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Christopher Fennell
University of Illinois at Urbana-Champaign, cfennell@illinois.edu

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National Center for Preservation Technology and Training Funds an Aerial Thermal Study of the New Philadelphia Town Site

By Christopher Fennell

New Philadelphia, Illinois was the first town platted and legally registered by an African American in the United States. Founded by Frank McWorter, a former slave, in 1836, this town grew as a demographically integrated community through the late nineteenth century. New Philadelphia was platted in a grid pattern with 42 acres of space, divided into 20 blocks, 144 lots, alleyways, and several streets. The town population reached a peak of approximately 160 people, 29 households, and merchant and crafts operations listed in the 1865 federal census. New Philadelphia was bypassed by a new railroad in 1869 and the population declined steadily thereafter. By 1885, the status of the community as a town was eliminated and large tracts of the land were put into agricultural use. Today, no structures from the town remain above ground, and the town site is covered by prairie grasses and agricultural fields.



1998 high-altitude photograph of New Philadelphia town site, with overlay of 1836 plat of intended town design (U.S.G.S. archives,

overlay by author).

Federal and state census records, tax records, and deeds provide extensive data about the town's residents. However, such historical documents do not provide a specific spatial map of household and merchant locations. Archaeological survey and excavations can map those locations in much greater detail to provide a richer data set for the social history of this community. The 1836 plat provides a plan for the town, including a grid pattern of streets, alleys, and lots, but the question remains as to whether this design was followed as the town developed. Indeed, newspaper reports during the town's existence indicated that town residents did not adhere to planned property lines in their building activities. Limited archaeological excavations at the town site, funded by the National Science Foundation's program of Research Experiences for Undergraduates, have also uncovered early structures for which documentary evidence from deeds and other historical records provided no indications.

A number of archaeological survey and prospection methods have been employed previously at the New Philadelphia town site by collaborating researchers. These survey methods have included a pedestrian survey and surface collection of a large portion of the town site. Michael Hargrave, of the Construction Engineering Research Laboratory and U.S Army Engineer Research and Development Center in Champaign, Illinois, has also conducted 6.5 acres of surface-based geophysical surveys at the town site utilizing electric resistivity and magnetic gradient sensors. Due to the large size of New Philadelphia as platted, it is not practical to attempt surface-based geophysical surveys of the entire town site.

The National Center for Preservation Technology and Training (NCPTT) has now awarded funding to test the usefulness of low-altitude aerial surveys employing high resolution thermal imaging at New Philadelphia. This method will be employed at the town site for a new and specific purpose: determining whether this technology can detect the grid pattern of an historic town site buried beneath 1-2 feet of agricultural fields and prairie grasses. If successful, this technique will provide an extremely useful resource for applications on numerous similar sites throughout the nation.

Tommy Hailey of Northwestern State University in Natchitoches, Louisiana, and Bryan Haley of the University of Mississippi, have pioneered the techniques to be used in combination in this survey, and they will collect and process the survey data utilizing a powered parachute ultralight aircraft and a high resolution thermal camera. The exact timing of the survey will be determined based on ground cover, weather, and soil moisture conditions during the year. The data sets will be geo-referenced and integrated using spatial mapping programs, such as Geographic Information Systems software, and the creation of mosaic imaging representations. The survey results can then be examined in relation to a geo-referenced version of the 1836 town plan and other comparative data. Chris Fennell of the University of Illinois at Urbana-Champaign will serve as principal investigator and provide overall coordination of the project.

Additional information about the New Philadelphia archaeology project is available on the internet at <http://www.anthro.uiuc.edu/faculty/cfennell/NP/> and more information concerning the NCPTT is available at <http://www.ncptt.nps.gov/>.