



## Leading Vehicle Redistribution Company Deploys Solar Solution and Saves



### **FAST FACTS:**

**Customer profile:** A leading North American vehicle redistribution company that facilitates the exchange of used and salvaged vehicles via both online and physical auctions.

**Reach:** More than 160 sites throughout the United States, Canada and Mexico.

**Industry:** Automotive/Vehicle Redistribution

**Challenge:** To provide employees constant access to vehicle data, the customer needed to provide complete WLAN coverage throughout the sprawling lots that each site inhabits. To do so, WLAN equipment needed to be extended to the back of the lots where no full-time power was available.

**Solution:** Brooke Associates engineered a system that incorporated its solar solution with the limited, part-time power available via an existing light pole to provide continuous power for the extended WLAN.

### **CLIENT**

A leading North American vehicle redistribution company that facilitates the exchange of used and salvaged vehicles via both online and physical auctions. The customer operates over 60 physical auction locations and over 100 storage sites throughout the United States, Canada and Mexico.

### **CHALLENGE**

To provide real-time updates and information on all vehicles across sites, the customer utilizes a custom application that is hosted on a central server for all North American sites. Vehicle data is collected, accessed and updated by employees via wireless handheld tablet computers across all locations. Due to the number of vehicles the customer processes and redistributes, each of the customer's 160 plus locations are huge, sprawling lots with an ever-changing landscape of vehicles to be processed.

Due to the size of these lots, the customer was unable to provide consistent wireless connectivity from the front of the lots (where WAN connectivity and the WLAN equipment is typically located) to the rear of the lots. This forced employees to make multiple trips from the rear of the lot to the effective hotspots of WLAN coverage towards the front of the lots in order to enter and update vehicle information, wasting a significant amount of employees' time.

## Benefits at a Glance:

- Cost savings of \$87,000 at the pilot location
- Productivity increase of 2X across all employees
- Continuous power source that leverages limited, existing power to maximize resources

Even after the implementation of high-gain directional antennas, the customer was unable to achieve consistent wireless coverage throughout the pilot site. It was determined that an intermediate distribution frame (IDF) was needed at the rear of the site to interconnect with the existing equipment at the front of the lot. However, existing light poles on the premise only provided part-time 480V AC power, so an additional, full-time power source was needed to power the equipment. The cost for trenching and installing full-time power to just one light pole was estimated at \$87,000 for the pilot site, which was cost prohibitive.

## SOLUTION

Brooke Associates engineered a solar solution that incorporated the existing, part-time power supplied by one light pole at the rear of the pilot site. This hybrid solar/utility power system provided the extremely dependable, full-time power source needed for a completely self-contained wireless IDF, both of which were mounted on the light pole. The entire system was designed to fit within the protection of NEMA 3R-rated outdoor enclosures to guarantee protection against the elements, including rain, sleet, snow and external ice formation.

The design parameters for the new system accounted for the network equipment load, system component load, electrical resistance and the battery lifespan and capacity loss. Brooke Associates also took into consideration the insolation rate (the amount of available sunlight per day) to ensure that the system provided enough energy to supplement the part-time power supply provided by the existing light pole.

## BENEFITS

### *Cost savings of \$87,000 at the pilot location*

By eliminating the need for trenching and installing full-time power to a light pole at the rear of the site, Brooke Associates' solar solution was able to save the customer an estimated \$87,000 at the pilot location alone. The Brooke Associates solution represented an 86 percent cost savings over the alternate solution of full-time utility power. The pilot system has been successfully deployed for over one year, and additional site deployments are expected to begin soon.

### *Productivity increase of 2X across all employees*

The convenience and productivity increases expected of the customer's wireless handheld tablet deployment were lost because there was insufficient WLAN coverage to enable connectivity. As a result, employees had to make frequent trips back and forth from the rear of each site to the WLAN hotspots at the front of the sites. Brooke Associates' solar solution extended power to the wireless IDF at the rear of the site, enabling ubiquitous wireless coverage across the entire site. The result was an average increase of 2X in employee productivity.

### *Continuous power source that leverages limited, existing power to maximize resources*

To maximize the use of existing power resources, Brooke Associates engineered an integrated, hybrid solution that supplemented the existing light pole's part-time power source with a solar solution. The result was a highly-dependable, continuous power source that avoided the costly, complex trenching and installation of full-time power.