Review of: "Exploring the Impact of Future Land Uses on Flood Risks and Ecosystem Services, With Limited Data: Coupling a Cellular Automata Markov (CAM) Model, With Hydraulic and Spatial Valuation Models"

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Potential competing interests: No potential competing interests to declare.

It is an interesting case study. It presents an application of CAM for predictions of future land use in the Cedar Creek Watershed - one of the famous hydrological case studies. The land use scenarios are then analyzed in terms of flood hazard and also changes in Ecosystem Services. I have no doubts that it is a valuable contribution (especially as the source codes are supplemented) and will be interesting for many researchers; however, limitations of the study should be more clearly emphasized. The main remarks are as follows:

1. Analysis is rather on flood hazard than on flood risk. The study outcomes in the form of flooded area present clearly flood hazard. Risk is a combination of probability and consequences.
2. The literature review should be improved in terms of studies on modelling the effect of land use changes on flood hazard. For example, for the Cedar Creek Watershed, there is a good assessment of the historical (not modeled) land use and flood hazard:
   Dave Fongers, (2004), Cedar Creek Watershed Hydrologic Study,Michigan Department of Environmental Quality, Hydrologic Studies Unit.
3. Observations on the land use change in the Cedar Creek Watershed, used in CAM, are relatively short (15 years). Was this sufficient to estimate and validate the probability transition matrix? Note that Figure 4 suggests that almost nothing changed in the basin during these 15 years.
   Is it possible to estimate the uncertainty when the land use is extrapolated for the next 30 years?
   Maybe in future studies it could be possible to include data used by Fongers (2004)?

Minor issues that also could be addressed:

1. Are MAE and RMSE appropriate measures for categorical values of the land use?
2. Consider modifying figures 3-5, making differences in subplots visible.
3. Explain the variability in flood extent presented in Fig. 6 (error bars - how they were estimated). Provide also the significance of (e.g., p-value) for the trend, as it might be insignificant.