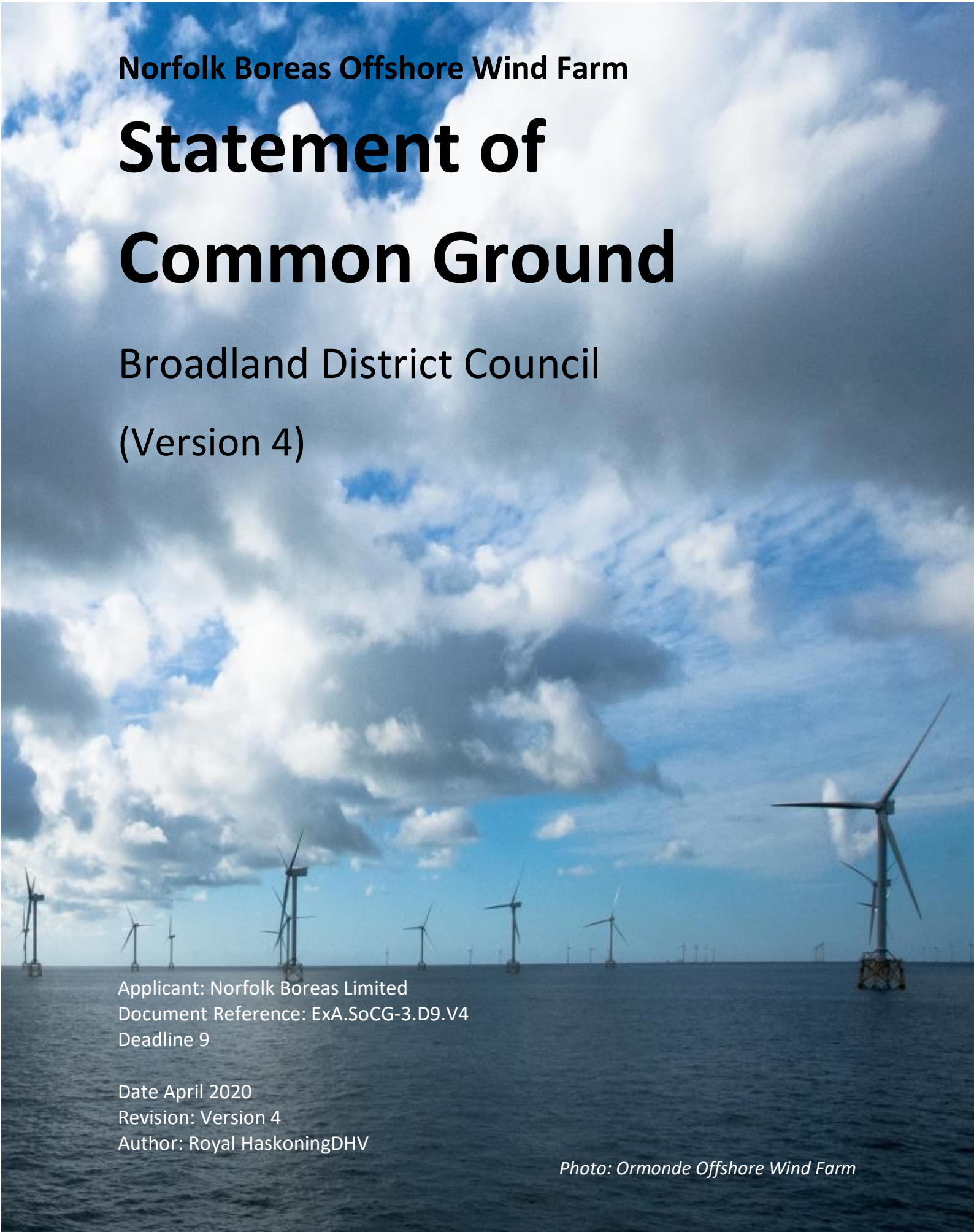
Norfolk Boreas Offshore Wind Farm

Statement of Common Ground

Broadland District Council

(Version 4)



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13/09/2019	01D	First draft for Broadland District Council Review	RA	CD/JL	JL
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07/04/2020	04D	Fourth draft for Deadline 8 submission	CD	JL	JL
29/04/2020	05D	Fifth draft for Deadline 9 submission	CD	JL	JL

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Glossary of Acronyms

CIA	Cumulative Impact Assessment
CoCP	Code of Construction Practice
DCO	Development Consent Order
EIA	Environmental Impact Assessment
ES	Environmental Statement
EPP	Evidence Plan Process
HIA	Health Impact Assessment
HDD	Horizontal Directional Drilling
HVAC	High Voltage Alternating Current
HVDC	High Voltage Direct Current
LVIA	Landscape and Visual Impact Assessment
OCoCP	Outline Code of Construction Practice
PEIR	Preliminary Environmental Information Report
SoCG	Statement of Common Ground

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 Broadland District Council and Norfolk Boreas Limited (hereafter the Applicant) to set out the areas of agreement, ongoing discussion 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 Broadland District Council with regard to the Norfolk Boreas DCO application (hereafter 'the Application'). The agreement logs (section 2) outline all topic specific matters agreed, not agreed and actions to resolve between Broadland District 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. Topics 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 (document reference 6.1.5 of the Application, APP-218).

5. The Norfolk Boreas DCO 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 Logs for each subject area, otherwise the agreement applies to both scenarios.

1.2 Consultation with Broadland District Council

7. This section briefly summarises the consultation that the Applicant has had with Broadland District 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 Broadland District 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, Broadland District Council where provided with the Preliminary Environmental Information Report (PEIR) for review.

10. Further to the statutory Section 42 consultation, consultation was undertaken with Broadland District Council through the Evidence Plan Process (EPP), for further details 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). Table 1 summarises the key consultation undertaken between the parties during the pre-application phase.

Table 1 Summary of pre-application consultation with Broadland District Council

Date	Contact Type	Topic
Pre-Application		
January / February 2018	Emails from the Applicant	Issue of Method Statements and Agreement Logs for relevant Environmental Impact Assessment (EIA) topics.
November 2018	Section 42 consultation	Broadland District Council provided with a copy of the PEIR.
January 2019	Emails from the Applicant	Offering any topic specific EPP meetings for relevant onshore topics, it was concluded none where required.
July 2019	Email from the Applicant	Providing early sight of relevant chapters of the Environmental Statement.

11. Consultation was also undertaken with Broadland District Council in respect of matters relevant to both projects by Norfolk Vanguard and has been taken into account by Norfolk Boreas. Details are provided in the Norfolk Vanguard Statement of Common Ground – Broadland District Council (Norfolk Vanguard examination document REP9-043).

1.2.2 Post-Application

12. The Applicant hosted a meeting with Local Authorities including Broadland District Council on the 23rd July 2019. The Applicant presented their suggested approach to SOCG's and the meeting provided an open forum for the attending authorities to provide their opinions.

13. Table 2 summarises the consultation undertaken between the parties during the post-application phase to date.

Table 2 Summary of post-application consultation with Broadland District Council

Date	Contact Type	Topic
Post-Application		
23 July 2019	Meeting	Project update and agreement on approach to SoCG's.
19 August 2019	Email from BDC	Providing copy of Section 56 response and Local Impact Report
13 September 2019	Email from Applicant	Providing copy of draft SoCG for comment
6 December 2019	Email from BDC	Providing updated position in SoCG
9 December 2019	Email from Applicant	Providing clarification in the Norfolk Boreas position on where information can be found for some of the concerns raised.
3 March 2020	Call	Discuss items still under discussion in SoCG
5 March 2020	Email from BDC	Providing updated position in SoCG
30 March 2020	Call	Discuss position on noise sensitive receptors.
3 April 2020	Email to Applicant	Providing copy of draft updated SoCG
6 April 2020	Email from BDC	Agreeing to updates to SoCG
20 April	Email from Applicant	Providing draft SoCG

14. This SoCG is a live document and will be updated throughout the examination process. This is version taking into account of information provided by Broadland District Council throughout the examination and captures the position of both parties at Deadline 9.

2 STATEMENT OF COMMON GROUND

15. Section 2.1 to section 2.7 below, outline the subject areas of relevance to Broadland District Council regarding the Application. Each section includes an Agreement Log highlighting the current position of both the Applicant and Broadland District Council with regard to each topic for agreement.

16. In line with Broadland District Council Local Impact Report, this SoCG does not consider the topics of traffic and transport (with the exception of disturbance effects associated with cumulative traffic), onshore ecology and ornithology (with the exception of hedgerow removal in relation to the historic landscape), onshore archaeology, water resources and flood risk with these matters deferred to Norfolk County Council. The SoCG focuses on ground conditions and contamination, noise and vibration, above ground cultural heritage, landscape and visual impacts, tourism and recreation and socio economics.

2.1 Project-wide considerations

17. Table 3 provides the final position for project-wide considerations of the Applicant and Broadland District Council.

Table 3 Agreement log – Project-wide considerations

Norfolk Boreas Limited position	Broadland District Council position	Final position
Policy and legislation		
The legislation adopted for Norfolk Boreas is relevant and interpreted appropriately.	Agreed	It is agreed by both parties that the legislation has been interpreted appropriately.
The principle of offshore renewable energy is supported, and will be permitted unless environmental impacts outweigh social, economic and environmental benefits.	Agreed	It is agreed that both parties support offshore renewable energy projects in principle.
Site selection		
The principles adopted in undertaking the site selection outlined in Chapter 4 Site Selection and Assessment of Alternatives (document reference 6.1.4 of the Application, APP-217) for Norfolk Boreas are appropriate and robust.	Agreed	It is agreed by both parties that the site selection principles are appropriate and robust.
The search areas used for the site selection process and the methodology used for refining these areas is considered robust and appropriate.	Agreed	It is agreed by both parties that the site selection process is robust and appropriate.

Norfolk Boreas Limited position	Broadland District Council position	Final position
Health Impact Assessment (HIA)		
The methodology adopted for the HIA, outlined in Chapter 27 Human Health (document reference 6.1.27 of the Application, APP-240) is appropriate and robust, and the outcome of the assessment is suitable.	Agreed	It is agreed by both parties that the methodology for HIA is appropriate and robust.

2.2 Ground Conditions and Contamination

18. The project has the potential to impact upon ground conditions and contamination. Chapter 19 Ground Conditions and Contamination of the ES (document reference 6.1.19, APP-232) provides an assessment of the significance of these impacts.

19. Details on the Evidence Plan Process for ground conditions and contamination can be found in Consultation Report Appendix 9.8 (document reference 5.1.9.8 of the Application, APP-045).

20. Table 4 outlines the topics for agreement with respect to ground conditions and contamination between Broadland District Council and the Applicant.

Table 4 Agreement log - Ground Conditions and Contamination

Topic	Norfolk Boreas Limited position	Broadland District Council position	Final position
Existing Environment	Sufficient survey data has been collected to undertake the assessment. It is considered that the Norfolk Vanguard survey data is valid for the Norfolk Boreas application due to the spatial overlapping of the two projects. Therefore, no further Phase 1 contaminated land surveys are required for the Norfolk Boreas assessment with regards to the ground conditions and contamination. Agreed as part of the Evidence Plan Process.	Agreed	It is agreed by both parties that sufficient data was collected to inform the assessment.
Assessment methodology	The impact assessment methodologies as outlined in section 19.4.1, ES Chapter 19 Ground Conditions and Contamination (APP-232) used for the Environmental Impact Assessment (EIA) represent 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 assessment methodology is appropriate.
	The worst case assumptions for Scenario 1 and Scenario 2, as outlined in Table 19.15 and 19.16 in ES Chapter 19 (APP-232) respectively, are considered appropriate.	Agreed	It is agreed by both parties that the worst case assumptions presented are appropriate.
Assessment findings	The assessment adequately characterises the existing environment in terms of ground conditions and contamination outlined in section 19.6 ES Chapter 19 (APP-232).	Agreed	It is agreed by both parties that the assessment adequately characterises the baseline environment.
	The assessment of potential impacts of both scenarios for construction, operation and decommissioning presented in section 19.7, ES Chapter 19 (APP-232) is appropriate and, assuming the inclusion of the embedded mitigation described, impacts on ground conditions and contamination are likely to be non-significant in EIA terms.	Agreed	It is agreed by both parties that impacts on ground conditions and contamination are likely to be non-significant.

Topic	Norfolk Boreas Limited position	Broadland District Council position	Final position
	The assessment of cumulative impacts of both scenarios presented in section 19.8, ES Chapter 19 (APP-232) are appropriate and, assuming the inclusion of the embedded mitigation described, cumulative impacts on ground conditions and contamination are likely to be non-significant in EIA terms.	Agreed	It is agreed by both parties that cumulative impacts on ground conditions and contamination are likely to be non-significant.
Approach to mitigation	The development of an approved Materials Management Plan (MMP) as included in the Outline Code of Construction Practice (OCoCP) (document reference 8.1, APP-692) and secured through Requirement 20 of the draft DCO is considered suitable to control impacts on Mineral Safeguarding Areas (MSA) as discussed in section 19.7.4.7, ES Chapter 19 (APP-232).	Agreed although approval of the MMP is for Norfolk County Council	It is agreed by both parties that an approved MMP is considered suitable to control impacts on Mineral Safeguarding Areas. Although it is Norfolk County Council who would approve an MMP.
	Given the potential impacts of the project, the mitigation proposed for both scenarios for ground conditions and contamination as outlined throughout Chapter 19 document reference 6.1.19 (APP-232) is considered appropriate and adequate.	Agreed	It is agreed by both parties that the mitigation proposed for ground conditions and contamination is considered appropriate and adequate.
Wording of Requirement(s)	The wording of Requirement 20 provided within the draft DCO (and supporting outline Code of Construction Practice) for the mitigation of impacts associated with ground conditions and contamination are considered appropriate and adequate.	Agreed	It is agreed by both parties that the wording of Requirement 20 is appropriate.

2.3 Noise, Vibration and Air Quality

21. The project has the potential to impact on noise, vibration and air quality receptors. Chapter 25 Noise and Vibration and 26 Air Quality of the ES, document reference 6.1.25 (APP-238) and 6.1.26 (APP-239) of the Application, provides assessments of the significance of these impacts.

22. Details on the Evidence Plan for noise, vibration and air quality can be found in Appendix 9.23 (document reference 5.1.9.23, APP-060) and Appendix 9.24 (document reference 5.1.9.24, APP-061).

23. Table 5 outlines the topics for agreement with respect to noise, vibration and air quality between Broadland District Council and the Applicant.

Table 5 Agreement log – Noise, Vibration and Air quality

Topic	Norfolk Boreas Limited position	Broadland District Council position	Final position
Existing Environment	Sufficient survey data (extent/duration) (section 25.6.2 of ES Chapter 25 (APP-238) and section 26.5.2 ES Chapter 26 (APP-239)) has been collected in appropriate locations to characterise the noise and air quality environment to undertake the assessment. The Noise and Vibration method statement (APP-060) contained an outline approach to the assessment methodology and through the identification of the nearest sensitive receptors was used to inform a strategic baseline noise survey. Each Local Planning Authority agreed that these measurement and assessment locations were representative based on the project design detailed at the time of submission. A Joint Position Statement on Noise Sensitive Receptors was submitted at Deadline 7 [REP7-034]. The position statement provides further information on the concerns raises by BDC regarding noise sensitive receptors and reflects the positions agreed with BDC. The position statement identified additional information to be included in the OCoCP. This additional information has been captured in the updated Section 9 of the OCoCP submitted at Deadline 8 (Version 4).	BDC content that in the circumstances that a receptor location in proximity to the onshore cable route that is not specifically assessed within the ES will have its impact assessed by reference to a comparable location a similar separation distance to the cable route.	Agreed
Assessment methodology	The impact assessment methodologies outlined in section 25.4 of ES Chapter 25 (APP-238) and section 26.4 of ES Chapter 26 (APP-239) used for the assessment represent an appropriate approach to assessing potential impacts.	As above	Agreed

Topic	Norfolk Boreas Limited position	Broadland District Council position	Final position
	British Standard BS8233:2014 (Guidance on sound insulation and noise reduction for buildings) states that the recognised national method for calculating road traffic noise levels is the Calculation for Road Traffic Noise (CRTN) augmented by additional guidance published by the Highways Agency (Design Manual for Roads and Bridges (DMRB), Volume 11, Section 3, Part 7). The Applicant's assessment of road traffic noise was undertaken using the approach set out in the CRTN using impact thresholds defined within DMRB (Volume 11, Section 3, Chapter 3, Table 3.1).	Agree that the CRTN, augmented by the additional guidance in the Highway Agency's DMRB is the only readily available method of assessment of road traffic noise available for use.	It is agreed by both parties that the CRTN, augmented by DMRB is the only readily available method of assessment of road traffic noise available for use
	The worst-case assumptions for noise and vibration in section 25.8.3 of ES Chapter 25 (APP-238) and those for air quality outlined in Tables 26.29 (Scenario 1) and Table 26.30 (Scenario 2) in ES Chapter 26 (APP-239) are considered appropriate. Traffic related assessments undertaken as presented in the following sections: 25.8.5.2 Road Traffic Noise Emissions Scenario 2 and 25.8.5.4 'Road Traffic Noise Emission Scenario. The worst case assumption with respect to traffic have been included in the noise impact assessment, as detailed in section 24.7.2 (Scenario 1) and 24.7.3 (Scenario 2) and of ES Chapter 24 Traffic and Transport.	The worst case scenario does include an assessment of noise and vibration as a result of construction traffic and is therefore appropriate as drafted.	Agreed

Topic	Norfolk Boreas Limited position	Broadland District Council position	Final position
	The assessments adequately characterise the baseline environment in terms of noise and vibration as outlined in section 25.5 of ES Chapter 25 (APP-238) and in terms of air quality section 26.6 of ES Chapter 26 (APP-239). The Noise and Vibration method statement (APP-060) contained an outline approach to the assessment methodology and through the identification of the nearest sensitive receptors was used to inform a strategic baseline noise survey. Each Local Planning Authority agreed that these measurement and assessment locations were representative based on the project design detailed at the time of submission. The OCoCP submitted at Deadline 8 (Version 4) has been updated to confirm that receptor locations identified in the ES will be used as indicators to identify potential receptor at similar distances from the cable route where enhanced measures may also be required. These locations and any required mitigation measures will be identified during the detailed design stage and included in the Construction Noise (and vibration) Management Plan, which will be submitted to and reviewed by the relevant planning authority as part of the final CoCP and discharge of DCO Requirement 20 (2).	BDC content that in the circumstances that a receptor location in proximity to the onshore cable route that is not specifically assessed within the ES will have its impact assessed by reference to a comparable location a similar separation distance to the cable route.	Agreed
Assessment findings	**The Street, Oulton** An assessment of cumulative noise, vibration and air quality effects associated with Norfolk Boreas and Hornsea Project Three along The Street at Oulton has been assessed and	BDC request that the physical alterations to Old Railway Gatehouse comprising new double glazing on elevations towards the road and a noise attenuation barrier to the garden form	The Applicant acknowledges that Broadland District Council request that the physical improvements to

Topic	Norfolk Boreas Limited position	Broadland District Council position	Final position
	included the Application (section 25.9 of ES Chapter 25 (APP-238) and section 26.8 of ES Chapter 26 (APP-239)). Further assessments specifically considering the noise, vibration and air quality effects of vehicles idling and accelerating in proximity to the Old Railway Gatehouse at Oulton was undertaken by Norfolk Vanguard and submitted during their examination at Deadline 7 (see Appendix 1). This included a cumulative effects with Hornsea Project Three. Mitigation was proposed in the form of a cap on the maximum number of daily HGV movements, a temporary speed restriction, regrading the road surface in proximity to the Old Railway Gatehouse, incorporation of passing places along The Street and priority warning signs in proximity to The Old Railway Gatehouse. With these mitigation measures in place residual impacts related to noise, vibration and air quality are not significant based on the agreed EIA criteria. These measures have been adopted by Norfolk Boreas and are captured within section 4.3.2 of the Outline Traffic Management Plan (OTMP) (document reference 8.8, Version 4) and secured through DCO Requirement 21. This combined suite of measures is consistent with those proposed by Hornsea Project Three and Norfolk Vanguard and will serve to mitigate the effects of either Norfolk Boreas or Hornsea Project Three alone, or both projects	part of the agreed package of measures to reduce the cumulative traffic impact of up to 3 onshore cable projects on the living conditions of the occupier. However, after clarification from the applicant no further assessment is required with regards to cumulative impacts. Agreed that the OTMP will provide sufficient controls for potential traffic related noise, vibration and air quality impacts.	Old Railway Gatehouse should be implemented to reduce cumulative traffic impact on the residents. The Applicant will look to engage with the resident to agree and implement the alterations when further details are available. However, the alterations are subject to the consent and agreement with the resident.

Topic	Norfolk Boreas Limited position	Broadland District Council position	Final position
	together. Whichever project progresses to construction first will introduce the measures and the second project will remove the mitigation at the end of construction. The scheme will be implemented under both scenarios, under Scenario 1 Norfolk Boreas will retain or reinstate the scheme from Norfolk Vanguard. Although the assessment has not identified the need for further mitigation, the Applicant acknowledges the potential for disturbance experienced by the residents of The Old Railway Gatehouse. As such, the Applicant has identified measures to further minimise perceived disturbance impacts comprising upgraded glazing on facades that face the traffic and a garden wall acting as a noise absorption barrier. Any proposed improvements will be subject to the consent of the property owner. These are offered as optional mitigation, to be taken forward for Norfolk Boreas Scenario 2 should the residents wish, however, they are not essential to mitigate the effects. However, the Applicant will seek to engage with resident to agree and implement the alterations where possible when further details are available. This approach is consistent with commitments also made by Hornsea Project Three and Norfolk Vanguard. For Norfolk Boreas Scenario 1 these mitigations would have been undertaken if required by Norfolk Vanguard. With the assessments of cumulative noise, vibration and air quality impacts along The Street at Oulton, the assessments		

Topic	Norfolk Boreas Limited position	Broadland District Council position	Final position
	findings are considered robust and with the inclusion of the identified mitigation measures, impacts have been reduced to non- significant.		
	B1145, Cawston An assessment of cumulative noise, vibration and air quality impacts associated with Norfolk Boreas and Hornsea Project Three along the B1145 through Cawston has been assessed (section 25.9 of ES Chapter 25 (APP-238) and section 26.8 of ES Chapter 26 (APP-239)). The assessment concluded that residual impacts related to noise, vibration and air quality are not significant. The traffic cap identified within the Application set out that cumulative HGV traffic must not exceed 260 daily HGV movements through Cawston, by reducing the Norfolk Boreas daily HGV movements to 133 (combined with the Hornsea Project Three peak of 127 daily HGV movements). However, the Applicant has sought to further optimise the construction programme to reduce the Norfolk Boreas Scenario peak traffic as low as practicable. As such, the Applicant is able to commit to a Norfolk Boreas peak of 112 (reduced from 133) daily HGV movements (in both the single project and cumulative scenario). These reductions do not change the findings of the CIA (the residual impacts remains minor adverse for noise impacts) but recognise the concerns of Cawston Parish Council and Broadland District Council and represent an effort to reduce these short-term peaks in construction traffic to as low as	The District Council recognise that the applicant has committed to further reduce the peak traffic levels in Cawston to Norfolk Boreas peak of 112 (reduced from 133) daily HGV movements (in both the single and cumulative scenario) BDC will review the additional assessment submitted at Deadline 8 to confirm whether the cumulative effect of the proposals will have a detrimental impact in respect of noise, vibration and air quality on the residents and businesses along High Street, Cawston. BDC appreciate confirmation that the Traffic Management Plan will need to be agreed with BDC. Clarification Note [REP8-028] under review by BDC.	Under discussion

Topic	Norfolk Boreas Limited position	Broadland District Council position	Final position
	practicable. This further commitment is captured in the Outline Traffic Management Plan. With the assessments of potential cumulative noise, vibration and air quality impacts along the B1145 through Cawston and the further commitment to reduce Norfolk Boreas peak daily HGV movements to 112, the assessments findings are considered robust, and with the inclusion of the identified mitigation measures, impacts have been reduced to non- significant. Mitigation is proposed for Link 34 (B1145), including the development of a Highways Intervention Scheme and is captured within section 4.3.1 of the Outline Traffic Management Plan (OTMP) (document reference 8.8, Version 4) and secured through DCO Requirement 21. Mitigation includes a cap on the maximum number of daily HGV movements, temporary speed restrictions, resurfacing the road, incorporation of formalised parking and parking restriction, and priority warning signs. Also includes prohibition of HGV deliveries during term time school pick up and drop off times (7:30am – 9:00am and 3:00pm – 4:00pm, Monday to Friday) and from 6pm to 9am (in line with parking restrictions). Norfolk County Council have indicated (during a meeting held on the 16th March 2020) that no further amendments were required to the HIS and there were no remaining technical objections. Following agreement on the HIS the Applicant has produced a Clarification Note [REP8-028],		

Topic	Norfolk Boreas Limited position	Broadland District Council position	Final position
	submitted at Deadline 8, which provides further information on the potential noise, vibration and air quality effects of the HIS which would serve to reduce traffic impacts through Cawston (Link 34, B1145). The findings of the road traffic noise assessment concluded that for Norfolk Boreas alone and cumulatively with HP3 impacts will be no greater than minor adverse, and therefore will have no significant effect upon the receptors in the vicinity of Link 34. The vibration assessment concluded that the predicted vibration impacts on humans are currently below the threshold level "Less than Low probability of adverse comment". The predicted vibration impacts on human receptors as a consequence of implementing the HIS are minor adverse, which is not significant in EIA terms. Predicted vibration impacts on buildings (including those designated as listed buildings) are below the threshold level for cosmetic damage at each of the four receptor locations (representative of listed and residential dwellings along link 34). Although it is noted the frequency of vibrational transfer events from HGV movements along Link 34 to each building during the scheme mobilisation hours will increase, the predicted impacts are minor adverse, which is not significant in EIA terms. The air quality assessment concluded that the pollutant concentrations were well below the respective annual mean air quality Objectives (40µg.m-3 for NO2 and PM10,		

Topic	Norfolk Boreas Limited position	Broadland District Council position	Final position
	25µg.m-3 for PM2.5) at all receptors identified. Therefore, impacts were assessed as not significant This combined suite of measures for Link 34 will serve to mitigate the effects of either Norfolk Boreas or Hornsea Three alone or both projects together. Whichever project progresses to construction first will introduce the measures and the final project will remove the mitigation at the end of construction. The scheme will be implemented under both scenarios, under Scenario 1 Norfolk Boreas will retain or reinstate the scheme from Norfolk Vanguard. In accordance with DCO Requirement 21 the final Traffic Management Plan will be approved the relevant planning authority.		
	The assessment of impacts of both scenarios for construction, operation and decommissioning presented in section 25.8 of ES Chapter 25 (APP-238) and section 26.7 of ES Chapter 26 (APP-239) is appropriate and, assuming the inclusion of the mitigation described, impacts from noise, vibration and air quality are non-significant in EIA terms.	Agreed	It is agreed by both parties that the assessment of impacts for construction, operation and decommissioning presented is appropriate

Topic	Norfolk Boreas Limited position	Broadland District Council position	Final position
	The assessment of cumulative impacts of both scenarios presented in section 25.9 of ES Chapter 25 (APP-238) and section 26.8 of ES Chapter 26 (APP-239), excluding the cumulative traffic associated with Norfolk Boreas and Hornsea Project Three (addressed separately above), is appropriate and, assuming the inclusion of the mitigation described, cumulative impacts from noise, vibration and air quality are non-significant in EIA terms.	Agreed	It is agreed by both parties that assessment of cumulative effects, other than cumulative traffic associated with Norfolk Boreas and Hornsea Project Three, is appropriate.
Approach to mitigation	The production of a Code of Construction Practice (CoCP), including a Construction Noise and Vibration Management Plan (CNMP) and Air Quality Management Plan (based on the Outline CoCP, document reference 8.1, APP-692) as secured under Requirement 20 of the draft DCO. This will provide sufficient controls for potential noise, vibration and air quality impacts.	Agreed in principle and the wording of the CoCP will need to be agreed with BDC.	Agreed.
	The production of a Traffic Management Plan (TMP) based on the Outline TMP (document reference 8.8, APP-699) will provide sufficient controls for potential traffic related noise, vibration and air quality impacts. Measures set out in the OTMP include delivery timing constraints (e.g. school arrival/departure times) which are set out in Table 3.47 and Table 4.3 of the OTMP.	Agreed in principle and the wording of the TMP will need to be agreed with BDC.	Agreed.
	The consented normal construction hours will be restricted to 07.00 to 19.00 on Mondays to Fridays and 07.00 to 13.00 on Saturdays, with no work taking place Sunday or bank holidays. Construction works outside of these hours may only be undertaken for essential continuous activities. When this is required permission must be agreed with the relevant	Construction work outside of the normal construction hours may be undertaken only for essential and specified non-intrusive activities which must be agreed with the LPA in advance of the activities taking place (Requirement 26)	It is agreed by both parties that construction work outside of the normal construction hours may be undertaken only for essential and specified non-intrusive activities which must be

Topic	Norfolk Boreas Limited position	Broadland District Council position	Final position
	planning authority in advance. This is set out in Requirement 26 of the draft DCO. These restrictions to the working hours will provide sufficient control for potential disturbance (noise and vibration) impacts associated with evening and weekend working.		agreed with the LPA in advance.
Wording of Requirement(s)	The wording of Requirements 20, 21 and 26 provided within the draft DCO (and supporting certified documents) for the mitigation of impacts associated with noise and vibration are considered appropriate and adequate.	Agreed	It is agreed by both parties that the wording of Requirements 20, 21 and 26 provided in the draft DCO for the mitigation of impacts associated with noise and vibration are considered appropriate and adequate.

2.4 Above Ground Cultural Heritage

24. The project has the potential to impact upon onshore archaeology and above ground 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.

25. Details on the Evidence Plan Process for onshore archaeology and above ground 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).

26. Table 6 outlines the topics for agreement with respect to onshore archaeology and cultural heritage between Broadland District Council and the Applicant.

Table 6 Agreement log - Above Ground Cultural Heritage

Topic	Norfolk Boreas Limited position	Broadland District Council position	Final position
Existing Environment	Sufficient survey data (extent/duration) as presented in section 28.5.2 of ES Chapter 28 (APP- 241) has been collected to inform the assessment.	Agreed in respect of above ground cultural heritage	It is agreed by both parties that sufficient data was collected to inform the assessment in respect of above ground cultural heritage.
Assessment methodology	The impact assessment methodologies used for the assessment (DMRB Volume 11, Section 3, Part 2: Cultural Heritage) as presented in section 28.4 of ES Chapter 28 (APP-241) provide an appropriate approach to assessing potential impacts of the project.	Agreed in respect of above ground cultural heritage	It is agreed by both parties that the assessment methodology in respect of above ground cultural heritage is appropriate.
	The worst-case assumptions for Scenario 1 and Scenario 2 as outlined in Table 28.17 and Table 28.18 respectively in ES Chapter 28 (APP-241) are considered appropriate.	Agreed in respect of above ground cultural heritage	It is agreed by both parties that the worst case assumptions in respect of above ground cultural heritage presented is appropriate.
	The assessment adequately characterises the baseline environment in terms of onshore archaeology and cultural heritage, including the setting of designated heritage assets (section 28.6 of ES Chapter 28, APP-241).	Agreed in respect of above ground cultural heritage	It is agreed by both parties that the baseline environment in respect of above ground cultural heritage presented is appropriate
Assessment findings	The assessment of impacts of both scenarios for construction, operation and decommissioning presented in section 28.7 of ES Chapter 28 (APP-241) is appropriate and, assuming the inclusion of the mitigation described and commitment to further evaluation post- consent, impacts on onshore archaeology and cultural heritage are likely to be non-significant in EIA terms.	Agreed in respect of above ground cultural heritage	It is agreed by both parties that impacts on above ground cultural heritage are likely to be non-significant in EIA terms

Topic	Norfolk Boreas Limited position	Broadland District Council position	Final position
	The assessment of cumulative impacts of both scenarios presented in 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 likely to be non-significant in EIA terms.	Agreed in respect of above ground cultural heritage	It is agreed by both parties that cumulative impacts on above ground cultural heritage are likely to be non-significant in EIA terms.
	A Heritage Assessment of the proposed scheme of mitigation proposed along the B1145 at Cawston, which is partially located within the Cawston Conservation Area, was undertaken by Norfolk Vanguard and submitted during their examination at Deadline 8 (see Appendix 2). The assessment identified that the majority of the measures are temporary in nature and whilst they will represent a temporary change to the character of the Conservation Area they will not lead to a permanent change to the character and appearance of the Conservation Area. Norfolk Boreas will adopt the same mitigation scheme and therefore the Heritage Assessment is also applicable to Norfolk Boreas. The Applicant will adopt the same measures to minimise any impacts upon the character of Cawston Conservation as agreed for Norfolk Vanguard, as outlined in the Norfolk Vanguard joint position statement with Broadland District Council (see Appendix 2). The Applicant has produced a Clarification Note [REP8-028], which provides further information on the potential noise, vibration and air quality effects of the Cawston Revised Highway Intervention Scheme (HIS), which is part of a package of mitigation measures that would serve to reduce traffic impacts through Cawston (Link 34, B1145). The revised HIS was detailed in the Outline Traffic Management Plan (OTMP) submitted at Deadline 5 [REP5-026].	BDC understand that the proposed traffic management mitigation proposals for Cawston village centre have not been agreed with NCC Highways and therefore it is not possible at this stage to confirm the implications for the Conservation Area and listed buildings that front High Street, Cawston. Clarification Note [REP8-028] under review by BDC.	Under discussion

Topic	Norfolk Boreas Limited position	Broadland District Council position	Final position
	The findings of the vibration assessment noted that although the frequency of vibrational transfer events from HGV movements along Link 34 to each building during the scheme during working hours (09:00 to 15:00 and 16:00 to 18:00) will occur more often, the predicted impacts are not significant. When using a conservative approach, using the highest measured level from the baseline survey at each of the four receptor locations (representative of listed and residential dwellings along Link 34 and including a listed building on the High Street), the predicted vibration impacts (PPV) on buildings, including those designated as listed buildings, are below the threshold level for cosmetic damage (detailed in Table 3.2 of the Clarification Note [REP8-028]). As the predicted vibration impacts on buildings, including those designated as listed buildings, are below the threshold level for cosmetic damage no further mitigation is required.		
Wording of Requirement(s)	The wording of Requirement 23 provided within the draft DCO (and supporting certified documents) for the mitigation of impacts to above ground cultural heritage are considered appropriate and adequate.	Agreed in respect of above ground cultural heritage	It is agreed by both parties that the wording of Requirement 23 is appropriate as it relates to above ground cultural heritage.

2.5 Landscape and Visual Impact Assessment

27. The project has the potential to impact upon landscape and visual receptors. Chapter 29 Landscape and Visual Impact Assessment (LVIA) of the ES (document reference 6.1.29, APP-242) provides an assessment of the significance of these impacts.

28. Further details on the Evidence Plan Process for LVIA can be found in Consultation Report Appendix 9.19 (document reference 5.1.9.19 of the Application, APP-056).

29. Table 7 outlines the topics for agreement with respect to LVIA between Broadland District Council and the Applicant.

Table 7 Agreement log - Landscape and Visual Assessment

Topic	Norfolk Boreas Limited position	Broadland District Council position	Final position
Existing Environment	Sufficient desk-based and survey based data (extent/duration) has been collected to inform the assessment. Agreed as part of the Evidence Plan Process.	Agreed	It is agreed by both parties that sufficient survey data has been collected to undertake the assessment.
	The methodology (section 29.4 of ES Chapter 29, APP-242) and viewpoints (section 29.6.4, ES Chapter 29, APP-242) selected are representative and appropriate. Agreed as part of the Evidence Plan Process.	Agreed	It is agreed by both parties that representative and appropriate viewpoints have been collected to undertake the assessment.
Assessment methodology	The list of potential LVIA effects assessed in section 29.7 of ES Chapter 29 (APP-242) is appropriate. Agreed as part of the Evidence Plan Process.	Agreed	It is agreed by both parties that the potential LVIA effects assessed are appropriate.
	All surveyed hedgerows have been assessed for their ecological value and historic landscape value, in accordance with the Hedgerow Regulations 1997. Potential impacts to hedgerows are discussed in detail within Chapter 22 Onshore Ecology (APP-235) and Chapter 29 Landscape and Visual Impact Assessment (APP-242). The Hedgerow Regulations are referenced in section 22.2.1.7 of ES Chapter 22 (APP-235) and details of the Hedgerow survey in presented in section 2.6.3.4. For those hedgerows located within unsurveyed areas of the onshore project area, these will be surveyed post-consent. An assessment of all hedgerows against the criteria in the Hedgerow Regulations 1997 will be presented within the Ecological Management Plan submitted to discharge Requirement 24 of the DCO.	It is noted that the hedgerows have been assessed in accordance with the Hedgerow Regulations 1997 and that those hedgerows located within the un-surveyed areas of the onshore project area will be surveyed post consent.	Agreed.

Topic	Norfolk Boreas Limited position	Broadland District Council position	Final position
	The impact assessment methodologies, including for cumulative impacts (section 29.4 of ES Chapter 29, APP-242), are appropriate for assessing potential impacts. Agreed as part of the Evidence Plan Process. Section 29.8.1 of ES Chapter 29 (APP-242) sets out a detailed assessment of the potential cumulative impacts of the onshore cable route in combination with the Hornsea Project Three onshore cable route. This include the crossing points at Reepham and the construction compounds at Oulton.	The assessment must include the landscape and visual impact of the construction compound at Oulton and the respective cable crossing point north of Reepham	Additional clarification provided and Agreed.
	Visual impacts associated with the cable installation and associated works such as compounds (table 29.10, 29.11 and 29.12 in ES Chapter 29, APP-242) are limited to the construction phase and an assessment of operational impacts was not required.	Agreed	Additional clarification provided and agreed.
	The worst-case assumptions for Scenario 1 and Scenario 2 as outlined in Tables 29.8 and Table 29.9 respectively in ES Chapter 29 (APP-242) are considered appropriate.	Agreed	It is agreed by both parties that the worst case assumptions presented in the assessment are appropriate.
Assessment findings	The assessment adequately characterises the visual baseline (section 29.6 of ES Chapter 29, APP-242).	Agreed	It is agreed by both parties that the baseline is suitably established.

Topic	Norfolk Boreas Limited position	Broadland District Council position	Final position
	The assessment of effects of both scenarios for construction, operation and decommissioning presented in section 29.7 of ES Chapter 29 (APP-242) is appropriate and adheres to the agreed methodology.	Agreed	It is agreed by both parties that the assessment of effects is appropriate and adheres to the agreed methodology.
	The assessment of cumulative effects (section 29.8 ES Chapter 29 LVIA, APP-242) (including the point where Norfolk Boreas (Scenario 2 only) and Hornsea Project Three onshore cable routes overlap, (Table 29.17 of ES Chapter 29)) is appropriate and, assuming the inclusion of the mitigation described, cumulative effects would be mitigated over time.	Agreed	It is agreed by both parties that the assessment of cumulative effects is appropriate, and that these would be mitigated over time.
Approach to mitigation	The mitigation proposed for both scenarios for LVIA (section 29.7 ES Chapter 29 (APP-242)) are considered appropriate and adequate.	Agreed	It is agreed by both parties that the mitigation proposed for LVIA are considered appropriate and adequate.
	All mitigation measures required for both scenarios (including the temporary removal of any hedgerows within Broadland District) are outlined in sufficient detail within the Outline Landscape and Environmental Management Strategy (OLEMS) (document reference 8.7 of the Application, APP-698).	Agreed	It is agreed by both parties that the mitigation measures required are outlined in sufficient detail within the OLEMS
Wording of Requirement(s)	The wording of Requirements 18 and 19 provided within the draft DCO (and supporting certified documents) for the mitigation of impacts in the LVIA are considered appropriate and adequate.	Agreed in respect of 18; aware that NNDC will require a 10 yr landscape maintenance period instead of 5 yrs in respect of 19	It is agreed by both parties that the wording of Requirement 18 is considered appropriate and adequate.

Topic	Norfolk Boreas Limited position	Broadland District Council position	Final position
	Important hedgerows are listed in Schedule 14 of the draft DCO and the Important Hedgerows Plan (document reference 2.11, APP-018).	Agreed	It is agreed by both parties that important hedgerows are listed in Schedule 13 of the draft DCO

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, APP-243) provides an assessment of the significance of these impacts.

31. Details on the Evidence Plan Process for tourism and recreation can be found in Appendix 9.20 of the Consultation Report (document reference 5.1.9.20 of the Application, APP-057).

32. Table 8 outlines the topics for agreement with respect to tourism, recreation and socio-economics between Broadland District Council and the Applicant.

Table 8 Agreement log - Tourism and Recreation

Topic	Norfolk Boreas Limited position	Broadland District Council position	Final position
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 the datasets presented are appropriate to inform the assessment.
Assessment methodology	The impact assessment methodologies used (section 30.4 of ES Chapter 30, APP-243) provide an appropriate approach to assessing potential impacts of the project.	Agreed	It is agreed by both parties that the assessment methodology is 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 in ES Chapter 30 (APP-243) are considered appropriate.	Agreed	It is agreed by both parties that the worst case assumptions presented are 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 assessment adequately characterises the baseline environment.

Topic	Norfolk Boreas Limited position	Broadland District Council position	Final position
Assessment findings	The assessment of effects of both scenarios for construction, operation and decommissioning presented in sections 30.7 in ES Chapter 30 (APP-243) is appropriate and, assuming the inclusion of the mitigation described, impacts on tourism and recreation are likely to be non-significant in EIA terms.	Agreed	It is agreed by both parties that the assessment of effects is appropriate and, assuming the inclusion of the mitigation described, impacts on tourism and recreation are likely to be non-significant in EIA terms.
	The assessment of cumulative effects of both scenarios as outlined in section 30.8 of ES Chapter 30 (APP-243) is appropriate and, assuming the inclusion of the mitigation described, cumulative impacts on tourism and recreation are likely to be non-significant in EIA terms.	Agreed	It is agreed by both parties that the assessment of cumulative effects is appropriate and, assuming the inclusion of the mitigation described, impacts on tourism and recreation are likely to be non-significant in EIA terms.
Approach to mitigation	Given the impacts of the project, the mitigation proposed for tourism and recreation in sections 30.7 in ES Chapter 30 (APP-243) are considered appropriate and adequate.	Agreed	It is agreed by both parties that the mitigation proposed for tourism and recreation are considered appropriate and adequate.

Topic	Norfolk Boreas Limited position	Broadland District Council position	Final position
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 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.

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, APP-244), provides an assessment of the significance of these impacts.

34. Details on the Evidence Plan Process 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 outlines the topics for agreement with respect to tourism, recreation and socio-economics between Broadland District Council and the Applicant.

Table 9 Agreement log - Socio-economics

Topic	Norfolk Boreas Limited position	Broadland District Council position	Final position
Existing Environment	Appropriate datasets have been presented to inform the assessments outlined in Table 31.7 of ES Chapter 31 (APP-244).	Agreed	It is agreed by both parties that the datasets presented are appropriate to inform the assessment.
Assessment methodology	The impact assessment methodologies used (section 31.4 of ES Chapter 31, APP-244) provide an appropriate approach to assessing potential impacts of the project.	Table 31.5 should include the adopted Joint Core Strategy and the adopted Broadland Development Management DPD under District and County Council policies.	It is agreed that Table 31.4 should reference the Joint Core Strategy (Broadland, Norwich and South Norfolk) and Broadland Development Management DPD. However, inclusion would not change the results of the assessment.
	The worst-case assumptions for Scenario 1 and Scenario 2 as outlined in section 31.7.4.1 and section 31.7.4.2 in ES Chapter 31 (APP-244) are considered appropriate.	Agreed	It is agreed by both parties that the worst case assumptions presented are 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 assessment adequately characterises the baseline environment.
Assessment findings	The assessment of effects of both scenarios for construction, operation and decommissioning presented in section 31.7 in ES Chapter 31 (APP-244) is appropriate and, assuming the inclusion of the mitigation described, impacts on socio-economics are likely to be non-significant in EIA terms.	Agreed	It is agreed by both parties that the assessment of effects is appropriate and, assuming the inclusion of the mitigation described, impacts on socio-economics are likely to be non-significant in EIA terms.

Topic	Norfolk Boreas Limited position	Broadland District Council position	Final position
	The assessment of cumulative effects of both scenarios as outlined in section 31.8 of ES Chapter 31 (APP-244) is appropriate and, assuming the inclusion of the mitigation described, cumulative impacts on socio-economics are likely to be non-significant in EIA terms.	Agreed	It is agreed by both parties that the assessment of cumulative effects is appropriate and, assuming the inclusion of the mitigation described, impacts on socio-economics are likely to be non-significant in EIA terms.
Approach to mitigation	Given the impacts of the project, the mitigation proposed for socio- economics section 31.7 in ES Chapter 31 (APP-244) are considered appropriate and adequate.	Agreed	It is agreed by both parties that the mitigation proposed for socio-economics are considered appropriate and adequate.
Wording of Requirement(s)	The wording of the Requirements provided within the draft DCO (and supporting certified documents) for the mitigation of impacts to socio- economics are considered appropriate and adequate.	Agreed	It is agreed by both parties that the wording of the Requirements provided within the draft DCO (and supporting certified documents) for the mitigation of impacts to socio-economics are considered appropriate and adequate.

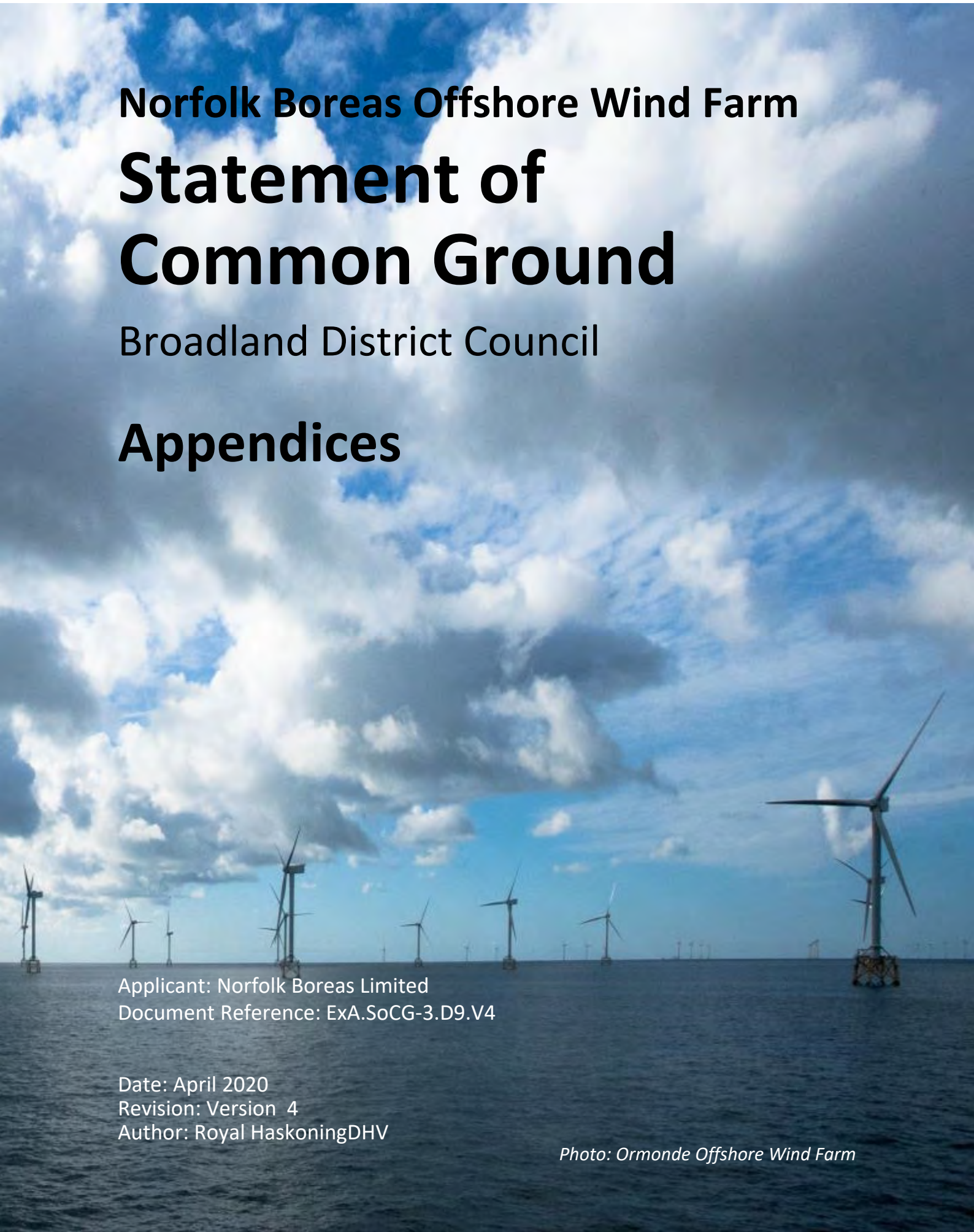
The undersigned agree to the provisions within this SOCG

Printed Name	Matthew Rooke
Position	Area Planning Manager
On behalf of	Broadland District Council
Date	29 April 2020

Printed Name	Jake Laws
Position	Norfolk Boreas Consents Manager
On behalf of	Norfolk Boreas Limited (the Applicant)
Date	29th April 2020

Royal HaskoningDHV
Enhancing Society Together

VATTENFALL



Norfolk Boreas Offshore Wind Farm

Statement of Common Ground

Broadland District Council

Appendices

Applicant: Norfolk Boreas Limited
Document Reference: ExA.SoCG-3.D9.V4

Date: April 2020
Revision: Version 4
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 baseline[1] 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 $L_{Aeq,16hr}$ (2022 Norfolk Vanguard Baseline + Growth) no mitigation	Predicted $L_{Aeq,16hr}$ (2022 Baseline + Growth + Cumulative traffic) including mitigation	Predicted $L_{Aeq,16hr}$ (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	

6. 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.

7. 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

	2022 Baseline + Growth (18hr AAWT)		2022 Baseline + Growth + Development (18hr AAWT)		% Change	
Link No.	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.					

8. Table 2.4 shows the predicted relative decibel (dB) change for Norfolk Vanguard construction traffic using the $L_{A10,18h}$ 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 $LA_{10,18hr}$	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

	2022 Baseline + Growth (18hr AAWT)		2022 Baseline + Growth + Cumulative + Development (18hr AAWT)		% Change	
Link No.	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					

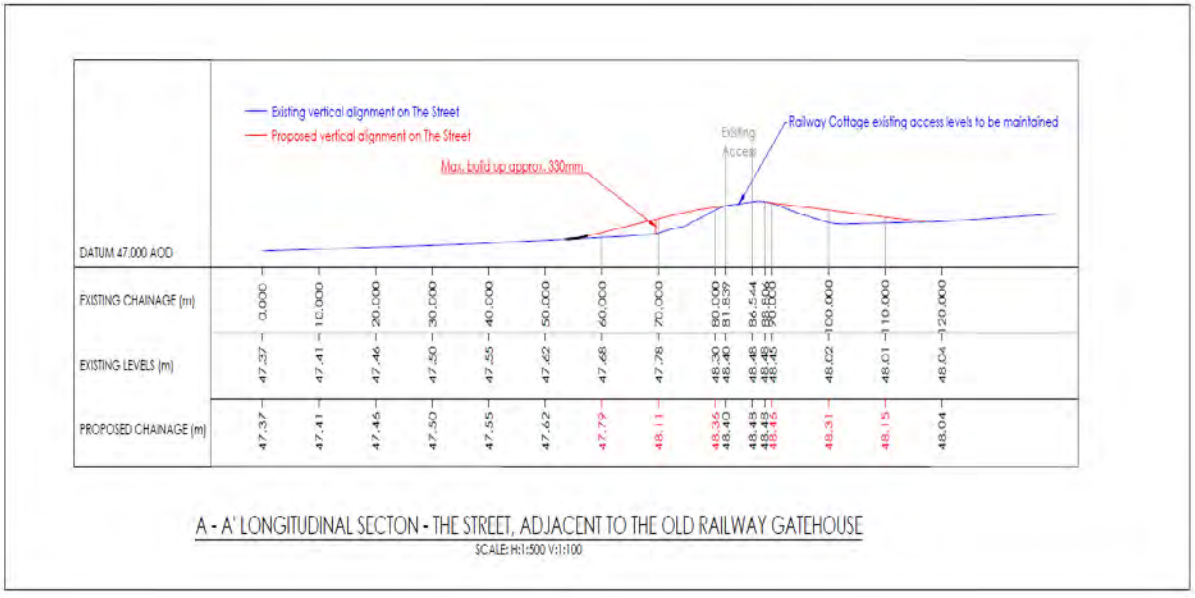
15. A difference of +0.5dB $L_{A10,18h}$ is evident between the posted speed limit for Link 68 in Table 2.7 and the measured speed data in Table 2.8 for the cumulative scenario. The impact is moderate adverse significance in both instances; therefore, the conclusions presented in the CIA submitted at 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



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 - *Construction Traffic Noise and Vibration Assessment at The Old Railway Gatehouse*				
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 - *Construction Traffic Noise and Vibration Assessment at The Old Railway Gatehouse*						
	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 $L_{Aeq,16hr}$ (2022 Norfolk Vanguard Baseline + Growth) no mitigation	Predicted $L_{Aeq,16hr}$ (2022 Baseline + Growth + Cumulative traffic) including mitigation	Predicted $L_{Aeq,16hr}$ (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.

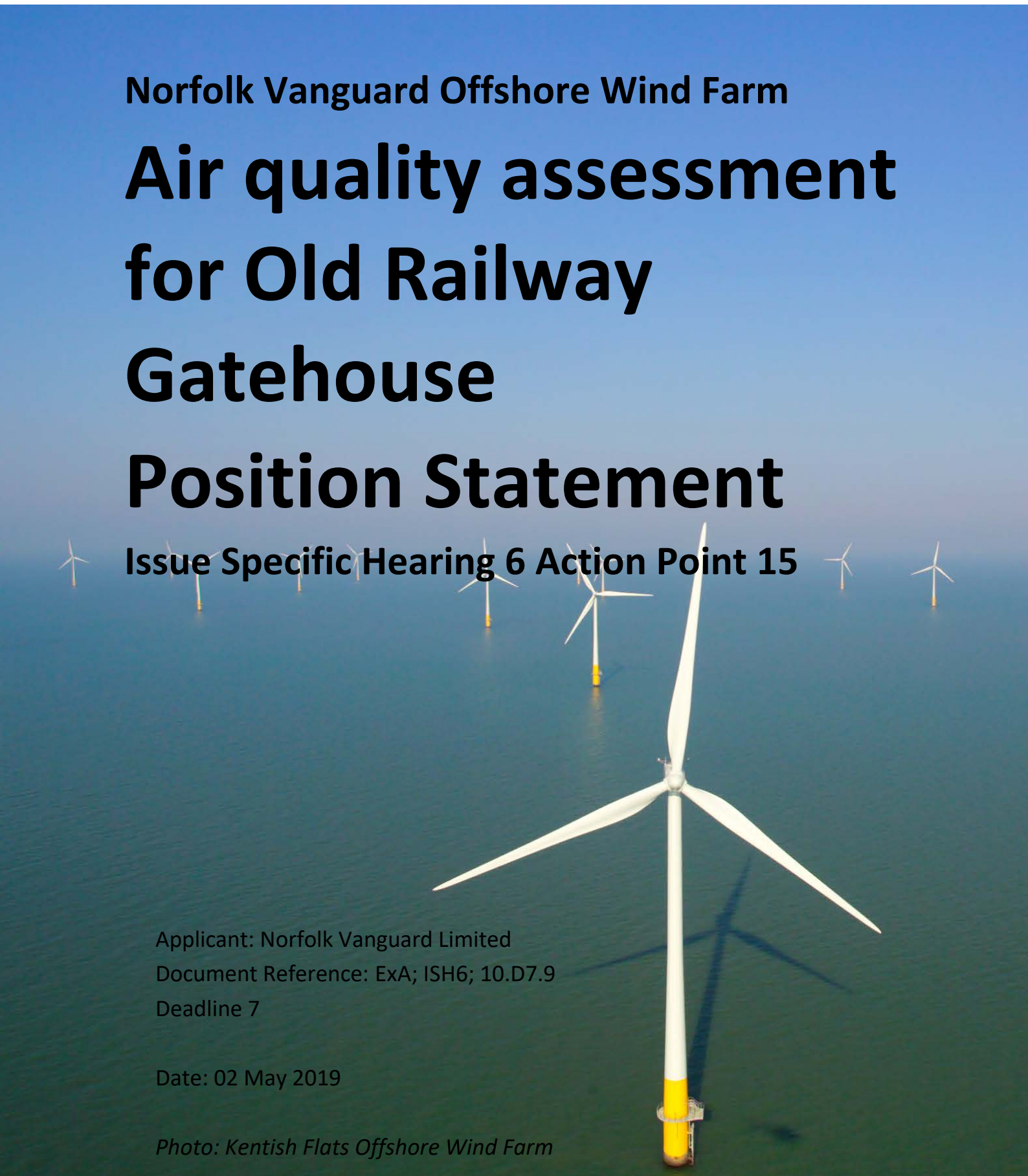
References

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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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:

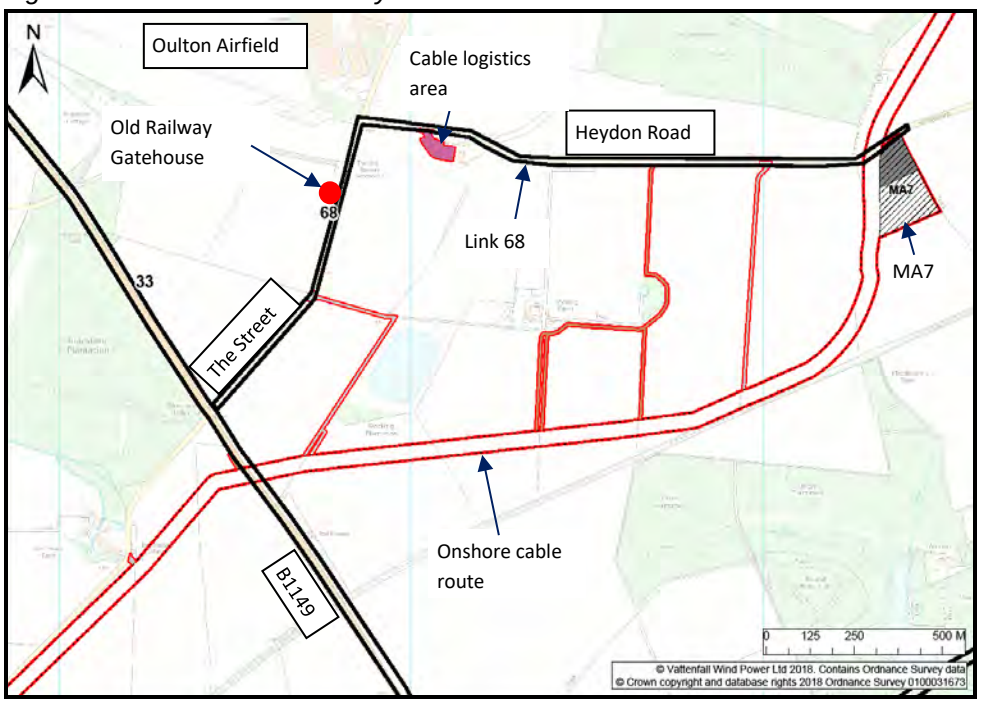
    - Air quality assessment at the Old Railway Gatehouse along Link 68 (Action Point 15).

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 NO_2 and PM_{10} from the biomass boiler. These contributions have been added to the modelled road contributions to provide the combined cumulative increase in NO_2 and PM_{10} 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 NO_2 and PM_{10} 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 NO_2, PM_{10}, 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 NO_2 concentrations at the Old Railway Gatehouse

Annual Mean NO_2 Concentration					
Without Norfolk Vanguard and Hornsea Project 3 ($\mu g/m^3$)	With Norfolk Vanguard and Hornsea Project 3 ($\mu g/m^3$)	Change ($\mu g/m^3$)	Annual mean air quality Objective ($\mu g/m^3$)	Change as % of Objective	Impact Significance
9.06	9.57	0.51	40	1.28	Negligible

Table 4 – Cumulative PM_{10} concentrations at the Old Railway Gatehouse

Annual Mean PM_{10} Concentration					
Without Norfolk Vanguard and Hornsea Project 3 ($\mu g/m^3$)	With Norfolk Vanguard and Hornsea Project 3 ($\mu g/m^3$)	Change ($\mu g/m^3$)	Annual mean air quality Objective ($\mu g/m^3$)	Change as % of Objective	Impact Significance
14.25	14.30	0.05	40	0.13	Negligible

Table 5 – Cumulative PM2.5 concentrations at the Old Railway Gatehouse

Annual Mean $PM_{2.5}$ Concentration					
Without Norfolk Vanguard and Hornsea Project 3 (µg/m³)	**With Norfolk Vanguard and Hornsea Project 3 (µg/m³)**	**Change (µg/m³)**	**Annual mean air quality Objective (µg/m³)**	**Change as % of Objective**	**Impact Significance**
9.24	9.27	0.03	25	0.12	Negligible

21. The predicted concentrations for NO_2, PM_{10} 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 NO_2, PM_{10}, 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 NO_2 concentrations at the Old Railway Gatehouse

Annual Mean NO_2 Concentration						
% vehicles queuing	**Without NV and HP3 (µg/m³)**	**With NV and HP3 + other activities (µg/m³)**	**Change (µg/m³)**	**Annual mean air quality Objective (µg/m³)**	**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 PM_{10} concentrations at the Old Railway Gatehouse

Annual Mean PM_{10} Concentration						
% vehicles queuing	**Without NV and HP3 (µg/m³)**	**With NV and HP3 + other activities (µg/m³)**	**Change (µg/m³)**	**Annual mean air quality Objective (µg/m³)**	**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 PM2.5 concentrations at the Old Railway Gatehouse

Annual Mean $PM_{2.5}$ Concentration						
% vehicles queuing	**Without NV and HP3 (µg/m³)**	**With NV and HP3 + other activities (µg/m³)**	**Change (µg/m³)**	**Annual mean air quality Objective (µg/m³)**	**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 NO_2, PM_{10} 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

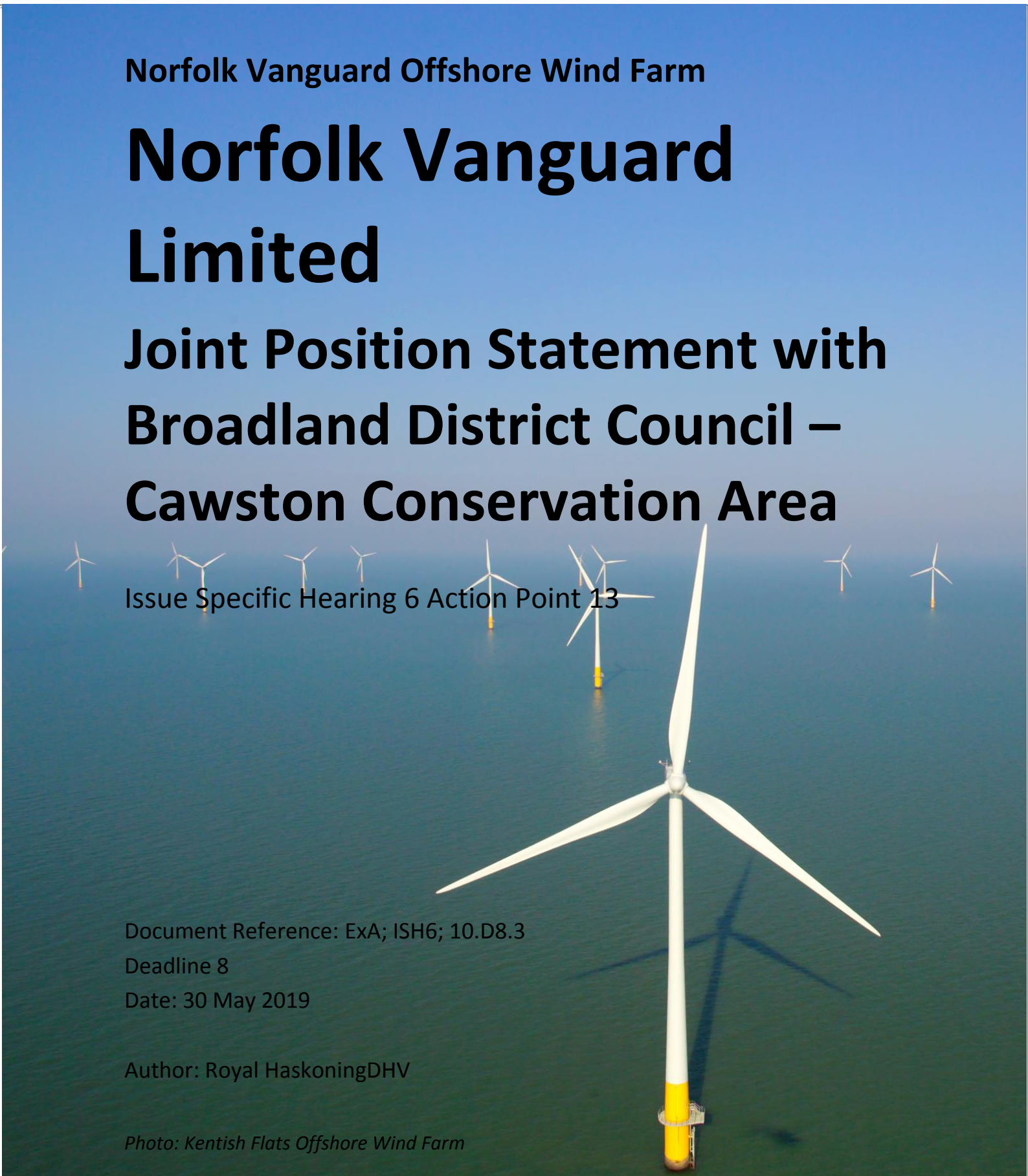
Appendix 2 Norfolk Vanguard Joint Position Statement with Broadland District Council – Cawston Conservation Area

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 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

Royal HaskoningDHV
Enhancing Society Together

VATTENFALL

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

Table of Contents

Figures

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.

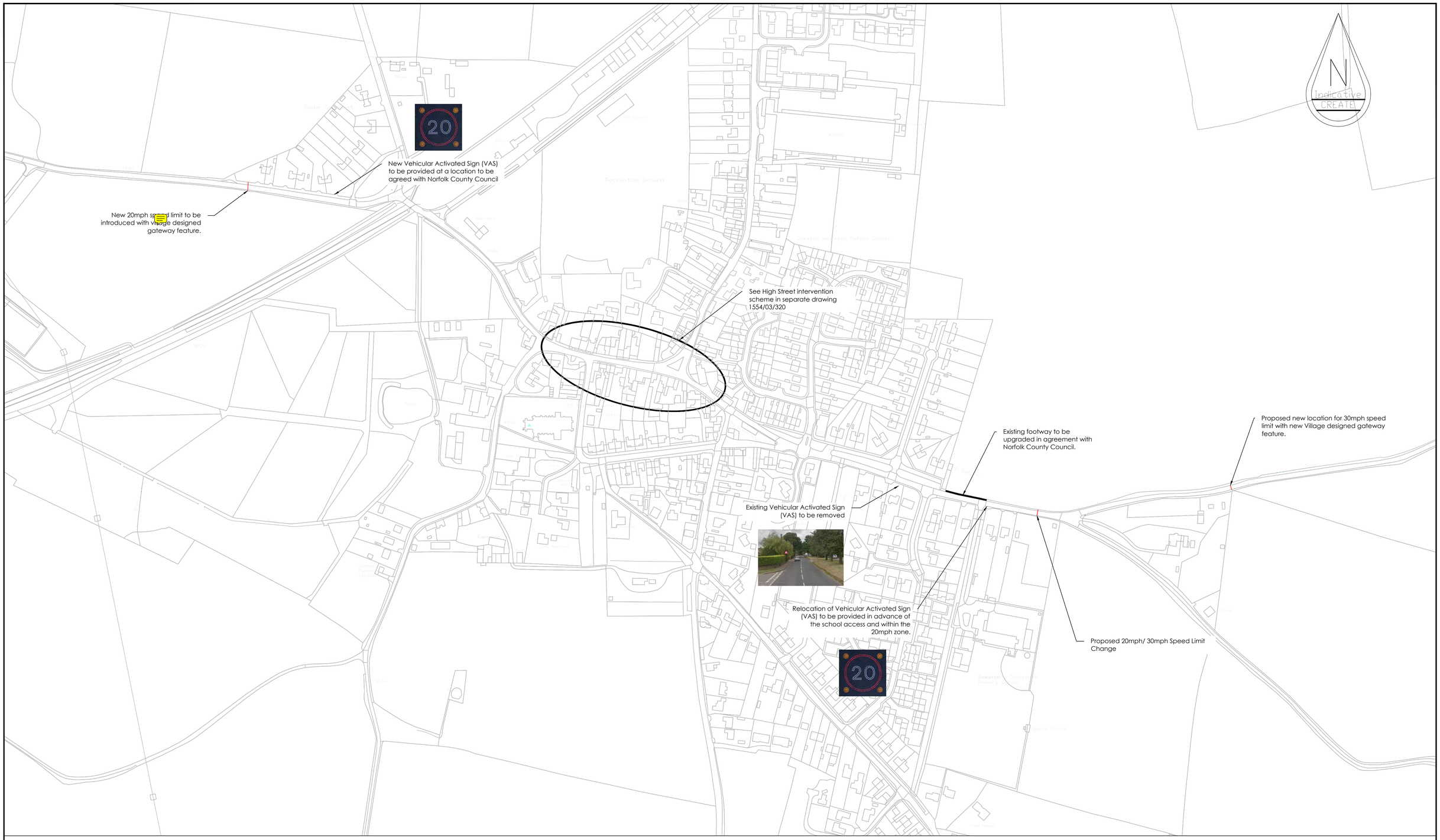
58. The pedestrian footway widening and road resurfacing would be permanent measures and would remain in place beyond the completion of construction works. These measures offer longer-term benefits and link to the enhancement opportunities identified within the CACA (2009), i.e. improving pedestrian 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 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



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.

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): 1:1,000	DESIGNED: EC	DRAWN: EC
DRAWING TITLE: APPROACH DRIVER AWARENESS WORKS ON B1145 CAWSTON		CHECKED: PZ	APPROVED: PZ
	JOB No: 1554		
CLIENT: ORSTED	DRAWING No: 03/322	REVISION: C	

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DO NOT SCALE ORIGINAL SHEET SIZE - A1 Landscape

20mph Speed Restriction.

See Plan 1554_03_322 to confirm the full area

Single way priority working signage to be agreed with NCC.

Footway to be widened providing improved pedestrian amenity.

Proposed 20 mph Zone sign. Exact location to be agreed with NCC.

Proposed End of 20 mph Zone sign. Exact location to be agreed with NCC.

Eastbound bus stop to be relocated. Provision of bus shelter to be proposed in agreement with NCC.

Proposed End of 20 mph Zone sign. Exact location to be agreed with NCC.

Proposed 20 mph Zone sign. Exact location to be agreed with NCC.

Existing parking to remain.

Footway to be widened to a minimum 1.2m to provide improved pedestrian amenity.

Footway to be widened to a minimum 1.2m to provide improved pedestrian amenity.

Footway to be widening along High Street frontage, where necessary, to provide minimum footway of 1.2m.

Single way priority working. signage to be agreed with NCC.

Existing Bus Stop to be relocated to assist movement and reduce vehicle conflict.

Clear sightline to be provided at all times to restrict traffic conflict.

Existing vegetation to be cut back within highway land and verge clearance completed.

WIDER LOCATION OF SCHEME
Not to Scale

CAWSTON HIGH STREET - INTERVENTION SCHEME
Scale 1:500

VEHICLE LIBRARY:

Max Legal Articulated Vehicle (16.5m)

Overall Length	16.500m
Overall Width	2.600m
Overall Body Height	4.232m
Min Body Ground Clearance	0.356m
Max Track Width	2.500m
Lock to Lock Time	6.00s
Kerb to Kerb Turning Radius	6.870m

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.

KEY:

SURFACE TEXTURE CHANGE TO DEFINE ON STREET PARKING AREA

ROAD SURFACE MAINTENANCE WORKS TO BE COMPLETED TO HIGH STREET IN AGREEMENT WITH NCC

DRAFT

THE VEHICLE TRACKS SHOWN WERE PRODUCED USING AUTOTRACK VERSION 11.00a AND ARE INDICATIVE OF THE MOVEMENTS ACHIEVABLE FROM THE VEHICLE TYPE SHOWN. NO GUARANTEE IS GIVEN THAT THE TRACK RUNS SHOWN ARE ACTUALLY ACHIEVABLE BY ALL INDIVIDUAL MAKES AND MODELS OF SIMILAR TYPES VEHICLES USING THE ILLUSTRATED ROUTES.

REV	DATE	AMENDMENT DETAILS	DRAWN	APPROVED
C	22.03.19	SURFACE TEXTURE CHANGE FOLLOWING CONSULTATION WITH NCC 20.3.19	AF	PZ
B	13.03.19	SCHEME AMENDED	AF	PZ
A	11.03.19	SWEPT PATH AMENDED	AF	PZ

PROJECT: HORNSEA 3 OFF-SHORE WIND FARM	DATE: 07.03.19	DRAWING STATUS: INFORMATION	
	SCALE(S): AS SHOWN	DESIGNED: AF	DRAWN: AF
		CHECKED: PZ	APPROVED: PZ
DRAWING TITLE: B1145 - CENTRE OF CAWSTON MITIGATION SCHEME HGV - HGV PASSING POINTS	JOB No: 1554		
CLIENT: ORSTED	DRAWING No: 03/332	REVISION: C	

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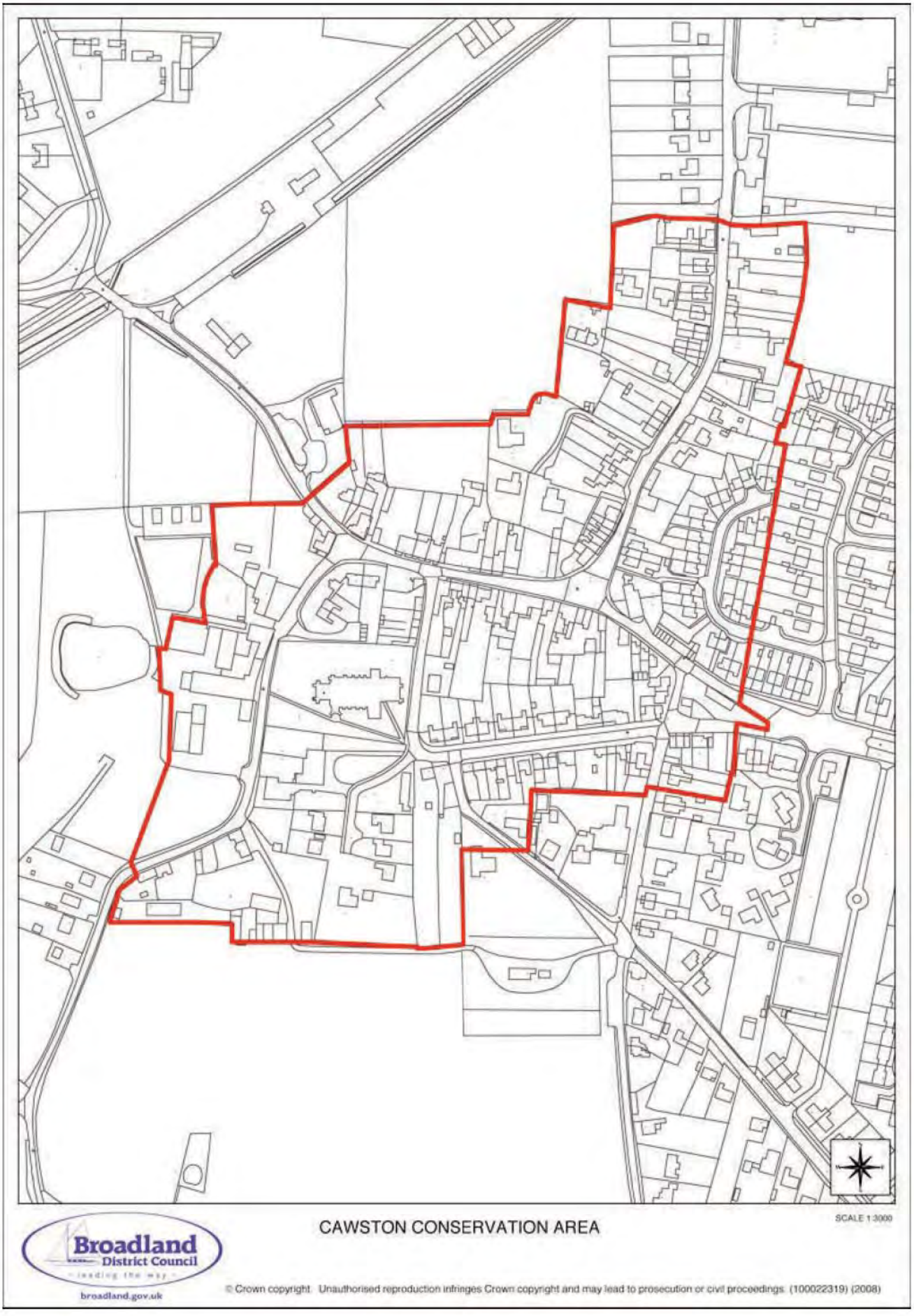
DO NOT SCALE ORIGINAL SHEET SIZE - A1 Landscape


CAWSTON CONSERVATION AREA
SCALE 1:3000
Broadland
District Council
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APPENDIX 1

Cawston Conservation Area Character Appraisal

CAWSTON CONSERVATION AREA

CHARACTER APPRAISAL
BROADLAND DISTRICT COUNCIL
ADOPTED MARCH 2009

IN TRAN
communication for all

Broadland District Council

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CAWSTON CONSERVATION AREA
CHARACTER APPRAISAL

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APPENDICES

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 the1979 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 spede 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 form 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

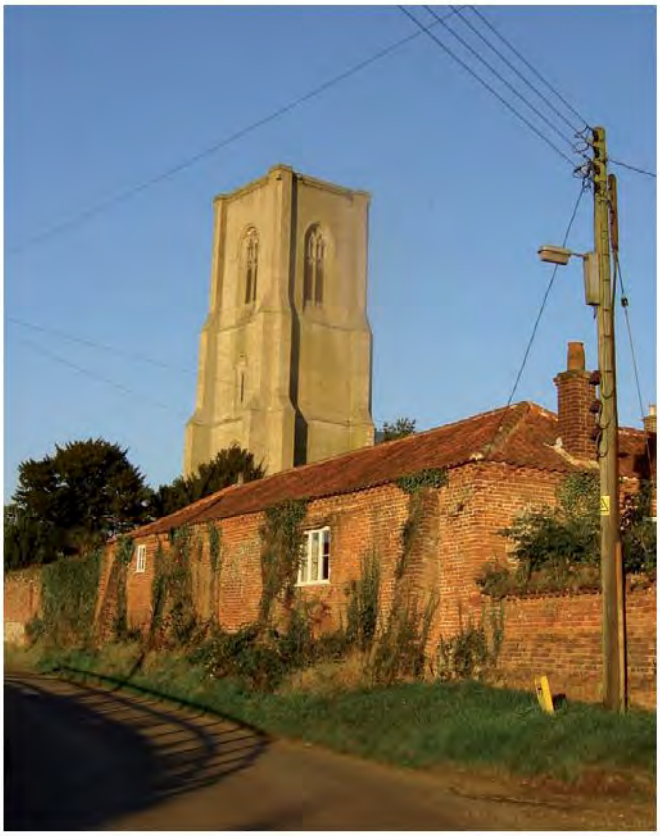
The church of St. Agnes dominates the Cawston skyline in any views from outside the village. But, within the village, it is only as one turns south into Church Lane, Goosepie Lane or New Street that it manifests its powerful presence.

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.

Reepham Road

Reepham 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

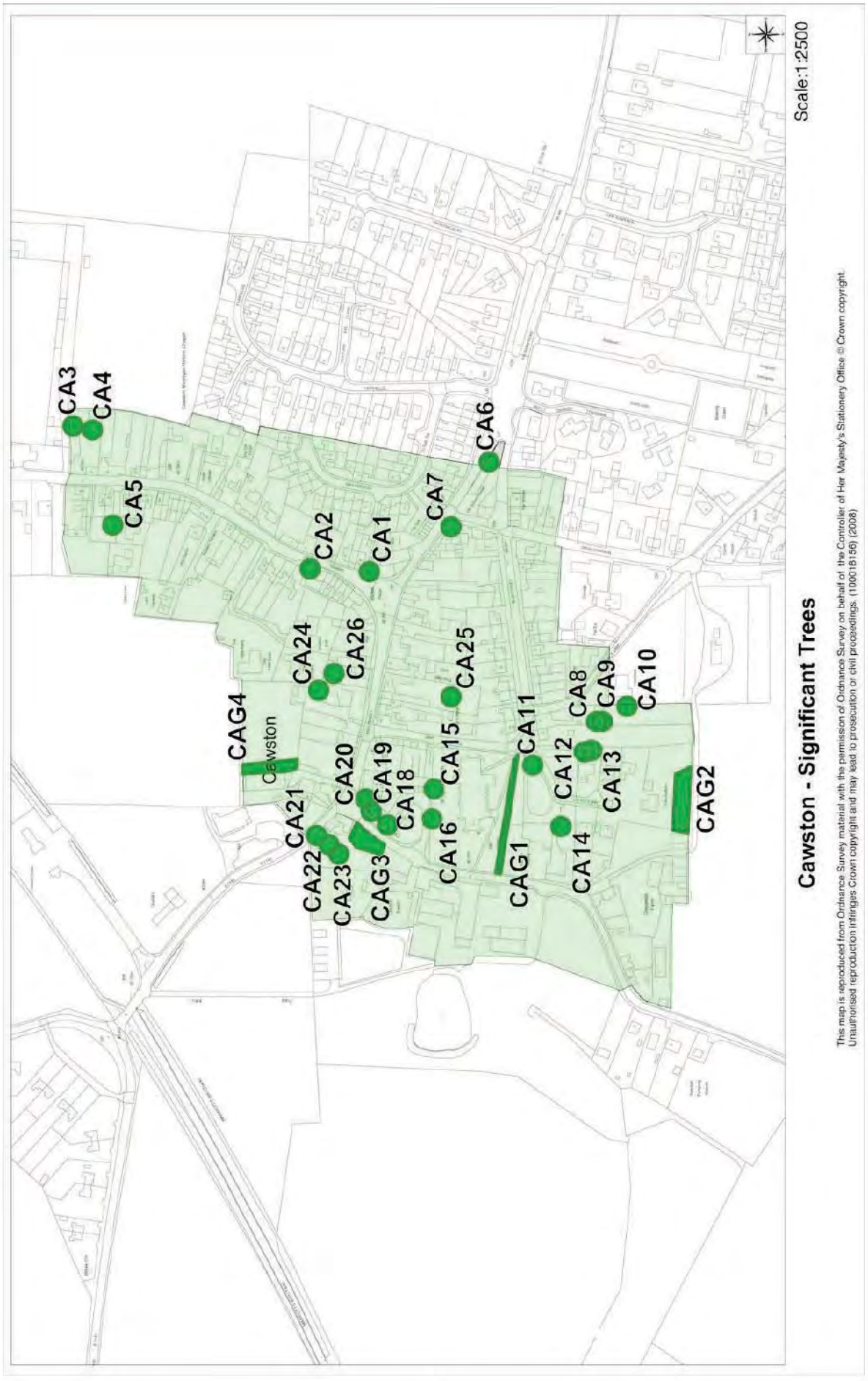
Street	Building etc.	Comments
High St. (north)	Converted outbuilding E of The White House	
	Long outbuilding W of No.1 Chapel St.	
	Wall running N from outbuilding to rear of No. 8	
	Building to rear of curtilege of No. 12	
	Roofed carriage entrance between Nos. 10 & 12	
	Wall W of No. 18	
	2 outbuildings W and NW of No. 18	
	No. 20	
High St. (south)	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

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

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

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


Cawston - Significant Trees
Scale:1:2500
CA3
CA4
CA5
CA6
CA7
CA2
CA1
CA24
CA26
CA25
CAG4
Cawston
CA20
CA19
CA18
CA15
CA11
CA8
CA9
CA10
CA21
CA12
CA13
CAG2
CA22
CA23
CAG3
CA16
CAG1
CA14
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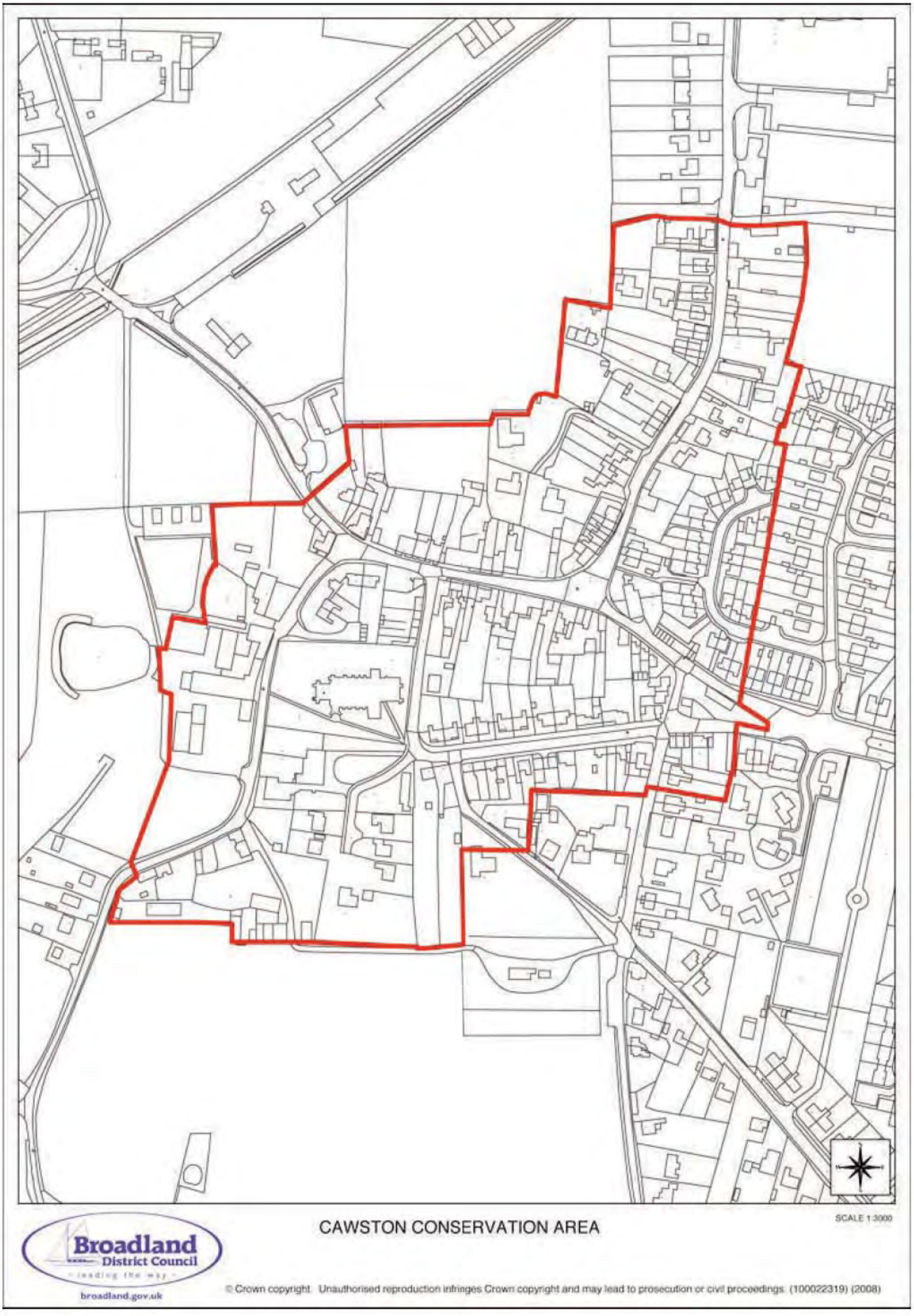
APPENDIX E : CONSERVATION AREA


CAWSTON CONSERVATION AREA
SCALE 1:3000
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District Council
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