

Illinois Height Modernization Program

What is Height Modernization?

Height Modernization is the establishment of accurate, reliable heights using global positioning satellites (GPS) technology in conjunction with traditional survey techniques such as leveling and remote sensing.

How is it being used in Illinois?

The Illinois Height Modernization Program (ILHMP) aims to advance the statewide network of survey benchmarks, develop a statewide high-resolution DEM data set, and distribute data and information on-line.

Program Achievements

- Established data sharing agreements to archive and distribute data
- Development of project web resources and outreach materials
- Performed outreach activities at state and national conferences
- Released an open contract for geodetic leveling in northern Illinois
- Conducted information surveys about existing digital elevation data collections, benchmarks, and reference datums

Developing Real Time Networks

Development of Real Time Kinematic (RTK) Networks and Continuously Operating Reference Systems (CORS) throughout Illinois will enable GPS and other satellite signals to continually receive information and provide Real-Time three dimensional corrections to other GPS users. The availability of RTK and CORS networks greatly improves the accuracy of GPS units.



Installation of New Benchmarks and Level Lines

Illinois has lost nearly half of its benchmarks, and continues to lose them. Our program supports traditional leveling activities and the installation of new benchmarks to replace those lost. ILHMP will ultimately result in a datum-consistent vertical and horizontal statewide network of survey benchmarks.



High Resolution Digital Elevation Model

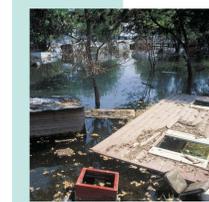
Using remote sensing to acquire Light Detection and Ranging (LiDAR) data and derivative products to create a statewide high resolution digital elevation model (DEM) of the earth's surface.



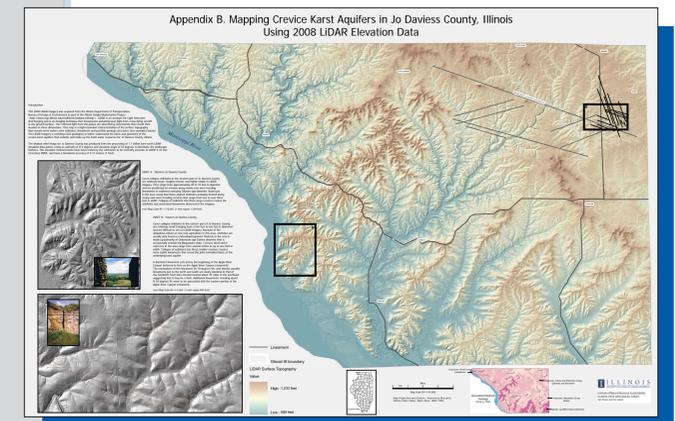
Low Resolution
2001 30M DEM shaded relief

High Resolution
2008 LiDAR DEM shaded relief

Preventing Loss of Life and Property Damage



- Floodplain management
- Evacuation route planning
- Sinkhole detection
- Mine subsidence mapping



2008 LiDAR data for Jo Daviess County, Illinois.

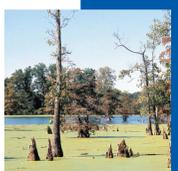
Saving Money

- Improve agricultural yields
- Infrastructure planning
- Building and road construction
- Natural resource management



Protecting the Environment

- Optimize fertilizer application
- Reduce pesticide usage
- Erosion control
- Wetland reconstruction
- Habitat analysis



Funding and Partnerships:

Funding for Year 1 activities was provided by the Height Modernization Program of the U.S. Department of Commerce, National Oceanic and Atmospheric Administration and National Geodetic Survey (NGS) in partnership with the State of Illinois and Congressman Timothy Johnson. Funding for Year 2 and 3 activities has been secured through the NGS Height Modernization Program with support from Congressmen Timothy Johnson and Aaron Shock. About \$35 million over 10 years is needed to complete the project.



For more information:

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