

Energy Currents

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GIS for Energy

Redlining for Mobile GIS Technology

GIS redlining map technology is an advancement in field map editing. An effective mobile solution needs to be customizable, lightweight, cost-effective, efficient, and fit for the purposes of the user. Utilities using GIS-enabled Tablet PCs in the field are using digital red ink to keep their companies in the black.

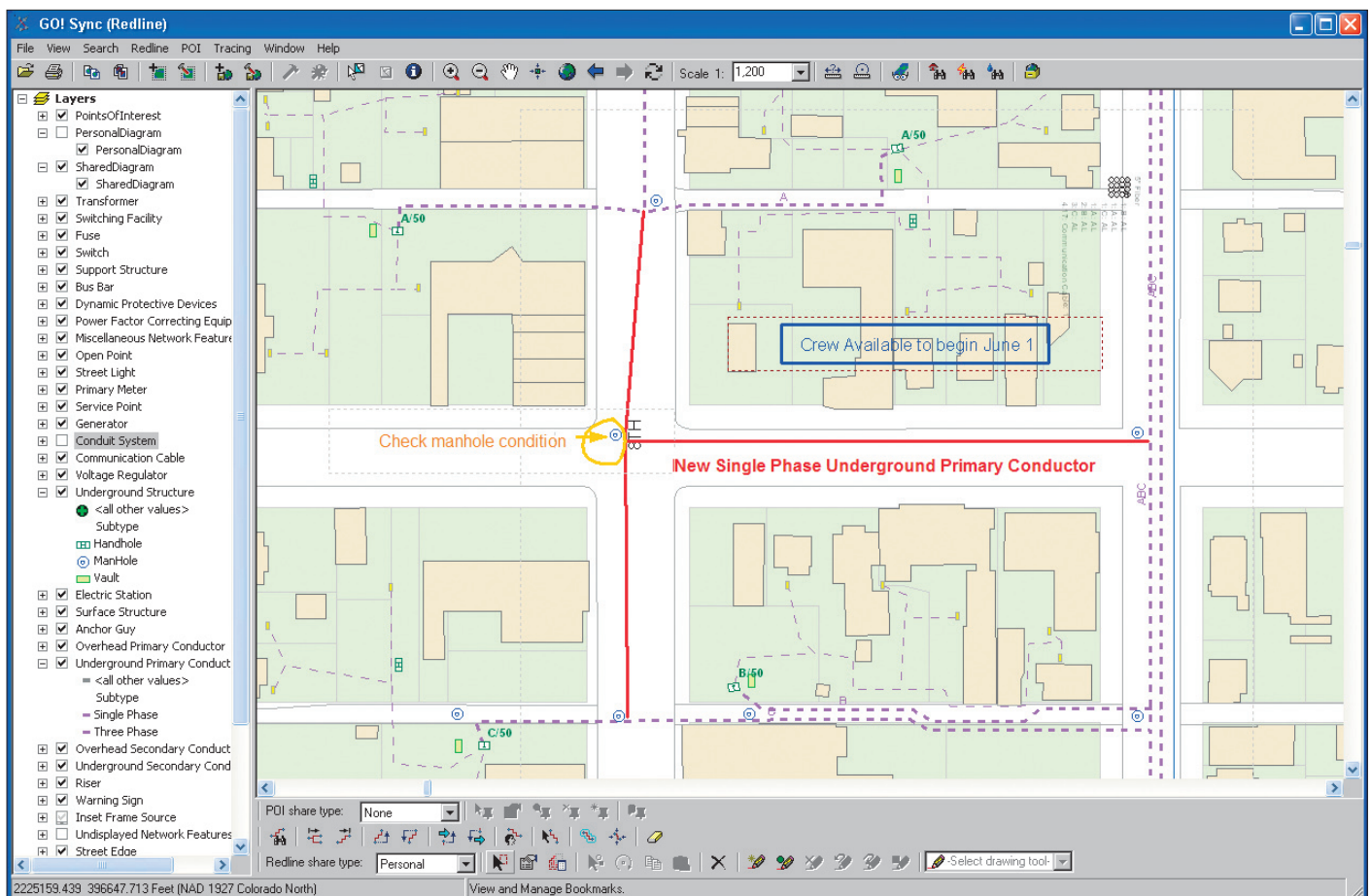
Truckee Donner Public Utility District sees redlining as a solution to multiple chal-

lenges seen in past mobile deployments. Ian Fitzgerald, Truckee Donner's GIS manager, says, "Our need is to employ field technology that field-workers understand. GIS on a Tablet PC allows them to use what they always have, a pen and paper, but now the pen is digital and the paper is a Tablet PC. Second, we see the solution as being a true time-saver in GIS information maintenance and deployment.

No longer will data backlogs be a contributor to poor data in the field. Real-time redlining will be available to every user almost immediately, whether the GIS department has made edits or not."

The redline sketch or diagram is an annotation layer on top of a digital map. The technology is easy for field-workers to understand.

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ArcGIS Engine Tablet PC application for field service workers

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Redlining for Mobile GIS Technology

Using Tablet PCs with GIS functions designed specifically for routine field tasks, field-workers are quickly adopting the technology as part of their toolkits. GIS developers use ArcGIS Engine based on ArcObjects to create custom GIS applications for daily work activities. Workers need to communicate geospatial information to other people using the corporate database, yet they should not be burdened with the details of updating GIS. Embedded GIS solutions are intended for users who are not GIS experts but still use GIS on a regular basis.

Digital redlining is intuitive to field-workers accustomed to redlining on paper maps. Writing on top of a digital map enables them to send field annotations back to the data administrator. Field-workers enter field data simply by plugging into the company network system to synchronize data to the system. Digital map edits are much easier for the administrator to enter into the database and to do it more accurately.

GIS redlining technology can be incorporated into the work flow of maintenance; disaster recovery; outage, inspection, asset, and work management; and so forth. Field-workers can send notes back to the office faster, and administrators can send directives back out to field-workers for swift problem resolution.

Redlining solutions designed with ESRI's ArcGIS Engine developer software are intuitive to the user, save money, increase accuracy, and improve productivity. Tadpole-Cartesia's redlining technology, which is a complete field and office system, is built primarily on ArcGIS Engine. The redlining solution allows field-workers to write notes on top of the digital map. The utility's mapping administrators incorporate those sketches into the geodatabase. Developers use ArcGIS Engine to create embedded GIS functionality for workforce applications. Because of the company's experience, it can work with utility companies to quickly customize the specific applications needed.

A synchronized process ensures data

quality and secures database management. The field-worker submits redline edits from the field to the administrator. If the administrator accepts them, then the edits go into the enterprise geodatabase. If the edits are rejected, they are returned to the field-worker with comments. Redline files can be saved at different levels. A personal redline file stays in the user's file. Personal notations, such as "access code to gate is 251#," are saved in a file for the field-workers' use only. The My Proposed Redline level includes redline files that are going to be sent to the administrator for approval. If these are approved, they will be sent to the main geodatabase. The approved redline edits are automatically synchronized to the administrator and put online, and the status is advanced to the Field Proposed Redline level. The administrator can review a sequential list of redline proposals in a daily review session and choose to accept, reject, or request additional information for the redline version. Once accepted, the redline is synchronized to the main geodatabase and is categorized as an Enterprise Redline. It is automatically sent out to other field-workers so that everyone is working with the same information. Once the redline version is available to the field, it is classified as a Shared Redline file.

Tadpole-Cartesia's redline system comes complete with an enterprise data management system known as GO! Sync. GO! Sync provides a background synchronization process that ensures the field maps and enterprise geodatabase remain up-to-date.

The ideal solution for having an effective field GIS redlining system is that it is built on enterprise ArcGIS. Redline mobile GIS technology does more than replace awkward keyboard technology with the ingenious Tablet PC. It extends the value of enterprise GIS that integrates mobile GIS solutions with asset management, staking work flow, work management systems, and more.

Learn more about Tadpole-Cartesia's mobile solutions by visiting www.tadpole-cartesia.com.



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