

## ***Interactive comment on “Quick Response Assessment of the Impact of an Extreme Storm Combining Aerial Drone and RTK GPS” by Arthur C. Trembanis et al.***

### **Anonymous Referee #2**

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General comments: The general topic and assessment procedure presented for the manuscript entitled Quick Response Assessment of the Impact of an Extreme Storm Combining Aerial Drone and RTK GPS by Trembanis et al. possesses potential, particularly for practical efforts on the ground to improve recovery in coastal areas facing extreme weather conditions. This is particularly the case for storms producing flooding in local communities. However, substantial revision is needed to make this a solid article. The main issues that need to be addressed are: 1) the lack of clarification in the text specifically with regard to the Quick Response Protocol (QRP) explanation; 2) the need for clarification of texts in a fair number of other instances (see the continued contents of this report for details in addition to the supplemental material); 3) the need

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to completely overhaul the explanation of the qualitative component of the research as it pertains to the interviews conducted with local stakeholders; and 4) a revision of the general verbiage and sentence restructuring throughout the text (again, please see the rest of this report and supplemental material for reference).

This reviewer also agrees, generally, with the comments made within the first submitted report from Anonymous Referee #1. The following sections of this report provide specific comments organized by manuscript sections, while the supplemental PDF provides both comments in their textual reference as well as technical corrections. The technical corrections provided in the PDF also contain suggestions for improving the text.

Abstract: There is a need for greater specificity with what is meant by the “comprehensive approach” and the “timing information” that supported the activities of the research. What exactly makes this approach comprehensive? The authors later in the body of the main text make brief mention of the qualitative component of the research. Is the combination of the two what makes this comprehensive? If so, that part of the approach should be mentioned within the abstract text. The official name of the regional EWS should also be used. The abstract would also benefit from having at least one or two of the actual findings provided in the end of the abstract. As it stands, the content contains primarily method description. Providing results or content framed as some kind of key findings would greatly strengthen this abstract.

Introduction: The introduction also focuses very generally on method, providing little mention or explanation of the protocol presented in the research. The introduction also does not address the qualitative part of the research, namely interviews that were conducted (this is not described). A general reframing of the introduction is needed to better set up the structure of what will be presented in the sections that follow.

Some points of clarification in the text are also needed. Particularly in line 25, “. . .to ensure appropriate plans are enacted. . .”, using “plans” is vague. Would this pertain to

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general land use plans, coastal territorial plans, or developmental plans? This section would benefit from better connection to the kinds of planning tools that the information presented in this research supports. This may also help the research reach a broader audience. Another point is found in line 29, "to assess the impacts to the coastline after the storm, . . .". Please be more specific. How long after the storm? And why? Would one wait until authorities deem it safe to survey and ensure impacts are assessed as soon as possible to prevent loss of data? Stating "before either natural or human induced recovery process begin..." is not specific enough (the authors should at least state "as soon as possible" prior to these recovery processes). The reason I stress this point is in connection to the practical application of the presented methods. More specifically, how long would a scientist or practitioner wait post-storm to perform these methods and how long is too long a wait (or is this so context specific that there is no way to give a general indication).

Although the introduction makes an attempt to connect to the research to planning and coastal management. This connection can and should be strengthened by providing more elaboration on potential uses of this information and also include mention of particular types of stakeholders such as governmental entities and NGOs.

Section 2: I agree with the previous referee that this section should be renamed as "Case study" rather than "Study area". I also agree that the information in Section 3 "Storm event" should be part of the case study description in Section 2. The event itself is part of the case study setting and the selection criteria for this location of study. Within the "Case study site and target area" section, there is also no mention of why this particular target area was selected as opposed to others. Why was this particular portion of the coast chosen? If there are unique geophysical characteristics that make this a "unique case" with regard to your selection criteria, this should be stated.

It would also be beneficial to have greater specificity as to what kinds of tourist facilities exist in the case study in order to understand the kind of land usage and potential for damage and general economic impact. The next sentence tries to address this in part,

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but does not address the types of tourist facilities (or types of residential). E.g. are these high density establishments? Very little demographic or land use information is given in demonstrating an understanding of the case study.

Section 3: This section requires some sentence revision and several points of clarification. Suggestions and elaboration of these points are found in the supplemental material submitted with this review.

Section 4: The first sentence of this section requires major revision. One of the most critical issues in this section (and indeed the manuscript as a whole) is the complete lack of explanation for the collection and analysis of data from stakeholder interviews.

The importance and purpose of the interview method should be provided much earlier than in section 4. This should have been a part of the abstract and introduction, and especially should have had more elaboration in the latter. Important questions that should have been addressed with a proper explanation of the method include: What kinds of interviews? (E.g. structured, semi-structured with open or closed questions?) Were these individual or group interviews? What was the purpose of these interviews? What type of data was collected? What kinds of "local" stakeholders did you interview? And how were they selected? What questions were asked?

The way this is presented, the reader has no idea whether the authors simply walked around the area asking random questions to random people (the brief in exhaustive list in the first bullet is not sufficient explanation). There is no scientific process presented and no explanation or transparency in communicating how this field method was used. Either fix this, or remove this qualitative component altogether from the manuscript. As is, the explanation of this method brings into question the scientific rigor and general quality of the research.

The first three critical tasks listed in bullet points on page 6 are not adequately described in their procedure or parameters. For the first bullet point related to the stakeholders interviewed, the following questions should be addressed in the text: Why

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these stakeholders? What is (or was) the saturation point or parameter for sufficient representation of stakeholder types?

In general for the QRP, there really needs to be a more structure presented with regard to the sequence of the protocol steps with more elaboration. The sequence of steps could also benefit from a visual illustration (e.g. at least a workflow diagram with minimal explanation).

For line 24 on page 6 that reads "In this study, 7 days were sufficient to complete the aforementioned tasks...", not enough detailed is provided. What were the parameters for sufficiency of each of these steps, and how were they met? Within that same paragraph, for the "error analysis and data comparison", what is the significance of these numbers? How do they contribute to the robustness of your research design and execution?

For line 1 on page 7, stating that "The integrated information will help to understand the overall impact of the storm in the surveyed area", is a big promise. However, there is little explanation of how this is achieved. Stating that interviews were conducted with a vague explanation of purpose and nearly zero method description does not automatically mean that the data collected from these interviews was integrated into the broader research pursuit. How exactly was this data analyzed? It needs to be very clear how this qualitative data was used, and prior to this, what type of data was collected in the first place. (E.g. What questions were asked? Did this enable gathering data on risk perception? Identifying priority areas?)

Section 5: This section needs some sentence revision (see supplemental attachment). The results and findings that have been integrated from the interviews is a missing component to the content of this section.

Section 6: In reference to line 6 on page 11, it should be made very clear what kind of time and other resource saving is made possible and/or enhanced using this protocol and the described methods. There are also several instances that would greatly ben-

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efit from more specification (e.g. see instances were "increase", "really detailed", and "prolonged" are used).

Within section 6.2, for the last bullet point guideline on page 12, please explain why this was done and how these points would have would have influenced your results. Line 9 on page 12 also mentions that the team was divided into thematic groups. Explanation is needed for what these thematic groups were and how they were determined.

Section 6.3 needs further elaboration on what kinds of further analyses should be performed and what kinds of deeper investigations would create a more robust outcome. The statement at the end of this section on potential uses of the protocol is good. However, this use potential and connections to practical application should be made in the beginning of the manuscript as well. The text prior to this section does not provide adequate detail into use potential and connections to practical application.

Section 7: The sentence in line 28 beginning with "Limitations of the application..." is what one would call a "cookie-cutter" sentence that can be copy and pasted into any manuscript as it contains no specificity or uniqueness to the research presented. The sentence needs revision with some hint at the specific limitations and recommendations provided for this research.

Please also note the supplement to this comment:

<https://www.nat-hazards-earth-syst-sci-discuss.net/nhess-2017-337/nhess-2017-337-RC2-supplement.pdf>

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Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., <https://doi.org/10.5194/nhess-2017-337>, 2017.

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