

## **Automation in solid waste: Technology worth picking up**

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### **Those days are long gone**

Gone are the days of the "mule system" of garbage collection. Gone also are the days of the multiple-personnel garbage-collection crew and even the three-person crew. These systems fostered hard labor on crews and the associated human-resources costs. Injuries, accidents and overall waste and inefficiency were part and parcel of these systems.

Now, driven by an industry that is always looking to collect more garbage for less money, solid-waste collection has evolved a great heap. The latest in collection systems includes improved equipment with more packing capabilities, sharper turning radii and one- or two-man operation.



**Kelvin L. Baker, Director of Public Services for the City of North Miami Beach, stands on one of the department's many automated sanitation trucks, along with Assistant Director Karl Thompson (foreground).**

But these innovations aren't breaking news for the solid-waste industry. The switch to automated collection began in the 1970s. By then, manufacturers of solid waste equipment were busy introducing trucks and other equipment that promoted ergonomics and effectiveness and, by extension, reduced costs. Among the pioneering developments was the sideloader, affectionately referred to by its operators as the "One-Armed Bandit." The sideloader also led to other innovations like standing driving stations, the use of right- and left-hand steering and the standardization of containers now used for fully automated collection.

### **Among the pioneers**

One of the first municipalities in the nation to revolutionize its operations was the City of North Miami Beach, Florida.

"We believe in working smarter, not harder, and the conversion to an automated collection system was definitely smart," states Director of Public Services Kelvin L. Baker. "At a time when no one wanted or dared to go automated, the City had the foresight to go against the grain. With the backing of a forward-thinking mayor and council and the cooperation of our residents, the City of North Miami Beach has always been at the forefront of innovation."

Benefits of converting to an automated collection system include improved work safety, more efficient operations, fewer collection routes, more cost-effective operations, fewer manual laborers, fewer injuries on the job, and fewer workers' compensation claims.

### **City leads the way**

Not only was the City of North Miami Beach among the first to convert to automated collection; it also offers training to other municipalities in South Florida, taking the City trucks out to other cities for demonstrations as well as hosting their staff for equipment training. The City of North Miami

Beach has taken the initiative to encourage many to convert to an automated collection system. North Miami Beach has benefited from fewer workers' compensation claims than other local municipalities. So committed is the City's Public Services Department to this venture that Baker organized and staged an equipment exposition to introduce equipment to fellow APWA members when the department had occasion to host a branch meeting.

"Who would know more about operating the equipment than them? They have more than twenty years of experience with it," says Donald Smathers, Sanitation Superintendent with the City of North Miami, referring to the City of North Miami Beach. "As our sister city, they were there to help us in our transition. After they did a demo for us, we were convinced—we ordered five trucks for our pilot program and will be sending our drivers to North Miami Beach for training."

"It's efficient and cost-saving," says Ronald L. Howard, Chief of Garbage Operations for Miami-Dade County Solid Waste, where a pilot program is currently in progress. "It's the way of the future...it's just not cost-effective to not convert to an automated collection system."

### **Comparative cost savings makes it worth the investment**

The costs of converting to automated systems seem to be one of the biggest impediments to making the switch. However, a cost-savings analysis done by the City of South Miami showed that the cost of buying the equipment is easily and quickly recovered. According to Charles Blazek, Assistant to the City Manager at the City of South Miami, which made the transition to automated collection in April 2004, there are recurring savings. South Miami's cost-savings analysis showed that the city would save almost \$150,000 per year in manpower costs alone by

replacing its multi-man collection crews with the two-man teams required to operate the automated equipment.

"The comparative cost savings go beyond just the labor cost," explains Baker. "Put into the equation the savings from the reduced number of on-the-job injuries and workers' compensation claims. Then add the savings from the more efficient collection, which allows you to do more routes in less time, and the reduction in cost of added trips to the dumping facilities...the savings are endless and well worth the initial costs of converting to automated collection."

The conversion itself can be made relatively easily. The City of Miami, which sent its staff to train with the City of North Miami Beach, started with a 10-route pilot program. Less than three years later, they have completed the process and now have automated equipment on all of the City's 23 routes.

There are still municipalities that have not fully automated their fleet. Equipment costs and other labor-management issues have largely dictated this. Still, North Miami Beach's Baker insists, "With the changing ergonomic requirements and pending legislation that is almost sure to be passed, automated collection is the smart choice."

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