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Date 15 November 2022

Dear Shaun

RE: 21/03380/FP - Land to The North and East of Great Wymondley, Hertfordshire

Thank you for re-consulting the LLFA on the above application for a Proposed solar farm measuring 88 hectares with associated battery storage containers, transformers stations, storage buildings, fencing etc including means of access at Land to the North and East of Great Wymondley, Hertfordshire.

In response to our previous objection dated 14 February 2022 the applicant has provided the following information:

- Technical Note- 5208 dated 30 May 2022 Final V1.1 prepared by Weetwood
- SWD and Overland Flow Management Strategy dated 30 May 2022 prepared by Weetwood

Based on the information provided we maintain our objection for the following reasons:

1. **Discharge rates-** The applicant is proposing a discharge rate of 5/l/s. This is at the higher end of what we would expect, in particular where we have requested a betterment of the current situation.
2. **No reference to Section 19-** having referred the applicant to this document and subsequent modelling and mitigation report, no direct reference has been made to this within the FRA and Drainage Strategy to ensure there is a full understanding of the prior modelling, constraints, catchment, assets and flood mechanisms.
3. **Catchment survey-** no condition survey of the culverts has been carried out. Please see S19 for information on the condition of culverts etc in this area (apart from the 285m length culvert which was not included). We are concerned that these watercourses do not have the capacity to accept additional volumes and in some

places are broken and under capacity. This needs to be taken into account when carrying out the hydraulic model to reflect the real conditions of the catchment. The 285m culvert referenced within the northern parcel has not been surveyed. Therefore, the condition and capacity of both of these culverts is unknown. In order to accept discharge rates and volumes into these catchments, this information is required. Please also refer to the S19 regarding the culvert downstream along Priory Lane from Gravelly Lane.

4. **Method of overland flow management-** It is proposed to install 2 ponds which are to be bunded. By using 'raised' methods, these become 'formal' flood assets. We therefore have concerns over their purpose, capacity and structural design to be able to manage flows from each catchment. It is stated that these are only design to manage the additional '7%' of extra run-off from the solar panels, despite our requirement to manage the run-off from the panels at source and avoidance of the existing natural overland flows. We have concerns that these ponds will naturally receive run-off and the overland flows as identified in our own modelling and within the applicants and these ponds will become redundant. The use of attenuation was assessed as part of the mitigation options as part of the S19 to manage over land flows under current conditions as was discounted due to the volumes and velocities of flows required to be accommodated, introducing 'flood management' structures which would require regular maintenance and cost, which if should fail would have negative downstream consequences. Any 'flood assets' approved would have to be formally registered by the LLFA on their flood defence register and permission to alter or remove them in the future would require prior written consent from the LLFA.

5. **Hydraulic modelling-** Paragraphs 18-28 discuss runoff and show this is represented. It states that there is an increase in rainfall applied of 7% compared with existing rainfall. However, with the small amount of storage being provided, we are unclear as to how the calculated figures have been concluded, particularly given that the main inlet to all of the attenuation features is a piped inlet from the access track. We are assuming that the flows presented in the table are for the outlet from the basin and not the total runoff from the site. If so then the increase in 7%, suggests that what has been applied cannot be catered for as there is no attenuation of all of the flow paths from the site. Therefore, how is the applicant providing mitigation for runoff from the site that does not pass through the attenuation features? Also is there a bund proposed through and over an existing track and how realistic is this? How are the bunds managing the 7% if all of the primary flow paths are not catered for? There are no post implementation scenario flood maps which are required to demonstrate what the impact of the development is. It is unclear where they have taken the measurements of flow for the graphs and tables from. We would expect to see a cut line across the full length of the boundary (can spilt across the two sites if necessary). The proposed access roads cut across the contour so has the runoff been calculated from the upslope catchment – therefore can they be treated in isolation? The question marks '?' on the sketch indicate the flow paths that have no mitigation. Therefore, we are not sure how it can be demonstrating such a large decrease in flow

for the 1 in 30 year unless the mitigation is only picking the points of overspill from the bunds and not looking at the rest of the site.

6. **Surface water management-** It is stated that attenuation ponds will be installed to manage the run-off from the 'developed' areas excluding the panels, however based on the proposed locations, these ponds will also capture natural run-off from the land. Has this been taken into account when calculating the capacity of the ponds an appropriate freeboard above the 1 in 100year + climate change rainfall event. There are insufficient surface water calculations, all other events from the 1 in 1 year event up to the 1 in 100 year + climate change event should be provided. We need more information on how run-off from the solar panels will be managed. Based on the topography and location of the proposed ponds, in particular the south basin 1 there seems to be an outfall into the field with no ditch location. There are lengthy pipes to and from the ponds which may be prone to blockage and place the drainage system deeper.
7. **Treatment Train-** There is no treatment train from the proposed track and other hardstanding areas prior to the discharge into the attenuation ponds. The proposed perforated pipes are to be set into the gravel track, therefore at risk of blockage from silt etc washing through the track blocking the perforations and blocking the pipe runs which will then cause flows to flow overland and make the proposed ponds redundant. The tracks need to be formally managed as part any other road. Roadside swales/filter strips may be more suitable and will manage at source reducing the need for lengthy pipes.
8. **Half drain down-** no half drain calculations have been provided for the attenuation and overland flow features. It needs to be demonstrated that these can half drain within 24 hours based on an appropriate discharge rate.
9. **Works to ordinary watercourse-** no details have been provided on the construction of the proposed new headwalls and capacity of the watercourses. Regardless of any planning permission, consent from the LLFA will be required under the Land Drainage Act 1991 will be required. The applicant will also need to ensure landowner permission if the works are not within their ownership. In principle agreement should be in place at planning application stage to ensure the drainage scheme is viable.

It is proposed to place one of the overland flow basins online to the Old Priory Lane watercourse, this is not acceptable as it will not manage the flows sufficiently and will hydraulically change the watercourse. Any proposals should be offline with a controlled outlet into the watercourse.

10. **Adoption and Maintenance-** Please provide this information.
11. **During Construction-** prior to the site having established grass and managed vegetation, how will the run-off and overland flows be managed including the management of silt and soil from heavy traffic and construction, ensuring sufficient

management of run-off and water quality with no negative impact on the existing ordinary watercourses.

With regards to the EA removing their objection on flood risk grounds, this only relates to the Flood Zones outside of the main development area with regards to the cables to the substation. These are associated with the Ash Brook which runs through the village of Little Wymondley and relates to the management of levels during construction, which the applicant has confirmed not materials will be storage in flood zone areas. This is not related to the complex management of existing overland flows and increase in overland flows and surface water run-off as a result of the main development area.

If this catchment is not managed appropriately and given the detailed assessment it requires, the impact downstream increasing flood risk is high. The Priory Lane catchment contributes flooding along Priory Lane and Little Wymondley where it joins the Ash Brook. This may negate the mitigation works on the main road undertaken by HCC Highways if there is an increase in run-off rates and volumes as a result of the development. Whilst we appreciate the development is to improve the environment with a sustainable source of energy this should not be prioritised above increasing flood risk which is also a climate change issue and should also be managed sustainably and for the lifetime of the development.

LLFA Position

For the reasons above, the proposed development is currently not acceptable to the LLFA and we maintain our recommendation of objection until further detail is provided.

If the LPA are minded to approve the application we recommend the following stringent conditions to secure an acceptable strategy.

Condition 1

No development including ground works and ground preparation works shall take place until a surface water drainage scheme and flood risk assessment for the site, based on sustainable drainage principles and an assessment of the hydrological and hydro geological context of the development, has been submitted to and approved in writing by the local planning authority. The drainage strategy should demonstrate the surface water run-off generated up to and including the 1 in 100 year + climate change critical storm will not exceed the run-off from the undeveloped site following the corresponding rainfall event. The scheme shall subsequently be implemented in accordance with the approved details before the development is completed.

The scheme shall also include:

1. A detailed response to our letter dated 15 November 2022 which satisfactorily addresses the 11 points of concern with the proposed surface water drainage scheme and overland flow management scheme.
2. Carry out any necessary amendments to the proposed surface water drainage scheme and hydraulic modelling for the overland management scheme for LLFA

approval. Once the baseline information is agreed the following information should be provided;

3. Detailed condition survey of all known culverts including the receiving catchments.
4. Demonstrate an overall betterment to the existing pre-development surface water greenfield run-off rates.
5. Demonstrate an overall betterment of the existing pre-development overland flow paths for the 1 in 30 year event, ensuring the flow paths are maintained and not made worse for events above the 1 in 30 year event up to the 1 in 100 year + climate change event.
6. Detailed engineered drawings of the proposed SuDS/ flood risk mitigation features including their location, size, volume, depth and any inlet and outlet features including any connecting pipe runs and all corresponding calculations/modelling to ensure the scheme caters for all rainfall events up to and including the 1 in 100 year + 40% allowance for climate change event.
7. Detailed engineered drawings of all proposed discharge locations including headwall details, evidence of landownership and relevant permissions. A condition survey of these specific locations should also be provided and any mitigation required should be carried out prior to development taking place.
8. Demonstrate appropriate SuDS management and treatment and inclusion of above ground features reducing the reliance on piped drainage.
9. Provision of half drain down times for surface water drainage features within 24 hours.
10. Silt traps for protection of any residual tanked elements.
11. Construction phase surface water and flood mitigation management plan.
12. Details of how the scheme shall be maintained and managed after completion including adoption details.

Reason

To prevent the increased risk of flooding, both on and off site in particular to Priory Lane and Little Wymondley.

Condition 2

Upon completion of the surface water drainage / flood management works for the site in accordance with the timing / phasing arrangements, the following must be submitted to and approved in writing by the Local Planning Authority:

1. Provision of a verification report (appended with substantiating evidence demonstrating the approved construction details and specifications have been implemented in accordance with the surface water drainage scheme). The verification report shall include photographs of excavations and soil profiles/horizons, installation of any surface water structure (during construction and final make up) and the control mechanism.
2. Provision of a complete set of as built drawings for site drainage.

3. A management and maintenance plan for the SuDS features and drainage network.
4. Arrangements for adoption and any other measures to secure the operation of the scheme throughout its lifetime.

Reason

To prevent flooding by ensuring the satisfactory storage of/disposal of surface water from the site.

Informative to the LPA

We would recommend the LPA obtains a management and maintenance plan, to ensure the SuDS features can be maintained throughout the development's lifetime. This should follow the manufacturers' recommendation for maintenance and/or guidance in the SuDS Manual by CIRIA.

Informative

Please find a link to the Little Wymondley Section 19 Flood Investigation here; <https://www.hertfordshire.gov.uk/media-library/documents/environment-and-planning/water/flood-investigations/little-wymondley-flood-investigation-report.pdf> and the Flood Alleviation Feasibility Study here; <https://www.hertfordshire.gov.uk/media-library/documents/environment-and-planning/water/flood-investigations/little-wymondley-flood-alleviation-feasibility-study.pdf>. These documents should be considered as part of any future application.

For further guidance on HCC's SuDS policies, HCC Developers Guide and Checklist and links to national policy and industry best practice guidance please refer to our surface water drainage webpages:

<https://www.hertfordshire.gov.uk/services/recycling-waste-and-environment/water/surface-water-drainage/surface-water-drainage.aspx>.

The applicant should be aware that any works proposed, permanent and/or temporary to be carried out that may affect the flow within an ordinary watercourse will require the prior written consent from the Lead Local Flood Authority (Hertfordshire County Council) under the Land Drainage Act 1991. This includes any permanent and/or temporary works, regardless of any planning permission.

For further advice on Ordinary Watercourses, please visit our Ordinary Watercourse webpage via the following link:

<https://www.hertfordshire.gov.uk/services/recycling-waste-and-environment/water/ordinary-watercourses/ordinary-watercourses.aspx#>

Please note if the LPA decide to grant planning permission, we wish to be notified for our records should there be any subsequent surface water flooding that we may be required to investigate as a result of the new development.

Yours sincerely

Sophie Taylor
SuDS and Watercourses Support Officer
Environment & Transport