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Targeting the Right Trees: How Central Virginia Electric Cooperative is Cutting SAIDI

Oct 2025

Contents

Quick Facts

LOCATION

Central Virginia, United States

ABOUT

Central Virginia Electric Cooperative (CVEC) is a not-for-profit, member-owned electric utility serving more than 39,000 members across 14 counties in central Virginia. Its 3,000 miles of overhead line run through mountainous, hilly, and suburban terrain, making vegetation management one of the most critical drivers of reliability across its network.

USE CASES

Hazard tree prioritization, cycle optimization, ROI-driven decision-making, contractor auditing

Planning Vegetation Management Work by SAIDI Impact

Vegetation is the largest contributor to outages across Central Virginia Electric Cooperative's system, accounting for more than 80% of events each year. Every minute of SAIDI matters to CVEC's members. Even small reductions in tree-related outages can have a sizable impact on the client experience, operational costs, and reliability metrics.

Through analysis of their outage history and hazard tree data, CVEC found that just five tree-related outages can add a full minute to their System Average Interruption Duration Index (SAIDI). This insight is unique to CVEC's network and allowed them to quantify the direct link between vegetation events and reliability performance.

CVEC observed that traditional time-based trimming alone was not enough to bring them closer to their SAIDI target. "We've been through three trimming cycles," remarked Mark Moreno, Vice President of Reliability and Field Engineering at CVEC. "Cycle trimming alone cannot be the only driver of SAIDI reduction."

Recognizing an opportunity to focus on the right trees instead of simply removing more, CVEC took a targeted approach that integrated technology. They were looking for a solution that was able to pinpoint which trees were most likely to cause outages and prioritize removals, and in turn, deliver the most significant impact for members.

The Cost of Tree-Related Outages

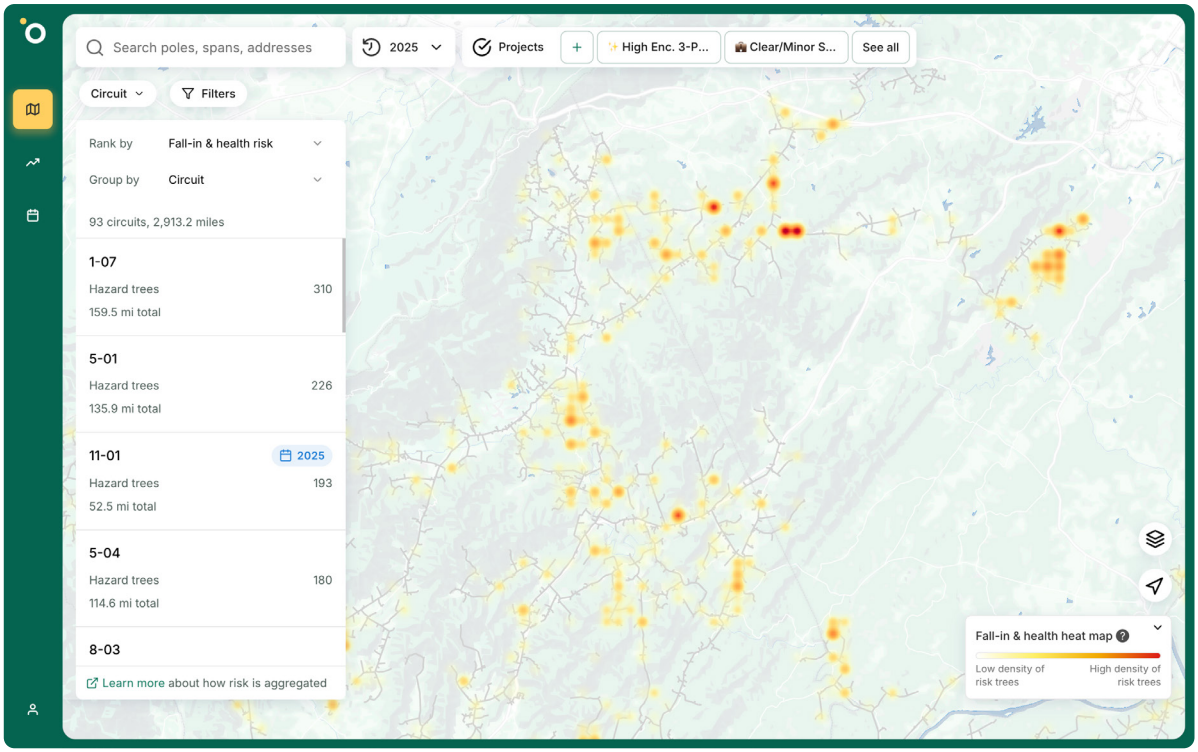
Tree-related SAIDI averaged 75% higher than their annual target. The majority of these outages came from fall-in trees outside the right-of-way, which are harder to predict and plan for. Each event required hours of restoration work, involving multiple crews and equipment, and together they amounted to significant operational costs and member impact over time.

CVEC knew that removing every hazard tree was not realistic or cost-effective. They needed a way to identify the trees that would have the biggest impact on reliability and working with Overstory gave them that capability.

Partnering with Overstory: Using Remote Sensing to Prioritize the Right Trees

In 2023, CVEC partnered with Overstory to integrate AI driven remote-sensing intelligence into their vegetation management plan. Overstory's hazard tree data ranked trees by potential customer impact and historical outage likelihood, allowing CVEC to target removals that would prevent the most customer minutes of outage.

> ***" The only thing we changed was starting to use satellite intelligence. It allowed us to be proactive with hazard trees."***
>
> ***-Mark Moreno, Vice President of Reliability and Field Engineering at CVEC***



Overstory's hazard tree map ranks trees by fall-in and health risk

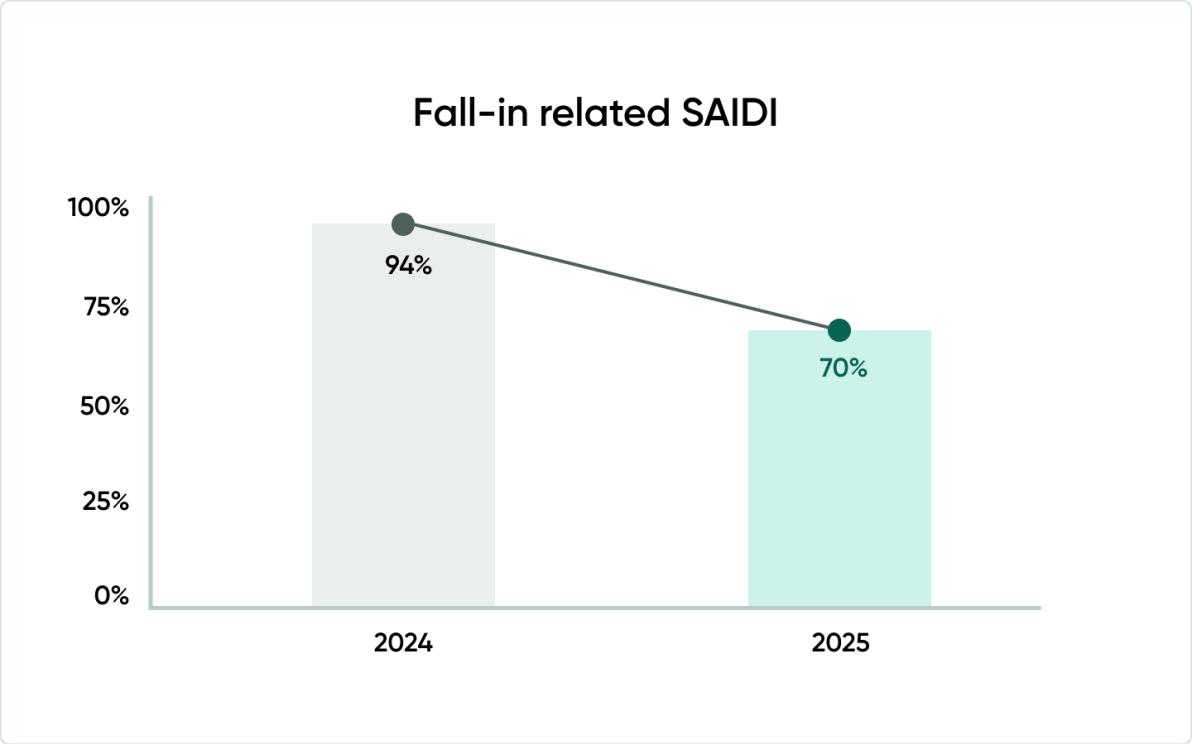
CVEC used a simple ROI calculation to make this prioritization quantifiable and defensible. The calculation took into consideration the cost of removal, the expected outage cost per event, and the number of members affected. Having a framework in mind, Moreno's team could triage removals, streamline contractor targeting, and clearly justify their vegetation management strategy.

The Results of Targeted Hazard Tree Work

By focusing on the trees with the highest potential reliability impact, CVEC was able to demonstrate measurable results across its territory. For example in 2023, the team removed more than 7,000 hazard trees, reaching one of their highest removal totals in recent history.

Overstory's hazard tree analysis pinpointed that just five tree outages equal one minute of SAIDI. This insight allowed CVEC to focus on removals that would deliver the biggest improvement on reliability. As a result, fall-in-related SAIDI dropped from as high as 94% to approximately 70% across CVEC's territory.

Moreno's team ensured all results were also normalized to a five-year average, making them storm-adjusted. This gave their leadership team confidence that the improvements were a result of targeted vegetation work rather than weather variability over a sustained period of time.



Fall-in-related SAIDI trend

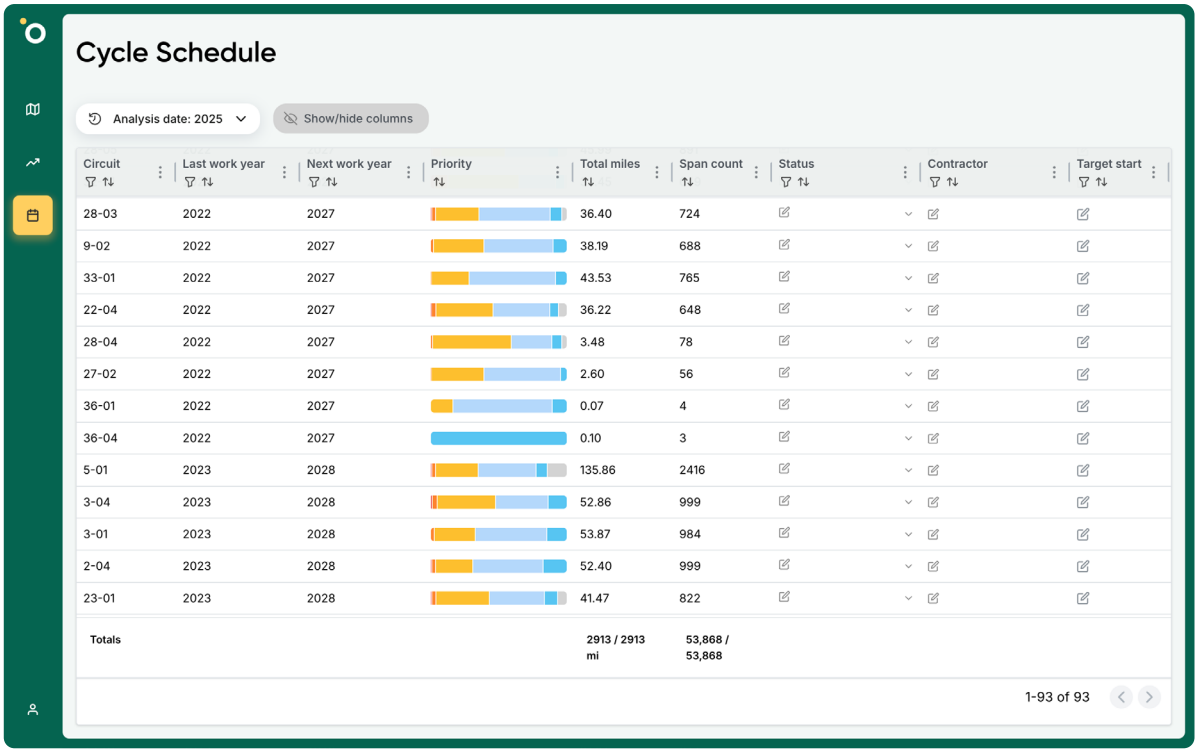
The benefits extended beyond SAIDI reduction. Crews faced fewer emergency callouts, allowing them to focus on proactive maintenance and planned work. By integrating Overstory's hazard tree rankings with CVEC's existing ROI tools, the team also rationalized their decision-making internally, reduced reliance on foresters for manual prioritization, and improved contractor targeting across their entire service territory.

What's Next: Optimizing VM Cycles

With targeted hazard tree work proving effective, CVEC is now focusing on the next phase of its roadmap. For one, the team is using hazard tree insights to refine vegetation management cycles, ensuring crews spend their time where it will have the greatest impact. They are also continuously tracking SAIDI improvements with a consistent and transparent methodology that clearly demonstrates the value of proactive vegetation management to both their internal teams and members.

CVEC is also using projects in Overstory to manage and track hazard tree work across teams. This allows them to streamline their vegetation management work and quickly report on impact, whether they are planning targeted hazard tree removals, coordinating cycle work, or assigning ad-hoc tasks to field crews.

By embedding hazard tree data directly into planning and execution, CVEC is creating a measurable and defensible approach that strengthens grid reliability, supports crews in staying ahead of outages, and keeps members connected to reliable power.



Cycle schedule helps teams plan their vegetation management cycles strategically, pushing and pulling different parts of their network in and out of their cycle to optimize their work.

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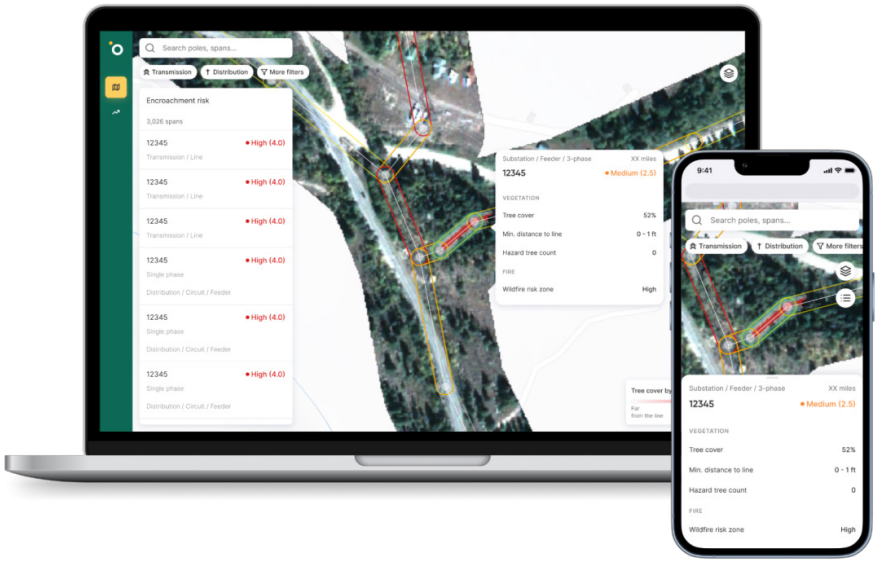

About Overstory

Overstory offers vegetation intelligence solutions to support utilities' grid resilience goals. Our software helps teams like CVEC optimize resources, mitigate vegetation risk, and future-proof their operations and maintenance programs. By combining artificial intelligence with remote sensing data around transmission and distribution corridors, we show utilities where they should prioritize vegetation management efforts to best minimize the risk of wildfires and power outages across their network.

1. ## Improve Grid Resilience

   Strengthen the grid to withstand extreme weather events and wildfires. Proactively identify and reduce vegetation risks in the most vulnerable areas to prevent damage before it occurs.

2. ## Optimize Operational Efficiency

   Prioritize vegetation work based on impact to manage budget and workload efficiently.

3. ## Boost Network Reliability

   Make your network more resistant to vegetation outages by moving beyond time-based cycles to data-driven operations practices based on actual risk.

Find out how actionable vegetation intelligence can support your team's goals.
Book a demo or learn more **overstory.com/solutions**.

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