**Surficial Geologic Mapping in the French Village 7.5-minute Quadrangle, Metro East St. Louis Area, Illinois**

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The surficial geology of the French Village 7.5-minute Quadrangle, located in the Metro East St. Louis area, was mapped as part of a USGS funded STATEMAP project in 1999. The French Village map contains a variety of interesting and important stratigraphic units that are typical for the region. The complex assortment of thick Quaternary deposits found here (intercalated loess, paleosols, diamictons, lacustrine deposits, alluvium) presented a challenge of how to produce an easily understood and meaningful map product.

For the purposes of this one year STATEMAP project, a method for displaying subsurface geology was preferred that did not require time consuming 3D modeling or excessive manpower (only 1-2 people were working on the entire project). **Three cross-sections** were produced that cross various geologic terrains and intersect many key stratigraphic, engineering and water well borings as well as observed outcrops. When their locations are carefully chosen, cross-sections (here exaggerated 20 x) can provide insight into the relations between and thickness of subsurface Quaternary units as well as the depth to bedrock. **Loess thickness contours** (dashed on the surficial geology map), that show the total thickness of the Wisconsin Episode Peoria and Roxana Silts, were used as an additional means to efficiently portray information in the third-dimension. As much as 90 feet thick near the bluffs, these loess units decrease in thickness exponentially southeast of the Mississippi River Valley from which the silts were deflated. A third means for showing important subsurface information is the use of a **colored striped pattern** on the map in color to indicate the occurrence of up to 60 feet of an Illinois Episode lacustrine silt (Petersburg Silt) in bedrock valleys. The diagonal stripes are colored light pink (the color of the Petersburg Silt in cross-sections) but are in a matrix of light tan – the color of the surficial loess units. These striped areas are of importance because they indicate areas that were inundated with backflooded lake sediment during Mississippi River aggradation of the penultimate glaciation. Furthermore, these mapped areas are of practical importance because they indicate low areas or valleys on the bedrock surface.

In summary, the French Village surficial geologic map displays 3 simple means of portraying subsurface information. Contours are useful for displaying the thickness of a near-surface unit, which is relatively predictable (such as loess). A colored striped pattern is useful for special units of interest, which are only sporadically preserved (e.g., lake deposits, alluvium, or old till deposits). Such patterns could also potentially be used to indicate important bedrock valleys or glacial aquifers. Cross-sections are of great importance to indicate the generally continuity, stratigraphic relationships, and thickness of various map units. These means will not replace the need for full blown 3D modeling of the subsurface geology, but are alternate ways of displaying information when resources and/or time are not available or when a simpler output is preferred for the intended map audience.