



Norfolk County Council

Response to Deadline 2 Submissions

Norwich to Tilbury

(EN020027)

Deadline 3 – 10 April 2026

1. This submission for deadline 3 provides Norfolk County Council's response to submissions made at deadline 2. At Deadline 2 Norfolk County Council made comments that it would not be possible to comment on Document 8.2, Drainage Strategy DCO at that time, given the length of that document and the time available. Following this, the LLFA have now had sufficient time to review the submitted information and have the following comments to make.

Detailed comments on the drainage strategy

2. In section 2.3.5 the applicant states that NCC as LLFA gave guidance that the FSR rainfall calculation method would be used. This is not correct. The LLFA did not indicate that. We referred to our LLFA Developer Guidance which is freely available online. The LLFA's Developer Guidance is clear the FEH is the preferred method of rainfall calculation. Therefore, the LLFA is aware that at present this paragraph is incorrect and requires amendment. **Further work is required.**
3. The LLFA notes that in Table 2.3, the applicant incorrectly titles and references the Norfolk Highways Drainage Design standards rather than the LLFA Developer Guidance. It is not clear to the LLFA, how the applicant was not able to identify that the Drainage Design standards related to the Highways design when the information was found under the highways section of the website and has continued reference to the disposal of surface water from a public highway rather than looking at the LLFA's Flood and Water Management pages where the LLFA's Developer Guidance is freely available <https://www.norfolk.gov.uk/article/38642/Information-for-developers>. It is clear the applicant had accessed areas of the Flood and Water Management pages to obtain the Local Flood Risk Management Strategy. Therefore, it is not clear why the LLFA Developer Guidance has not been used to support the production of this proposed Drainage Strategy. As some assumptions for the proposed drainage strategy and surface water management design within the Norfolk area have not been based on the appropriate guidance, Norfolk LLFA is concerned that as a consequence there will be continued divergence from the Norfolk LLFA Guidance. **Further work is likely to be required.**

4. Norfolk LLFA also notes that Table 2.3 does not reference the updated version of the Local Flood Risk Management Strategy (2018). It is clear the applicant has reviewed the correct page which is referenced (footnote 5 on page 12 of the Drainage Strategy). However, the Local Flood Risk Management Strategy Policy Review 2021 which is in the section immediately below the link to the Local Flood Risk Management Strategy 2015. Therefore, the Drainage Strategy has not considered the latest available policy information in Norfolk. **Further work and information is required.**
5. In section 2.5.3, the LLFA notes the applicant references the now superseded Defra Nonstatutory Technical Standards for SuDs. It is not clear to the LLFA why the new National Standards for Sustainable Drainage that were published on 30th July 2025 have not been referred to. The LLFA notes there are other older documents that are referred to when there are more recent relevant publications that should be considered. For example, the applicant has referenced the Environment Agency's 2012 Rural Sustainable Drainage Systems rather than the more recently published Natural Flood Management Manual by CIRIA (2022) which provides updated and detailed technical design guidance on many of the methods identified in the Rural Sustainable Drainage Systems. The LLFA is concerned the applicant is not using the latest relevant guidance and practises in the proposed design, which is reducing the LLFA's confidence in the Drainage Strategy at this time. **Further work and information is required.**
6. The LLFA notes that in section 2.5.2, the applicant's specification for the minimum criteria for the site drainage does not consider the inclusion of climate change allowances. This proposed design criteria is not future proof. This is in contradiction to section 4.10 of the National Policy Statement for Energy 1, which clearly states "If new energy infrastructure is not sufficiently resilient against the possible impacts of climate change, it will not be able to satisfy the energy needs as outlined in Part 3 of this NPS." **Further work and information is required.**
7. The LLFA notes the Drainage Strategy is not based upon site specific topographic data as confirmed by the applicant in section 3.1.1 to 3.1.6. While the LLFA can appreciate the applicant may have a few gaps in the baseline data, topography is a key data set for so many design matters. In relation to flood risk and surface water drainage, it is an important element in defining catchment areas, design calculations and mitigation measure designs. Therefore, it is not

clear to the LLFA why this data is not available to support the early design development. **Further work and information is required.**

8. In sections 3.1.7 to 3.1.9, the applicant indicates the site area of the Norwich Main Substation to be on "relatively flat ground" even though there is a 5m variation in level across the site. While in section 3.1.9 for RG Overhead Line Alignment (in Sections A and B) the applicant indicates the "topography is generally flatter" in the northern section of the route with a 30 m variation in levels while in the southern section has a greater variation in levels of approximately 57m. These descriptions are too vague over such an area. For example, section 3.1.9 covers the area between Norwich to Bramford. Therefore, this could not be considered informative in relation to surface water management as number catchments and discreet catchment areas would be included along this route. **Further, more suitably detailed information is required as this stage.**
9. The definition of the "main rivers" and "ordinary watercourses" in section 3.2.2 is not consistent with the legal definitions in the Water Resources Act 1991 and the Land Drainage Act 1991. To confirm, in legal terms there are only two types of watercourse in England; Main River and Ordinary Watercourse. A ditch is a colloquial name for a watercourse and depending on its definition could be either a Main river or an Ordinary Watercourse. The LLFA suggests the applicant updates their report to ensure the correct legal definitions of these terms are applied. The regulation of these watercourses varies in both legal definition of watercourse type and the presence of an Internal Drainage Board. **Further work is required.**
10. In relation to Table 3.2, the applicant may wish to note the River Waveney is part of the River Yare catchment as it discharges to the River Yare. Table 3.2 should be updated to reflect this. **Further work is required.**
11. In section 3.2.6, the section is titled Lakes and Reservoirs. However, in this section there is no discussion or mention of reservoirs. While in the second paragraph of this section there appears to be an indication that culverts and open cuts will be used to cross lakes and ponds. The LLFA requires clarification of which lake or pond the applicant is planning to cross with a culvert. There is also no indication of the number of ponds that are within each section of the proposed development that is consistent with the format of the previous sections

on watercourses. A summary of where the watercourses and ponds are located would be appropriate for inclusion. **Further work and information is required.**

12. The LLFA notes that in section 3.2.9 to 3.2.10 the applicant has referred to the Anglian Water records that have been reviewed. The LLFA notes that within Norfolk there are some private sewer structures within the road under section 50 agreements. It is not clear to the LLFA at this time whether the applicant has checked for the presence of these structures. **Further clarification is required.**
13. In section 3.2.21 to 3.2.22 it is not clear what drainage structures are present that relate to the proposed development at the Norwich Substation that "may need to be modified". The LLFA did review the information given in 6.4 ES Chapter 4 - Project Description [APP-130] where no information relating to the existing surface water drainage was provided. Therefore, it is not possible to understand what modifications may be necessary at this time. **Further information is required.**
14. In section 3.2.24, the applicant confirms the "location and details of existing field drainage systems are unknown at this stage and a review of natural overland flow paths on steeply sloping ground has not been undertaken." The applicant then goes on to indicate their commitment to the maintaining of land drainage as provided in Commitments AS05 and GG22. The LLFA acknowledges AS05 as being relevant to land drainage, but it is not clear to the LLFA how GG22 is specifically related to land drainage. **Further information and clarification is needed.**
15. The LLFA also notes that in section 3.2.24 there is reference to 7.2 Outline Code of
16. Construction Practice [APP-300] which in section 6.1.16 states the Surface Water Management has not been prepared to support the Outline CoCP as the detailed design is not yet known. However, this is now not correct and the OCoCP will need to be appropriately amended once this surface water drainage strategy has been appropriately updated to show the surface water drainage design with the supporting evidence. **Further work is required.**
17. The LLFA notes that in section 3.2.27 the applicant states "To produce this drainage strategy, a review of the Environment Agency flood risk mapping has been undertaken to ensure that the Project does not increase flood risk to the site or elsewhere and where practicable reduces flood risk over the lifetime of

the development." The LLFA questions this statement as this approach appears to lack the assessment and consideration to develop an appropriate strategy to either avoid, reduce or mitigate flood risk. **Further consideration and work is required.**

18. There is an inconsistency in the information that is provided in the baseline sections within the drainage strategy. For example, in some sections there is a break down of the summary information by section area such as section 3.3 in geology or existing sewers (3.2.8 to 3.2.20). While in other sections there is just a cross reference to another report with no relevant summary such as Flood Zones (3.2.27) and Contaminated Land (3.3.3 to 3.3.4). The Drainage Strategy should be able to be read as a standalone document as it is not incorporated into the ES. This inconsistency makes reading and reviewing the drainage strategy uneven and difficult. It also demonstrates an inconsistent consideration and presentation of relevant information. The LLFA suggests that while cross referencing can be used, a more informative summary should be provided. **Further work is required.**
19. In combination with our previous point, it is also noted that the drainage strategy is written and assessed in a similar approach to the Environment Statement rather than as a site specific technical design strategy. For example, in section 3.3.13 on the *"RG Overhead Line Alignment"*, the applicant states;
20. "As set out in 6.4 Environmental Statement Chapter 4 - Project Description [APP-130], paragraphs 4.8.42 to 4.8.58, all overhead line works are temporary. Therefore, the permanent impact of the overhead line works is negligible to groundwater. Proposed temporary drainage features outlined in Section 5.6 will manage groundwater risks at the construction stage."
21. The first sentence is a cross reference and there is no reference in the text to the context of the information. It is also clear in the statement that "all overhead line works are temporary". Although, it is not clear to the LLFA whether applicant means that the overhead line works are temporary or that there are temporary works associated with the construction of the overhead line.
22. The second sentence is based upon the unclear first sentence and is written like a conclusion from the Environmental Statement, even though no evidence has been presented or clearly discussed in this section of the drainage strategy. The final sentence makes reference to a future section in the drainage strategy

- report. However, it is not clear how this final sentence is relevant as the second sentence clearly indicates there is no risk to mitigate, and the first sentence indicates that the overhead lines are temporary with no construction considerations mentioned. This is a fairly typical example of the information provided in this "Existing Conditions" chapter should be considered as baseline
23. information for the report but that is not the case. Rather it is trying to assess the proposed development using an incomplete approach from the ES and without stating which phase of development it is reviewing. **Further work is required throughout this report to resolve and address this inconsistent structure and inappropriate approach to the drainage strategy.**
 24. In relation to section 4.1.2, the LLFA acknowledges the "expected" approach to the temporary foul water drainage from the construction compounds for it to be "contained onsite and regularly pumped, emptied, and transported off-site." It is not clear where the waste is proposed to be transported to and the LLFA would seek clarification of the foul water's destination. Further information required.
 25. Furthermore, the LLFA notes that in section 4.1.2, the applicant indicates that the contractor may establish connections to the existing foul water sewers for some of the construction compounds. While the LLFA accepts this as an approach, the LLFA requests consideration is given to the capacity in the sewers to accept this additional flow without increasing flood risk from the sewers on site or elsewhere. This section is also inconsistent with the information provided in the operational section. The operational section of chapter 4 is subdivided in to features and there is a lack of information **Further information is required.**
 26. In relation to 4.2.2, the applicant has provided one sentence for Norwich Main and Bamford Substations that states "Both Norwich Main and Bramford Substation currently have operational welfare facilities and further requirements would be defined at a later stage of the Project." This sentence lacks suitable detail to demonstrate what the existing arrangements are, whether they would be suitable for future use, and whether there are any risks associated with the proposed future drainage approach. **Further information is required.**
 27. In section 5.2.1, the LLFA notes the applicant references the National Grid design document TS2.10.13. however, this document has not been made available to the LLFA for review and has not been found available through an online search. The LLFA requires that a copy of the referenced design document

is made available for review to enable the LLFA to understand the design approach advocated by National Grid and to consider how this design approach relates to the national policy requirements to ensure that there is no increase in flood risk. **Further information is required.**

28. In section 5.2.2, the LLFA notes there is no evidence for the statement provided. Furthermore, the assessment statement is made in the context of the ES assessment methodology rather than consideration and assessment of whether there is an increase in the impermeable areas of each of the discreet drainage catchments. This lack of information and evidence will need to be addressed to support the statement made. **Further information is required.**
29. The LLFA notes that in section 5.2.3, the applicant's reference that there is no requirement for the application of climate change to the temporary works. The LLFA questions this interpretation as it is clear the applicant has not read the Norfolk LLFA Statutory Consultee Guidance Document. The LLFA notes that in accordance with the current NPPF paragraph 182, which states that "as part of proposals for major development should: a) take account of advice from the Lead Local Flood Authority". The LLFA consider the Norfolk LLFA Statutory Consultee Guidance Document publicly available advice for developers. In section 13.1.10 of the Norfolk LLFA Statutory Consultee Guidance Document (also known as the LLFA Developer Guidance) it states
30. "For development with a lifetime up to 2060 use the central allowance for the 2050s epoch (2022 to 2060). Unless the '2050s' climate change epoch allowance is greater than that of the '2070s' climate change epoch allowance, the LLFA are likely to query the use of the '2050s' climate change epoch if it is not obvious that the development is temporary in nature (i.e. temporary haul roads or construction sites)."
31. This implies that a climate change allowance in accordance with the '2050s' epoch would be expected to be applied to temporary construction works. Therefore, it is appropriate for the applicant to consider whether the 20% allowance that is indicated in section 5.2.3 is consistent with the requirements of the LLFA Developer Guidance. **Further consideration and information is required.**
32. *Informative* - In section 5.2.7 the LLFA notes the applicant does not appropriately attribute the key flood risk principles relating to development. NPPF is the

nationally recognised source of the principle that there should be no increase in flood risk from any source, now or in the future on site or elsewhere. However, section 5.2.7 of the drainage strategy it appears to attribute this to the "Environment Agency" rather than the NPPF.

33. In section 5.2.7, the LLFA notes the applicant appears to be considering climate change allowances for Flood Risk Assessments, however, there is no reference to the source of the information provided in the Climate Change sections (5.2.7 to 5.2.10). Assuming that it does relate to the Flood Risk Assessments: Climate Change Allowances Guidance, the LLFA notes that at present the applicant has indicated that climate change would be applied to the 1% AEP event. However, the Flood Risk Assessments: Climate Change Allowances Guidance is clear that climate change must be applied to the 3.3% AEP event calculations too. **Further work and consideration is required.**
34. The LLFA notes that in section 5.2.8, the applicant has indicated the scheme has a 50 year design life yet in Table 5.1, the applicant has stated the figures are "for permanent infrastructure". Paragraph 6 of the NPPG for Flood Risk and Coastal Change that for the assessment of flood risk for non-residential development a "period of at least 75 years" should be considered. Furthermore, paragraph 6 of NPPG also confirms that where the lifetime of a development is significantly beyond 100 years such as some infrastructure projects, it may be appropriate to consider a longer period for the lifetime of the development when assessing the potential impacts of climate change on flood risk.
35. The LLFA returned to the Project Description chapter in the Environmental Statement to see if further information was available to provide clarity on the lifetime of the proposed scheme. In section 4.10.8 of chapter 4 of the Environmental Statement indicates that fittings on the pylons have a life expectancy of 20 to 40 years, overhead lines 40 years and pylons 80 years. In section 4.10.8, also states that full refurbishment works would *"be needed at the end of the lifespan of the overhead line 40 years, although pylons have a typical life expectancy of 80 years) and works would be subject to separate permissions, to consider the latest site conditions and legislation in force at that time."*
36. In section 4.11 of the Environmental Statement the applicant states "It is expected that the transmission of electricity would continue for as long as there

is a business case for doing so and that any decommissioning activity would occur decades into the future. To date, relatively few transmission projects have been decommissioned since the main expansion of such infrastructure in the 1950s and 1960s. The cables and pylons for overhead transmission lines are replaced periodically, ordinarily under National Grid's permitted development rights."

37. Therefore, the information about the lifespan of the proposed project is conflicting within the project description and between the Drainage Strategy and the Environmental Statement. There is a lack of clarity at this time. However, based upon the information in the project description, it is reasonable to consider the statements made in 4.11 of the project description should be given priority, as these statements are based upon the previous experience of similar schemes and aligns with the aim and purpose of this proposed scheme. Therefore, the Drainage Strategy should consider the proposed development as a permanent development rather than only having a "50-year design life" for the consideration of climate change.
38. The inconsistencies and need for amendments in section 5.2 continue in the Table 5.1 to 5.3. In Table 5.1, the applicant has not identified the correct climate change allowance for the Norwich Main Substation which has identified a 40% climate change allowance. However, as this site is located in a catchment where the allowance for the 2050s epoch is higher than that for the 2070s epoch and development has a lifetime beyond 2061, the exception rule requires the use the higher of the two allowances. This results in a 45% climate change allowance being required for the Norwich Main Substation. The applicant then goes on to state in section 5.2.9 that a 45% allowance will be applied in all areas which is confirmed in Table 5.2. Although there are inconsistencies in the information presented within the Table. While in Table 5.3, a summary of the greenfield runoff rates, and presumably the climate change allowances are provided for a couple of permanent and temporary items. While some temporary features are mentioned, the most significant temporary works features in drainage terms are not mentioned. The information provided within section 5.2 is unclear and in places incorrect and incomplete. **Further work is required to update this section with appropriate information.**

39. The information in section 5.3 confidently indicates that the discharge hierarchy has been applied, however, there are no references or examples to specific locations along where each of the approaches are used. Therefore, these statements at present are unevidenced. **Further information is required to support the statements made in this section.**
40. In section 5.4.2 titled "Post-Development Discharge", it is not clear whether this relates to the operational phase or another phase, such as decommissioning, of the development. **Clarification is required.**
41. Section 5.4.2 also states "The above hierarchy is a summary of the potential discharge routes which could be utilised at each site." However, the hierarchy given in section 5.3.4 lists the options but does not indicate the prioritisation of the options until the last bullet point. Furthermore, the list does not reflect the local discharge hierarchy in Norfolk, and no consideration or discussion has been undertaken as to where location variations in the discharge hierarchy are applied. Further information and clarification is required.
42. Again, in relation to section 5.4.2, the applicant states "The above hierarchy is a summary of the potential discharge routes which could be utilised at each site. The respective site layouts are shown in 6.4.F1 Environmental Statement Figure 4.1 - Proposed Project Design [APP-133] and 6.4.F2 Environmental Statement Figure 4.2 - Proposed Project Design -Permanent Features [APP-134] and the proposed discharge methodology per drainage pond is shown in Appendix A."
43. On review of Figure 4.1, Figure 4.2 and Appendix A, it is not possible to make a connection between the information and references provided in the drawings and the information provided in Appendix A. In Figure 4.1, the proposed overhead line construction SuDS basins are the only SuDS features with a symbol on the plans. These SuDS features are not labelled in Figure 4.1. In Appendix A, a pond reference number is provided along with a contributing catchment area. This information is not provided in either Figures 4.1 or 4.2. Furthermore, the order of the ponds appears to not be provided in a north to south approach and is therefore inconsistent with the approach taken in the previous section of the drainage strategy. In Appendix A, there are a number of statements in the "notes/assumptions/risks" section that state "Infiltration of surface water considered unsuitable. Shallow groundwater not identified." followed by a statement of "Infiltration may be deemed possible after infiltration test." This

indicates to the LLFA that at present no ground investigation has taken place. Therefore, it is not possible for the applicant to determine whether infiltration is viable. The LLFA Developer Guidance is clear that where in the early stages of design that infiltration testing has not been undertaken, the developer should assume that infiltration is possible as a Plan A approach while demonstrating that a viable Plan B is available. At present, the applicant has not been able to demonstrate that either a Plan A or a Plan B could be viable due to a lack of information. It is also not possible to check or confirm the whether the proposed discreet drainage catchment area is appropriate and therefore, that appropriate sizing of the attenuation basin has occurred. **Further work and information is required.**

44. In addition, the information provided in Appendix A is not complete as it does not compare the proposed discharge rate to the greenfield runoff rate for the comparable area. **Further work and information is required.**
45. The LLFA also notes the Pond Reference contains a discreet code identifying whether the "pond" (meaning attenuation feature) is temporary or permanent. This information is not clear and should be made clearer in Appendix A. **Further work is required.**
46. In the sections subsequent to 5.4.2, the LLFA notes the ordering of the discharge locations is not consistent with the SuDS Manual discharge hierarchy. For example, section 5.4.4 to 5.4.6 is Discharge to a Watercourse, 5.4.7 to 5.4.8 is Discharge to an Existing Reservoir / Water Body, 5.4.9 to 5.4.10 is Discharge via Infiltration and then there is Discharge to Existing Drain or Public Sewer in section 5.4.11.
47. This is not consistent with the discharge hierarchy as defined in paragraph 56 of NPPG of:
48. to a surface water body;
49. to a surface water sewer, highway drain, or another drainage system;
50. to a combined sewer."
51. While the Water UK Design and Construction Guidance – Sewerage Section Guidance Appendix C (Section C3: Paragraph 12) states the discharge Hierarchy to as:
52. "a. Surface water runoff is collected for use. b. Discharge into the ground via infiltration.

53. Discharge to a watercourse or other surface waterbody.
54. Discharge to a surface water sewer, highway drain or another drainage system discharging to a watercourse or other surface waterbody. e. Discharge to a combined sewer.”
55. In addition, it is clear that the drainage strategy has not considered infiltration appropriately in context of the discharge hierarchy as in section 5.4.9 that applicant states "Following the hierarchy as set out above where no suitable watercourse / water body is identified, discharge via infiltration is considered." This demonstrates the applicant has prioritised the connection to the watercourse over the discharge to infiltration. Therefore, clearly showing the applicant is not adhering to any of the national or local discharge hierarchies. Furthermore, it is clear the applicant has misunderstood the hierarchy as they have separated watercourses and "existing reservoir / water body" whereas the discharge hierarchy is clear in the two examples given above that watercourses are considered to be a waterbody and that they are of equal standing to other waterbodies such as reservoirs in this context. **Further work and information is required.**
56. In relation to section 5.4.4, it is not clear to the LLFA why there is a difference between the maximum discharge rate for the WMA's and the LLFA's ordinary watercourses. **Further explanation and information is required.**
57. In relation to the discharge via infiltration, the applicant indicates in section 5.4.10 that infiltration testing or ground investigation in relation to permeability is yet to be conducted. **Further work is required.**
58. In section 5.4.13, the LLFA notes the applicant has included a 300mm freeboard value for ponds that are 1m deep but not for ponds that are 0.5m deep. There is no explanation for this approach. In addition, this approach is not consistent with the LLFA's Developer Guidance, that in section 12.1.31 clearly states a minimum freeboard of 300mm to the top of bank, along with other open SuDs design parameters such as a maximum water depth of 1.2m. **Further work is required.**
59. In relation to section 5.4.16, the LLFA confirms that Norfolk requires that the latest FEH catchment data and rainfall method is used. Should an alternative rainfall method be proposed, a fully hydrology assessment will be required to provide robust technical justification. **Further work is required.**

60. In relation to Table 5.4, the LLFA notes the applicant proposes to use Type 1 material for the Haul Road and suggests the use of an 80% impermeability rate. The LLFA is not supportive of this approach and would require a 100% impermeability rate if Type 1 material is to be used. While the Plat / Cable Drum Storage is indicated to be Type 3 Gravel with a 30% impermeability. Again, the LLFA is not supportive of the very low impermeability value associated with these areas. The LLFA would consider any platforms, access tracks and haul road to be impermeable due to the proposed materials and need for the materials to be compacted to such an extent that prevents them from being considered as permeable. From a drainage perspective, the more open the grading is considered better for drainage, while from vehicle running and structural platform perspective, a more dense grading is desired. The denser the build-up, the slower the rate of that water can permeate the surface resulting in an increased likelihood of surface water flow over the top of the haul road or platform area, particularly if the fines happen to be compacted into the surface. Type 1 material depending on the age and compaction, can result in a smooth and impermeable surface. While a Type 3 material is more open graded and more porous than a Type 1 material but is not completely permeable when compacted. Therefore, it is not possible to consider the platform, access tracks and haul roads as permeable or semi permeable. The impermeability rates for all these features will need to increase. In relation to the spoil / laydown areas and the cable trenches there is not enough information proved at this time to consider whether the 20% impermeability assumption is appropriate. These principles and LLFA comments follow through to Table 5.5 which considers the impermeability rates for the substations, various compounds and construction works compounds. It is interesting that section 5.4.18 indicates that
61. "construction compounds will consist of a combination of cabins (on asphalt areas), roads, parking, storage and spoil / laydown areas" and there is no information available on the areas of each type of use in a compound yet the impermeability percentage has lowered significantly when this information and supporting evidence is not available to inform this assessment. Later in section 5.4.27 the applicant indicates that "construction compounds have been assumed to have 60–75% of their gross site area as impervious", however, evidence has

not been provided to demonstrate what this assumption has been based upon.

Further work and information is required.

62. The LLFA notes that in section 5.4.22 the applicant indicates that "dirty water" from the temporary features during construction shall be treated through pollution controls and treatment. It is not clear to the LLFA how this will be possible if so much of the surface water runoff is to infiltrate due to the previously indicated permeability of the structures (as seen in Table 5.4 and 5.5). This inconsistency indicates the design has not yet been considered in full. **Further work is required.**
63. In section 5.4.23, it is not clear which substation this action relates to or whether it is all the substations. In addition, the discharge hierarchy has either not been applied appropriately or that suitable justification has not been provided. Furthermore, it is not clear in the design whether the discharge to the watercourse is viable by gravity. Overall, despite the text provided, there is no viable design that the applicant is able to evidence at this time and it is not clear to the reader whether this issue occurs along the scheme's route that crosses 3 counties and one unitary authority area. **Further information is required.**
64. Section 5.4.23 is one sentence that is so generic, it is not clear what value it adds to the drainage strategy. **Further work is required.**
65. In relation to section 5.4.25, the applicant states that "all temporary features described in this section will be removed and reinstated to the previous land use, unless otherwise agreed with landowner". This sentence has contradictory actions by stating the removal all temporary works unless they leave them in place. The LLFA requires that all temporary works that are proposed will need to be removed to ensure there is not increase in flood risk over the long term. Should any works remain in place the applicant will need to identify these at this stage and they will need to be designed and built as permanent features to ensure there is no increase in flood risk in the long term either onsite or elsewhere. **Further work is required.**
66. The LLFA notes in section 5.4.27 that the applicant has not included surface water drainage features such as SuDs attenuation basins into the areas that are within the construction compounds. In addition, the applicant has stated "The contractor is to manage areas within the Project with access from construction vehicles and where materials/spoil and waste are stored, and hence potentially

dirty water may drain into the ground below." The applicant has indicated that they are likely to pollute the soil and water within the area of the contractor compound. Yet in the Environmental Statement, the applicant has indicated that this risk is managed through a combination of site management and a surface water drainage system that is designed to adequately treat the surface water. Therefore, the Drainage Strategy is not consistent with the Environmental Statement and there is a lack of clarity around what is proposed at the temporary construction compounds that will be in place for approximately 5 years. **Further work and information is required.**

67. In sections 5.4.29 to 5.4.32, the applicant indicates there are 3 different haul road design widths that are likely to be used that range from 6m to 21m wide. However, while it is clear the 6-8m haul roads would be used for overhead line and underground cable construction, it is not clear what a 21m wide haul road would be used for or where it would be used. It is noted that only the 21m wide haul road has an indication of including surface water drainage in sections 5.4.32 to 5.4.33. The 6-8m wide haul roads do not have any mention of surface water being associated with them. The LLFA notes that both types of haul road would produce a significant increase in impermeable area that would potentially lead to an increase in flood risk. Later in section 5.4.35 for overhead lines, the applicant indicates that "the impermeable area has been determined from the full width of the haul road swathe (21 m wide)", which contradicts section 5.4.30 where it states the haul road for overhead line construction would be 6-8m wide. **Further work and information is required.**
68. In LLFA notes that in section 5.4.34, the applicant again assesses the flood risk for the overhead line works as temporary. An approach associated with the environmental statement rather than a drainage strategy. The LLFA's earlier points on these two issues continue to remain a concern. **Further work and information is required.**
69. In section 5.4.36, the applicant indicates "SuDS will be used to provide storage for the 100 year plus 25% climate change event for the overhead line route alignment." However, the preceding section (5.4.35) appears to indicate it is only haul roads associated with the overhead line construction. Yet in section 5.4.38, the applicant identifies that "Surface water runoff originating from the haul road, pylon work sites, and temporary construction compounds along the overhead

line routes". It is not clear to the LLFA what areas are associated with the overhead line construction and how the overhead line section is different to the Construction Compound Site (sections 5.4.27 to 5.4.28) and Haul Road (sections 5.4.29 to 5.4.33). **Further work is required.**

70. In section 5.4.38, the applicant has indicated that land drainages would be directed into surface water storage basins". The design need and justification for attenuating the water from the land drainage network in the temporary construction surface water storage basin, is not clear to the LLFA. **Further information is required.**
71. In section 5.4.37, the LLFA notes the applicant has not reviewed or considered the Norfolk LLFA's Developer Guidance. Therefore, the statement is incorrect as not all guidance has been reviewed or considered. **Further work and information is required.**
72. The LLFA notes there is a lack of explanation or description relating to the temporary pylon working areas. As these areas denoted in Figure 4.1 form a significant area, it is reasonable for the LLFA to require further information about these areas to better inform our understanding of the potential drainage and surface water runoff implications. **Further information is required.**
73. In section 5.4.41, the applicant describes a series of cascading settlement basins proposed to be used to manage the sediment discharged from the surface water runoff from the haul road, pylon working area or construction compounds. It is not clear from this information if this is a description that relates to all the SuDS basins shown in Figure 4.1 or whether this is for a few select locations. It is also not clear how the water would reach the basins as there been no discussion on the drainage network other than in selection 5.4.38 where some component features were mentioned in a list. **Further information is required.**
74. The LLFA requires clarification as to whether sections 5.4.47 to 5.4.50 relates to new Substations or the extension of existing substations. **Clarification is required.**
75. In section 5.4.47, it is clear that the discharge hierarchy, again has not been appropriately followed as the applicant has demonstrated a preference to discharge to a watercourse without considering whether infiltration to ground is viable. As stated in a previous comment on the discharge hierarchy, further work

and evidence is required to demonstrate that infiltration is not viable before discharging to a watercourse / waterbody. **Further work and information is required.**

76. The LLFA notes the applicant's high level description of the finished platform in section 5.4.50 and 5.4.54 as a permeable structure that would facilitate infiltration. At this early stage, the LLFA would consider these platforms to be an impermeable surface based upon the previously discussed matters relating to the need to compact the subbase and surface layer to ensure suitable and stable base for vehicles and equipment to be placed upon. Furthermore, it is normal practice within the surface water drainage industry to keep infiltration drainage structures approximately 5m away from existing or proposed buildings and structures. This approach is reflected in part by Part H of the building regulations, the SuDS Manal and the new National Standards for SuDS. Therefore, the suggestion that the proposed platform for a substation as permeable and enabling infiltration to occur is incorrect and inconsistent with the national standards and regulations and local requirements that are in place to reduce the risk of detrimental impacts posed to this infrastructure. The applicant has shown an awareness of the need for infiltration systems to be at least 5m away from "any existing or proposed buildings, roads, embankments or other infrastructure" as identified in section 9.5.3 if this drainage strategy. Therefore, this information is not new to the applicant so the applicant will need to review this design approach and update accordingly. **Further work is required.**
77. The LLFA notes that in sections 5.4.48 and 5.4.52, the applicant indicates that the proposed drainage strategy is "heavily informed by the 7.9 Flood Risk Assessment [APP331] and information fed in from the LLFA." At present, it is not clear what information from the FRA has been used to "heavily inform" the drainage strategy. Furthermore, the LLFA has already highlighted various concerns regarding the incorrect information used in relation to the Norfolk LLFA's requirements in part as the applicant appears to have not reviewed or considered the Norfolk LLFA's Developer Guidance or information. Therefore, there is a lack of evidence to support the applicant's statement that the proposed drainage strategy is "heavily informed by the 7.9 Flood Risk Assessment [APP-331] and information fed in from the LLFA." **Further work is required to address this matter.**

78. In relation to section 5.4.55, the applicant has again indicated that they believe there is the potential for the access roads to be designed in a permeable manner. Again, the LLFA considers these access roads to be an impermeable surface based upon the previously comments relating to the compaction of materials for vehicles to use and the application of normal practise in the surface water drainage industry to keep infiltration drainage structures approximately 5m away from existing or proposed buildings and structures including roads. This is reflected national regulations and design standards and local design requirements to reduce the risk of detrimental impacts posed to this infrastructure. The applicant will need to review this design approach and update accordingly. **Further work is required.**
79. In section 5.4.55, the applicant identifies that bellmouths for temporary haul roads in the permanent works section. The LLFA requires clarification as to whether the bellmouths to the temporary haul roads would be a permanent feature or removed at and the original land use reinstated as per the project environmental commitments. **Further information and clarification is required.**
80. In section 5.4.57, the applicant has stated that "Runoff from the access roads and bellmouths is proposed to be collected via infiltration drains/ditches along the edge and will be attenuated via the attenuation/infiltration ponds with a controlled discharge to the nearest existing watercourse or drainage ditch." This statement lacks clarity about the proposed drainage arrangements, discharge location and evidence to demonstrate these approaches are viable. **Further work and information is required.**
81. In relation to section 5.4.58, the LLFA notes the Drainage Strategy is not based upon site specific topographic data and has incomplete topographic data and information as confirmed by the applicant in section 3.1.1 to 3.1.6. The applicant does indicate that "all outfall locations are indicative". **Further work and information is required.**
82. The LLFA notes the reference to TS2.10.09 which is an internal technical specification to National Grid and has not been shared or suitable extracts provided in this drainage strategy. Therefore, there is no evidence provided at this time to support the proposed approach. **Further information is required.**

83. Again, the LLFA notes there is a section in the drainage strategy for the proposed outfalls, however, there is no information or consideration to the infiltration testing that would be necessary to demonstrate that the discharge hierarchy has been adequately applied. **Further work and information is required.**
84. The application states that "Outfall locations are indicated in 6.4.F1 Environmental Statement Figure 4.1 - Proposed Project Design [APP-133]." The LLFA has reviewed figure 4.1 and notes that only ordinary watercourse crossing points and the proposed overhead line SuDs basins are shown on these figures. Therefore, the drainage strategy statement is not correct. **Further work and information is required.**
85. In section 5.4.60, the statement that all attenuation and infiltration features would have a 300mm freeboard is inconsistent with the earlier statement in the drainage strategy in section 5.4.13. Section 5.4.13 indicated that only features with a 1 m depth of water would have a 300mm freeboard. **Further work and information is required.**
86. Section 5.4.60 indicates the applicant's expectation of residual flood risks likely to be associated with the proposed development. However, the Environmental Statement indicated that this was not to be the case. Therefore, the Drainage Strategy and the Environmental Statement appear to contradict. **Further work and information is required to resolve this contradiction.**
87. Section 5.4.59 contains very detailed information about the outfall design when there is a lack of information about the location of the outfalls and the proposed drainage design associated with the outfalls. Therefore, it is not possible to determine whether these outfalls are suitable for these locations or the drainage infrastructure. **Further information is required.**
88. In section 5.5, the applicant has stated that "The proposed SuDS features would allow interception of the first 5 mm of rainfall where possible, reducing runoff from the site into surface water or piped drainage systems." At present there is not enough detail to evidence that approach has been applied as no surface water drainage layouts have been provided for any of the construction or operational phases proposed developments.
89. Further information is required as it is not possible to assess this section at this time. **Further work and information is required.**

90. In relation to section 5.5.3, the LLFA's previous comments regarding the substation platforms and construction compounds would not be considered as "constructed with permeable material". Therefore, these structures would not be considered as offering interception of everyday rainfall. Furthermore, the LLFA notes that in section 5.5.4, the applicant lists items from Standard 2 in the National Standards for SuDS. Again, without a proposed drainage design it is not possible to determine whether the proposed design approach is appropriate. **Further work and information is required.**
91. In relation to section 5.5.3, the applicant has stated "The permeable platform construction shall naturally retain runoff, where runoffs will be lost to the soils or the atmosphere." The LLFA notes the applicant has previously indicated that the platform's material would be unbound and appear to have no sides to retain any water within these structures. The LLFA notes that these structures are yet to be suitably designed as attenuation structures as no drainage design information has been provided. **Further information is required.**
92. In section 5.6.1, the applicant has indicated the identification of the discreet drainage catchments along the route of the proposed development. However, this information has not been included in either the Drainage Strategy, Flood Risk Assessment or the
93. Environmental Statement. Therefore, the proposed design and the drainage strategy is not supported by an evidence base on this point. **Further information is required.**
94. In section 5.6, the use of the term pond implies these features are expected to contain a waterbody throughout the year. However, in previous sections the applicant has indicated these were basins or attenuation areas rather than ponds. The LLFA seeks clarification as to whether these features will be designed as ponds with standing water in them or attenuation basins that do not have standing water within them. **Further information is required.**
95. In section 5.6.2, the applicant identifies there are two types of ponds; a.) permanent pond for treated surface water and b.) a temporary pond that allows for the settlement of sediments in the pond design. However, in the subsequent information provided in sections 5.6.3 to 5.6.9, it is not clear which basin design the information relates to. It appears that most of the information provided relates to the temporary sediment management basins. The LLFA seeks clarification of

which design information relates to each type of basin. **Further clarification and information is required.**

96. In section 5.6.10 to 5.6.13, the applicant appears to indicate that Header, Filter drains and swales are being included in the permanent drainage arrangements. However, in the discussion within sections 5.6.10 to 5.6.13, the applicant considers the use of these features in relation to the temporary construction phase features, which is not what this section is about. Therefore, it is not clear to the LLFA how these features will relate to the permanent drainage arrangement, where they will be located and how they will be used in the surface water drainage systems for the operational phase. **Further work and information is required.**
97. In section 5.6.14, it is not clear where or what development these possible features could be related to. **Further information is required.**
98. The LLFA notes the discussion in section 5.7.5 that indicates that existing land drainage is 0.9m and that external access roads are expected to reach a depth of between 0.5 and 0.7m. The applicant has assumed that there would be no interaction. However, the LLFA, notes that the depths given are the invert depths. This means that a typical 150mm or 225mm diameter pipe would have a soffit of between 0.75 and 0.675m plus an allowance for cover. Therefore, there is a moderate potential risk of interaction between the field drains and the proposed access roads. Again, this risk could apply to haul roads with depths around 0.7m that are referred to in section 5.7.8. **Further work will be needed by the applicant to manage this risk.**
99. In relation to section 5.8, it is not possible for the LLFA to provide any specific comment as there is no indication as to where the areas of high groundwater levels are located.
100. Furthermore, it is noted that this section is written in the manner of an Environmental Assessment rather than a drainage strategy. **Further work and information is required.**
101. The LLFA notes that in section 5.8.7 there is another attenuation ponds section included, consisting of two sentences relating to ponds and groundwater. However, again this information is not specific and does not indicate where the areas of high groundwater levels are located. It is also the first time that the basins appear to have been considered to be lined. The base of the basins

would need to have 1.2m of clearance between the basin base and the peak groundwater level. This is identified in the LLFA Developer Guidance. **Further work and information is required.**

102. In section 6.1, it is not clear to the LLFA whether the applicant will be using the simple index approach or another approach identified in The SuDs Manual (C753). **Further information is required.**
103. The LLFA notes that the majority of the information provided in section 6.2 relates to site management and pollution mitigation practices on construction sites. There is no information relating to the proposed method of the water quality assessment for the surface water drainage system. The LLFA notes in section 6.2 the applicant refers to the Ciria C648 Control of water pollution from linear construction projects which was published in 2006. The Ciria SuDS Manual C753 (Published in 2015) includes information for the assessment of water quality for surface water drainage systems. As these temporary drainage systems will be in place for approximately 5 years, it is reasonable to use the more recently published water quality assessment approaches for sustainable drainage systems in this drainage strategy. It is also noted that the applicant focuses on the water quality for discharge to watercourses, with no obvious consideration of discharge to the ground. However, throughout the drainage strategy there was limited consideration and mention of discharge to the ground, resulting in the incomplete consideration of the discharge location and the water quality. As there is no information relating to the proposed method of the water quality assessment for the surface water drainage system it is not possible to determine at this time whether the proposed drainage strategy and design is appropriate. **Further work is required.**
104. The LLFA notes that in section 6.5.4 the applicant has only referenced the Water Resources Act 1991, which is where the Environment Agency derives their consenting powers. However, the LLFA and IDB derive their powers from the Land Drainage Act 1991. As this has not been identified in this section, an amendment will be appropriate as it is incorrect as it stands. **Further work is required.**
105. In relation to section 6.5.8 to 6.5.10 and the dewatering of construction works, the LLFA notes there is no consideration of whether the discharge of dewatering

activities could increase flood risk on site or elsewhere. **Further work and information is required.**

106. The LLFA notes that in section 8.1.4, the applicant indicates that the proposed project is committed to delivering at least 10% BNG and reinstating habitats across the route. While the LLFA supports these commitments, it is noted these commitments are separate to the provision of biodiversity within the sustainable drainage design, especially as many of these SuDs feature are proposed to be temporary for the duration of the construction phase. Furthermore, it is not clear in section 8 where these additional enhancements would be located as no information is provided as this time in the drainage strategy. **Further work and information is required.**
107. In section 8.1.7, the LLFA notes the applicant states the project "is retaining the temporary attenuation pond at the EACN Substation to create a wetland habitat to introduce habitat diversity." If the temporary attenuation basin is being retained to then develop a wetland then this is either change of use or a permanent structure. It should be noted that an attenuation basin is a different type of feature to a wetland. Further clarification and information on any retention of temporary features, such as this situation, would need to be identified at the start of the project. **Further information is required.**
108. The LLFA notes that at present the list of SuDS features given in Table 9.1 does not include an infiltration feature. It is also not discussed how the potential permeable structures such the platform and access road should a suitable permeable design be developed would be maintained to their proposed design capacity. At present the information provided in the maintenance section is not consistent with the drainage features identified in the preceding section of the drainage strategy. These inconsistencies will need to be resolved. **Further information and work is required.**
109. In relation to 9.3, the LLFA has been clear in our previous consultations that temporary works will need to be removed as they have been identified as temporary. Should the applicant seek for these temporary structures to remain after the construction phase then these structures would be considered as permanent structures. Any permanent structures would need to be identified during this phase of the design development and the structure designed for long

term use and to ensure there is no increase in flood risk of the full design life of the structure. **Further work and information is required.**