

Interactive comment on “Flood Impacts on Emergency Responders Operating at a City-Scale” by Daniel Green et al.

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General comments:

Emergency responder accessibility during natural disaster and extreme weather is a major issue. This paper addresses this problem by proposing a method to evaluate emergency responder accessibility during flood events within the City of Leicester. This is an applied research based on existing tools and datasets. Method is well depicted and can be easily reused.

Nevertheless, state of the art concerning accessibility assessment could be more exhaustive in order to improve methodology. Indeed, as the network analysis undertaken did not consider congestion or the impact of traffic, it will be interesting to use more innovative method for assessing accessibility.

The word “accessibility” should appear in the title of the paper.

Specific comments:

- First comment: In this research, it is required to assess accuracy of quickest routing calculation. Indeed, using GIS software in order to calculate quickest routing may produce inaccurate results. A comparison between GIS results and quickest routing achieved tanks to reference tools is required. For instance, Google Map give very accurate results, so it will be interesting to assess correlation between GIS results and Google Map results.
- Second comment: Hypothesis about capabilities of emergency vehicles to travelling through flood waters should be validated. Moreover, it would be necessary to take into account velocity and not just the flood depths.
- Third comment: Concerning impact of fluvial flooding, it will be interesting to study the case where bridges are closed, even if they are not flooded. For instance, in France during a 1/100 flood, bridges are generally closed in order to prevent major accident. Indeed, fluvial flooding can weaken the structure of the bridge.

Technical corrections:

- Line 65: First sentence of the paragraph should become the last sentence of the paragraph.
- Line 67: Multi-Agency Flood Plan (MAFP).
- Line 129: A map with the 26 surface water flood hotspots will be more interesting than the Figure 1.
- Line 170: You can indicate if a specific tool had been used for the modeling surface. You can also specify that is possible to extract depth at multiple points in time through the flood event.
- Line 171 to 174: This paragraph need to be clarified.

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- Line 180: What is AA?

- Line 235: Two paragraphs should be a better choice to allowing readers to well understand than you developed two approaches.

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