US Department of the Interior
National Park Service
National Center for Preservation
Technology and Training
Publication No. 2001-03

MT-2210-9-NC-34

Final Report

The National Register District GIS Project (NRDGIS) was designed to take data concerning historic districts within the state of Ohio in paper form and convert that information into digital data for inclusion into a GIS system. In addition to the data being available for internal staff use, the National Register district data is being made available over the Internet for use by the public. To accomplish this task a comprehensive examination of National Register files was performed within the Ohio Historic Preservation Office (OHPO) to identify existing data and to ascertain how much data might need to be collected externally or in-house. It was recognized early on that while districts entered into the database during the mid-80's contained sufficient scholarly information, the lack of individual address for some of the large, well established districts was going to be problematic.

There were many large districts that had address information for only representative or 'high-style' examples of particular properties. Also, boundaries for some of these districts have changed which led to differences in how the district was handled during the project. For districts where there was a boundary increase, it was typical that this occurred at a time when individual address lists were required so in these instances the shapefile or polygon created for that district contained the boundary addition as well as the original district polygon with the address lists combined. This is true for the majority of districts in the database. For boundary increases that needed to be treated separately, the boundaries were digitized adjacent to each other and remain as autonomous polygons, each with its own address list. The names of the districts should indicate to which group a polygon might belong. For example, the Center Street Historic District and Boundary Extension would be a combined district whereas separate ones would have their name from the National Register nomination form.

There were also issues in determining whether or not a building was a contributing property within a historic district from the earlier nominations. Available documentation and personnel associated with those nominations were used to try and make a determination for each property; however, there are 9,524 properties identified as 'Unknown' in the database. If additional information about these properties becomes available the database will be updated to reflect changes to the information. This is true of all properties within the district polygons as now that the database has been created and integrated into the GIS system, maintenance of the data has been incorporated into office operations. It was anticipated that approximately 47,000 properties would be entered into the database based on preliminary information; the final number included was 41,236 properties. The difference in numbers is largely a result of two structures sharing the same address being treated as two properties for the purposes of National Register listing but as one property for this project. For example, a house and garage were given only one record.

Finally, OHPO is in the process of making the data available via the Internet. In the original project scope, it was anticipated that this would be accomplished using ArcView Internet Map Server and MapObjects Internet Map Server and housed within the Ohio Historic Society's web machines. Very recently, OHPO switched Internet mapping software from ArcView IMS and is now utilizing the next generation of ESRI's Internet software, ArcIMS. In addition, OHPO now has its own dedicated web server running ArcIMS. It is hoped that the increased functionality that ArcIMS provides will enhance the capabilities and functionality of the Internet component of not only this project, but also all OHPO cultural resource data being made available via the Internet. We anticipate having the NRDGIS data available live via the Internet during April. The web system and data are being developed and tested; it is up and running on a private Intranet at this time.

While several problems were encountered during this project, the ultimate product as viewed by the staff and users of the data has been deemed very successful and worthwhile. A total of 407 unique district polygons were digitized. Archaeological districts were not digitized and certain boundary increases were incorporated into the original district polygons—these account for the difference between the number of listed districts and the number of polygons that were digitized. Attached to these shapefiles is a database of 41,236 records entered manually with information about the property, if the property is contained within another inventory at our office, its contributing status if known and when that district was added to the National Register of Historic Places. Finally, all of this information was compiled and integrated into our existing GIS system. In addition, in order to accomplish this project, two secondary benefits were immediately realized, the first being the creation of a notebook of all maps for National Register districts, which is now available to staff and the public and has received a great deal of use. These maps were the ones used during the heads-up digitizing portion of the project. The second benefit was that the National Register district files were cleaned-up as a result of accessing each of the files at the initiation of the project.

Project Methodology

The project was carried out in three main steps: Using the GIS program ArcView, 407 coverages were created which delineated and displayed as polygonal shapes the boundaries of each district upon digitized United States Geological Survey (USGS) 7.5' topographical maps. Hardcopy maps from each National Register of Historic Places (NRHP) district file were used for reference in determining the boundary limits and the overall shape of the polygon. Using the heads-up digitizing capabilities within ArcView, and with the USGS digitized maps magnified to the extent that sufficient accuracy and precision would be achieved (the polygon shape would not exceed or fall short of the boundaries indicated on the NRHP file map), the district boundaries were delineated and the resulting polygon was saved as a shapefile with its own NRHP reference number. The size and shape of these polygon shapefiles ranged from simple town square districts to canal districts winding through counties.

Each district coverage created was then given a corresponding and linked record (plus additional records if a district had any boundary amendments) in an Access database. 407 district records were entered and had the following fields noting: the district's name, reference number, number of contributing buildings, NRHP criteria met, date listed, county, city, and FIPS place code. The data for these fields came from current National Park Service NRHP databases and was "cut and pasted" into the Access database.

The third and final step was to enter data for each district by entering all known property addresses within each district. 41, 236 individual property records were entered into a second Access database. Each property record was searched for within the Ohio Historic Inventory Database (OHI—an ongoing survey of historic properties) to note if the property had been surveyed. If the property was inventoried, the OHI reference number was cut and pasted into the Access database, thereby linking any information contained in each record of the OHI database with the district database, individual property database, and the corresponding shapefile or coverage. Property addresses came from hardcopy address lists within each NRHP district file and where an address could not be found, a search was conducted via county auditor GIS records and other online databases. For each property record, information for the following fields was entered: district reference number, OHI number (if inventoried), date listed, property address, city, state, zip code, and contributing status (if known).

Each of the district shapefiles was then integrated into our existing MAPIT GIS system utilizing the Avenue programming language. The design was to allow users to pull up information about a particular district from a drop-down menu, and provide the capabilities to easily query address information about that district. The stand-alone version of this application is provided on the enclosed CD and should provide the look and feel for how it is incorporated into the MAPIT system.

Finally, all of the datasets were rechecked for quality control and metadata about the information was created. All data for this project is projected with the Geographic system using Degrees Decimal. The datum is NAD27 for the Eastern United States. Bounding Coordinates for the National Register shapefiles are as follows: North Bounding Coordinate: 41.90333; South Bounding Coordinate: 38.530296; East Bounding Coordinate: -80.566971 and West Bounding Coordinate: -84.752594.