Georgia Power Interview on Crew Software

Chris Kelly from Clearion met with Dan Burer from Georgia Power to discuss their three-year journey with mobile-enabled vegetation work management software, focusing on the benefits, challenges, and lessons learned during their effort to deploy software to their contractor crews.

KELLY. What's your background in utility vegetation management (UVM), and what is your role today?

BURER. I started my career at Georgia Power in the early '90s as a utility arborist and then spent 20 years in various roles in power delivery. Four years ago, I came back to lead T&D vegetation management (VM), where we have a responsibility for the rights-of-way (ROW) along 50,000 line miles.

KELLY. How does your program work? What is Georgia Power's approach to UVM?

BURER. A few years ago, we moved from work to spec to a planning approach seeking to reduce costs. We decided to have an arborist identify which trees and spans to treat, and specifically what could wait another cycle. It's a condition-based approach, and it's also a risk-based approach because we consider the criticality of the asset.

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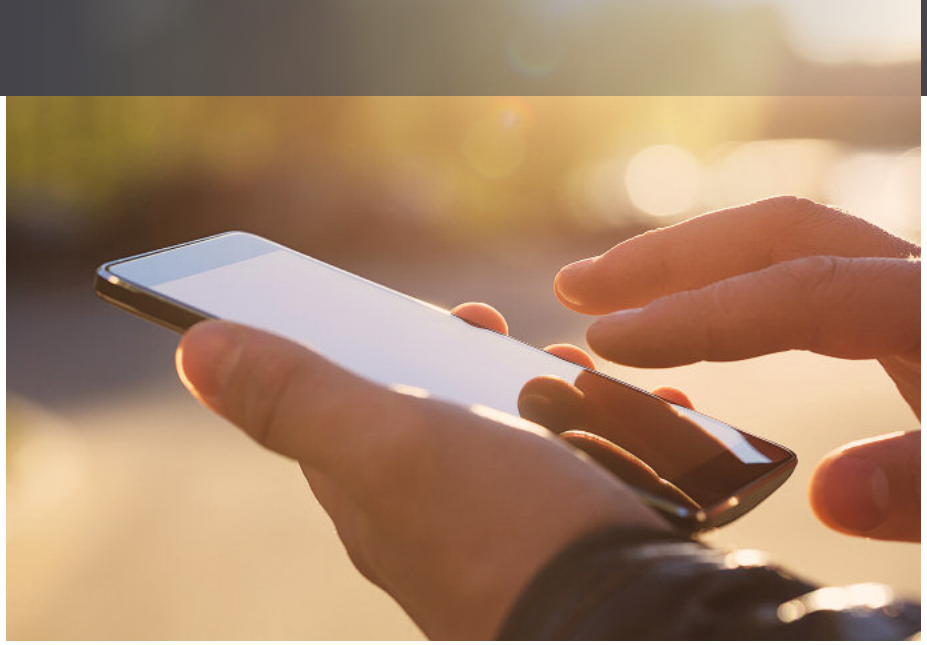
KELLY. How did you communicate with your crews prior to implementing a software solution that put technology in the hands of the crews?

BURER. We worked from printed maps. The crew had one map, the general foreman had another map, and the arborist had another map that we tried to sync up with highlighters and pens. There was a lot of lag and a lot of risk for information to be lost or missed.

KELLY. So, your software deployment coincided with your move to a work-planning approach. What were the main challenges during and after implementing the software?

BURER. Our biggest challenges continue to be around security and hardware. We have a separate software system for transmission VM that we use across all three operating companies in Southern Company. This system is inside our firewall and is one hundred percent Windows PC based. Establishing trust between a contractor-owned device and our internal servers is a big challenge that we still haven't solved because of the way we house our transmission data. On the distribution side, our servers and data are hosted by the software vendor and our field software is a hybrid of PC and smartphone apps. The PC software is challenging because our various contractor companies have their own security protocols with unique requirements and hurdles. It takes a lot of back and



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forth, and sometimes they had to physically bring the machines to Atlanta to get them imaged. The smartphone apps where the crews access their work simply don't have these issues. That aspect turned out really well.

KELLY. Moving on from the challenges to talk about the benefits; were there any surprises or any benefits you didn't anticipate with having your crews connected with this technology?

BURER. Well, there are a lot of benefits. The one big surprise is that the crew foremen really loved it. They like having the digital map on their phone with their GPS signal showing where they were, where the work was, and the discreet work tasks. They love it. Going into this, I thought that group of users would be the most resistant. So that was a surprise, but a good one.

The planning software also worked really well, and it was pretty easy to drop points and lines and specify detailed work directives. The intelligence you get knowing where you did work or where you had planned work provides benefits as different issues pop up. We are able to move work between crews and contractors very rapidly if we need to, and we're able to leverage that technology for storm and trouble events. Thinking back to the time when we had three different sets of paper maps that we struggled to sync up, now it's closer to real time. Everybody has the same information, and that's been a major benefit.

The other big benefit, that we probably didn't fully appreciate previously, is the ability to build and share a restriction layer. It's a specific commitment we made to a customer or a concern that we know will be there and needs to be handled every time we visit a property. It may be a no-spray zone, a refusal, or an environmental or regulatory requirement that we must abide by. Now everybody's got that: the crew foreman, the general foreman, the arborist. Everybody has that information, and that has been really valuable in terms of managing customer relations. We are not repeatedly stepping into the same problems we learned from, or attempted to learn from, and tried to communicate because we didn't have good tools in the past to bring that information forward. So, that's been a big benefit, too.

KELLY. Is there anything you would change at this point in terms of the software, the hardware, or the communication frequency? Is there a wish list at Georgia Power for this technology moving forward?

BURER. On the transmission side, we're still working with our IT security team to find a way to get contractors easier access to our system inside of our firewall. That's something that continues to be a barrier for us—unlocking the benefits of a fully connected workforce—that we're trying to solve.

With our distribution system, we'd like to see more two-way communication and for the data sharing to be more real time. Right now, the crews can update existing information in the system but can't add items or work tasks created in the field. That's one item on the wish list. There is also a one-day delay in getting some of the data out to our crews. Eliminating this would open up a lot in terms of storm, reactive work, and immediate communications with the part of our work that is emergent and would benefit from real time communication.

KELLY. You've been testing LiDAR for your distribution vegetation management (DVM) program. Can you share anything about that experience?

BURER. Yes, we've been testing LiDAR on distribution for a few years. We've done multiple surveys over about 5,000 miles of line, and we're using that data to drive a condition-based program. The LiDAR work really began in parallel with the development of our software system. And the beauty is that the LiDAR results can be immediately ported into our work management system. I don't think it would have been possible to act on that LiDAR information without a software system for work management and crews. It just would have been too much to try to translate by pen and paper or spreadsheet. It's been powerful to take the condition-based survey from LiDAR and then turn it into action through our software system.

KELLY. Before we wrap up, I have a couple of questions about the community engagement work that's going on within Georgia Power's UVM program. Can you

tell us about the work you're doing with Zoo Atlanta and also about the wood chip donation program?

BURER. Sure. Working with external stakeholders, like nonprofits or other community organizations, is a great way to make a positive impact locally. We've been working with Zoo Atlanta for a couple of years. They came to us with an idea to provide a wider variety of food for their browser species at the zoo, like the giraffes. We coordinate with the zoo to send their specialists out ahead of our line clearing crews to identify vegetation species that would enhance the animal diet for browsers. Our crews leave those target species behind, and those trimming end up on the table, so to speak, of the animals at the zoo.

The wood chip program is much newer, but it seems to be filling a need. It started with a group of community farms in the Metro Atlanta area that use a large volume of wood chips for mulching perennial beds to enhance soil conditions. These farms support educational programs at several schools in the area, as well as a women's transitional center. These farms are also providing food to over a hundred families in need. Since launching the wood chip program with the farms, this has expanded to parks and other organizations that struggle to find affordable mulch for erosion control and ground maintenance. It's a win-win for us because we've got an abundance of chips, and it doesn't cost us anything to drop these where they're needed in the community.

KELLY. That's really fantastic. Has your crew software been useful in these community engagement programs?

BURER. We recently added these two community programs to our software system. We were running the zoo project for a couple of years using text messages and e-mails. Once we added this layer into our software, the coordination with the team at Zoo Atlanta has been much easier. Two-way communication between the zoo and our crews has been a big improvement over the old way we were working. With the chip sites, the organizations can request chips at predefined sites that show up in our crew app. A green icon means the site is looking for wood chips, and our crews can compare these locations with their current locations on the map. They can click on the map to get contact information and detailed instructions for each site. Frankly, we've been surprised by how much demand is out there for wood chips and are happy to be able to support the community this way.