

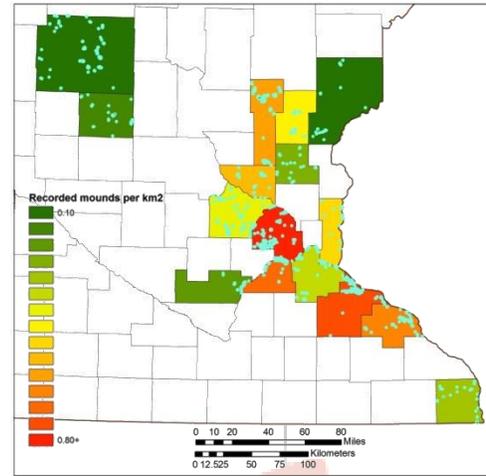
Mapping Pre-Contract Burial Mounds using LiDAR

**Minnesota Historical Society and
The University of Iowa Office of the State Archaeologist**
2013

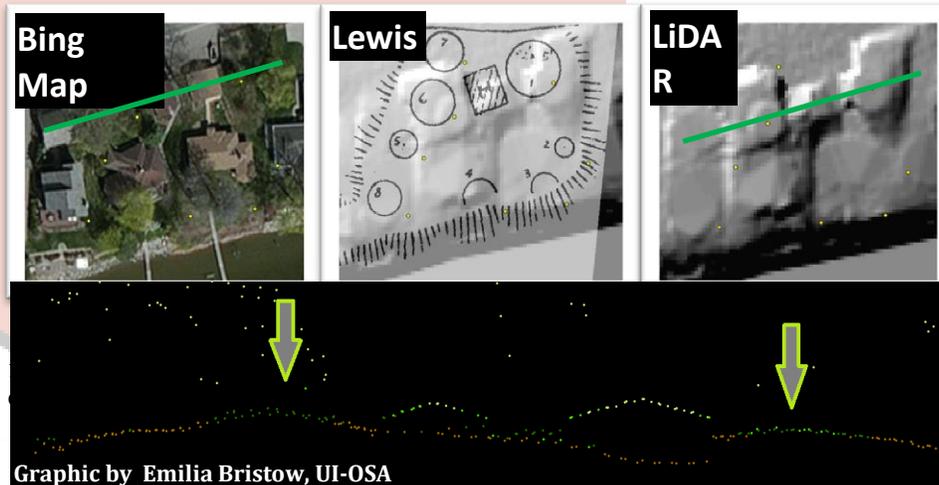


The University of Iowa contributes to economic development in Iowa through joint research ventures with small businesses. An example is EarthView Environmental's participation in an archaeological research grant* awarded to the University of Iowa's Office of the State Archaeologist (UI-OSA). The opportunity arose as EVE's Joe Artz transitioned from a 23 year career at UI-OSA to join EVE as a geoarchaeologist and GIS specialist. The objective of the study was to search for surviving, previously-recorded PreContact burial mounds in 16 Minnesota counties using Light Detection and Ranging (LiDAR) imagery. LiDAR uses airborne lasers to obtain high-resolution elevation data, and can detect features as low in height as 30 cm.

The project area successfully detected 2181 mounds, 28 percent of the 7677 mounds originally recorded by archaeologists beginning in the late 1800s. This percentage is remarkable because the 16 counties include many of the most developed and rapidly developing parts of the state. The results give Minnesota's Office of the State Archaeologist a previously unavailable tool for verifying and protecting these ancient human burials that are significant parts of Minnesota's heritage and sacred to Native Americans.



Graphic by William Whittaker, UI-OSA



Graphic by Emilia Bristow, UI-OSA

Graphic at left shows the surprising preservation of two mounds on a residential lot.

- **Top right:** modern aerial photo.
- **Top center:** T.H. Lewis' 1800s map of the original mound group.
- **Top left:** LiDAR image showing two surviving mounds as circular features
- **Bottom:** vertical slice of LiDAR points along the green line in aerial and LiDAR images showing

Client References:

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***This Project was Supported by the Arts & Cultural Heritage Fund of the Minnesota Clean Water, Land, and Legacy Amendment.**



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