

M. Smyth Comments on Flood Risk Assessment information relative to appeal
APP/R3650/W/25/3367393

The Appellant has provided two documents relative to Appeal APP/R3650/W/25/3367393, Appeal reference A for Pitch 1 at Lydia Park.

The flooding Proof of Evidence is submitted by Mr Quigg of Flume Consulting Limited and consists of a 14 page document.

A Flood Risk Assessment (FRA) authored by Flume Consulting Limited is also submitted to accompany the Proof of Evidence.

The FRA is entirely new information and is the first FRA that has been presented by the Appellants for either of the sites.

The Flood Risk Assessment considers a different redline plan (figure 1, page 9) to the main application, which consists of a rectangular land boundary around pitch 1. No boundary is shown to include the Lydia Park Access Track. A new site layout plan is included (figure 2 page 11) a different pitch configuration is shown with reduced hardstanding area, different boundary positions and treatments, and the watercourse at the front pitch is shown to be partially exposed.

The FRA includes outputs from a hydraulic flood model, produced using the Truflow software package. This is an industry standard hydraulic modelling software tool. The modelling is discussed on pages 18 and 19 of the FRA.

On page 21 of the FRA, figure 7, the proposed surface water mitigation scheme is shown. The scheme shown requires significant additional land (approximately by a factor of x10) compared to the land associated with Pitch 1. This is a stark difference in scale of land, and includes other pitches associated with other gypsy and traveller pitches. There is no supporting information about the viability of this other off-site land. There is no other information regarding this off-site flood mitigation, which comprise offsite associate of land raising and flood compensation.

The scope of my work is limited to the Appeal A site, shown in CD1A.4. This new information includes engineering works and land raising is the surface water flood corridor outside the appeal boundary. This off-site information is outside the scope of this appeal, and no previous information has been presented to show these works and the extent of activity associated with them.

Flood modelling work has three fundamental aspects, two of which are the model inputs of hydrology / rainfall and the modelled topography or pre and post development surface levels. The third aspect is the construction of the hydraulic model itself. All these three

aspects require careful and appropriate consideration as part of a professional review process.

There is insufficient information within the two pages to understand the construction on the hydraulic model, the model operation, sensitivity testing or validation of the model construction and operation. Hydraulic models are incredibly sensitive to operational parameters and settings and must be tested and validated to ensure satisfactory model stability. It is known an existing piped culvert currently flow through the site; it is unclear what consideration has been given to existing pipe routes in the model. A hydraulic modelling is required which must describe the hydraulic model; no such information or report is provided in the FRA document.

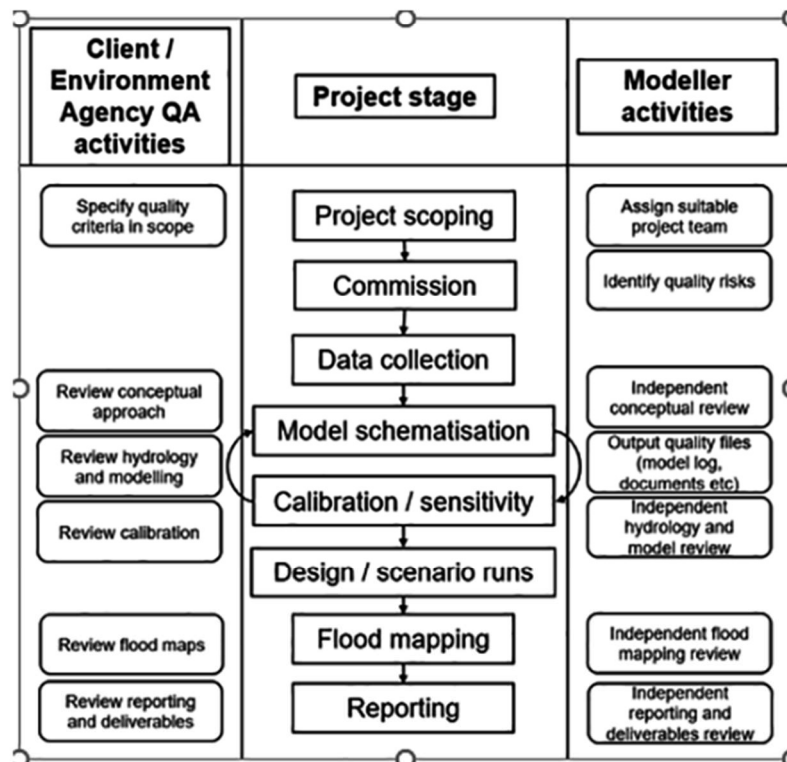
Direct rainfall hydrology has been used in the Flume modelling. There are numerous specific modelling parameters necessary to determine the rainfall profile (model input). Such information must be understood to ensure the correct input data is run through the model. It is essential that these parameters are known and understood, different storm durations and seasons (winter/summer) require consideration to ensure that the critical rainfall profile is used in the modelling. Not using the critical (worse case) rainfall profile will result in overly optimistic outputs which do not adequately assess the design storm event. Insufficient details are provided to assess the hydrology of the input data, and a review cannot currently be considered.

The other key input information for modelling is the topography, terrain surface. Some information is provided in figure 5, but it is unclear if this represents the undeveloped original predevelopment scenario, the current unconsented development arrangement or something else. The modelled mitigation scheme surface is not provided in detail, and the extent of land raising is not defined in the information. The report discusses land raising no level information has been provided, nor has any space layout information other than the off-site mitigation work plans shown in figure 7 and figure 8.

The typical approach for hydraulic modelling follows the EA guidelines for hydraulic modelling, and the below extract from Environment Agency document below outlines the process timeline.

Model review process

SEPA (2016) includes a suggested timeline for the model review process. This activity closely follows the EA process.



The figure shows the suggested timeline for the model review process.

The suggested timeline for flood modelling is set out, and due to the complexities and scope for error to influence the modelling result. The typical timeline for a review of a site-specific hydraulic model is usually in the order of 3-4 months, or potentially longer for more complex or unstable hydraulic models.

The FRA does not include accurate definition of the off-site flood mitigation scheme, nor does it include agreement from other landowners or tenants. The hydraulic model information provided is incredibly sparse and lacks enough detail to undertake a technical review of these off-site works. To enable an appropriate review of the appellant hydraulic modelling work, a flood modelling report is required in line with the EA hydraulic modelling guidelines <https://www.gov.uk/guidance/using-modelling-for-flood-risk-assessments>. The information currently provided cannot be reviewed until the required modelling information is provided.

This is clearly a new scheme with significant offsite land raising and channel excavation works. These flood compensation works are shown off site, requiring land approximately 10x the size of pitch 1. The poorly defined off site works are clearly outside the scope of the planning appeal boundary as shown in CD1A.4, and these offsite works are outside the scope of my current technical expert review work.