

Norfolk Boreas Offshore Wind Farm

Statement of Common Ground

**Norfolk County Council
(Version 2)**

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Glossary of Acronyms

ADBA	Archaeological Desk Based Assessment
AMP	Access Management Plan
CIA	Cumulative Impact Assessment
CoCP	Code of Construction Practice
CWS	County Wildlife Sites
DCO	Development Consent Order
EIA	Environmental Impact Assessment
ES	Environmental Statement
EMP	Ecological Management Plan
EPP	Evidence Plan Process
HDD	Horizontal Directional Drilling
HIA	Health Impact Assessment
HVAC	High Voltage Alternating Current
HVDC	High Voltage Direct Current
MMP	Materials Management Plan
MSA	Mineral Safeguard Area
OAMP	Outline Access Management Plan
OCoCP	Outline Code of Construction Practice
OLEMS	Outline Landscape and Environmental Management Strategy
OTMP	Outline Traffic Management Plan
OTP	Outline Travel Plan
PEIR	Preliminary Environmental Information Report
SoCG	Statement of Common Ground
TMP	Traffic Management Plan
TP	Travel Plan
WSI	Written Scheme of Investigation
VMPL	Vattenfall Wind Power Limited

Glossary of Terminology

Landfall	Where the offshore cables come ashore at Happisburgh South
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 overhead line modifications	The works to be undertaken to complete the necessary modification to the existing 400kV overhead lines.
Necton National Grid substation	The grid connection location for Norfolk Boreas and Norfolk Vanguard.
Norfolk Boreas	The Norfolk Boreas Offshore Wind Farm project.
Norfolk Boreas Limited	The Applicant undertaking the development of the Norfolk Boreas Offshore Wind Farm project (an affiliate company of VWPL).
Norfolk Vanguard	Norfolk Vanguard Offshore Wind Farm, sister project of Norfolk Boreas.

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 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.
Trenchless crossing zone (e.g. HDD)	Areas within the onshore cable route which will house trenchless crossing entry and exit points.
The Applicant	Norfolk Boreas Limited

1 INTRODUCTION

1. This Statement of Common Ground (SoCG) has been prepared between Norfolk County Council and Norfolk Boreas Limited (hereafter the Applicant) to set out the areas of agreement, ongoing discussions or disagreement in relation to the Development Consent Order (DCO) application for the Norfolk Boreas Offshore Wind Farm (hereafter ‘the project’).
2. This SoCG comprises an agreement log which has been structured to reflect the topics of interest to Norfolk County Council with regard to the Norfolk Boreas DCO application (hereafter ‘the Application’). The agreement logs (Table 3 to Table 9) outline all topic specific matters agreed, not agreed and actions to resolve between Norfolk County Council and the Applicant.
3. The Applicant has had regard to the Guidance for the examination of applications for development consent (Department for Communities and Local Government, 2015) when compiling this SoCG. Matters that are not agreed will be the subject of ongoing discussion wherever possible to resolve or refine the extent of disagreement between the parties.

1.1 The Development

4. The Application is for the development of the Norfolk Boreas Offshore Wind Farm and associated infrastructure. A full description of the project can be found in Chapter 5 Project Description of the Environmental Statement (ES) (document reference 6.1.5 of the Application, APP-218).
5. The Application is seeking consent for the following two alternative development scenarios:
 - **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.
6. Where a topic of agreement is specific to a scenario this is identified in the Agreement Log (section 2), otherwise the agreement applies to both scenarios.

1.2 Consultation with Norfolk County Council

7. This section briefly summarises the consultation that the Applicant has had with Norfolk County Council. For further information on the consultation process please see the Consultation Report (document reference 5.1 of the Application, APP-027).

1.2.1 Pre-Application

8. The Applicant has engaged with Norfolk County Council on the project during the pre-application process, both in terms of informal non-statutory engagement and formal consultation carried out pursuant to Section 42 of the Planning Act 2008.
9. During formal (Section 42) consultation, Norfolk County Council provided comments on the Preliminary Environmental Information Report (PEIR) by way of email 28th November 2018.
10. Further to the statutory Section 42 consultation, meetings were held with Norfolk County Council through the Evidence Plan Process (EPP). For further details on these meetings see sections 9.5, 12.5, 13.5, 18.5, 21.5 and 21.6 of the Consultation Report (document 5.1 of the Application, APP-027). These included meetings for onshore archaeology, traffic and transport, onshore ecology and water resources and flood risk and the minutes of the meetings are provided as appendices to the Consultation Report (see Table 1 for details).
11. Table 1 provides a summary of pre-application correspondence with Norfolk County Council.

Table 1 Summary of pre-application consultation with Norfolk County Council

Date	Contact Type	Topic
Pre-Application		
January / February 2018	Email from the Applicant	Issue of Method Statements and Agreement Logs for relevant Environmental Impact Assessment (EIA) topics.
March 2018	EPP Meeting	Onshore and Offshore Archaeology agreement on method statements (minutes in document 5.1.9.44 of the Application, APP-081).
May 2018	EPP Meeting	Traffic and Transport agreement on method statement and traffic parameters for the scenarios (minutes in document 5.1.9.42 of the Application, APP-079)
November 2018	Section 42 consultation	Norfolk County Council response to section 42 consultation on PEIR. Appendix 24.01 of the Consultation Report (document reference 5.1.24.1 of the Application, APP-180).
January 2019	Emails from the Applicant	Offering any topic specific EPP meetings for relevant onshore EIA topics (for those topics not identified below it was concluded a meeting was not required).
February 2019	EPP Meeting	Onshore archaeology agreement on finding of geophysical survey and approach to ES Chapter (minutes in document 5.1.28.1 of the Application, APP-192).

Date	Contact Type	Topic
	EPP Meeting (conference call)	Water Resources and Flood Risk agreement on approach to the Environmental Statement and section 42 responses. (minutes in document 5.1.28.1 of the Application, APP-192). Norfolk County Council invited but not able to attend but minutes and updated agreement log provided post meeting
	EPP Meeting (conference call)	Onshore Ecology and Ornithology process meeting to discuss section 42 responses and approach to Environmental Statement (document 5.1.28.1 of the Application, APP-192). Norfolk County Council invited but not able to attend but minutes and updated agreement log provided post meeting
July 2019	Email from the Applicant	Providing early sight of relevant chapters of the Environmental Statement.

12. Consultation was also undertaken with Norfolk County Council concerning matters relevant to both projects by Norfolk Vanguard and has been taken into account by Norfolk Boreas. For details see Norfolk Vanguard Statement of Common Ground – Norfolk County Council (Norfolk Vanguard examination document REP9-047).

1.2.2 Post-Application

13. The Applicant met with Norfolk County Council on 24th July 2019 to agree the approach for drafting the SoCG. Norfolk County Council agreed that the SoCG should cover the same subject areas as identified in the Norfolk Vanguard SoCG, i.e. focusing on traffic and transport, onshore ecology, historic environment, flood risk, tourism and recreation and socio economics only.
14. This SoCG is a live document and will be updated throughout the examination process. This version is the original draft and takes consideration of the relevant representations submitted as part of the Section 56 Consultation (RR-037).
15. Table 2 provides a summary of post-application correspondence with Norfolk County Council.

Table 2 Summary of post-application consultation with Norfolk County Council

Date	Contact Type	Topic
Post-Application		
24 th July 2019	Meeting	Project update and agreement on approach to SoCG's.
4 th November 2019	Meeting	Project update and discuss comments on SoCG relating to socio-economics and traffic and transport
15 th January 2020	Meeting	Norfolk Vanguard and Norfolk Boreas project update meeting
12 th February 2020	Meeting	Meeting on Cawston Traffic attended by with Highways Authority, Cawston Parish Council and Broadland District Council.

2 STATEMENT OF COMMON GROUND

16. Within the sections and tables below the different topics for agreement, ongoing discussion and disagreement for the different subject areas between Norfolk County Council and the Applicant are set out.

2.1 Project-wide considerations

17. Table 3 provides areas of agreement and disagreement for project-wide considerations.

Table 3 Project-wide considerations

Norfolk Boreas Limited position	Norfolk County Council position	Final position
Electricity supply		
The principle of offshore wind is supported, as Norfolk Boreas accords with national renewable energy targets and objectives. This was noted in Norfolk County Councils PEIR response in November 2018.	Agreed	It is agreed that both parties support offshore wind in principle and the project accords with national targets and objectives for renewable energy.
The onshore connection point was determined through a statutorily mandated process involving both the Applicant and National Grid, to identify a direct connection to the 400kV national transmission system. There are no planning or regulatory mechanisms through which the Applicant could identify direct 'infeeds' into the regional distribution network in Norfolk.	Agreed	The County Council accepts that Vattenfall are unable to influence National Grid and UK Power Networks regarding options to potentially feed electricity into the local transmission networks.
Site selection		
The methodology adopted for selecting and assessing the onshore project substation location options, including the final option, is considered robust and appropriate (ES Chapter 4 Site Selection and Assessment of Alternatives, document reference 6.1.4 of the Application, APP-127).	Agreed	It is agreed by both parties that the approach to selecting and assessing the onshore project substation location was appropriately undertaken.
The methodology adopted for selecting and assessing the landfall location options, including the final option, is considered robust and appropriate. (ES Chapter 4 Site Selection and Assessment of Alternatives, document reference 6.1.4 of the Application, APP-127).	Agreed	It is agreed by both parties that the approach to selecting and assessing landfall location was appropriately undertaken.
The proposed transition pit has been suitably set back from the cliff edge to ensure natural coastal erosion will not affect the drilled cable or	Agreed	The County Council ask that sufficient safeguards and mitigation measures are

Norfolk Boreas Limited position	Norfolk County Council position	Final position
<p>transition pits within the conceivable lifetime of the project (approx. 30 years).</p> <p>In addition, the Applicant has committed to a long HDD to avoid any interaction with intertidal areas.</p> <p>Requirement 17 of the draft DCO (Landfall Method Statement) commits the Applicant to producing a method statement for the landfall works including the long HDD and any associated mitigation measures. This will be approved by the relevant planning authority. With this in place, measures to mitigate any impacts associated with the landfall are adequately secured.</p>		<p>put in place where the offshore cable route makes landfall to the south of Happisburgh (as a planning requirement), in order to ensure the onshore infrastructure does not exacerbate existing coastal erosion in the area.</p>
<p>Committing to a High Voltage Direct Current (HVDC) solution removes the need for additional onshore infrastructure (cable relay station) in North Norfolk and reduces the potential environmental impact associated with the cable route by narrowing the cable corridor from 50m to 35m.</p> <p>This was noted in Norfolk County Councils PEIR response in November 2018.</p>	<p>Agreed</p>	<p>The County Council welcomes the decision by Vattenfall to pursue a HVDC solution, particularly in terms of minimising the impacts of this development on the landscape in North Norfolk.</p>
<p>Health Impact Assessment (HIA)</p>		
<p>Detailed matters relating to construction noise and local environmental health, will be addressed by the relevant District Councils and/or other statutory body such the Environment Agency.</p>	<p>Agreed</p>	<p>The County Council would expect detailed matters relating to construction noise and local environmental health, to be addressed by the relevant District Councils.</p> <p>Providing the District Councils are satisfied with the proposal in relation to the above matters, the County Council would not wish to raise any public health concerns at this time.</p>
<p>Minerals and waste</p>		
<p>The provision of a Materials Management Plan (MMP) is considered suitable to mitigate any potential impacts to the Mineral Safeguarding Areas (MSA).</p> <p>This was noted in Norfolk County Councils PEIR response in November 2018.</p>	<p>Agreed</p>	<p>Norfolk County Council in its capacity as the Minerals and Waste Planning Authority does not object to the Proposed Boreas Wind Power Project. Requirement 20(2)(f) of the</p>

Norfolk Boreas Limited position	Norfolk County Council position	Final position
<p>The MMP will form part of the final Code of Construction Practice (CoCP) and is secured through Requirement 20(2)(f) of the draft DCO.</p>		<p>draft DCO adequately secures the request that the applicant continues to work with Norfolk County Council regarding the mitigation of impacts on the Mineral Safeguarding Areas.</p>

2.2 Water Resources and Flood Risk

18. The project has the potential to impact upon water resources and flood risk. Chapter 20 Water Resources and Flood Risk of the ES, (document reference 6.1.20 of the Application, APP-233), provides an assessment of the significance of these impacts.
19. Details on the Evidence Plan for water resources and flood risk can be found in Consultation Report Appendix 9.22 (document reference 5.1.9.22 of the Application, APP-059) and Appendix 28.1 (document 5.1.28.1 of the Application, APP-192).
20. Table 4 outlines the topics for agreement with respect to water resources and flood risk between Norfolk County Council and the Applicant.

Table 4 Agreement Log - Water resources and flood risk

Topic	Norfolk Boreas Limited position	Norfolk County Council position	Final position
Environmental Impact Assessment			
Existing Environment	<p>Sufficient survey data has been collected to inform the assessment.</p> <p>Detailed in section 20.5.2 of ES Chapter 20 Water Resources and Flood Risk (document reference 6.1.20, APP-233). The survey data collected as part of the Norfolk Vanguard project is suitable for use in the Norfolk Boreas EIA.</p> <p>Agreed as part of the Evidence Plan Process.</p>	Agreed	It is agreed by both parties that sufficient survey data have been collected to undertake the assessment.
Assessment methodology	<p>The impact assessment methodologies used for the EIA, section 20.4 of ES Chapter 20 (APP-233) provide an appropriate approach to assessing potential impacts of the project.</p> <p>Agreed as part of the Evidence Plan Process.</p>	Agreed	It is agreed by both parties that the impact assessment methodologies used in the EIA are appropriate.
	<p>The worst case assumptions presented in the assessment for Scenario 1 and Scenario 2, as outlined in ES Chapter 20 (APP-233) Table 20.15 and 20.16 respectively, are appropriate.</p>	Agreed	It is agreed by both parties that the worst case assumptions presented in the ES are appropriate for this project.
Assessment findings	<p>The ES adequately characterises the baseline environment in terms of water resources and flood risk as outlined in section 20.6 of ES Chapter 20 (APP-233).</p>	Agreed	It is agreed by both parties that the ES adequately characterises the baseline environment.
	<p>The assessment of impacts of both scenarios for construction, operation and decommissioning presented in section 20.7 of ES Chapter 20 (APP-233) are consistent with the agreed assessment methodologies.</p>	Agreed	It is agreed by both parties that the assessment is consistent with the agreed methodologies.

Topic	Norfolk Boreas Limited position	Norfolk County Council position	Final position
	The assessment of cumulative impacts of both scenarios presented in section 20.8 of ES Chapter 20 (APP-233) is consistent with the agreed methodologies.	Agreed	It is agreed by both parties that the assessment of cumulative impact is consistent with the agreed methodologies
Approach to mitigation	<p>Under Scenario 2 the proposed locations for trenchless crossing techniques as detailed in Schedule 1, Part 3, Requirement 16 (13) of the draft DCO are appropriate and will be explored further and details agreed at each location at detailed design stage.</p> <p>Under Scenario 1 trenchless crossings will not be required as these will have been pre-installed by Norfolk Vanguard.</p>	Agreed	It is agreed by both parties that the proposed trenchless crossing techniques under Scenario 2 are appropriate, subject to detailed design.
	<p>The onshore project substation surface water drainage plan will have sufficient storage / attenuation volume to ensure that during the 1 in 100 year rainfall event, plus an allowance for climate change, there will be no increase in surface water runoff from the site.</p> <p>Whilst the outline drainage design assumptions included an allowance of 40% for climate change, this was included as contingency to demonstrate proof of concept. As the operational life of the project is approximately 30 years, the relevant flood risk epoch is 2040 to 2069 using the Environment Agency's Climate Change Allowance Guidance. This identifies an allowance of 20% for climate change.</p> <p>Based on the operational life of the substation (30 years) the detailed design of the surface water drainage plan will therefore allow for the 1 in 100 year critical rainfall plus 20% for climate change as a minimum (as identified within the submitted Flood Risk Assessment). This is appropriate and in accordance with the Environment Agency's Climate Change Allowance guidance.</p> <p>40% climate change allowance is the worst-case allowance identified for developments that have a design life extending beyond 2070. The onshore</p>	Agreed	While the Council's requested figure for climate change allowance (40%) is consistent with advice set out by County Council as Lead Local Flood Authority it is felt that given the operational life of the development (approximately 35 years) a reduced figure of 20% is acceptable

Topic	Norfolk Boreas Limited position	Norfolk County Council position	Final position
	<p>project substation has a 30-year design life running from approximately 2025-2055. Whilst the Applicant is committed to adopting best practice design standards for all infrastructure, adopting elevated standards that aren't appropriate for the proposal may lead to unnecessary over-engineering within the design and potentially affect the functionality of the drainage system that is installed. These systems are designed to receive a certain volume of water to self-clean. If they are over designed and receive less water than expected there is a risk they will silt up which could lead to impacts to the sensitive chalk river catchment.</p>		
	<p>The outline Operational Drainage Plan (document reference 8.21, APP-712) sets out the principles for the development of the operational drainage at the onshore project substation in accordance with the principles of Sustainable Drainage Systems discharge hierarchy. The final Operational Drainage Plan will be developed in accordance with the outline plan, in consultation with Norfolk County Council. This is secured through Requirement 32 of the draft DCO, as such mitigation to manage potential flood risk impacts associated with the operation of the onshore project substation will be appropriate and adequately secured.</p>	<p>Agreed</p>	<p>It is agreed by both parties that mitigation to manage operational flood risk at the onshore project substation will be appropriate and adequately secured.</p>
	<p>The mitigation proposed for managing flood risk is appropriate and adequate.</p>	<p>Agreed</p>	<p>It is agreed by both parties that that mitigation to manage flood risk will be appropriate and adequate.</p>

Topic	Norfolk Boreas Limited position	Norfolk County Council position	Final position
	Part 4 of the DCO (Supplemental Powers) Article 15 (Discharge of water and works to watercourses) sets out that the Applicant must not undertake any works to any ordinary watercourse without the consent of the relevant drainage authorities or Norfolk County Council.	Agreed	The County Council confirms that for ordinary watercourses that are to be crossed by open cut trenching or where any other temporary works proposed as part of this project are likely to affect flows in an ordinary watercourse, then the Applicant would need the approval of Norfolk County Council
Draft Development Consent Order (DCO)			
Wording of Requirement(s)	The wording of Requirements 20, 25 and 32 presented provided within the draft DCO (and supporting certified documents) for the mitigation of impacts to water resources and flood risk are considered appropriate and adequate.	Agreed	It is agreed by both parties that the wording of Requirement 20, 25 and 32 that mitigation to manage flood risk will be appropriate and adequately secured.

2.3 Onshore Ecology and Ornithology

21. The project has the potential to impact upon onshore ecology and ornithology. Chapter 22 Onshore Ecology and Chapter 23 Onshore Ornithology of the ES, (document reference 6.1.22 and 6.1.23 of the Application, APP-235 and APP-236 respectively), provides an assessment of the significance of these impacts.
22. Details on the Evidence Plan for onshore ecology and ornithology can be found in Consultation Report Appendix 9.17 (document reference 5.1.9.17 of the Application, APP-054) and Appendix 28.1 of the Consultation Report (document reference 5.1.28.1 of the Application, APP-192).
23. Table 5 outlines the topics for agreement with respect to onshore ecology and ornithology between Norfolk County Council and the Applicant.

Table 5 Agreement Log- Onshore ecology and onshore ornithology

Topic	Norfolk Boreas Limited position	Norfolk County Council position	Final position
Environmental Impact Assessment			
Survey methodology	Survey methodologies for Phase 1 Habitat Surveys are appropriate and sufficient. Agreed as part of the Evidence Plan Process.	Agreed	It is agreed by both parties that sufficient survey data have been collected to undertake the assessment.
	Survey methodologies for Phase 2 Surveys are appropriate and sufficient. Agreed as part of the Evidence Plan Process.	Agreed	Both parties agree that Phase 2 survey scopes are appropriate.
Existing Environment	Survey data collected for Norfolk Vanguard and Norfolk Boreas for the characterisation of onshore ecology and ornithology are suitable for the assessment (as summarised in section 22.5.2 of ES Chapter 22 (APP-235) and section 23.5.2 of ES Chapter 23 (APP-236)). Due to access constraints only 65% of the onshore project area and only 45% of the ponds within the onshore study area were subject to ecological field surveys. The use of the Norfolk Living Map to 'fill-in' data gaps at this stage, is appropriate to inform the assessment. The Applicant has committed to undertake field surveys of all un-surveyed areas post consent, which will inform site specific mitigation.	Agreed	The County Council recognises field surveys of the currently un-surveyed locations will be necessary post-consent, and these surveys may lead to further mitigation at specific locations.
	County Wildlife Sites (CWS) in proximity to the cable route have been sufficiently surveyed to inform the assessment of potential impacts. At an early stage, the County Council advised that surveying of CWS close to the cable corridor was necessary (Norfolk Vanguard Evidence Plan Process meeting Jan 2017, Minutes included in Appendix 9.32 of the Consultation report (APP-069)). This was accepted by the Applicant and the surveys were completed.	Agreed	It is agreed by both parties that the survey effort at CWS in proximity to the works is sufficient to inform the assessment.

Topic	Norfolk Boreas Limited position	Norfolk County Council position	Final position
	The ES adequately characterises the baseline environment in terms of onshore ecology and ornithology.	Agreed	It is agreed by both parties that the ES adequately characterises the baseline environment.
Assessment methodology	Appropriate legislation, planning policy and guidance relevant to ecology and ornithology has been considered for the project (listed in section 22.2 ES Chapter 22 Ecology (APP-235) and section 23.2 in ES Chapter 23 Onshore Ornithology (APP-236). Agreed as part of the Evidence Plan Process.	Agreed	It is agreed by both parties that the appropriate legislation, planning policy and guidance has been taken into account with regard to onshore ecology and ornithology.
	The list of potential impacts on onshore ecology (section 22.7 ES Chapter 22) and ornithology (section 23.4 in ES Chapter 23) assessed is appropriate. Agreed as part of the Evidence Plan Process.	Agreed	It is agreed by both parties that the list of potential impacts considered is appropriate.
	The impact assessment methodologies used for the EIA provide an appropriate approach to assessing potential impacts of the project. Agreed as part of the Evidence Plan Process.	Agreed	It is agreed by both parties that the impact assessment methodologies used in the EIA are appropriate.
	The worst case assumptions for Scenario 1 and Scenario 2 presented in the ES Chapter 22 (Table 22.22 and Table 22.33) for onshore ecology and ES Chapter 23 (Table 23.23 and 23.24) for onshore ornithology, are appropriate for the project.	Agreed	It is agreed by both parties that the worst case assumptions presented are appropriate.
Assessment findings	The assessment of impacts of both scenarios for construction, operation and decommissioning presented in the ES (Chapter 22 section 22.7 Chapter 22 and section 23.7 Chapter 23) are consistent with the agreed assessment methodologies.	Agreed	It is agreed by both parties that the assessment is consistent with the agreed assessment methodologies.
	The assessment findings for potential cumulative impacts for both scenarios presented in the ES (section 22.8 Chapter 22 and section 23.8 Chapter 23) are consistent with the agreed methodologies.	Agreed	It is agreed by both parties that the assessment is consistent with the agreed assessment methodologies.

Topic	Norfolk Boreas Limited position	Norfolk County Council position	Final position
Mitigation and Management			
Approach to mitigation	<p>The provision of an Ecological Management Plan (EMP) (based on the Outline Landscape and Ecological Management Strategy (OLEMS) submitted with the DCO application, document reference 8.7 (APP-698) is considered suitable to ensure potential impacts identified in the Ecological Impact Assessment are reduced to a non-significant level.</p> <p>The OLEMS sets out that all hedgerows will be reinstated along the cable route and sets out additional hedgerow planting that is proposed in proximity to the onshore project substation.</p>	Agreed	The County Council welcome the approach and agrees the content of the outline CoCP and the OLEMS.
	<p>Under Scenario 2 the use of trenchless crossing techniques at CWS is acceptable subject to detailed design.</p> <p>Agreed as part of the Evidence Plan Process.</p> <p>Under Scenario 1 trenchless crossings will not be required as these will have been pre-installed by Norfolk Vanguard.</p>	Agreed	It is agreed by both parties that the use of trenchless crossings at CWS are acceptable, subject to detailed design.
	<p>The mitigation proposed for bats (ES Chapter 22 section 22.7.5.10) is appropriate and proportionate.</p>	Agreed	The County Council is content that appropriate mitigation for bats has been identified and notes that during the design process the landfall has moved away from the key area of concerns for Barbastelle bats at the Paston Great Barn SAC colony.
Draft Development Consent Order (DCO)			
Wording of Requirement(s)	<p>The Requirements provided in the draft DCO (and supporting certified documents) for the mitigation of impacts to onshore ecology and ornithology are considered appropriate and adequate.</p>	Agreed	It is agreed by both parties that the Requirements provided in the draft DCO are considered appropriate and adequate.

2.4 Traffic and Transport

24. The project has the potential to impact upon traffic and transport. Chapter 24 Traffic and Transport of the ES, (document reference 6.1.24 of the Application, APP-237), provides an assessment of the significance of these impacts.
25. Further details on the Evidence Plan for traffic and transport can be found in Consultation Report Appendix 9.18 (document reference 5.1.9.18 of the Application, APP-055) and Appendix 9.42 (document reference 5.1.9.42 of the Application, APP-079).
26. Table 6 outlines the topics for agreement with respect to traffic and transport between Norfolk County Council and the Applicant.

Table 6 Agreement Log - Traffic and transport

Topic	Norfolk Boreas Limited position	Norfolk County Council position	Final position
Environmental Impact Assessment			
Existing Environment	Sufficient survey data (extent/duration) has been collected to inform the characterisation of the baseline environment.	Agreed	Agreed
Assessment methodology	The impact assessment methodologies used for the assessment represent an appropriate approach to assessing potential impacts.	NCC has no specific points to raise	n/a
	The methodology adopted for the Great Yarmouth port assessment (onshore construction traffic derived from the port) is acceptable. Agreed as part of the Evidence Plan Process. All construction traffic associated with the onshore works, including that derived from relevant ports, will be included within the relevant Travel Plan for that stage of the works.	Agreed	Agreed
	The assessment adequately defines the realistic worst case scenario for traffic demand for Scenario 1 (S1-WCS) and Scenario 2 (S2-WCS) (ES Chapter 24 section 24.7.2 and 24.7.3, respectively). Agreed as part of the Evidence Plan Process. NCC requested clarification regarding the change in HGV increase for Link 33 B1149: The 132.1% increase in HGV flows relates to traffic flows presented within the Norfolk Vanguard ES and is derived by an additional 234 HGV construction movements to the future baseline (2022) of 178 HGV movements.	Other than issues specifically identified elsewhere within this Statement of Common Ground - this is now agreed.	Agreed

Topic	Norfolk Boreas Limited position	Norfolk County Council position	Final position
	<p>In comparison, Norfolk Boreas Scenario 2 presents a lower increase of 117.8% in HGV flows (derived by an additional 213 HGV construction movements to the future baseline (2023) of 180 HGV movements.</p> <p>By using professional judgement, based on the outlined HGV construction flows, character and classification of the B1149 (Main Distributer others) and baseline flows. It was deemed that the reduced % increase in HGV flows constituted a low magnitude of change from the Medium presented in Norfolk Vanguard. Thus, resulting in an impact significance of Minor Adverse. Notwithstanding, in the event that the magnitude of effect were to stay as Medium, the impact significance would still result in a Minor adverse impact and no further assessment would be required.</p>		
	<p>The assessment adequately defines the realistic worst case scenario for employee distribution for Scenario 1 (S1-WCS) and Scenario 2 (S2-WCS) (ES Chapter 24 section 24.7.2 and 24.7.3, respectively).</p> <p>Agreed as part of the Evidence Plan Process.</p>	NCC have no specific points to raise	n/a
	<p>The assessment adequately characterises the baseline environment in terms of traffic and transport.</p>	NCC have no specific points to raise	n/a
Abnormal Indivisible Loads	<p>Consideration of Abnormal Indivisible Loads (AIL) is presented within section 3.6 of the Outline Traffic Management plan (OTMP) (document reference 8.8 of the Application, APP-699). An AIL Route Access Study is included as Appendix 3 of the OTMP, which sets out the type of management measures which could be employed to minimise disruption to traffic during AIL delivery.</p>	NCC is satisfied that any impact from abnormal loads will be insignificant and falls outside the current assessment. However, it will still need to be assessed at a later and appropriate time.	Agreed

Topic	Norfolk Boreas Limited position	Norfolk County Council position	Final position
	<p>The movement of AILs will be subject to separate agreement with the relevant highway authorities and police through the Electronic Service Delivery for Abnormal Loads system.</p>		
<p>Approach to mitigation</p>	<p>With the exception of points identified separately in this SoCG, the measures described in the OTMP, Outline Travel Plan (OTP) and Outline Access Management Plan (OAMP) (document reference 8.8, 8.9 and 8.10 of the application (APP-699, APP-700, APP-701)) are considered appropriate. Further detail and site-specific measures will be developed in the final documents post-consent and will require approval from the relevant planning authority in consultation with the highways authority. This is secured through DCO Requirement 21 of the draft DCO.</p> <p>The OTMP (section 3.9), secured through DCO Requirement 21, states that “A highway condition survey would be undertaken by the contractor before the commencement of construction and after the substantial completion of construction works. Any damage to the existing road network or public highway as a consequence of the construction activities, will be made good to the reasonable satisfaction of NCC.”</p> <p>It is anticipated NCC would utilise the powers afforded under S59 of the Highways Act to ensure that evidenced damage is adequately repaired or a financial contribution is made for the cost of repair.</p> <p>The Applicant will ensure effective and open communication with local stakeholders affected by the construction works (as detailed in Section 2.4 of the OCoCP) and further details will</p>	<p>The TMP; TP and AMP are all in outline form only. Accordingly, they are working documents that need to be progressed as the project develops.</p> <p>In particular temporary signage will be required in accordance with TSRGD as well as Temporary speed limits via Temporary Traffic Regulation Orders The exact details to be confirmed via the CTMP. Also require a commitment to remove temporary construction accesses unless otherwise approved by the HA.</p> <p>The County Council expects the developer to:</p> <p>(A) Explain how the condition survey will be undertaken and monitored.</p> <p>(B) Agree a method for undertaking the technical vetting for the detailed design of all off-site highway works.</p> <p>(C) Confirm within the OTMP that they accept all responsibility for any part 1 claims under the Land Compensation Act that are directly attributable to their off-site highway works as some of these works are likely to remain in perpetuity. This would normally form part of a 278 agreement and needs to be captured. If the applicants are altering the road in any way, then</p>	<p>In discussion concerning the nature of side legal agreements</p>

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	<p>be provided in a communication plan will developed as part of the final CoCP.</p> <p>The Funding Statement [APP-025] sets out the Applicant's approach to meeting claims under Part 1 of the Land Compensation Act 1973 ('Part 1 claims'). Notwithstanding this, the Applicant does not anticipate that any Part 1 claims will arise as a result of the OTMP. This is because Part 1 claims relate to depreciation of land caused as a result of the use and operation of works (within the 12 month period following first operation), whereas the OTMP is intended to mitigation impacts arising from the construction of the works.</p>	<p>the works can impact on property e.g. if it brings vehicles closer to property with increased noise and vibration etc. We do not foresee any claims but these are the applicants works and not ours so the risk is also theirs and not ours.</p>	
	<p>Within section 4.3.2 of the submitted Outline Traffic Management Plan TMP (Document reference 8.8, APP-699) Link 68 (The Street at Oulton) during Norfolk Boreas Scenario 2, serves mobilisation area MA7 during the duct installation period and access points AC84, AC85, AC88 during the Scenario 1 and Scenario 2 cable pulling works.</p> <p>A scheme of mitigation (Table 4.2 of the OTMP) has been developed by Hornsea Project Three (and agreed with Norfolk County Council) on The Street at Oulton which incorporates all of the required traffic management measures for a single development alone, or for projects cumulatively.</p> <p>The Applicant has committed to adopting the mitigation under both scenarios. In effect this scheme of mitigation, on the shared part of Link 68, would be sufficient to mitigate impacts for Norfolk Boreas alone, Hornsea Project Three alone or for both projects together. The first project to proceed to construction would deliver the full scheme of mitigation and the final project remaining on site would be responsible for</p>	<p>The County Council is satisfied the proposed off-site highway works for Oulton will mitigate against the impact arising from the applicant's development – including the cumulative scenario with Hornsea 3.</p> <p>The information in relation to the cable logistics area is now agreed.</p>	<p>Agreed</p>

Topic	Norfolk Boreas Limited position	Norfolk County Council position	Final position
	<p>removing the measures once both projects' construction phases are complete.</p> <p>In addition, Norfolk Boreas Limited has committed not to route HGV construction traffic along Oulton Street north of the junction between the Street and Heydon Road.</p> <p>This commitment has been captured in the OTMP (document reference 8.8, APP-699) submitted with the Application.</p> <p>Norfolk Boreas will use the same cable Logistics Area, to the south east of Oulton for the same purpose as Norfolk Vanguard. It is the Applicant's preferred strategy to deliver cable drums and associated materials directly to the jointing bay locations from the supplier, and that the cable logistics area will seek to provide 'buffer' storage only should delivery or installation issues arise. The Cable Logistics Area will also include a temporary site office, welfare and space for the storage of other materials associated with cable jointing such as cable joint kits and cement bound sand. The cable logistics area would only be used during the cable pulling phase of the project and would not be used during the duct installation phase or operational phases.</p> <p>The Applicant has provided further information on the use of the Cable Logistics Area [RE2-027] and Appendix 1 and Appendix 2 of the OTMP have been updated to note the 10 HGV movements to and from the Cable Logistics Area.</p>		

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	<p>Substation Access - The Applicant is continuing to engage with Highways England on the approach to junction design off the A47(T). An SoCG between the Applicant and Highways England is also being progressed.</p> <p>The approach to the junction design is set out in the Substation Access Clarification Technical Note (SACTN) and OAMP (document reference 8.10, APP-701) and have been agreed with Highways England for Norfolk Vanguard (Highways England Norfolk Vanguard Briefing Note BN07, see Appendix 1). The same design has been brought forward and included in the Norfolk Boreas Application (see section 24.7.6.3 of ES Chapter 24 (APP-237) and SACTN in ES Appendix 24.33 (APP-648).</p> <p>Requirement 22 of the draft DCO ensures that the siting, design, layout and any access management measures for any new, permanent or temporary means of access to a highway must be approved by the relevant planning authority in consultation with the highway authority.</p> <p>Following agreement of the SACTN (and on the understanding that the work outlined within the document is delivered to the satisfaction of Highways England post-consent), and with the inclusion of Requirement 22, this will ensure that that any final junction design will be fit for purpose with regard to safety, driver delay and will not obstruct any future plans for dualling the A47(T).</p>	<p>Agreed</p>	<p>NCC remain of the opinion that a full right turn lane is needed but acknowledge the applicant and Highways England are in discussion. Accordingly, we will leave Highways England to advise upon the suitability of the final junction design.</p>

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	<p>Construction access off the A47(T) at Scarning - The Applicant is continuing engage with Highways England on the approach to junction design off the A47(T) at Scarning. A SoCG between the Applicant and Highways England is also being progressed.</p> <p>The approach to the access strategy for the A47 cable crossing north west of Scarning, is set out in the Cable Crossing Access Technical Note (CCATN) and has been agreed in principle for Norfolk Vanguard (Highways England Norfolk Vanguard Briefing Note BN08, see Appendix 1). The same approach has been brought forward and included in the Norfolk Boreas Application (see OAMP, document reference 8.10, APP-701).</p> <p>Requirement 22 of the draft DCO ensures that the siting, design, layout and any access management measures for any new, permanent or temporary means of access to a highway must be approved by the relevant planning authority in consultation with the relevant highway authority.</p> <p>Following agreement of the CCATN (and on the understanding that the work outlined within the document is delivered to the satisfaction of Highways England post-consent), and with the inclusion of Requirement 22, this will ensure that that any final junction design will be fit for purpose with regard to safety, driver delay and will not obstruct any future plans for dualling the A47(T).</p>	<p>NCC have received clarification from the Applicant that the maximum number of daily HGV movements generated from the National Grid Substation extension would be 68 (ref. SACTN, Table 4.1).</p> <p>With respect to the hourly traffic movements that are likely to be diverted to the Tavern Lane / Yaxham Road junction, this equates to a peak demand of 20 movements (3 HGVs and 17 employees) (ref. SACTN, Table 6.2). On the basis of these flows no further assessment is required.</p>	Agreed
Cumulative impacts	<p>The Street, Oulton (Link 68)</p> <p>A transport cumulative transport impact assessment was undertaken and presented in section 24.8 of ES Chapter 24, to consider the potential cumulative traffic and transport</p>	<p>NCC supports a mitigation scheme proposed for Hornsea 3 which we believe overcomes the issue of either Norfolk Boreas or Ørsted using link 68 independently of each other. NCC would want to ensure that the two projects work together to ensure that the mitigation delivered for link 68 is</p>	Agreed

Topic	Norfolk Boreas Limited position	Norfolk County Council position	Final position
	<p>impacts of Norfolk Boreas in combination with other relevant projects.</p> <p>For Norfolk Boreas in the absence of mitigation, potentially significant cumulative pedestrian amenity impacts were identified along The Street at Oulton (Link 68) and a suite of mitigation measures have been identified, including temporary speed restriction, priority vehicle signage and passing bays to reduce impacts down to no greater than minor adverse significance.</p> <p>A scheme of mitigation has been developed by Hornsea Project Three (and agreed with Norfolk County Council) on The Street at Oulton which incorporates all of these requirements. This mitigation scheme has been reviewed by the Applicant and will deliver the measures identified within the Applicant's own cumulative impact assessment. The Applicant has therefore committed to also adopt this scheme of mitigation in full under both scenarios. The first project to proceed to construction would deliver the full scheme of mitigation and the final project would be responsible for removing the measures once both projects' construction phases are complete.</p> <p>This commitment has been captured in the OTMP (document reference 8.8, APP-699) submitted with the Application.</p> <p>Norfolk Boreas will use the same cable Logistics Area, to the south east of Oulton for the same purpose as Norfolk Vanguard. It is the Applicant's preferred strategy to deliver cable drums and associated materials directly to the jointing bay locations from the supplier, and that the cable logistics area will seek to provide 'buffer' storage only should delivery</p>	<p>introduced in full and retained for the duration of both projects and then removed, in order to minimise disruption.</p> <p>The information in relation to the cable logistics area is now agreed.</p>	

Topic	Norfolk Boreas Limited position	Norfolk County Council position	Final position
	<p>or installation issues arise. The Cable Logistics Area will also include a temporary site office, welfare and space for the storage of other materials associated with cable jointing such as cable joint kits and cement bound sand. The cable logistics area would only be used during the cable pulling phase of the project and would not be used during the duct installation phase or operational phases.</p> <p>The Applicant has provided further information on the use of the Cable Logistics Area [RE2-027] and Appendix 1 and Appendix 2 of the OTMP have been updated to note the 10 HGV movements to and from the Cable Logistics Area.</p>		
	<p>B1145 at Cawston (Link 34)</p> <p>A transport cumulative transport impact assessment was undertaken and presented in section 24.8 of ES Chapter 24. The assessment identified the requirement for mitigation along the B1145 through Cawston (Link 34) to mitigate potentially significant pedestrian amenity impacts associated with the combined peak construction traffic flows for both Norfolk Boreas and Hornsea Project Three. The measures identified included enhanced pedestrian facilities, managed parking and road safety measures. The Applicant committed to peak traffic not exceeding 133 daily HGV movements for Norfolk Boreas alone during the cumulative scenario. This would ensure that cumulative HGV movements (combined with Hornsea Project Three) would not exceed 260, which would reduce the identified pedestrian amenity impacts to minor adverse.</p> <p>Following discussions with Cawston Parish Council as part of Norfolk Vanguard, the Applicant has sought to further reduce this peak traffic to as low as practicable within the existing construction programme. The Applicant is able to commit to a</p>	<p>The applicant's position is somewhat misleading. Whilst it is true to say a Road Safety Audit was undertaken and reviewed by NCC's internal auditors – the scheme did not pass the audit. The proposed reduction in traffic numbers is greatly welcomed however our position in relation to Cawston remains unchanged.</p> <p>Norfolk County Council believes a suitable access strategy can be produced that mitigates impact however until the scheme passes the audit the intervention scheme drawings and proposal before us remain "work in progress"</p> <p>A revised audit was received at Deadline 5 and is currently being reviewed by our own auditors.</p>	<p>Not yet agreed as Road Safety Audit under review.</p>

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	<p>Norfolk Boreas peak of 112 daily HGV movements (in both the single project and cumulative scenario). This further commitment has been captured within an updated OTMP submitted at Deadline 1.</p> <p>This reduction does not change the findings of the CIA (the residual impacts remains minor adverse), however, they recognise the concerns of Cawston Parish Council and represent a further effort by the Applicant to reduce these short-term peaks to as low as practicable.</p> <p>A Stage 1 Road Safety Audit has been undertaken by Hornsea Project Three for the proposed scheme of mitigation and NCC's own auditors have also reviewed the proposed scheme.</p> <p>The Applicant understands that NCC's position is that the proposed scheme of mitigation along Link 34 would be suitable to mitigate traffic impacts with the incorporation of a small number of amendments to address issues raised through the Road Safety Audit, which will be addressed during detailed design post-consent.</p> <p>The adopted scheme would be sufficient to mitigate impacts for Norfolk Boreas alone, Hornsea Project Three alone or for both projects together. The first project to proceed to construction would deliver the full scheme of mitigation and the second project would be responsible for removing the measures once both project's construction phases are complete.</p> <p>Norfolk Boreas Limited is committed to continuing to engage with Norfolk Vanguard, Hornsea Project Three, NCC,</p>		

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	<p>Broadland District Council and Cawston Parish Council to finalise the scheme post-consent.</p> <p>It has been agreed with Norfolk Vanguard and Hornsea Project Three that the Applicant would take forward the scheme design to address the concerns raised in the Road Safety Audit (RSA) and by Norfolk County Council.</p> <p>A revised Cawston Highway Intervention Scheme (HIS) was submitted to the Examination at Deadline 4 [REP4-016]. The scheme revisions were designed to address the remaining road safety concerns.</p> <p>A Stage 1 RSA was undertaken on the revised HIS and submitted at Deadline 5, together with a RSA decision log [REP5-055]. The decision log confirms the Applicant's acceptance of all RSA recommendations and accordingly details minor revisions to the D4 HIS [RE4-016].</p> <p>The Applicant considers that all residual road safety matters have now been addressed and the HIS concept design is finalised.</p>		
	<p>Cawston Access Alternatives</p> <p>A review of a number of proposed options for traffic movements through Cawston was undertaken, full details are provided the Position Statement Cawston Traffic submitted at Deadline 5 [ExA.AS-2.D5.V1].</p> <p>Four alternative options were reviewed (Option 1 being the existing proposal to use the B1145 and the Highways Intervention Scheme);</p>	<p>In highway terms we favour Option 2 as it has the potential to remove all of the traffic from Cawston.</p> <p>Failing that we would also support Options 4; 3; and 1 (listed in order of preference due to traffic impact) subject to safety audit.</p>	<p>Under discussion</p>

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	<ul style="list-style-type: none"> • Option 2 (Norfolk Boreas Scenario 2 only) a full bypass from the B1149 requiring a new separate haulage route parallel to the cable corridor; • Option 3 (Norfolk Boreas Scenario 2 only) a light bypass where traffic uses the running track when not in use for duct installation; • Option 4 (Norfolk Boreas Scenario 2 only) moving mobilisation MA6 adjacent to the B1149; and • Option 5 (Norfolk Boreas Scenario 1 and 2) Implementing a one-way system using Heydon Road. <p>Option 2 - Due to the additional significant constraints relating to construction methodology, traffic demand, environment and land, (see Appendix 2) the full bypass option does not represent a viable alternative.</p> <p>Options 3 and 4 go against the principles of construction and associated embedded mitigation to minimise the amount of land required and duration of works and is constrained by the need for additional land outside the existing Order Limits. Therefore, are not considered an appropriate alternative.</p> <p>Option 5 with appropriate highway measures represents a viable route for reducing the HGV demand through Cawston High Street. An initial scheme concept was submitted at Deadline 5.</p> <p>The Applicant notes NCC concerns relating to highway safety and volume of Agri-industry traffic, however it is considered these issues can be addressed with revisions to the initial</p>	<p>We do not support Option 5 as the highway network is not suitable to cater for the traffic proposed.</p> <p>Options 2 to 4: Involve a temporary access from the B1149 adjacent to the Applicant’s cable crossing, which in turn links to a haul road. These options were previously dismissed by the County Council due to traffic management concerns.</p> <p>Our previous concerns have now been addressed by the Applicant as part of their assessment for traffic management at this same location relating to open cut trenching (albeit unrelated issues for open cut trenching remain).</p> <p>Out of the four possibilities presented, Norfolk County Council would favour options that can be used by Hornsea 3; Vanguard and Boreas rather than one wind farm in isolation.</p> <p>We fully recognise there are other environmental considerations which may render these options unacceptable.</p> <p>Option 5 – This option utilises a one-way system through Cawston, with the return journeys directed along existing narrow rural roads. The County Council does not support this option on highway safety grounds. In addition, the fabric/construction of the road is not suitable to cater for the volume of traffic proposed.</p>	

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	<p>concept design. It is also considered that concerns relating to amenity can be mitigated by comprehensive HGV control measures. Further discussion with NCC on these matters is ongoing.</p>	<p>Firstly - the Applicant's concept drawings indicate the level of emerging visibility for vehicles exiting Heydon Road onto Cawston Road. However, the Applicant's vehicles will be travelling in the opposite direction. Accordingly, the assessment needs to be made against forward visibility and not emerging visibility. The County Council's concern is that HGVs will be stationary on the carriageway whilst making the turn into the junction at a point where forward visibility is restricted due to a bend in the road. This presents a risk of tail end collision. There has been one personal injury accident at this junction in the last 5 years, involving three vehicles and 2 casualties. Forward visibility has not been checked on site and an update will be provided at the ISH on 17 March if required.</p> <p>Secondly – The Applicant's drawings indicate a visibility splay at the B1149 junction measuring 2.4 x 215m. However, the plans submitted are not based on a topographical survey and measurements need to be taken on site due to the presence of roadside trees. It may be possible to overcome the problem by introducing a temporary speed restriction but again this needs to be checked and verified on site and an update will be provided at the ISH on 17 March if required</p> <p>Thirdly - These rural lanes are used by walkers; horse riders and cyclists. The volume of HGV</p>	

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		<p>traffic would turn a 1. mile length of public highway into a private haul road for a considerable period of time, rendering it inaccessible to non-motorised users.</p> <p>Fourth – This is a highly agricultural area and accordingly some movement of crops in large vehicles - tractor/trailer combinations, tankers, or other HGVs is ‘normal’ and to be expected on the network. They would be very frequent and concentrated on this particular stretch of road over a concentrated time period each year. The Applicant's drawings show the provision of 4 passing places along a 1.5 mile stretch of road which is unlikely to be sufficient to cater for the Applicant's vehicles meeting agricultural vehicles along the route.</p> <p>From the drawing submitted, it is not possible to tell if the location for the passing places is suitable and again this needs to be checked on site and an update will be provided at the ISH on 17 March.</p> <p>This proposal would markedly intensify and exacerbate the difficulties presented by the current arrangement, in which the drivers of vehicles are obliged to reverse on the narrow road. The provision of more formal passing places would neither eliminate nor sufficiently ameliorate the consequences of the proposed increase in traffic movements of the most</p>	

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		<p>problematic form of vehicle and at the most problematic times.</p> <p>Lastly, the fabric/construction of the road is not suitable to cater for the volume of traffic proposed.</p>	
	<p>B1149 crossing</p> <p>An investigation was undertaken in response to the concerns raised by NCC on the potential impacts of open cut trenching on the B1149 and was submitted as part of the Norfolk Vanguard examination at Deadline 7.5 (see Appendix 2). The findings are summarised below:</p> <ul style="list-style-type: none"> Forecast cumulative traffic flows were examined and would fall well below the total vehicles per hour level at which single lane traffic management would lead to network disruption. A drawing has been provided showing the swept path of vehicles (including abnormal loads) which demonstrates that the proposed traffic management is viable. Norfolk Partnership Laboratory (NPL), investigated ground conditions at the B1149 to ascertain if an appropriate road reinstatement specification (to address additional concerns raised by NCC) would be feasible. The testing indicates that the road subsurface has good load bearing properties and a specification was identified for the reinstatement that liability. 	<p>We do not agree with the applicant – our reasoning is set out in considerable detail within our response at Deadline 5 but very briefly summarised as:-</p> <p>The road width and scale of the works is such that traffic signal control would be necessary 24 hours per day, 7 days per week. This would need manual control consideration at peak traffic times due to the roads’ Traffic Sensitive designation (Band 4 0730 – 0900 and 1600 – 1900). <u>Trenchless</u> methods require no carriageway incursion of works or traffic management.</p> <p>To enable an open cut method would require extensive temporary carriageway widening to give adequate sideways clearance to permit through traffic whilst the road was crossed half at a time. This widening would involve the removal of mature hedgerow, and the construction of a suitable running lane in virgin verge. The nature of the verge and traffic levels at this point requires a full depth construction to enable adequate lateral restraint. We fully understand that Norfolk County Councils</p>	<p>This is still not acceptable to NCC on safety grounds.</p>

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	<p>An open cut trench crossing was deemed appropriate for Norfolk Vanguard and therefore is also considered appropriate Norfolk Boreas Scenario 2, as there is no evidence from the investigations to suggest that this form of open cut crossing and associated reinstatement will cause significant adverse impacts or present a maintenance liability for Norfolk County Council.</p> <p>NCC's concerns regarding the 1.2m wide safety zone are noted and will be taken account in a revised traffic management drawing (incorporating the requisite 1.2m safety zone) which will be captured within an update to the OTMP submitted at Deadline 1.</p> <p>Under Scenario 1 the duct installation for Norfolk Boreas will have been undertaken by Norfolk Vanguard.</p> <p>The Applicant has produced an updated traffic management design which has been developed to address the safety concerns raised by NCC . The updated design incorporates a distance of separation of 1.5m (amply allowing for the required 1.2m safe working distance) and includes details for both sides of the carriageway. The drawings (which include Swept Path Analysis), demonstrate traffic management detail fully compliant with Chapter 8 of the Traffic Designs Manual, which can also accommodate Hornsea Project Three cumulative traffic (including Abnormal Loads) and is entirely within the current Norfolk Boreas DCO Order limits. The</p>	<p>laboratory has provided a suitable construction specification. Construction would involve the <u>importation</u> of much aggregate and bituminous bound material to a rural environment, only for it to be removed again once the crossing was completed. This is not environmentally sound practice and goes against the applicants very reasons (environmental) for using this crossing methodology.</p> <p>The issue of long-term maintenance liability is also a concern, particularly given the potential for other future large-scale projects and their associated <u>HGV</u> load movements. Rural road structure can vary greatly, and with an increasing volume of base level traffic, notwithstanding the additional loading from these <u>HGV</u> movements any weakening of the surface construction derived from breaking open the bound and <u>subgrade</u> layers will greatly increase the risk of carriageway failure in years to come when it has reverted to local authority responsibility.</p> <p>We remain firmly of the view that <u>trenchless</u> crossing methods need to be employed for this specific crossing.</p> <p>We have not undertaken any assessment in relation to the acceptability of removing the hedgerow and/or trees as required for the construction of the proposed diversion lane as this falls outside our remit.</p>	

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	<p>updated design has been included in the updated OTMP at Deadline 5.</p>		
	<p>A1067 crossing</p> <p>An investigation has been undertaken in response to the concerns raised by NCC on the potential impacts of open cut trenching on the A1067 and was submitted as part of the Norfolk Vanguard examination at Deadline 7.5 (see Appendix 2).</p> <p>Updated traffic counts were undertaken on the A1067 in April 2019. These show increased usage of the A1067 as a result of the operation of the Norwich Northern Distributor Road and forecast traffic flows for Norfolk Vanguard would now exceed the total vehicles per hour level at which single lane traffic management may be undertaken without network disruption. As a result, under Norfolk Boreas Scenario 2 the Applicant has now committed to undertake the crossing of the A1067 using trenchless techniques. This trenchless crossing will be included on the list of trenchless crossings in DCO Requirement 16 the updated draft DCO submitted on 4th November 2019 (AS-019).</p> <p>The mobilisation areas either side of the A1067 (MA5a and MA5b) can be repurposed to be used as drilling and receiving compounds to enable this trenchless crossing to be undertaken within the existing Order limits.</p> <p>Under Scenario 1 the duct installation for Norfolk Boreas will have been undertaken by Norfolk Vanguard.</p>	<p>The commitment to trenchless crossing of the A1067 is welcomed.</p>	<p>Agreed</p>

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	<p>Link 41 – B1436, Felbrigg</p> <p>The Applicant has proposed to cap construction traffic to 93 daily HGV movements for Norfolk Boreas during the six week school summer holiday period.</p> <p>This cap represents typical average HGV demand and will be achieved by re-scheduling non-critical construction activities.</p> <p>After the six week school summer holiday period, the cap will revert to a maximum 287 daily HGV movements for Scenario 2 and 138 daily HGV movements for Scenario 1.</p> <p>This commitment has been captured within the OTMP submitted with the Application (document reference 8.8, APP-699).</p>	<p>This is acceptable to NCC</p>	<p>Agreed</p>
	<p>Link 36 – B1149, Holt Road</p> <p>During the Norfolk Vanguard Examination Norfolk County Council requested the use of an alternative route (Shortthorn Road) to avoid the village of Horsford along Link 36 (B1149). As this proposed diversion would take traffic off the B1149 and onto a lower classification road the Norfolk Vanguard proposed an alternative diversion for the cumulative scenario with Hornsea Project Three. This alternative diversion would use Link 39 (A140) and Link 37 (B1145) and ensure that traffic remains on a road of similar or greater standard, in terms of the road hierarchy, compared to the B1149.</p> <p>The Applicant is of the opinion that Link 36 is suitable for the proposed Norfolk Boreas daily peak HGV traffic, with the inclusion of a traffic cap (peak daily HGV movements no greater than 136) and enhanced mitigation, and represents the most efficient route for construction traffic, in comparison to the diversion along Shortthorn Road, which would be 2km</p>	<p>We have no objection to the alternative route proposed via links 39 and 37 but it needs be for all HGV traffic and not just in the cumulative scenario.</p>	<p>Agreed</p>

Topic	Norfolk Boreas Limited position	Norfolk County Council position	Final position
	<p>longer and require traffic to divert onto a lower classification road.</p> <p>However, the Applicant recognises NCC's concerns and as there is a suitable alternative that ensures traffic remains on roads of similar or greater standard, in terms of the road hierarchy, which would not result in any impacts greater than those previously assessed, the Applicant will commit to avoiding the use of Link 36 for all HGV traffic (both for Norfolk Boreas alone and cumulatively with Hornsea Project Three). HGV traffic will instead be diverted along Link 39 (A140) and Link 37 (B1145). This commitment has been captured in an updated OTMP submitted at Deadline 1.</p>		
	<p>Link 32 – B1149, Edgefield</p> <p>The Applicant has committed to a cap of 289 cumulative daily HGV movements along Link 32. This will be achieved by a commitment for Norfolk Boreas Scenario 2 peak daily HGV movements to not exceed 136 in the cumulative scenario.</p> <p>For Scenario 1 the Applicant is committed to Norfolk Boreas peak traffic not exceeding 92 daily HGV movements alone or during the cumulative scenario.</p> <p>In addition, a restriction will be in place for the morning peak traffic flows between 07.30 and 09.00, i.e. no construction HGV movements along Link 32 during between 07.30 and 09.00 (this applies to Norfolk Boreas alone and in the cumulative scenario).</p> <p>These commitments are captured in the OTMP submitted with the Application (document reference 8.8, APP-699).</p>	<p>This is acceptable to NCC</p>	<p>Agreed</p>

Topic	Norfolk Boreas Limited position	Norfolk County Council position	Final position
Draft Development Consent Order (DCO)			
Wording of Requirement(s)	The wording of Requirements 21 and 22 provided within the draft DCO (and supporting certified documents) for the mitigation of impacts to traffic and transport are considered appropriate and adequate.	Agreed	Agreed
	<p>The wording of Requirement 16 includes a list of trenchless crossings that were identified early in the project design and represent embedded mitigation that formed the basis of the design that was assessed within the Environmental Impact Assessment. Hence, they are listed in the detailed design DCO Requirement as they are considered fixed elements of the design.</p> <p>Further assessment work has been undertaken and the Applicant has committed to a trenchless crossing at the A1067 and this has been added to the list of trenchless crossings list under Requirement 16 in an updated draft DCO submitted on the 4th November (AS-019).</p> <p>Further assessment work has also been undertaken and the B1149 crossing. An open cut trench crossing is still deemed appropriate as there is no evidence from the investigations to suggest that this form of open cut crossing and associated reinstatement will cause significant adverse impacts or present a maintenance liability for the Norfolk County Council.</p>	Requirement 16 is written in such a way that it implies only the A47; A140; A1067 and A149 will be crossed by trenchless crossing methods. The view of NCC is the list of trenchless crossings within R16 needs to be expanded to include the B1149.	NOT agreed

2.5 Onshore Archaeology and Cultural Heritage

27. The project has the potential to impact upon onshore archaeology and cultural heritage. Chapter 28 Onshore Archaeology and Cultural Heritage of the ES, (document reference 6.1.28 of the Application, APP-241), provides an assessment of the significance of these impacts.
28. Details on the Evidence Plan for onshore archaeology and cultural heritage can be found in Consultation Report Appendix 9.25 (document reference 5.1.9.25 of the Application, APP-062), Appendix 9.44 (document reference 5.1.9.44 of the Application, APP-081) and Appendix 28.1 (document reference 5.1.28.1 of the Application, APP-192).
29. Table 7 outlines the topics for agreement with respect to onshore archaeology and cultural heritage between Norfolk County Council and the Applicant.

Table 7 Agreement Log - Onshore archaeology and cultural heritage

Topic	Norfolk Boreas Limited position	Norfolk County Council position	Final position
Environmental Impact Assessment			
Existing Environment	Sufficient survey data (extent/duration) has been collected to inform the assessment (section 28.6 of ES Chapter 28 (APP-241)). Agreed as part of the Evidence Plan Process.	Agreed	It is agreed by both parties that sufficient survey data have been collected to undertake the assessment.
	It is accepted that outstanding geophysical surveys (scheme-wide) may be undertaken post-consent. Agreed as part of the Evidence Plan Process.	Agreed	It is agreed by both parties that the approach to survey data collection is appropriate to undertake the assessment.
	The approach to the selection of priority geophysical survey areas was appropriate and sufficient to inform the assessment of impacts. Agreed as part of the Evidence Plan Process.	Agreed	It is agreed by both parties that the approach to survey data collection is appropriate to undertake the assessment.
	Heritage setting viewpoint locations are representative and appropriate.	Agreed	It is agreed by both parties that the heritage setting viewpoint locations are representative.
	Archaeological trial trenching is not required to inform the assessment of impacts pre-application. Further evaluation will be completed post-consent. Agreed as part of the Evidence Plan Process.	Agreed	It is agreed by both parties that the approach to survey data collection is appropriate to undertake the assessment.
Assessment methodology	The impact assessment methodologies used for the assessment (DMRB Volume 11, Section 3, Part 2: Cultural Heritage) provide an appropriate approach to assessing potential impacts of the project. Agreed as part of the Evidence Plan Process.	Agreed	It is agreed by both parties that the impact assessment methodologies used in the EIA are appropriate.

Topic	Norfolk Boreas Limited position	Norfolk County Council position	Final position
	<p>The worst-case assumptions for Scenario 1 and Scenario 2 as outlined in Table 28.17 and Table 28.18 of ES Chapter 28 (APP-241) assessment is appropriate.</p> <p>Agreed as part of the Evidence Plan Process.</p>	Agreed	It is agreed by both parties that the worst-case assumptions presented in the ES is appropriate for this project.
	<p>The assessment adequately characterises the baseline environment (section 28.6 of ES Chapter 28 (APP-241) in terms of onshore archaeology and cultural heritage, including the setting of designated heritage assets.</p> <p>Agreed as part of the Evidence Plan Process.</p>	Agreed	It is agreed by both parties that the ES adequately characterises the baseline environment.
	<p>The scope of the Archaeological Desk Based Assessment (ADBA) (ES Appendix 28.1, document reference 6.3.28.1, APP-666) is appropriate to inform the assessment.</p> <p>Agreed as part of the Evidence Plan Process.</p>	Agreed	It is agreed by both parties that the ADBA is appropriate to inform the assessment.
Assessment findings	<p>Based on all of the currently available information and assuming the inclusion of the mitigation described and commitment to further evaluation post-consent, impacts on onshore archaeology and cultural heritage of both scenarios (section 28.7 of ES Chapter 28, APP-241) during construction, operation and decommissioning, are very likely to be non-significant in EIA terms.</p>	Agreed	It is agreed by both parties that based on the currently available information impacts are very likely to be non-significant. Accepting that there is a small risk that highly-significant, previously-unrecorded and unexpected heritage assets with archaeological interest could be encountered.
	<p>The assessment of cumulative effects of both scenarios (section 28.8 of ES Chapter 28, APP-241) is appropriate and, assuming the inclusion of the mitigation described, cumulative impacts on onshore archaeology and cultural heritage are non-significant in EIA terms.</p>	Agreed	It is agreed by both parties that the assessment of cumulative impact is appropriate and that the proposed mitigation will result in non-significant impacts.

Topic	Norfolk Boreas Limited position	Norfolk County Council position	Final position
Approach to mitigation	The provision of a pre-construction and construction Archaeological Written Scheme of Investigation (WSI) (Onshore) (to be based on the outline WSI, document reference 8.5, APP-696) is considered suitable, with respect to Set-Piece Excavation; Strip, Map and Sample and archaeological monitoring/watching brief scenarios.	Agreed	It is agreed by both parties that the provision of a WSI is considered suitable.
	The mitigation proposed for both scenarios for potential impacts on buried and above-ground archaeological remains is appropriate.	Agreed	It is agreed by both parties that the proposed mitigation will result in non-significant impacts.
Draft Development Consent Order (DCO)			
Wording of Requirement(s)	<p>The wording of the Requirements provided within the draft DCO (and supporting certified documents) for the mitigation of impacts to onshore archaeology and cultural heritage are considered appropriate and adequate.</p> <p>Specifically, Requirement 23 states: <i>“No stage of the onshore transmission works may commence until for that stage an archaeological written scheme of investigation (which accords with the outline written scheme of investigation (onshore)) has, after consultation with Norfolk County Council and Historic England, been submitted to and approved by the relevant planning authority”.</i></p> <p>And <i>“In the event that archaeological site investigation is required, the scheme must include details of the following—</i></p> <ul style="list-style-type: none"> (a) <i>an assessment of significance and research questions; and</i> (b) <i>the programme and methodology of site investigation and recording;</i> (c) <i>the programme for post investigation assessment;</i> (d) <i>provision to be made for analysis of the site investigation and recording;</i> 	Agreed	Both parties are in agreement that potential impacts to archaeology and cultural heritage impacts will be adequately managed subject to the submission and approval of a final Written Scheme of Investigation.

Topic	Norfolk Boreas Limited position	Norfolk County Council position	Final position
	<p>(e) <i>provision to be made for publication and dissemination of the analysis and records of the site investigation;</i></p> <p>(f) <i>provision to be made for archive deposition of the analysis and records of the site investigation. “</i></p> <p>(g) <i>nomination of a competent person or persons/organisation to undertake the works set out within the written scheme of investigation.</i></p>		

2.6 Tourism and recreation

30. The project has the potential to impact upon tourism and recreation. Chapter 30 Tourism and Recreation of the ES, (document reference 6.1.30 of the Application, APP-243), provides an assessment of the significance of these impacts.
31. Details on the Evidence Plan for tourism and recreation can be found in Consultation Report Appendix 9.20 (document reference 5.1.9.20 of the Application, APP-057).
32. Table 8 provides topics for agreement with respect to tourism and recreation between Norfolk County Council and the Applicant.

Table 8 Agreement Log - Tourism and recreation

Topic	Norfolk Boreas Limited position	Norfolk County Council position	Final position
Environmental Impact Assessment			
Existing Environment	Appropriate datasets have been presented to inform the assessments (Table 30.11 of ES Chapter 30, APP-243).	Agreed	It is agreed by both parties that datasets are appropriate.
Assessment methodology	The impact assessment methodologies (section 30.4 of ES Chapter 30, APP-243) used provide an appropriate approach to assessing potential impacts of the project.	Agreed	It is agreed by both parties that the methodologies used are appropriate.
	The worst-case assumptions for Scenario 1 and Scenario 2 as outlined in section 30.7.3.1 and section 30.7.3.2 of ES Chapter 30 (APP-243) presented in the assessments are appropriate.	Agreed	It is agreed by both parties that worst case scenario presented is appropriate.
	The assessment adequately characterises the baseline environment in terms of tourism and recreation (section 30.6 of ES Chapter 30, APP-243).	Agreed	It is agreed by both parties that the baseline environment has been adequately characterised.
Assessment findings	The assessment of effects of both scenarios for construction, operation and decommissioning presented in section 30.7 of ES Chapter 30, APP-243) is appropriate and, assuming the inclusion of the mitigation described, impacts on tourism and recreation are non-significant in EIA terms.	Agreed	It is agreed by both parties that the residual impacts are non-significant.
	The assessment of cumulative effects of both scenarios is appropriate (section 30.8 of ES Chapter 30, APP-243) and, assuming the inclusion of the mitigation described, cumulative impacts on tourism and recreation are non-significant in EIA terms.	Agreed	It is agreed by both parties that the residual cumulative impacts are non-significant.

Topic	Norfolk Boreas Limited position	Norfolk County Council position	Final position
Approach to mitigation	The mitigation measures identified within the Public Right of Way Strategy (document reference 8.4 of the Application, APP-695) and the Outline Code of Construction Practice (CoCP) (document reference 8.1 of the Application, APP-692), are considered to be appropriate to mitigate impacts on the PRoW and Trails network.	Agreed	Norfolk County Council believes these documents should result in appropriate measures to manage impacts in relation to cable-laying. The County Council welcomes the intention of the applicant to liaise with the PRoW Officers and Trail Officers.
	Under Scenario 2 the Applicant has committed to trenchless crossing techniques at a number of sensitive footpaths, which will avoid direct impacts to those routes. These include the Norfolk Coast Path, and Marriott's Way, Paston Way and Wensum Way Long Distance Trails. This is detailed in Appendix 30.1 (document reference 6.3.30.1, APP-679). Under Scenario 1 trenchless crossings will have been pre-installed by Norfolk Vanguard.	Agreed	Norfolk County Council welcomes the use of HDD underneath some of the particularly heavily-used recreational routes (long-distance trails).
Draft Development Consent Order (DCO)			
Wording of Requirement(s)	Given the impacts of the project, the wording of the Requirements provided within the draft DCO (and supporting certified documents) for the mitigation of impacts to tourism and recreation are considered appropriate and adequate.	Agreed	It is agreed by both parties that the wording of Requirements within the DCO are appropriate and adequate.

2.7 Socio-economics

33. The project has the potential to impact upon socio-economics. Chapter 31 Socio-economics of the ES, (document reference 6.1.31 of the Application, APP-244), provides an assessment of the significance of these impacts.
34. Details on the Evidence Plan for socio-economics can be found in Consultation Report Appendix 9.20 (document reference 5.1.9.20 of the Application, APP-057).
35. Table 9 provides topics for agreement with respect to socio-economics between Norfolk County Council and the Applicant.

Table 9 Agreement Log - Socio-economics

Topic	Norfolk Boreas Limited position	Norfolk County Council position	Final position
Environmental Impact Assessment			
Existing Environment	Appropriate datasets have been presented to inform the assessments (Table 31.7 of ES Chapter 31, APP-244).	Agreed	It is agreed by both parties that datasets are appropriate.
Assessment methodology	The impact assessment methodologies (section 31.4 of ES Chapter 31, APP-244) used provide an appropriate approach to assessing potential impacts of the project.	Agreed	It is agreed by both parties that the methodologies used are appropriate.
	The worst-case assumptions for Scenario 1 and Scenario 2 as outlined in section 31.7.4.1 and section 31.7.4.2 of ES Chapter 31 (APP-244) scenario presented in the assessments is appropriate.	Agreed	It is agreed by both parties that worst case assumptions presented is appropriate.
	The assessment adequately characterises the baseline environment (section 31.6 of ES Chapter 31, APP-244) in terms of socio-economics.	Agreed	It is agreed by both parties that the baseline environment has been adequately characterised.
Approach to mitigation	<p>As set out in paragraph 163 of ES Chapter 21 Land Use and Agriculture (document reference 6.1.21 of the Application, APP-234), private agreements (or compensation in line with the compulsory purchase compensation code) will be sought between Norfolk Boreas Limited and relevant landowners/occupiers regarding any measures required in relation to crop loss incurred as a direct consequence of the construction phase of the project.</p> <p>Norfolk Boreas Limited is committed to exploring options for delivering a provision for communities, with the aim of recognising hosts and accounting for change, where benefits acknowledge and address tangible local change. The form of the benefit and its purpose will be explored with relevant stakeholders at the appropriate time, separate to the DCO process.</p>	Agreed	It is agreed by both parties that the commitment to delivering compensation to relevant landowners/occupiers incurred as a direct consequence of the construction phase of the project is appropriate.

Topic	Norfolk Boreas Limited position	Norfolk County Council position	Final position
	Given the impacts of the project, the mitigation proposed for socio-economics are considered appropriate and adequate. Where significant impacts are identified suitable mitigation is proposed.		
	Where there is likely to be a demonstrable impact (i.e. during: construction; operation and/or decommissioning) on commercial fishing affecting communities in Norfolk, individual agreements will be reached as necessary, with any agreements based on evidence and track record and in accordance with FLOWW Best Practice Guidance for Offshore Renewables Developments.	Agreed	The County Council welcomes the revised/amended design of the above proposal and mitigation measures set out in the applicant's ES.
	Norfolk Boreas Limited recognises the economic benefits of using local Port facilities at Great Yarmouth and Vattenfall has signed an agreement with Peel Ports that reserves space for the potential future operations and maintenance use of the site. This is subject to DCO consent award and other regulatory considerations.	Agreed	The County Council will continue to work pro-actively with Vattenfall to demonstrate the economic benefits of using the Port facilities at Great Yarmouth
	Vattenfall is actively seeking to collaborate with stakeholders to support, complement and enhance where appropriate, local skills development programmes. The aim shared with these stakeholders is to work towards a sustainable and resilient employment pipeline, and to channel into / retain more local intellectual and social capital within the green energy sector. To date this has included collaborations with University of East Anglia, UTCN Norwich, local schools, EEEGR, NCC, NALEP and others.	Agreed	The County Council will also continue to work with the Applicant to develop the creation of apprenticeships and work experience.
Draft Development Consent Order (DCO)			
Wording of Requirement(s)	<p>A Skills and Employment Strategy Requirement has been included within the draft DCO (Requirement 33), which will demonstrate consistency with advice set out in paragraph 55 of the NPPF.</p> <p>An Outline Skills and Employment Strategy has been submitted with the application (document 8.22), which sets out the approach that will be adopted by the Applicant to maximise the economic benefit associated</p>	The County Council welcomes the inclusion within the draft DCO of a Planning Requirement, which will ensure	The County Council is satisfied with the wording of the proposed Planning Requirement (33) set out in the draft DCO.

Topic	Norfolk Boreas Limited position	Norfolk County Council position	Final position
	<p>with Norfolk Boreas in Norfolk and the East of England and the principles that must be adhered to, including the types of activities to be undertaken by the Applicant as part of the development. The strategy also includes a commitment by the Applicant to produce a Supply Chain Plan and the Applicant will continue to work closely with local communities, communities of interest and stakeholders to explore means of local optimisation of supply chain, jobs and skills opportunities associated with the project.</p>	<p>that a Skills and Employment Strategy is prepared.</p>	

The names inserted below are to confirm that these are the current positions of the two parties contributing to this SOCG

Printed Name	Laura Waters
Position	Senior Planner
On behalf of	Norfolk County Council
Date	5 th March 2020

Printed Name	Jake Laws
Position	Norfolk Boreas Consents Manager
On behalf of	Norfolk Boreas Limited (the Applicant)
Date	5 th March 2020

Norfolk Boreas Offshore Wind Farm Statement of Common Ground

Broadland District Council

Appendices

Applicant: Norfolk Boreas Limited
Document Reference: ExA.SoCG-3.D6.V2

Date: March 2020
Revision: Version 2
Author: Royal HaskoningDHV

Photo: Ormonde Offshore Wind Farm

Norfolk Boreas Offshore Wind Farm

Appendix 1 Norfolk Vanguard The Old Railway Gatehouse Noise Mitigation Measures and Air Quality Assessment

Norfolk Vanguard Offshore Wind Farm

Noise Mitigation Measures at the Old Railway Gatehouse Position Statement

Issue Specific Hearing 6, Action Point 14

Applicant: Norfolk Vanguard Limited
Document Reference: ExA; ISH6; 10.D7.7

Deadline 7

Date: 02 May 2019



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1 NOISE & VIBRATION – THE OLD RAILWAY GATEHOUSE

1. The Applicant undertook a cumulative impact assessment (CIA) of the combined construction traffic from Norfolk Vanguard and Hornsea Project Three, which was submitted to the examination at Deadline 5 (ExA; ISH1; 10.D5.3). This included an assessment of cumulative noise and vibration impacts along Link 68 (The Street at Oulton) and specifically at the Old Railway Gatehouse.
2. During the Issue Specific Hearing on Environmental Matters (ISH6) on the 24 April 2019, the Examining Authority (ExA) requested a position statement from the Applicant setting out the latest position in relation to:
 - Cumulative noise and vibration impacts at the Old Railway Gatehouse related to the introduction of priority signage in proximity to the property and the resulting potential for heavy goods vehicles idling and accelerating from a standing start outside the property; and
 - The status of optional mitigation proposed by Hornsea Project Three (double glazing and garden wall) in relation to the Old Railway Gatehouse (both covered under Action Point 14).

1.1 Noise and vibration

1.1.1 Optional mitigation measures identified by Hornsea Project Three

3. A scheme of mitigation has been proposed by Hornsea Project Three (and agreed with Norfolk County Council) along The Street at Oulton (Link 68) to mitigate construction traffic impacts associated with Hornsea Project Three both alone and in combination with Norfolk Vanguard. The scheme of mitigation includes the re-grading of the road surface outside of the Old Railway Gatehouse, the introduction of a temporary speed limit for the length of The Street, and traffic management signage to give priority for southbound vehicles in the vicinity of The Old Railway Gatehouse.
4. This scheme of mitigation has been assessed by Norfolk Vanguard and it has been concluded that these mitigation measures will reduce traffic related noise impacts to negligible in the cumulative scenario. Norfolk Vanguard has therefore committed to also adopt this scheme of mitigation. The first project to proceed to construction would deliver the full scheme of mitigation and the second project would be responsible for removing the measures once both project's construction phases are complete. This commitment has been captured in an update to the Norfolk Vanguard Outline Traffic Management Plan (OTMP) submitted at Deadline 7.

5. The scheme of mitigation developed by Hornsea Project Three also includes optional measures that may be implemented subject to agreement from the owner of The Old Railway Gatehouse. These measures include installation of double glazing along the façade closest to The Street, or the provision of a wall along the garden of the property. Hornsea Project Three state that these options would be taken forward should residents wish; however they are not essential to mitigate the potential noise effects (*Hornsea Project Three, Deadline 6 submission: Appendix 23 – Construction Traffic Noise and Vibration Assessment at The Old Railway Gatehouse*).
6. During ISH6 Broadland District Council confirmed that their approval of the Hornsea Project Three scheme of mitigation was on the basis that these optional mitigation measures are part of the package of measures available, although accepting that they are not essential to mitigate potential noise effects.
7. Broadland District Council has confirmed that the Council's position is that the mitigation measures along Link 68 should be consistent between both Hornsea Project Three and Norfolk Vanguard.
8. The Applicant is in the process of discussing these optional mitigation measures with the owner of The Old Railway Gatehouse and a further update will be given at Deadline 8.

1.1.2 Potential noise increases related to priority vehicle signage

9. The width of The Street immediately adjacent to The Old Railway Gatehouse is sufficiently narrow that two Heavy Goods Vehicles (HGVs) would have difficulty passing. The scheme of mitigation along The Street proposes the introduction of a passing bay located 40m south from The Old Railway Gatehouse and the inclusion of a sign to give priority to oncoming vehicles, i.e. to ensure that vehicles do not attempt to pass each other directly outside of the property.
10. This 40m distance is designed to allow a loaded HGV to traverse through their gears avoiding HGVs changing gear directly outside the property. Furthermore, there is an existing 'informal' passing bay which is already used by vehicles waiting to pass at The Old Railway Gatehouse, thus the introduction of a passing bay as part of the scheme of mitigation formalises an existing arrangement, albeit the intensity of the frequency of the events would increase.
11. Only a small proportion of passing vehicles would be required to stop at the proposed passing place at The Old Railway Gatehouse, and only a small proportion of those vehicles would be HGVs. An assessment of the potential noise increases associated with a proportion of HGVs stopping at the passing bay located 40m south of the Old Railway Gatehouse and then moving slowly past the property is presented in detail in Appendix 1 to this note. A summary of the findings is presented below.

12. Research reported in a commission by the UK Noise Association (2009) titled “Speed and Road Traffic Noise – The role that lower speed could play in cutting noise from traffic” states that “accelerations from 20km/h to 50km/h accounted for 10% of traffic noise while accelerating from traffic lights accounted for 5%”. Table 1 below reproduces reported noise levels associated with accelerating HGVs from the 2009 document.

Table 11 Acceleration and braking noise level effects

Acceleration/deceleration	Vehicle Type	Noise influence	Note
0.5 m/s² (acceleration)	Heavy	+2.1dB	Moderate acceleration
1 m/s² (acceleration)	Heavy	+4.5dBA	High acceleration
-1.5m/s² (deceleration)	Heavy	-4.5dBA	Moderate deceleration
	Parameters included in the Lay-by assessment		

Reproduced from UK Noise Association (2009) *Speed and Road Traffic Noise*

13. Based on the details in Table 1, the following assumptions were included for the assessment of potential noise impacts at the lay-by within the vicinity of The Old Railway Gatehouse from HGV acceleration and deceleration noise and the results of the noise calculations for cumulative construction traffic are presented in Table 2:

- Link 68 speed would be restricted to 30mph;
- Link 68 carriageway would be re-graded from a 5.6% to 3.2% gradient;
- A heavy vehicle under moderate acceleration would increase noise levels by +2.1dBA;
- A heavy vehicle under moderate deceleration would be 4.5dBA quieter than a vehicle travelling at speed;
- 10% of HGV traffic would be required to wait in the lay-by until the carriageway was passable;
- A Sound Exposure Level (SEL) of 93dBA obtained from the data presented in Hornsea Project Three baseline¹ was used in the event calculation to determine the effect of accelerating and decelerating vehicles -this value has been reviewed by Norfolk Vanguard and is considered to be robust;
- A -5.0dBA correction for mean traffic speed (V) and percentage heavy vehicles (p) as detailed in CRTN was included to account for the lower speed of the 10% HGVs accelerating/decelerating (approximated to 30 km/h);

¹ Hornsea Project Three, Deadline 6 submission: Appendix 23 – Construction Traffic Noise and Vibration Assessment at The Old Railway Gatehouse

- 18hr Annual Average Weekday Traffic (AAWT) %HGVs flows were calculated based on a 10% reduction to account for the numbers of HGVs involved in accelerating and decelerating; and
- Total noise level (LAeq,16hr) = Predicted LAeq,16hr noise levels (based on 18hr AAWT flows) + Predicted LAeq,16hr noise levels (10% HGVs accelerating and decelerating).

Table 2 Cumulative construction phase road traffic noise emissions assessment 2022 – with proposed mitigation – with and without lay-by accelerating effects

Link No.	Predicted LAeq,16hr (2022 Norfolk Vanguard Baseline + Growth) no mitigation	Predicted LAeq,16hr (2022 Baseline + Growth + Cumulative traffic) including mitigation	Predicted LAeq,16hr (2022 Baseline + Growth + Cumulative traffic + Lay-bys) including mitigation	Difference (dBA)	Impact magnitude	Impact significance
68*	58.4	59.9	n/a	+1.5	Minor	Minor
68**	58.4	n/a	60.8	+2.4	Minor	Minor

*Speed restriction of 30mph (48.1 km/h), Re-grading of Link 68 carriageway
 ** Speed restriction of 30mph (48.1 km/h), Re-grading of Link 68 carriageway, including Lay-by passing areas

14. Re-calculating the relative change in noise level for Link 68, using the Norfolk Vanguard peak construction scenario of 2022 Baseline + growth versus 2022 Baseline + growth + cumulative traffic + lay-bys (including mitigation), predicts an increase in noise of +2.4dB which represents a residual impact of **minor adverse** significance.
15. This represents a non-significant impact in EIA terms; however, the Applicant is in the process of discussing optional mitigation measures with the owner of The Old Railway Gatehouse, and a further update will be given at Deadline 8.

2 APPENDIX 1 Noise Assessment – Idling and Accelerating HGVs in Proximity to The Old Railway Gatehouse

2.1 Introduction

1. This assessment considers the potential for noise and vibration impacts at The Old Railway Gatehouse, resulting from Norfolk Vanguard construction traffic and cumulatively with Hornsea Project Three construction traffic travelling along Link 68 (The Street, Oulton); specifically the potential road traffic noise effects associated with the introduction of traffic mitigation - regrading of the road surface and introduction of passing bay and the associated effects of Heavy Goods Vehicles (HGVs) idling and accelerating in proximity to The Old Railway Gatehouse.
2. This document supports Environmental Statement Chapter 25 Onshore Noise and Vibration (document reference 6.1.25) and Appendix G of the Traffic Cumulative Impact Assessment (CIA) submitted at Deadline 5 (document reference ExA;ISH1;10.D5.3).

2.2 Baseline Sound Levels (Link 68) at The Old Railway Gatehouse

3. Baseline sound levels were measured at The Old Railway Gatehouse during 15 to 21 October 2018 by the consultants (RPS) assessing the noise and vibration effects of Hornsea Project Three. The findings were reported in Table 2.1 of Hornsea Project Three document “Appendix 23 to Deadline 6 submission – Construction Traffic Noise and Vibration Assessment at The Old Railway Gatehouse (REP6-037)”.
4. A summary of the baseline sound data is provided in Table 2.1.

Table 2.1 Baseline Sound Survey

Reference Period	Ambient Noise Level (dB) LAeq,T	Level exceeded 10% of the time (dB) LA10,T	Level exceeded 90% of the time (dB) LA90,T	Maximum Daily (dB) LAFmax,T
Daytime (07:00 – 23:00)	59	54	30	N/A
Night time (23:00 – 07:00)	50	36	25	81 ^B

2.3 Road Traffic Noise Emissions 2022

2.3.1 Road Traffic Noise Emissions 2022 - Norfolk Vanguard alone

5. Table 2.2 presents shared Link 68 (Norfolk Vanguard scheme Link ID) and Link 208 (Hornsea Project Three Link ID) speed data and year of observation.

Table 2.2 Link survey detail (recorded speeds)

Link No.	Road	Survey type	Survey year	Speed (km/h)
68	The Street/Heydon Road	Estimated	2017	96.6
208*	The Street*	Measured*	2018*	69*
Note: *Details obtained from the Hornsea Project Three report - Appendix 23 to Deadline 6 submission - Construction Traffic Noise and Vibration Assessment at The Old Railway Gatehouse				
	Posted Speed Limit			Measured speed during survey period

- An assessment was undertaken following the methodology contained in Design Manual Roads and Bridges (DMRB) (Volume 11, Section 3, Chapter 3) to assess whether there would be any significant changes in traffic volumes and composition on surrounding local roads as a result of the construction of Norfolk Vanguard. The significance of any predicted change in noise level was then assessed in accordance with the criteria contained in the DMRB.
- Table 2.3 presents the Norfolk Vanguard traffic flow data for the assessment year 2022 (as previously detailed in the ES Chapter 25 Noise and Vibration).

Table 2.3 Link 68 Traffic Flows 2022 – Norfolk Vanguard

Link No.	2022 Baseline + Growth (18hr AAWT)		2022 Baseline + Growth + Development (18hr AAWT)		% Change	
	Total Flow	HGVs	Total Flow	HGVs	Total Flow	HGVs
68	1,142	52	1318	148	15.4	182.9
	Change >25% or <20% in accordance with DMRB screening criteria.					

- Table 2.4 shows the predicted relative decibel (dB) change for Norfolk Vanguard construction traffic using the LA_{10,18h} criteria for traffic in accordance with Calculation of Road Traffic Noise (CRTN) methodology.

Table 2.4 Norfolk Vanguard - Construction phase road traffic noise emissions assessment 2022

Link No.	Predicted Basic Noise Level L _{10,18hr} dBA (2022 Baseline + Growth)	Predicted Basic Noise Level L _{10,18hr} dBA (2022 Baseline + Growth + Development)	dB Change LA _{10, 18hr}	Speed (km/h)	Impact magnitude	Impact significance
68	63.1	64.7	+1.6	96.6	Minor	Minor
	Posted Speed Limit				Measured speed	

9. Table 2.5 shows the predicted relative dB change for Norfolk Vanguard construction traffic using the $L_{A10,18h}$ criteria for traffic in accordance with CRTN methodology using the measured speed for Link 68 obtained from the Hornsea Project Three 2018 survey.

Table 2.5 Norfolk Vanguard - Construction phase road traffic noise emissions assessment 2022 revised speeds

Link No.	Predicted Basic Noise Level $L_{10,18hr}$ dBA (2022 Baseline + Growth)	Predicted Basic Noise Level $L_{10,18hr}$ dBA (2022 Baseline + Growth + Development)	dB Change $L_{A10, 18hr}$	Speed (km/h)	Impact magnitude	Impact significance
68	60.5	62.5	+2.0	69*	Minor	Minor
Note: *Details obtained from the Hornsea Project Three report - Appendix 23 to Deadline 6 submission - Construction Traffic Noise and Vibration Assessment at The Old Railway Gatehouse						
	Measured speed					

10. A difference of +0.4dB $L_{A10,18h}$ is evident between the posted speed limit for Link 68 in Table 2.4 and the measured speed data in Table 2.5. The impact remains of minor adverse significance in both instances; therefore, the original conclusions presented in Norfolk Vanguard ES Chapter 25 Noise and Vibration remain valid and no further mitigation is required for Norfolk Vanguard alone.

2.3.2 Road Traffic Noise Emissions 2022 – Cumulative scheme

11. An assessment was undertaken for cumulative traffic flows for Norfolk Vanguard and Hornsea Project Three on Link 68 and is presented in Appendix G of the Traffic CIA submitted at Deadline 5 (document reference ExA;ISH1;10.D5.3).
12. Following the methodology contained in DMRB (Volume 11, Section 3, Chapter 3) an initial screening exercise was undertaken to determine whether there would be any significant changes in traffic volume and composition on shared links related to both projects' construction traffic during the year 2022 (worst-case year). The predicted changes in volume for Link 68 is given in Table 2.6.

Table 2.6 Link 68 Traffic Flows 2022 - Cumulative

Link No.	2022 Baseline + Growth (18hr AAWT)		2022 Baseline + Growth + Cumulative + Development (18hr AAWT)		% Change	
	Total Flow	HGVs	Total Flow	HGVs	Total Flow	HGVs
68	1,142	52	1,566	266	37.1	408.1
	Change >25% or <20% in accordance with DMRB screening criteria.					

13. Table 2.7 details the results of the cumulative construction phase noise road traffic emissions calculations for 2022 for Link 68 as reported in the CIA submitted at Deadline 5 (document reference ExA;ISH1;10.D5.3) using the speed data as reported in the ES Chapter 25 Noise and Vibration.

Table 2.7 Cumulative construction phase road traffic noise emissions assessment 2022 (estimated speeds)

Link No.	Predicted Basic Noise Level L _{10,18hr} dBA (2022 Baseline + Growth)	Predicted Basic Noise Level L _{10,18hr} dBA (2022 Baseline + Growth + Cumulative)	dB Change LA _{10, 18hr}	Speed (km/h)	Impact magnitude	Impact significance
68	63.0	66.1	+3.1	96.6	Moderate	Moderate
	Posted Speed Limit				Measured speed	

14. Table 2.8 details the results of the cumulative construction phase noise road traffic emissions calculations for 2022 using the revised speed data for Link 68.

Table 2.8 Cumulative construction phase road traffic noise emissions assessment 2022 (measured speeds)

Link No.	Predicted Basic Noise Level L _{10,18hr} dBA (2022 Baseline + Growth)	Predicted Basic Noise Level L _{10,18hr} dBA (2022 Baseline + Growth + Cumulative)	dB Change LA _{10, 18hr}	Speed (km/h)	Impact magnitude	Impact significance
68	60.5	64.1	+3.6	69*	Moderate	Moderate
Note: *Details obtained from the Hornsea Project Three report - Appendix 23 to Deadline 6 submission - Construction Traffic Noise and Vibration Assessment at The Old Railway Gatehouse						
	Measured speed					

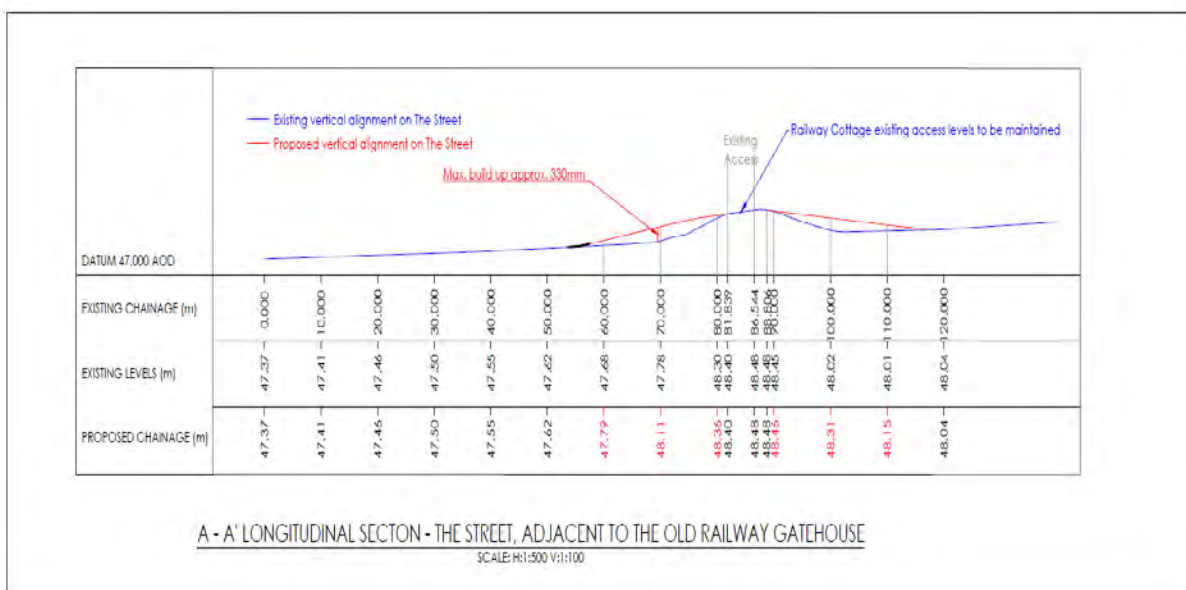
15. A difference of +0.5dB LA_{10,18h} is evident between the posted speed limit for Link 68 in Table 2.7 and the measured speed data in Table 2.8 for the cumulative scenario. The impact is moderate adverse significance in both instances; therefore, the conclusions presented in the CIA submitted at Deadline 5 (document reference ExA;ISH1;10.D5.3) remain valid and mitigation measures are presented in the following sections.

2.3.3 Cumulative construction phase noise – Mitigation Link 68 (speed restriction and road re-grading)

16. A scheme of mitigation has been proposed by Norfolk Vanguard along Link 68 which includes re-grading the carriageway for approximately 120m adjacent to the Old Railway Gatehouse and reducing the speed of the link to 30mph.

17. The proposed carriageway regrading is shown on Figure 1.

Figure 1 Proposed road regrading in proximity to the Old Railway Gatehouse



Source: Hornsea Project 3 Offshore Wind Farm, Appendix 20 to Deadline 9 submission Outline Construction Traffic Management Plan APFP Regulation 5(2)a, dated 26th March 2019

18. A comparison of the existing highway was undertaken in order to calculate the extent of the change in gradient.

Table 2.9 Link 68 gradient – existing and proposed

Distance (m)	Existing Elevation AOD (m)	Proposed Elevation AOD (m)	Difference (m)	Existing Gradient	Proposed Gradient
0	47.37	47.37	0.00	0.0	0.0
10	47.41	47.41	0.00	0.4	0.4
20	47.46	47.46	0.00	0.5	0.5
30	47.5	47.5	0.00	0.4	0.4
40	47.55	47.55	0.00	0.5	0.5
50	47.62	47.62	0.00	0.7	0.7
60	47.68	47.79	0.11	0.6	1.7
70	47.78	48.11	0.33	1	3.2
80	48.3	48.36	0.06	5.2	2.5
81.8	48.4	48.4	0.00	5.6	2.2
86.54	48.48	48.48	0.00	1.7	1.7
88.8	48.48	48.48	0.00	0	0
90	48.45	48.46	0.01	-2.5	-1.7
100	48.02	48.31	0.29	-4.3	-1.5
110	48.01	48.15	0.14	-0.1	-1.6
120	48.04	48.04	0.00	0.3	-1.1
	Section of link closest to The Old Railway Gatehouse Link 68				

19. For the purposes of assessing the effect of the carriageway re-grading, the gradient at the closest point to the Old Railway Gatehouse (at 70m to 81.8m) was included in the CRTN calculations i.e. 5.6 (existing) and 3.2 (proposed).
20. The effects of re-grading the carriageway and reducing the speed limit to 30mph (48.1 km/h) were assessed using the CRTN methodology for Norfolk Vanguard and Hornsea Project cumulatively and are presented in Table 2.10.

Table 2.10 Cumulative Construction phase road traffic noise emissions assessment 2022 - mitigated

Link No.	Predicted Basic Noise Level L _{10,18hr} dBA (2022 Baseline + Growth + Cumulative) Unmitigated	Predicted Basic Noise Level L _{10,18hr} dBA (2022 Baseline + Growth + Cumulative) With mitigation	dB Change LA _{10,18hr}	Speed (km/h)
68 ^A	64.1	62.8	-1.3	69*
68 ^B	64.1	63.6	-0.5	69*
68 ^C	64.1	62.2	-1.9	69*
	Measured speed			
Note: *Details obtained from the Hornsea Project Three report - Appendix 23 to Deadline 6 submission - <i>Construction Traffic Noise and Vibration Assessment at The Old Railway Gatehouse</i>				
68 ^A Speed restriction ONLY, 68 ^B Regrade of Carriageway ONLY, 68 ^C Speed restriction and Regrade				

Table 2.11 Cumulative construction phase road traffic noise emissions assessment 2022 – with proposed mitigation

Link No.	Predicted Basic Noise Level L _{10,18hr} dBA (2022 Baseline + Growth) no mitigation	Predicted Basic Noise Level L _{10,18hr} dBA (2022 Baseline + Growth + Cumulative) with proposed mitigation	dB Change LA _{10,18hr}	Speed (km/h) as per mitigation	Impact magnitude	Impact significance
68	60.5*	62.2	+1.7	48.1	Minor	Minor
Note: *Details of speed (69 km/h) obtained from the Hornsea Project Three report - Appendix 23 to Deadline 6 submission - <i>Construction Traffic Noise and Vibration Assessment at The Old Railway Gatehouse</i>						
	Mitigated speed					

21. Re-calculating the relative change in noise level for Link 68, using the scenario of 2022 Baseline + growth versus 2022 Baseline + growth + cumulative (including mitigation), predicts a residual impact of **minor adverse** significance.

2.3.4 Cumulative construction phase noise – Link 68 HGVs use of lay-by

22. Due to a restricted width of the carriageway along Link 68, Hornsea Project Three has proposed mitigation in the form of a lay-by approximately 40m south from The Old Railway Gatehouse to allow HGVs to pass each other.

23. The effect of HGV traffic accelerating and decelerating from the lay-by has been considered cumulatively to the additional traffic flows from Norfolk Vanguard and Hornsea Project Three.
24. Research reported in a commission by the UK Noise Association (2009) *Speed and Road Traffic Noise – The role that lower speed could play in cutting noise from traffic*, Watts et al. 2005, (as reported in Page 10 of the UK Noise Association 2009 document) states that “accelerations from 20km/h to 50km/h accounted for 10% of traffic noise while accelerating from traffic lights accounted for 5%”. Table 3 taken from the UK Noise Association document is reproduced in Table 2.11.

Table 2.11 Acceleration and braking noise level effects

Acceleration/deceleration	Vehicle Type	Noise influence	Note
0.5 m/s ² (acceleration)	Heavy	+2.1dB	Moderate acceleration
1 m/s ² (acceleration)	Heavy	+4.5dBA	High acceleration
-1.5m/s ² (deceleration)	Heavy	-4.5dBA	Moderate deceleration
Parameters included in the Lay-by assessment			

25. Based on the details in Table 2.11, the following assumptions were included for the assessment of the lay-by HGV acceleration and deceleration noise and the results of the assessment are presented in Table 2.12:
 - Link 68 speed would be restricted to 30mph;
 - Link 68 carriageway would be re-graded from a 5.6% to 3.2% gradient;
 - A heavy vehicle under moderate acceleration would increase noise levels by +2.1dBA;
 - A heavy vehicle under moderate deceleration would be 4.5dBA quieter than a vehicle travelling at speed;
 - 10% of HGV traffic would be required to wait in the lay-by until the carriageway was passable;
 - Predicted L_{A10,18hr} relative noise change results were converted to L_{Aeq,16hr} using the TRL conversion of -2dBA;
 - An SEL of 93dBA obtained from the Hornsea Project Three baseline was used in the event calculation to determine the effect of accelerating and decelerating vehicles;

- A -5.0dBA correction from Chart 4 Correction for mean traffic speed V and percentage heavy vehicles p detailed in CRTN was included to account for the lower speed of the 10% HGVs accelerating/decelerating (approximated to 30 km/h);
- 18hr AAWT %HGVs flows were calculated based on a 10% reduction to account for the numbers of HGVs involved in accelerating and decelerating; and
- Total noise level (LAeq,16hr) = Predicted LAeq,16hr noise levels (based on 18hr AAWT flows) + Predicted LAeq,16hr noise levels (10% HGVs accelerating and decelerating).

Table 2.12 Cumulative construction phase road traffic noise emissions assessment 2022 – with proposed mitigation and Lay-by effects

Link No.	Predicted LAeq,16hr (2022 Norfolk Vanguard Baseline + Growth) no mitigation	Predicted LAeq,16hr (2022 Baseline + Growth + Cumulative traffic) including mitigation	Predicted LAeq,16hr (2022 Baseline + Growth + Development + Cumulative traffic + Lay-bys) including mitigation	Difference (dBA)	Impact magnitude	Impact significance
68*	58.4	59.9	n/a	+1.5	Minor	Minor
68**	58.4	n/a	60.8	+2.4	Minor	Minor

* Speed restriction of 30mph (48.1 km/h), Re-grading of Link 68 carriageway
 ** Speed restriction of 30mph (48.1 km/h), Re-grading of Link 68 carriageway, including lay-by passing areas

26. Re-calculating the relative change in noise level for Link 68, using the scenario of 2022 Baseline + growth versus 2022 Baseline + growth + cumulative traffic + lay-bys (including mitigation), predicts an increase in noise of +2.4dB which represents an impact of **minor adverse** significance.
27. This represents a non-significant impact in EIA terms; however, the Applicant is in the process of discussing optional mitigation measures with the owner of The Old Railway Gatehouse, and a further update will be given at Deadline 8.

References

Department of Transport, Welsh Office (1988). Calculation of Road Traffic Noise. HMSO, London.

Highways Agency (2011). Design Manual for Roads and Bridges, Volume 11, Section 3, Part 7: Noise and Vibration. The Highways Agency.

Mitchell, P. (2009). Speed and Road Traffic Noise – The role that lower speeds could play in cutting noise from traffic. UK Noise Association

Norfolk Vanguard. (2018) Norfolk Vanguard Offshore Wind Farm Chapter 25 Onshore Noise and Vibration Environmental Statement, Volume 1 (Reference: PB4476-005-025).

Orsted. (2019) Orsted Hornsea Project Three Offshore Wind Farm - Appendix 23 to Deadline 6 submission - Construction Traffic Noise and Vibration Assessment at The Old Railway Gatehouse, submitted 8 February 2019

Orsted. (2019) Orsted Hornsea Project Three Offshore Wind Farm - Appendix 24 to Deadline 7 submission - Construction Traffic Noise Assessment Clarification Note, submitted March 2019

Orsted. (2019) Orsted Hornsea Project Three Offshore Wind Farm - Appendix 20 to Deadline 9 submission - Outline Construction Traffic Management Plan APFP Regulation 5(2)(a) submitted 26th March 2019

Norfolk Vanguard Offshore Wind Farm

Air quality assessment for Old Railway Gatehouse Position Statement

Issue Specific Hearing 6 Action Point 15

Applicant: Norfolk Vanguard Limited
Document Reference: ExA; ISH6; 10.D7.9
Deadline 7

Date: 02 May 2019

Photo: Kentish Flats Offshore Wind Farm



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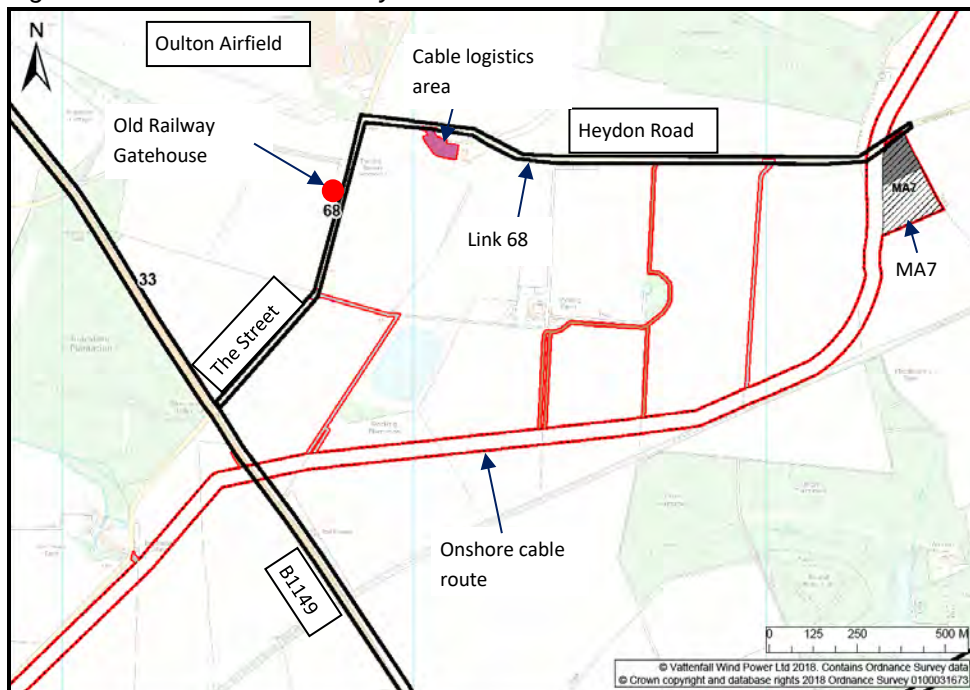
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1 Air Quality – The Old Railway Gatehouse

1.1 Introduction

1. During the Issue Specific Hearing on Environmental Matters (ISH6) on the 24 April 2019, the Examining Authority (ExA) requested a position statement from the Applicant setting out the latest position in relation to:
 - Air quality assessment at the Old Railway Gatehouse along Link 68 (Action Point 15).
2. Link 68 was not previously identified as a specific receptor in the updated CIA submitted at Deadline 5 (ExA; ISH1; 10.D5.3). The ExA also requested that the assessment considered ammonia and other background pollutants from existing nearby polluting activities.
3. A cumulative air quality impact assessment was submitted to the examination at Deadline 5 which was based on the previously agreed air quality receptors in proximity to the construction traffic access routes for the Project. The Old Railway Gatehouse was not identified as one of the air quality receptors for Norfolk Vanguard alone and hence the CIA submitted at Deadline 5 did not include that property. The Applicant has subsequently re-run the air quality model separately for this property for completeness.
4. The location of the Old Railway Gatehouse along Link 68 as modelled is shown on Figure 1 below.

Figure 1 Location of Old Railway Gatehouse



1.2 Air quality impact assessment methodology

5. The assessment presented in the updated CIA submitted at Deadline 5 and subsequently employed for the assessment of the Old Railway Gatehouse followed the agreed air quality impact assessment methodology as set out in section 26.4.1.2 of Environmental Statement Chapter 26 Air Quality, which includes details of the dispersion model used (Atmospheric Dispersion Modelling System for Roads (ADMS-Roads) v4.1.1), the assessment scenarios modelled, the emission factors provided by Defra, the meteorological data used and the model verification process undertaken.
6. Air quality assessments are, in their nature, desk-based as atmospheric dispersion modelling is used to predict pollutant concentrations from developments which are not yet operational. The air quality assessment undertaken for Norfolk Vanguard has made use of Defra mapped background pollutant concentrations, which is standard industry practice, is referenced in statutory technical guidance, is recommended by the relevant statutory bodies for use in such assessments and was the approach agreed for Norfolk Vanguard through the evidence plan process. The background maps include contributions of existing road, industry, commercial and domestic emission sources. The air quality impact assessment for the Old Railway Gatehouse using the accepted Defra pollutant concentrations is presented in section 1.3.1.

1.2.1 Other polluting activities

7. In response to queries raised during ISH 6 the Applicant has repeated the air quality assessment taking into account background pollutants associated with a consented biomass boiler. In addition, the potential for traffic using Link 68 and having to wait in proximity to the Old Railway Gatehouse has also been taken into account.

1.2.1.1 Consented biomass boiler

8. An air quality assessment was carried out in respect of a consented biomass boiler which would provide contributions of NO₂ and PM₁₀ from the biomass boiler. These contributions have been added to the modelled road contributions to provide the combined cumulative increase in NO₂ and PM₁₀ emissions from Norfolk Vanguard, Hornsea Project 3 and the biomass boiler.

1.2.1.2 Heavy Goods Vehicles (HGVs) waiting in proximity to the Old Railway Gatehouse

9. The width of The Street immediately adjacent to The Old Railway Gatehouse is sufficiently narrow that two HGVs would have difficulty passing. The scheme of mitigation proposed by the Applicant along The Street proposes a passing bay set back 40m from The Old Railway Gatehouse and the inclusion of a sign to give priority to oncoming vehicles, i.e. to ensure that vehicles do not attempt to pass each other directly outside of the property.

10. This 40m distance is designed to allow a loaded HGV to traverse through their gears avoiding HGVs changing gear directly outside the property. Furthermore, there is an existing 'informal' passing bay which is already used by vehicles waiting to pass at the Old Railway Gatehouse, thus the introduction of a passing bay as part of the scheme of mitigation formalises an existing arrangement, albeit the intensity of the frequency of the events would increase.
11. Idling and slower vehicle speeds may result in higher pollutant emissions in this vicinity. A sensitivity test was therefore carried out to consider the changes in pollutant concentrations at the Old Railway Gatehouse, on Link 68, associated with traffic travelling at lower speeds. The model considers the number of light and heavy duty vehicles expected to travel along this road both without (i.e. the baseline) and with Norfolk Vanguard and Hornsea Project 3 on Link 68, at a speed of 5kph (3mph). This is the lowest speed it is possible to include in the model and is considered to be a reasonable conservative representation of average speeds associated with HGVs slowing, momentarily idling, and then pulling away and increasing in speed.
12. Only a small proportion of passing vehicles would be required to stop at the proposed passing place at The Old Railway Gatehouse. For the purpose of this note, two scenarios have been tested, based on professional judgement:
 - Low scenario - that during the daytime 10% of the cumulative HGVs along Link 68 would have to stop at the passing place.
 - High scenario - that during the daytime 25% of the cumulative HGVs along Link 68 would have to stop at the passing place.

1.2.1.3 Ammonia

13. National air quality Objectives have been set by UK Government for atmospheric pollutants which have known impacts on human health, based on atmospheric emissions, likely population exposures and epidemiological studies; there is currently no UK air quality Objective (or EU Limit Value on which UK legislation is based) for ammonia.
14. Ammonia is principally of concern in relation to ecological sites due to the deposition of eutrophying pollutants and through its contribution to acidification. However, it does also contribute to the formation of secondary particulate matter (particles formed in the atmosphere rather than directly emitted), which does have implications for human health.
15. Particulate matter has health-based Objectives, and the contribution from secondary particulate matter formation is included within the Defra mapped background data used in the assessment. It is not possible to calculate the proportion of secondary particulate

matter which may form as a result of vehicle emissions; the formation of secondary particles in the atmosphere is slow and within this time frame the pollution can travel long distances and lead to impacts far from the original source.

16. The primary source of ammonia in the UK is agriculture; whilst there is a contribution from diesel fuel, it is nominal in comparison to emissions of NO₂ and PM₁₀ from Heavy Goods Vehicles (HGVs) which do have health-based air quality Objectives. A comparison of the emissions of ammonia and particulate matter for HGVs and agriculture is provided in Table 1 – this shows the contribution across the whole of the UK.

Table 1 – Comparison ammonia and particulate matter emissions for HGVs and agriculture UK wide

Source (2016 data)	Units	Ammonia	NOx as NO ₂	PM ₁₀ Exhaust and brake and tyre wear	PM _{2.5} Exhaust and brake and tyre wear
All Road transport HGVs rural driving	tonnes/yr	100	16,040	900	620
Road transport - HGV articulated - rural driving	tonnes/yr	50	5,770	449	303
Road transport - HGV rigid - rural driving	tonnes/yr	50	10,270	451	316
Agriculture	tonnes/yr	253,000	-	-	-

* source: UK National Atmospheric Emissions Inventory

17. On this basis construction traffic associated with Norfolk Vanguard and Hornsea Project Three are not considered to be significant contributors of ammonia and ammonia has not been considered further in this assessment.

1.2.1.4 Other polluting activities assessment

18. The assessment for the Old Railway Gatehouse using the accepted Defra pollutant concentrations plus the biomass development plus the introduction of up to 25% of vehicles using Link 68 and having to stop in proximity to the Old Railway Gatehouse as a result of Norfolk Vanguard and Hornsea Project Three is presented in section 1.3.2.

1.3 Results

1.3.1 Magnitude and significance – human receptors

19. Guidance provided by the Institute of Air Quality Management and Environmental Protection UK has been used to determine the magnitude and significance of a project's impact on local air quality. The impact descriptors that take account of the magnitude of changes in pollutant concentrations, and the concentration in relation to the air quality objectives, are detailed in Table 2.

Table 2 – Impact significance

Long term average concentration at receptor in assessment year	% Change in concentration relative to the air quality objective			
	1	2 - 5	6 - 10	>10
75% or less of Objective	Negligible	Negligible	Slight	Moderate

1.3.2 Old Railway Gatehouse – using Defra mapped background data

20. Existing traffic flows along Link 68 were growthed to the peak assessment year (2023) and then modelled for increases in NO₂, PM₁₀, and PM_{2.5} using peak cumulative construction traffic for both Norfolk Vanguard and Hornsea Project Three. The results of this standalone assessment for the Old Railway Gatehouse are provided in Tables 3-5.

Table 3 – Cumulative NO₂ concentrations at the Old Railway Gatehouse

Annual Mean NO ₂ Concentration					
Without Norfolk Vanguard and Hornsea Project 3 (µg/m ³)	With Norfolk Vanguard and Hornsea Project 3 (µg/m ³)	Change (µg/m ³)	Annual mean air quality Objective (µg/m ³)	Change as % of Objective	Impact Significance
9.06	9.57	0.51	40	1.28	Negligible

Table 4 – Cumulative PM₁₀ concentrations at the Old Railway Gatehouse

Annual Mean PM ₁₀ Concentration					
Without Norfolk Vanguard and Hornsea Project 3 (µg/m ³)	With Norfolk Vanguard and Hornsea Project 3 (µg/m ³)	Change (µg/m ³)	Annual mean air quality Objective (µg/m ³)	Change as % of Objective	Impact Significance
14.25	14.30	0.05	40	0.13	Negligible

Table 5 – Cumulative PM_{2.5} concentrations at the Old Railway Gatehouse

Annual Mean PM _{2.5} Concentration					
Without Norfolk Vanguard and Hornsea Project 3 (µg/m ³)	With Norfolk Vanguard and Hornsea Project 3 (µg/m ³)	Change (µg/m ³)	Annual mean air quality Objective (µg/m ³)	Change as % of Objective	Impact Significance
9.24	9.27	0.03	25	0.12	Negligible

21. The predicted concentrations for NO₂, PM₁₀ and PM_{2.5} are all well below the Objectives both without and with the two projects. The inclusion of cumulative traffic does not result in a change in concentrations any greater than 1.28% of the relevant air quality Objectives and the cumulative air quality impact is considered to be **negligible** in all cases.

1.3.3 Old Railway Gatehouse – using Defra mapped background data + known additional polluting activities and influence of vehicles waiting in proximity to the Old Railway Gatehouse

22. Existing traffic flows along Link 68 were growthed to the peak assessment year (2023) and then modelled for increases in NO₂, PM₁₀, and PM_{2.5} with and without the following additional potentially polluting activities:

- peak cumulative construction traffic for both Norfolk Vanguard and Hornsea Project Three;
- road contributions associated with the consented biomass boiler; and
- the influence of 10% and 25% of vehicles using Link 68 having to slow in proximity to the Old Railway Gatehouse.

23. The results are provided in Tables 6-8.

Table 6 – Cumulative NO₂ concentrations at the Old Railway Gatehouse

Annual Mean NO ₂ Concentration						
% vehicles queuing	Without NV and HP3 (µg/m ³)	With NV and HP3 + other activities (µg/m ³)	Change (µg/m ³)	Annual mean air quality Objective (µg/m ³)	Change as % of Objective	Impact Significance
10%	9.06	10.07	1.01	40	2.53	Negligible
25%	9.06	10.78	1.72	40	4.30	Negligible

Table 7 – Cumulative PM₁₀ concentrations at the Old Railway Gatehouse

Annual Mean PM ₁₀ Concentration						
% vehicles queuing	Without NV and HP3 (µg/m ³)	With NV and HP3 + other activities (µg/m ³)	Change (µg/m ³)	Annual mean air quality Objective (µg/m ³)	Change as % of Objective	Impact Significance
10%	14.25	14.36	0.11	40	0.28	Negligible
25%	14.25	14.37	0.12	40	0.30	Negligible

Table 8 – Cumulative PM_{2.5} concentrations at the Old Railway Gatehouse

Annual Mean PM _{2.5} Concentration						
% vehicles queuing	Without NV and HP3 (µg/m ³)	With NV and HP3 + other activities (µg/m ³)	Change (µg/m ³)	Annual mean air quality Objective (µg/m ³)	Change as % of Objective	Impact Significance
10%	9.24	9.34	0.10	25	0.40	Negligible
25%	9.24	9.35	0.11	25	0.44	Negligible

24. The predicted concentrations for NO₂, PM₁₀ and PM_{2.5} for the combined cumulative traffic plus other polluting activities scenario are all well below the Objectives both without and with the two projects. The inclusion of the cumulative traffic plus other polluting activities does not result in a change in concentrations any greater than 4.3% of the relevant air quality Objectives and the cumulative air quality impact is considered to be **negligible** in all cases.

Norfolk Boreas Offshore Wind Farm

Appendix 2 Norfolk Vanguard Joint Position Statement with Broadland District Council – Cawston Conservation Area

Norfolk Vanguard Offshore Wind Farm

Norfolk Vanguard Limited

Joint Position Statement with Broadland District Council – Cawston Conservation Area

Issue Specific Hearing 6 Action Point 13

Document Reference: ExA; ISH6; 10.D8.3

Deadline 8

Date: 30 May 2019

Author: Royal HaskoningDHV

Photo: Kentish Flats Offshore Wind Farm

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1 CAWSTON CONSERVATION AREA

1.1 Introduction

1. During the Issue Specific Hearing on Environmental Matters (ISH6) on 24 April 2019, the Examining Authority (ExA) requested a joint position statement from the Applicant and Broadland District Council with regards to:
 - Heritage assessment of effects of proposed package of measures on the character or appearance of Cawston Conservation Area (Action Point 13)
2. Appendix 1 to this document is the Applicant's heritage assessment of effects of the package of mitigation measures at Cawston as proposed by the Applicant on the character or appearance of Cawston Conservation Area. Appendix 1 also includes a map showing Cawston Conservation Area and a copy of the Conservation Area Appraisal both produced by Broadland District Council.
3. A copy of the Applicant's Heritage Assessment was provided to Broadland District Council on 22 May 2019 and their comments are reflected within this joint position statement.

1.2 Summary of Cawston Conservation Area Heritage Assessment

4. A proposed scheme of highway mitigation measures will be introduced along the B1145 through Cawston, passing through part of the Cawston Conservation Area, to mitigate for traffic increases associated with the construction of Norfolk Vanguard and Hornsea Project Three offshore wind farms.
5. The majority of the proposed highway mitigation measures will be temporary in nature (e.g. signage and road markings) and will be fully removed following the completion of construction works associated with Norfolk Vanguard and Hornsea Project Three.
6. The pedestrian footway widening and road resurfacing would be permanent measures and would remain in place beyond the completion of construction works. However, these measures offer longer-term benefits and link to the enhancement opportunities identified within the Cawston Conservation Area Conservation Appraisal, i.e. improving pedestrian priority and safety.
7. Depending upon the phasing of the construction works associated with the two projects, the temporary highway mitigation measures are expected to be required for 2-3 years, prior to their removal. These measures represent a temporary change to the appearance of the Conservation Area; however, any impacts upon the character of the Conservation Area will be minimised by adopting the principles of simple, unobtrusive and good quality (sympathetic) material during detailed design.

8. The increase in traffic associated with the construction of Norfolk Vanguard and Hornsea Project Three is considered to represent temporary harm to the character and appearance of the Conservation Area during the construction works and represents a temporary adverse impact on the ability of people to experience and appreciate the Area and the significance of its associated heritage assets. However, this harm will be temporary and reversible, and the road resurfacing and pathway widening is considered to offer a longer-term legacy benefit to improve the ability for people to experience the Conservation Area along the B1145.

1.3 Broadland District Council position

9. Broadland District Council is generally in agreement with the contents of the Applicant's Heritage Assessment as this recognises that there will be temporary damage to the character and appearance of the Conservation Area caused by the increase in Heavy Goods Vehicle (HGV) traffic in the area. The Council welcomes the permanent widening of specific sections of footways and resurfacing of the main carriageway.
10. However, the proposed widening of the footway outside No. 6 The Street, Cawston may have the unfortunate effect of narrowing the carriageway and increasing the risk of the corner of the Grade II listed Whitehouse Farm opposite being hit by a passing vehicle.
11. The Council request that this be taken into consideration during subsequent development of the scheme of mitigation to ensure that the carriageway width is not reduced at this point.

1.4 Norfolk Vanguard position

12. A Road Safety Audit has been undertaken of the proposed highway mitigation scheme through Cawston, which has also identified potential safety concerns related to some of the proposed pavement widening. The final design will ensure that there is no increased risk of the Grade II listed Whitehouse Farm being hit by a passing vehicle.
13. Further discussion and agreement with Norfolk County Council and Broadland District Council will be undertaken post-consent during detailed design, to agree the final details of the highway mitigation scheme, including the proposed pavement widening outside No. 6 The Street, Cawston.
14. This further discussion post-consent will also include agreement of the surface materials and street furniture (both temporary and permanent), weighing practical and safety needs with conservation requirements and good practice within a Conservation Area. The detailed design will be captured within the final Traffic Management Plan and secured through DCO Requirement 21.

15. As outlined in section 1.2 any harm associated with the scheme of highway mitigation through Cawston will be temporary and reversible. The road resurfacing and pathway widening is considered to offer a longer-term legacy benefit to improve the ability for people to experience the Conservation Area along the B1145.

2 APPENDIX 1 CAWSTON CONSERVATION AREA HERITAGE ASSESSMENT

Norfolk Vanguard Offshore Wind Farm Cawston Conservation Area Heritage Statement Traffic Management Measures Proposed along the B1145 in Cawston

Issue Specific Hearing 6 – Action Point 13

Applicant: Norfolk Vanguard Limited
Document Reference: ExA; ISH6; 10.D8.3
Deadline 8

Date: 30 May 2019
Author: Royal HaskoningDHV

Photo: Kentish Flats Offshore Wind Farm

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Figures

Cawston Conservation Area Map.

Approach Driver Awareness Works on B1145 Cawston - Figure 03/322 Rev C (29.01.19).

B1145 - Centre of Cawston Mitigation Scheme HGV – HGV Passing Points - Figure 03/322 Rev C (07.03.19).

1 INTRODUCTION

1.1 Purpose of the Document

1. During the Issue Specific Hearing on Environmental Matters (ISH6) on the 24 April 2019, the Examining Authority (ExA) requested a ‘heritage assessment of the effects on the Cawston Conservation Area’ associated with a proposed package of traffic mitigation measures through the village of Cawston (Action Point 13).
2. The purpose of this document is to assess whether the proposed traffic mitigation measures for Norfolk Vanguard (the Project) will give rise to any potential significant impacts to the Conservation Area’s character and/or appearance.
3. The proposed scheme of mitigation has been developed by Hornsea Project Three to address cumulative construction traffic impacts with Norfolk Vanguard through Cawston. The principles of the scheme of mitigation have been accepted by Norfolk County Council as local highway authority although the final detailed design of the scheme will be subject to further sign off post-consent by both Norfolk County Council and Broadland District Council.
4. Traffic noise and vibration impacts along the B1145 through Cawston for the Project alone and cumulatively with Hornsea Project Three have been assessed separately as part of the traffic cumulative impact assessment submitted to the examination at Deadline 5 (ExA; ISH1; 10.D5.3). This determined that with the introduction of the traffic mitigation measures through Cawston associated traffic noise and vibration impacts will not be significant.

1.2 Summary of Cawston Proposed Highway Mitigation Scheme

5. The proposed scheme of mitigation through Cawston is captured within the Norfolk Vanguard Outline Traffic Management Plan (TMP) (DCO document 8.8). The proposals are also shown separately on two figures at the back of this report “Approach Driver Awareness Works on B1145 Cawston Figure 03/322 Rev C 29.01.19” and “B1145 - Centre of Cawston Mitigation Scheme HGV - HGV Passing Points Figure 03/322 Rev C 07.03.19”.
6. In summary the proposed mitigation includes the following elements (the proposals are located within the Conservation Area unless otherwise stated):
 - Parking restrictions limiting on street parking to newly painted parking bays painted onto the existing road (temporary).
 - Various signage:
 - 20 mph signs (temporary);

- End of 20 mph signs (temporary);
 - Priority to oncoming vehicles signs (temporary);
 - Proposed new village designed gateway features (permanent but outside Conservation Area);
 - New vehicle activated speed sign to the west of the village (permanent but outside Conservation Area); and
 - Relocation of existing vehicle activated speed sign to the east of the village (outside Conservation Area).
- Road re-surfacing along the length of the B1145 through Cawston to improve condition and reduce vibration effects associated with potholes and rough surface etc (permanent); and
 - Localised footway (pavement) widening and improvement (permanent).
7. A road safety audit undertaken in March 2019 by Orsted proposed that a mechanism to enforce the parking restrictions also be introduced. It has therefore been proposed that this will be single yellow lines on both sides of the road with waiting restriction signs added.
 8. All measures are currently proposed to be temporary in nature, with the exception of the re-surfaced road and footway (pavement) widening and improvement.
 9. For the Norfolk Vanguard project alone, the temporary measures are only required during the cable duct installation works, for a period of approximately 1 year.
 10. For Hornsea Project Three, the temporary measures would need to be in place for approximately 2 years. As such, when considered cumulatively, the temporary highway mitigation measures could be required for a total of 2-3 years.
 11. The principles of the scheme of mitigation have been accepted by Norfolk County Council as local highway authority although the final detailed design of the scheme will be subject to further sign off post-consent by both Norfolk County Council and Broadland District Council.

2 CAWSTON CONSERVATION AREA CONSIDERATIONS

2.1 Conservation Areas

12. A Conservation Area comprises an area of special architectural or historic interest, the character or appearance of which is desirable to preserve or enhance.
13. Conservation Area designation exists to manage and protect the special architectural and historic interest of such places and is essentially intended to protect the buildings and trees that fall within them.
14. There are currently 21 Conservation Areas within Broadland District Council (BDC). These differ in their type (character and appearance) and include:
 - Parts of historic towns and villages;
 - 18th and 19th-century suburbs;
 - Model housing estates; and
 - Country houses set in historic parks.
15. Cawston Conservation Area falls under the ‘parts of historic towns and villages’ category and was designated in 1979.
16. Factors that contribute to the special quality of a Conservation Area can include:
 - The architectural qualities of the buildings;
 - The material used in their construction;
 - The relationship between buildings and their setting in the townscape / landscape;
 - The character of the spaces between buildings, including walls, hedges, trees and ground surface materials; and
 - Views from within and outside the area.

2.2 Cawston Conservation Area Character Appraisal

17. The extent of the Cawston Conservation Area is shown on the Broadland District Council figure at the back of this report. The Conservation Area along the B1145 has a western extent in proximity to Booton Road and an eastern extent a New Street covering an approximate 300m stretch of the High Street through Cawston. A copy of the Cawston Conservation Area Character Appraisal (CACA) is included as Appendix 1 to this report.

2.2.1 Road and Traffic References

18. The Cawston CACA, adopted in March 2009, contains several references with respect to 'traffic': It is noted in the 1979 statement that Nos. 39 to 45 Chapel Street were demolished in the 1980s as part of a County Council Scheme for highway improvements to Chapel Street to provide for adequate HGV access and a footway.
19. The CACA (2009) notes that – *“this is the only indication in the 1979 Statement of the conflict between heavy traffic and conservation in Cawston.”* – and that *“Since then the volume of traffic has increased: heavy goods vehicles pound through the streets constantly, causing danger to pedestrians and to bona fide village traffic, producing noise and spattering newly painted buildings with dirt.”* – *“Despite the removal of the bottle-neck in Chapel Street, the centre of Cawston can be hazardous for pedestrians.... Buildings are also potentially at risk from damage by traffic. Street widening and demolition is no longer accepted as the solution of traffic problems in built up residential and shopping areas, least of all in a Conservation Area.”* (CACA 2009, Introduction – p.2)
20. Under 'Location and Setting' the CACA states that - *“The village developed around a major road junction, and today the B1145 running east-west from North Walsham to Kings Lynn remains an important cross-country route.”* (CACA 2009, Location and Setting – p.4). *“The form of the village derives from it being the meeting place of several roads leading in from the surrounding countryside – as well as from further afield, making it an ideal location for a market and a fair.”* (CACA 2009, Location and Setting – p.4)
21. Under 'Form and Character' the CACA states that *“The Market Place is a most satisfying space. It is enclosed on all sides by buildings of interest or walls, but, whereas Chapel Street and the western arm of the High Street broaden out as they approach the junction, the eastern arm of the High Street becomes a narrow funnel between walls or buildings. It is important to conserve this contrast: any pressure to accommodate through traffic by road widening should be resisted.”* (CACA 2009, Form and Character, The Market Place – pp. 4 & 5)

2.2.2 Character Detractors

22. Traffic is highlighted as one of the primary elements which detracts from the character of the area; a situation which has further developed since the Conservation Area was originally designated in 1979.
23. It is stated that *“the heavy traffic passing through the village has a serious impact on the character of the Conservation Area.”* (CACA, Things which detract from the Character of the Area, Traffic – p.8)

2.2.3 Enhancement Opportunities

24. The control of traffic through the Conservation Area is also seen as a primary enhancement opportunity.
25. It is stated that *“better control of traffic through the village would at once improve the environment and give the opportunity to consider other physical improvements.”* (CACA, Opportunities for Enhancement, – p.9)
26. *“The repaving of the Market Place and part of the high street would then become possible. The emphasis should be on pedestrian priority and safety, while ensuring the prosperity of shops, the public house and other businesses in the village and allowing for residential access. Surfacing material and street furniture should be simple and unobtrusive, but of good quality.”* (CACA, Opportunities for Enhancement, – p.9)

2.3 The Proposed Highway Mitigation Details and Discussion

27. The two distinct elements of the proposed highway mitigation scheme for Norfolk Vanguard are addressed separately below:
 - 1) The B1145 approaches to Cawston (outside of the Conservation Area); and
 - 2) The B1145 through the centre of Cawston (within the Conservation Area).

2.3.1 1) The Approaches to Cawston on the B1145 (outside of the Conservation Area)

28. The elements of the scheme of mitigation on the approaches to Cawston are shown on Figure' 03/322 Rev C (29.01.19) provided at the back of this report.
29. The mitigation proposed on the eastern side of the village, heading east – west, include:
 - Proposed new village designed gateway feature (permanent) – approximately 500m east of Conservation Area.
 - Proposed 20 mph/30 mph speed limit change, i.e. 20mph if you're heading into Cawston and 30mph if you're heading out of Cawston (temporary) – approximately 300m east of Conservation Area.
 - Relocation of Vehicular Activated Sign (VAS) to be provided in advance of school access and within the 20mph zone (permanent) – approximately 350m east of Conservation Area.
 - Existing footway to be widened (permanent) – approximately 250m east of Conservation Area. The potential for pavement widening is subject to ongoing

discussion with Norfolk County Council (NCC) as this was identified as a concern within the road safety audit. This would be confirmed during detailed design.

30. The mitigation proposed approaching Cawston on the western side of the village, heading west – east, include:
 - New village designed gateway feature (permanent) – approximately 400m west of Conservation Area.
 - New Vehicular Activated Sign (VAS) to be provided at a location to be agreed with NCC (permanent) – approximately 250m west of Conservation Area.
31. The mitigation measures proposed approaching Cawston are designed to slow traffic speeds on the approach to the centre of Cawston, and the footway widening is designed to improve pedestrian safety. As such these measures should be seen as positive and beneficial. However, these measures are unlikely to be visible from the Conservation (at distance of 250m or greater) and are considered to be non-material in terms of any associated adverse impact to the character and/or appearance of Cawston Conservation Area itself.

2.3.2 2) The Centre of Cawston Mitigation (within the Conservation Area)

32. The elements of the scheme of mitigation along the B1145 through the centre of Cawston are shown on Figure 03/322 Rev C (07.03.19) at the back of this report.
33. These proposed measures are all within, or partly within, the Cawston Conservation Area boundary.
34. Heading east – west through the village, these measures include:

Existing vegetation to be cut back within the highway boundary and verge clearance.
35. This work is at the very eastern extent of the Conservation Area. This may include lopping of branches overhanging the road if forward visibility is being impaired. This tree is noted as a ‘significant tree’, albeit not currently subject to a tree preservation order, and is numbered CA6 – Common Walnut within Appendix D of the Cawston CACA (2009). Any proposed lopping of branches of this tree would need to be discussed and agreed with the appropriate Broadland District Council Officer (Development Management and/or Conservation). This will be captured within the final TMP to be produced post-consent, secured through DCO Requirement 21.

Single way priority working signage, to be agreed with NCC. Proposed to be located near to/in the vicinity of the entrance to Whitehouse Farm.

36. Clear visibility of the signage will ensure this traffic measure is effective. Any new signage should be simple, unobtrusive and good quality. The exact size and location of the signage (albeit of a temporary nature) will also be important with respect to minimising impact upon the character and appearance of the Conservation Area. The final appearance and location of the signage will be discussed and agreed with NCC and Broadland District Council during the detailed design as part of the final TMP, secured through Requirement 21.

Footway to be widened to a minimum of 1.2m to provide improved pedestrian amenity, from the corner of Norwich Road to the south-eastern corner of Market Square. Subject to ongoing discussion with NCC in relation to road safety.

37. This would be a permanent measure which can be related directly to ‘opportunities for enhancement’ within the CACA (2009) with respect to pedestrian priority and safety. Any footway works should be simple, unobtrusive and use good quality materials. If this element is retained, this will be discussed and agreed with NCC and Broadland District Council during the detailed design and captured within the final TMP.

Existing Bus Stops to be relocated to assist vehicle movement and reduce vehicle conflict (permanent).

At present the bus stop signage is not obvious. Any new signage should be simple, unobtrusive and of good quality. The final location and appearance of the bus stop sign should be further discussed and agreed with NCC and Broadland District Council during detailed design and captured within the final TMP.

Footway to be widened along the High Street frontage, where necessary, to provide a minimum footway of 1.2m, from nos. 5, 7 to 11 and 13.

38. This would be a permanent measure which can be related directly to ‘opportunities for enhancement’ within the CACA (2009) with respect to pedestrian priority and safety. Any footway works should be simple, unobtrusive and use good quality materials. If required, this will be discussed and agreed with NCC and Broadland District Council during the detailed design.

Existing parking to remain (in Market Square).

39. No change, noted. As such this is not considered a matter directly relevant to the character and appearance of the Conservation Area.

New 20 mph zone sign and new end of 20 mph zone sign. Exact locations to be agreed with NCC within the vicinity of nos. 2c and 9-11 Chapel Street.

40. Any new signage should be simple, unobtrusive and of good quality. Exact sizes and locations of signage (albeit of a temporary nature) will also be important with respect to minimising impact upon the character and appearance of the Conservation Area. This will be discussed and agreed with NCC and Broadland District Council during the detailed design and captured within the final TMP.

Footway to be widened to a minimum of 1.2m to provide improved pedestrian amenity, between nos. 15 to 19, 21 to 29, and also nos. 14 to 18.

41. This would be a permanent measure which can be related directly to ‘opportunities for enhancement’ within the CACA (2009) with respect to pedestrian priority and safety. Any footway works should be simple, unobtrusive and use good quality materials. If required, this will be discussed and agreed with NCC and Broadland District Council during the detailed design.

New 20 mph Zone sign and new End of 20 mph Zone sign. Exact locations to be agreed with NCC within the vicinity of The Old Forge (Booton Road / Goosepie Lane) and no. 41 Church Close.

42. Any new signage should be simple, unobtrusive and of good quality. Exact sizes and locations of signage (albeit of a temporary nature) will also be important with respect to minimising impact upon the character and appearance of the Conservation Area. This will be discussed and agreed with NCC and Broadland District Council during the detailed design and captured within the final TMP.

Single way priority working, signage to be agreed with NCC. Proposed to be located in the vicinity of The Old Forge and nos. 22/24 High Street.

43. Clear visibility of the signage will ensure this traffic measure is effective. Any new signage should be simple, unobtrusive and good quality. The exact size and location of the signage (albeit of a temporary nature) will also be important with respect to minimising impact upon the character and appearance of the Conservation Area. This will be discussed and agreed with NCC and Broadland District Council during the detailed design and captured within the final TMP.

Formalisation and demarcation of parking bays (blue boxes) in front of nos. 5, 7 to 11, no. 13 and no. 15 - south-side of High Street; and nos. 8 / 10, nos. 12, 12a and 12b and nos. 14-18 – north-side of High Street.

44. Any road markings should be simple, unobtrusive, and use good quality materials. Whilst temporary in nature, some further consideration of line/box colour, thickness and spacing will be required during detailed design. This will be discussed and agreed with NCC and Broadland District Council during the detailed design and captured within the final TMP..

Single yellow lines along the non-parking bay lengths and associated parking restriction signs (advice received within the road safety audit but not yet shown on plans at the back of this report).

45. Any road surface works should be simple, unobtrusive, and use good quality materials. Exact sizes and locations of signage (albeit of a temporary nature) will also be important with respect to minimising impact upon the character of the Conservation Area. The thickness and spacing of lines will also require further agreement during detailed design. This will be discussed and agreed with NCC and Broadland District Council during the detailed design and captured within the final TMP..

Road re-surfaced to improve condition and reduce vibration effects associated with potholes and rough surface etc. (not shown on the plans at the back of this report).

46. Surfacing materials should be simple and unobtrusive, but of good quality. The colour and visual finish will be important with respect to minimising impact upon the character of the Conservation Area. Further discussion and agreement with / between NCC and Broadland District Council will be required during detailed design and captured within the final TMP.

2.3.2.1 Summary of highway mitigation measures

47. The majority of the proposed highway mitigation measures will be temporary in nature (e.g. signage and parking bay markings) and will be fully removed following the completion of construction works associated with Norfolk Vanguard and Hornsea Project Three. Whilst these measures will represent a temporary change to High Street, impacts upon the character of the Conservation Area can be minimised through the use of simple, unobtrusive and good quality materials.
48. The pedestrian footway widening and road resurfacing would be permanent measures and would remain in place beyond the completion of construction works. Road resurfacing and a focus on pedestrian priority and safety (pavement widening and repaving) is considered a longer-term beneficial focus and effect of the proposed highway mitigation measures and links to the enhancement opportunities

identified within the CACA (2009), for example in respect to pedestrian priority and safety.

49. The measures (both temporary and permanent) will be undertaken within the principles of simple, unobtrusive and good quality (sympathetic) material. Further discussion and agreement with NCC and Broadland District Council during detailed design will be required for new surface materials and street furniture (both temporary and permanent), weighing practical and safety needs with conservation requirements and good practice within a Conservation Area. This will be captured within the final TMP, secured through DCO Requirement 21.

2.4 Construction Traffic

50. The construction of both Norfolk Vanguard and Hornsea Project Three will lead to temporary increases in HGV traffic through Cawston. The proposed scheme of mitigation discussed in Section 2.3 has been developed to address cumulative construction traffic impacts; however, the additional traffic itself has the potential change the character of the area.

51. Norfolk Vanguard construction traffic and cumulative traffic with Hornsea Project Three is outlined below:

Norfolk Vanguard alone

- 1 week @ 112 peak daily HGV movements
- 22 weeks @ 95 average daily HGV movements
- 13 weeks @ 44 average daily HGV movements
- 23 weeks @ 8 average daily HGV movements

Hornsea Project Three alone

- 2 year flat profile @ 127 daily HGV movements

Cumulative traffic (Norfolk Vanguard + Hornsea Project Three)

- 1 week @ 239 peak daily HGV movements
- 22 weeks @ 222 average daily HGV movements
- 13 weeks @ 171 average daily HGV movements
- 23 weeks @ 135 average daily HGV movements

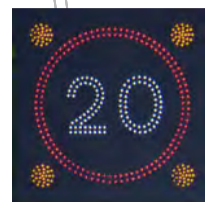
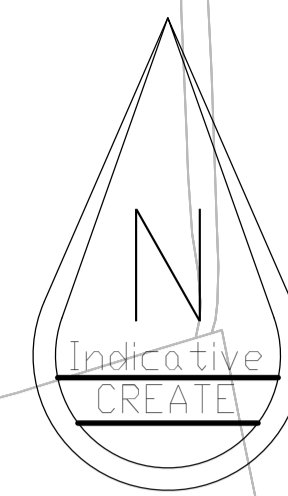
52. The traffic numbers represent a temporary increase in HGV traffic movements through the village and associated Conservation Area.

53. This level of increased traffic will result in an adverse impact to the character and appearance of the Conservation Area, and particularly the ability to experience and appreciate the Conservation Area along the B1145 and the significance of its associated heritage assets. However, this harm will be temporary and reversible and the introduction of the footway widening will offer longer-term improvements for people to experience the Conservation Area.
54. In addition, Norfolk Vanguard has sought to reduce the peak traffic for Norfolk Vanguard alone through Cawston from an originally assessed 240 peak daily HGV movements down to 112 peak daily HGV movements.
55. Norfolk Vanguard alone will represent an increase in traffic for approximately one year. As a worst case, the duration of the traffic increase will be 2 to 3 years with the inclusion of Hornsea Project Three. Whilst, it is acknowledged that residents and visitors to Cawston may consider 2 to 3 years to be a substantial period of time, it is nonetheless a temporary and reversible impact.

3 CONCLUSIONS

56. A proposed scheme of highway mitigation measures will be introduced along the B1145 through Cawston, passing through part of the Cawston Conservation Area, to mitigate for traffic increases associated with the construction of Norfolk Vanguard and Hornsea Project Three offshore wind farms. .
57. The majority of the proposed highway mitigation measures will be temporary in nature (e.g. signage and road markings) and will be fully removed following the completion of construction works associated with Norfolk Vanguard and Hornsea Project Three.
58. The pedestrian footway widening and road resurfacing would be permanent measures and would remain in place beyond the completion of construction works. These measures offer longer-term benefits and link to the enhancement opportunities identified within the CACA (2009), i.e. improving pedestrian priority and safety.
59. Depending upon the phasing of the construction works associated with the two projects, the temporary highway mitigation measures are expected to be required for 2-3 years, prior to their removal. These measures represent a temporary change to the appearance of the Conservation Area; however, any impacts upon the character of the Conservation Area will be minimised by adopting the principles of simple, unobtrusive and good quality (sympathetic) material during detailed design.
60. Further discussion and agreement with NCC and Broadland District Council during detailed design will be required for new surface materials and street furniture (both temporary and permanent), weighing practical and safety needs with conservation requirements and good practice within a Conservation Area. The detailed design will be captured within the final TMP and secured through DCO Requirement 21.
61. The increase in traffic is considered to represent temporary harm to the character and appearance of the Conservation Area during this period and represents a temporary adverse impact on the ability of people to experience and appreciate the area and the significance of its associated heritage assets. However, this harm will be temporary and reversible and the road resurfacing and pathway widening is considered to offer a longer-term legacy benefit to improve the ability for people to experience the Conservation Area along the B1145.

FIGURES



New Vehicular Activated Sign (VAS) to be provided at a location to be agreed with Norfolk County Council

New 20mph speed limit to be introduced with village designed gateway feature.

See High Street intervention scheme in separate drawing 1554/03/320



Existing footway to be upgraded in agreement with Norfolk County Council.

Proposed new location for 30mph speed limit with new Village designed gateway feature.

Existing Vehicular Activated Sign (VAS) to be removed



Relocation of Vehicular Activated Sign (VAS) to be provided in advance of the school access and within the 20mph zone.



Proposed 20mph/ 30mph Speed Limit Change


GENERAL NOTES:

1. THE DRAWING IS BASED ON DIGITAL OS MAPPING.
2. SERVICES ARE TO BE PROTECTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE RELEVANT STATUTORY AUTHORITIES.
3. TO BE READ IN CONJUNCTION WITH ALL OTHER LAYOUT AND DETAIL DRAWINGS.
4. ACCESS FOR PEDESTRIANS AND CYCLISTS IS TO BE MAINTAINED AT ALL TIMES. ACCESSES TO PROPERTIES ARE TO BE MAINTAINED AND WORKS PROGRAMMED IN CONSULTATION WITH PROPERTY OWNERS.
5. ROAD MARKINGS AND ROAD SIGNS ARE TO BE IN ACCORDANCE WITH THE SI DOCUMENT "TRAFFIC SIGNS REGULATIONS AND GENERAL DIRECTIONS, 2016".
6. ALL MEASUREMENTS IN METRES UNLESS OTHERWISE STATED.

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REV	DATE	AMENDMENT DETAILS	DRAWN	APPROVED
C	13.03.19	SCHEME DESIGN REVISED FOLLOWING SITE WALKOVER WITH CAWSTON PC WORKING GROUP	AF	PZ
B	07.09.19	AMENDMENTS FOLLOWING MEETING WITH NCC ON 06.03.19	EC	PZ
A	05.02.19	VAS RELOCATED AND DWG REFERENCE ADDED	AF	PZ

PROJECT HORNSEA 3 OFF-SHORE WIND FARM	DATE 29.01.19	DRAWING STATUS INFORMATION	
	SCALE(S)	DESIGNED EC	DRAWN EC
DRAWING TITLE APPROACH DRIVER AWARENESS WORKS ON B1145 CAWSTON	1:1,000	CHECKED PZ	APPROVED PZ
	JOB No 1554	REVISION C	
CLIENT ORSTED	DRAWING No 03/322		

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APPENDIX 1

Cawston Conservation Area Character Appraisal

CAWSTON CONSERVATION AREA



CHARACTER APPRAISAL
BROADLAND DISTRICT COUNCIL
ADOPTED MARCH 2009



If you would like this information in a different format, such as large print, audio, Braille or in a different language please call (01603) 431133 and we will do our best to help. www.broadland.gov.uk

CAWSTON CONSERVATION AREA

CHARACTER APPRAISAL

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CAWSTON CONSERVATION AREA

CHARACTER APPRAISAL

INTRODUCTION

A Conservation Area is defined as “an area of special architectural or historic interest, the character of which it is desirable to preserve or enhance”. The conservation of the historic environment can enhance the quality of life of those who live or work in the area and, by attracting visitors, can benefit the local economy. Under the 1990 Planning (Listed Buildings and Conservation Areas) Act, Local Authorities are required to review existing Conservation Areas and, where appropriate, consider the designation of new ones.

Factors which contribute to the special quality of a Conservation Area may include:

- the architectural quality of the buildings themselves
- the materials of which they are made
- their relationship with one another and their setting in the landscape
- the character of the spaces between buildings, including walls, hedges, trees and ground surface materials
- views both within the area and from outside

The District Council is committed to the protection and enhancement of the historic environment of Broadland. The Cawston Conservation Area was designated in 1979. An illustrated Statement accompanied designation.

The present Statement identifies and reaffirms the special architectural and historic character of the area identified in the earlier Statement and makes recommendations for its enhancement.

The visual character of Cawston has evolved through the arrangement of buildings along the network of roads, lanes and open spaces. Since these buildings are the dominant element in producing this identity, the basic aims of conservation must be to avoid unnecessary defacement or destruction of these buildings of special worth; to attempt to extend their period of usefulness . . . , to preserve an authentic appearance . . . and to provide and maintain an appropriate setting for them.

This quotation from the Statement which accompanied Conservation Area designation provides a useful starting point for the present statement and a yardstick against which to measure how far the aims set out in 1979 have been achieved in the past quarter-century.

The 1979 statement identified a number of cottages which contributed to the character of the village, but which, if they were to survive, needed renovating and bringing up to an acceptable standard of accommodation. These have now all been renovated and modernised, with the significant exception of one group: Nos. 39 to 45 Chapel Street. These were demolished in the 1980s as part of a County Council scheme for the improvement of Chapel Street . . . to provide for adequate heavy lorry access and a footpath. In their contribution to the character of the street, the new houses which replaced this group are well above average: considerable care has been taken to follow ideas put forward in the 1979 Statement. But, as the Statement itself acknowledged: . . . inevitably the character of Chapel Street will be affected and with present day building standards it is not possible to fully recapture the character of the buildings replaced.

This is the only indication in the 1979 Statement of the conflict between heavy traffic and conservation in Cawston. Since then the volume of traffic has increased: heavy goods vehicles pound through the streets constantly, causing danger to pedestrians and to bone fide village traffic, producing noise and spattering newly painted buildings with dirt. Despite the removal of the bottle-neck in Chapel Street, the centre of Cawston can be hazardous for pedestrians: as a visit on any dark winter afternoon at school closing time will demonstrate all too clearly. Buildings are also potentially at risk from damage by traffic. Street widening and demolition is no longer accepted as the solution of traffic problems in built up residential and shopping areas, least of all in a Conservation Areas.

Many buildings have been repaired and modernised, both those identified in the 1979 Statement and others. But in some cases this has caused “unnecessary defacement” of the building. In particular the use of unsympathetic replacement windows has altered the character of buildings for

the worse. There are many examples, but - just taking those properties identified in 1979 as in need of renovation - they include No.3 Chapel Street, No 5 Chapel Street, No. 27 New Street, 22 Chapel Street, 24 and 24A Chapel Street, The Walnuts New Street.

The design of new developments in an historic setting demands skill and persistence. Good examples are 39 - 45 Chapel Street (already referred to above) and the houses at the junction of High Street, New Street and Cooks Hill. By contrast, new detached houses on the south side of New Street and a number of suburban-style developments on both sides of Chapel Street fail to take account of their setting.

One historic building, not identified as in need of renovation in 1979, is currently seriously at risk: this is No. 16 Chapel Street.

HISTORICAL DEVELOPMENT

The name of the village is derived from the combination of the Old Norse name Kalfr with the Old English word tun. So it means "Kalfr's enclosure [or settlement]". Kalfr was probably the name of the leading family in the settlement in the eighth or ninth century. In the Domesday Survey made by the Norman conquerors in 1086 the village is called both Caupstuna and Causton.

Edward I (1273 – 1307) granted a licence for a fair to be held in Cawston. He visited the village in 1294 and hunted in the area. The fair was held annually in January on St Agnes Day until the late nineteenth century.

By the late fourteenth or fifteenth century, and continuing until the late eighteenth or early nineteenth century, spinning and weaving wool provided a living for a large proportion of the inhabitants of Cawston. But with the Industrial Revolution the wool industry moved to the north-east of England. Many redundant spinners and weavers turned to farmwork, others to clay digging, for which they rarely earned more than 4 shillings and 6 pence a week. From 1725 a sheep fair was held annually in August. It became known as the greatest sheep fair in the country, where breeders from west Norfolk brought lambs to be sold to graziers from the east of the county.

In 1385 Michael de la Pole, Earl of Suffolk, became Lord of the Manor. He died in 1414. Though other benefactors were involved, it was mainly due to his munificence, and that of his widow, that the church of St Agnes was in great part rebuilt in the splendid form we see today.

A little north of the village at Southgate (or more correctly Sygate, derived from the Old English words for a rough - or plough - way) stands the former Plough Inn. This was the guildhall of the Medieval Plough Guild. From here a plough was drawn to St Agnes Church to be blessed shortly after Twelfth Night each year. Merrymaking followed, including the Dance of Sygate. In the church the seventeenth century Plough Gallery bears an inscription God sped the plow / And send us all corne enow / Our purpose for to mak / at crow of cok of ye plowlete of Sygate / Be mery and glade / Was Goodale yis work mad.

In 1685 Cawston suffered a great fire. Although there may be framed structures hidden behind later facades, the fire may account for the apparent absence of timber framed buildings in the village.

In 1698 the last duel was fought in Norfolk, when Oliver le Neve of Witchingham killed Sir Henry Hobart of Blickling Hall. The event is commemorated by a stone on the Norwich side of the former Woodrow Inn, (now a garage) on the B1149.



Tithe Map mid 19th Century

The trade directories (Kelly's and White's) give a flavour of the changing life of the village in the nineteenth and twentieth centuries. The development of regular carrier and postal services, the coming of the railway, the building of the school reflect a growing link with the world outside the village, while - at the same time - the large number (by today's standards) of local shops, builders and other craftsmen and women reflect the comparative self-sufficiency of a rural community. But throughout the twentieth century

the links with the outside world increased exponentially and the provision of local services declined. Today Cawston retains a church, a chapel, a school, a village hall, a pub and a few shops: this is more than many villages of similar size. But with the growth of modern transport, education and telecommunications and with the decline in the proportion of its population dependent on agriculture, a village can no longer provide the sole focus of people's lives. Yet Cawston is a good place in which to live and work and there remains a strong sense of community. For this to continue to grow and flourish it is vital that, alongside change and development, the environment inherited from the past is maintained and enhanced.

LOCATION AND SETTING

Cawston is about twelve miles from Norwich and is situated on slightly raised flat land between the Bure river system to the east and the Wensum river system to the west. The village developed around a major road junction, and today the B1145 running east-west from North Walsham to Kings Lynn remains an important cross-country route. The surrounding area, with its free-draining loam soil, is good for arable farming. This makes for an open landscape in which trees are relatively few in number, with good views in all directions. The church tower, one of the highest in the area is a notable local landmark.



To the north-west, west and south-west the village remains bounded by open countryside, from which there are good views of the church with the lower roofs of houses and farm buildings in the foreground. It is important to conserve this traditional firm boundary between village and countryside and not to blur it by further new development or infill.

To the north-east, east and south-east, on the other hand, the village has expanded well beyond its historic boundaries, with residential and industrial developments. These enable the village to thrive in the modern world, though it has to be said that they hardly complement its special architectural character. For this reason, only the western end of the Fairfields estate, which impinges directly on the historic core of the village, is included in the Conservation Area.

FORM AND CHARACTER



OS Map First Edition

The form of the village derives from its being the meeting place of several roads leading in from the surrounding countryside - as well as from further afield, making it an ideal location for a market and a fair. The heart of the village is the western arm of the High Street, with the Market Place at one end and the junction with Goosepie Lane at the other. At one end roads enter from the north (Chapel Street), the east (High Street / Aylsham Road) and the south (Cooks Hill / Norwich Road) and, at the other end, from the north (Reepham Road) and the south (Goosepie Lane / Booton Road).

The Market Place

The Market Place is a most satisfying space. It is enclosed on all sides by buildings of interest or

walls, but, whereas Chapel Street and the western arm of the High Street broaden out as they approach the junction, the eastern arm of the High Street becomes a narrow funnel between walls or buildings. It is important to conserve this contrast: any pressure to accommodate through traffic by road widening should be resisted. The junction with Goosepie Lane, by contrast, was opened up in the middle of the twentieth century: old buildings were demolished and replaced by flats, set back from the road, and by the open space west of the junction with Church Lane.



High Street (west)

The western arm of the High Street is urban in character as befits a one-time weaving town. It is characterised by continuous frontages on both sides, with houses dating from the seventeenth to the nineteenth century. They are mostly colour-washed and the majority retain windows consistent with their facades.



Two gaps weaken the character of the street: the parking area east of No. 10 on the north side and, on the south side, the planted open planted west of Church Lane.

Chapel Street

At the Market Place Chapel Street retains its historic character. On the west side buildings hard onto the road include a terrace of tall eighteenth century weavers' cottages. On the east side, the seventeenth century White House acts as a visual stop to the view up the High Street and frames the view as one enters the Market Place from the east. Further north the survival of some older frontages and the double-curved alignment of the street give attractive views along Chapel Street, including a view of the chapel itself. But the street has been badly served by the twentieth century: many older buildings have been demolished and replaced by suburban style development on both sides.

High Street (east)

On the north side of the eastern arm of the High Street, the retention and conversion of a low outbuilding, hard onto the road east of the White House, has helped to preserve the funnel-like character of the street. This demonstrates the importance in historic townscapes of conserving even apparently unimportant older buildings. On the south side modern residential development on the corner with Cooks Hill has been successfully woven into the traditional fabric of the village. East of Cooks Hill the retention and conversion of the former school has enabled the "entrance" to the historic village to remain clearly marked, in contrast to the less distinguished modern developments which now surround it.



The Church

The church of St. Agnes dominates the Cawston skyline in any views from outside the village. But, within the village, it is only as one turns south into Church Lane, Goosepie Lane or New Street that it manifests its powerful presence.



New Street

New Street, as its name implies, is a relatively recent extension of the village. In contrast to the High Street, the tightly knit product of centuries of evolution, New Street was consciously planned, as a broad, tree-lined, avenue with wide footpaths on either side. Buildings are dwarfed by the wide open space between them. On the south side a long terrace of the late eighteenth or early nineteenth century has been successfully conserved and modernised. Though small in scale, by its length it serves as a "wall" to the space of the street. Towards the Norwich Road end several pleasing houses of the same period survive and pick up the "wall" again. By contrast, a group of modern detached houses in between these two groups, break up the "wall" and contribute nothing to the townscape. On the north side of the street the new development at Cooks Hill (already referred to) holds the corner and The Walnuts complements the older buildings opposite. The rest of the north side comprises modern semi-detached single-storey houses for the elderly. Though undistinguished in themselves, these houses benefit from the magnificent backdrop of the church and from the trees in front, while their location near the centre of the village must surely be ideal.

Church Lane

Church Lane is a quiet narrow back street, dominated by the east end of the church and the churchyard. North of the church a terrace of cottages provides a pleasing contrast of scale and

ideal accommodation in the centre of the village. The electricity sub-station makes a weak corner with the High Street. The east side of the lane is less interesting: a long flat flat-roofed extension to No. 29 High Street and larch-lap fencing detract from the character of the area; further south a "cottage style" modern house nestles behind a high hedge.



Goosepie Lane

On Goosepie Lane (Booton Road) Church Farm and Goosepie Farm link the centre of the village, both functionally and visually, with the open countryside to the west and south. Goosepie Lane is dominated by the church to the east and by Church Farm to the west. Walls and trees and views inwards to the church and outwards across open countryside are all important here. By Church Close is the village sign. Against the churchyard wall is the Lucky Strike memorial. The memorial was unveiled in 1996 and commemorates the crash landing of the American Bomber 'lucky strike' in 1944 when two of the aircrew were killed. The open paddock south of Church Farm allows a good view of the church.

Reephram Road

Reephram Road is the western continuation of the B1145. Buildings of interest hold both sides of the junction with the High Street. On the south side

the former forge, despite some inevitable loss of character, has been retained by conversion to a cottage. On the north side No. 20 High Street, hard onto the road, has unusual carved corbels at the corners, while further back Nos. 22 to 26 High Street (in process of renovation in 1979) has a Dutch gable at one end.



Norwich Road

Only a short stretch of Norwich Road is included in the Conservation Area. While the pairs of Victorian cottages on the east side could merit inclusion in the Conservation Area, Marsham's garage opposite effectively rules this out.

TRADITIONAL MATERIALS AND ARCHITECTURAL DETAILS

The character of Cawston owes much to the traditional use of a limited palette of building materials. Some of these are indigenous to the area (e.g. red brick, timber framing, red and black pantiles, sand-lime render and flint); some have come from further afield (e.g. stone and slate).

As one would expect, the materials brought from elsewhere tend to be confined to the more prestigious buildings. St Agnes Church, unlike most Norfolk village churches (but like nearby Salle), was lavishly faced in stone. Black pantiles are to be found on a number of buildings, but, though indigenous, they would have been more costly. No. 6 Chapel Street has the only exposed timber frame, though others are probably concealed behind brick or rendered facades.

Cawston boasts a more than usual proportion of curved Dutch gables.

THINGS WHICH DETRACT FROM THE CHARACTER OF THE AREA

A lot has been done since 1979 to address problems identified at that time. Only two buildings are now unused and falling into decay. In some cases buildings have been demolished, notably on the west side of Chapel Street. But many more have been renovated or converted. Other problems remain or have developed since the Conservation Area was originally designated.

- **Traffic**

The heavy traffic passing through the village has a serious impact on the character of the Conservation Area.

- **Buildings at risk.**

No. 16 Chapel Street Any proposals for the development should only be considered if they take careful account of the setting of the existing building and the character of the street.

Single-storey building to the rear of No. 8 High Street (now separated from the frontage building by recent demolitions). Pressure for further demolition on this site should be resisted.

- **Wall in need of repair**

The front end of the wall to the west of the vehicular entrance to the Bell needs to be rebuilt, with the saddle-back coping restored and, to finish it off in a satisfactory manner, a square brick pier at the end.

- **Unsympathetic new developments**

Buildings – or high walls - abutting the pavement are characteristic of Cawston. "Suburban style" developments, comprising detached or terraced houses with low garden walls or open, hedged or fenced frontages, have in several streets detracted from the traditional character of the village.

- **Unsympathetic alterations**

Windows are one of the most significant elements in any building: their replacement by new ones

different from the old can so easily damage its essential character. Changes include, most commonly, a different pattern of window frame or glazing bars; setting the window further forward in the opening; the use of top-hung casements in place of sliding sashes ("mock-sashes"); the use of UPVC in place of wood causing major changes in widths and profiles of frames and bars. Examples of such changes can be seen in buildings throughout the village.

Wedge dormer windows, too big in scale, detract from the character of two cottages: in Chapel Street and Norwich Road.

The use of standard UPVC doors and of some standard wood doors (in particular one in which a fanlight – which should be above a door - is inserted in the door itself) and the use of inaccurate reproduction "Georgian" doorways detract from the character of several houses in the village.

- **Frontage treatment**

Simple high brick walls will generally harmonise well with the village street scene. The use of woven "larch lap" boarding (e.g. in Goosepie Lane and Church Lane), of vertical boarding with concrete posts (e.g. in the east part of New Street) detracts from the scene, while the use of elaborate fencing, brickwork and gates (e.g. in Chapel Street) tends to look out of place.

- **Flat roofs**

Single storey extensions on the street front with flat roofs seldom harmonise with the traditional street (e.g. in Church Lane).

OPPORTUNITIES FOR ENHANCEMENT

- Better control of traffic through the village would at once improve the environment and give the opportunity to consider other physical improvements.
- The repaving of the Market Place and part of the High Street would then become possible. The emphasis should be on pedestrian priority and safety, while ensuring the prosperity of shops, the public house and other businesses in the village and allowing for residential access. Surfacing materials and street furniture should be simple and unobtrusive, but of good quality.
- The wide gap in the north side of the High Street (opposite the Bell) could be closed by a new building, possibly with an archway to parking behind.
- The expanded metal fence around the electricity sub-station on the corner of the High Street and Church Lane could be replaced by a high brick wall.
- Some thought needs to be given to the use and nature of the "amenity area" immediately west of the sub-station. At present it has a post box, a litter bin, a tree and some shrubs, but its use is unclear.
- The undergrounding of prominent overhead cables would enhance the area. Prime examples are those which are fed via the pole on the north side of the High Street close to its junction with the Market Place.
- Ames Court would be enhanced by more tree planting on the green in front of the Scout Hut and by some consideration being given to improving the appearance of the Hut itself.

APPENDIX A

THE EFFECT OF DESIGNATION

DESIGNATION

Section 69, Planning (Listed Buildings and Conservation Areas) Act 1990 requires local authorities to identify Conservation Areas and to designate them after consultation with the Parish Councils concerned, statutory undertakers and with other interested bodies.

PUBLIC PARTICIPATION

Any application for permission to carry out development which affects the character or appearance of the Conservation Area must be publicly advertised on site and in the local press not less than 21 days before it is determined by the Local Planning Authority. This may in some cases apply to developments on the fringe or margins of the Conservation Area where it is considered the proposed development may affect the character or appearance of the Conservation Area.

DEVELOPMENT CONTROL

New Development

The local planning authority, as a general rule, will require that all planning applications for building works are accompanied by detailed plans and drawings. These drawings should illustrate proposed elevations in relation to existing and adjoining buildings or their immediate surroundings.

The local planning authority must pay particular regard to the character of the Conservation Area and the possible effect any proposed development may have. Factors taken into consideration will be layout of buildings, scale, shape and form. A high standard of design and materials will also be expected. Peripheral elements such as design of walls, fences, planting and the visual effects of providing for vehicular traffic, e.g. access, parking areas, vision splays will similarly be considered.

It is desirable, therefore, that details of proposals should be discussed with

Development Management Officers or Conservation Officers at an early stage, preferably before submission of formal planning applications.

Alterations and Extensions/ Permitted Development

The form of control relating to alterations and extensions differs between Listed and unlisted buildings within Conservation Areas. The Town & Country (General Permitted Development) Order permits, within certain limits, alterations or extensions to any building* without the need to obtain specific planning consent. However, any proposal to alter or extend a Listed Building, within the limits of permitted development, requires Listed Building Consent if, in the opinion of the local planning authority, this would affect its character. Beyond the limits laid down in the General Permitted Development Order both planning permission and Listed Building Consent will be required.

Owners of unlisted buildings can extend or alter their properties within the limits of permitted development without the need to obtain consent. In some situations such alterations or extensions can have a detrimental effect upon the visual amenity of the street scene and character of the Conservation Area.

The local authority would therefore encourage owners who wish to alter or extend their houses, to do so in a sympathetic manner. The authorities' Conservation Officers will be pleased to give advice on matters of design and use of materials.

If the local authority is satisfied that in the interests of conservation it is necessary and expedient to bring under control any particular class or classes of 'permitted development', application may be made to the Department for Communities and Local Government for a Direction under Article 4 of the Town and Country (General Permitted Development) Order 1995, for that purpose.

*building means in this case, a dwellinghouse Town and Country (General Permitted Development) Order 1995.

Satellite dishes

The siting of a satellite dish on the chimney stack

or on the roof slope or any elevation fronting the road, on a dwelling house within a conservation area, requires consent from the council.

Demolition

With minor exceptions, no building within a Conservation Area may be demolished without the consent of the local planning authority. Additionally, demolition of a 'Listed Building' requires Listed Building Consent and the approval of the Secretary of State.

Where a building which is of particular importance in maintaining the character of a Conservation Area has been allowed to decay, the Secretary of State may direct a local authority to ensure that repairs necessary to make the building weatherproof are carried out.

Tree Preservation

It is an offence to fell, lop, top, cause wilful damage, destroy or remove a tree in a Conservation Area without first giving the local planning authority at least 6 weeks notice in writing. In that period, the authority may either seek to preserve the tree by serving a Tree Preservation Order in which case express consent then be obtained for any remedial work. If no such Order is served then work can proceed.

For trees which are already the subject of Tree Preservation Orders express consent of the local planning authority must be obtained before any remedial work is undertaken.

DESIGN GUIDANCE / HEDGEROW LEGISLATION

Window Replacements

Window replacements are often the most serious threat to the appearance of our conservation areas and may even affect the value of properties.

The replacement of timber windows with PVCu is likely to result in several problems

- The material cannot reproduce profiles and detailing of traditional joinery
- The variety can destroy the visual harmony of the streetscene
- The material is not as easy and economic to repair as timber
- It does not have the biodegradable qualities of timber when redundant, creating an

environmental land fill hazard.

NB: All complete window replacements are now required to achieve minimum insulation values – please consult the Building Control Section at Broadland District Council.

In the interests of conservation, local authorities are also empowered to relax the requirements under Building Control Regulations when considering proposals for the restoration or conversion of historic buildings.

Other repairs that can have a detrimental impact include:

- Alterations to roofing materials
- Inappropriate repointing techniques
- Inappropriate repointing materials
- Painting, rendering or cladding brickwork
- Removal of decorative architectural features such as stone or window surrounds
- Installing modern plastic rainwater gutters and downpipes

Careful repairs are as important as major alterations and extensions.

Important Hedgerows

Under the Hedgerow Regulations 1997 (S1 No. 1160):

- It is against the law to remove most countryside hedgerows without permission.
- To get permission to remove a hedgerow you must notify your local planning authority.
- If the authority decide to prohibit removal of an important hedgerow, it must let you know within 6 weeks.
- If you remove a hedgerow without permission (whether it is important or not) you may face an unlimited fine, you may also have to replace the hedgerow.
- For further information regarding the hedgerow legislation see D.O.E. leaflet 'The Hedgerow Regulations – Your Questions Answered'.

GRANTS

Grant assistance may be available for both listed and unlisted buildings or structures which are of amenity value to the conservation area, both for repair and enhancement. Grants may also be available for tree work / planting. Contact the Conservation Section at Broadland District Council

APPENDIX B : LISTED BUILDINGS IN THE CONSERVATION AREA

Ref. No.	Grade	Street	Building	Comments
11/34	II	Booton Road (Goosepie L)	Church Farm House	
11/33	I	Church Lane	Church of St Agnes	Mainly C15, much stone faced
11/35	II	Church Lane (Ames Court)	The Old Rectory	Spoilt by modern porch
11/36	II	Church Lane	Wall N & W of Old Rectory	
11/37	II	High Street (N)	Nos 8 & 10	
11/38	II	-do-	No 12	Good railings
11/39	II	-do-	Nos 14, 16 and 18	Rendered, pilasters, sundial
11/40	II	-do-	Nos 22, 24 and 26	Dutch gable
11/41	II*	High Street (S)	No 15 (Bank Cottage/Oak House)	Dutch gables, brick details
11/42	II	-do-	The Bell (17/19 High Street)	Dutch gable
11/43	II	Chapel Street (E)	The White House	Flint gable
11/44	II	-do-	No 6	Exposed timber frame
11/45	II	Chapel Street (W)	Nos 5, 7, 9 and 11	Blocked weavers' windows. good railings (No 5 has plastic windows)
11/46	II	-do-	Nos 13 and 15	Three storey, good railings

APPENDIX C : UNLISTED BUILDINGS OF INTEREST



The following buildings and boundary walls within the Conservation Area, are not included in the statutory List of Buildings of Special Architectural or Historic Interest compiled by the Secretary of State. Nevertheless they are considered by the District Council to be of sufficient interest, as townscape and/or in their own right, to warrant every effort being made to maintain their special character.

Some may merit being added to the List

Street	Building etc.	Comments
High St. (north)	Converted outbuilding E of The White House	
	Long outbuilding W of No.1 Chapel St.	
	Wall running N from outbuilding to rear of No. 8	
	Building to rear of curtilage of No. 12	
	Roofed carriage entrance between Nos. 10 & 12	
	Wall W of No. 18	
	2 outbuildings W and NW of No. 18	
High St. (south)	No. 20	
	Wall E of Old School House	
	Retaining wall NE & NW of Old School House	
	Retaining wall running W from Cooks Hill	Part is boundary of new houses
	1-storey building E of No. 9	
	Nos. 9, 11 and 13	Shop front & windows No 11 detract
	Outbuilding to rear of No. 21	
	Nos. 21, 23, 25, 27 and 29	Masonry paint on eaves cornice of No.29 and flat roof of No.31 to rear detract

CAWSTON CONSERVATION AREA

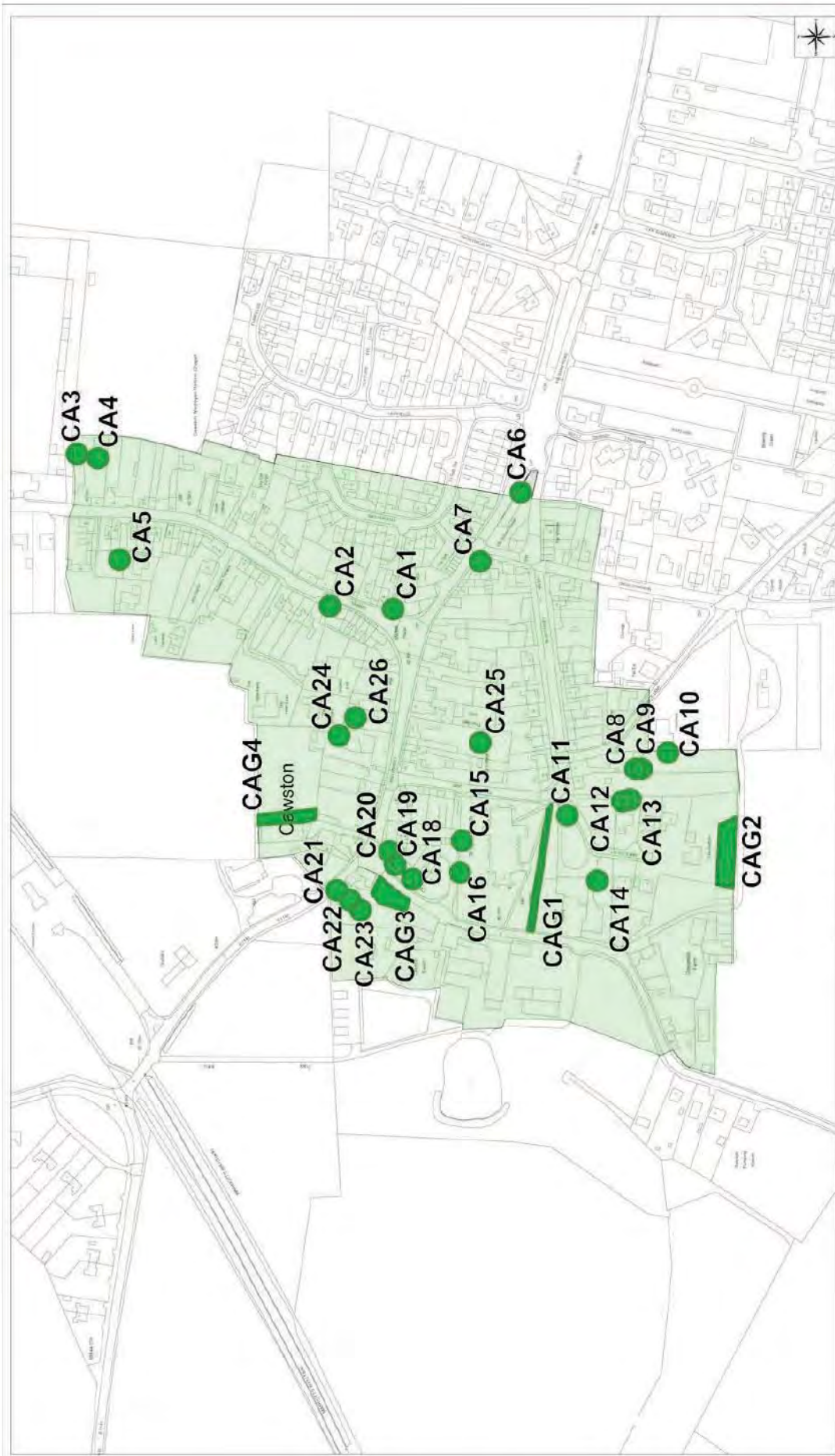
Chapel St. (west)	No. 1	Former pub. Undergoing repair,/ alteration
	No. 3 & 3A	
	Nos. 25, 27, 29 and 31	Victorian terrace.
	Wall north of No 33	
	House to rear of No. 39	
	Magnolia Cottage	
	The Old Workhouse and Workhouse Yard	Converted to houses
Chapel St. (east)	Wall in front of The White House	
	Front wall S of No. 4	
	No. 4	Faces S
	No. 10	Faces S
	No. 12	Cottage attached to SE of No. 10
	Front wall S of No. 10	
	No. 14 (Rose Cottage)	17c lobby-entrance house with axial stack. Front fence and gates inappropriate
	Wesleyan Chapel (1829)	Good facade
	No. 16	AT RISK (house, ancillary buildings and potentially attractive sizeable garden)
	Nos. 18 and 20	
	Nos. 24, and 24A	Rendered "keyed" window and doorway, plastic windows detract
	No. 26	Stone "keyed" window and doorway
New St. (north)	Old School House	Wood and concrete front fence detract
	Old School and wall to S	Good W elevation to Cooks Hill
	The Walnuts and annexe to west	Aluminium windows detract
New St. (south)	Heather Cottage	
	Nos. 3, 5 and 7	Victorian terrace
	No. 9 (The Old White House)	Fine doorway, but inappropriate door
	Nos. 11, 13 and 15	Terrace. Non-matching windows detract
	No 17	Inaccurate reproduction period doorcase
	Nos. 21 to 27	Terrace. Well modernised, but windows of No. 27 detract
	No. 29 (The Old Lamb) and E & W walls to rear	Good Georgian facade, with pilasters
	No. 31	Windows detract

CAWSTON CONSERVATION AREA

Goosepie Lane	<p>The Old Forge</p> <p>North, east and west walls of Churchyard</p> <p>Church Farm barn</p> <p>Church Farm other farm buildings</p> <p>Walls to Church Farm house and buildings</p> <p>Former stables etc to Old Rectory</p> <p>Wall south of former stables etc to Old Rectory</p> <p>Goosepie Farm house</p> <p>Building S of Goosepie Farm house</p> <p>House W of Goosepie Farm house</p> <p>Cottages approaching bend in road</p>	
Church Lane	Nos. 2 to 10	<p>Rendered window & door surrounds to Nos. 6, 8 & 10. No. 6 windows detract</p>
Norwich Rd.	<p>E side: pair of semi-detached houses</p> <p>W side: small cottage</p>	<p>Windows detract</p> <p>Large dormers detract</p>

APPENDIX D : SIGNIFICANT TREES NOT THE SUBJECT OF TREE PRESERVATION ORDERS

Tree Number	Species
CA1	Small-leaved Lime
CA2	European Beech
CA3	Sycamore
CA4	European Beech
CA5	Sycamore
CA6	Common Walnut
CA7	English Oak
CA8	Common Ash
CA9	Common Ash
CA10	English Oak
CA11	Horse Chestnut
CA12	Corsican Pine
CA13	Corsican Pine
CA14	Horse Chestnut
CA15	Common Ash
CA16	Scots Pine
CA18	Swedish Whitebeam
CA19	Rowan
CA20	Silver Birch
CA21	Copper Beech
CA22	Horse Chestnut
CA23	Horse Chestnut
CA24	Common Ash
CA25	Scots Pine
CA26	European Beech
CAG1	English Yew
CAG2	Common Ash
CAG3	Lawson Cypress, Western Red Cedar, Beech, Horse Chestnut, False Acacia
CAG4	Poplar, Horse Chestnut



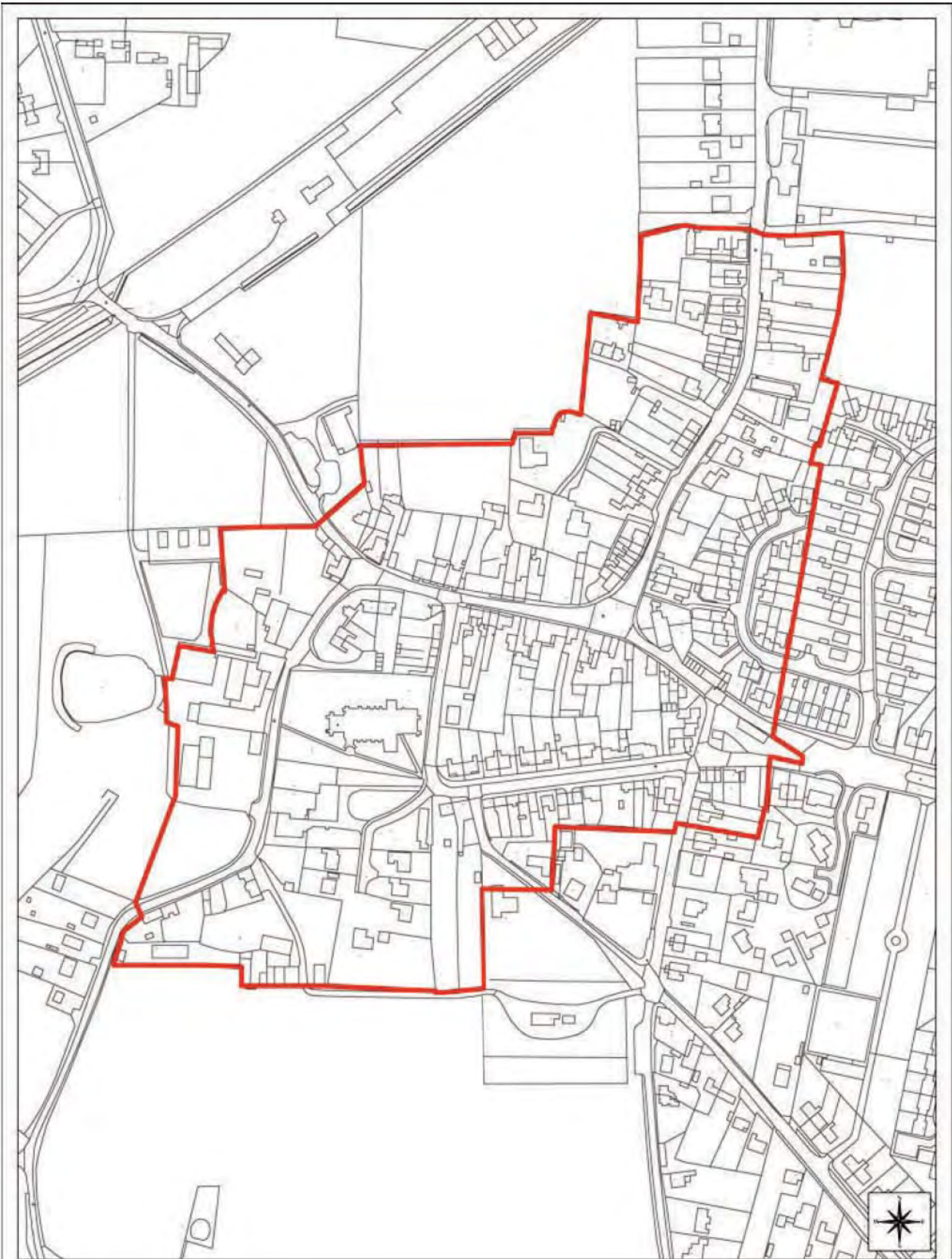
Scale: 1:2500

Cawston - Significant Trees

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APPENDIX E : CONSERVATION AREA

CAWSTON CONSERVATION AREA



CAWSTON CONSERVATION AREA

SCALE 1:3000



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