

PCSWMM Report to CHI

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I used PCSWMM as a basis to research and understand the impact of land management change on water resources. As a brief overview of my research, PCSWMM was used to characterize an urban hydrologic system in south central Kansas as well as 56 land management scenarios featuring a variety of low impact development practices (bioretention, green roofs and rainwater harvesting). PCSWMM outputs were translated into ecosystem service outputs using a set of ecosystem service indices to quantify the influence of the 56 land management scenarios on ecosystem service provision at the local and watershed scales. This research was completed as part of the requirements of my M.S. degree in Biological and Agricultural Engineering at Kansas State University and my complete thesis is publically available through the Kansas State electronic thesis and dissertation repository: <http://krex.k-state.edu/dspace/handle/2097/20508>. I have also presented this research and my use of PCSWMM at numerous local and national conferences.

Advantages of PCSWMM: The advanced user interface made it easy to implement different LIDs into the land management scenarios and access various components of the model. PCSWMM's ability to interface with GIS saved a significant amount of time in the model-building process, as GIS shapefiles were quickly imported into the software. I think the best feature of PCSWMM was the SRTC tool, which greatly improved (and sped up) the calibration and validation process.

Opportunities for improvement: One suggestion that I would have for improvement in the software would be to develop an easier way to extract output data from the model. Our research ran several simulations (over 200) and then compared output – it would be great to have a simpler way to extract data rather than having to export an excel file for each individual model simulation. I would also suggest some expanded literature about all of the specific model capabilities beyond what is provided in the user's manual currently, especially explanations behind the theory of some of the basic model functions. This would help clarify some questions that arise in research situations when examining the best route to approach/design a problem.