

# Citizens Scores with GE Smallworld Software

*Citizens Utilities, a gas service provider for Arizona, Hawaii, and Louisiana, is a sure winner with its fully integrated GE Smallworld gas facility network management system.*

In today's volatile market, utilities deal with constant change and the uncertainty of being merged or sold. Last year, Citizens Communications put its three Citizens Utilities gas divisions (Louisiana Gas, Hawaii, and Arizona) up for sale. The purchase of Louisiana Gas will soon be finalized, and the Hawaii and Arizona gas divisions are currently for sale. One business system that will remain constant throughout the gas divisions is the GE Smallworld geospatial gas network management system, which is managed from the Citizens office in Flagstaff, Arizona.

Citizens has invested \$18 million in their geospatial system across three gas utility companies. Executive management is certain the investment will pay off — it already has in numerous areas — and management fully supports moving forward with the latest technology and applications. The software helps the company save costs, increase pipeline safety, improve customer and employee satisfaction, and comply with government regulations.

Nader Attar, director of GIS at Citizens, is implementing a GE Smallworld system in Hawaii and manages the system already in place in the Arizona service areas. The system is based on GE Smallworld Core Spatial Technology. Nader's team has been busy, and he is very optimistic about the future. "With a moderate growth rate in this area of 8% per annum," he says, "we've been able to stay on top of new construction and are working steadily on adding more data to the system. And our GE Smallworld system has quickly become the backbone for our operations and maintenance systems. With the exception of our financial system, it is a key component for all of the business systems throughout our districts."

## GPS for Accuracy Improvements

With the goal of making their facility location records as accurate as possible, Citizens employs global positioning survey (GPS) technology to locate their in-place facilities,

as well as any new construction as it is built. Four full-time crews are currently locating and collecting GPS coordinates for all gas services. Pipeline facilities, originally converted from paper maps, are continuously being adjusted and corrected to near-exact locations from the ongoing GPS collection process.

## Immediate Customer Service

Michael Roberts is a district technician and jack-of-all trades at Citizens. He uses the GE Smallworld system, knows all the applications used at the utility, and works with customers to perform estimates. In major cities such as Flagstaff and Prescott, in Arizona, customers can stop by a Citizens office and ask about potentially running gas lines to their property. Using the system, Michael can give them the approximate cost by calling up the area by address and looking at locations of existing gas mains. "Information to generate customer estimates is immediately available," he says. "This saves us a lot of time and effort — we used to have to go out in the field to gather this information."

## Efficient Work Design Management

Workstations are installed at each of Citizens' seven district offices. Engineers at each office use either Cook-Hurlbert's Expert Designer or GE Smallworld Core Spatial Technology and other GE Smallworld tools for design. According to Nader, "Our GE Smallworld system, in conjunction with our other vendors, has brought everyone on the same page, using the same business practices." He noted that, "In the past, it was like we had seven different companies."

## Analysis Tools

To conduct analysis on various systems, Citizens uses a wide range of software tools from state-of-the-art software vendors.

- **Network Pressure Analysis** - While a new construction area is being designed, Citizens runs network pressure analysis applications using Stoner Associates', SynerGEE software, or Cook-Hurlbert's network analysis tools. Using information from the GE Smallworld system, Citizens can determine and design the most cost-effective pressure solution.
- **Construction Prints** - The GE Smallworld system is used to produce construction prints and complete final estimates, which are then forwarded to the construction developer.
- **Outage Analysis** - Applications developed by Convergent Group use information from the GE Smallworld system to evaluate a series of actions. For example, the application traces out the network for potential valves, indicates the valve number, and generates a list of each customer affected.

## Business Decision and Marketing Tools

Citizens carefully determines optimal locations in which to use investment capital for placing new gas mains. For example, in one new construction area Citizens has gathered data on houses that currently use electricity or propane. GE Smallworld Spatial Intelligence software can assist Citizens in analyzing the cost-benefits for conversion to natural gas and determining the best location for new mains.

## Faster and Easier Locates

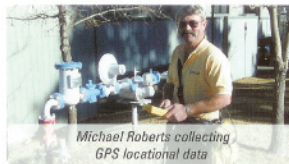
The GE Smallworld geospatial system saves locate personnel countless hours out in the field. Paper records previously did not include services, and service cards were not necessarily current or readily available. Now, up-to-date maps allow locate technicians to view gas facility locations in record



In northern Arizona, Citizens provides natural gas to six counties for 110,000 customers. They have approximately 2,268 miles of distribution and transmission pipeline. With the exception of one sparsely populated county, all of the territory served by Citizens is in the GE Smallworld geospatial system.



Even the receptionist uses GE Smallworld software. Carol Shafer is updating landbase in the course of her workday.



Michael Roberts collecting GPS locational data



Gary A. Smith, expounding on the benefits of their GIS



Nader Attar, director of GIS at Citizens

time. This is especially helpful in rural areas where radio and telephone are not accessible. According to Diane Broz, a utility technician in Prescott, Arizona, "When an emergency or damaged locate is dispatched to you, the location might be a problem area or an extremely rural area you've never located before. With the geospatial information system, I have confidence and verification to back my decisions."

### Regulatory Requirements Easily Met

Thanks to numerous applications developed by Convergent Group, Citizens has integrated its GE Smallworld system with numerous business systems. The result is that Citizens is successfully meeting the regulatory requirements imposed by the Arizona Corporation Commission (ACC), which is charged with regulating pipeline safety for the state. By automating manual processes, Citizens has improved customer service, improved map quality, reduced costs, and saved hours of effort. Software based on GE Smallworld Core Spatial Technology in use at Citizens includes:

- **Valve Maintenance Applications** - are used to ensure valves are greased and turned according to established schedules.
- **Department of Transport (DOT) Applications** - use information from the GE Smallworld system to calculate and generate required DOT report information.
- **Leak Tracking Applications** - are used to record and manage leak information. Additionally, Citizens can use this information to help plan for future facility replacement and for planning preventive maintenance in this critical area.
- **Leak Surveys** - the ACC requires Citizens to conduct leak surveys following different schedules for various divisions and districts within the utility's service area. Applications allow survey information to be entered by polygon, and reports are produced to prove regulation compliance.
- **Cathodic Protection Management** - Cathodic protection involves emitting electrical charges that keep steel pipes from rusting. The location of cathodic protection (CP) devices and associated information is tracked in the GE Smallworld system. Previously this data and test point readings were stored on separate map products.

- Protecting pipe and equipment assets are of critical importance to a gas utility. The geospatial system is an essential tool that helps Citizens maintain functional cathodic protection circuits.
- **Right-of-way (ROW) Applications** - ROW applications are used to efficiently manage easements and rights-of-way associated with construction of Citizens pipelines throughout the service area. Citizens is developing new applications that use the GE Smallworld system to track easements, rights-of-way, and permits.

### Executive Support is Overwhelming

Gary A. Smith is the director of operations at Citizens Utilities for Arizona and Colorado. He imparts, "I see geospatial technology from A to Z, start to finish, as a tool that is essential in enabling us to meet safety, federal, and state regulations." And he should know - he was formerly in charge of Arizona's regulatory safety programs. "The GE Smallworld-based system does a lot for our company," he notes. "It makes it easy for us to satisfy regulators on safety and service, comply with laws, and supply commodity when requested."

Citizens is accountable to its shareholders. Gary can prove to them that the GE Smallworld system is critical for saving money through increasing the ability of operations to maintain the system and meet customer demands, as well as helping the company to stay on track with preventative maintenance. "Middle management and executives can access the system, and all the information needed to comply with regulations is readily available," he says. "Many of the tasks that took us up to 45 days to complete now take about four hours."

In Gary's eyes, the utility has received numerous benefits from the GE Smallworld system, including:

- Time-savings on construction design and as-builts
- Increased productivity through quick information access
- Improved accuracy on facility records
- Increased engineering and operational efficiency
- Enhanced construction and expansion planning
- Better-informed management strategy decisions
- Increased customer satisfaction
- Minimization of outage times
- Reduced time to respond to customer requests

- Improved regulatory compliance (and avoidance of penalties)
- Cost-savings from standardized employee practices across the utility

With current and planned applications, Smith expects to obtain substantial savings on an annual basis. "And with the strong support across the utility," he says, "our system is here to stay."

### Future Goals for 2001

With the responsibility for ensuring the geospatial system is effective, Nader is constantly encouraging enhancements to increase operational efficiency. "Our main concern this year is focusing on infrastructure improvements," he says. "Goals for 2001 include a dynamic link to our Orcom Solutions customer information system and taking our GE Smallworld-based system to the masses."

Nader is in the process of incorporating the GE Smallworld Internet Application Server as a means to provide office and field personnel with new tools to enhance their capabilities. Dispatchers will soon be able to send graphic geospatial data to hand-held GPS/data collectors and trucks, increasing productivity in the field and expanding the reach of outage and work management systems. Other infrastructure improvements include incorporation of the Cook-Hurlbert work design system, the addition of compatible units, and revamping the way the districts and their contractors do work in the field. "We constantly strive to create designs and schedules with our partners and vendors that deliver goods and products more effectively," remarks Nader. "Another goal that will reduce time and save costs is to enable just-in-time materials delivery in the field, resulting in improved inventory management and increased field crew efficiency."

Thanks to GE Smallworld Core Spatial Technology, Citizen's geospatial system provides the backbone that helps the utility save costs, increase pipeline safety, improve customer and employee satisfaction, and comply with government regulations. Their investment is fully supported by executive management and is in direct line with the company's mission statement and strategic planning initiatives.

Cook-Hurlbert, Stoner Associates and Convergent Group are GE Smallworld World Class Partners.