

SkyTEM Completes Aerial Geologic Survey of Boone County



Figure 1. SkyTEM's Aerial Demonstration of survey equipment at the March 8th, 2025 public information event for the Boone County 3-D Geologic Mapping Project. Photo credit: Dan Kane

The Wings and Wheels Museum was the perfect setting on Saturday, March 8th to learn about Boone County's exciting geologic mapping project! Kicking off the start of this cutting-edge scientific study with local and state experts sharing how using this new technology sends electromagnetic signals deep into the ground and comparing the results to taking an MRI of the earth.

The event drew a good crowd! The weather cooperated and those that came out to learn more about the 3-D geologic mapping project were treated to an impressive helicopter demonstration (Figure 1 & 1A.) and the geophysical instruments it carries to emit and collect electromagnetic signals. Participants were able to meet with the Illinois Prairie Research Institute scientists working on the Boone County project, ask questions and get first hand information.

The Northern Regional Groundwater Protection Planning Committee (NRGPPC), an outreach effort of the Illinois Groundwater Protection Act, assisted with organizing, funding and staffing this event. This Committee consists of individuals representing a number of local agencies and organizations with water resource

expertise. Members of this committee volunteered to staff tables around the museum with groundwater models and other demonstrations (see Figure 2.) to help further the public understanding about local water resources and our water supply.

This event was supported by the Wings & Wheels



Figure 1A. SkyTEM helicopter crew. Photo credit: Ken Hall

Museum, the Poplar Grove Airport, the Boone County Conservation District, the Boone County Soil and Water Conservation District, Severson Dells Foundation, Mr. Goodwater, S&S Catering and the Boone County Board. We had 175 pre-registered attendees, but additional participants stopped-in, raising participation to around 200 people. Boone County Board Chairman Karl Johnson (Figure 3.) spoke to the crowd acknowledging former County Board Member Sherry Branson's efforts to move this project forward. He stressed the importance of utilizing this new study in the community's efforts to sustain and preserve our water resources.



Dells demonstrates how rainfall can cause erosion and carry sediments and other contaminants to streams and waterways. Photo credit: Diane Kane



Figure 3. Boone County Board Chairman Karl Johnson speaking at the public information event for the Boone County 3-D Geologic Mapping Project. Photo credit: Dan Kane



Figure 4. Senator Dave Severson shares his perspective on the 3-D geologic mapping project and the need to better understand our water supply. Photo credit: Dan Kane

An impressive list of speakers including Senator Dave Severson (Figure. 4), Illinois State Geological Survey Director Dr. Dick Berg, Illinois Prairie Research Director Praveen Kumar, and project team scientists ISGS Geologist Jason Thomason and ISGS Geophysicist Kisa Mwakanyamale all contributed to the morning program.

The event concluded outside the museum with a presentation from the helicopter crew and an aerial demonstration (Figure 3.) of how the equipment is flown across the landscape to collect important scientific data that will be translated into the three-dimensional geologic map of Boone County. This map will reveal a comprehensive picture of geologic materials like sand and gravel deposits, glacial tills, bedrock stratigraphy and hidden features like the buried Troy Bedrock Valley and its tributaries. The results of this study will provide high resolution, 3-dimentional geologic maps and interactive online tools that will be available to the public. Even though it only took SkyTEM about a week to complete the aerial survey, it will take scientists about 2 ½ years to analyze the information and complete this study.

To read the previous articles in the series about the 3-D geologic mapping project and access more information about this project visit the Boone County Website at the link below:

https://www.boonecountyil.gov/government/departments/planning_department/water_resources.php

Please feel free to contact me with questions or for additional information about this project!

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