An agent-based model for flood risk warning – O'Shea et al.

Unfortunately, most (all) of my comments provided in the discussed version were not addressed. As it stands, this work does not present any major novelty, does not provide any major values to the existing literature in this topic and furthermore, the results and conclusions may be misleading. I cannot recommend accepting the paper at its current form. The major comments are summarized once again here:

- 1. Lack of major novelty: "This paper presents a new flood risk behaviour model developed using a coupled Hydrodynamic Agent-Based Model (HABM)". What is new here? The flood inundation model has been used for over a decade; creating such an ABM model on NetLogo is a straightforward task and no major advance is presented, compared with e.g. the one presented by Dawson et al. (2011) which was also reported almost one decade ago. "Instead of directly embedding the hydrodynamic model within the ABM, a more pragmatic solution is to indirectly couple a separate, and highly optimized, hydrodynamic model with an existing ABM framework." This is a bizarre statement/argument which does not explain why we don't need to couple the models and can't take advantages of the inundation model by 'properly' coupling them together. HABM "uses water depth output files from the LISFLOOD-FP at each model time-step within a simulated version of the affected area". Whilst it is presented as 'a coupled' model, the two modeling components are not even integrated together and the HABM simply uses the results from LISFLOOD-FP to inform the agent behaviours. There is no interaction between the two modelling components. The authors should stop exaggerating their work or model and use correct terminology. So, the model(s) as presented are not new and actually the whole paper lacks major novelty.
- 2. The model adopts oversimplified behaviour rules to drive the interactions between agents and does not consider major 'actors' that play key roles in flood evacuation and risk propagation processes and so will not be able to provide any meaningful results to address the "two currently unresolved questions relating to flood evacuation warnings" as claimed. For example, the transport systems and all of the relevant government agencies or organisations are not included. Again, the authors provide an unconvincing augment for this, "discrete transport model was not included in this model for these initial findings as it was felt that there has already been recent and significant advances in this area of interest". But transport systems are a key 'actor' in any of the flood evacuation/flood impact model related to population and must be taken into account to ensure the results are presentative! Modelling individual behaviours have also been made 'significant advances' recently. Why the authors bother to present this work then?
- 3. The model does not consider sufficient social processes during a flood event to ensure the modelling results to be representative and meaningful. Also, the model has not been validated by any means. The results being presented and the following conclusions are likely to be misleading, and certainly do not help address the 'two currently unresolved questions relating to flood evacuation warnings" as claimed.