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VEGETATION MANAGEMENT

RESILIENCE TECHNOLOGY PROFILE

IFA ILLINOIS FINANCE AUTHORITY
Illinois Climate Bank

See the GDO Vegetation Management Investment Guide for more details.

OVERVIEW

Recent studies show that vegetation-related disruptions are the most common cause of power outages in the U.S., and are responsible for an estimated **20%** of incidents.[1]

Distribution and transmission lines span long distances and often cross remote areas with dense vegetation. Vegetation management should be **preventive and predictive.** Solutions range from traditional methods to sophisticated tools like software-based tracking and predictive analytics that can help utilities optimize resource allocation, anticipate high-risk areas, and reduce the need for reactive or emergency interventions.[2]

Due to their straightforward nature and strong potential for outage reduction, vegetation management practices are a common area of focus for grid reliability and resilience efforts.

PROGRAM OVERVIEW

This document was developed under the **Customized Help and Expertise on Energy Resilience for States (CHEERS)** program. CHEERS is a community of practice focused on helping states implement **Infrastructure Investment and Jobs Act (IIJA) Section 40101(d) Grid Resilience State and Tribal Formula Grants ("40101(d)")**. CHEERS is managed by the U.S. Department of Energy (DOE) Grid Deployment Office (GDO), and convenes an annual cohort of states to deliver grid resilience technical assistance.

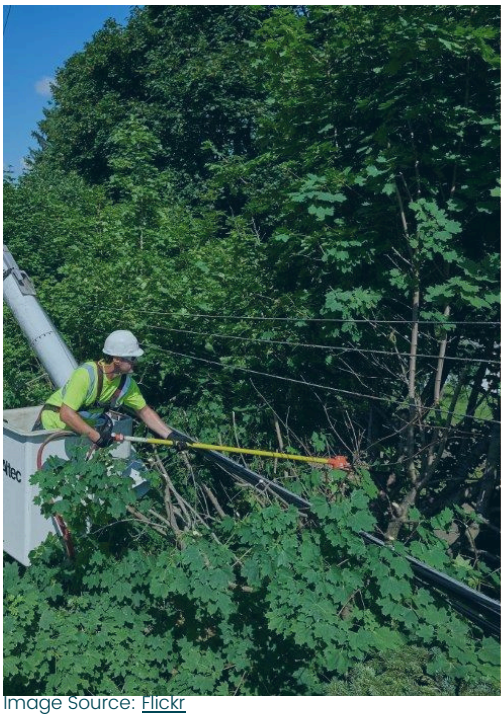

Image Source: Flickr

RESILIENCE BENEFITS

Reliability. Vegetation management increases reliability by mitigating the risk of short circuits and equipment damage caused by falling vegetation during routine and severe weather.

Decreased Maintenance Costs. Consistent and proactive vegetation management practices reduce long-term maintenance costs by minimizing unscheduled field repairs to damaged equipment.

Safety. Mitigating vegetation-related risks—such as branches overhanging conductors or overgrown vegetation susceptible to wildfires—reduces public hazards and enhances grid stability.

CHECKLIST

Consider this technology if you experience the following:

- ☐ Frequent vegetation-related outages
- ☐ Increased maintenance costs
- ☐ Damaged, unhealthy, or dead trees surrounding critical lines
- ☐ Prevalence of fast-growing invasive species

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40101(D) APPLICABILITY

Eligible Uses of 40101(d) Grid Resilience Formula Grants:

- **Tree Pruning.** Trimming tree growth around lines.
- **Tree Removal.** Clearing out damaged, unhealthy, or dead trees in proximity to lines.
- **Vegetation Control.** Removing flammable brush and suppressing hazardous brush growth.
- **Widening Rights-of-Way.** Widening the area around utility poles and wires.
- **Integrated Vegetation Management.** Planting practices that favor low-growing, easy-to-maintain communities over invasive, tall-growing species.
- **"Enhanced" Vegetation Management.** Incorporating technologies like LiDAR to pinpoint where vegetation needs to be trimmed.

KNOW BEFORE YOU DEVELOP

Consider the following before choosing vegetation management for your 40101(d) application:

- **Utility Rights-of-Way.** Although trees outside of rights-of-way often contribute to vegetation-related outages, the boundaries of these areas are not always clearly defined and may be subject to dispute by property owners.
- **Community Sentiments.** Vegetation management activities naturally attract public attention to utility operations. Engaging in proactive community outreach can help customers understand the necessity of these practices to ensure reliable electricity delivery.

CASE STUDY#1: WAYNE-WHITE ELECTRIC COOPERATIVE[3]

Image Source: Flickr

Wayne-White Electric Cooperative (WWCEC) in Fairfield, Illinois implemented a system-wide Integrated Vegetation Management program to cost-effectively prune and remove trees and brush encroaching on power lines. The program incorporates Tree Growth Regulators (TGRs) to reduce pruning frequency and volume. Their "Right Tree, Right Place" strategy designates specific zones for large, medium, and low-growing trees based on proximity to power lines. This program is an example of a multi-pronged vegetation management plan.

CASE STUDY #2: LAKE REGION ELECTRIC COOPERATIVE[4]

Image Source: Canva

Lake Region Electric Cooperative (LREC) in Pelican Rapids, Minnesota implemented an "Enhanced" Vegetation Management program that leverages software to provide site-specific information on tree type, anticipated growth patterns and and other critical factors for analyzing and tracking vegetation impacts on power lines.

Since launching the program, LREC has achieved an 80% reduction in trimming costs, a 30% decrease in tree-related outages, and a 45% decline in total outage hours. Collectively, these improvements have generated annual savings of $80,000, allowing the cooperative to reallocate resources to other priorities.

1. Rancea, G.V. (2014). "Evaluation of Methods for Control of Vegetation in Utility Corridors," The University of San Francisco
2. Lawrence Berkeley National Laboratory (2024). "Vegetation Management," Grid Deployment Office
3. Wayne White Electric Cooperative (2025). "Vegetation Management.
4. Thompson,T. (2015). "LREC Achieves $1 Million in Annual Cost Savings," T&D World