# CleanScapes

## Waste Collection Services Company Goes Green with In-Vehicle Data Collection and Management - A Sierra Wireless® Mobile Workforce Application




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***A Sierra Wireless® Mobile Workforce Application***

### CUSTOMER CRITICAL CHALLENGE

- In-vehicle data collection solution for waste management trucks
- Required persistent connectivity and rugged design for in-vehicle environmental conditions

### SOLUTION

- AirLink® Gateway, integrated with Routeware’s GPS application provided reliable,cellular communications, GPS location tracking for improved fleet management andremote management and maintenance to reduce field service trips

## BENEFITS

- Secure, reliable connectivity for real-time transmission of and access to mission critical customer data
- MIL-STD 810 certified for high performance in the harshest of environmental conditions
- Plug-and-play installation and remote management of network of in-vehicle devices
- Portability for easy re-deployment if vehicles are replaced or temporarily out of service

In 2008, CleanScapes began serving as the waste collection contractor for the City ofShoreline, followed soon after by the City of Seattle. The company has grown from justtwo employees to over 250 and serves three states.

## Business Challenge

The vision to improve the urban landscape and reclaim alleys for their utilitarian andpedestrian use was the impetus for CleanScapes’ innovative Clear Alleys/ Dumpster-Free Program, which launched in 2000 with a grant from the City of Seattle to providean alternative waste management program. CleanScapes now serves the residentsof Shoreline and Seattle, WA, as well as the downtown commercial core areas andbusiness districts in San Francisco, CA and Portland, OR.

For decades, waste collection companies relied upon paper route-books for theirdrivers to identify service areas, as well as record and report whether or not a can’scontents had been successfully collected. To improve the speed and accuracy ofreported collection data, CleanScapes began working with Routeware, a leadingprovider of GPS routing software specialized for the waste industry, to implement anin-vehicle computer solution and help CleanScapes transition from a paper-based toan electronic-based data transmission and management system.

A key component of any in-vehicle solution is the mobile connectivity and GPSinformation. Routeware, who has over a decade of experience in deploying routingsolutions, recommended that CleanScapes use the AirLink intelligent gatewaysintegrated with their routing software.

## Sierra Wireless AirLink® Solution

CleanScapes tested the Sierra Wireless AirLink in-vehicle gateway for use in concertwith Routeware’s electronic data management system that allows drivers to use GPSnavigation to run their collection route, while automatically logging and completingwork in real-time with corresponding timestamps and location data.

“The introduction of the cellular electronic data collection system in our truckshas allowed us to gather more accurate data, which in turn enables us to improveoperational efficiency with accurate route information, improve driver safety andimprove our own awareness of actual truck activity,” said Sally Hulsman, vice president,CRM Systems at CleanScapes. “We also eliminated the added step of data entry totransfer data from paper route-books into our system to provide reporting to cities.”

CleanScapes’ Hulsman highlighted the rugged construction, small profile, highreliability and ability to connect remotely and verify connectivity, as predominantdrivers in the company’s selection of the AirLink gateway. “Our waste managementvehicles run seven days a week, 365 days a year, often with multiple shifts in the same24 hour period,” explained Hulsman. “Wear-and-tear on these vehicles is second onlyto that on heavy-duty mining equipment.”

In developing its in-vehicle solution for waste collection management, CleanScapesworked with Routeware and third-party contractors to install the equipment in itstrucks. Though each installation was slightly different based on variations in truckcabs and operation, the key components remained the same: an AirLink gateway asthe primary communications device, connected to a General Dynamics DMS5000military-grade tablet PC or Toshiba laptop and cameras used to record visuals of wastereceptacle location and condition.

The AirLink management tools allowed CleanScapes to connect quickly and reliably tomultiple devices in a short period of time, largely eliminating the need for field visits toidentify problems. Any required maintenance work is now identified and assigned astrucks return to the field, or simple fixes can be implemented remotely while vehiclesare still in service.

“We can now gain access to truck usage data for better driver management and moreefficient truck maintenance,” said Hulsman. “In general, we see better overall data sets,which are more accurate because of fewer data entry errors; we experience quickerdata availability and see more complete data –

more data can be entered throughthe in-vehicle tablets, which reduces data entry steps and speeds up the process ofmaking this critical data available to use in improving service to our customers.”