Submissions

Proposal:	Construction of a 62ha Solar Farm to include the installation of ground mounted solar panels together with associated works, equipment & necessary infrastructure
Location:	Land 800 metres South of Park House Farm, Meriden Road, Fillongley
Appeal no:	APP/R3705/W/24/3349391

NEW

UPDATED

Prepared by The Fillongley Flood Group

The Fillongley Flood Group (The FFG), who are affiliated to the National Flood Forum are opposing the Appellant's Appeal under section 78 of the Town & Country Planning Act 1990.

We understand that the Appeal relates to "Land 800 metres South of Park House, Meriden Road, Fillongley" (the development) in the Borough of North Warwickshire.

We have prepared a bundle: -

1. Statement filed 19th November 2024
2. Addendum dated 10th January 2025
3. Comments on NWBC Statement of Common Ground
4. FOI Response to Proposed Solar Farm
5. National Highways FOI Response
6. Further FOI Response to Proposed Solar Farm from WCC
7. Site Selection note

Our Statement & Addendum together with enclosures clearly set out the FFG's concerns that the development will increase the risk of flooding in the village. Unfortunately, the LLFA have raised no objection subject to conditions. We appreciate that the LLFA have imposed conditions, but as we have maintained from the outset, we believe that the modelling and data that both the Appellant and the LLFA have used was either flawed or inaccurate.

Since filing our Statement & Addendum we have recently discovered from a Freedom of Information Request sent to Warwickshire County Council that both the Appellant's consultants & the LLFA have based their research in respect of drainage on Cook & McCuen.

The Appellant's Drainage Strategy report by BWB dated November 2023 relies on the research paper by Cook and McCuen 2013 as its basis for their drainage strategy. However, this paper has subsequently been criticised as it does not take into account panels which are perpendicular to the contours of the land and a site which is not level, as is the case for the Appellants Fillongley appeal site.

A paper by Mulla(1) states ..... "Surprisingly Cook and McCuen concluded there was no difference in stormwater runoff between simulations in the presence or absence of panels. However no experimental measurements were collected to verify model performance in the Cook and McCuen study, and the impact of concentrated drip edge runoff on stormwater runoff was not considered."

It is important to note that the panels proposed by the Appellant will slope in dual

planes on an undulating site and thus the runoff will be from the lowest corner and not along the whole of the bottom edge on a level site as modelled in the Cook and McCuen paper.

Yaravi(2) in a 2022 paper titled "Minimizing environmental impacts of solar farms: a review of current science on landscape hydrology and guidance on stormwater management" concluded ....."At the time of this review, we were unable to find any study that directly evaluated runoff generation on solar farms through field measurement. Thus, we are still lacking critical insight into whether solar farms change runoff generation, and whether existing site and stormwater management practices are adequate to prevent adverse impacts. As a result, existing hydrologic models of solar farms are largely uncalibrated. There is also a bias in the sort of sites being evaluated. In general, existing environmental research on solar farms has focused on more ideal sites, i.e. those on sites with lower slopes and well drained soils. Thus, we are neglecting sites that could be more vulnerable to change in hydrologic processes with solar farm development"

The Appellant's site is not an "ideal site with lower slopes" but is **very undulating**.

The above papers were published prior to the submission of the Appellant's planning application. It is surprising that the Appellants hydrologists chose to ignore the issues raised by those papers and instead relied on unverified research which does not reflect the proposed panel orientation and topography at the Fillongley site.

I would also draw the Inspector's attention to the appeal case APP/D3313/A/13/2203242, wherein the Inspector found compelling the following argument:-".....rainwater would be likely to fall in a column from the lowest corner of each panel and could then form rivulets flowing down through the rain-shadows of the rows below without utilising their whole area for infiltration, thus increasing the amount of water runoff from the site." This is exactly the same scenario as for the appeal site, where rainwater will fall from the lowest corner. The Appeal was refused.

The LLFA has also confirmed that its recommendations in its response to the planning application are based upon the Cook and McCuen report and therefore does not take into account panel orientation, topography or that they are perpendicular to the contours. The City of Doncaster Council's guide titled "Solar Farm Drainage Strategy Advice" at point 6 states ....."Where possible, solar panel rows should be arranged parallel to a site's contours. A perpendicular arrangement may worsen flow channels and soil erosion".

The panel on the appeal site are perpendicular. This point does not appear to be taken into account by Warwickshire LLFA and therefore the LLFA response should be disregarded. Finally an article by Kennedy and Jenks, an American leading water and engineering company, entitled "rainy day at the solar farm" concluded .....
"Irrespective of state- specific permitting approaches, elevated ground- mount solar PV arrays may have the potential to alter the volume, velocity and discharge pattern of stormwater runoff at a site during and after construction. According to Minnesota Pollution Control Agency, sites can expect a 15-50% increase in volume due to the installation of solar PV panels. Given the above above, and bearing in mind that firstly the Appellant has not demonstrated it researched sites with a lower potential flood risk, and secondly because of the potentially increased flood risk to Fillongley, the precautionary principle should be applied to the flood risk and drainage aspects of the site. This appeal should therefore be dismissed.

Further we do not agree with the LLFA's or the Appellant's flood risk assessment. It appears to be contrary to the NPPF at section 171 which reads "Strategic policies should be informed by a strategic flood risk assessment & should manage risk from all sources. They should consider cumulative impacts in, or affecting, local areas susceptible to flooding...." The key words being "**manage flood risk from all sources**" & consider **"cumulative impacts."** Yesterday the LLFA confirmed that the surface water runoff from a section of the M6 drains into the watercourse that passes through the solar farm. The LLFA also confirmed that the flood risk assessment prepared by the Appellant's consultants BWB makes "minimal reference to the M6 motorway as the potential risk posed by this drainage is considered to be low." The LLFA have stated that the flood risk assessment is assessing the risk to the solar farm development and not the village of Fillongley. This appears to be contrary to section 171 NPPF.

National Highways have recently confirmed that when the M6 was upgraded to a Smart Motorway at junctions 2-4 the following works were carried out:-

Upgrading existing drainage to accommodate the construction of Emergency Areas (additional paved areas)

Re-profiling of ditches within the pipe network due to increased outfall requirements where attenuation was not within the original drainage network

Cleaning of drainage ditches where there was standing water in the M6 carriageway.

Further National Highways have said "This potentially does not point to work that have been carried out reduce surface water runoff, but they are the only works that have been carried out in this location and wanted to provide them for transparency."

It is a very different record of what works the LLFA believe were carried out by National Highways to reduce the increased discharge rates. It appears to us that the works were de minimus.

Therefore given the Bourne Brook Catchment & Flood Alleviation Study 2010 (commissioned by NWBC after flooding in Fillongley in 2007 & 2008), states an analysis had been carried out to look at the contribution to the overall runoff of the M6 motorway & the table shows the contribution from the **M6 is significant**. Further since the M6 has been upgraded to a Smart Motorway & the betterment measures watered down one would expect that the discharge rate has increased yet it has not been taken into account. The LLFA have confirmed that they have not reviewed the Bourne Brook Catchment & Alleviation Study 2010 & it was not part of this planning application.

Given this & the concern that our own experts had about the position of the interception swales for which we have never received a response from the LLFA & the fact that the Appellant's Drainage Strategy confirmed that there will be an increase in runoff although negligible we believe we have a perfect storm brewing in Fillongley.

BWB admitted at paragraph 3.17 of the Drainage Strategy that "in the event of exceedance of the proposed swales, exceedance flows will follow the existing topography either into the nearby watercourses or off site."

Therefore the cumulative effect of the M6 runoff exacerbated by the upgrade to the M6 Smart motorway plus the runoff from the solar farm development means increased flooding. Furthermore without up to date evidence of current predicted discharge rates from the M6 how can any flood assessment be carried out accurately.

updated

We would therefore ask that the Appeal be dismissed.

Conditions

As the FFG regularly have to stand in freezing cold water in the middle of the night protecting our homes and the village from flooding we would ask the Inspector that if she is not persuaded by our objections and those of other objectors that this site is inappropriate for the said development then we would ask that as well as the conditions imposed by WCC LLFA the Appellant is subject further conditions and a section 106 as appropriate. Edenvale Young Associates (EYA) Report (item 7 of the Appendix recommended the following:

1. "The swale design as shown will not reduce the runoff rates anticipated. The design should be developed to ensure that water is captured and managed such as by infiltration with check dams, and that the overflow mechanism is predicted and illustrated. The swales do not manage runoff as presently shown and would simply convey flows to the lowest points and cause unchecked erosion and silt mobilisation."

2. That attenuation ponds/detention basins be installed within the development site boundary. The LLFA agreed in their letter of 3rd April 2024 (item 3) that Natural Flood Management (NFM) measures including attenuation ponds, **"may reduce the risk any an unknown quantity by holding back the volume of water entering the watercourses at times of significant rainfall."** The Appellant put forward three attenuation ponds/detention basins initially proposed by way of email dated 7th May 2024 (item 4) and in its Drainage Strategy of 30th April 2024 but has now withdrawn those. We asked EYA to comment on the proposed Drainage Strategy and Flood Risk Assessment of 30th April 2024 and the letter from the LLFA dated 30th May 2024 (item 6). The FFG were concerned that the ponds/basins that were being put forward by the Appellant were not in the right place. EYA said the "ponds as put forward by the developer would not attenuate flows in the existing watercourses. The inlets needed to be designed to receive water from the watercourses and the outlets designed to mobilise storage – they do not, as presently shown. An indication of the benefits delivered by these ponds should be given, to provide monitoring". Therefore, any attenuation ponds

design and installation would need to be approved with the assistance of the LLFA and Edenvale Young Associates.

3. EYA stated that the scale and duration of grazing should be specified to ensure that the vegetation is effective in managing runoff. The FFG believes that this needs to be monitored. If the land is overgrazed, then the vegetation will not be effective in managing runoff.

4. EYA also stated that tracks should be formed in permeable granular material, usually expected to have 30% voids.

5. EYA recommended a project programme should be submitted showing the detention basins and swales installed as a first stage to bring benefits during construction. The FFG believe that the attenuation ponds/detention basins and swales should be installed before construction begins to reduce flood risk from compaction of the site. EYA state that it is customary to ensure that the fields are vegetated prior to trafficking and the commencement of construction, and that trafficking is avoided in wet conditions when the soil characteristics in the long term can be damaged. The FFG believe that this should be a condition of the development. We understand from our initial conversations with the LLFA that one of the greatest risks for the village from this development is during the construction phrase. As the Appellant indicated on the site visit potentially the development could take 18 months to construct and then the vegetation needs to grow, we calculate that the village could be at a higher risk of flooding at this stage.

6. EYA recommended on other solar farms that the Developer has agreed to have an annual walk around with the community group to promote good relations and show that the maintenance is being undertaken.

As well as the recommendations from EYA as an active Flood Group we would like the following condition and a section 106 agreement as appropriate that the Appellant provides before work on the development commences namely: -

1. An automated trash screen in Fillongley to replace the antiquated trash screen that was installed over twelve years ago. The trash screen was a recommendation of the NWBC Bourne Brook Catchment & Alleviation Study, Fillongley, North Warwickshire – July 2010. The placing, type etc of trash screen would have to be with consultation with the LLFA. Hopefully an automated trash screen would reduce the risk of a flood group volunteer being injured or killed.

2. A contractual agreement to fund from pre-commencement for the length of the development the Timeview Telemetry (Brook alarm/monitor). It records the rising water levels at the mouth of the culvert by the Manor House Pub and sends alerts to members of the flood group as well as providing invaluable data. The Timeview Telemetry has been in place for the last 12 years and has been a lifeline for the village. However, the funding of the monitor has been harder and harder for the flood group to secure.

The FFG engaged with the Appellant and asked them if they were willing to fund the brook monitor. An email from the Appellant dated 17th May 2024 is attached regarding their offer to fund the flood alarm as well as wishing to discuss any other ways they could support the Fillongley Flood Group's "admirable efforts in protecting Fillongley from the effects of floodings". (Item 5 – Appendix).

It is important to the FFG and the community of Fillongley that planning conditions recommended by the LLFA, and those that we have outlined in this Statement are included in the Decision Notice, if approved, and that the conditions are fully implemented and approved by the LLFA prior to being Discharged.

Citations

1. Mulla D, Galzki J, Hanson A, Simunek J (2024) Measuring and modelling soil moisture and runoff at. solar farms using a disconnected impervious surface approach. Vadose Zone Journal, 23, e20335

2. Rouhangiz Yavari et al 2022 Environ. Res.: Infrastructure. Sustain. 2 032002