# A Flash Flood Potential Index for the NWS Mount Holly Hydrologic Service Area

Raymond Kruzdlo
Senior Service Hydrologist
NOAA National Weather Service
Mount Holly, New Jersey

Joseph Ceru
Meteorologist Intern
NOAA National Weather Service
Pueblo, Colorado

The Flash Flood Potential Index (FFPI) incorporates physiographic characteristics of an individual drainage basin to determine its hydrologic response. In potential flash flood situations, the hydrologic response will be influenced by many factors, including (1) soil type, (2) terrain slope, (3) vegetation and forest canopy, and (4) land use, especially urbanization. An FFPI is developed by obtaining high resolution maps of these characteristics as raster datasets over the domain of interest, then using GIS technology to resample, reclassify and combine the data. The result is a quasi-static numerical index of flash flood potential specific to a geographic area.

Specifically, this study will assess the roles of soil type, slope, vegetation, and urbanization across the National Weather Service, Mount Holly, NJ, Hydrologic Service Area (HSA). The HSA covers southeast Pennsylvania, New Jersey excluding the five northeastern counties, Delaware, and the Eastern Shore of Maryland. It contains numerous streams draining a variety of terrains, soil types and land-use types, including some in highly urbanized areas.

The goal of this study is two-fold: first, to be able to visualize how each individual dataset affects flash flooding potential, both individually and collectively through map algebra; and second, to be able to determine flash flood potential for each of the HSA's sub-basins by comparing the final indexed result to the NWS's Flash Flood Monitoring Prediction Advanced (FFMPA) small-basin shape file.