



USDA-CSREES 2007 National Water Quality Conference

[Watershed Management through Regional Stormwater Planning: A Case Study of a Mixed Land Use Watershed](#)

New Jersey has embarked on a series of stormwater regulations that are mandated at the municipal level and have the option of regulating at a regional level. A region containing mixed land use is the focus of one of those regional stormwater management plans. The Pompeston Creek Watershed contains low density residential development, a series of horse farms, wetlands and light industry. The compilation of the plan included the collection of available data, field surveillance and model preparation. Hydrologic and hydraulic modeling were performed using readily available GIS (Geographic Information Systems) data combined with field surveillance. The Geospatial Hydrologic and Hydraulic Modeling Extensions developed by the Army Corps of Engineers, HEC-GeoHMS and HEC-GeoRAS provided an efficient approach to process available data for use in HEC-HMS (hydrologic) and HEC-RAS (hydraulic) models and presented quantifiable results on stream flow and water surface elevation to stakeholders. Once existing conditions were properly characterized, remedial options were analyzed for benefits and economic viability based on accurate representations within the modeling scenario. Land use throughout the watershed was critically evaluated for the contribution to reduced water quality and reduced groundwater recharge. Given the widespread problems related to poorly managed stormwater, the lessons learned through the use of regional stormwater management planning in the Pompeston Creek Watershed are useful in many localities across the county. Stakeholder input, data availability, model accuracy, and BMP implementation is discussed.

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