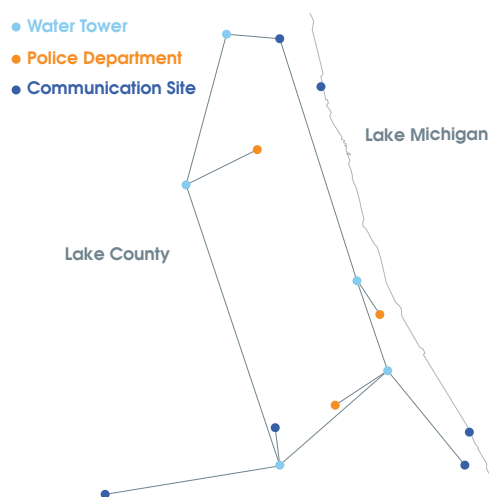


# EMERGENCY RADIO NETWORK REPLACES COPPER LEASED LINES WITH RADIO OVER IP



## Case Study

East Shore Radio Network (ESRN) near Chicago, Illinois needed a replacement solution for its TELCO leased lines as costs had reached \$85,000 per year and continued to increase. Support for the leased copper circuits had dwindled due to telephone company phase outs of the difficult-to-maintain lines.



Above: ESRN replaced their leased lines with 4 and 2 wire cards. They integrated PTP 650 radios, a 4.9 GHz public safety network, and an OSPF network.

The East Shore area stretching 2 counties and 6 cities relied on ESRN for their emergency and public safety communications. The network consisted of 12 radio sites, connected to a dispatch site. Rather than continue costly operations they opted to discontinue use of leased lines from the telephone company.

Entre Solutions II was commissioned by ESRN to replace their leased lines including network installation and integration.

## OBSTACLES

Entre Solutions II had successfully installed the backhaul and communications system for ESRN consisting of 15 microwave towers with some paths traveling 4 or 5 microwave hops to reach the dispatch center. Tom Blumenshine, President of Entre Solutions II, noticed packet delays along with lack of audio quality, and that the system was going down intermittently. This caused loss of communications to the fire and emergency departments, for up to ten minutes during system failures. The fire departments had missed calls and communication difficulties; a solution was needed quickly.

The analog conversion product used at the time would often lock up, cutting communications and required a cold reboot or physical pulling out of the power cord. Attempts to warm boot-up or reset the Ethernet ports often failed.

**We took your product; we put it in place; we connected it, and it worked.**

*- Tom Blumenshine, President of Entre Solutions II*

## SOLUTION

With the situation being critical, Tom from Entre Solutions II contacted TC Communications for a solution to restore reliable communications for emergency personnel. Having seen many similar cases in the past, Radio Network Specialist at TC, William Jeske, suggested they test out a pair of JumboSwitch 600ohm Analog over IP (TC3846-6) cards to troubleshoot the issue and verify compatibility and function.



# EMERGENCY AND PUBLIC SAFETY NETWORK SOLUTION

## LEASED LINE REPLACEMENT



**Solutions Cont.** Entre Solutions II installed the units, and without any adjustments, the voice channel worked right away. Operators of ESRN noticed immediate improvement of audio quality. There were no more equipment lockups, failures, or downtime. Audio quality increased greatly; an unexpected benefit. Channels are now uncompressed 64K with no loss of packets or speech and pass all status tones. In a nut shell, the TC3846-6 works.

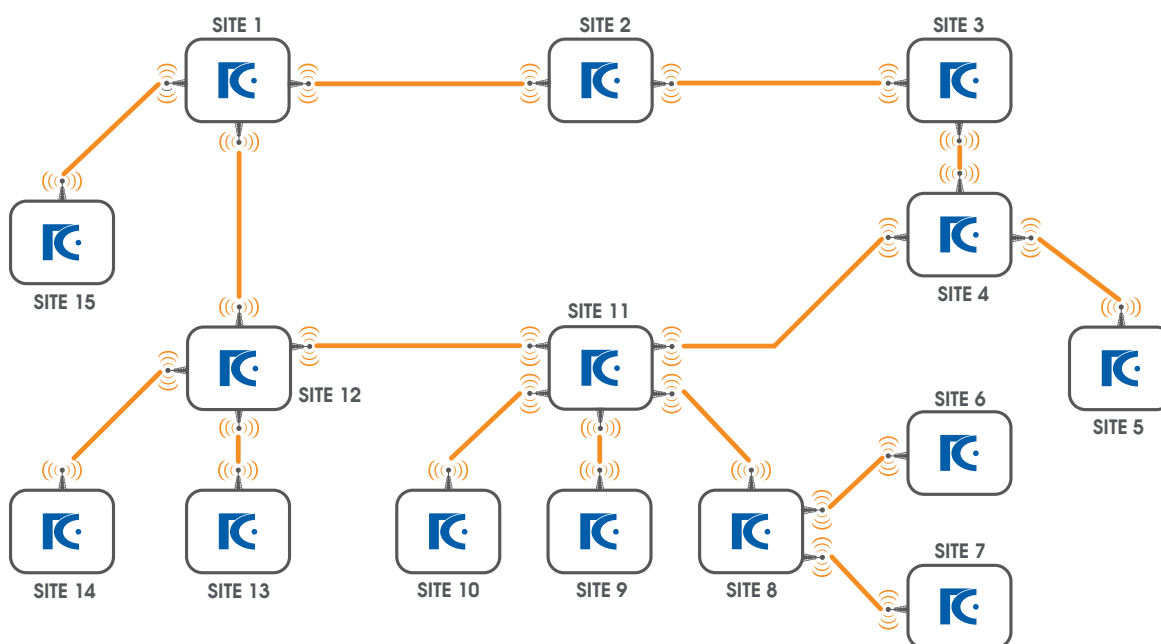
### INTEGRATION

Two months after the initial call to TC, the JumboSwitch TC3846-6 Solutions was fully integrated into the OSPF microwave network for ESRN. After just a few programming adjustments for PDV on the longer paths, everything worked. A few locations traverse up to five hops to the dispatch center; all without loss of quality or issues. The ESRN JumboSwitch Network consists of 12 standalone units at the towers and two

rackmount units, a 1U and 4U, at Central Dispatch with a mix of 4-wire and 2-wire interface cards (TC3846-6 Analog Radio over IP).

### IMPACT

Since replacing the analog conversion equipment 2 years ago with TC JumboSwitch cards, there has been no downtime or frustrations. East Shore Radio Network has eliminated its leased lines. That means \$7500 per month in fees are gone and available for use elsewhere. By keeping the radios in place, Entre Solutions II ensured minimal downtime and training needed in the switchover. Most importantly, lock-ups, cold boots, and ten-minute communications downtimes are no longer a concern for emergency personnel. East Shore Radio Network plans to expand operations to five more cities requiring four more radio receiver sites.



Above: East Shore Radio Network deployed JumboSwitch cards at 15 separate sites. TC equipment worked with microwave towers that traversed 2 counties and 6 cities.