From:	Shaw, John R
To:	Norfolk Boreas
Cc:	Dixon, Martin; Waters, Laura; Faulkner, Stephen
Subject:	Application by Norfolk Boreas Limited for the Norfolk Boreas Offshore Windfarm.
Date:	25 February 2020 10:26:16
Attachments:	image004.png image006.png image008.png Response_EN010087.pdf

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Your Ref: EN010087

Dear Sir/Madam

Application by Norfolk Boreas Limited for the Norfolk Boreas Offshore Windfarm.
Response to the applicants clarification note on trenchless crossings.

Please find attached Norfolk County Councils written submissions, in its capacity as local highway authority, in response to documentation submitted into the examination at Deadline 4.

Regards

John R Shaw

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Date: 25 February 2020

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Dear Sir/ Madam

Application by Norfolk Boreas Limited for the Norfolk Boreas Offshore Windfarm. Response to the applicants clarification note on trenchless crossings.

Please accept this letter as Norfolk County Councils written submissions in its capacity as local highway authority in response to documentation submitted into the examination at Deadline 4.

1. Introduction

The ExA will recall that Norfolk County Council has raised serious ongoing concerns regarding the applicant's proposal to use open cut trenching for the B1149 road crossing. During Issue Specific Hearing 3, the applicants indicated their reasons for selecting this method of working relate solely to environmental impact. The applicants written summary of their oral case submitted at deadline 4 also confirms this as follows: -

"The Applicant can also confirm that the decision whether or not to use trenchless installation is not primarily based on financial imperative or implication for the Applicant. The decision to use trenchless techniques is based on thorough investigation and assessments relating to environmental considerations."

To support of the applicants position, the ExA asked the applicants to submit a clarification note to set out the reasons for and against trenchless crossings for the B1149 and also Church Road, Colby. It is the County Councils contention that the applicants have produced a set of generalities that could be used for any crossing point and have not taken into account the local context of the B1149 at this **specific** location.

In response to the applicants clarification note we wish to comment as set out overleaf:-

2. Comparison of open cut trenching and trenchless crossing of highways

Impacts to road users

The applicants state - Open cut trenching is temporary **typically** lasting less than 1 week.

In response - The whole point of the County Councils concern is that the B1149 is **not** a typical crossing. We have not objected to other "B class" roads along the cable route being crossed by open cut trenching but we do have concerns with this **specific** crossing.

This specific proposal requires the construction of a new diversion lane as shaded pink on drawing numbers TP-PB4476-DR033 and TP-PB4476-DR036 attached to the applicants trenchless crossing clarification note. The disruption to road users for this specific proposal will be significant and last for weeks (see also our detailed comments under the heading timescale below).

Working hours

The applicants - indicate night time working **may** be needed for trenchless crossings but imply it will not be required with open cut trenching.

In response - The applicants Outline Traffic Management Plan for open cut trenching states at para 113 that "...To minimise the impact of closures or diversions, night working could be employed." Accordingly it is clear that night time working could be used for either open cut trenching or trenchless crossings in equal measure, there is no difference. The Outline Traffic Management Plan is clearly at variance with the clarification note on Trenchless Crossings, they cannot both be right. We are of the view that it is the applicants trenchless crossing clarification note that gives a false impression.

The applicants - State that for "technical reasons", night time working may be necessary with trenchless crossing but give no such indication for open cut trenching.

In response - The applicants do not provide any indication as what those "technical" reasons may be. It is equally clear from the Outline Traffic Management Plan that "technical" reasons could require night time working with both methods.

The proposal for the B1149 will require a deep excavation and the provision of a new diversion lane. For these reasons, open cut trenching for this specific proposal will require traffic lights to be fully operational 24 hours per day, 7 days per week. In sharp contrast to trenchless crossing, which may or may not have a night time impact - the applicants proposal for open cut trenching to the B1149 **will** cause disruption throughout the entire working period both day and night.

Given the status of the B1149 as a “band 4” traffic sensitive street, the traffic lights will also need to be under manual control at peak times.

Works footprint

The applicants indicate - Additional temporary land requirements for laydown areas and facilities will be required for trenchless crossings.

In response - The Outline Traffic Management Plan clearly indicates at para 45 that open cut trenching also requires a running track to deliver equipment to the installation site from mobilisation areas and will also require separate storage areas for topsoil and subsoil.

Open cut trenching for this specific proposal to the B1149 will not only require the road to be dug up but also requires the highway verges and adjacent hedges (together with any trees) to be dug up and removed to accommodate a diversion lane (see area shaded pink on drawing numbers TP-PB4476-DR033 and TP-PB4476-DR036 attached to the applicants clarification note).

Timescale

The applicants state - Open cut trenching is **typically** likely to be completed in days, but trenchless crossing will take up to 6 weeks as there is a requirement to "...conduct the crossing, allowing for setup of temporary areas and additional equipment, period of drilling and subsequent demobilisation and removal of equipment and materials".

In response - The whole point of the County Councils concern is that this is **not** a typical crossing. We have not objected to other "-class" Broads along the cable route being crossed by open cut trenching but we do have concerns with the **specific** proposal to the B1149.

This **specific** proposal requires:-

- Installation of traffic lights
- Creation of storage areas for the materials excavated from the verges to be kept.
- Excavation and removal of the existing verges and hedges.
- Construction of a new diversion lane over the former verge - including the importation of raw materials.
- New road marking to be painted on the carriageway surface
- Saw cut and remove one side of the existing carriageway - with removal of materials from site.
- Import new granular back-fill material to infill the excavation.
- Reinstate the original road.
- Remove and dispose of the temporary running surface material from the diversion lane
- Relocate the traffic signals and signs.

- Repeat the whole process all over again on the opposite side of the road.

- Reinstate the verges and plant new hedges.
- Demobilisation

The disruption to road users will be significant and last for weeks.

Materials and Transport

The applicants state - Negligible additional materials will be required for open cut trenching compared to trenchless crossing in agricultural land, with exception to some minor traffic management and resurfacing materials, **however this is offset by no running track material requirements.**

In response - this proposal does not simply involve negligible resurfacing of the existing road but:-

- Requires the highway verges and adjacent hedges and part of the field to be dug up and removed to accommodate a diversion lane. (see area shaded pink on drawing numbers TP-PB4476-DR033 and TP-PB4476-DR036 attached to the applicants clarifiacation note).
- Importing new raw materials to construct the diversion lane.
- Importation of granular back-fill for the deep excavation.
- The Outline Traffic Management Plan clearly indicates at para 45 that open cut trenching **would require a running track** to deliver equipment to the installation site from mobilisation areas and will require separate storage areas for topsoil and subsoil.

The applicants state - state that approximately 8 HGV deliveries will be required per notional 15m highways open cut trenched crossing.

In response - The applicants do not give a total number of movements or the calculation of how many m2 of excavation there will be, but simply say 8 movements per 15m2 of excavation. One thing is clear, there will be a lot more than 15m2 of excavation to construct the new diversion lanes and a lot more than 8 movements.

The applicants state - With reference to Appendix 24.20 [APP-635], worst case additional deliveries of 450 HGVs per trenchless crossing.

In response - This is not a **typical** crossing and it is very clear the applicants have not taken into account the movements associated with the construction of the new diversion lane attributable to this specific proposal and the calculations to show how the 450 movements have been derived are not substantive.

Equipment / plant and associated noise levels

The assessment of noise falls outside our remit and accordingly it is not an issue for the Highway Authority to assess. However we would like to make the following comments:-

- As with working hours mentioned above - the applicants Outline Traffic Management Plan for open cut trenching states at para 113 that "To minimise the impact of closures or diversions, night working could be employed. Accordingly it is clear that night time working **could** be used for either open cut trenching or trenchless crossings, there is no difference.
- In contrast, open cut trenching at this specific location **will** require traffic signals 24 hours per day, 7 days per week with vehicles stopping and starting at the traffic signals together with associated noise.

In summary, we are having difficulty reconciling the applicants claim that their proposal for open cut trenching is based on a "...thorough investigation and assessments relating to environmental considerations" as claimed within their clarification note.

In addition, we do not understand the applicants statement within their EIA that they will use "...trenchless crossing techniques at key sensitive environmental features, including but not limited to; waterways, protected wildlife sites, woodlands, long distance cycle route/footpaths, and major transport corridors **to avoid significant environmental disturbance**" and yet they are now saying that trenchless crossing (rather than open cut trenching) would actually cause significant environmental disturbance!

3. Considerations for the Proposed Open Cut Method at the B1149

Road Network Disruption Review
We agree with the applicants that "...open cut trenching for the B1149 project would need to be carried out by closing a lane of the carriageway and providing traffic signal control to safely introduce single file traffic (known as 'one-way working').

Traffic Flow Data
We have no issue with the traffic flow data.

Network Disruption Conclusion
We disagree with the applicants claim that these works are capable of being undertaken outside of the periods of 7:30am to 9am and 4pm to 7pm with the road being open to two-way traffic thereafter.

Department for Transport Chapter 8 states that if it is not possible to maintain adequate sideways clearance for 2 way traffic to be facilitated, then the carriageway must be reduced to single carriageway width and traffic management deployed. Given the use of the B1149 by HGV's; PSV's etc, the width required is 6.75m to maintain 2 way traffic. The width cannot be maintained and accordingly traffic lights will be required throughout the entire working period, both day and night.

Irrespective of the above, this project involves a deep excavation and the construction of a new diversion lane. The scale and nature of the works is such that it would not be feasible to open the road to two way running during construction. This proposal will require traffic lights to be fully operational 24 hours per day, 7 days per week. Even if it were possible for the applicants to open the road to two way running each day (which it isn't) it would simply extend the timescale and cause additional disruption to highway use for a longer period. The disruption will already last weeks and not days as indicated by the applicants.

Given the status of the road as a "band 4" traffic sensitive street, the traffic lights will need to be under manual control at peak times.

Long-Term Maintenance Liability Review
The issue of long term maintenance liability remains a concern, particularly given the potential for other future large scale projects and their associated HGV load movements. Rural road structure can vary greatly and with an increasing volume of base level traffic, notwithstanding the additional loading from these HGV movements. Any weakening of the surface construction derived from breaking open the bound and subgrade layers will

greatly increase the risk of carriageway failure in years to come when it has reverted to local authority responsibility.

Cumulative Traffic Management
The County Council agrees the proposed diversion lane is technically feasible, but the solution offered for the B1149 is not a typical open cut trench and the applicants claim under their heading of timescale that this can all be provided and completed in days is not realistic.

The scale and nature of the works is such that this proposal will require traffic lights to be fully operational 24 hours per day, 7 days per week. In addition, the disruption will last weeks and not days as indicated by the applicants.

Given the status of the road as a “band 4” traffic sensitive street, the traffic lights will need to be under manual control at peak times.

Conclusions

We do not agree with the applicants conclusions.

The County Council is of the opinion that an open cut method of duct installation at this specific point on the B1149, whilst not impossible, is impractical. We still wish to see a trenchless method used similar to that at other points on this cable route.

The road width and scale of the works is such that traffic signal control would be necessary 24 hours per day, 7 days per week. This would need manual control consideration at peak traffic times due to the roads’ Traffic Sensitive designation (Band 4 0730 – 0900 and 1600 – 1900). The crossing point whilst having reasonable forward visibility would benefit from additional signage to alert approaching traffic particularly from the north approach. This traffic management would need to be in place for the full duration of the crossing works on a 24/7 basis. Trenchless methods require no carriageway incursion of works or traffic management.

To enable an open cut method would require extensive temporary carriageway widening to give adequate sideways clearance to permit through traffic whilst the road was crossed half at a time. This widening would involve the removal of mature hedgerow, and the construction of a suitable running lane in virgin verge. The nature of the verge and traffic levels at this point requires a full depth construction to enable adequate lateral restraint. We fully understand that Norfolk County Councils laboratory has provided a suitable construction specification. Construction would involve the importion of much aggregate and bituminous bound material to a rural environment, only for it to be removed again once the crossing was completed. This is not environmentally sound practice and goes against the applicants very reasons (environmental) for using this crossing methodology.

The issue of long term maintenance liability is also a concern, particularly given the potential for other future large scale projects and their associated HGV load movements. Rural road structure can vary greatly, and with an increasing volume of base level traffic, notwithstanding the additional loading from these HGV movements any weakening of the surface construction derived from breaking open the bound and subgrade layers will greatly increase the risk of carriageway failure in years to come when it has reverted to local authority responsibility.

We remain firmly of the view that trenchless crossing methods need to be employed for this crossing.

We have not undertaken any assessment in relation to the acceptability of removing the hedgerow and/or trees as required for the construction of the proposed diversion lane as this falls outside our remit and rests with Broadland District Council.

4. Considerations for the Proposed Open Cut Method at Church Road, Colby

We understand this is an issue that has been raised by North Norfolk District Council.

Whilst the County Council has not insisted on trenchless crossing for this particular road, we would have no objection to the use of this method.

Yours sincerely

[redacted]

Senior Engineer - Highways Development Manager
for Executive Director for Community and Environmental Services