Empire District
A Liberty Utilities Company

Integrating Augmented Reality into Vegetation Management Work Planning

Case Study

Company

Empire District Electric Company (Liberty Utilities)

Company Details

Based in Joplin, Missouri, The Empire District Electric Company is a subsidiary of Liberty Utilities Co. and headquarters for the Liberty Utilities Central Region. The company provides electric, natural gas, water, and wastewater services to nearly 320,000 customers across six states. In addition, a subsidiary of the company provides fibre optic services. For more information regarding Empire District Electric Company, visit empiredistrict.com. For more information about Liberty Utilities Co., visit libertyutilities.com.

Wearable Solution

- **VisualSpection software platform**
- **RealWear HMT-1 hardware**

Use Case

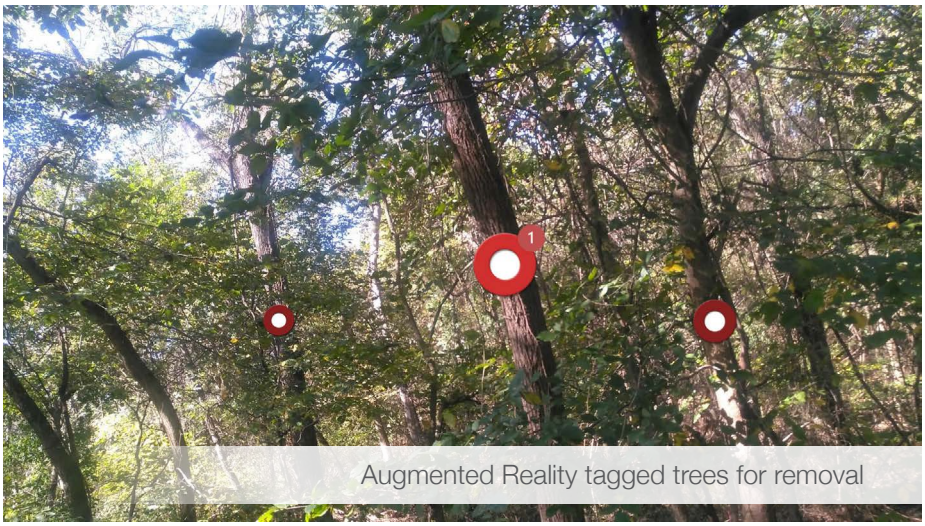
- **Vegetation management**
- **Work planning**
- **AR for right of way trees**

Benefits

- **3 to 1 ROI**
- **67% faster collection of individual data points**
- **6% lower work planning cost**

Executive Summary

Augmented reality has come of age and is ready to be incorporated into the utility world. Tracking assets and utilizing real time data allows the utility to manage its assets in an efficient and cost effective way. By using Augmented Reality, work planners are able to see historical information and recycle asset information while updating prescriptions.



Augmented Reality tagged trees for removal

Challenges

Empire District Electric Company maintains vegetation clearances on its transmission and distribution assets. Traditionally, data was collected on a tablet, maps were designed, and the information printed for the tree crews. During the second cycle, the same information would be captured again with little change from the original data and the same process repeated itself. In addition, during the second cycle, the tree crews' speed picked up with re-trimming versus removing original growth. This process put additional pressure on the work planning group. Instead of adding additional staff, Empire District Electric Company chose to pursue technology that would enhance the existing resources by increasing productivity. The RealWear HMT-1 platform combined with VisualSpection allows the user to collect data hands-free and efficiently, by simply talking. Augmented reality allows the user to have the static information prepopulated in a heads-up display and makes the best prescription based on the historical data. Empire District Electric Company's Tree Growth Regulator program has seen the most improvement by having real-time historical data available at the time of planning.

VisualSpection

How VisualSpection Helped

Manitoba Hydro International launched a new solution, VisualSpection, with several objectives in mind: to increase efficiency and safety while acting as an information aggregator in the field during asset inspections and maintenance. Empire District also wanted to do more with less and improve efficiency.

The VisualSpection solution for Empire District includes:

- Accessing tree information via Augmented Reality through heads-up display device;
- Completely voice driven and automated work flow for collecting data;
- Secure live stream video conferencing to connect field technicians with remote experts;
- Hosted online Geographic Information System for managing assets.

Results, Return on Investment, and Future Plans

The VisualSpection solution proved to be very intuitive and straightforward to implement and use in the field.

An estimated ROI of 3:1 is a projected savings overall. Empire District plans on expanding this solution to benefit other areas of its operations as well.

> “VisualSpection software, through a heads-up display, allows the work planner to make an informed decision in a third of the time vs conventional tablet based planning. With Voice to Text, we improved the speed of data acquisition and reduced cost.”
>
> **-Jason Grossman,** Manager of T&D Vegetation

Contact **Adam Vitt** to receive a webinar or to schedule a complimentary workshop: **avitt@mhi.ca**

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Available in accessible formats upon request.

Manitoba HYDRO INTERNATIONAL