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Interactive comment on "Camera-based Water Stage and Discharge Prediction with Machine Learning" *by* Kenneth W. Chapman et al.

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There are two layers to this. (1) There is a proliferation of ground-based cameras capturing water features for a variety of reasons. In our study, we partnered with the Platte Basin Timelapse project, a watershed documentary project that provided high quality images. Part of our goal was to test whether those images, freely available to the public, could be used to fill data gaps in streamflow records. (2) Because this paper demonstrates that these types of images can be used to fill data gaps, there is an opportunity to further explore the use of imagery to improve the reliability of stream monitoring networks. Imagery provides important context (as noted in the first sentence(s) of our abstract and introduction) and provides data validation that is not possible when simply installing a second sensor. Furthermore, while the images we used were from very

high quality cameras and set up by professional photographers, there are good quality, inexpensive (equal or less than the price of a second in-stream water level sensor) game cams that can capture images with extremely low maintenance requirements. In other words, imagery can provide a passive monitoring system with much lower cost for site visits (or potentially no cost, if the images are collected by another entity, for another purpose), with the potential benefits of data validation and gap filling based on information in the images. Thus, this study has very practical implications for improving stream monitoring sites and networks.

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