3-GIS Helps Enable Huntsville Build

Huntsville Utilities supplies electricity, gas, water and dark fiber, which it leases to Google Fiber for a gigabit FTTH network. Here's how it uses software to track its fiber assets.

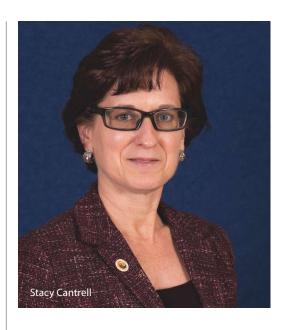By Steven S. Ross / *Broadband Communities*

The publicly owned utility in Huntsville, Alabama, has embarked on an ambitious project to bring fiber to the city's fast-growing population and its business and commercial centers. Its business plan has never been tried at this scale. As described in the October 2017 issue of **Broadband Communities**, Huntsville has committed to build 1,000 miles or more of new fiber, and Google Fiber has committed to lease it. The lease improved the return on investment for Huntsville's build and shifted most of the risk away from the utility.

The plan required a large step up in the sophistication of the utility's approach to facilities management. To manage its fiber assets more effectively, it turned to 3-GIS, headquartered conveniently nearby. But convenience was not a major consideration in the decision.

When it comes to keeping track of telecom assets, getting organizations to change established ways of doing things is not easy. 3-GIS is one of many firms that base their systems on software provided by Esri – accessible both on the web and with desktop software, ArcGIS.

Other vendors partner with other mapping software suppliers. These are almost all mature, cost-effective solutions easily used by technicians in the field and by management specialists. But all require some getting used to for fiber deployers that have relied on older tools such as computer-aided design (CAD) software or even spreadsheets. **Broadband Communities** interviewed Stacy Cantrell, Huntsville Utilities'

Stacy Cantrell

vice president for engineering, to get the details about her organization's experience.

BROADBAND COMMUNITIES: *How big a system is Huntsville Utilities building, and where do things stand now?*

STACY CANTRELL: We started with about 100 miles of what we call legacy fiber. The system will be 1,000 to 1,100 miles when finished, and we are now about 30 percent complete. The first broadband customers were served in May 2017.

BBC: *Had you used 3-GIS from the outset?*

SC: No. We started with 3-GIS only in fall 2016 when the deal closed with Google

Fiber. We pulled 3-GIS in before we started any new fiber construction. But we have not even migrated our legacy fiber over to the system because we have not had time. We have been focused on getting the new stuff built.

BBC: *Was Google Fiber happy with your choice?*

SC: It has gone well. We have had a few bumps. The fiber build has been a new process for both of us. Most important, we had to work through ways to exchange information in ways that made sense for both parties.

BBC: *For that legacy 100 miles, how much detailed information did you have?*

SC: In the original fiber build, which supported our electric grid, we did not formally document even the number and location of hubs, poles and so forth. Some staff members had the information in their heads, but the organization did not.

We have been far more careful with the new build, thanks to the 3-GIS software. Every enclosure, every item in the network we are building requires a lot more than just the 96-count fiber or whatever. There is other fiber connected to that, cabinets with splits, and the numbers and types of splits (four-way or eight-way). There are no splits in the legacy network's 100 miles.

BBC: *Have you had the need, or even the time, to use the more detailed data you are collecting on the new build?*

SC: No need yet. But eventually, we, Google Fiber and any other tenants will be able to lower costs and improve service as we analyze sources of trouble and predict staffing and budgetary needs more accurately. Remember, we are essentially leasing dark fiber.

BBC: *Is there any additional functionality you would like to have?*

SC: We struggled to produce constructible prints to provide to contractors. We want to do better there.

Huntsville Utilities installers can update the fiber asset database in the field.

BBC: *Is 3-GIS working on this need?*

SC: Yes. 3-GIS is aware of the problems with construction prints and is trying to improve the output. And as more contractors do more construction, we have been focusing on construction documentation, especially for bigger projects.

BBC: *Where do the outputs go?*

SC: Into Google's system as well as into our GIS. We use Bentley and Microstation for our CAD needs.

BBC: *Is Google Fiber using the data you supply, maybe combining with their demographic data for marketing?*

SC: They are committed to serving the entire city and have been marketing in Huntsville for a long time, so it doesn't matter in our situation. They do not have full access to all the data we collect, but they do need all the port assignments for houses passed and all the fiber routing, the fibers on the poles and in the ground.

They do not directly link into our system, either. We send them files. We do coordinate with them, giving notice of areas we are about to turn over to them and the predicted date they can start serving.

BBC: *Are they sharing their data with you on what they are doing?*

SC: No. Our agreement with Google is that we will build out to the target number of households passed. But we try to tell them what we will

be ready to turn over months in advance. They don't tell us where to build.

BBC: *What's next?*

SC: Our goal when we finish and migrate our systems is to have everything on the same platform to truly connect the legacy network and what we have been adding to fulfill our commitment to Google Fiber. Now we are still, in effect, running two networks.

BBC: *Has this experience helped on the electric side and with other users of your poles?*

SC: Yes, absolutely, especially in pole attachment tracking. There are lots of new communications with other users of the poles.

BBC: *Huntsville has a lot of diversity in premises to be served, more than normal for its size. It is also growing fast. Any feeling you are having trouble keeping up?*

SC: Yes, but we have stabilized. The model here has been unique, in the way we are partnering with Google Fiber. We knew how to build good plant, but we did not know how to do this. The consultants and contractors we have worked with have been great, and everyone has come out better. ❖

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