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MODELING OF URBAN WATERSHEDS USING BASINS AND HSPF

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ABSTRACT

The EPA's BASINS (Better Assessment Science Integrating Point and Nonpoint Sources) software was used to create a HSPF watershed model of the Mamaroneck River, located in lower Westchester County, New York. This is a small urban watershed just north of New York City. The model was successfully calibrated and verified using 20 years of flow data. Land use, river reach and topographic data supplied with BASINS were compared to local county data and some discrepancies were noted, particularly with the reach data. Three versions of the model were developed: single segment, three segment and six segment. It was found that there was little gain in using the multi-segment models over the single segment. The calibrated parameters values from the single segment were found to provide an excellent starting point for calibrating the multi-segment models. The parameter values used were compared against those used in a large number of previous HSPF studies and found to be close to the median value in most cases.

Reference: Lowe, S.A. and R. Doscher; Modeling of urban watersheds using BASINS and HSPF, Journal of Environmental Hydrology, Vol. 11, Paper 1, March 2003.

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