

From: [Geoff Lyon](#)
To: [Norfolk Vanguard](#)
Subject: NNDC Deadline 7 Submission
Date: 02 May 2019 17:42:51
Attachments: [NNDC Deadline 7 Post Hearing Submissions Final 02 May 2019.pdf](#)

Dear Examining Authority,

Please find attached the Norfolk Vanguard Deadline 7 response from North Norfolk District Council (INTERESTED PARTY REF: 20012882).

Please could you confirm receipt of this document.

Kind Regards

Geoff Lyon
Major Projects Manager

Geoff Lyon
Major Projects Manager
+441263 516226

North Norfolk District Council
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**NORTH
NORFOLK
DISTRICT
COUNCIL**

Norfolk Vanguard Offshore Wind Farm

REPRESENTATIONS FOLLOWING ISSUE SPECIFIC HEARINGS ON 24 & 25 APRIL 2019

NORTH NORFOLK DISTRICT COUNCIL
(INTERESTED PARTY REF: 20012882)

DEADLINE 7 – 02 MAY 2019

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1. Introduction

- 1.1. These are North Norfolk District Council's written submissions following Issue Specific Hearings 6 on Environmental Matters and 7 on the Draft Development Consent Order ("**DCO**"). They do not cover in writing all the matters on which oral submissions were made, but expand or elucidate where required, in light of the Action Points published by the Examining Authority after the hearings.
- 1.2. As indicated at the hearing on the Draft DCO, attached to these submissions are further materials relating to the potential impact on tourism of the proposed development:
 - **Appendix A:** Further Evidence Concerning Tourism Impact
 - **Appendix B:** Information about Visit North Norfolk
 - **Appendix C:** Information about Visit Norfolk
 - **Appendix D:** Colby Road (Church Road), North of Banningham - Site Plan and Photographs
 - **Appendix E:** Note Concerning 24 Hour Working in Happisburgh
 - **Appendix F:** Note Concerning Noise Mitigation from the Fencing of Compounds
- 1.3. The Appellant has provided further information concerning the impact of the cable route on trees within Works No. 4C and 5. NNDC have concerns about trees to be lost on Colby Road (Church Road) north of Banningham and consider these trees should be avoided through trenchless crossing techniques. There remain further concerns about the lack of clarity about other trees to be removed along the cable route and NNDC have suggested amendments to Requirement 18 to include details of trees to be removed. Hedgerow replacement alone cannot compensate for the loss of hedgerow trees resulting from this development.
- 1.4. The Appellant has provided a note concerning 24 hour working in Happisburgh; and a note concerning noise mitigation from the fencing of compounds. NNDC continue to have significant concerns about the impacts from 24 hour working

at landfall. NNDC would welcome further discussions with the Applicant to ensure that landfall construction activities do not adversely impact on amenity.

- 1.5. Other matters still require clarification from the Applicant in relation to fencing to compounds at Happisburgh and MA8 near Holly Farm Barningham and also in relation to works at Little London, as requested at Deadline 6.

2. Tourism Impacts and Proposed New Requirement

- 2.1. The Applicant and NNDC met to discuss potential tourism impacts and have agreed that they will undertake further work together with a view to formulating some sensible joint actions for assuaging the concerns of local tourism-reliant businesses. NNDC welcomes and supports this collaborative approach.
- 2.2. However, there remains a substantive disagreement between the parties – the Applicant disagrees that there will be significant local tourism impacts within NNDC’s boundaries and emphasises that the construction time within the area will be short. What is missing in the Applicant’s analysis is the perception impact, which is different from the Applicant’s fine and precise understanding of the construction process. Short-term impacts do not necessarily translate into short-term perception of tourists about where they will visit and stay. The evidence attached in **Appendix A** shows perception impact on tourism which NNDC has experienced in other comparable circumstances.
- 2.3. As a result, NNDC’s view remains that the Applicant has, in the ES and its later analysis, underestimated the significance of the impact on tourism. Accordingly, in order to make the development acceptable in planning terms, a requirement mitigating tourism impact is necessary.
- 2.4. Such a requirement is supported in policy terms. The Overarching National Policy Statement for Energy (EN-1) requires applicants to assess relevant socio-economic impacts, including effects on tourism (§5.12.3) NNDC’s Core Strategy sets out the importance of tourism to the economy of North Norfolk: see §§2.7.19. The Core Strategy also acknowledges that “the main tourism appeal in North Norfolk is based on the unique natural environmental assets”, so “it is important to protect these”. Accordingly, policy SS5 on the economy provides that the tourism industry will be supported and that proposals should not have a detrimental environmental impact which in turn might negatively impact tourism.

- 2.5. NNDC has, since its Local Impact Report (Rep 1-100), challenged the Applicant's assumption that the countryside of North Norfolk is not a direct draw for tourism, outside of the Norfolk Coats AONB (see section 14 of the LIR). The onshore cable route goes through attractive and sensitive parts of North Norfolk district, especially between Happisburgh and North Walsham. Figure 7 in the Core Strategy, entitled "Tourism Asset Zones" (pg 96), identifies Happisburgh as a "coastal service village" asset, and §3.4.28 identifies North Walsham as part of a "rural" asset zone.
- 2.6. The NPPF also recognises the importance of tourism to rural economies (such as North Norfolk) and paragraph 83 requires that decisions should enable "sustainable rural tourism" which "respects the character of the countryside". Plainly for this policy to achieve its aim, it requires both positive support for rural tourism businesses and, more relevant for present purposes, it requires mitigation of potential negative impacts from non-tourism development on sustainable rural tourism.
- 2.7. NNDC in its Deadline 6 submissions proposed the text of a draft requirement. The Applicant challenged the appropriateness and necessity of the requirement based on the ES. As set out above, the ES does not adequately address the tourism impact. If the Examining Authority accepts that the Applicant has underestimated this impact and accepts that there is the potential for substantial negative impact on tourism, then in order for permission to be granted that impact must either be mitigated by a requirement, or the Examining Authority must set out how the benefits of the proposal outweigh the negative impacts on tourism. In NNDC's submission, the Applicant has not provided any evidence that such a balancing exercise favours making the DCO despite the negative impacts on tourism. NNDC's evidence all points to the need for a requirement to be imposed.
- 2.8. As a matter of principle, a negatively worded requirement can require a mitigation strategy that envisages payment by the Applicant of a contribution to address an impact – see paragraph 005 of the PPG on the Use of Planning Conditions ("**the Conditions PPG**"). Furthermore, paragraph 011 of the Conditions PPG states that, where a condition or a section 106 agreement could be used to overcome

a planning objection to a development, then a condition should preferably be imposed.

2.9. The requirement proposed by NNDC at Deadline 6 envisaged a mitigation scheme which addresses tourism impact in two ways:

- Via the payment of a contribution out of which compensation can be awarded to local tourism and associated businesses impacted by the development; and
- Via marketing activity to combat negative perception and to assist with generating tourist footfall and spend.

2.10. The Appellant in discussions raised concerns about the practicality of linking the payment of the contribution to compensation to local tourism and associated business. Although NNDC considers that such a scheme could be workable, it recognises the need for the Applicant to be confident in what is being proposed. Accordingly, NNDC suggests a different destination for the payment of the contribution: it could be paid to existing Tourism Information Centres and to Visit North Norfolk and/or Visit Norfolk, both organisations with which NNDC works closely. **Appendix B** provides further information about Visit North Norfolk (including the pages on areas relevant to the DCO and the “About” page of the organisation) and **Appendix C** provides further information about Visit Norfolk.

2.11. NNDC therefore proposes the following amended wording to the draft DCO requirement:

Tourism and Associated Businesses

- X.-** (1) No part of Works No. 4C or Work No. 5 within the District of North Norfolk may commence until such time as a tourism and associated business impact mitigation strategy has been submitted to and approved in writing by North Norfolk District Council.
- (2) The tourism and associated business impact mitigation strategy referred to in sub-paragraph (1) must include:

- (a) Details of a contribution to be paid by the undertaker to Tourism Information Centres, Visit North Norfolk, Visit Norfolk and any other relevant organisations supporting and promoting tourism in North Norfolk;
 - (b) Details of a method by which the contribution by the undertaker in (a) will be apportioned to the above organisations;
 - (c) Details of who will administer the strategy;
 - (d) Details of how the strategy will be funded including the cost of administration;
 - (e) Details of how any monies unspent are to be returned to the undertaker;
 - (f) Details of marketing campaigns (including funding) to be run in order to market North Norfolk in advance of, during and after construction works have been completed for Norfolk Vanguard for the purpose of generating tourist footfall and spend.
- (3) The tourism and associated business impact mitigation strategy must be implemented as approved.

2.12. The payment of a contribution to improve and support tourism services like information centres or such as Visit North Norfolk and payment of a contribution to develop and run a targeted marketing campaign are well-trodden ways of mitigating negative impacts of development on tourism. A mitigation strategy incorporating these measures would be reasonable and enforceable, and the detailed scheme would be precise. Accordingly, the proposed requirement would meet all the tests in paragraph 55 of the NPPF and paragraph 3 of the Conditions PPG.

2.13. If the revised wording of the requirement is still felt to be too complex, then a requirement echoing the skills and employment strategy in requirement 33 could be used:

- (1) No part of Works No. 4C or Work No. 5 within NNDC may commence until a tourism and associated business impact mitigation strategy (which accords

with the outline mitigation strategy) has been submitted to and approved in writing by NNDC.

(2) The tourism and associated business impact mitigation strategy must be implemented as approved.

2.14. The outline mitigation strategy could mirror the envisaged scheme in paragraph (2) of the revised draft requirement. NNDC will discuss this further with the Applicant and will provide an update at Deadline 8

3. Impact on Trees

- 3.1. NNDC set out in its Deadline 6 submission, concerns about the possibility of a net loss of biodiversity where trees lost as a result of the development are not to be replaced. NNDC asked the Applicant to confirm the maximum number of trees with the potential to be lost along the cable route within North Norfolk.
- 3.2. On 25 April 2019 the Applicant provided further information concerning trees which will be affected within North Norfolk. In the Applicant's view, one hedgerow which has significant susceptibility from a landscape character perspective will be impacted, with the loss of 3-4 trees. Other hedgerows with trees will be crossed where tree losses will amount to approximately 36 trees in the worst case. The Applicant indicated further micro-siting would be undertaken following the Arboricultural survey to reduce this number, where possible.
- 3.3. The Applicant has identified key locations along the onshore cable corridor where a significant effect would occur in relation to loss of trees, referring to ES Chapter 29, Table 29.10 (APP-353). Within North Norfolk District, one of these key locations is alongside Colby Road, north of Banningham where roadside trees are identified as being most susceptible to the project.
- 3.4. In this location the road is characterised by a row of trees of varying age along both sides of the road forming a continuous canopy (See photos at **Appendix D**). Loss of any trees here would have a significant effect, as agreed within the Applicant's LVIA and it is considered that there is little scope for replacement tree planting within the immediate vicinity.
- 3.5. NNDC therefore conclude that, in this location, cabling should be installed via trenchless installation techniques so as to avoid the loss of the 3-4 trees identified. NNDC strongly recommend that this location, known as Colby Road (Church Road), north of Banningham (See Plan and photographs at **Appendix D**) should be added to the list of trenchless crossings set out within the draft DCO Requirement 16 (17).

- 3.6. NNDC are concerned about the lack of clarity within the Environmental Statement about the other 36 trees that the Applicant has indicated could be removed within North Norfolk. In its current drafting, DCO Requirement 8 does not make provision for the written landscape plans to include details of those trees to be removed. This information is important in order to be able to agree appropriate mitigation and to identify where it can be accommodated.
- 3.7. It is NNDC's position that hedgerow replacement alone cannot compensate for the loss of hedgerow trees resulting from this development. The DCO should not result in a net loss of trees within hedgerows which are an important landscape characteristic in this area. The concern about loss of trees in North Norfolk is not addressed by the Applicant securing no overall net loss of trees over the whole project, through tree planting in other areas, such as around the substation in Necton. While tree planting is of course welcome, and it is right to ensure no overall net tree loss over the whole project, the issue within the North Norfolk district is that trees within hedgerows are an important landscape characteristic. The Updated North Norfolk Landscape Character Assessment (2018) lists the "Valued Features and Qualities" of the Low Plains Farmland character type (through which the cable route passes), and lists as third out of eight "woodlands, hedgerows and hedgerow trees". A net loss of trees within hedgerows will thus have a negative impact.
- 3.8. In light of concerns about potential tree loss, NNDC have discussed, and continue to seek to explore, with the Applicant whether replacement planting can be secured within 'temporary' rather than 'permanent' land take areas or with agreement of landowners outside of the DCO area (as has been secured within the Hornsea Project Three scheme). This is a matter where discussions will continue with the Applicant in order to identify an agreed way forward.

- 3.9. If an agreed way forward cannot be reached by Deadline 8, then the fall back position proposed by NNDC would be to add additional text to DCO Requirement 18 as follows:

Provision of landscaping

18.—(1) No stage of the onshore transmission works may commence until for that stage a written landscaping management scheme and associated work programme (which accords with the outline landscape and ecological management strategy) has been submitted to and approved by the relevant planning authority in consultation with Natural England.

(2) The landscaping management scheme must include details of proposed hard and soft landscaping works appropriate for the relevant stage, including—

- (a) location, number, species, size and planting density of any proposed planting, including any trees;
- (b) cultivation, importing of materials and other operations to ensure plant establishment;
- (c) hard surfacing materials;
- (d) details of existing trees to be removed
- (~~d~~ e) details of existing trees and hedgerows to be retained with measures for their protection during the construction period;
- (~~e~~ f) retained historic landscape features and proposals for restoration, where relevant;
- (~~f~~ g) implementation timetables for all landscaping works;
- (~~g~~ h) proposed finished heights, form and gradient of earthworks; and
- (~~h~~ i) maintenance of the landscaping;

(3) The landscaping management scheme must be implemented as approved.

- 3.10. This additional text at new (d) will enable a better understanding of the extent of tree and hedge removal being proposed and enable a clearer appreciation of the compensation and mitigation planting considered necessary to be secured under this Requirement.

4. Clarifications Concerning Noise Impacts

4.1. NNDC set out in its Deadline 6 submission at para 3.11 a request for some further information from the applicant in relation to noise concerns. On 25 April 2019, the Applicant provided NNDC with two clarifications notes:

- a Note concerning 24 hour working in Happisburgh; and
- a Note concerning noise mitigation from the fencing of compounds.

Copies of these documents are attached at **Appendix E** and **Appendix F**.

4.2. NNDC has the following observations:

Note concerning 24 hour working in Happisburgh

4.3. NNDC continue to have significant concerns about this aspect of the proposal. In particular, adverse impacts from night working at location: LFR2H mean that without agreed further mitigation there is the potential for sleep disturbance and adverse impacts on residents, businesses and tourism. The Applicant has highlighted three processes within the ES Appendix 25.2 - Construction Phase Assessment (APP-295) where an adverse impact will arise from night time working. These include (set out on page 9 of that document):

- Table 25.8 - Landfall Pre construction night- time
- Table 25.9 - Duct installation night time
- Table 25.10 - Landfall – Cable pull, joint and commission night-time

4.4. The Applicant sets out in their clarification document two scenarios in relation to landfall works; one involving extended working 24 hours a day, 7 days a week over a 14-week period and a second using standard construction working hours over a 20-week period.

4.5. In the 24 hours option the Applicant refers to daily personnel changes outside of the 7am to 7pm period if a 3 x 8hr shift pattern were proposed. The Applicant also refers to four HGV movements between 7am to 7pm at weekends associated with arisings from the drill activities.

- 4.6. The Applicant has set out their perceived advantages for night working enabling shorter total construction duration in the area reducing this timeframe from 20 weeks down to 14 weeks and have suggested there are technical construction process advantages such as reduced risk of drill failure from continuous working. However, there are serious concerns regarding sleep disturbance and an adverse impact on local amenity from construction activities taking place 24 hours a day such that it is the opinion of NNDC that the 20-week construction period using standard construction working hours would be preferable from an amenity perspective.
- 4.7. Should there be technical reasons for undertaking 24 hour working at landfall, NNDC would need to be satisfied that the Applicant has demonstrated effective enhanced mitigation to reduce noise to minimum levels. NNDC would welcome further discussions with the Applicant to ensure that landfall construction activities do not adversely impact on amenity.

Note concerning noise mitigation from the fencing of compounds.

- 4.8. The clarifications provided by the Applicant do not directly address the issue of site compound fencing in terms of what is required as boundary treatments to mitigate noise from site compounds in balance with what is acceptable in terms of visual amenity and landscape character.

Other Issues

- 4.9. The Construction Noise Impact Assessment provided by the Applicant has highlighted other issues including exceedance of daytime noise thresholds at two locations in North Norfolk (based on Environmental Statement Figure 25.2 – Noise Receptor Locations – Map 1 (APP-590):
- CRR1E; and
 - CRR3F

- 4.10. The Applicant has suggested some additional mitigation to address the noise exceedance including provision of temporary barriers. NNDC would expect these additional measures to be captured within the updated Outline Code of Construction Practice and would welcome further discussion to ensure any mitigation is acceptable.
- 4.11. The Construction Noise Impact Assessment provided by the Applicant refers at Section 2.2, paragraph 6 to 'avoiding reversing wherever possible'. In connection with this, NNDC would welcome further reassurances from the Applicant on the use of low noise reversing warnings.
- 4.12. NNDC continues to await clarification from the Applicant in respect of proposed fencing to compounds at Happisburgh and MA8 near Holly Farm Barningham.
- 4.13. Details are also awaited from the Applicant in respect of Little London and daily HGV movements including providing more of a bespoke detail of additional standard and enhanced mitigation and best practical means in relation to works in this area. NNDC will respond further once this additional information is provided.

02 MAY 2019

Appendix A – FURTHER EVIDENCE CONCERNING TOURISM IMPACT

FURTHER EVIDENCE CONCERNING TOURISM IMPACT

- 1) The visitors to north Norfolk are vital to the local economy. This is a year-round industry and it depends upon the attractiveness of the local environment (noted for dark skies, peace and quiet etc.), specific visitor attractions, the historic environment, towns and villages and a wealth of other assets. Business in the hospitality sector depend entirely upon these for their living. Any detriment to those assets or even the *perception* of a threat to them can have a profound effect on the trading potential of local businesses.
- 2) Whilst it is accepted that actual direct impacts (over a defined period) on local businesses, particularly those in the hospitality sector or otherwise serving the visitor economy, are difficult to quantify, it is firmly believed that the *perceived* impacts will be a very real cause of concern to local businesses and the visitors on which they depend.
- 3) Those operating in the (tourism) industry will plan their itineraries, offers, marketing and promotion well in advance of actual visits taking place. Events (such as Heritage Open Days, Lighthouse open days, Open Studios, Open Gardens, fetes, festivals and other events – examples of which can be found on the links below) often fall at fixed points in the diary and can be the basis of ‘packages’ or be the reason for visits at a particular time of the year, very often by repeat annual visitors. This is a year-round phenomenon, with events often specifically planned outside the peak holiday season. Similarly, visitors will plan their visits well in advance and they will base their decisions of where and when to visit on a number of factors, including events that are in the calendar. A major influence (perhaps the most influential) in booking decisions nowadays is reviews (on Google, trip advisor, Facebook etc.).
- 4) The environmental impacts of the proposed scheme, including those resulting from the construction phase, have been evaluated and substantially evidenced by the applicant. The *actual* impacts will not be fully known until the scheme is

implemented; what has not even been estimated, however, is the quantum of impact resulting from the *perception* of a scheme of this magnitude. The substantial publicity that this scheme will attract (for entirely laudable reasons, as well perhaps resulting from negative reactionary comments) will undoubtedly cause those operating businesses in the affected area to worry, and for those seeking to visit the area to think carefully about the timing of their visit. Visitors tend not to be loyal and uncertainty alone can cause them to be more promiscuous, choosing alternative destinations, thus transferring the tourism benefits elsewhere (perhaps another part of the country altogether).

- 5) NNDC experienced the perception impact on tourism arising from another phenomenon locally: that of coastal erosion. The north Norfolk coastline between Weybourne and Cart Gap is infamously one of the fastest eroding coastlines in Europe. This has very obvious and direct physical consequences – the loss of homes, businesses, infrastructure etc. – but the predictions of erosion and the publicity given to this phenomenon caused impacts of a much greater magnitude. Simply marking the areas of coastal erosion on maps appeared to make those areas less desirable destinations.

- 6) Obviously attractions and most accommodation tend to be in fixed locations; however some events and some businesses can operate in an itinerant way, an example of which is a very successful local organisation that offers walking tours in North Norfolk: <https://walkandglamp.co.uk/walking-holidays/lapwing-package/>. This business relies upon local sites to accommodate visitors and chooses its walking itineraries accordingly, it brings visitors (and their consequent benefits) to hospitality businesses. Uncertainty about possible future impacts, or the perception of them, could easily sway the choice of such a business away from the area thought to be so affected - perhaps choosing to develop itineraries elsewhere. NNDC itself sponsors, invests in and operates events and promotional campaigns, including that of the Deep History Coast and has well advanced plans for an (annual) Mammoth Marathon (between sea Palling and Sheringham from May 2020) in order to promote the east of the district. Such events and campaigns need to be planned long in advance.

- 7) It is believed that an approach that clearly demonstrates that this area of North Norfolk is ‘open to business’ – before, during and after the construction period of the scheme will help assuage local concerns and challenge any perceptions (or misconceptions) of any potential visitors.

Examples of local events which are promoted by businesses in the area or that attract significant numbers of visitors:

- <http://www.e-ruston-oldvicaragegardens.co.uk/pages/view/589/news-and-events.htm>
- <http://www.rnlihappisburgh.org.uk/event/lifeboat-day-fete/>
- <http://happisburgh.org.uk/lighthouse/open-days/>
- https://www.ngs.org.uk/find-agarden/?date=all_dates&order_by=date&location=Norfolk&from_date=&to_date=&by_arrangement=0&gclid=EAlalQobChMI5eO1jci64QIVUETTCh3A7w6UEAAYASAAEgl3yPD_BwE
- <https://en-gb.facebook.com/events/the-hill-house-inn-dancing-men-brewery-halt-coffee-shop-carvery/summer-solstice-beer-festival/616899281767382/>

Source: **Rob Young** – Head of Economic & Community Development

Appendix B – INFORMATION ABOUT VISIT NORTH NORFOLK

[SIGN UP](#)[STAY](#)[SEE & DO](#)[PLACES](#)[WHAT'S ON](#)[ATTRACTIONS](#)[INSPIRE](#)

THE DEEP HISTORY COAST

The unique Deep History Coast in north-east Norfolk is home to some of the earliest evidence of human British civilisation with footprints left by the UK's first tourists nearly one million years ago. The world's biggest mammoth skeleton remains were found at West Runton and a 550,000 year old flint axe was discovered in Happisburgh. Discover more about this fascinating coastline steeped in millions of years worth of history.



**FIND OUT HOW TO
BEACHCOMB**



DEEP HISTORY COAST FILM



**FIND OUT ABOUT WEST
RUNTON BEACH**



**CROMER FOREST-BED
FOSSIL PROJECT**



**FIND OUT ABOUT CROMER
MUSEUM**



**DISCOVER MORE HISTORY
AND HERITAGE**



EXPLORING THE DEEP HISTORY COAST

This part of Norfolk has universally changed understanding of pre-prehistoric times. Discoveries have meant the Norfolk Deep History Coast

has contained some of the most important archaeological finds in Western Europe, the country's best preserved Neanderthal site and is the only county where evidence of four species of human have been found. This part of the country is where, pre-Ice Age, Britain was connected via a land mass to the Continent known as Doggerland.

Footprints dating back 850,000 years have been left at Happisburgh by the first visitors to Norfolk. These footprints, belonging to nomads hunting bison, rhinos, deer and mammoths, have become the oldest evidence of humans outside Africa's Great Rift Valley. The footprints were found in 2013 by chance when a team of scientists were, after high seas had scoured the shoreline revealing estuary mud, conducting a geophysics survey.

Historically, this area would have been a great plain, similar to East Africa's Serengeti, grazed by animals. The footmarks were discovered in what would have been an estuary of a river system that flowed into the North Sea and included the Thames, which was fed by an extinct river from the Midlands called the Bytham. The footprints were found to be the marks of toes and heels of five adults and children.

Along the coast at West Runton, the remains of a 600,000 year old mammoth were discovered. This discovery is the oldest mammoth skeleton to have been found in the UK and the most complete specimen of the species to have been found in the world. After a stormy night in 1990, a couple walking by the bottom of the cliffs discovered the pelvic bone of the mammoth. A year or so later after another storm, more bones were revealed. This led to an exploratory dig taking place in 1992 and then an excavation in 1995. The most complete skeleton of a mammoth was revealed, identified as the species *Mammuthus trogontherii* (Steppe Mammoth).

Most of the skeleton was there; about 85%, and the missing parts were nibbled off by scavenging hyaenas as shown by hyaena bite marks and fossilised hyaena dung! The skeleton is 4m tall at the shoulder and weighs 10 tonnes, making it twice as large as discoveries on the Jurassic Coast. You can see some of the remains in Cromer Museum, Gressenhall Farm and Workhouse and Norwich Castle Museum. Along the West Runton Freshwater Bed, rhino teeth and bones have also been found.

Furthermore, around 550,000 years ago, there was the discovery of a flint hand axe at Happisburgh. This Palaeolithic tool had been preserved in a former forest within a dense peaty deposit. The axe was discovered by a dog-walker in 2000, which led to even older tool and bone finds. The significance of this find changed history. It pushed back the evidence for human colonisation this far north by 100,000 years or more. You can see the flint tool at Norwich Castle Museum, just a short drive from north Norfolk.

Beachcombing along the Deep History Coast at beaches including West Runton and Happisburgh which is 16 miles away, can be fascinating with finds including amber, fossil sea urchins and belemnites. Search the shores of Hunstanton and you may find sharks teeth and look out for fossilised coral along Sheringham beach. There is also Cromer's underwater chalk reef 200m from the shore, the Cromer chalk ridge (the highest point in East Anglia) and the prehistoric Cromer Forest-Bed in Weybourne. Each year, there are more than 20,000 fossil finds! You can take any fossil finds to the Cromer Museum for identification.

Please note: As long as you are not in a protected area, you can pick up small fossils that are lying around on the ground. Please do not remove any fossils from rocks or cliffs, and large fossils are best left for all to enjoy. If you are lucky enough to come across a rare find, please report it to a museum and if you're in a Site of Specific Scientific Interest, please follow any rules they might have. They are there to protect geology for future generations.



**NATURE & WILDLIFE IN
NORTH NORFOLK**



**SIGN UP AND KEEP
UPDATED**



HAPPISBURGH



**BEST PLACES TO FIND
FOSSILS**



**MUSEUMS IN NORTH
NORFOLK**



**EXPLORE MORE OF NORTH
NORFOLK**



**UNIQUE FACTS ABOUT
NORTH NORFOLK**

SEARCH FOR PLACES TO STAY

(Any Property Type) ▼

From



Night(s) 1

Near

(Any town) ▼

or Property name

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DISCOVER HAPPISBURGH

The historic village of Happisburgh has a secluded sandy beach and a fascinating history showing the earliest signs of humans in Britain. The constantly changing coastline, its 18th century lighthouse and 15th century church makes Happisburgh a fascinating place to explore.



Happisburgh is home to the oldest working light in the county and the only independently operated lighthouse in the UK. The famous red and white striped lighthouse was built in 1790 and offers wonderful views of the coast and countryside. In the summer, it is open to visitors on occasional Sundays.

HISTORY AND HERITAGE OF NORTH NORFOLK

Coastal erosion is constantly changing the landscape of the coastline at Happisburgh and that has also revealed evidence of humans being present in Britain 200,000 years earlier than had previously been known. Flint axes and early fossilized human footprints dating back 800,000 years signified the oldest evidence of man outside the Great Rift Valley in Africa! These finds, as well as the mammoth skeleton in West Runton, have earned this coastline the name, the Deep History Coast.

[FIND OUT ABOUT THE DEEP HISTORY COAST](#)

[WATCH 'HOW TO BEACH COMB'](#)

St Mary's church also dominates the Happisburgh skyline and dates back to the 15th century. Its 110ft tower, overlooks the sea and is an important landmark warning mariners of the nearby sandbanks. Indeed, the



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graveyard has memorials to the many sailors who lost their lives in the treacherous waters, including the 119 sailors of HMS Invincible, who in were on their way to join Nelson in Copenhagen in 1801. If you climb the 133 steps up the tower, you can see 30 churches, two lighthouses, seven water towers and even the Cathedral spire in the city of Norwich over 16 miles away.

VISIT NORWICH

The secluded, sandy beach is dog friendly and great for days out. From the beach, you can walk as far as Sea Palling taking in wonderful views. Happisburgh is a pretty village and is an ideal base for a north Norfolk holiday.



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DISCOVER MUNDESLEY

Mundesley is a pretty Victorian seaside village where families can enjoy a traditional holiday away from the hustle and bustle. Set in an [Area of Outstanding Natural Beauty](#), Mundesley offers great coastal walks and is close to the [Broads National Park](#).



The coastal village of Mundesley became popular with the Victorians, when visitors were brought to the area with the opening of a railway in 1889. Visitors were able to sample the finest air in the country! The railway has long gone, but the fresh sea breezes off the North Sea still attract visitors.

The village is a great starting point for country walks with plenty of footpaths and circular routes. Close by is Southrepps Common, an important area for wildlife with woodland and wild flowers.

MUNDESLEY CIRCULAR WALK

Mundesley's Blue Flag wide sandy beach, with colourful beach huts and shallow rock pools, are an ideal playground for children of all ages, and there is also great year-round sea fishing.

A fine nine-hole golf course built in 1901, sits on the hillside of the River Mun valley and offers unrivalled views over the coast and countryside, which is a designated [Area of Outstanding Natural Beauty](#).

[FIND OUT ABOUT GOLFING IN NORTH NORFOLK](#)

[AREA OF OUTSTANDING NATURAL BEAUTY](#)



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BLUE FLAG BEACHES

The charming village has pretty cottages, shops, pubs and places to eat and stay with pretty thatched buildings and stone walls. Mundesley is also home to the Maritime Museum, believed to be one of the smallest museums in England! Opposite the museum is a World War II memorial to the men who were killed while clearing landmines from the cliffs and beaches.

MUSEUMS IN NORTH NORFOLK

Mundesley is perfect for those seeking a traditional seaside holiday, scenic walks and family friendly activities.



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DISCOVER NORTH WALSHAM

North Walsham is steeped in history dating back to Anglo-Saxon times. Close to the Broads National Park and north Norfolk coast, and surrounded by scenic countryside, North Walsham is an ideal holiday base to explore north Norfolk.



The market town, North Walsham, became a centre for weaving in the Anglo-Saxon era, along with the nearby village of Worstead (from where the cloth gets its name). The wealth generated, enabled the local people to build St. Nicholas Church which dates back to 1330. Its tall tower is the second tallest in Norfolk after Norwich Cathedral.

CHURCHES IN NORTH NORFOLK

The market place houses a 16th century cross with clock, the focal point of the town, which was built to collect rent from the market traders. Today, a market runs on Thursdays and the rest of the town has plenty of shops, eateries, places to stay and historical buildings including Paston College where Horatio Nelson, spent his school days between 1768 and 1771.

For Nelson enthusiasts, you can visit Nelson's birthplace, Burnham Thorpe, about an hour away from North Walsham. A stroll around the village reveals the site of the Parsonage where Nelson was born (which was knocked down in 1803) and raised before going to sea at the tender age of 12. You will also find All Saint's Church where Nelson's father Edmund was rector and Nelson's local pub, The Lord Nelson, known at the time as the Plough Inn.

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NORTH NORFOLK HISTORY AND HERITAGE

Nearby Bacton Woods has 280 acres of ancient woodland, dating back to Saxon times. The marked trails through the beautiful woodland offers great walking routes and terrain for mountain biking.

BACTON WOODS LEAFLET

Its historic buildings and proximity to the Broads National Park and coast, makes North Walsham well worth visiting.

DISCOVER THE BROADS NATIONAL PARK

WATCH 'HOW TO MOOR A BOAT'



EXPLORE MORE OF NORTH NORFOLK



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VISIT NORTH NORFOLK

Visit North Norfolk is the officially commissioned Destination Management Organisation and visitor guide for north Norfolk.



ABOUT VISIT NORTH NORFOLK

Visit North Norfolk, a membership organisation, is the official Destination Management Organisation (DMO) for the area, operating on a not-for-profit basis and delivering the official tourism website and marketing activity for North Norfolk District Council.

DMOs are organisations charged with representing a specific destination and helping the long-term development of the local tourism economy through targeted and strategic campaigns. Visit North Norfolk is responsible for promoting all that the area has to offer at local, regional and national levels and is affiliated with [Visit East of England](#) and [Visit Norfolk](#). Visit North Norfolk, as the accredited authoritative DMO for north Norfolk, is also affiliated with [Visit Britain](#).

Visit North Norfolk delivers two key aspects of the local tourism economy: support for businesses and the promotion of the area to potential visitors, providing a major channel for communication, support and access to market for the tourism industry.

By developing promotional campaigns and initiatives, Visit North Norfolk works with other DMOs to grow the area's visitor economy which is worth £505m and supports over 11,000 jobs. Marketing activity is supported by North Norfolk District Council and private business sponsorship and its core business is self-sustaining through business membership funding. Visit North Norfolk is a business-led DMO, operated by a group of local business leaders (in partnership with North Norfolk District Council). This meets the Government's stated direction of encouraging businesses to become more directly responsible for tourism promotion.

The board comprises the following directors:



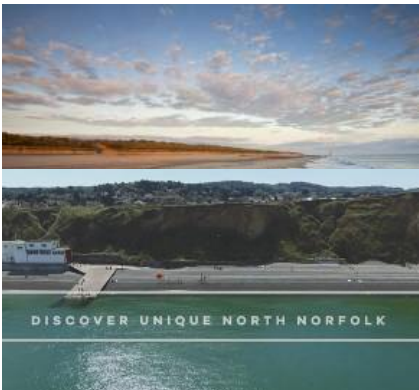
Chairman: Andrew Hird, General Manager of **Woodland Holiday Park**
Mark Noble, Trustee of **Pensthorpe Conservation Trust**
Bee Hopkins, owner of **The Hoste**.



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Appendix C – INFORMATION ABOUT VISIT NORFOLK

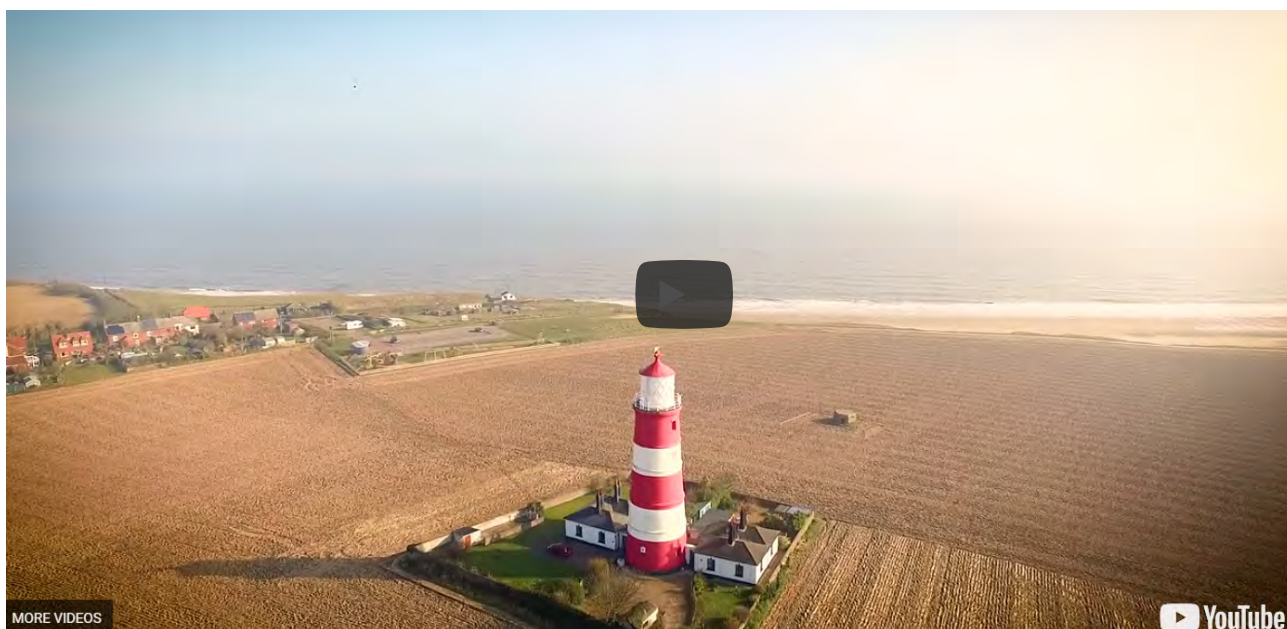
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On the mid-east coast of England, we enjoy over 90 miles of unspoilt coastline, beautiful countryside, the unique Broads National Park, forests and heathland, internationally important nature reserves, picturesque market towns, amazing birdwatching and the fabulous seaside resorts of Great Yarmouth, Cromer, Wells-next-the-Sea and Hunstanton.

There's **Norwich**, a fantastic city of heritage, culture and shopping, as well as countless outdoor activities, a fantastic variety of family theme parks and attractions, historical sights and Royal connections.

What are you waiting for? Come and Visit Norfolk...

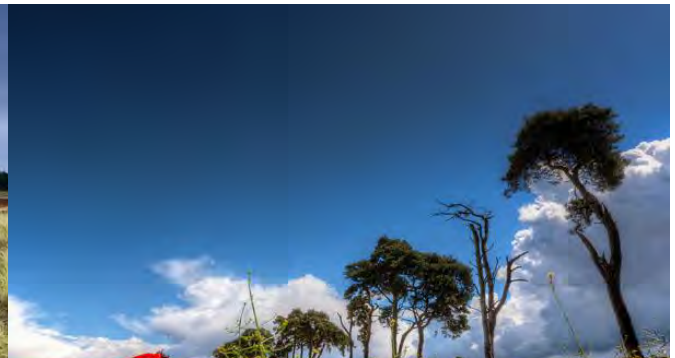
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Your essential Visit Norfolk
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Top 10 beaches in Norfolk

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NORTH NORFOLK COAST AND COUNTRYSIDE

North Norfolk is renowned for its spectacular coastline, fantastic wildlife, miles of glorious beaches, seaside communities and a beautiful hinterland of rolling countryside and picturesque market towns and villages. North Norfolk must be the birdwatching capital of the UK, and you can even take a boat trip to see our seal colony at Blakeney Point.



HIGHLIGHTS OF NORTH NORFOLK



An Area of Outstanding Natural Beauty

Between the lively seaside resort of Hunstanton and the pretty town of Sheringham is a spectacular coastline, most of which is designated as an Area of Outstanding Natural Beauty.

Here the landscape of tidal marshes, creeks, shingle spits, and sweeping golden beaches is backed by explorable pine woods. It includes the [Holkham Hall](#) and Estate, and its beach at [Wells-next-the-Sea](#), consistently voted the best in Britain.

Further to the East is the imperious clifftop setting of [Cromer](#), with its Victorian pier striding proudly out to sea. The coastline then meanders southward to the secluded beaches of [Mundesley](#) and [Happisburgh](#), with its striped [lighthouse](#), and inland to the traditional market town of [North Walsham](#).

The magic of North Norfolk is that as the seasons and tides change, it offers completely different qualities and scenery.

The [North Norfolk Railway](#) begins at Sheringham and ends at genteel [Holt](#), a fabulously handsome market town which has become a mecca for discerning visitors looking for independent shops. Most of Holt was burned in its famous fire of 1708, and in its place rose a splendid Georgian town focusing on an appealing Market Place.

This is also [Deep History Coast](#), where the biggest and best-preserved mammoth skeleton was found, along with a prehistoric flint axe and 850,000 year old human footprints – the oldest evidence of man found outside the Great Rift Valley in Africa.

PLACES TO VISIT IN NORTH NORFOLK



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Inland in north Norfolk, UK



WELLS TO HUNSTANTON



ABOUT VISIT NORFOLK

Visit Norfolk is the strategic voice of the county's visitor industry. Visitnorfolk.co.uk is run under contract by Visit East Anglia Ltd. and is responsible for promoting all that the county has to offer at local, regional and national levels.

It aims to develop promotional campaigns and initiatives and work with other DMOs (destination marketing organisations) to grow the county's visitor economy which supports some 61,521 jobs, 17.3% of all employment in Norfolk. The sector also supports thousands more jobs in retail, food production, culture and transport.

The visitor economy is the largest industry sector in the county, worth £3.055 billion.

Visit East Anglia won the contract to manage the development of Norfolk tourism from November 2012, following a tendering process overseen by New Anglia Local Enterprise Partnership and Norfolk County Council.

Visit Norfolk's marketing activity is supported by local district councils, the Broads Authority, and private sector partnerships including Visit Norwich, Enjoy The Broads, Visit North Norfolk, Norfolk and Suffolk Tourist Attractions and Gt Yarmouth Tourism Business Improvement District.

One of Visit Norfolk's key objectives is to encourage all the county's tourism organisations involved in promoting Norfolk to become more self-sustaining and less reliant on public funding. This meets the Government's stated direction of encouraging businesses to become more directly responsible for tourism promotion.

Visit Norfolk within the national context

Visit Norfolk works closely with its partner organisations, regional and national bodies to promote the county. The national tourism structure is:

Visit Britain: Britain's national tourism agency, responsible for marketing Britain overseas, working with thousands of organisations in the UK and overseas. Visit Britain promotes Britain in 35 markets around the world via a range of campaigns, and also promotes the tourism industry within the UK itself. Their consumer facing website is www.visitbritain.com.

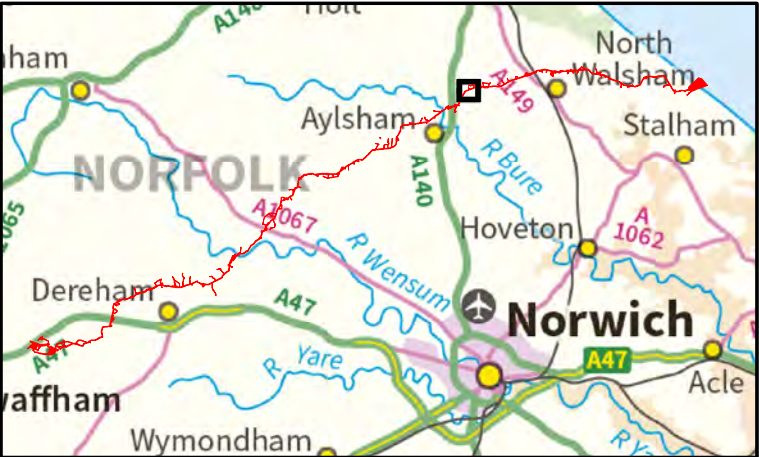
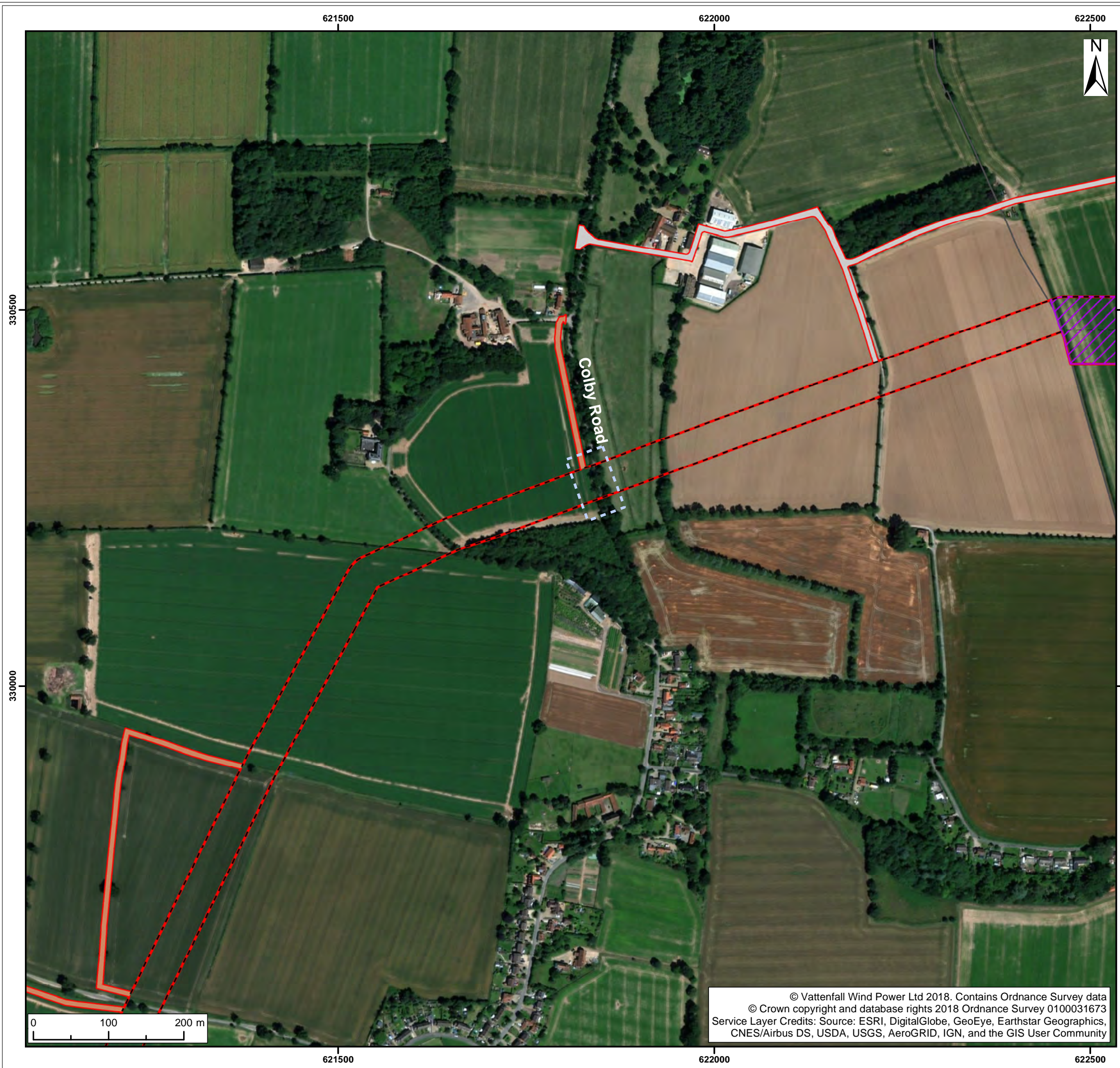
Visit England: The strategic leadership body representing the public and private sector stakeholders of English Tourism. Visit England works in partnership with Visit Britain, local and regional DMOs, and the private sector, creating a national tourism strategy, optimising marketing investment, and developing the visitor experience across England.

Visit East Anglia: A business-led, not-for-profit organisation to promote tourism across East Anglia. It is supported by some of the most successful tourism businesses in Norfolk and Suffolk, including Adnams, Africa Alive!, Banham Zoo, BeWILDerwood, Dinosaur Adventure, Flying Kiwi Inns, Gough Hotels, Norfolk Broads Direct, Norfolk Country Cottages, Suffolk Secrets and T&A Hotel Collection and Wroxham Barns. Consumer, customer and membership focussed, Visit East Anglia is managed by experts and brings a unified tourism voice to East Anglia.

Visit East Anglia is working closely with Greater Anglia, the new East Anglian rail franchise operator, and has established links with the major airports, seaports and other gateways in both East Anglia and neighbouring counties.

Visit East Anglia Limited is also supported by the New Anglia Local Enterprise Partnership (LEP) and is therefore fully aligned with the Tourism Strategy for England.

Appendix D – COLBY ROAD (CHURCH ROAD), NORTH OF BANNINGHAM - SITE PLAN AND PHOTOGRAPHS



- Legend:
- Norfolk Vanguard onshore red line boundary
 - Onshore cable route**
 - Onshore cable route
 - Trenchless crossing zone (e.g. HDD)
 - Access**
 - Construction access
 - Operation access
 - Footpath ²
 - Areas of potential vegetation removal

¹ Sustrans, 2017 ² Ordnance Survey 1:25000 map

Project:	Report:
Norfolk Vanguard	Examination: For Information Only

Title: ExA; ISH;10.D311
Colby Road (Church Road), north of Banningham
(map 1 of 9)
Potential Tree Removal

Figure: 1		Drawing No: ExA; ISH;10.D311			
Revision:	Date:	Drawn:	Checked:	Size:	Scale:
01	12/02/2019	TH	JP	A3	1:5,000
02	13/02/2019	TH	JP	A3	1:5,000

Co-ordinate system: British National Grid EPSG: 27700



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CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community




Colby Road (Church Road) North of Banningham -
View looking North.
Image Courtesy of Google



Colby Road (Church Road) North of Banningham
View looking South.
Image Courtesy of Google

Appendix E – NOTE CONCERNING 24 HOUR WORKING IN HAPPISBURGH



Norfolk Vanguard Offshore Wind Farm Clarification Note on Landfall 24 Hour Vehicle Requirements in accordance with Issue Specific Hearing Action Point 10

Applicant: Norfolk Vanguard Limited
Document Reference: ExA;AS(ISH1 Action);10.D3.7

Date: 19 February 2019
Author: GHD

Photo: Kentish Flats Offshore Wind Farm

Date	Issue No.	Remarks / Reason for Issue	Author	Checked	Approved
19/2/2019	01	Final version for submission	AH	RS	RS

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1.5	Summary.....	3

1 CLARIFICATION NOTE ON LANDFALL 24 HOUR VEHICLE REQUIREMENTS IN ACCORDANCE WITH ISSUE SPECIFIC HEARING ACTION POINT 10

1.1 Purpose of Clarification Note

1. This clarification note has been produced by the Applicant in response to Action Point 10 from Issue Specific Hearing 1 to outline some indicative examples of when 24 hour working may be needed at the landfall for Norfolk Vanguard and the potential implications this has on traffic movements. Any 24 hour working will be agreed with the relevant planning authority in advance of construction in accordance with Requirement 26 of the draft Development Consent Order (DCO). The Applicant refers to Appendix 24.7 of the Environmental Statement (ES) with respect to the indicative construction programme at the landfall and associated daily Heavy Goods Vehicle (HGV) delivery and daily personnel requirements.
2. It should be noted that for the purposes of the traffic assessment within Chapter 24 Traffic and Transport of the ES, a 20% contingency and rounding up to the nearest whole HGV delivery is included to provide the worst case scenario. The figures presented within this note are those used within the traffic assessment (i.e. including the 20% contingency), which explains the inconsistency between the figures presented in this note and those shown in Appendix 24.7 of the ES.
3. The Applicant also refers to Chapter 5 of the ES for general construction details associated with the landfall works. The DCO requirements associated with these works are secured primarily in Requirement 20 (Code of Construction Practice), Requirement 21 (Traffic) and Requirement 26 (Construction hours).

1.2 Landfall construction and associated traffic requirements

4. Landfall construction and related traffic requirements for Norfolk Vanguard can be subdivided into three distinct phases: site mobilisation, site demobilisation, and the drilling phase between site mobilisation and site demobilisation activities. During these phases, there are different requirements for materials, personnel and working hours, which are noted below.
5. In the event that 24 hour working, seven days a week is agreed, the landfall programme would be reduced from 20 weeks to 14 weeks. The first and last week of the programme covers site mobilisation and site demobilisation, such that the drilling phase would be for 18 weeks or (in the event of 24 hour, seven days a week working) 12 weeks of these respective programmes. The benefits of 24 hour working are a reduced construction programme and reduced risk of drill failure by maintaining drilling pressures throughout the drilling process until the duct is installed.

1.2.1 Site mobilisation

6. Site mobilisation occurs in the first week of the landfall construction process. During this time the landfall compound is established and includes activities as detailed in paragraph 289 of ES Chapter 5 Project Description such as stripping of topsoil, laying of protective matting/hardstanding, fencing and delivery of plant and welfare facilities. These works are covered under Work No. 4C of the draft DCO.
7. During this one-week period, the average traffic demand would be 30 HGV deliveries per day and 20 personnel vehicles per day (assumed to be one vehicle (car or van) per worker). These deliveries are to bring the plant, welfare facilities, geotextiles, stone (aggregate), fencing and associated materials to establish the landfall compound. All works at the landfall compound during site mobilisation, including associated traffic demand, would be conducted during normal construction hours as secured in Requirement 26(1) of the draft DCO.

1.2.2 Drilling

8. Once the mobilisation site is established and drilling activities have begun, as detailed in paragraph 290 of ES Chapter 5, it may be necessary to continue the drilling operation on a 24-hour basis to minimise the risk of a failure prior to the duct being installed by maintaining continuous drilling pressures. During this drilling period of 12 weeks (assuming 24 hour working), the average HGV deliveries per day is 4 and the average daily number of personnel required for the works is 10 (assumed to be one vehicle (car or van) per worker).
9. The 4 HGV deliveries per day are associated with the collection of drill arisings. It will be possible to store a small amount of these arisings temporarily, such that collections could be made during normal daytime construction hours, i.e. between 07.00 to 19.00 Monday to Friday and 07.00 to 13:00 hours on Saturday (Requirement 26(1) of the draft DCO). However, the storage space within the landfall compound will not be sufficient to store arisings over the Saturday afternoon and Sunday period. Therefore, should extended working hours be agreed at the landfall, it would be on the basis of (on average) 4 HGV deliveries per day between 7am to 7pm Monday to Sunday inclusive, unless otherwise agreed with the relevant planning authority.
10. The average daily personnel requirements for 24-hour working may be achieved with two 12 hour shift patterns which would allow for changes of personnel at 7am and at 7pm. However, in the worst case scenario, three 8 hour shifts may be necessary which would require a single shift change outside of the 7am to 7pm period.

11. In the event that 24 hour working was employed for the drilling phase, the vehicles accessing the landfall compound outside of the 7am to 7pm period would be up to 10 personnel vehicles (cars/vans) for 12 weeks.
12. In the event that 24 hour working was not employed for the drilling phase, all works and all vehicle deliveries at the landfall compound would take place within normal construction hours as secured in Requirement 26(1) of the draft DCO for a period of 18 weeks.

1.2.3 Site demobilisation

13. Site demobilisation occurs in the last week of the landfall construction process. During this time plant is removed and the land reinstated as detailed in paragraph 291 of ES Chapter 5. During this one-week period, the average traffic demand would be 30 HGV deliveries per day and 20 personnel vehicles per day (based on one vehicle (car/van) per worker). These deliveries are to remove the plant, welfare facilities, geotextiles, stone (aggregate), fencing and associated materials to demobilise the landfall compound. All works, including associated traffic deliveries at the landfall compound during this period, would be conducted during normal construction hours as secured in Requirement 26(1) of the draft DCO.

1.3 Parking

14. All parking will be within the landfall compound. With reference to Section 2.5.2 of the Outline Code of Construction Practice (document reference 8.01), the Applicant has agreed to not use the public beach car park at Happisburgh South.

1.4 Environmental Statement

15. All works within the landfall compound have been assessed for 24-hour, seven days a week operation within the ES.

1.5 Summary

16. Should extended working hours (24 hour, seven days a week) be agreed with the relevant planning authority in advance of construction for the landfall works, it is anticipated that no HGV deliveries would access the landfall compound outside of the 7am to 7pm period (Monday to Sunday). The average number of daily HGV deliveries associated with the landfall drilling works would be 4 and would all occur between 7am to 7pm.
17. There may be a requirement for a single daily personnel change outside of the 7am to 7pm period during the 12 week drilling phase, however this would be a daily

average of 10 personnel vehicles (cars/vans) arriving and departing site, and all parking will be within the landfall compound.

18. All works within the landfall compound have been fully assessed for 24 hour, seven days a week operation within the ES. All construction works undertaken outside of the normal construction hours must be agreed with the relevant planning authority in writing in advance, and must be carried out within the agreed time, as secured in Requirement 26(3) of the draft DCO.

Appendix F – NOTE CONCERNING NOISE MITIGATION FROM THE FENCING OF COMPOUNDS

1 Construction Noise Impact Assessment

1.1 Background

1. Construction noise impacts are assessed in Environmental Statement (ES) Chapter 25 Noise and Vibration and Appendix 25.2 Construction Phase Assessment. The assessment is based on representative noise sensitive receptors (NSRs) at the landfall (four in total) and receptors identified along the cable route (33 in total) as well as assessing potential noise increases along all the required road links (vehicle noise emissions).
2. The following sections repeat the mitigation measures that are described within Chapter 25.

2 Standard Mitigation

3. Standard construction noise mitigation practices and good practice construction management will be adopted throughout the construction phase. These will be captured within a Construction Noise Management Plan (CNMP) within the CoCP (DCO requirement 20). A summary of the measures is set out in the following sections.

2.1 Best Practical Means

4. The Control of Pollution Act and BS 5228¹ define a set of Best Practice working methods and mitigation measures, referred to as Best Practical Means (BPM). Examples of these measures include:
 - Where possible, locating temporary plant so that it is screened from receptors by on-site structures, such as site cabins;
 - Using modern, quiet equipment and ensuring such equipment is properly maintained and operated by trained staff;
 - Applying enclosures to particularly noisy equipment where possible;

¹ British Standards Institution, 2014 [BS] 5228-1:2009+A1:2014 “Code of practice for noise and vibration control on construction and open sites – Part 1: Noise”.

- Ensuring that mobile plant is well maintained such that loose body fittings or exhausts do not rattle or vibrate;
- Ensuring plant machinery is turned off when not in use;
- Providing local residents with 24-hour contact details for a site representative in the event that disturbance due to noise from the construction works is perceived; and
- Establishing a community engagement process including informing local residents about the construction works, detailing the timing and duration of any particularly noisy elements, and providing a contact telephone number to them.

2.2 Training of construction staff

5. The site induction programme and site rules will include good working practice instructions for site staff, managers, visitors and contractors to help minimise noise whilst working on the site.
6. Good working practice guidelines/instructions could include, but not be limited to, the following points:
 - Avoiding unnecessary revving of engines;
 - Plant used intermittently should be shut-down between operational periods, where possible;
 - Avoiding reversing wherever possible;
 - Reporting any defective equipment/plant as soon as possible so that corrective maintenance can be undertaken; and
 - Handling material in a manner that minimises noise.

2.3 Maintenance of construction plant

7. Maintenance of temporary plant will be carried out routinely and in accordance with the manufacturers' guidance.
8. A regular inspection of all plant and equipment should be undertaken to ensure that:
 - All plant is in a good state of repair and fully functional;
 - Any plant found to be requiring interim maintenance has been identified and taken out of use;
 - Acoustic enclosures fitted to plant are in a good state of repair;
 - Doors and covers to such enclosures remain closed during operation; and
 - Any repairs are being undertaken by a fully qualified maintenance engineer.

2.4 Standard mitigation summary

9. Whilst the effect of adopting these best practice methods cannot be precisely quantified, it is possible that these methods would reduce noise levels by between 5 - 10dB(A). In order to provide a conservative approach, the construction phase assessment assumed a 5dB(A) reduction for incorporating these standard mitigation measures.
10. During the daytime period, modelled construction noise levels (including standard mitigation) predicted impacts at only two onshore NSRs along the onshore cable route within North Norfolk District – CRR1E and CRR3F. The modelled exceedances of the daytime construction noise threshold (65dB) were calculated at +2.2dB and +9.8dB.
11. Potential construction noise impacts were also predicted at the landfall in the event of night time working². The modelled exceedance of the night time working noise threshold (45dB) was +5.5dB at one landfall NSR – LFR2H.
12. The locations of these NSRs are shown on the extract of ES Figure 25.2 below.



² Refer to separate note on the potential for 24 hour working at the landfall submitted to the examination on 19 February 2019 - ExA;AS(ISH1 Action);10.D3.7.

3 Enhanced Mitigation

13. In order to ensure that impacts that remain following the application of standard mitigation are reduced to non-significant more site specific solutions such as increased separation distance of noisy plant, the use of temporary noise barriers and temporary spoil bunds will be applied.

3.1 Construction plant mitigation

14. Bulldozers, dump trucks and tracked excavators have been identified as the noisiest sources at receptor locations within the onshore cable route where significant impacts have been predicted.
15. Careful scrutiny of plant selection at procurement stage will ensure that the associated noise impact of the aforementioned plant is reduced as much as reasonably possible.
16. Initial calculations determined that with application of standard mitigation measures and an increased separation distance would ensure that the BS 5228 daytime construction noise thresholds are not exceeded at all receptors along the cable route.

3.2 Localised screening/temporary noise barriers

17. The exact specification of any noise barriers that may be required to mitigate these construction phases effects will be determined during detailed design. A CNMP will be produced for each stage of the works which will include further detail on the actual plant and equipment as well as the confirmed working methods. Where construction noise impacts remain, noise barriers will be introduced with the appropriate specification for the location and noise reduction required.
18. As an example of the relative effectiveness of applying a temporary localised noise barrier BS 5228 states:
- *“as a working approximation, if there is a barrier or other topographic feature between the source and the receiving position, assume an approximate attenuation of 5 dB when the top of the plant is just visible to the receiver over the noise barrier, and of 10 dB when the noise screen completely hides the sources from the receiver. High topographical features and specifically designed and positioned noise barriers could provide greater attenuation.”*

3.3 Residual impacts

19. The modelled residual magnitude of effect after enhanced mitigation measures are is negligible at all affected NSRs, representing a **negligible** residual impact related to construction noise.