IBM Vegetation Management

Make better vegetation management decisions by combining weather, satellite, and IoT data with intelligent prioritization and reporting capabilities.

The challenge

Vegetation-related outages are among the most prevalent factors affecting system reliability and customer satisfaction for utilities.

Traditional approaches to vegetation management can be expensive and labor intensive, relying primarily on manual inspections and static records of the last time an area was maintained. But the variety of contributing growth factors such as tree species, weather conditions, soil moisture, health and herbicide applications might create difficulties in tracking the development of trees in your territory without exhausting your resources.

Vegetation leaders must balance system reliability with the cost for service. This includes effectively determining the risk of vegetation to utility assets, prioritizing and executing mitigation plans, and monitoring the state of vegetation between cycle trims to precisely identify location and proximity of lines to hazard and danger trees.

In a highly regulated industry, compliance is critical. This requires constant vegetation monitoring across the entire service territory at adequate granularity, execution of adapted vegetation management tasks, and potentially reporting on related activities.

With the IBM Vegetation Management solution, it is possible to overcome the biggest challenges of vegetation management: unpredictability and uncertainty.

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IBM Vegetation Management combines AI and analytics to help address the high costs and inefficiencies associated with vegetation management

By combining complex weather data, high-resolution satellite imagery, vegetation insights like tree species identification and growth rate assessment, and IoT geospatial-temporal data sets, leaders will have the insight they need to optimize vegetation management activities around budget allocation, work planning, regulatory reporting, hazard monitoring, and auditing as well as the tool to inject this intelligence into their existing vegetation management workflows.

Actionable insights for vegetation management

IBM Vegetation Management combines AI and analytics to help address the high costs and inefficiencies associated with vegetation management by providing greater visibility into the current state of your service territory.

Delivered through the cloud, this solution is designed to:

– Reduce vegetation-related outages by automatically identifying potential hazards so you can allocate resources to areas most likely to impact grid reliability.
– Enhance monitoring to identify unexpected growth rates and refine trimming cycles to focus on areas that need it most
– Improve contracting processes through deeper insights into how much trimming and maintenance work is required and when it should be done
– Audit your vegetation management programs by monitoring plants that have been trimmed or treated with herbicide applications

Key capabilities

– Make better, more informed, data-driven decisions—at a faster pace
– Monitor vegetation and identify areas where vegetation and trees may pose a threat
– Calculate scores and KPIs to highlight potential hazard areas and facilitate assessment of the vegetation situation of entire corridors or individual corridor segments
– Define and prioritize, using multiple information sources, vegetation actions that must be performed
– Optimize the planning of vegetation-related tasks

IBM Vegetation Management is built on
IBM Environmental Intelligence Suite and
its Geospatial Analytics application

– More insights to inform the contracting and bidding process with a better understanding of what's needed, where, and why

– Enrich cycle-based vegetation management planning methods with condition-based approaches

– Inform the audit process using the remote inspection sensing techniques

– Integrate irrefutable evidence about the utility's vegetation actions in regulatory reporting

– Overcome the burden of scattered information with data integration capabilities, unifying user interfaces and management dashboard views

How does it work?

IBM Vegetation Management is built on IBM Environmental Intelligence Suite and its Geospatial Analytics application – formerly known as IBM PAIRS Geoscope - a cloud-based platform that ingests up to 10 terabytes of satellite, drone, flight and weather data every day to create a catalog of geospatial-temporal information. Users provide a geospatial file with a view of their infrastructure. To create an additional layer of analysis, users can set desired buffer zones between assets and vegetation.

The solution applies AI and analytics to this data to identify potential outage threats so you can take action. This enables utility companies to automatically monitor vegetation growth and maintenance needs across hundreds of miles of transmission and distribution lines. These geospatial-temporal insights can also help improve overall grid reliability, wildfire prevention, storm management and assessment.

These insights help you better understand your territory by providing:

– The current state of vegetation across your territory, including average and max tree height
– Summaries of vegetation encroachment in defined buffer zones around assets
– Location and height of trees that may pose a threat to your service
– Trees that present a fallen risk (hazard trees)
– Tree species identification (add-on)
– Customizable scoring to help identify focus trimming efforts

Get more with one solution

Define and manipulate business objects as needed: Vegetation Managers can work at the level of corridors, corridor segments, and singular trees to view related aggregated information and KPIs, enabling them to drill down to the minutia or pan out for the big picture.

Integrate insights with high-resolution imagery and proprietary models: Get high-resolution vegetation data, such as tree coverage, canopy height, and growth rates. Switch your background map view from geographical to satellite for alternative contextual information.

Identify critical areas and prioritize work with scoring models: A data scientist can create and run scoring models that can be used to visually highlight corridor situations on maps and prioritize areas to handle.

Generate recommended actions to support creation of work packages: Scoring models suggest recommended actions by combining the available data sets. This helps Vegetation Managers spend less time defining actions and concentrating on more complex decisions.

Get integrated views with a management dashboard: User-friendly dashboards provide summarized views of areas under consideration, including KPIs, scores, and recommended actions. Export views to facilitate comparison across vegetation management projects.

Select and group actions and corridor segments with grid views: Actions and corridor segments can be ordered, filtered, and grouped based on scores and KPIs. Prepared lists can be exported and infused into subsequent steps in the vegetation management workflow (e.g. bidding and contracting).

Why IBM?

This solution leverages IBM's rich analytics and AI expertise, as well as a large variety of data from The Weather Company, to cover the vegetation management process end-to-end, from generating robust vegetation insights that help decision making, planning, and operations support to auditing. Modular in approach, IBM can provide application components that address specific parts of the vegetation management value chain based on client requirements and existing solution landscape. Clients can also rely on deep industry expertise thanks to IBM's large utility customer base, as well as a collaborative and agile software development approach that involves a proactive collection and consideration of their needs.

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Help reduce outages in your territory with AI-driven insights

Schedule a demo today

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