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Interactive comment on "The road weather model RoadSurf driven by the HARMONIE-Climate regional climate model: evaluation over Finland" *by* Erika Toivonen et el.

Anonymous Referee #2

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This paper evaluates the RoadSurf model forced with output from a regional climate model (HARMONIE-Climate). The RoadSurf is used operationally to simulate road conditions for the benefit of the public. Here, the authors extend RoadSurf by forcing it with output from a regional climate model. This successful endeavor then paves the way to make assessments of future road conditions under climate change by forcing RoadSurf with output from a projection-period regional climate simulation.

The paper is easy to read and understand. I am not an expert in road modeling, so it is difficult to criticize anything about the RoadSurf model. I certainly couldn't identify any glaring deficiencies. Much of the paper is devoted to assessing the skill of the

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Discussion paper

regional climate model. There are biases and problems, as one would expect, but even with these biases, the RoadSurf model is able to reasonably replicate what is observed at the observed road sites. Clearly, it would be even more powerful if the simulation forced with regional climate model output could be compared to results with bias-corrected forcing or local forcing, but that may not really be feasible. So, in the context of the purpose of the paper, which is to assess whether or not RoadSurf forced with a regional climate model has the potential to provide useful information on Road conditions now and in the future, I would say that the authors have demonstrated this to be the case.

So, overall, I find this paper suitable for publication in close to it's current form. Will be interesting to see what happens when they run with climate change scenarios.

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