

CASE STUDY

DELAWARE ELECTRIC COOPERATIVE TRANSITIONS TO RISK-BASED TRIMMING TO INCREASE EFFICIENCY

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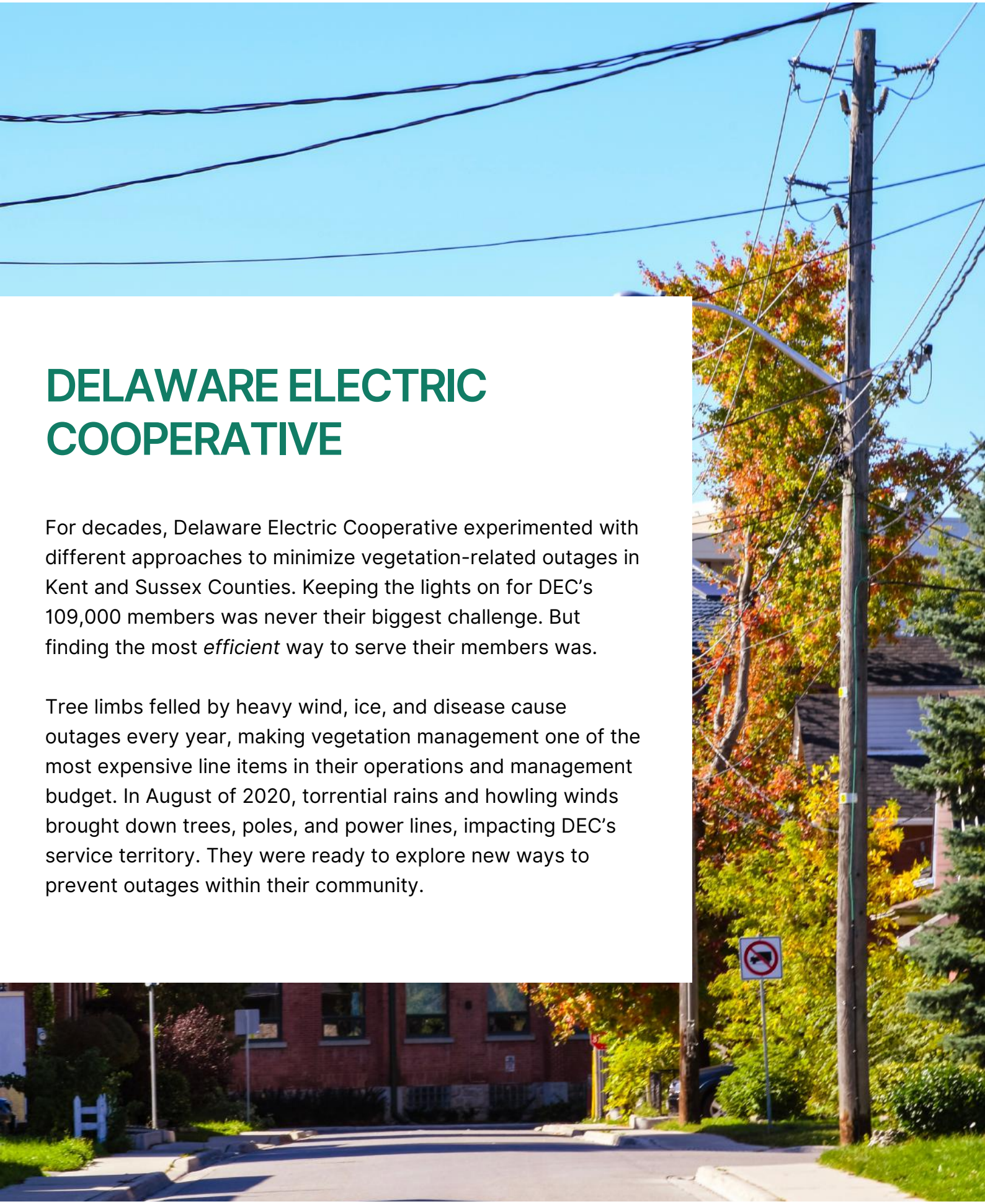

DELAWARE ELECTRIC COOPERATIVE

For decades, Delaware Electric Cooperative experimented with different approaches to minimize vegetation-related outages in Kent and Sussex Counties. Keeping the lights on for DEC's 109,000 members was never their biggest challenge. But finding the most *efficient* way to serve their members was.

Tree limbs felled by heavy wind, ice, and disease cause outages every year, making vegetation management one of the most expensive line items in their operations and management budget. In August of 2020, torrential rains and howling winds brought down trees, poles, and power lines, impacting DEC's service territory. They were ready to explore new ways to prevent outages within their community.

DEC overstory

PUTTING PREDICTABILITY FIRST

Brian Fooks, Operations Supervisor, has been dispatching vegetation work crews across DEC's territory for years. In the past, they've employed cycle-based management (trimming vegetation in specific areas every few years with emergency work for other pressing threats as needed) and have experimented with reactive trimming, focusing on areas with more recent outages.

DEC found cycle-based trimming to be the most effective, but it didn't offer the flexibility to prioritize high-impact spans affecting the most households.

Rather than wasting time sending work crews to low-risk and low-impact areas, DEC was looking for a risk-based approach enabling them to tackle the spans that mattered most. That's why they've partnered with Overstory.

Overstory will allow us to take a proactive approach to our vegetation management. With satellite imagery, we can quickly identify high-priority problem areas that need trimming—areas we might not have prioritized with a cycle-based approach. We anticipate a decrease in vegetation-related outages as a result.

Grace Malcom, Data Scientist

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OPTIMIZING EFFICIENCY WITH RISK-BASED TRIMMING

Armed with Overstory's machine learning and vegetation analysis, DEC aimed for a 12.5% improvement in vegetation-related outages (specifically, SAIDI) or pruning crew resource efficiency.

In collaboration with the Overstory team, they've defined a virtual buffer around power lines. Vegetation is scored based on its proximity to the line, and additional factors—like potential members impacted by an outage—weigh into final priority.

This risk-based approach gives them the actionable insights they need to plan accordingly. Now, DEC isn't limited to managing vegetation based on eye-witness reports from crews or prescriptive annual cycles. They can prioritize doing work where it matters most.



500 miles

de-risked in DEC's test phase using AI and satellite data

Throughout this partnership, Overstory has welcomed our feedback and implemented our suggestions. The Overstory platform feels like it's tailored to our needs, and we can't wait to see how far this collaboration takes us and the success it will bring.

Grace Malcom, Data Scientist

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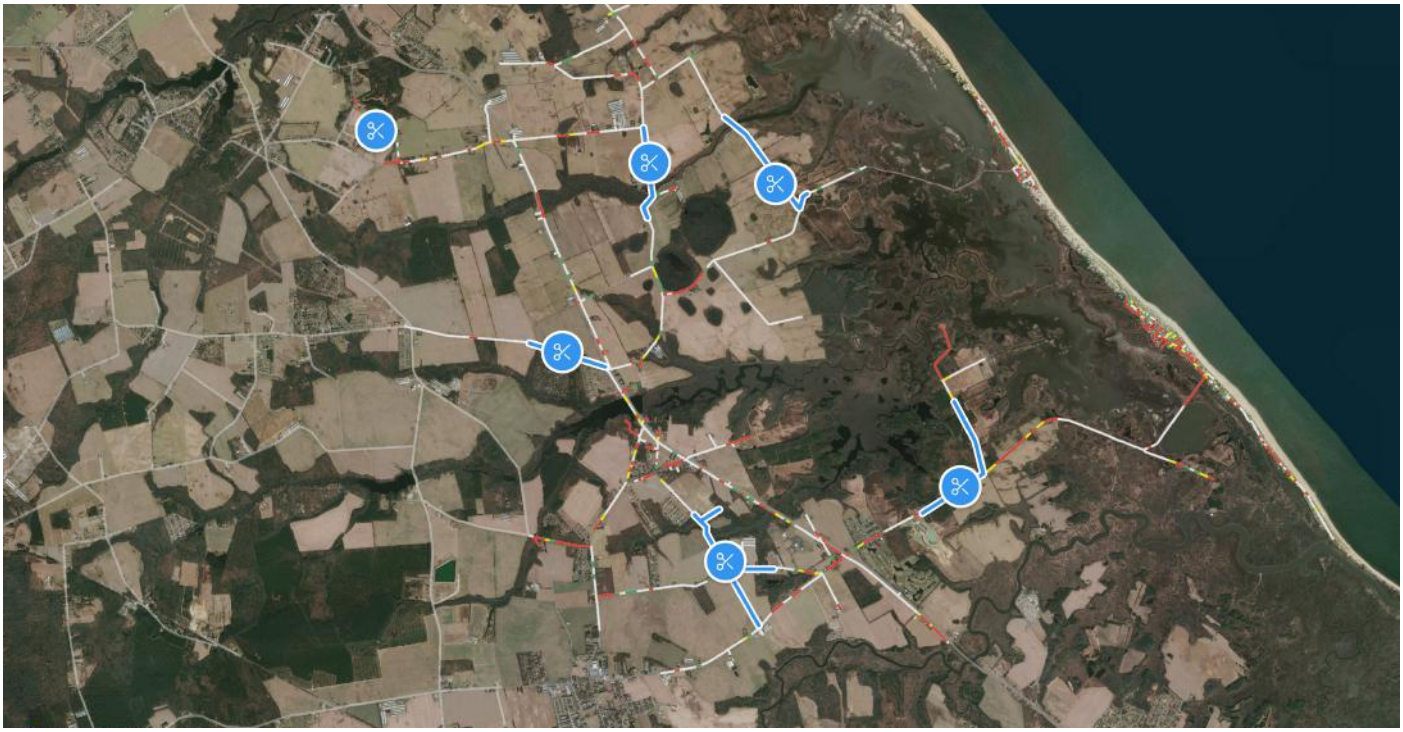

CREATING SMARTER WORK PLANS USING SATELLITE IMAGERY AND AI

Overstory integrates directly into a wide range of planning and management systems, and the platform is collaborative by design. Using their own regional expertise as input for the feedback loop, DEC shapes Overstory's machine learning within their territory.

The Overstory platform highlights areas most in need of attention from pruning crews, and as a result, helps DEC plan long stretches of high-impact work.

Their work plans are shifting to prioritize high risk areas rather than quantity, which they expect to yield a 40% improvement in resource efficiency.

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Because this new AI-fueled approach helps DEC's team prioritize valuable work, they expect to see a decrease in spend and effort in year one. While their previous cycle-based approach would have had them trim 120 miles on the next annual circuit in the test area, Overstory's risk-based trimming calls for just 99 miles.

Now, DEC can give pruning crews familiar work plans thanks to Overstory's analysis. Instead of spending time learning a challenging new tool, crews get to work within the planning and management tool they already know. This time, though, they are equipped new insights to help them do the work that matters most.

BY PARTNERING WITH OVERSTORY, DELAWARE ELECTRIC CO-OP ANTICIPATES...

18%

decrease in miles trimmed across the test territory

14%

projected decrease in System Average Interruption Duration Index

...in addition to newfound flexibility in their annual planning and budgeting.



IMPROVED FLEXIBILITY, INCREASED RELIABILITY

Along with less variability comes simpler budgeting. DEC now makes more informed decisions about where they invest or save, knowing they're not gambling at the expense of their customers. And because they're not tied to annual cycles, pruning crews don't have to commit to trimming 120 miles some years versus just 80 miles in others.

As the partnership continues, the technology will continue to improve in both efficiency and SAIDI. And Overstory, as ever, will continue to support DEC on their mission—to provide efficient and low-cost energy to each of their 109,000 members.

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ABOUT OVERSTORY

Overstory uses machine learning to interpret satellite imagery in order to monitor vegetation in and around transmission and distribution corridors. With up-to-date insights at the tree level, Overstory helps utilities direct pruning efforts to areas most at risk, support wildfire mitigation plans and make sure O&M budgets are spent in the most effective way.

To date, the Overstory AI has been trained and applied on more than 2 million square miles of forest in 64 countries, including 22,000 miles of T&D right-of-way. The Overstory vegetation intelligence platform helps utilities to identify:

- Tree species
- Vegetation encroachment
- Pruning verification and remote auditing
- Height of trees
- Wildfire risks
- Proximity of vegetation to the power lines
- Tree vitality and fall-in risks
- Prediction of grow-ins, based on species and growth rate
- Risk insights for each span of the network

Learn how Overstory can help mitigate risks within your network.

Schedule a demo at overstory.com/demo



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