

Truckee Donner Public Utility District

Smart Grid solution offers improved efficiencies and cost savings



PROJECT AT A GLANCE

Project Type

Operational fiber optic solutions

Location

Truckee, California

Number of Customers

24,000

Applications

Offering the unique ability to trace the communications network from the fiber patch panel through the fiber and coax network to the tap

Software Implemented

Fiber Manager

CUSTOMER BENEFITS

- Efficient communication, planning and reporting
- Flexible data modeling
- More accurate and efficient network management
- Improved management of its advanced fiber-optic and coax networks



The Truckee Donner Public Utility District (PUD) provides electric and water service to 24,000 customers in the Truckee, California area. It is a non-profit, publicly-owned utility governed by elected officials, and has an 86 year history of providing quality service at reasonable prices.

Truckee Donner PUD has used Schneider Electric technology since 2000, when it implemented ArcFM™. Since then, the utility has also implemented Schneider Electric's Designer and Responder products.

Challenges

Like many utility companies, Truckee Donner PUD was looking to improve upon its existing infrastructure, and prepare for new Smart Grid and SCADA technology. Implementing a single-mode fiber optic system was determined to be the optimal solution, both for security and bandwidth. To avoid the high costs associated with poor fiber optic design, Truckee Donner PUD sought a product that could accurately design and model an advanced fiber optic system, utilizing the existing GIS infrastructure already in place.

“Fiber Optics is one of the most difficult utility networks to design, manage, and quality control. During the design phase, the district had to be 100 percent sure that any layout would accommodate existing and future data requirements and system specifications,” said Ian Fitzgerald, IT/GIS operations manager at Truckee Donner PUD. “During the build phase, the district needed documentation that could accurately direct the contractor to construct, splice and label aspects of the system. Lastly, during quality control, the district required absolute knowledge of decibel loss for every fiber, cable and circuit, ensuring construction was completed to contract specifications.”

Solution

After serious consideration, Truckee Donner PUD decided to use Schneider Electric’s Fiber Manager to help with the planning, design and implementation of its fiber optic network. The planned 400,000 foot land fiber network needed to interconnect its five electrical substations and 42 water stations with its data center over a span of approximately 65 square miles.

Fiber Manager’s intuitive, visual interface helped Truckee Donner PUD design everything from the actual path of the fiber optics — whether overhead or underground — to the assets the fibers will be tied to, like overhead pole lines, underground communication lines or live electrical conduits. Additionally, the seamless, map-based data format of Fiber Manager helped Truckee Donner to determine the best transition points, splice locations, cable sizing and circuit paths.

For example, while working to determine the correct cable sizing, Truckee Donner PUD was able to see the fiber availability of every cable throughout the entire system on Fiber Manager’s map. This real-time data allowed the utility to identify the locations where the cables were the incorrect size and readjust the sizing before it became a costly mistake.

“Fiber Manager gave us the information we needed to normalize and standardize the number of cables we keep in stock,” said Fitzgerald. “Streamlining our inventory needs significantly keeps our stocking costs down, and helps ensure we are using the right cables not just for right now, but for our future growth.”

By utilizing Fiber Manager’s capacity analysis capability, Truckee Donner PUD was able to plan ahead to ensure that it will not run out of fiber as the city and infrastructure continue to grow. This planning will save both time and money, since replacing fibers after implementation is nearly impossible and extremely expensive.

The Bottom Line

Truckee Donner PUD experienced improved efficiencies and cost savings with Fiber Manager almost immediately, beginning with the design and planning stages.

Fiber Manager was up and running in a matter of days, enabling Truckee Donner PUD to accurately determine all of the materials needed for the project, from cable footage to the number of splices required for each specific splice box. Fiber Manager also helped the utility visualize how many transition points it would have and how many poles were needed for load analysis. In short, when Truckee Donner PUD went to bid the project, they already had a clear understanding of what materials were required to build the system and how much it was going to cost.

As the fiber optic network was being built, Fiber Manager’s advanced modeling and reporting capabilities provided Truckee Donner PUD’s contractor with critical information that helped them work as efficiently as possible, ensuring that the final result would accomplish its goals.

“Fiber Manager not only made our life a lot easier, it’s also made our contractor’s life that much easier,” said Fitzgerald. “From the beginning, we were able to present the contractor with a well-organized plan complete with map layouts and splice diagrams. Our contractor has dealt with hundreds of utilities building fiber optic networks, and this is the first time they’ve seen a utility as organized and informed as Truckee Donner.”