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UTILITY VEHICLES

Utility Vehicles: Driving Toward Sustainability

Emerging technology and environmental concerns lead to more vehicle options for demanding landscapes

By Chris Matt

John Burns didn't need scientific tests or in-depth analysis to determine that his older electric utility vehicles lacked the power and speed to handle the landscaping duties on a 426-acre campus.

"They're more of a golf-cart type (vehicle)," says Burns, landscape manager at the University of Texas at Austin. "(If) you're going up a hill, I could walk twice as fast as them. And you put a load on them, and you're really in trouble. We weren't happy with those at all."

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Burns' newer electric utility vehicles have proven to be more effective, but trying to balance the traditional characteristics of these machines – power, bed space, towing capacity, and safety – with the burgeoning issue of sustainability can be a challenge for grounds managers. They can choose gasoline or diesel fuel, or they can purchase more environmentally friendly power sources, such as electric, propane, and bio-diesel.

Gas-powered utility vehicles have a prominent presence in many organizations, but emerging technologies are making environmentally friendly machines a more viable option for grounds departments. Managers say they are willing to shift to green products, but they are researching and testing to ensure they can stand up to the rigors of maintaining a large landscape.

Golf-cart limitations

Many of these large institutions have landscaped areas that stretch across hundreds of acres. So despite utility vehicles' versatility, their most essential function is simply traveling from Point A to Point B.

"A lot of it is just transportation, getting my crew members throughout different parts of the campus that they're responsible for," says Marion Bolick, manager of grounds at Lexington Medical Center in West Columbia, S.C. "The utility vehicles allow them to pull a trailer with more equipment on it.

"They have dump beds on them so they can haul dirt or whatever and dump it."

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The problem Bolick and other managers run into is some electric golf carts do not have the hauling capacity or power to get across a site quickly and efficiently enough.

"Utility vehicles are just a little bit more geared toward what we're doing than the golf carts are," Bolick says. "They have served a purpose, and they were more economical to buy than the utility vehicles. As we progress, we're just trying to go more toward (the gas-powered machines) in the fleet."

Burns had similar problems with his electric golf carts, but that didn't discourage him from using electric-powered machines. Burns has typical utility vehicles that are electric, and he is pleased with the results.

"The only question with them is if you have enough life on the charge to make a full day," he says. "It's pretty marginal, but we have made it work."

Initially, the batteries would last only three-four hours before needing a charge. But Burns says once the batteries were broken in, workers could use the vehicles throughout the day. Burns' crew drives the electric utility vehicles about 10-12 miles a day. The machines lose some power toward the end of the shift, but they finish the job.

Alternative fuels

Along with electric-powered machines, propane and bio-diesel utility vehicles are becoming more feasible options for grounds managers. Roger L. Conner, landscape coordinator at the University of Virginia in Charlottesville, is looking into bio-diesel power, following in the footsteps of on-campus buses that made the conversion about a year and a half ago. Conner, who is responsible for 750 acres, has 26 utility vehicles in his department, three of which are diesel powered.

Conner prefers an alternative-fuel vehicle to an electric due to the power differential.

"Most people that are doing electric are using golf carts," he says. "We're trying to use this in place of a pickup truck. So we're looking for something that has power."

Burns doesn't have diesel vehicles, but he has looked into adding propane-powered machines to his fleet. The problem with propane is the tank takes up about one-third of the vehicle bed, which is invaluable space to a grounds department, Burns says. He believes the propane and gas-powered machines perform on the same level, and he is already buying a propane lawn mower for his department.

"If these utility vehicle manufacturers would come up with something propane (that doesn't take up bed space), I'd be very interested in that because I think we'd be better off with that power-wise and length-of-service-wise than we are with the electric," Burns says. "However, I think the electric is probably better for the environment."

Maintenance considerations

Along with choosing the vehicles' power source, managers must determine who will

maintain and repair the machines. Departments often perform their own preventive maintenance, such as changing oil, air filters and belts, and replacing worn seats and tires, but what happens when vehicles need major repair? Some departments might have automotive or small-engine mechanics on-site who can fix the gas-powered machines, but they might not have experience with electric or alternative-fuel units.

"In this business, we use these machines every day," says Bolick, who keeps a spare golf cart in case a repair takes longer than expected. "We can't afford for them to go sit somewhere for three weeks before they work on them."

Another concern managers can have is the cost of repairs. Conner hasn't compared electric and gas-powered machines head-to-head, but he's heard some repairs cost more than others.

"One thing I would worry about with the electric versus some of the others is how the cell works," Conner says. "I know some of the new cars that are half gas and half electric, they say to replace that one part of the electric is so expensive, you almost have to buy a new vehicle."

Hot-button issue

When researching and purchasing utility vehicles, more managers are considering the overall concept of sustainability at their institutions. If a manager works for a public institution that is more environmentally conscious, that can factor into the type of vehicle purchased.

"(The University of Virginia has) decided that all our new buildings will be LEED," Conner says, referring to the [Leadership in Energy and Environmental Design](#) certification, "and I think the next step is going to be the equipment used on those sites as far as maintaining the LEED certifications."

Lexington Medical Center is a not-for-profit, public hospital, but Bolick says he hasn't felt pressure to use electric or alternative-fuel equipment.

"It's coming," he says. "I'm not going to say it's a big issue now; maybe not as much with the utility vehicles. We're starting to get into that with our regular (courier) vehicles."

While having green vehicles contributes to an institution's overall goal of sustainability, managers know the bottom line always comes first. They will compare the price of fuel and electricity, along with the difference in repair costs for all types of vehicles, when deciding which one to purchase.

"I think the efficiency of the piece of equipment is going to be the final say," Conner says.

Changes ahead?

Rising fuel costs and growing sustainability issues have some managers concerned that institutions might eventually curtail or eliminate gas-powered vehicles or utility vehicles altogether. Not having these products could cripple a grounds department. In such cases, managers would need more manpower and more time to complete the tasks that require utility vehicles.

"The argument is, 'You give us some more people to do the job with and we can do it,'" Burns says. "(Having utility vehicles) is a definite time saver."

Burns believes eliminating utility vehicles on campus seems less likely than converting to an all-electric fleet. He is confident the newer versions of the electric machines would be comparable to the gasoline-powered units in speed, towing capacity, and efficiency.

"(Going all-electric) is not a huge concern since the technology is improving all the time," Burns says. "That's obvious with these newer (electric) vehicles that we've gotten. If we had to go with the older models (the golf carts) that we had, it would take twice as long to get from our facility to campus. It was really extending our time."

Bolick's mixed experience with golf carts wouldn't discourage him from using more advanced electric vehicles in the future, as long as they can do the job.

"I'm not opposed to looking at that option," Bolick says. "Sometimes it's feasible, sometimes it's not. I think it is something that will become more of an issue as time goes by, especially with oil prices. We may have to end up looking at electric utility vehicles (again) at some point, and I'm not opposed to that."

Burns' campus already has a sustainability initiative in place, so he understands how prominent electric and alternative-fuel utility vehicles will be in the future.

Says Burns, "It's definitely a wave of the future that we're going toward rapidly."

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