

iCAN Construction Waste Recycling – Roll Off Truck Replacement

Case Study Follow-up visit on 7-10-14

NC DENR, Division of Air Quality



The roll off truck (above, on right) is a key component of iCAN's operations. It is responsible for bringing recyclable materials to the facility as well as delivering iCAN's products to customers.

Site Overview

Based in Fayetteville, NC, iCAN is a HUBZone small business specializing in residential and commercial construction waste recycling. Their recycling-based services include roll-off containers, mobile crushing, screening, wood grinding, demolition, site cleanup and LEED project construction waste management. The result of their recycling efforts is a high number of quality products made from materials diverted from their landfill.

The Construction Equipment

iCAN owns and operates, among other construction equipment: three semis, three skid steers, two excavators, two wood grinders, a concrete crusher, a small dump truck and a front loader to help collect and process its recyclable materials. For transportation of these materials, iCAN uses its four roll-off trucks, which can accommodate 20, 30 or 40 cubic yard containers. In the past, iCAN's president Bill Hester has received grant funding from the state to replace an old excavator and to repower a rubber-tired loader. His most recent goal was to replace an old 1978 roll-off truck that ran a Detroit 6V-71, 450 horsepower diesel engine with a Tier 0 rating.

Implementation

In 2012, iCAN was awarded a Diesel Emission Reduction Grant (DERG) that went toward the purchase of a replacement roll-off truck – an updated 2009 model with a Caterpillar 3406C, 425 horsepower diesel engine and a Tier 3 rating. This roll-off truck has led to the following improvements and benefits:

- An estimated 20-30 percent better fuel efficiency, which translates to a savings in fuel costs of \$4,000-5,000 annually.
- Reduced the operating time for moving recovered material from the sorting operation and moving finished materials to its sales stockpile.
- The replacement roll-off truck is more reliable and possesses updated technology, so operators have more confidence in its abilities and dependability.
- Increased efficiency allows iCAN to recycle more waste, which keeps a greater amount of useable materials out of North Carolina's landfills.
- Maintenance costs have decreased, and parts are easier to find for the newer truck.

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Adjustments and Conclusion

iCAN did not encounter any major problems related to the grant process, and Mr. Hester is already looking toward the next round of grants to replace his various equipment's diesel engines with electric. The main issue, which came after receiving the grant, was finding a roll-off truck that fell within the proposed budget. Mr. Hester found it difficult to find a truck that met iCAN's condition and operational requirements, so he opted to go over budget for a higher priced truck that would meet the iCAN's needs. Despite that hurdle, iCAN would still highly recommend this type of project to similar companies and organizations.



After recyclable materials are brought to the facility, they are sorted by employees and turned into a number of landscaping products.



iCAN has adopted a "cradle-to-grave" business model – recyclable materials are collected or delivered to the facility, and then mulches, gravel and other products are produced and sold on site.

"If a company has a piece of equipment that is older, a grant is a way to save on the front-end investment cost, save a little on immediate fuel cost, and an overall investment in your future. Plus, you help the environment in the process."

- Bill Hester, iCAN president

Emission Reductions

Nitrogen Oxides (tons/yr)	Fine Particulate Matter (tons/yr)	Carbon Monoxide (tons/yr)
3.62	0.6	3.14

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