Review by Dr Sergio Freire, for manuscript:

Variable population exposure and distributed travel speeds in least-cost tsunami evacuation modelling

Author comments in bold, signified by '>>'

REVIEW REPORT

*** General comments:

This is a very interesting and high-quality paper, making a substantial contribution to advancing the modeling and simulation of population exposure and evacuation from tsunami hazards.
Although the research is supported by a specific case-study for which regional and local data is rather abundant, it is quite innovative and significant, and able to be adapted to other contexts.
The manuscript is very well written and organized, and impeccably revised and proof-edited. It is well referenced.
Since
Figures and tables are appropriate and generally well-executed and clear.
Conclusions are sound and fitting the work performed.

*** Specific comments:

p. 2, ln. 22: Shouldn't the citations be listed by chronological order, as is the case elsewhere?
>> Corrected

p. 3, ln. 73: Shouldn't be "three storeys or more…"? (confusing, please clarify)
>> Corrected

Section 3: Since the methodology and simulation is elaborated, perhaps a general paragraph on the main steps implemented AND/OR a flowchart would increase clarity and readability.
>> It was decided that a flowchart was too substantial a figure to include, but a summary paragraph is a good idea and has been added.

Section 3.2.1, (ln. 153): why distribute population randomly and not by division/averaging, since uncertainty should be similar? This should be clarified
>> Population was subject to random distribution, because division or averaging would have resulted in non-whole numbers of people in each building. The aim in this case was to keep the number of people in each building whole integers, so that each person could have rules applied in subsequent planned agent-based modelling.

p.7, ln. 207: seems 8h00 – 14h00 in respective chart (Fig 2C)
>> Corrected

ln. 213: are staff subtracted from residents or assumed from outside study area? (minor detail)
>> Good point. Staff were not subtracted from the residential population – this is an oversight in the analysis, but the number of staff pails into insignificance considering the number of people assumed to commute in and out, so this is highly unlikely to make any difference to the analysis. No change has been made.

Section 4: would be interesting to see other results illustrated, namely for other season such as Fig. 6

>> There was very little difference in spatial distribution from season to season, and figure 4 shows the evacuation curve for each season. The balance of restricting manuscript length took priority over illustrating seasonal variation in additional maps.