately one month per phase of construction. The total duration would be two months in two separate, one month phases, spaced by up to a year (as a worst case).
194. A Project Environmental Management Plan (PEMP) will be prepared and agreed in consultation with all relevant stakeholders. An outline PEMP (Document reference 8.14) has been produced and submitted alongside the ES and DCO submission. This specifies all offshore environmental mitigation and will include details on a Construction Liaison Committee who would work with local businesses and stakeholders to minimise adverse impacts to an acceptable level.
195. When vessels are engaged in nearshore cable installation works, the concentration and activity of vessels close to the shore would appear at variance with the existing character and this would add a notable effect to users of the coastal beach and path assets. The sensitivity of tourist and recreational receptors to the presence of additional offshore shipping is considered to be low and it is not anticipated to change people's use of the coast for tourism and recreation activities. It is also plausible that some visitors and locals would be interested in the process which may add to their experience. Any effects would be transient and temporary in nature, and due to the baseline of marine activity in the area are assessed to be of negligible magnitude and of **negligible** significance.

30.7.4.2 Impact 2: Disruption of marine recreational activities including sailing and other water sports

30.7.4.2.1 Scenario 1 and Scenario 2

196. This potential impact is the same under both scenarios.
197. As discussed in Chapter 15 Shipping and Navigation, recreational vessel (classed as 2.5 to 24m length) movements were very low during the marine traffic surveys. The ability to transit through the buoyed construction area will continue and embedded mitigation measures for the project will ensure that navigation and other information concerning the project is communicated through the appropriate channels. When these measures are combined with the low number of vessels, and consultation

responses which indicated that there are no concerns over the project; the displacement of recreational vessels from the proposed project is concluded to have no perceptible effects. Chapter 15 Shipping and Navigation concludes that there is **no impact**.

198. Mitigation relevant to marine tourism and recreation activities will be discussed and agreed with appropriate stakeholders. It is expected that this would include the application of offshore safety zones, on-going consultation, and distribution of relevant information via Notice to Mariners and other appropriate media, and compliance with international maritime regulations.
199. Works within the offshore cable corridor will be transient and temporary in nature, and assuming the embedded mitigation identified in Chapter 15 Shipping and Navigation (including the continued ability to transit through the buoyed construction area and promulgation of information) any disruption or risk of collision is considered to be of low magnitude, and consequently the impact assessment is assessed to be **negligible**. Full details of the Navigation Risk Assessment are provided in Appendix 15.1 to Chapter 15 Shipping and Navigation.

30.7.4.3 Impact 3: Deterioration to bathing water / Blue Flag beaches and resulting effect on tourism and recreation

30.7.4.3.1 Scenario 1 and Scenario 2

200. There is a possibility that construction at landfall could lead to increased sediment plumes that would decrease water quality at beaches. There is a small chance that this would be negatively perceived by tourists and an even smaller chance that this perception would deter tourists from re-visiting the area or reducing their expenditure.
201. Visit Norfolk information shows that visitor numbers have been increasing year on year and North Norfolk District Council note that the coastal area is dependent on tourism income and that this induces further income. Furthermore, perception surveys suggest that Norfolk is primarily regarded for its beaches and countryside, therefore if the quality of these were affected it may have an effect on tourist perception.
202. Under both scenarios Norfolk Boreas would undertake long HDD at landfall using two drill rigs and an offshore shallow draft vessel. No vehicular access to the beach would be required. Therefore, the potential impacts would be the same under both scenarios.
203. There are two Designated Bathing Waters within 10km of the Happisburgh South landfall (Chapter 9 Marine Water and Sediment quality). Whilst compliance with the Bathing Waters Directive is not dependent on meeting requirements in relation to

suspended sediment concentrations, the presence of a plume during the bathing season is undesirable.

204. Landfall and associated nearshore cable construction works have the potential to cause perceptions of deteriorated quality of the Blue Flag beaches, potentially leading to loss of business in these areas.
205. As discussed under Impact 4 of Chapter 9 Marine Water and Sediment Quality: *Deterioration in water quality due to works at the offshore export cable landfall*:
- Suspended sediment concentrations would be elevated above prevailing conditions, but are likely to remain within the range of background nearshore levels (which will be higher close to the coast because of increased wave activity) and lower than those concentrations that would develop during storm conditions;
 - Any suspended sediment plumes arising would be localised to within approximately 1km of the release location;
 - Sediment size is dominated by sand sized material which would settle out of suspension rapidly; and
 - The two nearest designated bathing waters are located at least 3km from the proposed landfall location and the cable corridor is located approximately 1.5km from the bathing water at Sea Palling at the closest point.
206. The worst case scenario changes in suspended sediment concentrations are predicted to be low in magnitude and the sensitivity of the water quality in the offshore project area is considered to be low. Baseline conditions of suspended sediment concentrations are expected to return to normal rapidly following cessation of activity and therefore any impact would only be present during the installation process. Therefore, the overall worst case impact is predicted to be at worst a **minor adverse**. Notably, due to the limited temporal and spatial extent of sediment plumes combined with the temporary nature of the work and the distance from designated beaches, it is considered unlikely that tourists would perceive a change in bathing water quality.

30.7.4.4 Impact 4: Disruption to onshore coastal tourism and recreational assets

207. The impacts above consider receptors using the coast and coastal water whereas this impact considers the tourism industry inland from the coast.
208. Within this section, the tourism and recreation receptors are common to both scenarios, as are the processes and construction works at landfall. Therefore, the impact pathways, mitigation and impact significance is also common to both scenarios, and they are discussed together below.

30.7.4.4.1 *Tourism receptors – Scenario 1 and Scenario 2*

209. As described in section 30.6.1, the Norfolk tourism sector has a tourism supply side consisting of businesses with high confidence in future demand (Table 30.13). Tourism demand appears to be growing (Table 30.12) mainly due to domestic day visitors (Table 30.12, Plate 30.1, and section 30.6.1.5). These visitors come to enjoy natural assets such as the North Norfolk Coast AONB and the rural character of the area.
210. The location of the landfall and onshore cable route have been designed to avoid the high value assets of the Norfolk Coast AONB and the Norfolk Broads National Park.
211. A number of hotels, self-catering cottages and camping and caravan parks are located in the vicinity of the landfall at Happisburgh South, and along the cable route. These establishments enjoy regular bookings throughout the year (Plate 30.1), which can accommodate tourists in the area who may in turn utilise local pubs, restaurants, cafes and local tourist attractions. Following
212. Table 30.5 these establishments would be considered low value individually but as communities or clusters of assets are considered to be of medium value.
213. Tourism communities correlate with populated areas located around landfall and along the onshore cable route. The route selection has been designed to avoid the location of such communities. A number of individual assets are located south of the landfall, accessed by Cart Gap Road, these are Smallsticks Café (approximately 670m away), Sussex Crafts (approximately 420m away) and the RNLI Lifeboat Station (approximately 600m away). The Happisburgh Lighthouse is located approximately 60m north of the landfall area, with pubs and cafes located more widely in Happisburgh. Potential impacts on Happisburgh Lighthouse are also considered within Chapter 28 Onshore Archaeology and Cultural Heritage and Chapter 29 Landscape and Visual Impact Assessment.

30.7.4.4.2 *Recreational receptors - Scenario 1 and Scenario 2*

214. The beach is used for local recreational purposes. It is assumed that access to both the beach and coastal path is an important element of local residents' quality of life. Following criteria in
215. Table 30.5, as a national asset, the Norfolk Coast Path is considered to have high sensitivity and the beach is considered to be of medium value and sensitivity.

30.7.4.4.3 *Impact pathways and mitigation - Scenario 1 and Scenario 2*

216. Potential sources of disturbance to the tourism and recreation receptors during construction are:
- Traffic (both congestion and noise) (discussed further in section 30.7.4.9);

- Temporary disturbance to establishments closest to landfall due to change in environment;
- Potential reduction in availability of holiday accommodation at landfall due to construction workers;
- Temporary obstruction of assets or diversion of PRoWs due to construction (however, direct impacts to the Norfolk Coast Path will be avoided through the use of HDD at landfall); and
- Potential temporary indirect construction impacts due to noise, vibration, dust, and visual impacts.

30.7.4.4.4 *Impact significance Scenario 1 and Scenario 2*

217. Noise impacts are discussed in detail in Chapter 25 Noise and Vibration. These show a resultant **negligible** impact significance at landfall (with appropriate mitigation measures in place).
218. Dust impacts are discussed in Chapter 26 Air Quality and impacts to human receptors within 350m of construction activities are assessed to be **not significant** following implementation of the mitigation as outlined in the chapter.
219. Impacts on landscape are discussed in Impact 5 (section 30.7.4.5) and detailed in Chapter 29 Landscape and Visual Impact Assessment. At landfall these are considered to be **not significant**.
220. Therefore, the remaining potential pathway is due to traffic congestion as discussed in Impact 9, section 30.7.4.9.
221. At landfall, long HDD has been selected to avoid the need for closures of the coastal path and the beach at Happisburgh. Therefore, there will be **no direct impact** on recreational assets.
222. The drilling duration for the installation of ducts at the landfall under the worst case assumptions for both scenarios is 3 months, with up to two 50m x 60m temporary site compounds in place for 6 months. This assumption does not include 24 hour working which would reduce total duration to 5 months. Installation of the ducts will be undertaken in one phase and cable pulling would be undertaken in one or two phases. However, with appropriate mitigation measures in place, no noise and vibration impacts are anticipated as a result of these works (see Chapter 25 Noise and Vibration).
223. Due to the presence of a temporary works site at landfall there is anticipated to be temporary disruption of low magnitude to the recreation assets in the immediate vicinity of the landfall due to traffic and visual disruption. The impacts are localised, short term and reversible. The resultant impact on recreation receptors is **minor**

- adverse** because the sensitivity/value of the recreational receptors are medium and the magnitude of effect is low.
224. Due to temporary disturbance during construction activities, there is the potential for establishments closest to landfall to suffer a temporary impact due to a change in the surrounding environment if appropriate mitigation is not implemented. It is plausible that this may have marginal consequences to surrounding businesses reliant on the trade they bring. The resultant impact on tourism receptors would be of **minor adverse** significance because the sensitivity/value of the recreational receptors are medium and the magnitude of effect is low.
225. With construction workers working at landfall, there is a potential for an influx of people staying in holiday accommodation near the landfall, leading to a reduction in availability, conceivably leading to marginal consequences to surrounding businesses as above. However, the low numbers of workers associated with the landfall, and the relatively short timescale for the landfall works is expected to result in a **negligible** impact on the availability of holiday accommodation and therefore tourism receptors.
226. Ongoing consultation will be continued with the North Norfolk District Council and key tourism asset owners around the landfall location post-consent to ensure open and effective communication with local residents and businesses and that all management plans put in place are acceptable and sufficient to help mitigate any potential impacts throughout the construction phase.
227. A Construction Liaison Committee will be established to support liaison with local businesses with the aim to identify potential opportunities associated with the construction of the project and to ensure construction related disturbance or access constraints to tourist and recreation facilities (e.g. local accommodation providers, pubs, coffee shops, the lighthouse and RNLI lifeboat station) are kept to a minimum.
228. As detailed in Chapter 24 Traffic and Transport, a Traffic Management Plan will be prepared and agreed with the relevant local authorities prior to construction activities commencing (DCO Requirement 21), an outline version of this plan has been submitted with the DCO application (document reference 8.8). The plan would minimise disturbance to local communities and tourists, and seek to avoid serious disruption and indirect impact upon tourism and recreational receptors.
229. An Outline CoCP (Document reference 8.1) has been prepared and submitted as part of the DCO application. The final CoCP will detail methodologies to be used during onshore construction activities, including all requirements for provision of alternative linear recreation routes including long distance trails, cycle routes, PRow and local footpath networks where appropriate.

230. As detailed in Chapter 29 Landscape and Visual Impact Assessment, an Outline Landscape and Environmental Management Strategy (OLEMS) (Document reference 8.7) has been prepared and submitted as part of the DCO application. This document includes mitigation measures proposed for ecology and how they would fit into the wider approach to managing potential landscape impacts during construction and operation of the project. This strategic approach to the management of ecology and landscape will ensure that adverse impacts to nature- and wildlife-related tourism activities are minimised.
231. The Traffic Management Plan (TMP), CoCP and OLEMS will be developed in association with the Local Planning Authority and through continued engagement with the tourism asset owners to ensure their operations can continue during the construction period. Therefore, with the above mitigation measures in place, it is anticipated that the magnitude of the impact to tourism assets will be reduced to negligible and therefore the residual impact will be reduced to **negligible**.

30.7.4.5 Impact 5: Visual impacts of construction activity to tourism and recreational receptors

232. Within this section the source of visual impact can be categorised in to construction activity occurring at the landfall, during duct installation (under Scenario 2 only), and at the onshore project substation.

30.7.4.5.1 Scenario 2

233. The highest density of tourism and recreation receptors is likely to be in the vicinity of the landfall and the coastal hinterlands. Due to embedded mitigation of the project including using a long HDD at landfall and the selection of HVDC technology, the potential visual impacts to these receptors during construction have largely been removed. There remains a localised and temporary visual impact due to the temporary work site but this would be for a short duration (20 weeks) and reversible. Therefore, it has a low magnitude of effect on tourism and recreation receptors.
234. The duct installation process along the cable route is sequential so impacts are temporary, localised (See Chapter 5 Project description for further detail), and reversible due to the commitment to reinstate the land. Therefore, the magnitude is also low.
235. The main potential for visual impacts is at the onshore project substation however the density and thus sensitivity of tourism and recreation assets within this area are low. Visual impacts are discussed in detail in Chapter 29 Landscape and Visual Assessment.
236. Impacts to heritage sites are assessed in Chapter 28 Onshore Archaeology and Cultural Heritage.

237. The resultant impact on recreation receptors is of **minor adverse** significance because the sensitivity/value of the recreational receptors are medium (as described in Impact 4, section 30.7.4.4) and the magnitude of effect is low.

30.7.4.5.2 Scenario 1

238. As with Scenario 2 the highest density of tourism and recreation receptors is likely to be in the vicinity of the landfall and the coastal hinterlands. As the works will be broadly the same under Scenario 1 the impact magnitude is also considered to be low.
239. Under Scenario 1 the main visual impacts associated with duct installation along the cable route would have been completed by Norfolk Vanguard, therefore these impacts would be avoided.
240. As with Scenario 2 the greatest potential for visual impacts is at the onshore project substation, however, the density and thus sensitivity of tourism and recreation assets at this point is low.
241. The resultant impact on recreation receptors is of **minor adverse** significance because the sensitivity/value of the recreational receptors are medium (as described in Impact 4, section 30.7.4.4) and the magnitude of effect is low.

30.7.4.6 Impact 6: Reduction of tourist accommodation availability due to non-resident work force

242. Within this section the accommodation receptors are common to both scenarios. However, the impact pathway and impact significance differs between each scenario, and are therefore discussed separately under each heading.

30.7.4.6.1 Accommodation receptors – Scenario 1 and Scenario 2

243. As discussed in section 30.6.1.1, it is considered that a disruption to overnight visitors could potentially lead to a subsequent impact on the tourism supply economy. The largest proportion of overnight stays are in serviced accommodation and it is also assumed that the majority of transient workers would stay in serviced accommodation for convenience. Therefore, serviced accommodation has been used as an indicator for this impact assessment.
244. As described in Table 30.15 and Table 30.16, there are 1,483 rooms and 3,124 bed spaces across North Norfolk. This increases to 8,387 rooms and 18,870 beds when considering hotels across the whole of Norfolk.
245. An increase in demand for this accommodation by the potentially non-resident workforce may be welcome by some hotel owners, due to the extra guaranteed business, however it is likely to lead to some displacement of tourists in peak summer

time when hotel occupancy rates are around 80% (Visit Britain, 2016), with secondary impacts to other local businesses where those tourists would be spending money.

30.7.4.6.2 *Impact pathway Scenario 2*

246. To assess this impact, it has been assumed that the worst case for peak construction personnel will occur (420 personnel of which 70% are from outside Norfolk) providing an increase of 294 people (as discussed in Chapter 31 Socio-economics). The main potential impacts as a result of non-resident workers (i.e. those from outside the Norfolk/Suffolk area) for the project will be to accommodation availability in Norfolk and indirect economic impacts to local businesses.
247. During peak tourism seasons (in the months of March and June to September), there will be a greater demand on accommodation from tourists. A large number of construction workers could result in less availability of hotels and other accommodation along the cable route and other onshore infrastructure to tourists.

30.7.4.6.3 *Impact pathway Scenario 1*

248. Due to the reduction in construction activity along the onshore cable route, there will be minimal non-resident workers requiring accommodation under Scenario 1. Peak employment is expected to be 170 people per week in the worst case during peak tourist season of 2026. This is due to cable pulling and as a worst case it is assumed that these will be 100% in-migrant workforce. There is also expected to be a relatively constant workforce of 100 people during 2024 and 2025 (except the first quarter of 2024 and the last quarter of 2025).

30.7.4.6.4 *Impact significance Scenario 2*

249. As shown in Table 30.26, peak construction for Scenario 2 could increase demand for bed spaces in North Norfolk by up to 9.4%. Assuming that the majority of the workforce will require their own room (some may share twin rooms for short stays) then demand for rooms could increase by up to 20%. Considering that businesses report strong confidence in their businesses and long-term bookings it is assumed that the magnitude of an effect on North Norfolk during high season would be medium over that period but could be accommodated with appropriate engagement with hotel owners.

Table 30.26 Showing potential for increased peak demand on accommodation under Scenario 2

Area	Rooms	Bed spaces	Peak Demand	Increase rooms	Increase bed spaces
North Norfolk	1,483	3,124	294	19.8%	9.4%
Norfolk	8,387	18,870	294	3.5%	1.6%

250. It is expected that non-resident workers would be prepared to travel up to 45 minutes to reach site. Therefore, the stock of bed spaces in Norfolk that could be included increases to 18,870 and the demand created by non-resident workers reduces 1.6% on bed spaces and 3.5% on rooms across a much wider area. Considering that peak hotel occupancy rates are 80% the overall magnitude of effect is considered to be negligible because under the worst case it is expected that 16.5% of rooms would still be available for booking. Furthermore, due to the growth of micro-businesses that use platforms such as Airbnb⁶, an increase in demand for hotel rooms could be met by the supply from this accommodation market.
251. As defined in
252. Table 30.5, hotels are individually a low value receptor because they are plentiful and visitors can easily select alternatives. The resultant impact on accommodation receptors in North Norfolk would be **minor adverse** because the magnitude would be medium. However, assuming that workers stay at hotels across Norfolk then the significance of the impact would be of **negligible** significance because the magnitude of effect across all hotels in Norfolk is negligible.
253. This outcome could be assured by the creation of an accommodation plan that targets large hotel chains in urban areas such as Norwich or Great Yarmouth and avoids increasing demand for hotels in key tourism areas. However, it could remove the potential for positively benefiting local businesses (such as bringing out of season business to local accommodation suppliers) and could be detrimental to local support of the project. A Construction Liaison Committee will be established and consultation with local businesses will determine if the creation of an accommodation plan i.e. to avoid major resorts and areas of high holiday-maker demand would be favourable and could be implemented to reduce displacement.

30.7.4.6.5 Impact significance Scenario 1

254. It is expected that as under Scenario 2, non-resident workers would be prepared to travel up to 45 minutes to reach site, and therefore the stock of beds in Norfolk that could be included reaches 18,870. Workers will be required to work on the substation extension and the cable pulling works, resulting in a peak of 170 personnel requiring accommodation and an average of 100 personnel.
255. As shown in Table 30.27, peak construction could increase demand for bed spaces in North Norfolk by only 5.4%, and within Norfolk by only 1%. The magnitude of an effect

⁶ Airbnb is an online marketplace which lets people rent out their properties or spare rooms to guests
<https://www.airbnb.co.uk/>

within North Norfolk would therefore be negligible even during high season, on a low sensitivity receptor. Resulting in an impact of **negligible** significance.

Table 30.27 Showing potential for increased peak demand on accommodation under Scenario 1

Area	Rooms	Bed spaces	Peak Demand	Increase rooms	Increase bed spaces
North Norfolk	1,483	3,124	170	11.5%	5.4%
Norfolk	8,387	18,870	170	2.03%	1.0%

30.7.4.7 Impact 7: Obstruction or disturbance to inland tourism and recreation assets

30.7.4.7.1 Scenario 1 and Scenario 2

256. Under both scenarios the project will be required to construct an onshore project substation but in slightly different locations. With regards to tourism and recreation receptors and against the baseline of an existing substation, the location of the onshore project substation between scenarios is considered to have little effect on the magnitude of impact. Under both scenarios also, work will be required on the cable route, which is the same for each scenario - located away from all key tourism assets. Under Scenario 2, this will involve installing ducts and cable pulling, and under Scenario 1, the project will not be required to install ducts along the onshore cable route and therefore impacts will be avoided.
257. Impacts to tourism and recreation assets at the coast from landfall activities are discussed in Impact 4, section 30.7.4.4. Impacts to paths and non-motorised routes are discussed in Impact 8, section 30.7.4.8.
258. Potential impacts on inshore assets could arise from the physical presence of construction works or disturbance impacts from noise or lighting. The site selection process discussed in section 30.6.4 has resulted in the onshore project substation and onshore cable route under both scenarios being located away from key tourism assets. The closest tourism asset along the onshore cable route is Gressenhall Farm near Dereham which is over 1km away and thus will not be affected by visual or noise impacts.
259. Outside of The Norfolk Coast AONB, the countryside of North Norfolk and Breckland is not regarded as a direct draw for tourism although it is well regarded by local recreational users and an intrinsic aspect of the visitor's experience. The Broads, primarily in Broadland, are a significant inland tourism asset however they are located far enough to the south that they will not be directly affected by the construction works under either scenario.
260. Tourism assets in the vicinity of the onshore works are considered to be of medium sensitivity with regional value. Due to the low number of tourist assets in the vicinity of onshore works the magnitude of effect to tourism assets is assessed to be low.

Therefore, the significance of impact under either scenario is **minor adverse** and should be monitored to ensure it remains as such, in line with other chapters that describe receptor pathways such as water contamination, visual and noise impacts through adherence to the CoCP that will be discussed and agreed with local stakeholders following consent of the project.

30.7.4.8 Impact 8: Obstruction or disturbance to users of PRoW and cycle routes

261. There are no interactions with PRoW at the onshore project substation or the National Grid substation extension. Therefore, the impacts associated with construction works are limited to the landfall and onshore cable route only.
262. The use of long HDD at landfall under both scenarios will result in duct installation and cable pulling without the need to close either the Norfolk Coastal Path or the beach at Happisburgh. As a result, **no impact** is predicted for Norfolk Coastal Path or the beach at Happisburgh in either scenario.
263. The impact pathway along the onshore cable route would differ, therefore these pathways are discussed under different sub-sections, as is the impact significance.

30.7.4.8.1 PRoW receptors Scenario 1 and Scenario 2

264. The onshore cable route and landfall interact with PRoW and cycle routes at 46 locations, as discussed in section 30.6.4. These are described in Appendix 30.1 and Figure 30.3. The majority of PRoW are footpaths and there are three Bridleways which are considered to have medium local value. Table 30.28 shows all high value PRoWs and cycle routes interacted with by the project. For narrative simplicity all footpaths, bridleways, Byways and cycle routes will be referred to as PRoWs under this impact assessment and assigned appropriate levels of value.

30.7.4.8.2 Impact pathways Scenario 2 only

265. The installation of ducts (as described in Chapter 5 Project Description) along the onshore cable route will be carried out by several teams working in parallel, with each team tackling a defined section. Starting from one of the mobilisation areas, the team will work its way along the route one workfront at a time. Workfronts are expected to be roughly 150m in length, and each workfront will take approximately one to two weeks to complete. Once a workfront has been completed, the cable route will be reinstated, however the running track will need to be maintained throughout onshore construction to allow access from the mobilisation area to the workfront.
266. As the construction would be undertaken in a sequential manner the majority of PRoW could be kept open with appropriate safety precautions, such as fencing to separate the public from the works site. It is anticipated that where the workfront crosses a route, it could be diverted for approximately one to two week. There would

be no permanent closures of paths or non-motorised routes, therefore all closures would be temporary. Reinstatement of footpaths will be undertaken following the construction works, in agreement with Norfolk County Council.

267. Once the running track is installed across the PRow, further management measures (i.e. signage) would ensure that running track users are aware of the potential for PRow users to cross their path, and PRow users are aware of the hazards to allow both to operate together safely. Precise details for the management of the PRow that will remain accessible during works will be agreed with the relevant planning authority in consultation with Norfolk County Council prior to commencement of the relevant stage of works.
268. In the case of a PRow that runs parallel to the cable route at discreet sections, safe access to the routes will be maintained along the side of the workfront with safety fencing between the works area and the pedestrian route. Subject to agreement with Norfolk County Council, only where a running track or upgraded access track is formed from an existing PRow would there need to be provision of an alternative route.
269. The majority of the effects would therefore relate to the construction works and be short to medium term with visual effects mitigated through reinstatement of the land and hedgerows. Residual impacts would occur where hedges and trees would have been removed and could not be replaced owing to restrictions over cable easements. These effects would be long term but not irreversible as replanting of hedges and trees could take place following decommissioning. Full details of landscape mitigation are discussed in Chapter 29 Landscape and Visual Impact Assessment.

30.7.4.8.3 Impact pathways Scenario 1 only

270. Under Scenario 1 the activities along the cable route will be limited to cable pulling undertaken at the jointing pit locations (spaced at approximately 800m intervals). The locations of the jointing pits are yet to be determined but will be chosen based on site selection to avoid sensitive features, including the presence of PRow, where possible and engineering considerations. Therefore, there will be less interaction with users of PRow as they will be limited to the jointing pit locations.

30.7.4.8.4 Impact significance Scenario 2

271. 46 interactions with PRow by the cable route and landfall which are considered to be of medium to high value using the criteria defined in Table 30.7. Those PRow considered of high value are outlined in Table 30.28. At all but two of the high value PRow there will no change to the PRow and therefore no impact. For the remaining two high value PRow (Wensum Way and Weaver's Way) the magnitude of effect is assessed as negligible and low, respectively, as defined in Table 30.8, and therefore

the significance of impact on these PRoWs would be minor adverse and moderate adverse.

272. The overall magnitude of effect on the PRoW network is assessed as negligible because only 31 of the interactions have the possibility of requiring any type of closure or management and these closures would be of a temporary nature. Therefore, overall the impact is assessed as being of **minor adverse** significance.

Table 30.28 High value PRoW within the onshore project area under Scenario 2

PRoW	Interaction	Value	Impact magnitude	Significance
Norfolk Coastal Path	Crossed at Sea Palling to Weybourne using trenchless crossing	High	No change	No impact
Paston Way, Long Distance Walking Route	Crossed using trenchless crossing	High	No change	No impact
Weaver's Way, Long Distance Walking Route	Temporary closure for approximately one week and then controlled crossing	High	Low	Moderate adverse
Marriott's Way, Long Distance Walking Route	Trenchless crossing as part of designated area	High	No change	No impact
Wensum Way Long Distance Walking Route	Temporary closure for approximately one week and controlled crossing	High	Negligible	Minor adverse
Regional Cycle Route 30	Crossed three times but is assumed no closure will be required	High	No change	No Impact
Regional Cycle Route 33	Crossed once but it assumed no closure will be required	High	No change	No impact
National Cycle Route 1	Crossed once but it assumed no closure will be required	High	No change	No impact
National Cycle Route 13	Crossed once but it assumed no closure will be required	High	No change	No impact

273. Norfolk Boreas Limited is committed to working with Norfolk County Council to ensure that these impacts are temporary.
274. A pre- and post-construction survey (including identification of surface condition and street furniture) of the PRoW affected will be undertaken. PRoW surveys will be undertaken by an experienced surveyor with scope of coverage and methodology to be agreed with the relevant authority. A suitably qualified Agricultural Liaison Officer will be employed to ensure that information on existing land conditions is obtained, recorded and verified during the rights of way surveys.
275. Where impacted by the works, the surveyed PRoW will be restored to its original condition or otherwise as agreed with the relevant authority. The liaison officer will act as the point of contact for the restoration of the PRoW.
276. The CoCP (DCO Requirement 20) will be prepared and agreed in consultation with all relevant stakeholders. This would detail methodologies to be used during

construction activities, including all requirements for alternative recreation routes including long distance trails, cycle routes, PRoW and local footpath networks, sign posting and dissemination of information to the public to minimise all possible impacts to an acceptable level. A Public Rights of Way Strategy (Document reference 8.4) and an outline CoCP have been prepared and submitted as part of the DCO application.

277. With this mitigation in place, the residual impact is expected to be of **negligible** significance because only one high value PRoW has the possibility of being closed. It is considered that close working with Norfolk County Council, and clear communication to the public would mitigate adverse effects on this single high value PRoW.
278. The installation of the cable within the ducts will require cable pulling activities undertaken at jointing pits located along the cable route. The locations of the jointing pits are yet to be determined but will be chosen based on site selection to avoid sensitive features, including the presence of PRoW, wherever possible and engineering considerations. Impacts during cable pulling activities are therefore anticipated to be **negligible**, depending on the location of jointing pits and access requirements.

30.7.4.8.5 *Impact significance Scenario 1*

279. Under Scenario 1 the potential impacts are limited to the cable pulling activities at the jointing pit locations, which as detailed above, are considered to be of **negligible** significance, depending on the location of jointing pits and access requirements. However, the measures detailed within the outline COCP will be adhered to minimise any potential impacts.

30.7.4.9 **Impact 9: Increased traffic affecting tourism and recreation**

30.7.4.9.1 *Receptors – Scenario 1 and Scenario 2*

280. Chapter 24 Traffic and Transport follows Guidelines for the Environmental Assessment of Road Traffic (GEART). This considers Severance and Pedestrian Amenity as the receptors of increased traffic volume.
281. Severance is the perceived division that can occur within a community when it becomes separated by a major traffic artery. The term is used to describe a complex series of factors that separate people from both places and other people. Severance may result from the difficulty of crossing a heavily trafficked road or a physical barrier created by the road itself. It can also relate to relatively minor traffic flows if they impede pedestrian access to essential facilities. Severance effects could equally be applied to residents, motorists, cyclists or pedestrians.

282. Pedestrian amenity is broadly defined as the relative pleasantness of a journey and is considered to be affected by traffic flow, traffic composition, pavement width and separation from traffic. The definition of amenity also takes into consideration pedestrian fear and intimidation, consideration of the exposure to noise and air pollution, and the overall relationship between pedestrians and traffic.
283. It follows that if the impact on pedestrian amenity is high then it is likely that footfall to tourism assets would reduce.

30.7.4.9.2 Impact pathway - Scenario 1 and Scenario 2

284. Chapter 24 Traffic and Transport considers 108 routes of varying sensitivity and Appendix 24.2 provides a Sensitivity Rationale. The sensitivity of a road (link) can be defined by the type of user groups who may use it. A sensitive area may for example be a village environment or where pedestrian or cyclist activity may be high, for example where there is a high tourist footfall.

Severance

285. With regards to severance of communities, the traffic and transport assessment (section 24.7.6.1) under Scenario 2 concludes that only link 69 will experience an increase of traffic greater than the 30% change in total traffic threshold whereby GEART suggests negative impacts may be experienced (section 24.7.6.1.1. of Chapter 24 Traffic and Transport). All other links experience traffic flows significantly below the 30% thresholds. This results in the magnitude of effect assessed as very low on low to high sensitivity links leading to impact significance on all remaining links of **negligible to minor adverse**
286. Following implementation of mitigation measures on link 69 (detailed in of Chapter 24 Traffic and Transport there will be a much demand which is considered to be of low magnitude. However, due to the high sensitivity of the receptor, it is expected that the residual impact significance would be 'marginally' **moderate adverse** for this link.
287. Under Scenario 1 the traffic flow for all screened links is less than the 30% change in total traffic threshold. Therefore, the magnitude of effect is assessed as very low on low to high sensitivity links giving impact significance on all links of **negligible to minor adverse**.

Pedestrian Amenity

288. Table 30.29 shows the areas with **moderate to major adverse** Pedestrian Amenity impacts due to traffic increase (taken from Chapter 24 Traffic and Transport) under Scenario 2. All remaining links experience traffic flows significantly below the 100% thresholds therefore the magnitude of effect is assessed as very low on low to high sensitivity links giving impact significance on all of these links of **negligible to minor adverse**.

289. As Scenario 1 avoids the need for duct installation the impacts in Table 30.29 are limited to link 34, 47c, and 69.

Table 30.29 Areas with moderate to major adverse Pedestrian Amenity impact due to traffic increase

Link number	Description	Location	Pedestrian Amenity Impact	Residual Impact	Density of tourism assets	Tourism Impact significance
17	B1145 - Billingham Road	Litcham to Billinghamford	Moderate Adverse	Minor adverse	Low	Minor adverse
21	B1147 - Etling Green	Etling Green	Moderate adverse	Minor adverse	Low	Minor adverse
22	B1147 – Dereham Road	Dereham Road	Moderate adverse	Minor adverse	Low	Minor adverse
34	B1145 – west of Cawston	West of Cawston	Moderate Adverse	Minor adverse	Low	Minor adverse
35a	B1159	Stalham to Bacton	Moderate adverse	Minor adverse	Medium	Minor adverse
35b	B1159		Moderate adverse	Minor adverse	Medium	Minor adverse
36	B1149 - Holt Road	Norwich to east of Cawston	Moderate adverse	Minor adverse	Low	Minor adverse
41	B1436 - Felbrigg	South of Cromer	Moderate adverse	Minor adverse	Medium	Minor adverse
42	B1145 – Reepham Road	West of Reepham	Major adverse	Minor adverse	Medium	Minor adverse
47c	North Walsham Road - Edingthorpe Green	From Stalham to Walcott and around to North Walsham	Major adverse (Scenario 2) Minor adverse (Scenario 1)	Minor adverse	Medium	Minor adverse
49	B1159 - Brumstead to Walcott		Major adverse	Minor adverse	Medium	Minor adverse
69	Little London Road	East of North Walsham	Major adverse	Moderate adverse	Low	Minor adverse
72	Dereham Road / Longham Road - Dillington	North west of Dereham	Moderate adverse	Minor adverse	Low	Minor adverse

30.7.4.9.3 Impact significance Scenario 1 and Scenario 2

290. Chapter 24 Traffic and Transport proposes mitigation measures for moderate and major adverse traffic impacts. These would include a Traffic Management Plan (TMP) and an Access Management Plan (AMP) which will be agreed with Local Authorities to reduce the impact to an acceptable level.

291. With respect to link 69 under Scenario 2, the assessed residual impact is very localised (impacting on a small number of dwellings) and is for a relative short

duration of time. It is considered community engagement to establish clear lines of communication to the appointed contractor would serve to identify periods that are particularly sensitive to HGV movements and this could further mitigate this impact. The OTMP (document reference 8.8) contains a specific commitment to managing the HGV movements on link 69 to the assessed levels.

292. Based on the assessment above regarding Link 69 and that in Table 30.29 due to potential negative impacts caused by increased traffic affecting severance and pedestrian amenity (section 30.7.4.9) the impact on tourism assets is considered to be at most **minor adverse** under either scenario.
293. Traffic management measures will be implemented (See Chapter 24 Traffic and Transport for details) to ensure tourists and the local communities can still access the coast and other key tourism locations. The use of a running track will also reduce the number of construction vehicles on existing country roads.

30.7.4.10 Impact 10: Disruption or impacts to open access or public land

30.7.4.10.1 Scenario 1 and Scenario 2

294. Several small areas of open access land or common land have been identified adjacent to the onshore cable route (e.g. Bacton Wood, near Hoveton along the A140, along the River Wensum, Blickling Hall and Abel Heath) and adjacent to the landfall (Natural England, 2017; National Trust, 2017). These areas lie outwith the onshore cable route, therefore access to this area would not be restricted.
295. No areas of open access or common land have been identified at the landfall or substation sites.
296. Under the Countryside and Rights of Way Act 2000, land that is seaward of an English coastal path is defined as the Coastal Margin. This would apply at Happisburgh due to the presence of the coastal path. However, Norfolk Boreas' commitment to long HDD at landfall ensure no impact to the coastal margin.
297. Due to the absence of open or common land in the footprint of the project, **no impact** is predicted under either scenario.

30.7.5 Potential Impacts during Operation

298. The operational phase of the project would be very similar regardless of scenario. The onshore project substation and National Grid extension would be in slightly different locations; however this will not create differing impacts on tourism and recreation, therefore the following assessment applies to both scenarios.

30.7.5.1 Impact 1: Obstruction or disturbance to marine recreation

299. Due to the location of the Norfolk Boreas site 73km offshore it is unlikely that recreational angling, diving or the majority of sailing in the region will be affected during operation activities. There is only one marina that would serve this sector at Lowestoft. There are no known dive sites within the Norfolk Boreas site and no scheduled boat trips cover this area of sea.
300. Cables would be buried where possible but cable protection would be required (e.g. at cable and pipeline crossings and potentially at the HDD exit locations). The Maritime and Coastguard Agency requires that where cable protection is required the water depth will not decrease by more than 5%. This will ensure keel clearance and reduce the risk of anchor snagging (see Chapter 15 Shipping and Navigation) to ensure there are no safety implications. Full details of impacts to navigation can be found in Chapter 15 Shipping and Navigation.
301. As with the construction phase a low sensitivity of receptor is applied. Given the very low numbers of recreational vessels in the offshore project area and the embedded mitigation (e.g. promulgation of information), displacement of recreational vessels from the offshore project area would have no perceptible effects (further information can be found in Chapter 15, section 15.71). Therefore, the magnitude of effect is assessed to be negligible, and the significance also **negligible**.

30.7.5.2 Impact 2: Visual and noise impacts on land-based tourism and recreation assets

302. There are no operation or maintenance requirements for the buried landfall cable and therefore there will be no impacts due to visual or noise disturbance on coastal tourism and recreation receptors at Happisburgh under either scenario.
303. As the onshore cables will be buried underground under both scenarios, impacts will be restricted to times of routine or ad hoc inspection and maintenance at the transition pits, jointing pits and along the onshore cable route. Routine and ad hoc maintenance activities are not anticipated to require disruption to or closure of any paths or non-motorised routes and will not interfere with local recreation activities such as walking or cycling. As such it is considered that the magnitude of effect will be negligible and given the largely rural setting away from tourism and recreation receptors, the sensitivity will be low. Therefore, for the landfall and along the onshore cable route the impact significance is likely to be **negligible**.
304. Therefore, the key impact on onshore tourism will be the long-term presence of the onshore project substation (including the National Grid substation extension). The following sections consider potential impacts arising due to the presence of these. Visual and noise impacts during operation will be common to both scenarios due to the same onshore infrastructure being used in both scenarios. Under Scenario 1 the Norfolk Boreas onshore project substation would be to the east of the Norfolk

Vanguard onshore project substation. Although the extent of the combined substations would be greater under Scenario 1, the difference in effect on tourism and recreation assets would be marginal.

30.7.5.2.1 *Potential noise impacts during operation*

305. Potential operational noise impacts associated with the onshore project substation area have been assessed in detail in Chapter 25 Noise and Vibration. With the effective implementation of mitigation measures outlined in the chapter **negligible** impact is predicted at all receptor locations.
306. Routine maintenance of the onshore project substation would require one visit per week, involving a single vehicle and staff during daylight hours. As a consequence, disturbance from noise and landscape and visual disturbance (above general operational movements on and off site) is predicted to be of negligible magnitude and only affect receptors in the immediate vicinity of the onshore project substation.

30.7.5.2.2 *Potential visual impacts during operation*

307. Potential visual impacts during operation are assessed in Chapter 29 Landscape and Visual Impact as **not significant** for the majority of the area around the onshore project substation. This assessment summarises impacts as follows:
- The operational phase of the onshore project substation and National Grid substation extension would not significantly affect landscape character, apart from in the localised areas of the Settled Tributary Farmland Landscape Character Types (LCT) – River Wissey Tributary Farmland Landscape Character Units (LCU) and Plateau Farmland LCT – Beeston Plateau LCU and Pickenham Plateau LCU in which the onshore project substation or National Grid substation extension would be located or would have a close range influence.
 - In respect of representative viewpoints, significant effects would be experienced by walkers on Lodge Lane to the immediate south of the site, and by road-users on a very localised section of Ivy Todd Road to the south-west and a section of the A47 to the north. These effects would all occur within approximately 1.2km of the onshore project substation, making them localised. Extensive landscape planting and earthworks would be implemented on the sites of the onshore project substation, National Grid substation extension and around the new A47 junction, in order to mitigate localised effects. Landscape planting would comprise mostly woodland planting that would grow to screen or partially screen the onshore components and associated infrastructure of the project.
308. The potential impact of light pollution on people's enjoyment of the night sky is also assessed. There are no nationally or internationally recognised Dark Sky Areas within the study area. The only onshore infrastructure with the potential for illumination is the onshore project substation. As the onshore project substation will not be

illuminated at night (this is highlighted within section 30.7.1 Embedded mitigation) there will be **no impact** on any recreational star gazers in the vicinity.

30.7.5.2.3 Receptors

309. In the study area of the onshore project substation there is one low value (with regards to
310. Table 30.5) tourism asset (Fransham Caravan Park, as shown in Figure 30.2). No PRowS and no recreational assets are interacted with at the onshore project substation (as shown in Figure 30.3 and discussed in section 30.6.4 respectively). It is assessed that there will not be a high density of tourists in the onshore project substation region in comparison to the levels assumed in coastal areas, with the majority of high value recreational assets, such as blue flag beaches and the AONB, located near the coast. Therefore, the remaining receptors of visual impact (under tourism and recreation considerations) during operation are recreational users that live in the vicinity of the onshore project substation, such as walkers. As the onshore project substation area is around 500m from the closest urban area it is assumed that there will be a low density of recreational users that could be affected. Previous studies (section 30.6.6.1) show that recreational users do not change their behaviour due to the presence of electrical distribution infrastructure. Therefore, these are considered to be low sensitivity based on the criteria outlined in
311. Table 30.5.
312. Consultation with Necton Parish Council has highlighted that there are a small number of holiday let businesses located approximately 1km away from the onshore project substation in the general direction of Necton. Previous studies (section 30.6.6.1) show that businesses have not observed a change in their performance due to the presence of electrical distribution infrastructure. While the high personal value of these features is noted, according to the definitions presented in
313. Table 30.5 and considered within the wider baseline, these features are classified as having low value.

30.7.5.2.4 Impact significance

314. Potential impacts due to light pollution are assessed to have **no impact** as the onshore project substation will not be illuminated at night.
315. Chapter 25 Noise and Vibration sets out the mitigation to ensure there are no significant noise impacts from the onshore project substation or National Grid substation extension effecting local recreation receptors. Local tourism receptors are considered to be of low sensitivity (see

316. Table 30.5) due to low density. Therefore, given the low magnitude of impacts discussed above the potential impacts for the majority of the area are assessed to be of **minor adverse** significance. Norfolk Boreas' approach for the assessment of potential impacts from noise and vibration and any necessary mitigation has been agreed with Breckland Council. Full details of this are included in Chapter 25 Noise and Vibration.
317. The landscape and visual impacts are assessed to be **not significant** in Chapter 29 Landscape and Visual Impact Assessment and therefore assessed as low magnitude with regards tourism and recreation receptors. The receptors in the area are assessed to be low value (see
318. Table 30.5) due to low density. Chapter 29 Landscape and Visual Impact Assessment also notes that significant effects would arise from Lodge Lane to the immediate south of the site, a very localised section of Ivy Todd Road to the south-west and a section of the A47 to the north. However, there are no high value receptors here although four low value receptors (highlighted by Necton Parish Council) may be indirectly affected. This would lead to very localised impacts of **moderate adverse** due to visual disturbance in the medium term (i.e. there are only three locations where the onshore project substation would potentially be visible and these are not locations that are important for the tourism industry or where tourism assets are located). Therefore, using the matrix in Table 30.9, the potential impacts for the majority of the area are assessed to be **minor adverse**.
319. Chapter 29 Landscape and Visual Impact Assessment describes the following mitigation measures that are summarised below:
- The onshore project substation site benefits from some substantial existing hedgerows and woodland blocks within the local area. These would provide mitigation of landscape and visual effects from the outset and will be infilled, where necessary, during the early phases of the proposed project to ensure robust screening. Mitigation planting would mostly comprise indigenous woodland species and would be located around the onshore project substation site. This would be designed to comprise a mix of faster growing 'nurse' species and slower growing 'core' species.
 - The earthworks required for the cut and fill to create the level platform would produce surplus soil which would be used to form subtle earthwork bunds of up to 2m along the western side of the onshore project substation. This would help to give an incremental increase to the overall height of screening along this sensitive boundary which is not constrained by planting restrictions associated with underground cables.

320. The culmination of this mitigation, the presence of very few receptors and studies that show no behavioural change of recreational users, would result in a residual long-term impact of **negligible** significance arising from the operational phase of the project on tourism and recreational receptors.

30.7.5.3 Impact 3: Permanent closure of paths or non-motorised routes

321. Any alternative routes proposed for the construction phase would be removed and the original routes reinstated post-construction. **No impact** is therefore predicted during operation under either scenario.

30.7.5.4 Impact 4: Reduction in visitor numbers due to tourist perceptions of wind farms

322. To explore tourist perceptions, three studies are summarised in section 30.6.6. The purpose of this inclusion is to identify trends in the perception of tourists to wind farm development as well as their supporting infrastructure, and in actual changes in tourist visits to areas that have experienced wind farm development (which would also have electrical distribution infrastructure).

323. The literature review found that:

- Recreational users do not change their behaviour due to the presence of electrical distribution infrastructure;
- Tourism visitors do not hold a negative opinion of wind farm development and would not be put off visiting an area if it were developed for renewable energy generation; and
- Tourism visitors that have not visited an area are unlikely to find negative views expressed online as a result of offshore wind farm development.

324. More recent studies of economic impacts of areas where onshore wind farms and their electrical distribution infrastructure have been developed, show no measurable impact on tourism growth from wind farm development. Recent studies (Lilley et al. 2010 and Lutzeyer et al. 2016) do show a limited relationship between the proximity of offshore wind farms and tourist perceptions but this proximity is in terms of 5-9km with clear visual impacts. Therefore, this limited relationship excludes Norfolk Boreas due to the wind farm area being located 73km from the shore and beyond the range of visibility of a person standing on the coast.

325. Based on the studies of tourist perceptions it is predicted that during operation Norfolk Boreas will have **no impact** on the perceptions of visitors to Norfolk and therefore, there will not be a reduction in tourist numbers due to this development.

30.7.6 Potential Impacts during Decommissioning

326. Whilst details regarding the decommissioning of the project are currently unknown, considering the worst case assumption which would be the removal and

reinstatement of the current land use at the site, it is anticipated that the impacts would be less or no worse than those during construction.

327. The decommissioning methodology would be finalised nearer to the end of the lifetime of the project so as to be in line with current guidance, policy and legislation at that point. Any such methodology would be agreed with the relevant authorities and statutory consultees at the relevant time.

30.8 Cumulative Impacts

328. The assessment of cumulative impact has been undertaken as a two-stage process. Firstly, all the residual impacts from previous sections are assessed for their potential to act cumulatively with other projects for each scenario. This summary assessment is set out in Table 30.30. Where differences occur between each scenario these have been described separately.

Table 30.30 Potential cumulative impacts

Impact	Potential for cumulative impact	Rationale
Construction		
Increased marine construction traffic affecting attractiveness of the coastline for Tourism and recreation.	Yes	Although the project is located far enough offshore that it will not be visible from shore, there are other wind farms in the region that are visible. The short-term temporary offshore cable laying activities for Norfolk Boreas will also be visible from shore. This may create a perception in tourists that the coastline is despoiled although research shows that tourists have a generally positive view of wind farms, as detailed in section 30.6.6.
Disruption of marine recreational activities including sailing and other water sports	Yes	As discussed in Chapter 15 Shipping and Navigation, there is potential for cumulative impacts with other offshore wind farms in the southern North Sea with regards to vessel routing / displacement, increased vessel to vessel collision risk and increased vessel to structure collision risk and diminished emergency response time. The cumulative increase in marine traffic has the potential to impact upon recreational activities.
Deterioration to Bathing Water / Blue Flag beaches and resulting effect on Tourism and Recreation	Yes	As with visual impacts, although the project will not have a direct impact on Blue Flag beaches, the perception of tourists due to other developments may create the perception that the area is becoming over developed; although research shows that tourists have a generally positive view of wind farm development, as detailed in section 30.6.6.
Disruption to onshore coastal recreational and tourism assets	Yes	Landfall works associated with Norfolk Boreas and Norfolk Vanguard there may be cumulative disruption to recreational marine users.
Visual impacts of construction activity	Yes	Under Scenario 2 Depending on the timings of the works for Hornsea 3, there may be cumulative impacts during construction works associated with the cable route for Norfolk Boreas Under Scenario 1 there will be cumulative impacts due to the onshore project substation for Norfolk Boreas although these have been minimised by Norfolk Vanguard undertaking the preparatory works along the rest of the cable route.
Reduction of tourist accommodation availability due to non-resident work force	Yes	Depending on timing of works with respect other large infrastructure projects there may be an accumulation of non-resident workers residing within Norfolk during high season months.
Obstruction or disturbance to inland tourism and recreation assets	Yes	This will depend on the phasing of works with respect to other projects with the potential for interaction.

Impact	Potential for cumulative impact	Rationale
Obstruction or disturbance to users of paths or non-motorised routes	Yes	This will depend on the phasing of works with respect to other projects with the potential for interaction; cumulative impacts may occur with the onshore cable routes of other offshore wind farms (Norfolk Vanguard, Hornsea Project Three and Dudgeon) in the surrounding area.
Increased traffic affecting tourism and recreation	Yes	This will depend on the phasing of works with respect to Hornsea Project Three and other coastal works.
Operation		
Obstruction or disturbance to marine recreation	No	Once constructed, it is assumed that impacts will be negligible so ongoing obstruction of marine recreation is unlikely for recreation vessels.
Visual and noise impacts on land-based tourism and recreation assets	No	Once constructed, it is assumed that these impacts will be negligible so ongoing disturbance of recreation is unlikely. However, if not managed properly, the perception of the value visitors have for rural Norfolk tourism may reduce which may lead to a reduction in tourist numbers.
Decommissioning		
The detail and scope of the decommissioning works will be determined by the relevant legislation and guidance at the time of decommissioning and agreed with the regulator. A decommissioning plan will be provided. As such, cumulative impacts during the decommissioning stage are assumed to be no worse than those identified during the construction stage.		

329. The second stage of the CIA is an assessment of whether there is spatial or temporal overlap between the extent of potential effects of the onshore infrastructure and the potential effects of other projects scoped into the CIA upon the same receptors. To identify whether this may occur, the potential nature and extent of effects arising from all projects scoped into the CIA have been identified and any overlaps between these and the effects identified for Norfolk Boreas in section 30.7 have also been identified. Where there is an overlap, an assessment of the cumulative magnitude of effect is provided.
330. Projects identified for potential cumulative impacts have been agreed as part of the Norfolk Boreas PEIR consultation. These projects, as well as any relevant development applications submitted since this consultation have been considered and their anticipated potential for cumulative impact are detailed in Table 30.31.
331. Under Scenario 2 there would be no cumulative impacts between Norfolk Boreas and Norfolk Vanguard because the latter would not exist. Therefore, section 30.8.1.1

below only considers the cumulative impacts of Norfolk Boreas and Norfolk Vanguard under Scenario 1.

332. For onshore tourism and recreation receptors affected by Norfolk Boreas, key cumulative interactions may occur with other onshore infrastructure (e.g. onshore cable routes) in the vicinity of Norfolk Boreas, i.e. Norfolk Vanguard, Dudgeon and Hornsea Project Three Offshore Wind Farms.
333. For offshore tourism and recreation receptors affected by Norfolk Boreas, key cumulative interactions may occur coastally i.e. with Norfolk Vanguard landfall and offshore cable installation works and Bacton and Walcott Coastal Management Scheme.
334. The remainder of the section details the nature of the cumulative impacts against all those receptors scoped in for cumulative assessment.
335. To avoid confusion between different projects, the Norfolk Boreas Offshore Wind Farm, previously referred to as 'the project', is referred to as 'Norfolk Boreas' within this section.
336. In summary, the following projects will be assessed for potential direct cumulative impacts:

Scenario 1

- Norfolk Vanguard Offshore Wind Farm;
- Hornsea Project Three Offshore Wind Farm; and
- Bacton and Walcott Coastal Management Scheme.

Scenario 2

- Hornsea Project Three Offshore Wind Farm; and
- Bacton and Walcott Coastal Management Scheme.

Table 30.31 Summary of projects considered for the CIA in relation to tourism and recreation

Project	Status	Development period	⁷ Distance from Norfolk Boreas onshore project area (km)	Distance from Norfolk Boreas offshore project area (km)	Project definition	Project data status	Included in CIA Scenario 1	Included in CIA Scenario 2	Rationale
National Infrastructure Planning									
Norfolk Vanguard Offshore Wind Farm	Application submitted	Expected construction 2020 to 2025	0 – projects are co-located	0 – projects are co-located	Full ES available: https://infrastructure.planninginspectorate.gov.uk/projects/eastern/norfolk-vanguard/?ipcsection=docs	High	Yes	No	Under Scenario 1 impacts would relate to visual and noise impacts on onshore tourism and recreation assets, primarily concentrating around mobilisation areas and works at the project substation and National Grid extension. Cable landfall will be co-located for both projects and has been included in the impact assessment for this Chapter, therefore is not within the CIA. Any secondary infrastructure may have temporary noise/vibration impacts and long term visual impacts. Scenario 2 assumes that the Norfolk Vanguard project would not be constructed. There is therefore no potential for cumulative impacts to occur under this scenario.
Hornsea Project Three	Application submitted	Expected construction start date	0 – cable intersects project	80	Full ES available: https://infrastructure.planninginspectorate.gov.uk/projects/eastern/norfolk-vanguard/?ipcsection=docs	High	Yes	Yes	The Hornsea Project Three onshore cable route will cross the Norfolk Boreas cable route. The exact location and manner of

⁷ Shortest distance between the considered project and Norfolk Boreas – unless specified otherwise.

Project	Status	Development period	⁷ Distance from Norfolk Boreas onshore project area (km)	Distance from Norfolk Boreas offshore project area (km)	Project definition	Project data status	Included in CIA Scenario 1	Included in CIA Scenario 2	Rationale
Offshore Wind Farm		2021. Duration 6 to 10 years dependent on phasing.	32 between substation locations		ructure.planni nginspectorat e.gov.uk/proje cts/eastern/h ornsea- project-three- offshore- wind-farm/				this crossing will determine the magnitude of cumulative impacts on local tourism and recreation assets. Details of this crossing will be discussed with Ørsted (formally DONG Energy), local stakeholders and the Local Authority.
A47 corridor improvement programme – North Tuddenham to Easton	Pre-application (application due 2020)	Start works April 2021 Open May 2013	26.7	n/a onshore project	https://highwaysengland.co.uk/projects/a47-north-tuddenham-to-easton-improvement-scheme/	Medium	No	No	Roadworks may have a cumulative impact on Pedestrian Amenity but as the roads listed for the improvement programme are not within the area highlighted as potentially impacted by Norfolk Boreas (section 30.8.2 Impact 9), it is unlikely to have an effect on the tourism industry.
A47 corridor improvement programme – A47 Blofield to North Burlingham	Pre-application (application due 2019)	Start works 2021 Open 2022	25	n/a onshore project	https://highwaysengland.co.uk/projects/a47-blofield-to-north-burlingham/	Medium	No	No	Roadworks may have a cumulative impact on Pedestrian Amenity but as the roads listed for the improvement programme are not within the area highlighted as potentially impacted by Norfolk Boreas (section 30.8.2 Impact 9), it is unlikely to have an effect on the tourism industry.

Project	Status	Development period	⁷ Distance from Norfolk Boreas onshore project area (km)	Distance from Norfolk Boreas offshore project area (km)	Project definition	Project data status	Included in CIA Scenario 1	Included in CIA Scenario 2	Rationale
A47 corridor improvement programme – A47 / A11 Thickthorn Junction	Pre-application (application due 2019)	Start works 2020 Open 2023	18	n/a onshore project	https://highwaysengland.co.uk/projects/a47-thickthorn-junction/	Medium	No	No	Roadworks may have a cumulative impact on Pedestrian Amenity but as the roads listed for the improvement programme are not within the area highlighted as potentially impacted by Norfolk Boreas (section 30.8.2 Impact 9), it is unlikely to have an effect on the tourism industry.
Norwich Western Link	Pre-application	Expected construction start late 2022	2.8	n/a onshore project	https://www.norfolk.gov.uk/roads-and-transport/major-projects-and-improvement-plans/norwich-western-link/timeline	Medium	No	No	Roadworks may have a cumulative impact on Pedestrian Amenity but as the roads listed for the improvement programme are not within the area highlighted as potentially impacted by Norfolk Boreas (section 30.8.2 Impact 9), it is unlikely to have an effect on the tourism industry.
Third River Crossing (Great Yarmouth)	Pre-application (application due 2019)	Expected construction start in late 2020 Open early 2023	28	n/a onshore project	https://www.norfolk.gov.uk/roads-and-transport/major-projects-and-	Medium	No	No	Roadworks may have a cumulative impact on Pedestrian Amenity but as the bridge is not within the area highlighted as potentially impacted by Norfolk Boreas (section 30.8.2 Impact 9), it is unlikely to have an effect on the tourism industry.

Project	Status	Development period	⁷ Distance from Norfolk Boreas onshore project area (km)	Distance from Norfolk Boreas offshore project area (km)	Project definition	Project data status	Included in CIA Scenario 1	Included in CIA Scenario 2	Rationale
					improvement-plans/great-yarmouth/third-river-crossing				
King's Lynn B Power Station amendments	Approved	Expected construction start 2019 to 2022	28	n/a onshore project	https://www.kingslynnbccgt.co.uk/	High	No	No	Due to the distance of King's Lynn B Power Station from the project it is unlikely that cumulative effects would occur. There is the potential for increased accommodation demand but the assessment (section 30.6.5 Accommodation in Norfolk) shows that the accommodation stock across Norfolk is substantial so any additional impact would be negligible.
North Norfolk District Council									
PF/17/1951 Erection of 43 dwellings and new access with associated landscaping, highways and	Approved	Anticipated Q2 2018	0.7	n/a onshore project	Application available: https://idoxpa.north-norfolk.gov.uk/online-applications/applicationDetails.do?activeT	High	No	No	Low density of tourism receptors within the vicinity of the development therefore a low likelihood of cumulative impact.

Project	Status	Development period	⁷ Distance from Norfolk Boreas onshore project area (km)	Distance from Norfolk Boreas offshore project area (km)	Project definition	Project data status	Included in CIA Scenario 1	Included in CIA Scenario 2	Rationale
external works					ab=summary &keyVal=_NN ORF_DCAPR_9 2323				
Bacton and Walcott Coastal Management Scheme	Approved	Expected construction start date Spring 2019	1	n/a onshore project	Public information leaflets available: https://www.north-norfolk.gov.uk/media/3371/bacton-to-walcott-public-information-booklet-july-2017.pdf	Medium	Yes	Yes	Potential for nourishment scheme to influence coastal process in vicinity of project.
Coastal defence/protection work, Happisburgh PF/18/0751	Approved	Coastal protection over 10 year duration from August 2018	0.12		https://idoxpa.north-norfolk.gov.uk/online-applications/applicationData	Medium	No	No	The coastal defence application is intended to enable a near shore rock sill to be moved landward in response to erosion. The project area is 150m north Norfolk Boreas' landfall project area. Considering this is a reactive project in

Project	Status	Development period	⁷ Distance from Norfolk Boreas onshore project area (km)	Distance from Norfolk Boreas offshore project area (km)	Project definition	Project data status	Included in CIA Scenario 1	Included in CIA Scenario 2	Rationale
					ils.do?activeTab=summary&keyVal=_NNORF_DCAPR_93543				response to natural process exacerbated by climate change, it is not expected to have a cumulative effect on tourism during the construction phase and will not interact with the project during operational phase.
Breckland Council									
Erection of 85 Dwellings with Associated Open Space 3PL/2018/1246/F	Awaiting Decision	Application received 04/10/18.	1.26	n/a onshore project	http://planning.breckland.gov.uk/OcellaWeb/planningDetails?reference=3PL/2018/1246/F&from=planningSearch	Medium	No	No	<p>There are two ways that housing developments could cumulatively affect tourists:</p> <ul style="list-style-type: none"> • Through disturbance due to noise, vibration, or dust; and • Through traffic delays. <p>These projects are far enough from the onshore project substation area for cumulative noise impacts to not be an issue to community infrastructure receptors.</p> <p>Increased traffic density is considered in Chapter 24 Transport and Traffic. It is not possible to determine if these will culminate in community impacts but it is</p>
Residential development of 40 No. units comprising a mix of housing types, accommodati	Approved	Application approved 11/02/19. Construction must begin within 2 years.	1.42	n/a onshore project	http://planning.breckland.gov.uk/OcellaWeb/planningDetails?reference=3PL/2018/0993/F&from=planningSearch	Medium	No	No	

Project	Status	Development period	⁷ Distance from Norfolk Boreas onshore project area (km)	Distance from Norfolk Boreas offshore project area (km)	Project definition	Project data status	Included in CIA Scenario 1	Included in CIA Scenario 2	Rationale
ing open space and appropriate associated infrastructure with vehicle access via Hall Road 3PL/2018/09 93/F									assumed to be highly unlikely due to the low level of human health outcomes.

30.8.1 Cumulative Impacts during Construction

30.8.1.1 Norfolk Boreas and Norfolk Vanguard

337. The development of Norfolk Boreas will use the same offshore cable corridor as Norfolk Vanguard with the addition of a spur to the Norfolk Boreas offshore wind farm area. The main impact pathways for cumulative tourism impacts will be due to the onshore construction.
338. Cumulative construction impacts may occur where there is overlap of the project construction programmes. The combined labour curve (as used in Chapter 31 Socio Economics) is a good indicator of the potential for overlap between the project would be as shown in Plate 30.5. This shows that because Norfolk Boreas is due to begin a year after Norfolk Vanguard:
- The only cumulative effect would occur during 2024 where the primary works for Norfolk Boreas would be undertaken at the same time as the cable pulling and jointing for Norfolk Vanguard.
 - These impacts are likely to be in different locations so there would be limited cumulative effect on tourism receptors and the combined average daily staffing would be less than the peak in 2022.
 - The peak average daily workers has the same value under a combined project (Scenario 1) as it would if only Norfolk Boreas were built (Scenario 2) but the peak would be in a different year; and
 - The duration of the construction works programme would increase from 3 years to construct one project to 5 years to construct both.
339. Using labour demand as a proxy for construction intensity and considering that the peak volume of staff required per year does not increase, it is unlikely that the physical disturbance created by a building Norfolk Boreas after Norfolk Vanguard would be higher than building Norfolk Boreas alone.
340. Therefore, the cumulative effects with other projects are likely to be similar if Norfolk Vanguard is built first then Norfolk Boreas is built (Scenario 1) or if only Norfolk Boreas is built (Scenario 2).

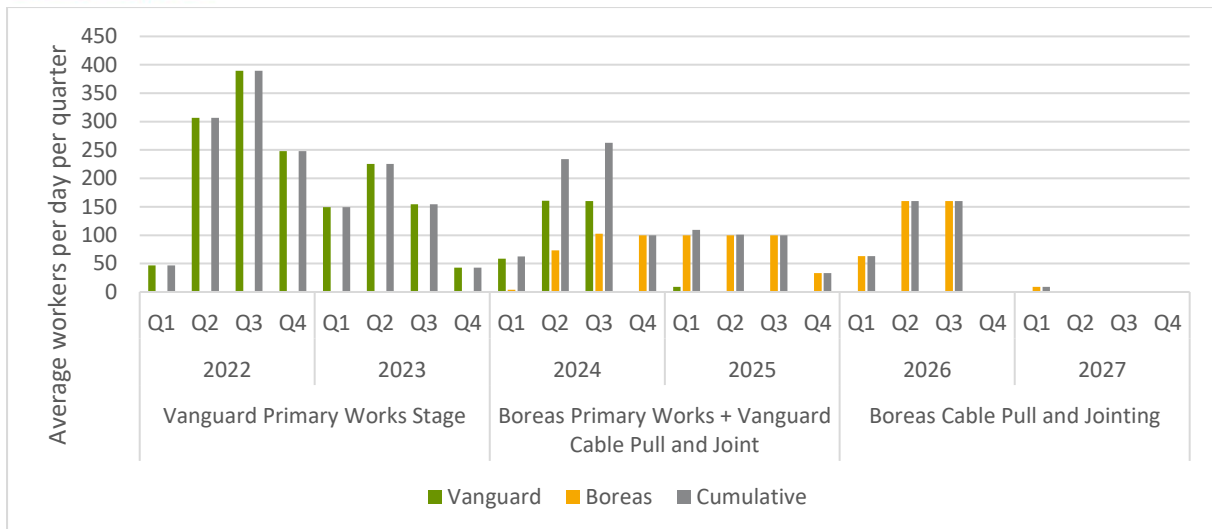


Plate 30.5 Cumulative onshore labour curve under Scenario 1

30.8.1.2 Cumulative Impact 1: Increased marine construction traffic affecting attractiveness of the coastline for tourism and recreation

30.8.1.2.1 Scenario 1 and Scenario 2

341. Under both scenarios an export cable at the landfall location will be required. Under Scenario 1 the combined duration of effects due to construction of Norfolk Boreas and Norfolk Vanguard at Happisburgh and offshore would be longer than the construction of a single project (Scenario 2).
342. There is potential for the temporary presence of construction vessels on passage to or from the construction sites and loadout ports for both Norfolk Boreas and Norfolk Vanguard to pass the North Norfolk coast and be visible to tourists and recreational users of the coast. Perception of shipping by visitors can be negative, viewed as a man-made addition to the environment. In other cases, the presence of shipping offshore can be viewed by some observers as a positive feature of interest.
343. Construction vessels may be travelling from Great Yarmouth, Lowestoft, or from sites outside of Norfolk. If they travel from Great Yarmouth, Lowestoft, ports in Suffolk or ports further south to Norfolk Boreas and Norfolk Vanguard, they would not pass the North Norfolk Coast.
344. If construction vessels travelled to Hornsea Project Three from Great Yarmouth, Lowestoft, or further south, then they may pass the North Norfolk coast. However, it is assumed that vessels would travel at a far enough distance from the coast to not be visible to tourism and recreation receptors.
345. If vessels were to travel from ports in the North, such as Hull or Grimsby, to Norfolk Vanguard and Norfolk Boreas they would pass the North Norfolk coast but it is

assumed they would be outside of the visual range of tourists in North Norfolk due to the distance offshore of the offshore wind farm sites.

346. Construction vessels laying the offshore export cables for Norfolk Boreas and Norfolk Vanguard will be visible from shore. The works for the two projects will be conducted sequentially. Norfolk Boreas is planned for construction approximately one year after Norfolk Vanguard. Therefore, although the number of vessels potentially present on site at any time will not increase, the vessels will be cumulatively present for a greater duration until works are completed for Norfolk Boreas.
347. The concentration and activity of vessels close to the shore, would appear at variance with the rural character and this could add to a notable effect to users of the coastal beach and path assets. The sensitivity of tourist and recreational receptors to the presence of additional offshore shipping is considered to be low and it is not anticipated to change people's use of the coast for tourism and recreation activities. Under either scenario, the number of vessels present at any one time will be limited, and these visual impacts will be transient and temporary in nature, and due to the baseline of marine activity in the area are assessed as negligible magnitude and of **negligible** significance.

30.8.1.3 Cumulative Impact 2: Disruption of marine recreational activities including sailing and other water sports

30.8.1.3.1 Scenario 1 and Scenario 2

348. **No impacts** have been identified on cumulative displacement of recreational activity, and thus collision risks. Vessels related to the construction, operation or decommissioning of any of the cumulative projects will be managed by the marine coordinators. Full details on the CIA for recreational vessels are discussed in Chapter 15 Shipping and Navigation.

30.8.1.4 Cumulative Impact 3: Deterioration to Bathing Water / Blue Flag beaches and resulting effect on Tourism and Recreation

30.8.1.4.1 Scenario 1 and Scenario 2

349. The proposed landfall at Happisburgh South and the offshore cable corridor is to the south of proposed Bacton and Walcott Coastal Management Scheme, a sand engine (large scale beach nourishment) to bolster sea defences at Bacton Gas Terminal, Bacton and Walcott villages. The effect of the beach nourishment has potential to be expressed at nearby bathing waters and blue flag beaches (i.e. some of the nourished sand will migrate from the main sand engine driven by longshore sediment transport). The available information on this project indicates that the construction programme, 2018 or 2019, is unlikely to overlap with the Norfolk Boreas construction periods (Table 30.31).

350. As a result, it is considered that the cumulative impact would not increase the impact significance predicted as a result of construction of Norfolk Boreas alone (i.e. **negligible** impact significance)

30.8.1.5 Cumulative Impact 4: Disruption to onshore coastal tourism and recreation assets

30.8.1.5.1 Scenario 1 only

351. A number of tourism assets are located around the landfall south of Happisburgh. The shared landfall and onshore cable route of both Norfolk Boreas and Norfolk Vanguard is designed to avoid the location of these assets (described in section 30.7.4.4 Impact 4).
352. The local beach and Norfolk Coast Path also provide key recreation assets at the landfall. Closure of these features would be avoided by the use of long HDD to install ducts for both Norfolk Boreas and Norfolk Vanguard during construction.
353. Traffic management measures would be implemented (See Chapter 24 Traffic and Transport for details) to ensure tourists and the local communities can still access the coast and other key tourism locations.
354. Noise impacts are discussed in Chapter 25 Noise and Vibration and dust impacts are discussed in Chapter 26 Air Quality. Both are considered not to be significant for the shared infrastructure and, therefore, assessed to be low impact.
355. Cumulative impacts to tourism assets at landfall are assessed to be low magnitude and the sensitivity of affected receptors is assessed to be low. Following the matrix set out in Table 30.7 the cumulative impact is anticipated to be **minor adverse** significance for the duration of construction activities.
356. With regards to recreational assets, closures would not be required to the beach or Norfolk Coast Path during construction. Therefore, there would be no direct impact on receptors. The potential for indirect noise and vibration impacts are considered in detail in Chapter 25 Noise and Vibration which states there will be no resultant noise or vibration impacts at landfall with the inclusion of appropriate mitigation measures. The presence of a temporary works area would create a visual change to the environment but this would be localised, temporary, and not significant so is unlikely to lead to a reduction in visitor numbers or expenditure, therefore the cumulative magnitude is considered to be negligible. Following the matrix set out in Table 30.7 the cumulative impact is anticipated to be **negligible** significance for the duration of construction activities.
357. As Norfolk Vanguard and Norfolk Boreas share a landfall, a co-ordinated approach to consultation and mitigation has and will continue to be undertaken to ensure impacts to local tourism and recreation receptors are minimised. The strategy adopted by

VWPL for both Norfolk Vanguard and Norfolk Boreas to have a co-located landfall and allow for a joint onshore cable route was considered most appropriate from both environmental and engineering perspectives, and limits the geographical extent of the construction works. This also ensures any impacts to local tourism and recreational receptors are kept to an acceptable minimum. Consequently, a co-ordinated approach to traffic and access for both Norfolk Vanguard and Norfolk Boreas will be undertaken. Although the commissioning of two projects will result in construction activities being conducted over a longer duration than a single project, the installation of Norfolk Boreas' onshore cable ducts by Norfolk Vanguard will ensure the geographical extent of construction works is constrained. Further details on the traffic-related cumulative impacts are discussed in Chapter 24 Traffic and Transport.

30.8.1.6 Cumulative Impact 5: Visual impacts of construction activity to tourism and recreation assets

30.8.1.6.1 Scenario 1

358. Impacts relating to visual effects are discussed in Chapter 29 Landscape and Visual Assessment. Because the landscape along the onshore cable route will be reinstated by Norfolk Vanguard prior to construction of Norfolk Boreas and Norfolk Boreas will only be pulling cables through the preinstalled ducts at a later time there will be **no cumulative** impact during construction activities.
359. Impacts at the onshore project substation and National Grid substation extension for Norfolk Boreas would be less than for Norfolk Vanguard, due to the fact that Norfolk Boreas would have already undertaken the overhead line modifications (see Chapter 5 Project Description). The only works undertaken for Norfolk Boreas would be the onshore project substation and a smaller extension to the east of the existing National Grid substation. However, it is assumed that users of recreational assets may perceive a similar level of impact or at a slightly lower level but for a longer duration. Therefore, at the onshore project substation, the cumulative impact is assessed to be of **minor adverse** significance.

30.8.1.6.2 Scenario 2

360. The Hornsea Project Three onshore cable route would cross the Norfolk Boreas onshore cable route. It has not been determined which set of cables will pass underneath the other but it is best practice for the later project to use a trenchless crossing to minimise disturbance. This will remove the need for two trenches and the associated visual impact. Current predicted timelines for the two projects would indicate that Hornsea Project Three will install its cables prior to Norfolk Boreas. Therefore, Norfolk Boreas will need to install temporary sites either side of the Hornsea Project Three cable route to facilitate the HDD, but this will mean less above ground work and therefore less visual impacts. As the impact would be temporary the

sensitivity is assessed to be low and the cumulative impact magnitude to be low. Therefore, the cumulative impact at the onshore cable route crossing is assessed to be of **minor adverse** significance.

30.8.1.7 Cumulative Impact 6: Reduction of tourist accommodation availability due to non-resident work force

30.8.1.7.1 Scenario 1

361. Due to the installation of the cable ducts by Norfolk Vanguard, there would be minimal non-resident workers due to Norfolk Boreas requiring accommodation under Scenario 1 during the cable pulling phase. Work on the onshore project substation and the National Grid substation extension may require a maximum of 170 personnel in the worst case and an average of 100 personnel per week during 2024 and 2025.
362. As discussed in Chapter 31 Socio-economics and shown in Plate 30.5, the cumulative workforce of Norfolk Vanguard and Norfolk Boreas would have three peaks during the second and third quarters of the following years:
- 2022 with a peak of 420 personnel;
 - 2024 with a cumulative peak of 263 personnel; and
 - 2026 with a peak of 170 personnel.
363. The worst case for construction personnel is that peak demand for Hornsea Project Three and Norfolk Vanguard and Norfolk Boreas overlap. Cumulative demand would therefore increase as shown in Table 30.32, because to construct Norfolk Vanguard and Norfolk Boreas would require a peak employment of 420 personnel and to construct Norfolk Boreas as a standalone project would also require a peak employment of 420 personnel.
364. It is expected that non-resident workers would be prepared to travel up to 45 minutes to reach site. Therefore, the stock of bed spaces in Norfolk that could be included increases to 18,870 and the demand created by non-resident workers reduces 3.1% on bed spaces and 7.0% on rooms across a much wider area. Considering that peak hotel occupancy rates are 80% the magnitude of effect would be negligible and potentially positive.
365. As defined in
366. Table 30.5, hotels are individually low value. Following the matrix set out in Table 30.9, the resultant impact on accommodation receptors in North Norfolk would be of **minor adverse** significance because the cumulative magnitude would be medium. However, assuming that workers stay at hotels across Norfolk then the significance of the impact would be of **negligible** significance because the cumulative magnitude of effect across all hotels in Norfolk would be negligible.

30.8.1.7.2 Scenario 2

367. To assess this impact, it has been assumed that the worst case for peak construction personnel will occur (420 personnel of which 70% come from outside Norfolk) providing an increase of 294 people requiring accommodation. The main potential impacts as a result of non-resident workers for the project will be to accommodation availability in Norfolk and indirect economic impacts to local businesses.
368. The ES for Hornsea Project Three provides a low to medium scenario for FTE in the New Anglia LEP. This estimates an annual FTE of 120 to 880 construction personnel but does not indicate whether these people would be likely to be residential or in-migrant staff. As the range is similar to that of Norfolk Boreas it is assumed that a similar number of in-migrant workers will be required.
369. Onshore construction for Hornsea Project Three is anticipated to begin in 2021, whilst pre-construction works for Norfolk Boreas are programmed for 2022.
370. Although unlikely, a worst case for peak construction personnel is considered to be where peak demand for Norfolk Boreas and Hornsea Project Three overlap. Demand would therefore increase as shown in Table 30.32. This would be a significant impact on availability in North Norfolk (as discussed under section 30.7.4).

Table 30.32 Showing potential for cumulative increased peak demand from Norfolk Boreas and Hornsea Project Three on accommodation under Scenario 2

Area	Rooms	Bed spaces	Peak Demand	Increase rooms	Increase bed spaces
North Norfolk	1,483	3,124	588	39.6%	18.8%
Norfolk	8,387	18,870	588	7.0%	3.1%

371. It is expected that non-resident workers would be prepared to travel up to 45 minutes to reach site. Therefore, the stock of bed spaces in Norfolk that could be included increases to 18,870 and the demand created by non-resident workers reduces 3.1% on bed spaces and 7.0% on rooms across a much wider area. Considering that peak hotel occupancy rates are 80% the magnitude of effect would be negligible and potentially positive.
372. As defined in
373. Table 30.5, hotels are individually low value. Following the matrix set out in Table 30.9, the resultant impact on accommodation receptors in North Norfolk would be **minor adverse** because the magnitude would be medium. However, assuming that workers stay at hotels across Norfolk then the significance of the impact would be **negligible** because the magnitude of effect across all hotels in Norfolk would be negligible.

30.8.1.8 Cumulative Impact 7: Obstruction or disturbance to inland tourism and recreation assets

30.8.1.8.1 Scenario 1 only

374. The onshore works required for Norfolk Boreas and Norfolk Vanguard have been located to avoid tourism and recreation assets. The site selection process undertaken, as detailed in Chapter 4 Site Selection and Assessment of Alternatives, has located the onshore infrastructure for both projects a minimum 1km from tourism and recreation assets in Norfolk.

375. Due to the low number of tourist assets in the vicinity of the onshore project area, the sensitivity of tourism assets is assessed to be low. Due to the temporary nature of any effect the impact magnitude is also assessed to be low. Therefore, the significance of the cumulative impact is **minor adverse**.

30.8.1.8.2 Scenario 1 and Scenario 2

376. There are no tourism or recreation assets which could be affected by construction of the onshore cable route at the crossing point between Norfolk Boreas, Norfolk Vanguard and Hornsea Project Three, therefore no potential for cumulative impact.

377. Potential cumulative impacts at landfall are considered in section 30.8.1.5.

30.8.1.9 Cumulative Impact 8: Obstruction or disturbance to users of PRoW and other non-motorised routes

30.8.1.9.1 Scenario 2 only

378. During the duct installation under Scenario 2 the only project that would have a cumulative impact with the cable route construction of Norfolk Boreas is Hornsea Project Three.

379. It is anticipated that the cable routes would cross north of Reepham and therefore there is potential to cumulatively effect the following PRoWs:

- Reepham footpath (FP)18 at the point where the two routes cross;
- Salle FP8 potentially at two points within walking distance of each other; and
- The Blickling to Cawston cycle route, once to the north of the cable route crossing where Hornsea Project Three crosses a minor road and once north west of Cawston where the Norfolk Boreas (or Norfolk Vanguard) cable route cross a minor road.

380. The crossing will be subject to a management plan and mitigation that would be agreed between the projects and with the Local Authority. These could include soft management techniques or provision of alternative routes. However, depending on timings of the projects, there may be cumulative impacts of multiple works at the

same time, thereby potentially increasing travel times. Any impacts would be short term and temporary for the duration of works at each crossing point.

381. Chapter 29 Landscape and Visual Impact Assessment concludes that the construction of the Norfolk Boreas onshore cable route in addition to the Hornsea Project Three onshore cable route would have a short term significant cumulative effect on the views of walkers on an approximate 200m section of Marriott's Way, but would not have significant effects on the remaining parts of this route or on any other landscape or visual receptors, including nearby Salle Park and the B1145.
382. Therefore, cumulatively residual potential impacts to PRoW or non-motorised routes are anticipated to remain **negligible** as described in section 30.7.4.8.

30.8.1.10 Cumulative Impact 9: Increased traffic affecting tourism and recreation

30.8.1.10.1 Scenario 2 only

383. Cumulative traffic impacts could occur with Hornsea Project Three and Norfolk Boreas Scenario 2. Norfolk Boreas Limited and Ørsted are in regular dialogue and have been for some time. From the indicative programmes for both projects, Hornsea Project Three construction could coincide with Norfolk Boreas Scenario 2. Ørsted submitted a Hornsea Project Three ES in May 2018, however the most recent Traffic data for the Hornsea Project Three was the primary data source for the assessment "Hornsea Project Three Deadline 4 - Appendix 7: The HGV Haul Road Reduction Report (REP-028)"⁸.
384. Chapter 24 Traffic and Transport assesses the cumulative impact on increased traffic Norfolk Boreas Scenario 2 in combination with Hornsea Project Three.
385. In terms of pedestrian severance, the assessment concludes that no links experience an increase in traffic above the severance threshold for very low magnitude of effect (30% increase in total traffic) and therefore a maximum **minor adverse** cumulative traffic impacts are assessed.
386. The cumulative assessment for pedestrian amenity noted an initial impact of **major adverse** on links 34 and 36, with **moderate** adverse impacts on links 13b, 32, 41 and 68. With the addition of enhanced mitigation measures which will be included in the final Traffic Management Plan and an Access Management Plan. Mitigation is also detailed in section 24.8.6.2 of Chapter 24 Traffic and Transport the residual cumulative impact for all of these links is **minor adverse**.

⁸ *The updated Hornsea Project Three construction traffic numbers, and their use of the normal (100%) distributions for the CIA, have been agreed by Hornsea Project Three, Norfolk County Council (NCC) and Highways England as part of the Statements of Common Ground between Hornsea Project Three and NCC (REP4-019) and Highways England (REP4-017).

387. The remaining links all experience cumulative traffic flows significantly below the 100% HGV thresholds and the magnitude of effect is assessed as very low on low to high sensitivity links representing a cumulative impact on all these links of **negligible** to **minor adverse** significance.
388. Chapter 24 Traffic and Transport proposes mitigation measures for moderate and major adverse traffic impacts. These include a TMP (DCO Requirement 21) and an AMP (DCO Requirement 22), which will be approved by the relevant planning authority in consultation with the Highways Authority, to reduce the impact to an acceptable level. Traffic management measures will be implemented (See Chapter 24 Traffic and Transport for details) to ensure tourists and the local communities can still access the coast and other key tourism locations. The use of a running track will also reduce the number of construction vehicles on existing country roads.
389. It is therefore concluded that any potential cumulative negative impacts caused by increased traffic affecting severance and pedestrian amenity due to Hornsea Project Three and Norfolk Boreas Scenario 2 will have an impact significance on tourism assets of at most **minor adverse**.

30.8.2 Cumulative Impacts during Operation

30.8.2.1 Cumulative Impact 1: Obstruction or disturbance to marine recreation

390. **No impacts** have been identified on cumulative displacement of recreational activity, and thus collision risks for operation. This is due to recreational vessels in the majority transiting within the wind turbine arrays and therefore avoiding the majority of potential displaced commercial traffic. Vessels related to the construction, operation or decommissioning of any of the cumulative projects will be managed by the marine coordinators. Further details are discussed in Chapter 15 Shipping and Navigation.

30.8.2.2 Cumulative Impact 2: Visual and noise impacts on land-based tourism and recreation assets

391. The results of the cumulative mitigated noise modelling (Norfolk Vanguard onshore project substation and Norfolk Boreas onshore project substation and at the National Grid extensions) are detailed in Chapter 25 Noise and Vibration. With the application of mitigation measures which are to be determined during the detailed design phase (in agreement with Breckland Council) predicted noise levels fall within the 32 decibels (dB)Z(100hz) limit and result in no impact at identified receptor locations in accordance with BS4142:2014 derived impact magnitudes. A **negligible** impact significance post mitigation has been predicted.
392. There is potential for cumulative visual impacts with Norfolk Vanguard at the onshore substation and the National Grid extension, which may affect local recreation assets. However, there is a low density of tourism and recreational receptors at this point.

Chapter 25 Noise and Vibration and Chapter 29 Landscape and Visual Impact Assessment discuss these impacts in more detail and outline the indicative mitigation which will be further developed to ensure cumulative noise impacts are within an acceptable level. Mitigation practices will be shared between projects therefore the long term cumulative impacts are assessed to be **negligible** as described in section 30.7. The approach to mitigation for Norfolk Boreas and Norfolk Vanguard has been discussed with local authorities through the ETG Meetings and will continue post-consent during the detailed design phase.

30.8.3 Cumulative Impacts during Decommissioning

30.8.3.1 Scenario 1

393. Under this scenario, the decommissioning of Norfolk Vanguard must be considered cumulatively with Hornsea Project Three and Norfolk Boreas. The detail and scope of the decommissioning works will be determined by the relevant legislation and guidance at the time of decommissioning and agreed with the regulator. A decommissioning plan will be provided. As such, cumulative impacts during the decommissioning stage are assumed to be no worse than those identified during the construction stage and therefore would not exceed **minor adverse** impact significance.

30.8.3.2 Scenario 2

394. Decommissioning of Hornsea Project Three may potentially take place at the same time as Norfolk Boreas. The detail and scope of the decommissioning works will be determined by the relevant legislation and guidance at the time of decommissioning and agreed with the regulator. A decommissioning plan will be provided. As such, cumulative impacts during the decommissioning stage are assumed to be no worse than those identified during the construction stage and therefore would not exceed **minor adverse** significance.

30.9 Inter-relationships

395. Table 30.33 lists out the inter-relationships between this chapter and other chapters within the ES.

Table 30.33 Tourism and recreation inter-relationships

Topic and description	Related Chapter	Where addressed in this Chapter	Rationale
Landscape and Visual Impact Assessment from marine, coastal and land based receptors	Chapter 29 Landscape and Visual Impact Assessment	Section 30.7.4.4 Section 30.7.4.5 Section 30.7.4.7 Section 30.7.4.8	Visual impacts of the project may affect local communities and tourists who use the area for recreation activities including walking, cycling, bird watching and, wildlife appreciation and star gazing.

Topic and description	Related Chapter	Where addressed in this Chapter	Rationale
Impact of tourism and recreation to socio-economics	Chapter 31 Socio-economics	Section 30.7.4.6	The project may affect local businesses in the tourism and recreation industry.
Impacts to tourism and recreation due to increased noise or vibration	Chapter 25 Noise and Vibration	Section 30.7.4.4 Section 30.7.4.7 Section 30.7.4.8	Noise generated by the project may affect local communities and tourists who use the area for recreation activities including walking, cycling, bird watching and, wildlife appreciation and star gazing.
Impacts to marine recreation	Chapter 15 Shipping and Navigation	Section 30.7.4.1 Section 30.7.4.2 Section 30.7.5.1	The project may affect recreational coastal and water based activities.
Impacts on traffic for tourists and local communities accessing local assets and facilities	Chapter 24 Traffic and Transport	Section 30.7.4.4 Section 30.7.4.7 Section 30.7.4.9 Section 30.7.5.3	The impacts of construction traffic may affect access for local communities and tourists.

30.10 Interactions

396. The impacts identified and assessed in this chapter have the potential to interact with each other, which could give rise to synergistic impacts as a result of that interaction. The worst case impacts assessed within the chapter take these interactions into account and for the impact assessments are considered conservative and robust. For clarity, the areas of interaction between impacts are presented in Table 30.34, along with an indication as to whether the interaction may give rise to synergistic impacts. Although it would seem that all impacts interact with all other impacts the synergies should be considered with regards to the tourists' experience.
397. There are several impacts that would have synergies with other impacts. These are the availability of accommodation, visual impacts, and traffic increases. First of all, if visitors cannot book accommodation then they will not be able to visit for more than a day and the additional expenditure would be lost. Of those that still do visit, if traffic increases delay their travel then they would have less time available at tourism assets. If this is compounded by significant visual impacts then their enjoyment of the tourism experience would be significantly reduced and could lead to lower expenditure. However, assessment shows that these impacts are negligible to minor and therefore the resultant impact would also be minor.

Table 30.34 Interactions between impacts

Potential interactions between impacts										
Construction										
	1 Increased marine construction traffic	2 Disruption of marine recreational activities including sailing and other water sports	3 Deterioration to bathing water / Blue Flag beaches	4 Disruption to onshore coastal tourism and recreational assets	5 Visual impacts of construction activity to tourism and recreational receptors	6 Reduction of tourist accommodation availability due to non-resident work force	7 Obstruction or disturbance to inland tourism and recreation assets	8 Obstruction or disturbance to users of PROW, paths and non-motorised routes	9 Increased traffic affecting tourism and recreation	10 Disruption or impacts to open access or public land
1 Increased marine construction traffic	-	Yes	Yes	No	Yes	Yes	No	No	Yes	No
2 Disruption of marine recreational activities including sailing and other water sports	Yes	-	Yes	No	Yes	Yes	No	No	Yes	No
3 Deterioration to bathing water / Blue Flag beaches	Yes	Yes	-	No	Yes	Yes	No	No	Yes	No
4 Disruption to onshore coastal tourism and recreational assets	No	No	No	-	Yes	Yes	Yes	Yes	Yes	No
5 Visual impacts of construction activity to tourism	Yes	Yes	Yes		-	Yes	Yes	Yes	Yes	Yes

Potential interactions between impacts										
and recreational receptors										
6 Reduction of tourist accommodation availability due to non-resident work force	Yes	Yes	Yes	Yes	Yes	-	Yes	Yes	Yes	Yes
7 Obstruction or disturbance to inland tourism and recreation assets	No	No	No	Yes	Yes	Yes	-	Yes	Yes	Yes
8 Obstruction or disturbance to users of PRoW, paths and non-motorised routes	No	No	No	Yes	Yes	Yes	Yes	-	Yes	Yes
9 Increased traffic affecting tourism and recreation	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-	Yes
10 Disruption or impacts to open access or public land	No	No	No	No	Yes	Yes	Yes	Yes	Yes	-
Operation										
	1 Obstruction or disturbance to marine recreation		2 Visual and noise impacts on land-based tourism and recreation assets			3 Permanent closure of paths or non-motorised routes		4 Reduction in visitor numbers due to tourist perceptions of wind farms		

Potential interactions between impacts				
1 Obstruction or disturbance to marine recreation	-	No	No	Yes
2 Visual and noise impacts on land-based tourism and recreation assets	No	-	Yes	Yes
3 Permanent closure of paths or non-motorised routes	No	Yes	-	Yes
4 Reduction in visitor numbers due to tourist perceptions of wind farms	Yes	Yes	Yes	-
Decommissioning				
It is anticipated that the decommissioning impacts will be no worse than those of construction.				

30.11 Summary

398. Table 30.35 summarises the likely tourism and recreation effects associated with the proposed project during the construction and operation and maintenance phases of the proposed project under both Scenario 1 and Scenario 2. It has been concluded that following mitigation the residual potential impacts on tourism and recreation range from **no impact** to **minor adverse**.
399. These impacts are driven mainly by the increased traffic density during construction and the visual impact of construction in a rural area. The construction impacts have a greater likelihood of being more significant closer to the coast because the density of tourism and recreational receptors increases with proximity to the coast. This is to be expected because the Norfolk Coast AONB is one of the main drivers of tourism in the area. However, these impacts are temporary, short term due to the sequential nature of the construction, and fully reversible once construction is complete. Therefore, it is unlikely that they would result in a negative impact to the tourism industry in the area.
400. During operation, there are not expected to be any impacts to tourist visitors or the tourist industry. This is because the onshore cable is buried and the offshore wind turbines are far enough from the coast to not be visible. It is likely that there will be a long term change to the landscape at the onshore project substation and National Grid Substation. However, due to the low density of tourism receptors here it is unlikely to have an impact on the tourism industry. Recreational users may have some negative perceptions of the presence of a substation but the significance of physical impacts combined with observations seen in previous studies indicate that it is unlikely that they would change their behaviour or stop using the area for recreational purposes.
401. It should be stressed that where **minor adverse** impacts have been assessed that they are localised and Norfolk Boreas Limited will work to mitigate the determinants of the impacts by development of a CoCP and TMP to ensure all potential impacts are managed to an acceptable level.

Table 30.35 Potential Impacts Identified for tourism and recreation

Potential Impact	Receptor	Value/ Sensitivity	Magnitude	Scenario 2			Scenario 1			
				Significance	Mitigation	Residual Impact	Magnitude	Significance	Mitigation	Residual Impact
Construction										
Impact 1: Increased marine construction traffic affecting attractiveness of the coastline for Tourism and recreation.	Tourists	Low	Negligible	Negligible	None	Negligible	Negligible	Negligible	None	Negligible
Impact 2: Disruption of marine recreational activities including sailing and other water sports	Recreational marine users	Low	Low	Negligible	None	Negligible	Low	Negligible	None	Negligible
Impact 3: Deterioration to Bathing Water / Blue Flag beaches and resulting effect on Tourism and Recreation	Visitors to blue Flag beaches and associated local businesses	Low	Negligible	Negligible	None	Negligible	Negligible	Negligible	None	Negligible
Impact 4: Disruption to onshore coastal recreational and tourism assets	Tourism and recreation assets	Medium	Low	Minor adverse	OLEMS CoCP TMP	Negligible	Low	Minor adverse	OLEMS CoCP TMP	Negligible

Potential Impact	Receptor	Value/ Sensitivity	Scenario 2				Scenario 1			
			Magnitude	Significance	Mitigation	Residual Impact	Magnitude	Significance	Mitigation	Residual Impact
Impact 5: Visual impacts of construction activity	Tourists and local communities using the area recreationally	Medium	Low	Minor adverse	OLEMS CoCP	Minor adverse	Low	Minor adverse	OLEMS CoCP	Minor adverse
Impact 6: Reduction of tourist accommodation availability due to non-resident work force	Hotels and other accommodation	Low	Negligible to medium	Negligible to Minor adverse	Accommodation plan	Negligible to Minor adverse	Negligible	Negligible	None	Negligible
Impact 7: Obstruction or disturbance to inland tourism and recreation assets	Tourism and recreation assets	Medium	Low	Minor adverse	CoCP	Minor adverse	Low	Minor adverse	CoCP	Minor adverse
Impact 8: Obstruction or disturbance to users of paths or non-motorised routes	Tourists and local communities using the area recreationally	Medium to high	Negligible	Minor adverse	CoCP	Negligible	Negligible	Minor adverse	CoCP	Negligible
Impact 9: Increased traffic affecting tourism and recreation	Pedestrian severance and amenity	Low to High (see Chapter 24)	Low	Moderate (link 29) to Minor adverse	TMP CoCP	Minor adverse	Low	Minor adverse	TMP CoCP	Minor adverse

Potential Impact	Receptor	Value/ Sensitivity	Scenario 2				Scenario 1			
			Magnitude	Significance	Mitigation	Residual Impact	Magnitude	Significance	Mitigation	Residual Impact
Impact 10: Disruption or impacts to open access or public land	Open or public land areas	None interacted with	No impact	No impact	None	No impact	No impact	No impact	None	No impact
Operation										
Impact 1: obstruction of disturbance to marine recreation	Recreational marine users	Low	Negligible	Negligible	None	Negligible	Negligible	Negligible	None	Negligible
Impact 2: Visual and noise impacts on land-based tourism and recreation assets	Tourists	Low	Low	Minor adverse	Planting and bunding	Negligible	Low	Minor adverse	Planting and bunding	Negligible
Impact 3: Permanent closure of paths or non-motorised routes	Recreational users	Negligible	No Impact	No impact	None	No impact	No Impact	No Impact	None	No Impact
Impact 4: Reduction in visitor numbers due to tourist perceptions of wind farms	Potential visitors to Norfolk	Low	No Impact	No impact	None	No impact	No Impact	No Impact	None	No Impact
Decommissioning										
The detail and scope of the decommissioning works will be determined by the relevant legislation and guidance at the time of decommissioning and agreed with the regulator. A decommissioning plan will be provided. As such, cumulative impacts during the decommissioning stage are assumed to be no worse than those identified during the construction stage under both scenarios.										

Potential Impact	Receptor	Value/ Sensitivity	Scenario 2				Scenario 1			
			Magnitude	Significance	Mitigation	Residual Impact	Magnitude	Significance	Mitigation	Residual Impact
Cumulative Construction										
Impact 1: Increased marine construction traffic affecting attractiveness of the coastline for tourism and recreation.	Tourists	Low	Negligible	Negligible	None	Negligible	Negligible	Negligible	None	Negligible
Impact 2: Disruption of marine recreational activities including sailing and other water sports	Marine recreational users	Low	No Cumulative Impact	No Cumulative Impact	None	No Cumulative Impact	No Cumulative Impact	No Cumulative Impact	None	No Cumulative Impact
Impact 3: Deterioration to Bathing Water / Blue Flag beaches and resulting effect on Tourism and Recreation	Visitors to Blue Flag beaches and associated local businesses	IOW	Negligible	Negligible	None	Negligible	Negligible	Negligible	None	Negligible
Impact 4: Disruption to onshore coastal tourism and recreation assets	Tourism and recreation assets	Low	n/a	n/a	n/a	n/a	Low	Minor adverse	None	Minor adverse
Impact 5: Visual impacts of construction activity	Tourists and local communities	Low	Low	Minor adverse	Embedded mitigation Site selection	Minor adverse	Low	Minor adverse	Embedded mitigation: Site selection	Minor adverse

Potential Impact	Receptor	Value/ Sensitivity	Scenario 2				Scenario 1			
			Magnitude	Significance	Mitigation	Residual Impact	Magnitude	Significance	Mitigation	Residual Impact
to tourism and recreation assets	using the area recreationally				OLEMS CoCP				OLEMS CoCP	
Impact 6: Reduction of tourist accommodation availability due to non-resident work force	Hotels and other accommodation	Low	Negligible to medium	Negligible to Minor Adverse	Accommodation plan	Negligible	Negligible to medium	Negligible to Minor Adverse	Accommodation plan	Negligible
Impact 7: Obstruction or disturbance to inland tourism and recreation assets	Tourism and recreation assets	Low	Low	Minor adverse	None	Minor adverse	Low	Minor adverse	None	Minor adverse
Impact 8: Obstruction or disturbance to users of PRoW and other non-motorised routes	Tourists and local communities using the area recreationally	Medium to high	Low	Minor to Moderate adverse	Embedded mitigation CoCP	Negligible	n/a	n/a	n/a	n/a
Impact 9: Increased traffic affecting tourism and recreation	Pedestrian severance and amenity	Low to High (see Chapter 24)	Low to High	Negligible to Major Adverse	TMP and AMP	Negligible to Minor Adverse	n/a	n/a	n/a	n/a

Potential Impact	Receptor	Value/ Sensitivity	Scenario 2				Scenario 1			
			Magnitude	Significance	Mitigation	Residual Impact	Magnitude	Significance	Mitigation	Residual Impact
Cumulative Operation										
Impact 1: Obstruction or disturbance to marine recreation	Marine recreational users	Negligible	No Cumulative Impact	No Cumulative Impact	None	No Cumulative Impact	No Cumulative Impact	No Cumulative Impact	None	No Cumulative Impact
Impact 2: Visual and noise impacts on land-based tourism and recreation assets	Tourists	Low	Negligible	Negligible	None	Negligible	Negligible	Negligible	None	Negligible
<p>Cumulative decommissioning: Cumulative impacts during the decommissioning stage are assumed to be no worse than those identified during the construction stage and therefore would not exceed minor adverse significance.</p>										
<p>Cumulative impacts that effect tourism and recreation assets are further discussed in:</p> <ul style="list-style-type: none"> • Chapter 24 Traffic and Access; • Chapter 25 Noise and Vibration; and • Chapter 29 Landscape and Visual Assessment. 										

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