



A Tale of Three Cities

**Semi-trailer
collection system
IMPROVES EFFICIENCIES.**

GREATLY IMPROVING COLLECTION SPEED AND reducing crew size to a single person are a couple of reasons to consider making the switch to a semi-trailer refuse and recycling collection service. Two communities and a private contractor who use the system share their stories.

The Public Sector

Before switching to a semi-trailer refuse and recycling collection system, crews from the city of Hampton, VA Department of Public Works routinely worked overtime collecting trash and recyclables. “They’d work into the darkness,” said Chip McDonough, recycling manager, Department of Public Works.

That ended when the city began using Heil’s STARR® System, which collects materials using an automated arm mounted on a truck tractor and a detachable semi-trailer packer body. “We collect from 15,000 homes every day without having to log overtime—it’s a great savings,” said McDonough. “With the trucks spending less time on the road, we’re also saving on fuel and maintenance costs.”

Crews work 10 trash and five recycling routes each day, collecting trash from roughly 10,000 homes and recyclables from approximately 5,000 homes. Crews average 9 to 11 tons per trailer load for refuse, and 4 to 6 tons per load for recycling, which has more voids and doesn’t pack to the same density as trash. Hampton provides weekly refuse collection, bi-

The STARR System collects materials using an automated arm mounted on truck tractor and a detachable semi-trailer packer body.





Pincers grasp a cart as Bay Disposal & Recycling collects recyclables in Newport News, VA.

monthly recyclables pick up, and weekly curbside bulk collection at a cost of \$4.25 per week. “That includes all collections, no matter the volume,” said McDonough.

The city began using a semi-trailer refuse and recycling collection system in 1999, primarily because a single person drives and collects materials, compared to three for a typical rear-loading truck. The system’s tight turning radius and maneuverability compared to a straight frame truck has also improved efficiency. “On tight streets and cul-de-sacs, we had to turn into the curb and back up to collect the can using a straight frame truck. We were having a lot of backing accidents, or when guys turned into get cans they’d clip the front end of a car that was parked too close,” said McDonough. “Now, there’s very little time spent trying to maneuver. In a cul-de-sac, these trucks make one sweeping turn, and never have to back up. It eliminates wasted time.”

Hampton had used a contractor to collect recyclables before purchasing the STARR system. “We decided we could do the collection cheaper ourselves by purchasing a few extra trucks, and it has worked out exactly that way,” said McDonough.

The city owns 23 units, although only 15 are operated on a typical day. “There’s always going to be times when trucks are in for annual inspections, oil changes, maintenance—things like that,” McDonough said. The additional units also provide added versatility. Because each unit comprises two separate pieces, the city can hook up another trailer or chassis to replace the

piece that’s inoperable and continue collecting materials. “You can keep collecting your route, if one piece goes down,” McDonough said. “If a trailer is out for any reason, you take the trailer off and put another one on and you’re back at work. The same is true of the tractors.” And the trucks keep on rolling, and trash and recyclable collection continues.

The Private Sector

Newport News, VA wanted to decrease its carbon footprint. To meet the challenge, Bay Disposal & Recycling proposed a plan decreasing the number of trucks used to collect recyclables from 11 to 5 by using the STARR semi-trailer system with conventional cab tractors.

The company has been collecting single-stream recyclables in the city since February 2010. “A key factor in winning the contract was using a new type of automated collection to lower the number of trucks on the street. That efficiency makes collection cleaner and quicker,” said Mike Norris, vice president of Bay Disposal & Recycling. “The equipment put us at the front of the line. We were willing to take that step. Other companies weren’t.”

With the system, the company has been able to decrease the number of collection stops per truck—from seven to five. (Note: collection routes, not stops, were reduced from seven to five.) Norris said that in his experience, a rear load recycling truck collects 600 to 700 stops per day. Using the semi-trailer system, Bay Disposal & Recycling collects from 1,000 to 1,100 stops per

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The number of trucks collecting recyclables in Newport News decreased from 11 to five using the STARR System.

day. “And we’re using one person, as opposed to two with a rear loading truck.”

One of the reasons production is increasing is the trailer’s paddle packer, which continuously sweeps the hopper. This eliminates the need to stop and pack the load. “The trailer is continuously packing, so you’re able to dump cans as quickly as you can lift them. You don’t stop. There’s no standing around, waiting for the truck to pack. From the time you hit the route until you stop, you’re doing nothing but working,” Norris said. There’s no need to clean out the hopper, or clear refuse from behind the blade. “You’re dumping in the hopper. That’s your main unit—where you’re dumping. There’s nothing more,” said Norris.

The company works the routes using five tractors and eight trailers. “We stage everything at our yard. Drivers pull their first load, come back to the yard and drop a trailer. Then they grab another trailer, and finish their route. We’ve set up the trailers so they can be pulled in tandem to our main facility, which is done at night when traffic is lightest,” said Norris. Hauling two trailers, rather than a single, increases production time by 35 percent. “That eliminates a two-hour run each way during the middle of the day,” Norris said. Other semi-trailer system advantages include:

- Trucks are operated in idle mode when lifting containers, cutting fuel consumption by 50 percent. “You don’t have the noise, or the emissions,” Norris said.



Jamie Taylor at the controls of a Bay Disposal & Recycling truck. A single driver collects from as many as 1,100 stops per day using the semi-trailer system.



From left to right: Charlie Bliven, fleet maintenance superintendent, Dave Clark, P.E., public works director, and Ricky Spencer, sanitation supervisor for the town of Nags Head, NC.

- Reduced risk of workers comp claims because drivers aren’t in and out of the cab to lift containers.

Bay Disposal & Recycling drivers trained for 30 days to make the switch to the new system, mainly because they work alone on collection routes. Drivers have sharpened their skills so that when containers are side-by-side without adequate space for pincers to grasp them, drivers use the arm to slide containers until they are far enough apart to grab and hoist their contents into the trailer. “They’ve found ways to handle these situations,” Norris said.

And when a smaller recycling bin is placed in front of a larger container, they’ll raise the arm enough to avoid the bin. “Drivers have learned to raise the arm up to grab the cart, and lift it up over the smaller bin,” Norris said. Where there’s a will, there’s a way. And if the will is recyclable collection with a smaller carbon footprint, the way is a semi-trailer system.

On The Beach

During the summer, the population of Nags Head, NC swells to 10 times its year-round population of 3,000. “Our challenge is satisfying the demands of a town of 30,000,” said Dave Clark, P.E., public works director. To help meet the challenge, the village uses four STARR System units to collect trash on two collection routes. The east route is mostly rental homes. In off-season, collection is twice weekly. When tourists flood the area from the third week of May to the last week of September, collection is three times per week. The west route is primarily year-round residences, and trash is



The semi-trailer collection system enables Nags Head, NC to meet demands of a summer population that is 10 times as large as the year-round population.

picked up twice weekly all year. “These areas are least effected by the tourist industry,” said Clark.

The maneuverability of the semi-trailer collection system enables operators to snake between parked cars and negotiate crowded and narrow streets that can be difficult to navigate in a rigid frame truck. “The truck is so much more flexible. It does things that a rigid frame cannot do. If we were using a straight frame truck, we’d have to do a lot of forward and back in those tight spots,” Clark said. Backup accidents have been reduced from one or two per week to one or two per year, using the automated side loaders.

Continuous sweeping of trailers has improved efficiency. “When working a beach road during the summer, it’s cart after cart after cart. You don’t have to stop after every three carts to pack it, and then start again. The guys just keep working,” said Charlie Bliven, fleet maintenance superintendent.

Nags Head crews carry up to 12 tons per load to the landfill, while neighboring communities using rear load trucks max out at 9 tons. “We’ve never had a weight ticket, knock on wood,” said Bliven. This extra capacity saves time and fuel.

The Sanitation Division works from 3 a.m. to 10:30 a.m. “The reason for that is because traffic gets pretty heavy by 11 a.m. to 12 p.m. on a typical tourist day,” said Clark. “If they came in at 7:30 a.m., they couldn’t pick up the same amount of trash in seven and one-half hours that they can pick up starting at 3 in the morning.” The work day begins early in Nags Head, and with the use of the semi-trailer collection system the day is finished in time for some late afternoon fishing.

From reduced overtime in Hampton to Bay Disposal & Recycling’s increased collection stops per day, to Nags Head’s ability to better meet the demands of a swelling population during summer, all three locations benefited and improved their efficiency using Heil’s STARR System. | **WA**

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