Case Study

Seneca Light and Water Improves Efficiency with Wireless Vehicle Tracking

About Seneca Light and Water

Seneca Light and Water is a municipally-owned enterprise that supplies electrical power and water service to the 8,000 residents of the City of Seneca, South Carolina, and the 6,000 citizens of the surrounding areas of Oconee County. With a staff of 70, it operates as a not-for-profit entity of the Seneca municipal government. The city itself is a fast-growing community that is becoming a favored location for both new retirees and young families thanks to its small-town atmosphere and proximity to the pristine Lake Keowee and the Blue Ridge Mountains.

Situation

In its daily operations, Seneca Light and Water relies on a fleet of about 42 vehicles that are used by employees for everything from meter reading and turning up services, to emergency repairs and maintenance. The city administration and managers of the utility wanted to remain responsible and accountable to the citizens by controlling costs and making the most efficient use of its vehicles and employees' time. Management also had some concerns about the safety of workers, who typically travel alone, and often into remote rural areas out of radio range. The key was to find some way to dispatch and manage its fleet as efficiently as possible.

Solution

Seneca Light and Water now monitors and tracks all of its vehicles in real time with an AT&T Mobile Resource Management solution that operates over AT&T's wireless data network. Through on-board devices, supervisors can pinpoint each vehicle's exact location and speed on a graphic display, while logging detailed information about its operation. This allows supervisors to respond more quickly to emergency and repair calls by dispatching the nearest available vehicle. The system also alerts managers to any unusual vehicle conditions or locations that suggest a driver may need urgent assistance, even if there is no direct radio or voice contact.

Keeping the Lights On, Water Running

Unlike towns that rely on private enterprises to deliver utility services, the City of Seneca opted to run its own electric power and water company. Seneca Light and Water serves approximately 13,500 water and 6,600 electrical customers within the city limits and in certain unincorporated areas of Oconee County. It also incorporates the sewer, billing and engineering departments for the city.

On the electric side, Light and Water handles the local transmission and distribution of power that it buys on the open market, tapping into the grid from its own substation. The department is also responsible for installing and maintaining the distribution infrastructure. To help avoid the higher costs of peak usage, Light and Water also generates about nine megawatts of its own power each month at two peak generation units, passing the savings back to the city. For water service, Light and Water relies on nearby Lake Keowee as a source, and runs its own water treatment and all distribution for its service area.

For the number customers it serves, Light and Water runs a relatively lean organization, relying on a staff of just 70 to manage every aspect of its service, from billing to storm repairs.

Said City Administrator Gregg Dietterick, "As a city-owned utility, our responsibility is to our citizen customers. Anything we can save by operating more efficiently is passed right back to the people of Seneca. That is why we are conscious about costs and want to manage our vehicles more closely."

Seneca Light and Water Facts

- **Business Needs**
  Manage a fleet of 42 field vehicles more efficiently
- **Networking Solution**
  A mobile resource management solution that uses GPS technology and a wireless data network to track and monitor vehicles in real time.
- **Business Value**
  Improved utilization of vehicles, more efficient dispatch, improved maintenance scheduling and greater safety for field workers
- **Industry**
  Municipally-owned utility
- **Size**
  13,500 water and 6,600 electrical customers

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Managing a Far-Ranging Fleet

At any given time Light and Power could have 42 vehicles on the road on any number of assignments throughout the service territory, which covers an area roughly 120 square miles across. Workers routinely travel more than 20 miles outside the city limits in remote rural areas.

Light and Water had been relying solely on two-way radio to communicate with employees on the road, but in the hilly terrain of the Blue Ridge foothills, there were many 'dead' areas where radio didn't reach, putting the vehicle completely out of touch with headquarters. Said Seneca Director of Utilities Bob Faires, "That gave us some safety concerns since our people typically work alone, one to a vehicle. We were always concerned with having a worker get injured 20 miles away on some remote country road and not being able to call for help, nor would we know where they were."

Dispatching a vehicle to a water main break or a downed power line was imprecise as well. A supervisor would simply get on the radio, try to locate the vehicle closest to the emergency and divert it. Said Bob Faires, "When our AT&T team explained what their mobile management solution could do, we quickly recognized it was the ideal answer for us."

In Seneca's solution, each of the Light and Water vehicles – including the cars used by Diettrick and Faires – were outfitted with data capture and relay units about the size of a cigar box. Using GPS technology the units continuously calculate the vehicle's location, and its speed and direction. At the same time, the unit is logging data from the vehicle's on-board engine computer, tracking mileage and monitoring for malfunction alarms. All the GPS and vehicle data is then transmitted in real time over AT&T's wireless data network to specialized applications residing in an AT&T Internet Data Center.

The mobile management application then assembles all the data into a highly visual display that Seneca supervisors can view from any web browser, with a secured login.

"We have a real-time map that shows us precisely where each vehicle is, and whether it's on the road or parked at a job. We also have alarms about vehicle malfunctions," said Faires. "We have a view of the entire fleet at a glance that is broken out by department – light, water and sewer."

Smooth Dispatch, Safety, and Full Accountability

Faires noted that diverting vehicles to emergency calls is now far easier. A supervisor can immediately locate a vehicle and know exactly whether it is en route or at a job. He reported that this has helped speed up response time to urgent calls – such as a water main break or a problem with a utility pole or power line. The department is also conscious about burning fuel needlessly by sending the wrong vehicle the long way round to an emergency.

Faires and his team noticed an unexpected benefit in making those end-of-day decisions about whether to start a new job, discontinue one or push on to finish with overtime. With a clear picture about where each worker and vehicle is, supervisors can quickly determine if they can send another vehicle in to help finish a job, or if it would be more expedient to re-schedule.

Faires and Dietterick are also more comfortable with their ability to respond to a worker who may be in trouble in the field. "Thankfully, we haven't experienced any incidents so far," said Faires. "But we know that our system would quickly detect anything unusual, such as a collision, an engine problem or something out of the ordinary, like a vehicle idling on a remote road. We would be alerted to situations like that in real time."

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>
> **– Gregg Dietterick, City Administrator, City of Seneca, SC**

Since the technology also logs information about the vehicle's performance and operation, supervisors can be very efficient about maintenance and repairs. They know when each vehicle is due for oil changes and other maintenance, and they're alerted to malfunctions remotely, such as when a warning light goes on in the vehicle.

The detailed vehicle logs help the department remain accountable to the citizens. Said Dietterick, "If someone questions why they saw a Power and Light vehicle 20 miles outside of town in the middle of nowhere, we'd be able to detail exactly who it was and what work order or dispatch they were working on. And if any worker was using a vehicle inappropriately or in an unauthorized way, we would know very quickly. We're accountable."

Was there any resistance among the workers about having a monitoring system in the vehicles? "None at all," said Dietterick. "Everyone saw the safety and operational value in it right away, which is how we presented it to the town and the workers from the outset. Both Bob Faires and I had the system installed in our own work vehicles, so everyone knows exactly where we are at all times, too. We've had nothing but applause for installing the solution."

Looking Ahead: A Solution for the Whole Town

After seeing the solution at work for just a few months in Light and Water, Dietterick became convinced it would benefit every other vehicle fleet in Seneca. "Now that I see how well this performed in Light and Water, I would like to see this deployed in our police department, the public works department and sanitation. It's safer, smarter and very efficient."

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