DISTRIBUTION VEGETATION MANAGEMENT

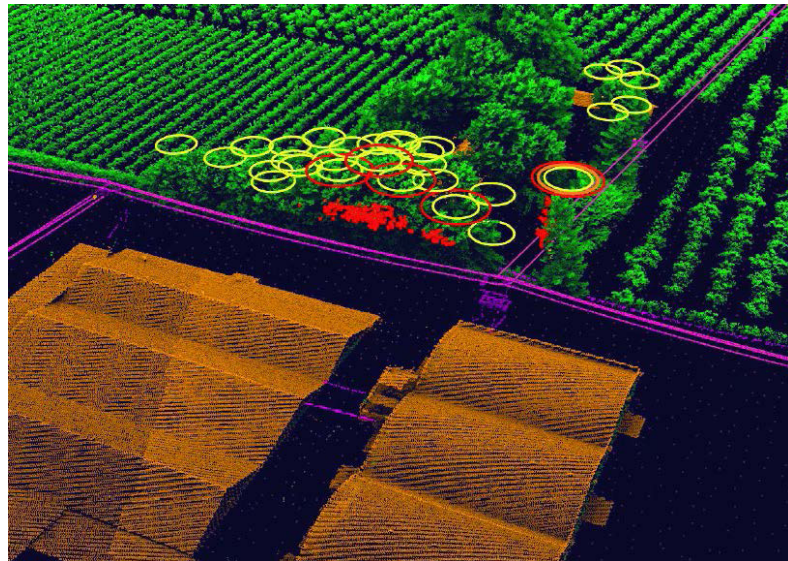## ACQUIRE
ANALYZE
ANSWER

NV5 EDGE
NV5 thoroughly evaluates, characterizes, and monitors all vegetation and vegetation encroachments that can impact the safe and reliable operation of your electric distribution system.

Distribution Vegetation Management combines NV5's core competencies into meaningful, solution-based analytics for electric utilities. From precise spatial rectification of network inventories to vegetation quantification and mapping, NV5G can provide direct and verifiable data. NV5 qualifies and prioritizes vegetation risk to assets to inform a comprehensive vegetation management program. We provide electric distribution engineers, managers, and decision-makers with leading-edge analytics for efficient and reliable network management. NV5 is the only firm in the industry to fully realize the potential of aerial and mobile lidar and imagery technologies deployed in tandem to capture vital analytics.

Creating a precise 3D model of distribution assets is the only way to understand vegetation encroachment issues fully. NV5 acquires and analyzes a wide array of remotely sensed data to determine exact spatial relationships between distribution networks and encroaching objects. Comprehension of this relationship is necessary to prioritize targeting the vegetation that most endangers your assets today. A record is created that can be referenced for planning, design, mitigation, enhancement, and restoration.
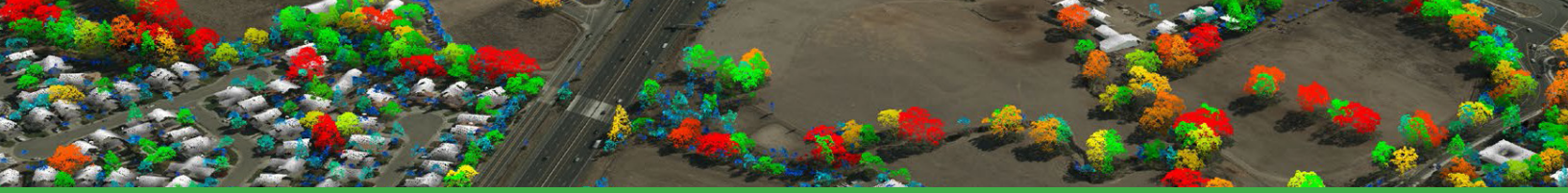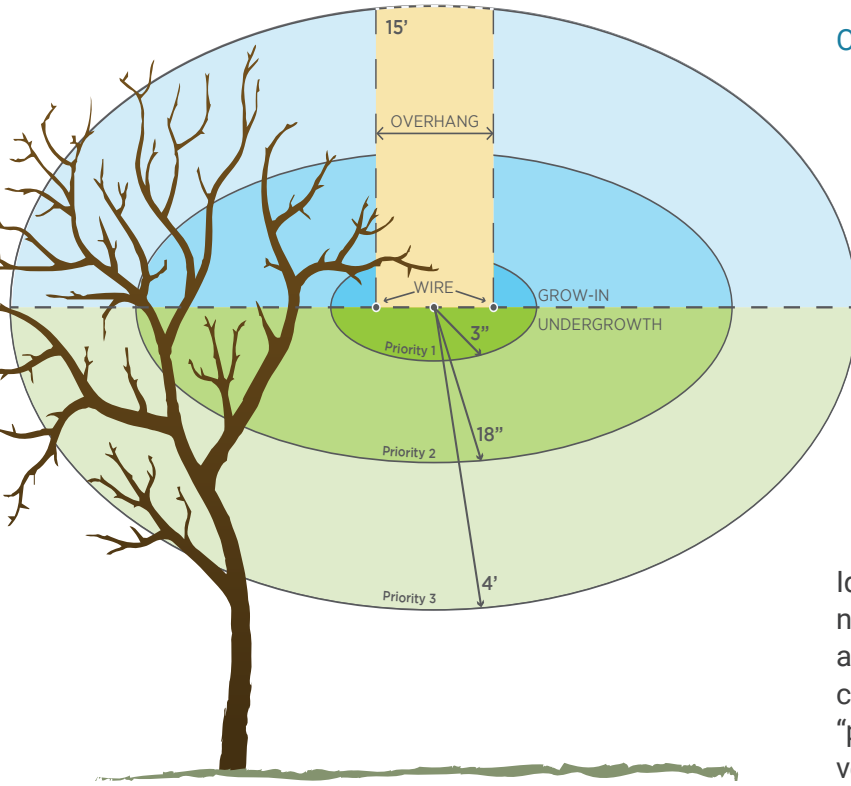

ACQUIRE

Sensors/Cameras
- Lidar
- Ortho & Spherical Imagery
- Multispectral/ Hyperspectral

Platforms
Airborne: fixed & rotary wing, drone

Ground: Vehicle, Rover, In-Situ

ANALYZE

OBSTRUCTIONS AND DETECTIONS

NV5 has created a system for identifying varying levels of severity for vegetation grow-in and fall-in analysis.

VEGETATION HEALTH AND SPECIES

NV5's vegetation management solution incorporates vegetation health and species into its analysis results. Hyperspectral and traditional orthographic imaging sensors are used to identify species and tree health.

VEGETATION RISK ANALYSIS

Vegetation management can be performed more efficiently and effectively using lidar analytics. Identification of all tree crowns and treetops on or near distribution lines, paired with health and species attributes, identifies potential risks. Lidar-based clearance, health, and species analysis provide a "prioritization prescription" applied to identified vegetation encroachments.

ANSWER

PROGRAMMATIC VEGETATION MANAGEMENT

Vegetation within the lidar point cloud is classified as such, allowing for the extraction of tree crown polygons and the identification of treetops. A vector model of distribution poles and wires tests the 3D distance between vegetation-classed points and conductors. Tree health is assessed with the aid of orthophotography which utilizes the near-infrared band to highlight chlorophyll. Alternatively, hyperspectral data can be used for the same purpose. Tree-level analytics that define the distance and severity of vegetation encroachments are provided. Hyperspectral signatures are collected for species and genus-level identification of problem vegetation. The combination of all of the above analyses allows a utility to manage its vegetation with confidence from end to end.

VEGETATION CHANGE QUANTIFICATION

NV5 couples this precise change detection analysis of the lidar point cloud with proprietary "tree tracking" methods for detailed comparisons of individual trees year after year.