

With Covered Cable, Littleton Electric Delivers Near-Perfect Reliability

Littleton Electric Light and Water Department, a public power utility serving heavily wooded areas of Massachusetts, including Littleton, Boxborough, and portions of Devens, learned an important lesson during a December 2008 ice storm that caused widespread power outages.

While it took its neighboring IOU up to two weeks to restore power in central Massachusetts, Littleton reinstated service to the majority of its customers within five days because it had installed covered cable, said Nick Lawler, general manager at LELWD.

The utility had installed the covered cable in Littleton but not Boxborough. The areas without the covered cable — which is called spacer cable and has polyurethane coatings that protect against outages — suffered the most from the storm.

“With the covered cable, when a storm hits, it’s not going to take your power out, and you don’t have to send crews out to repair it and fix it. So there’s the payoff,” said Scott Larsen, field representative at Marmon Utility and a former lineworker for LELWD.

After the storm, the utility installed spacer cable in much of Boxborough.

The investment was paid for by part of the \$1-\$2 million annual budget LELWD’s board of directors allots for resilience and system hardening, which



includes upgrading equipment and putting in the “best products that we can,” Lawler said.

In addition to investing in hardening, Littleton evaluated underground wire along with the traditional bare wire and covered cable installed in Boxborough and Littleton. For new developments, the utility often installs underground cable at the request of the neighborhood. In that case, the developer pays for the extra cost of the system.

While undergrounding wires boosts reliability compared to bare wire systems and improves the look of the neighborhood, they can be a challenge to maintain and inspect because they’re not as accessible as overhead wires, Lawler said.

Covered cable was the clear choice for LELWD. Its foray into covered cable began in the 1970s, when Marmon Utility, located in New Hampshire, became an important partner,

providing Hendrix overhead distribution products, Lawler said. The utility helped test prototypes of the Marmon products.

Marmon’s spacer cable is supported by an aluminum or aluminum-alumoweld messenger — bimetallic wire made of a thick, inseparably welded layer of aluminum on a steel core — which carries the system’s weight-bearing load. The system works well in wooded areas because it can withstand the weight of a tree or other loads up to about 32,000 pounds.

The multi-layered cable differs from traditional bare-wire systems because conventional systems have no coating to protect them. The covered cable systems have both low- and high-density polyurethane coatings.

“It has a structure that won’t allow any amperage to leak out and cause outages,” Larsen explained.

Even if a tree makes contact with the cable, there won’t be a power outage. With bare wire, a falling tree in a heavily wooded area can spark outages.

Over the past 15 years, as LELWD worked to ensure its system is insulated, its reliability numbers have improved. “We always had good reliability numbers, but they’re almost perfect now,” Lawler said.

LELWD earned Certificates of Excellence in reliability from APPA in 2015 and in 2017-2025, said Connor Reardon, energy and sustainability manager at LELWD.

The utility’s system average interruption duration index — which measures the average total duration of power interruptions in a year that customers experience — was 8.2 minutes in 2025, according to Reardon. Its system average interruption frequency index — which measures how many interruptions, on average, customers experienced — was 0.11 in 2025.

Delivering this level of reliability to the community is satisfying for the utility’s employees.

“If you’re a lineman, you have to work in some pretty terrible weather. You have to want to come to work and find value in the job that you do. You have to care about the community. Being public power, we’re all invested in the community that we serve and the people that we see on a daily basis. It’s very rewarding,” Lawler said.

