



## Case Study: Tri-Co Connections

# Utility Co-Op Builds Middle-Mile Network for Rural Broadband



**Vertical:** Utility Broadband Provider  
**Region:** North America  
**Solution:** 100G Broadband Aggregation using Ribbon NPT 1800

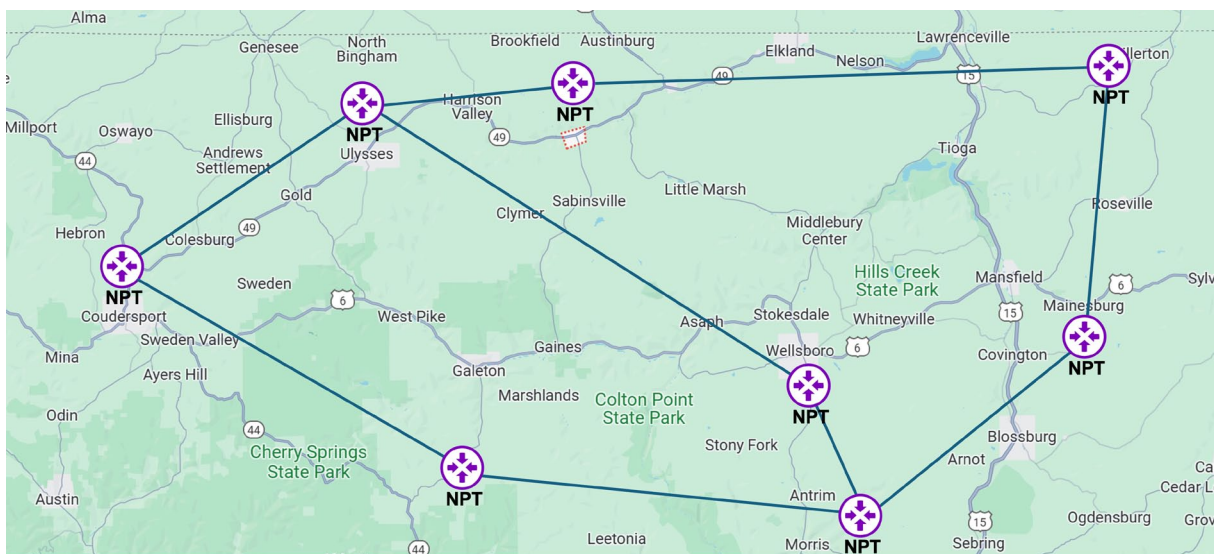
### Challenge

Tri-County Rural Electric Co-op has been delivering reliable electricity to nearly 19,500 meters in seven counties of Pennsylvania since its inception in 1936. In 2016, Tri-Co recognized the growing demand for broadband internet access among its members and conducted a comprehensive survey to gauge this need. The results were overwhelming, with an undeniable majority expressing a desire for broadband. To address this need, Tri-Co has expanded its original mission and established a subsidiary, Tri-Co Connections, dedicated to providing high-speed broadband services to its members. Through this initiative, Tri-Co is committed to bridging the digital divide in rural communities and empowering its members with reliable and efficient internet connectivity. To ensure reliable and scalable networking capabilities, Tri-Co needed

a scalable middle-mile solution to aggregate their member's broadband traffic back and forth to the internet, while prioritizing mission critical SCADA traffic that they use for their internal smart grid.

### Solution

To ensure reliable and scalable networking capabilities, Tri-Co selected a network solution from Ribbon Communications. After thorough evaluation, the company opted for Ribbon's Neptune 1800 Router, known for its exceptional performance in delivering a robust 100Gb Intelligent Middle-Mile backbone. This state-of-the-art router offers high-speed connectivity and unparalleled reliability, meeting the demanding needs of Tri-Co's network infrastructure. With this cutting-edge technology in place, Tri-Co can confidently support its growing broadband operations without any compromise on performance or stability. The decision to partner with Ribbon Communications reflects its commitment to providing its members with a dependable and scalable network that can keep up with their evolving needs.



Tri-Co Network Configuration

Tri-Co has greatly benefited from the implementation of an intelligent middle-mile network. The network was built to be highly scalable, capable of supporting the 1 Gbps broadband services that are offered today and any advanced applications that may come in the future. This will not only enhance the customer experience but also ensure that Tri-Co stays ahead in a constantly evolving technological landscape. Another advantage of this network is its ability to create separate EVPNs for SCADA traffic, meter gateways, and security cameras at all substations. This will enhance security by isolating different types of traffic and preventing potential threats from spreading throughout the network. Overall, the intelligent middle-mile network offers numerous benefits to Tri-Co in terms of scalability, improved customer experience, and enhanced security measures. It is a smart investment that has helped position Tri-Co as a leading broadband provider in Rural America.

### **Benefits to Tri-Co of Ribbon's Neptune (NPT) 1800 for Intelligent Middle-Mile:**

- 2 Tbps switching capacity with 100G interfaces, make it optimized for high-capacity broadband aggregation applications. IP Optical integration and multi-layer operation with automation delivers lowest TCO
  - Powerful 100GMPLS engine provides future-proof evolution with converged support for MPLS (IP and TP), Ethernet (MEF CE2.0 certified), segment routing, and TDM over CES/CEP.
- NPT is optimized for service aware aggregation providing utility and service providers like Tri-Co the ability to collapse all their services onto a single converged IP network, and agility to evolve the network as services and customer needs evolve
  - Service-aware, middle mile communication networks can guarantee mission critical traffic performance (e.g Utility SCADA traffic) using EVPNs
  - Manages the network as a single multi-layer entity, with full visibility on how changes in one layer affects the other

Tri-Co Connections has set an ambitious target of completing their fiber buildout by Fall 2024. This means that all their members will have access to high-speed broadband service by the end of that year. As they near the completion of their fiber buildout, Tri-Co is also proud to announce that they are close to achieving their marketing objectives. With more than 50% of their residential members already signed up for broadband service, Tri-Co has exceeded expectations and solidified its position as a leader in the rural market. The company remains committed to providing reliable and affordable internet services to all its members and looks forward to welcoming even more sign-ups as it completes its fiber buildout in 2024.

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