

Cook County, IL Soil Survey: Preparing to Map in an Urban Environment

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Abstract:

The primary goal of soil surveys in Illinois over the past 100 years was mapping agriculture land. Urban areas at the same time were not investigated or mapped at the same level of detail. Cook County, located in northeastern Illinois, is the most urbanized county in Illinois having an estimated population of 5,285,000 in 2007. A portion of the county, 317,000 acres, was soil mapped and completed in 1976. Mapping ceased where the environment became too highly urbanized. In response to a demand for more detailed soils information, in 2008 an agreement was signed with the Cook County, Illinois Board of Commissioners to map the remaining 299,000 acres at a 1:12,000 scale. The completion date is set for 2011. Drawbacks to mapping soils in urban areas are the limited number of available observation sites and changing land uses. As such, alternatives must be found which will provide a foundation for predicting the soil resources. Initially with the Cook County soil survey project various GIS data layers were generated. Land use maps provided direction for access to open land for field observations. Historic vegetation maps provided a key to the taxonomic soil order. Slope maps generated from digital terrain models (DTMs) aided in line placement of map unit delineations. Geology maps provided a basis in determining proper suites of soils. Historic fill maps indicated the location and extent where natural soils were replaced by human deposited materials. Also of value were historic aerial photos. These images not only reflected changes in land use but were a key in determining the natural drainage patterns. Soil mapping in an urban environment requires a substantial amount of support data. Gathering information and generating pertinent data layers prior to and during field activities will not only aid in increasing the quantity of acres mapped but improve the quality of information produced.

Keywords: data layers, GIS, soil map, urban soil survey

Topic: A. Methodology for urban and disturbed soils

Sub-topic: A5. Soil survey and mapping

Presentation type: Poster

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