



GIS and Mapping

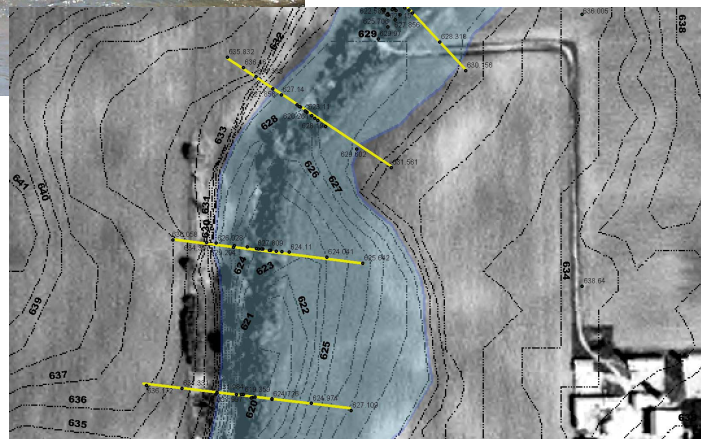
Rob Roy Creek
Kane and Kendall Counties, Illinois



Rob Roy Creek at Jericho Road

Project Features:

- Detailed hydrologic & hydraulic analysis of 16 square miles of watershed
- 10-100 year recurrence interval flood elevations for 6.5 miles of creek
- Letter of Map Revision (LOMR) to develop floodplain and floodway limits



Interpolated floodplain for Rob Roy Creek draped over a digital aerial photo

It became necessary to develop base flood elevations of the Rob Roy Creek to determine potential flood insurance rates for this previously unstudied, but prime development area. This information was, additionally, to be used in conjunction with the Federal Emergency Management Agency (FEMA) as well as local municipalities and developers to properly design stormwater management facilities.

Using the power of GIS, GPS and HEC-RAS, project engineers were able to construct a hydrologic and hydraulic model of Rob Roy Creek. Digital Elevation Models (DEM) were used to generate a surface layer that was broken down for further analysis to determine important land parameters required to build the hydraulic model. Digital

Orthophoto Quads (DOQ's) were used in conjunction with this data to confirm land use and drainage patterns. In areas of limited economic development, this digital information, quickly accessible, serves as the best available data, thus saving time and money in lieu of a surveyed topographic map.

GPS cross sectional information was imported into the GIS project and overlaid on the digitally generated land topography. These elevations were used to determine a temporary floodplain elevation for developers until the study receives the Illinois Department of Natural Resources (IDNR) flow certification. These elevations allow for proper design of detention facilities along the Rob Roy Creek and minimize impact on the potential floodplain.