

From suburban settings to mountainous terrain

Selecting the right technology can help strengthen efficiency and increase safety in any environment

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In the utility vegetation management industry, the most successful technological initiatives are grounded in safety and efficiency. For foresters in the field, having access to both conventional and innovative technologies can be essential in boosting personal safety across a range of environments, and in helping them perform their jobs faster and more accurately, heightening an organization's operational efficiencies.

Connecting with GPS technology

Global positioning system (GPS) technology offers benefits well beyond simply tracking the location of individual vehicles. For companies that approach the technology innovatively, GPS technology can boost efficiency on multiple levels. Facilitating better communication with employees in the field, GPS technology at its most basic, enables supervisors who oversee workers in multiple locations to ensure operations are running smoothly by enabling them to track vehicle locations and movement, without disrupting foresters' often tight schedules.

For employees on the road, GPS technology provides quick access to accurate directions helping them drive smarter, which reduces the potential for accidents. This capability also reduces unnecessary mileage and ultimately fuel costs – and for companies deploying large fleets, fuel is one of the highest expenses on the books.

GPS technology also can be essential in curtailing mechanical problems before they escalate. The technology can be set to alert drivers and supervisors of activated engine lights signaling potential mechanical problems. This knowledge empowers supervisors to take proactive steps to manage the situation, which is especially important for workers and vehicles in remote locations.

From lasers to anti-leaf filters

While handheld devices are commonplace for most consumers, these devices offer foresters in the field access to technologies that not long ago would have required a truck to transport.

Tablet PCs loaded with geographic information system (GIS) software and GPS receivers are invaluable in boosting efficiency in the field. These technologies eliminate paper maps, as well as the need to engage in time consuming-manual calculations. Using this technology, foresters can easily and accurately perform spatial data analyses of tree lines to identify and investigate problems. And, because visualization of the landscape takes place at two levels – one on the tablet and the other on the ground – foresters can almost immediately identify potential problems and begin the process for corrective steps.

Foresters also rely on personal digital assistant (PDA) devices with text-based programs. PDAs are invaluable in helping collect data in the field. With built-in formulas and data collection software, these devices eliminate the labor-intensive process of transferring data to reporting programs, saving time and greatly boosting efficiency. In addition, to obtain accurate measurements in the field, digital range

finders are available that use laser technology to quickly record distance, height and angular measurements, offering tremendous advantages over traditional manual measurement techniques. For the utility vegetation management industry, the devices can be equipped with anti-leaf filters and reflectors, designed to provide exact distance measurement specifically for forestry applications.

Foresters can capture information and, using Bluetooth technology, transmit the data back to their data collection device (PDA or tablet) for transfer to the appropriate reporting program.

In case of emergency

Foresters are often required to work in potentially treacherous locales, such as mountain ranges, which are vast and primarily remote. To heighten safety for these workers, technology is available that offers GPS location-based messaging and emergency communication via satellite. These devices are small and light, and work virtually anywhere, including areas where there is no cellular connectivity.

The technology can be preprogrammed to send emergency communications via 911 as well as signal for help for non life-threatening situations. It also helps protect foresters through its ability to send automatic check-in signals to supervisors, and offers supervisors tracking progress through Google maps, which can heighten worker safety and reinforce operational efficiency.

Risks in any environment

However, risk is not exclusive to rugged terrain and effective technology does not always require a digital signal. Dog encounters can pose significant safety hazards and are not uncommon in highly pet-friendly communities. In these areas, foresters often such conventional technologies as walking sticks equipped with tennis balls. This rudimentary technology is proven to appeal to dogs and can buy a few critical moments to enable foresters to call for assistance or identify an escape route.

Another more conventional technology that can be extremely handy is an aluminum device that attaches to fence posts enabling foresters to safely climb fences supported by t-posts. This technology helps reduce cuts caused by barbed wire and injuries from climbing over or crawling under fences.

Technology today clearly spans the gamut of complexity, ranging from high-tech digital devices to conventional protective technologies. By launching pilot programs to test the effectiveness of newer technologies and determine the benefits of those that are tried and true, organizations can identify what works for their specific applications and formulate the right blend of technologies to keep safety levels high and operational efficiencies strong.

ACRT's approach

With a goal of strengthening fleet performance, ACRT launched a pilot program to determine the potential benefits of GPS fleet tracking. GPS units were installed in 10 percent of the total vehicles in the company's fleet and, based on the success of the pilot program, will be increased to more than 25 percent of the fleet in the near future.

Over a six month period, the GPS-enabled vehicles used 1,050 less gallons than pre-GPS tracked vehicles and realized an overall 10 percent cost reduction based on less fuel usage, fewer miles driven and reduced maintenance. That equates to a savings of about six percent based on fuel prices only at the time of the pilot. In addition, since the launch of the program in 2008, ACRT's at-fault vehicle accidents have dropped 42 percent.

With technology playing an important role within the company's larger safety program, ACRT has experienced a marked decline in terms of medically treated injuries, dropping OSHA recordable incidents 60 percent in the same timeframe.

Implementing the right technologies, in conjunction with the company's existing measures to strengthen operations across the board, has helped ACRT meet safety and operational objectives. By launching strategic pilot programs and applying cost/benefit analyses, ACRT identifies and successfully deploys both innovative and conventional technologies that satisfy the specific needs of employees in the field. Using this approach, ACRT has consistently improved its safety record and strengthened operational efficiencies.