Author’s response to reviews

Title: Association between the food and physical activity environment, obesity, and cardiovascular health across Maine counties

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Reviewer 3 comment:

The revised manuscripts and responses mostly addressed the concerns raised. However, I believe that the clustered nature of the data and the lack of appropriate modelling (multi-level model or GEE) for these types of data need to be addressed in the manuscript. Multi-level and GEE models are usually standard for neighbourhood studies and it should be discussed why the authors opted not to use these approaches. The authors response state that "multilevel modelling can introduce assumptions that may not be true and can bring unanticipated confounding to the models, so we chose not to use this approach in our analyses" This decision needs to be made explicit in the manuscript, with justification supported by appropriate references, and discussion of the implications of not accounting for the clustering.

Response:

Thank you for introducing this concern. We agree that multilevel approaches are often appropriate for neighborhood studies. However, in the context of our study, we aimed to isolate the potential relationship between the built environment on health outcomes without over adjustment for context (see Roux 1998, page 220), especially since this is one of the first explorations of the local food environment within the largely unstudied Maine public health context. We have justified out choice to not use multilevel modeling in the methods section of the manuscript (Page 8-9, Lines 177-180) and supported this statement with appropriate
references. We have also noted the potential for future explorations of the Maine food environment context and the clustering within it in the limitations section (Page 16, Line 338).