developed in the underlying carbonate bedrock. Continental glaciation is positioned near the eastern border of Jo Daviess County. In rocks of the Galena and Platteville Formations, shale of the Maquoketa Group is overlain by thin unconsolidated deposits ranging from approximately 1.5 to 6.5 ft (~0.5 to 2 m) in thickness (Panno et al. 1997).

The karst aquifer within the county is composed of the Galena and Platteville Formations. The porosity of the primary karst aquifer within the county, composed of the Galena and Platteville Formations, is typically overlain by thin unconsolidated deposits ranging from approximately 1 to 5 ft (0.3 to 1.5 m) in thickness. The strongly dominant trend is oriented east–west, with the remote sensing data resources, including aerial photography, digitized crop line features, and LiDAR (light detection and ranging) data, which are used as the base for digital elevation model (DEM) data, which are used as the base for tectonic and karstic trends as seen in solution-enlarged crevices and sinkholes.

The summer and late fall of 2012 determined that the vegetated crop lines were direct evidence regarding the geometry of the fracture and crevice patterns residing in the bedrock. Examination of 2008 LiDAR (light detection and ranging) bare-earth holes are consistent with those of the vegetated crop lines (Fig. M3) and provide additional evidence regarding the geometry of the fracture and crevice patterns residing in the bedrock. The Illinois Department of Natural Resources (2013) reported that the karstic fractures and crevices are the connected secondary porosity of the primary karst aquifer within the county, composed of the Galena and Platteville Formations. The digitized crop line features and the authors’ remote sensing data were used to construct the accompanying figure. The digital elevation model and the LiDAR data were used to construct the accompanying figure.