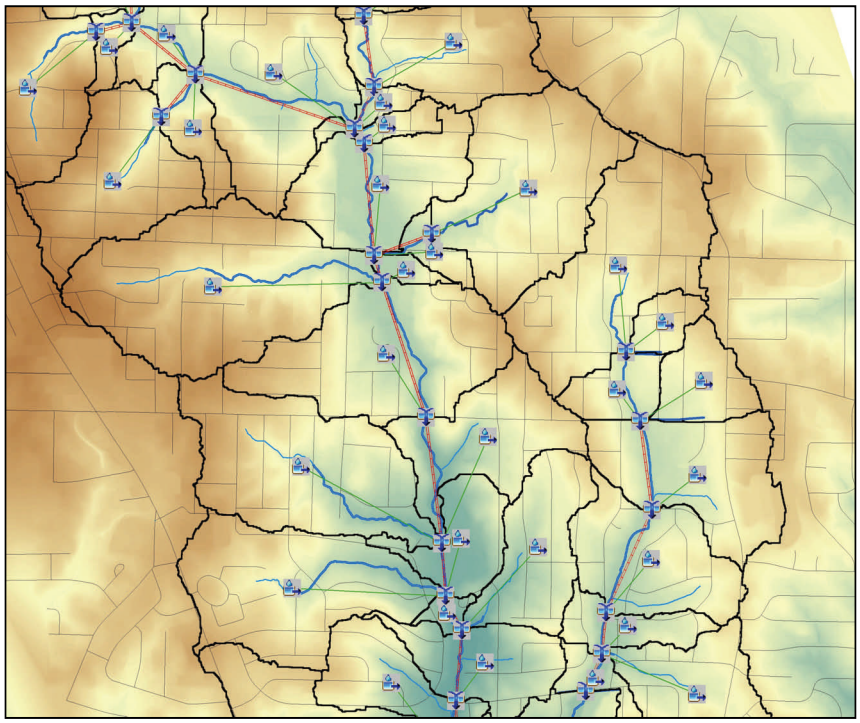
COUNTRYWIDE FLOODPLAIN MAPPING

DeKalb County , Georgia

CLIENT
DeKalb County, Georgia

SCOPE OF SERVICES
Hydrologic Modeling
Hydraulic Modeling
Flood Hazard Mapping
GIS Database Development
Surveying

PROJECT DURATION
09/2006 - ONGOING



DeKalb County contracted with Manhard Consulting to develop new floodplain mapping for all of the streams within the County that have a drainage area greater than 100 acres. Both existing and future land use conditions will be modeled for approximately 440 stream miles over the next four years.

The existing conditions floodplains and floodways will be used to update the FEMA Digital Flood Insurance Rate Maps (DFIRM). Future conditions floodplains will also be developed to meet the Metropolitan North Georgia Water Management Districts (MNGWPD) requirements.

The hydrologic modeling is built around ESRI's ArcHydro data model. Detailed Digital Elevation Models (DEMs) are created from the county's DTM (points and breaklines). Using the ArcHydro Tools and the USACE's HEC-GeoHMS extensions, much of the hydrologic modeling set up is automated. These time-saving automations allow our water resources engineers to spend more time calculating and calibrating model parameters, such as lag times.

The hydraulic modeling is being developed using HEC-GeoRAS. A TIN of the watershed created from the county's DTM is enhanced with field survey of channel cross-sections and hydraulic structures. A georeferenced HEC-RAS model is created using the TIN and digitized GIS layers, such as stream centerlines, stream banks, flow paths, and roadway profiles. After completing the hydraulic modeling in HEC-RAS, the results are exported to GIS to perform the automated floodplain delineation.