

Electric Utility System Inventory

Chicago Housing Authority

Developed a GIS-based field data collection and desktop GIS management system

Highland Geographic, Inc. developed a GIS-based field data collection and desktop GIS management system for the Chicago Housing Authority (CHA) Utility Electric System Investigation project. CHA chose to utilize handheld computers for their portability and efficiency collecting field data to better manage their electrical facilities inventory.

HGI developed a custom menu interface using ArcPad, a portable GIS that runs on handheld computers, to facilitate data capture for a variety of feature types. The custom menu system replaces paper data collection, eliminating the need to enter data twice, increasing productivity both in the field and back in the office. The ArcPad system streamlines the data collection process by customizing the type of data on the screen and matching database records to a feature in the field. By using these standardized forms, data entry errors are significantly reduced.

Implementation

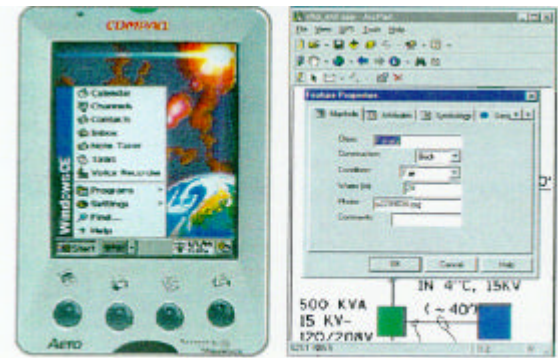
During field trials and subsequent implementation, the system exceeded expectations. Using the handheld computers, each field team views CAD site drawings and enters information for each feature type, building



Data from the handheld device are linked with existing CAD drawings and aerial photography, improving data intelligence

the GIS feature by feature. Field teams take a digital photo of each feature, linking each photo to the features in the desktop data management system.

After a day of field collection, the data collected on the handhelds are transferred to the desktop, where they can be directly used by in the ArcView GIS



Users enter data through custom menus on the handheld screens.

management system. This method of field collection is extremely efficient because there is no data conversion between the two platforms. The desktop GIS management system enables the user to locate CHA sites, view the CAD drawings of the sites on a backdrop of digital orthophotos, and view the schematic drawing of the sites' electrical systems. When viewing the schematic, the user may select any feature and view the digital photograph or field data collected using the ArcPad field system.

Project Highlights

- Developed interface to view CAD site drawings and enter information for features
- Created custom menu system to facilitate data capture
- Synchronized digital photos captured with each feature
- Improved data integration and querying capability

Benefits

- Replaces paper data collection form to reduce data entry errors
- Increases productivity
- No platform conversion necessary between handheld computers and management system
- The collection system may be easily modified to capture many types of data.
- ArcPad works with global positioning systems (GPS) to verify data in real time in the field.