

APPLICATION FOR 2003-2004 RALPH W. KETNER EMPLOYEE PRODUCTIVITY AWARDS

County: New Hanover Employee: Jason Hale Email: jhale@nhcgov.com

County Department: Environmental Management Employee Title: Solid Waste Planner

County Phone: 910.341.4373 County Mailing Address: 3002 Highway 421 N, Wilmington, NC 28401

Is this project being submitted on behalf of two or more employees? N Yes x

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If yes, please provide below a listing of all project employees. Employee & title as listed above should be for lead team member. Ray Church, Director; James Thomas, Supervisor; Garry Moore, Operator; Jason Hale, Solid Waste Planner

Fair Labors Standards Act Designation: In order for your project to be eligible, you MUST indicate one of the following. If you do not know, please contact your personnel director.

EXEMPT: NON-EXEMPT: BOTH (if applicable to team): x

1. **Productivity Improvement** Economic & Environmentally Friendly Glass Recycling Innovation

Title:

2. **Implementation Date (must be between January 1, 2003 and January 1, 2004):** September 24, 2003

3. **Please describe the productivity improvement. (Please limit response to these 2 pages.)**

New Hanover County operates a recycling program for the benefit of its residents and the environment, as well as for the resultant landfill space savings. The program offers collection of various household recyclables, including glass containers. These containers are collected at six convenience site locations and brought to a central processing area to be prepared for an end use. The County also accepts glass containers from the program run by the Town of Wrightsville Beach.

In the past these containers, each pre-sorted by color (clear, brown and green), were hauled 136 miles on a weekly basis to a facility in Raleigh for further cleaning and sorting. This facility then shipped the glass to a smelting operation hundreds of miles away. This program followed the example of all other successful glass recycling programs in the State, but given the very low value of the material; the truck time, labor and fuel involved in transporting it to market; and the frequency of downgraded or rejected loads of material (20 percent each), the program was far from ideal. Net post-collection costs were estimated at over \$6,400 annually.

Noting this, Environmental Management Director Ray Church instructed Jason Hale, Solid Waste Planner to look into other options for the glass, and suggested purchasing an automatic glass crusher and finding inter-county uses for the material. After investigating prices for crushers and determining them cost prohibitive, Mr. Hale turned to alternative means for crushing the glass. He also turned his attention to identifying a method to ensure size uniformity in the crushed glass, which would be essential in finding a reuse option for the material. Looking at existing departmental equipment, he determined that a large loading machine could be used to break the glass by dropping it repeatedly on an existing concrete pad. As

for screening, he asked Supervisor James Thomas to solve that dilemma.

Mr. Thomas, an expert in operational efficiency, solicited the help of Operator Garry Moore, a mechanically inclined worker with welding and design skills. After a great deal of thought and planning, they worked together to design and construct a large screen that would fit over an existing 20-yard roll off container. Through trial and error they modified the screen, first raising one side to create an incline, then adding strength to weaker areas, and finally attaching two small vibrating motors to shake the properly sized material through the screen. They used scrap metal bars and mesh already on hand and performed all of the welding, thus keeping construction costs very low.

Mr. Church and Mr. Hale took the final product – smooth, crushed glass screened to one-half inch – to County Landfill Manager Steve Edens for consideration as a road base material. The Landfill covers roads with purchased rock to keep them stable, and it was hoped that the glass would serve as a suitable substitute for some of the rock. After a trial, it was determined that the glass would be a very appropriate alternative road base material. With that, the new glass recycling procedures were implemented.

This operational change should result in net revenue of \$2,300 the first year, which boasts an \$8,700 positive improvement from the previous year. In future years the effect should be even larger, given that the cost of the screen was a one time occurrence and both gas and labor prices will continue to rise. It is also worth noting that this project is groundbreaking; it has never been utilized by another recycling program.

4. Please describe why this project was initiated or what problem it addressed:

As noted above, this project was initiated to address the high cost of recycling glass in New Hanover County, as well as the loss of local use of a collection truck and operator for one day each week.

5. Please quantify the improvement's results in terms of cost savings, cost avoidance and/or a higher level of services provided. (Please indicate what resources were used to achieve your results, and what was done with the time savings, if any accrued).

This project transformed the post-collection glass recycling program into a revenue source, with a net annual savings of at least \$8,700. Major factors influencing these savings include reduced costs for labor, fuel and aggregate rock. It also freed five hours of staff time and nearly eight hours of roll off truck time each week. This time is being used to service the convenience sites and other containers more frequently.

6. Please provide any other descriptive information you would like to be considered by the review committee.

Please consider that this was an innovative project solved using a team approach, and all levels of management and staff were involved. Each individual added his own input, and the cooperation and teamwork resulted in a notable net benefit for the County.

Also, the project broke new ground in recycling processing, and will serve as an example to other recycling programs. NC DENR is already working to highlight the project as a best management practice for local governments; it should receive considerable Web and workshop coverage. Many recycling programs are eliminating glass recycling due to budget constraints. It is hoped that this initiative will show those programs a more economically viable way to properly handle that waste stream.

County
Manager:

Allen O'Neal

Supervisor's
Name:

Ray Church

Return by JUNE 1, 2004 via email Rebecca.Troutman@ncacc.org or fax to (919) 733-1065