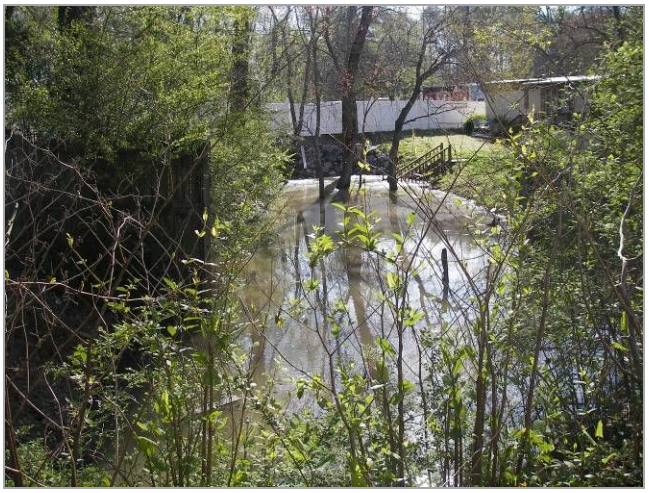
STORMWATER MANAGEMENT STUDIES

James Terrace Drainage Study, James City County, Virginia



Kerr Environmental Services (KES) was requested by the James City County Stormwater Division to evaluate two previous drainage studies for this 220-acre watershed which has flooding problems at several locations. The primary goal of the KES study was to incorporate "Green" and other Low Impact Development (LID) practices into the previously developed Storm Water Management Model (SWMM). Placement of LID practices within the watershed system would allow for elimination or reduction of channel widening and pipe replacement along several reaches. KES performed the following tasks: field evaluation of existing conditions, comparison of the SWMM model with actual existing conditions, re-creation of the SWMM version 4.2 files using SWMM version 5.0, calibration of the models to produce realistic results, evaluation of LID practices suitable for flood relief, incorporation of volumetric equivalents for the LID practices into the SWMM models for the 10-year design, concept plan development for three alternatives, a drainage study report evaluating three alternatives, cost estimating, and client and neighborhood meetings. For modeling the existing condition the watershed was divided into 39 sub-areas with over 13,000 linear feet of conduit, 107 links and 79 nodes. LID practices considered include the following: underground storage units, rain barrels, cisterns, rooftop disconnection measures, bioretention basins and swales, permeable pavement, shallow infiltration basins and trenches, in-stream check dams, extended detention facilities, constructed stormwater wetlands, regenerative storm water conveyance systems, and enlargement of stream flood-prone areas.

Kerr Environmental Services Corporation is a Certified Small Business, GSA Contract Holder # GS-10F-0291V and SWaM VA Certified # 653032 that provides services related to National Environmental Policy Act (NEPA) document preparation; watershed inventories; sustainable habitat assessments and design; Low Impact Development design; wetland and stream permitting and mitigation design; remediation investigations; protected species studies; Stormwater Pollution Prevention Plans (SWPPPs) and inspections, and all necessary coordination with regulatory agency personnel.