



OVERVIEW:

Waste Management is equipping collection vehicles with proprietary technology designed to improve customer service. A WM SmartTruck validates service, leveraging GPS mapping and dedicated cameras to photograph or video every bin or cart serviced. This technology will allow us to provide cities and customers important service data to make informed decisions to improve their service experience, including but not limited to:

- **Proactively communicate service information via customers' preferred channel of choice; phone, text or email**
- **Provide pictures to educate customers about contamination, recycling and right-size service offerings**
- **Identify service opportunities resulting in better customer experience**
- **Maximize technology to provide safer operations for our drivers and communities**

WM SmartTruck Contributing to Smart Cities

WHAT IS A WM SMARTTRUCK?

WM SmartTruck refers to our collection vehicles, which are equipped with proprietary technology designed to improve customer service. A WM SmartTruck can validate service to every customer by using GPS mapping and dedicated cameras to photograph or video every bin or cart serviced.

HOW DOES WM SMARTTRUCK BENEFIT A COMMUNITY?

WM SmartTruck enables cities and residents to partner with Waste Management to increase their knowledge of waste diversion and recycling participation. The SmartTruck documents overloaded containers and contamination as well as validates service levels. Communities can use this data to develop programs to increase diversion and improve recycling participation.

IS THIS THE FIRST TIME CAMERAS HAVE BEEN USED ON A WM COLLECTION TRUCK?

No, Waste Management has used cameras on trucks for almost 10 years. The mounted cameras have improved safety by assisting our drivers with rear and side-view perspectives, and documented driving incidents. Our drivers have also used handheld cameras to document overages and contamination. Now WM SmartTruck will automatically document overages, contamination and more, allowing our drivers to focus on their primary job. This advanced technology, passively gathers data to share with customers and jurisdictions. Images provide a reference point to help all parties understand a service, safety, or sustainability opportunity. WM SmartTruck captures images (still and/or video) of containers, waste and recycling materials and events related to service. These images help educate customers, improve service provider accountability and illustrate to the communities we serve how well their residents and businesses are recycling.



Safety is improved with camera technology

WHAT ABOUT PRIVACY?

The purpose of the photographs or videos is to educate and inform us about what is going on at the customer level so that we can improve collection service, diversion and recycling. If there is a service issue, images are shared with the service address customer of record. Images may also be shared with the local jurisdiction to illustrate service issues or success stories in the community. WM will not share the images or customer information with third parties for marketing or data mining.

HOW DOES WM SMARTTRUCK IMPROVE CUSTOMER SERVICE?

The technology frees the driver to have a singular responsibility: collection service excellence. Drivers will no longer have to leave their trucks to photograph container overages or contamination. The SmartTruck also adds another layer of service quality for customers by automatically recording issues such as a damaged container, missed service or blocked container. The images will trigger reports for container repairs, service audits, customer outreach and more.



Example of over filled MFD containers.

WHAT HAPPENS WHEN SMARTTRUCK DETECTS A SERVICE ISSUE?

A dedicated team of service consultants reviews the images from each route daily. They look for a variety of conditions including overfilled containers, contamination, damaged containers, graffiti, recorded service levels and more. Depending on the issue, a repair ticket is created, or a notification is sent to the customer. If a container is overfilled or contaminated, the customer will be notified, and a charge will be applied as permitted by the service contract.



Hopper view of contaminated commercial recycling

WHAT QUALITY CONTROL IS IN PLACE TO ENSURE ACCURACY?

Our service consultants are trained to carefully identify service issues. We have standard protocols for assessing every situation. A specialized auditor reviews the image for the existence of a particular issue such as a damaged container, excess material, contamination or skipped service. A report is generated and sent to the local operations staff for corrective action or customer communication.

HOW IS A CUSTOMER NOTIFIED?

Currently customers are notified of overages and contamination via their invoice and in some communities a separate letter. In the future, customers will be notified through their preferred channel of communication (email, text or phone). WM is testing electronic notification system that will generate notices based on SmartTruck findings. Examples include new service starts, service level validation, overages, contamination, and container repairs.

WHAT HAPPENS WHEN A CUSTOMER DISPUTES AN ISSUE IDENTIFIED BY WM SMARTTRUCK?

We will work with a customer to resolve any concerns and disputes. The starting point is access to an image that can be viewed by both parties. Our professional call center team is focused on providing solutions. For example, in a dense town house community, each cart may need to be clearly marked with the unit number to avoid confusion. Our representatives will help identify the opportunity and work with local operations to implement a solution.

IS WM SMARTTRUCK BEING USED FOR ALL ROUTES?

The initial rollout in Northern California and Nevada began in December 2018 with our Commercial line of business. Residential will follow in Q1 2019. Every vehicle, including our cart delivery trucks and bulky collection trucks, will be a SmartTruck. The tracking of service allows us to communicate fully with our customers when we identify an issue, so we can resolve it. It also allows us to provide our municipal partners with a fuller picture of how residents and businesses use WM services. The WM SmartTruck is designed to achieve service excellence.