



The Planning Act 2008

East Anglia One North (EA1N) and East Anglia Two (EA2) Offshore Wind Farms

Planning Inspectorate Reference: EA1N – EN010077, EA2 – EN010078

Deadline 8 – 25 March 2021

Comments of Suffolk County Council as Lead Local Flood Authority

1. Post hearing submissions including written submissions of oral case (ISH11)

Examining Authority's Question	Suffolk County Council's Response
Agenda Item 1 – Welcome, introductions and arrangements for these Issue Specific Hearings 11	
Agenda Item 2 – Policy framework in relationship to flood risk and drainage	
<p>Including but not limited to NPS, NPPF, NPPG, Friston Surface Water Management Plan and local planning policies.</p> <p>The Applicants, SCC, ESC and SASES and any other relevant participants will be invited to comment.</p>	<p>SCC drew attention to EN-1 (paras 5.7.9 and 5.7.10) as the most directly relevant guidance but also pointed out that it was the oldest current guidance on flooding. It does refer to the prioritisation to be given to SUDS and to the need to consider it both at the construction and operational phases.</p> <p>The NPPF (para 165) is the most recent guidance and promotes the use of SUDS unless 'clearly inappropriate' and refers to the need to take account of the advice of the LLFA (i.e. SCC).</p> <p>The NPPG (ID7) provides more detailed guidance and (ID7-080-20150323) sets out the SUDS hierarchy.</p> <p>Local planning policies are referenced in the LIR (section 11):SCLP3.4, SCLP9.5, and SCLP9.6, the latter dealing specifically with SUDS.</p> <p>More detailed local guidance is provided in the Suffolk Flood Risk Management Strategy (March 2016) at section 2.5 and in its supporting Appendix A (May 2018), the local design guide for SUDS. The SFRMS is a statutory strategy, required by s.9 of the Flood & Water Management Act 2010.</p>

At the very local level the Friston Surface Water Management Plan sets out an evidence base and approach to flood/drainage in the light of local flood events.

All of this guidance supports the use of SUDS in accordance with the hierarchy.

Agenda Item 3 – Flood risk and drainage during construction

- a) Assessment and methodology
 - b) Management of surface water and sediment
 - c) Outline Code of Construction Practice
- The Applicants, SCC, ESC and SASSES and any other relevant participants will be invited to comment.

The policy, guidance and datasets relevant to the applications are the same for the construction phase, as they are for the operational phase. On that basis, the assessment methodology, outputs (drainage strategy details) and information submitted by the Applicant should contain the same extent of details for both construction and operation.

Environmental Statement Chapter 20 (APP-068) does not assess the potential impact of an increase in surface water flood risk on Human Receptors in Friston. This is based on the Applicants' commitment to not increase surface water flood risk. Whilst this commitment is supported in principle by SCC, the mitigation required to achieve this must be demonstrated as deliverable within the Order Limits for this statement (and the subsequent lack of assessment) to be justifiable.

The Friston Surface Water Management Plan should be included in the assessment given its status as a high confidence data set. It should be assessed in the manner/detail that it would have been had it been incorporated into the Flood Risk Assessment from the outset. This means a detailed assessment of the outputs and interrogation of the hydraulic model itself to determine the potential impact this may have on the proposed development and indeed the impact that the development may have on any identified flow paths. Whilst it is acknowledged there are similarities

between the Friston Surface Water Management Plan flood path outputs and National Surface Water Flood Mapping, this should not be justification to not assess and interrogate the Friston Surface Water Management Plan in detail.

The management of surface water during construction is assessed in Chapter 20 of the Environmental Statement (APP-068). The impacts identified are proposed to be mitigated by a list of potential options. None of these options have been demonstrated as deliverable within the Order Limits. It is critical that there is an assessment to demonstrate there is space within the Order limits to deliver sufficient options to mitigate the potential impacts, using a Rochdale Envelope approach. Without this assessment there is no guarantee that sufficient mitigation can be delivered during the construction phase to mitigate the identified potential impacts.

The cumulative risk of suspended sediment entering the Friston Main River, (where there is a significant length of closed culvert), which could ultimately reduce the capacity of the Main River, and the potential this has to increase surface water flood risk in Friston must be acknowledged, assessed, and mitigated, with said mitigation being demonstrated as deliverable. ES Chapter 20 (APP-068) Table 20.25 identifies the interaction between increased sediment supply and changes to surface water flood risk, however this is not assessed any further. This may be due to the fact Human Receptors in Friston are not considered, as per paragraph 184 (APP-068).

Along the cable corridor, the proposal to remove areas of topsoil storage to make space for surface water attenuation features is supported in principle. However, it must be demonstrated that there is sufficient space at relevant topographic points (i.e at low points, near watercourses etc.) for surface water to be retained and disposed of. As per the operational phase,

infiltration must be prioritised. An area that demonstrates this concern is the crossing of the Hundred River, where the cable corridor narrows. The Hundred River is at a low point and is ultimately where surface water will be flowing towards. Surface water will need to be intercepted and stored prior to this point, however, given the narrow cable corridor, required to mitigate other impacts, SCC are not confident that the mitigation is deliverable.

The substation sites present a more significant surface water flood risk during construction. The areas used during construction are potentially far greater than that during operation. Large swathes of land may be stripped of topsoil at once. Large areas will be used for construction purposes (compounds, storages etc.). All these activities have the potential to increase surface water runoff rates and generate sediment which could have a detrimental impact to surface water flood risk in Friston, as explained above.

Whilst the lessons learnt from construction of the East Anglia 1 (EA1) substation are acknowledged, these are not all relevant to this application. The risks associated with Friston are unique, with no similar challenge being encountered during construction of EA1.

SCC expect there to be no increase in offsite surface water flood risk up to and including the 1 in 100 year rainfall event during construction. The 1 in 30 year rainfall event must be retained within the surface water system. Above ground flooding is permitted during the 1 in 100 year rainfall event, but must be retained within the Order Limits. This is as per the DEFRA Non-Statutory Technical Standards which have been applied to the operational phase.

Agenda Item 4 – Operational flood risk and drainage

- a) Surface water flooding in Friston
- b) Baseline information/existing conditions

A) Surface water flooding in Friston

c) Outline Operational Drainage Management Plan submitted at D6 including but not limited to:

- Methodology and assessment
- SuDs hierarchy
- Infiltration
- Attenuation
- Discharge to Friston watercourse
- Adoption and maintenance

d) Relationship with Outline Landscape and Ecological Management Strategy (OLEMS)

The Applicants, SCC, ESC and SASES and any other relevant participants will be invited to comment.

The Friston Surface Water Management Plan should be included in the assessment given its status as a high confidence data set. It should be assessed in the manner it would have been had it been incorporated into the Flood Risk Assessment from the outset. This means a detailed assessment of the outputs and interrogation of the hydraulic model itself to determine the potential impact this may have on the proposed development and indeed the impact that the development may have on any identified flow paths. Whilst it is acknowledged there are similarities between the Friston Surface Water Management Plan flood path outputs and National Surface Water Flood Mapping, this should not be justification to not assess and interrogate the Friston Surface Water Management Plan in detail. The full Friston Surface Water Management Report was provided to the Applicant, along with the modelling files, on 09/06/2020. The Applicant requested further information in relation to the Friston hydraulic model on 16/03/2021 and this was transferred to them on 22/03/2021.

SoCG 05.06 states *“Flood events in the Friston area, resulting from overland flow, that occurred during late 2019 – early 2020 was a result of multiple flow paths and not a direct result of surface water runoff from land associated with the proposed site of the onshore substation or the National Grid infrastructure”*. It should be noted that this does not mean that the proposed development site does not have the potential to present a future surface water flood risk to Friston.

B) Baseline information/existing conditions

No infiltration testing or other ground investigations have been undertaken on the proposed development site. SCC's experience is that this is a very different approach compared to Sizewell C.

[Suffolk County Council Flood Risk Management Strategy Appendix A](#) (2018) sets out the expected level of information required to be submitted for planning applications in Suffolk. This guidance is designed for major planning applications under the Town & Country Planning Act, but nonetheless can be interpreted for NSIPs. Page 9, Section 3 includes a table which details the information expected for each type of planning application. Outline planning applications require a preliminary site investigation report. More recently published [interim guidance for new Outline planning applications](#) (2020) has a similar requirement for a preliminary site investigation report. Both documents explicitly states that this should include '*3 or more trial pits to BRE 365 and associated exploratory logs*'. Both documents also set out the requirement for a full site investigation report to be submitted for subsequent planning stages, once more detailed design has been undertaken.

SCC have accepted the Applicant was not willing to undertake infiltration testing to inform the Outline design. However, this has necessitated the approach of using worst-case scenario design parameters (10mm/hr infiltration rate and Factor of Safety 10) to establish a worst-case scenario land take.

Existing runoff rates have been calculated using preferable methodologies (FEH), as per CIRIA SuDS Manual. Whilst this is acceptable for sizing potential attenuation SuDS features at this stage, a detailed hydraulic model will be required as part of detailed design to determine more reliable existing runoff rates. The Applicant acknowledges this in their Deadline 6 Outline Operational Drainage Management Plan. SCC have previously queried (REP3-101, Section 5, response to paragraph 23) whether the Applicant intends to gauge rainfall and flows in the Friston Main River to inform the proposed

detailed model. The Applicants response to this was that they do not intend to do this work. SCC maintain that this information is required to inform the detailed hydraulic model and to test whether any detailed hydraulic model mimics the run-off generated by the catchment north of Friston.

It should be noted that during ISH11, the Applicant referred to production of a detailed hydrogeological model (EV-123g, 17:30), which would be more detailed than a hydraulic model. The OODMP only refers to the production of a hydrological model. SCC has sought clarification on this matter from the Applicant and are of the understanding that they intend to produce a hydraulic model at detailed design (not as per stated in ISH11) and this will be clarified in the Deadline 8 OODMP submission. For clarity, the Friston Surface Water Management Plan also utilises a hydraulic model.

C) Outline Operational Drainage Management Plan submitted at D6

SCC support the use of Qbar as a discharge rate, however, as per our comments under sub-item B above, this Qbar rate will need to be confirmed as part of detailed design once a detailed model has been established. As an interim sensitivity test, the Friston Surface Water Management Plan could be used to assess in more detail the existing runoff rates that it predicts for the Qbar return period.

Whilst the worst-case option set out by the Applicants in the Deadline 6 OODMP is the attenuation option, this is only the worst-case option in terms of the surface water hierarchy. The infiltration only option, with the assumed parameters, is the worst-case option in terms of potential land take required.

SCC's understanding from recent discussions with the Applicant is that the following surface water disposal hierarchy will now be prioritised as part of the OODMP:

1. Infiltration only
2. Infiltration for lower return period rainfall events with an overflow to the Friston Main River for higher return period rainfall events. Infiltration will be maximised.
3. Attenuation and discharge to Friston Main River

Option 1 is the optimal mitigation promoted by national & local guidance and best practice and is what SCC support if infiltration is identified as achievable and viable.

The Applicant identified in the Deadline 6 OODMP a potential clash between proposed landscape mitigation and the land required for an infiltration only approach. This clash must be clearly identified on plan so the extent of the potential mitigation clash is clear. SCC would then expect to see the minimum land that would be available for an infiltration only approach. Subsequent infiltration testing may identify this extent of land to be sufficient, or, less land may be required for landscaping which can instead be used to aid an infiltration only approach. However, SCC expect these parameters to be identified, as part of the Rochdale Envelope approach. Only if there is insufficient land available for infiltration only SuDS (including this being agreed with the ExA), and infiltration has been shown to be achievable and viable, would Option 2 be promoted. If Option 2 is progressed, infiltration must be used to the maximum possible extent before an overflow is utilised. Only if infiltration is not shown to be achievable or viable, would Option 3 be acceptable to SCC.

It is worth reiterating that the above approach is required due to lack of infiltration testing. This was the Applicants choice. Whilst the clash between different mitigation requirements may be avoided once infiltration testing has been completed, a Rochdale Envelope approach must account for both worst-case mitigation scenarios, whilst delivering optimal mitigation (infiltration only). This remains SCC's formal position unless advised that this is not practicable by the ExA.

The 10mm/hr infiltration parameter is used for the sizing of SuDS components only. To state that infiltration is not feasible/viable based on this assumed rate is misleading. Whilst the Applicants point regarding half drain time is noted, this can be addressed in one of two ways. Increase the plan area of the basin, or, provide additional storage for a 1 in 10 year rainfall event after 24 hours. The Applicant has demonstrated that the latter option is deliverable with an infiltration only approach in the Deadline 6 OODMP. On this basis, SCC consider this to be a design check pass, which by definition, demonstrates that an infiltration only approach is technically viable.

It is SCC's understanding that the basis on which the Applicants state an infiltration only approach is not viable is due to the clash of space for other mitigation, not on technical grounds. As requested at ISH11, it would be useful if the Applicant could clearly state all the reasons for which they deem infiltration to be unviable, whilst providing sufficient evidence and justification to support any such statements.

As a rule of thumb, trees are not permitted within 5m of infiltration components due to the potential issues they can cause to the long term functionality of infiltration components. Detailed design, including landscape design, may determine there are some trees that are compatible with any

proposed infiltration component. However, that is a matter of detailed design and therefore the Applicant must work on the assumption that landscaping and infiltration components are not compatible.

As above, SCC support the use of Q_{bar} for any positive discharge. The preliminary rate used at this stage for attenuation sizing purposes is subject to detailed modelling. However, a minimum orifice size of 100mm must be ensured to reduce the chances of potential blockage of the orifice. This generally equates to a 5l/s discharge rate with a 1.0m design head. As such, if Q_{bar} were identified to be less than what would accommodate a 100mm orifice, a discharge rate higher than Q_{bar} may be permitted, subject to an assessment of potential flood risk. The Applicant has undertaken a sensitivity test for both sub-stations with a 5l/s discharge rate.

The proposed relocated flood storage basin location is not acceptable to SCC as it does not serve the same extent of the catchment as the existing feature.

The Applicant must demonstrate that a surface water connection to the Friston Main River, with a culvert or pipe passing beneath Church Road, is feasible from a technical engineering perspective. Suffolk County Council, as Lead Local Flood Authority and as Highway Authority have significant concerns as to the feasibility of this connection. Due to heavy siltation, the levels of the watercourse are very shallow. This is representative of the Main Rivers natural condition due to the shallow gradient of the channel which results in significant deposition of sediment. It is the view of Suffolk County Council that unless the Applicant can demonstrate a technically feasible solution, the option for a positive discharge to Friston Main River cannot be considered as part of these applications. The Applicant stated at ISH11 that this would require detailed topographical survey information. Suffolk County

Council have this information which was collected to inform the Friston Surface Water Management Plan. During ISH11 Suffolk County Council offered the Applicant this information. At the time of submission, SCC has not received a request for this information from the Applicant.

Any potential for the proposed attenuation structures to fall under the remit of the Reservoirs Act 1975 should be assessed by the Environment Agency.

D) Relationship with Outline Landscape and Ecological Management Strategy (OLEMS)

The diversion of the existing east west watercourse along the northern boundary of the National Grid sub-station will require diversion. If this is diverted to the north (uphill), this could result in an increase in watercourse depth, width and associated landscaping.

Draft DCO Requirement 41

SCC was asked by the ExA under Item 4 whether it maintained the position that SCC should be the discharging authority for Requirement 41 in relation to the final ODMP. SCC confirmed that it did maintain that position for the following reasons:

1. The subject matter of the ODMP falls fairly and squarely within the remit and scope of SCC's responsibilities as LLFA. SCC acknowledges that flood/drainage matters have to be considered on an integrated basis with other environmental topics and would fully expect to do so, in consultation with ESC as the relevant local planning authority (and with the Environment Agency). SCC is wholly competent to take a holistic approach across environmental topics.

2. There is no guidance/policy/advice to state that any one environmental topic should be prioritised above any other environmental topic, and it is therefore simply a question, where there are overlapping responsibilities, to determine which body should be the determining authority and which body (or bodies) should be the consultee. That question should be determined by reference to technical expertise in relation to the subject matter of the requirement and practicality.

3. Where the primary consent (i.e. the DCO) is not granted by the relevant local planning authority there is no reason in terms of 'ownership' of the decision why that body should be the discharging authority for technical details under that consent.

4. It is acknowledged elsewhere in the draft DCO (e.g. Requirements 16, 19, 28, 32, 33) that SCC should be the discharging authority because of its technical expertise and responsibilities and yet many of those matters (especially highways matters) will also engage with other environmental topics (e.g. landscape/biodiversity). No difficulty is seen in SCC meeting its obligations in those regards, after consultation with ESC.

5. The ODMP is required to address technical drainage matters and that is its essential focus and SCC is clearly the body with the technical expertise to address those matters, both in terms of what is feasible and in terms of what is sustainable. It is clear from the exploration of drainage matters in the Examination that the issues are both sensitive and complex, and a clear understanding of technical feasibility is therefore of great importance. SCC should therefore be the discharging authority and Requirement 41(1) should be re-worded so that it refers to a need to the ODMP to be *'approved by ~~the relevant planning authority~~ Suffolk County Council, in consultation with ~~Suffolk County Council~~ the relevant planning authority and the Environment Agency.'*

The ExAs may extend an opportunity for participants to raise matters relevant to the topic of these hearings that they consider should be examined by the ExAs. If necessary, the Applicants will be provided with a right of reply.

Agenda Item 6 – Procedural decisions, review of actions and next steps

The ExAs will review whether there is any need for procedural decisions about additional information or any other matter arising from Agenda items 2 to 5. To the extent that matters arise that are not addressed in any procedural decisions, the ExAs will address how any actions placed on the Applicants, Interested Parties or Other Persons are to be met and consider the approaches to be taken in further hearings, in the light of issues raised in these hearings. A written action list will be published if required.

Agenda Item 7 – Closure of the hearings

2. Responses to ExA's Further Written Questions (ExQ3) (if required)

2.1 Not applicable.

3. Comments on the Report on the Implications for European Sites (RIES) (if required)

3.1 Not applicable

4. Final Statements of Common Ground (SoCG) and Commonality requested by the ExA under Procedural Decision 15 (Annex F) also listing matters not agreed (in circumstances where a SoCG could not be finalised).

4.1 Statement of Common Ground with East Suffolk Council and Suffolk County Council to be submitted by the Applicant at Deadline 8. Since the Applicants are intending to submit changes to the current version of the Outline Operational Drainage Management Plan and the Outline Code of Construction Practice at Deadline 8 and SCC has not seen the terms of those changes, the Statement of Common Ground still leaves substantial matters of disagreement outstanding. SCC's position on those matters has been rehearsed in its earlier submissions and in the submissions above.

5. Comments on any additional information/submissions received by Deadline 7

5.1 EA1N&EA2 Draft Statement of Common Ground with East Suffolk Council and Suffolk County Council – Version 03 (REP7-056)

A final Statement of Common Ground with East Suffolk Council and Suffolk County Council will be submitted at Deadline 8.

The Deadline 7 submission, regarding Water Resources and Flood Risk, has not progressed since Deadline 1 (REP1-072).

5.2 EA1N&EA2 Applicants' Comments on Suffolk County Council's Deadline 6 Submissions (REP7-060)

Suffolk County Council as Lead Local Flood Authority have no further comment to make in response to the Applicants' Comments. This should not be viewed as agreement by SCC LLFA that any of the mentioned issues are resolved, merely that our point has been made and we have nothing further to add in response to the Applicants comments at Deadline 7.

6. Responses to any further information requested by the ExAs for this deadline

Issue Specific Hearing 11, Action Point 2

A separate PDF is attached which contains the minutes of EA1 lessons learnt meeting with Scottish Power Renewables, pertaining specifically to Drainage.