NORTH CAROLINA

State Agency Purchases of Recycled Products and Source Reduction, Recycling, and Composting Efforts

July 1, 2008 - June 30, 2009

Fifteenth Annual Report

ACKNOWLEDGMENTS

Published by the N.C. Division of Pollution Prevention and Environmental Assistance

Gary Hunt, Director Scott Mouw, Chief, Community and Business Assistance Section Rachel Eckert, Recycling and Environmental Purchasing Coordinator

DPPEA would like to thank the agencies that diligently submit their reports to our office each year. Your hard work and dedication is very appreciated.





North Carolina Department of Environment and Natural Resources Division of Pollution Prevention and Environmental Assistance 1639 Mail Service Center Raleigh, North Carolina 27699-1639

> Phone: (919) 715-6500 or (800) 763-0163 Fax: (919) 715-6794 E-mail: Rachel.Eckert@ncdenr.gov Web site: www.p2pays.org

The Division of Pollution Prevention and Environmental Assistance provides free, non-regulatory technical assistance and training on methods to eliminate, reduce or recycle wastes before they become pollutants or require disposal. Contact DPPEA for more information about this document or waste reduction.

0 copies of this public document were printed in an effort to conserve resources. The report can be viewed online at http://www.p2pays.org/epp/stagencies.asp. Hard copies are available upon request.

January 2010

Introduction

State agencies are directed to use products containing recycled materials by state law - N.C. General Statute 143-58.2(a), and by Executive Order. Executive Order 156 was signed in 1999 in support of N.C. Project Green, the state environmental sustainability initiative, and was an updating and strengthening of the original Executive Order, signed in 1993. Purchasing recycled content and other environmentally preferable products improves recycling markets, reduces environmental impacts from waste, and saves energy and natural resources.

Many state agencies and local school districts help achieve these goals through thoughtful purchasing decisions and the use of recycled content products. These efforts are particularly critical right now, for economic as well as environmental reasons. Over 14,000 people are employed in the recycling industry in the state and this part of our economy can grow if more materials are recycled and more products with recycled content are purchased. The recent economic crisis was also a reminder that the recycling industry can be negatively affected by downfalls in material demand. Although the price of recycled commodities has recovered to more historical levels, purchasing products made out of these materials has the potential to boost the value of recycled materials and help our recycling economy continue to succeed.

NC state government has continued to make progress toward environmental sustainability by offering recycled content and environmentally preferable products at affordable prices on state contract. Currently, over 25 products are available on term contract that exhibit some sort of environmentally preferable attribute, including recycled content, reduced packaging, and energy efficiency. A couple recent additions include green cleaners and more hybrid car options. State agencies and other entities that can buy from state term contracts (such as local governments) have an array of high quality, cost-effective recycled products available on term contract for purchase. The list of products can be seen at www.doa.state.nc.us/PandC/recycled.htm.

This document summarizes the efforts of state agencies to purchase recycled products. It fulfills the reporting mandate of N.C. General Statute 143-58.2(f) for fiscal year 2009. This year 11 additional agencies reported when compared to last year's tally, which had some effect on increasing overall spending reported. All reporting was conducted online, saving paper and postage.

Figure 1. 2009 Reporting Summary	
Departments	22
UNC Institutions	13
Community Colleges	48
Local Public School Units	69
Total (220)	152
Percent Reporting	69%

Fluctuations in data have stabilized somewhat, with small variations annually. This year, 10 agencies reported over \$1 million in paper expenditures and 4 agencies reported over \$1 million in recycled content non-paper expenditures. Therefore, while in the past two years Department of Corrections data was covered separately in the report due to skewing data numbers, this year we were able to incorporate the Department's data with the rest. DOC also only reported a fraction of the spending they have in the past two years, with the exception of building materials, which made up 90 percent of all reported building material expenditures. Comparisons varied relatively predictably, showing a rise in spending overall, which may be a sign of the state beginning to recover from very strict spending constrictions.

Purchases of Recycled Products

Paper and Paper Products. FY 09 is the eighth year in which agencies failed to meet the goal set forth by Executive Order 156: that, as of FY 2000-01, 100 percent of the total dollar value of expenditures for paper and paper products be toward purchases of paper and paper products with recycled content. However, there has been continued improvement overall in agency efforts and additional agencies have adopted recycled content purchasing goals annually.

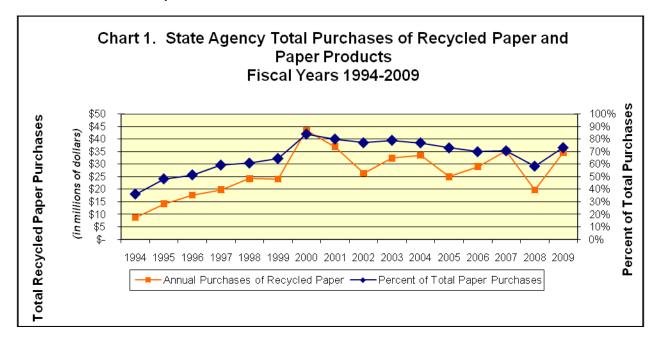
The percentage of recycled content paper purchases reached an all-time high of 84 percent in 2000, and has since fluctuated in the 70s percentage range. This year, agencies achieved a 73 percent rate for recycled content paper purchases; a good level of success despite ongoing budget challenges.

¹ Full text of No. 156 is available online at www.p2pays.org/epp/reports.asp.

Virgin paper is still available on state contract at a lower price, which is a notable obstacle in reaching statewide goals, particularly with continued concern for frugal fiscal spending. Seeking more vendors of recycled content paper and implementing waste reduction techniques, such as double-sided printing and reusing one-sided pages, can help neutralize the cost differential.

Below, **Chart 1** illustrates the trend in overall dollar amounts and percentages of recycled paper purchases over the past 16 fiscal years, including this year's 75 percent increase in overall paper expenditures². Recycled content paper purchases totaled \$34.5 million, which represents 73 percent of all paper purchases, a 15 percent increase from last year.

- Half of all paper purchases were spent on office paper, achieving a 71% rate for recycled content office paper.
- 21 agencies reached 100% goal for all paper purchases, which has been relatively consistent over the past 11 years.
- More than 1/3 of the agencies achieved a stellar 90% or higher rate of recycled content purchases for paper.
- Only 19% of reporting agencies purchased all office paper with recycled content.
- Over half of the agencies purchased all recycled content towel and tissue products, achieving an overall recycled content purchase rate of 87%.
- \$9.8 million was spent on outside print orders, decreasing somewhat from last year, the majority of which was recycled content.



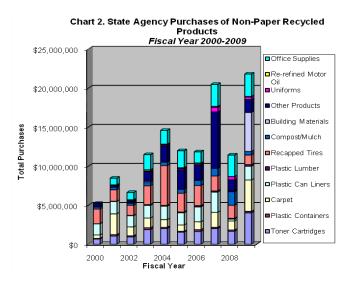
Policy and Administrative Support. While agencies are not required to develop an internal policy by the General Statutes or Executive Order, it could be the first step to improving our state's effectiveness in recycled content product purchases. A mere 46 percent report having a buy recycled policy or goal in place, which is consistent with the last five years. Agencies are specifically charged with the responsibility of purchasing recycled content products, as well as designating a lead coordinator, which less than half have reported accomplishing. Of agencies reporting this year, only half noted that administrators are communicating the importance of green purchasing. These are key components to a

_

² As previously stated, this year we included Department of Corrections data with all the other agencies. For FY 09, DOC only represented 10% of all paper purchases, compared to FY 08, where it made up 95% of all paper purchases.

successful recycled content procurement program, and should be examined as a way to considerably increase participation.

Non-Paper Products. Agencies reported spending \$21.8 million on non-paper recycled content products in fiscal year 2009, nearly doubling last year's expenditures. Non-paper recycled product spending is expected to increase continually as purchasers become further educated about the products they buy, and as the array of recycled products become more readily available.



Total expenditures of the recycled non-paper products reflect a significant increase FY 08's figure, as illustrated in Chart 2. This can most likely be attributed to the fact that some of the strict spending constrictions in state government have been alleviated, which particularly affected building projects and building and equipment maintenance. The size of the colored categories represent the total dollars of purchases in that category and the height in that fiscal year represents total purchases of non-paper recycled products. Reports revealed some fluctuations, most considerably in the categories of toner cartridges, carpet, office supplies, plastic lumber, and building materials. Recycled content building materials reached a \$5 million all-time high, 98 percent of which was spent by

Department of Corrections on materials such as concrete, steel, and wood for prison facilities. The "other" category includes furniture, electronic equipment, food service products, and custodial products such as mops, rags and even some cleaning solvents. Biodiesel and electronic equipment were also listed in the other category, and represent green purchases beyond recycled content, including other environmentally preferable attributes such as renewability and Energy Star compliance.

Other Environmental Purchasing Efforts. Some state agencies have excelled beyond buying recycled, and have begun to tackle more sustainable purchasing issues like environmentally preferable purchasing. Environmentally preferable purchasing, or green purchasing, includes a host of attributes that can be considered to decrease the impact of products on the environment. Ashe County Schools' bus fleet participated in a fuel efficiency pilot project, where preliminary findings suggest that it improved fuel efficiency up to 10 percent. The entire fleet will begin being treated with the enhancer in the 09/10 school year. Montgomery County Schools implemented the use of more energy efficient lighting and thermostats in their buildings in FY 08-09. They also required all buildings to operate within a more conservative heating and cooling climate. Craven County Schools began a similar program piloted in the Board of Education building, and will compare energy bills to identify any cost savings. Wilson Community College completed construction and received LEED Gold Rating on their Student Center Building. They also designed a "Growing Green" website to raise awareness on campus (http://www.wilsoncc.edu/climate.cfm).

Conclusion

The purchase of recycled content products is a well-established practice in state government, supported by statutory and executive order requirements, as well as the possibility of using government purchasing power to establish state term contracts that offer high quality, affordable recycled content choices for purchasers. Still, progress must be made to bring agencies to full compliance with the 100 percent recycled content paper goal.

Several key agencies could, with a few significant purchasing decisions, substantially increase the overall performance of state government in recycled paper purchasing. Converting the current \$12.7 million in virgin paper purchases to recycled paper will allow North Carolina state government to contribute largely

to the strength of recycling markets. As a major player in the collection of paper for recycling, state government stands to benefit directly from improved markets. The use of recycled products will also help North Carolina achieve its environmental goals by reducing natural resource, energy and water usage, and preventing air and water pollution.

The following recommendations may help state government meet goals set forth both in EO 156 and General Statutes, and increase overall recycled content purchases. In regards to previous recommendations, through NC Project Green the DPPEA, in partnership with other state agencies and local governments, succeeded in providing education this past year on efficient transportation technologies, sustainability policies and programs, water reuse, and environmental management systems. In the coming year, NCPG will conduct further meetings on green cleaners, green building, and establishing formal sustainability programs.

Recommendations

- I. Due to legislative changes in 2009, the statutory reporting requirement for recycled content purchasing was rescinded. This is a positive change, as agency performance in reporting has been very consistent in the last 10 years and the alternative possible use of staff resources to conduct active environmentally preferable purchasing technical assistance could lead to more productive change. As discussed in the introduction of this report, continued goals for purchasing recycled content and other environmentally preferable products is important to our local economy and the success of our recycling businesses. Unfortunately, reporting on this data is very difficult because these products do not have special commodity codes identifying that they are 'green' products. DOA's Purchase and Contracts Division has the best access to what agencies are buying on state contract, and it reports that data each year to be included in this State Solid Waste Management Annual Report. That continued effort will help the state keep a handle on recycled content purchases, while DPPEA maintains outreach and education efforts and assists DOA with populating state contracts with more environmentally preferable products.
- II. NC Procurement Professionals should communicate their interest in procuring green products to DOA's Purchase and Contracts Division. Educational sessions reveal that government purchasing professionals are interested in increased green product choices available on contract. While some university purchasing offices have management support and are interested in developing specifications and policies, most can not dedicate time to designing internal green policies or searching for environmentally preferable purchasing contract language and would be interested in utilizing prenegotiated state contracts. They also need assistance justifying price differentials for more durable and healthier products. Specific recommendations for state agencies would include:
 - Evaluate products in terms of broad environmental impacts including: durability, energy efficiency, performance, recycled content and recyclability, toxicity, biodegradability, local manufacturers, and packaging.
 - Engage P&C regarding products and contractual services that take into account environmental impacts.
- III. North Carolina government, under the new leadership of Governor Bev Perdue and DENR Secretary Dee Freeman, should consider initiating an updated Executive Order to strengthen the goals set forth in the 1999 EO 156, set forth under Governor James Hunt's administration.

Agencies that Purchased 100 Percent Recycled Paper in FY 09

Asheboro City Schools Bertie County Schools

Central Carolina Community College Chapel Hill-Carrboro City Schools Cleveland Community College Currituck County Board of Education Fayetteville Tech Community College

Guilford County Schools Lenoir Community College Madison County Schools NC School of the Arts Pamlico County Schools
Perquimans County Schools
Stokes County Schools
Swain County Schools
Watauga County Schools
Wayne Community College
Wilson County Schools

Winston-Salem State University

Yancey County Schools

Agencies that Failed to Report Data for FY 09

Alamance Community College Alamance-Burlington School System

Alexander County Schools

Alleghany County Board of Education

Avery County Schools
Bladen Community College
Buncombe County Schools
Cabarrus County Schools
Caldwell County Schools
Carteret County Schools
Catawba County Schools
Cherokee County Schools
Clay County Board of Education

Clinton City Schools

Coastal Carolina Community College

Columbus County Schools
Dare County Schools

Edgecombe Community College Edgecombe County Schools

Elkin City Schools

Employment Security Commission

Environment and Natural Resources, Dept. of

Fayetteville State University Franklin County Schools Gates County Public Schools

General Assembly Graham County Schools Halifax County Schools Harnett County Schools

Henderson County Public Schools

Hertford County Schools

Hoke County Board of Education Hyde County Board of Education Jackson County Public Schools
Johnston County Schools

Juvenile Justice and Delinquency Prevention

Lenoir County Public Schools

Lieutenant Governor's Office (in Labor)

Lincoln County Schools McDowell County Schools

McDowell Technical Community College

Mitchell County Schools Nash/Rocky Mount Schools

NC School of Science & Mathematics

NC State University

New Hanover County Schools Northampton County Schools Orange County Schools Pasquotank County Schools Person County Schools

Robeson County Public Schools Rutherford County Schools Sampson County Schools

Southeastern Community College

Stanly Community College Thomasville City Schools Tri-County Community College

UNC Hospitals
UNC Pembroke

Union County Public Schools Wake County Schools Warren County Schools

Wayne County Public Schools

Western Piedmont Community College

Whiteville City Schools Wilkes Community College

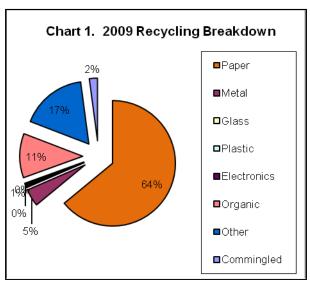
State Agency Source Reduction, Recycling, and Composting Efforts

State agencies are directed to recycle by state law - N.C. General Statute 143 and by Executive Order 156. The Division of Pollution Prevention and Environmental Assistance suspended reporting for a few years, but in 2005 started a new baseline for state recycling trends and participation has increased annually. **Sixty-four** agencies reported data, which constitutes over sixty percent of the required reporting entities. Universities and community colleges are heavily represented, accounting for 49 reports.

Agency departments pose a difficult challenge in reporting because they often have several regional offices to gather data from, and many have office spaces in leased facilities or share buildings with non-state businesses. Departments make up 25 percent of the required reports. More than twice as many state employees work in regional offices across the state than in the Capital area. In FY09, 15 agency departments reported, but six of them filed very incomplete reports without any tonnages or cost data. The Department of Transportation filed an extensive report, and a complete summary of its solid waste and recycling program is included in this State Solid Waste Management Annual Report.

The majority of agency offices located in the Raleigh-area have been included under one contract for recycling and solid waste collection, managed by the Department of Administration's Facilities Management Division. Facilities Management gathers data from the collection companies and completes this report for agencies in the capital region. For the next FY, this process will change as Facilities Management has dropped that recycling contract for leased spaces due to budget challenges. As of July 2009, lessors whose buildings house state agencies in the Raleigh area were required to establish their own recycling contract. DPPEA has been working with Facilities Management, the State Property Office, and Raleigh-area state employees and property managers of buildings occupied by state employees, to educate them on this change and provide assistance in locating recycling options for paper, plastic and glass bottles, aluminum cans, and cardboard.

Recycling Performance. In fiscal year 2009. state agencies collectively diverted 67,542 tons from disposal in landfills and incinerators. Respondents reported recycling 43,247 tons of paper, 3,000 tons of metals, 200 tons of glass, 220 tons of plastic, 1,422 tons of commingled containers, 7,679 tons of organics, and 11,514 tons of 'other' materials. The 'other' category consists of materials such as lead-acid batteries. textiles/fabrics, motor oil, tires, and construction and demolition debris. The commingled containers category was added two years ago because expanding markets across the state are able to handle mixed materials. This development is a great improvement, as simple programs have the highest participation rate.



An additional 672,000 tons of asphalt was recycled

by Department of Transportation, but that outstanding diversion skewed the data and was extrapolated out for the sake of drawing comparisons. While last year DOT recycling tonnages amounted to 96 percent of all recycling data reported, this year's totals put DOT more in line with efforts of other agencies and therefore we were able to include their data with the rest of the reported statistics.

Based on FY 2009 data, the agency recycling rate for all wastes managed during the year was 22 percent. While recycling weights increased by over 40 percent from last year, this is recycling rate is significantly lower than 2008's rate of 52 percent. Commingled tonnages decreased by nearly half while metal and plastic more than doubled and paper and glass tonnages quadrupled. Even without including DOT's asphalt tonnages, the 'other' category increased by more than 700 percent. This amplification can

be attributed to increased recycling of construction and demolition waste; the primary contributing factor is construction and demolition waste from DOT. East Carolina University, and Wilkes Community College.

It must be noted that the recycling data reported by agencies each year is extremely variable, and drawing comparisons is difficult because reporting behaviors are not consistent year to year. For instance, while almost all reported recycling tonnages, the overall reported amount of disposed solid waste tonnages also increased by more than 150,000 tons in FY 09, in part because agencies simply did a better job of reporting. Seven more agencies reported data this year, and the data represented comes from varying agencies each year, and is therefore erratic. Also, a quarter of the reporting agencies had a recycling rate under 10 percent.

Data was collected for electronics recycling for the fifth year in a row. Encouragingly, the majority of agencies has a process in place to manage excess electronics, and in FY 2009 collected 262 tons of electronics. This figure does not include data from DOA or the State Surplus Office. Most agencies report using the statewide electronics-recycling contract (www.doa.state.nc.us/PandC/926a.htm) to complement recycling opportunities through state surplus. A handful of agencies reported working directly with non-contract vendors, all of which are listed in our online directory at www.p2pays.org/dmrm. A few claim to work in conjunction with their local government to dispose of electronics and one or two donated to local schools. Agencies and local governments are becoming keenly aware of the need to recycle electronic materials, bearing in mind their contribution of hazardous substances to landfills and the opportunity to reclaim valuable resources from electronic products.

Solid Waste and Program Costs. State agencies landfilled approximately 236,908 tons of solid waste in FY 2009, at a cost of about \$13.8 million in collection and disposal fees. The average estimated cost was of \$58 per ton. This is the highest solid waste tonnage data reported since the report has been reinstated in 2005, and is three times the 85,056 tons reported last year. Some agencies, such as Department of Corrections, East Carolina University, Health and Human Services, Rowan-Cabarrus Community College, Department of Transportation, and Wake Technical Community College, experienced a substantial increase in solid waste tonnages. Most of those increases can be ascribed to construction and demolition waste from new buildings and renovations. The overall disposal costs went up by over \$1.6 million dollars from last year, but the cost per ton decreased by about \$182. This number is extremely fickle depending on how complete and accurate agency reports are.

Calculating the total cost of solid waste and recycling programs is difficult, and respondents may need training to review this computation. Additional calculations have been included to more accurately compute the expense of recycling programs. In order to determine the true cost or cost avoided, agencies must submit complete reports. The reliability of this data also depends on how in-depth the reporting agencies examine their program fees.

Agencies are asked to report the cost avoided through recycling, calculated by multiplying the recycling tonnage by the cost per ton of solid waste. While most appeared to do this from the data, some agencies reported tremendous differences in their cost avoided through recycling. Those discrepancies were either miscalculations or took into consideration other costs of the program that were not supplied in the report. From the data agencies reported, the total cost avoided is estimated over \$26.4 million. This is about half the money diverted last year, and can be ascribed to the economic situation in FY 09, which affected the value and collection costs of many recyclables.

While nearly half of the reports claim some revenues for the sale of recyclables, amounting to more than half a million dollars, the majority still experienced net program costs totaling nearly \$2.5 million. Program costs include collection, processing, and outreach and education. The result is an average cost of almost \$3 per ton of recyclables, a small fraction of the cost for solid waste disposal, which exemplifies the savings in recycling. It should be noted that 18 agencies did not include recycling program costs although they did report recycling tonnages. Recycling programs should not have the expectation of zero cost, but can expect that there will be an overall savings by avoiding the higher disposal fees of solid waste. As with most new programs and efforts, there is an upfront cost for containers and initial education, and minimal costs to continue marketing the program.

With the economic downturn, recycling commodity prices also declined dramatically starting in October 2008. Some programs did not receive revenues for the sale of their materials in 2009, and some experienced increased recycling collection costs. State agencies can assist our local markets by continuing to improve recycling programs and through an increased effort in buying recycled content products. Some of those state efforts are included in this report as well.

Administrative Support and Source Reduction. A clear majority of agencies report that they receive top-down administrative support for recycling efforts, and almost half have a lead coordinator for waste reduction and recycling program. Seventy-three percent have ongoing educational programs for waste reduction and recycling and many are using one of DPPEA's educational programs (www.re3.org and/or www.re3.org and/or www.re3.org and www.re3.org and/or www.re3.org and <a href="www.re3.org and <a href="www.re3.org and <a href="www.re3.org and <a href="www.re3.or

- ✓ Employee email, newspaper, radio, word of mouth and one-on-one education at campus events where promotional items are distributed.
- ✓ Website, brochures, student groups, volunteers and volunteer activities.
- ✓ Presentations at training sessions and managers meetings, as well as annual reports.
- Recycling policies and procedures listed in materials such as Employee Manuals, printed on campus phone directories, given to residence hall staff, and posted online.
- ✓ Posters and signs in break rooms, recycling centers, hallways, and restrooms.

Ninety-four percent of reporting state agencies practice waste reduction at the source, including reducing office paper by eliminating unnecessary reports and forms or converting to electronic format, making fewer copies, double sided printing, using email and voice mail to communicate, and posting announcements on bulletin boards or in break areas. Agencies estimate a reduction in paper usage in fiscal year 2009. A quarter of agencies conducted solid waste assessments of the amount and types of solid waste at their facilities. Some use this reporting process to reevaluate their program. Other agencies conduct site visits, collect landfill invoices, or audit on-site trash dumpsters. The results help in finding the best place to put recycling containers, deciphering which materials are most feasible to recycle, and identifying where waste reduction techniques would be most efficient.

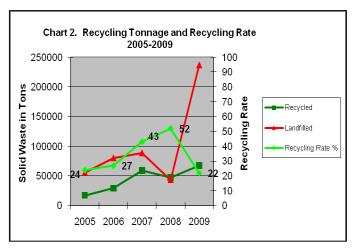
Conclusion

While the revitalization of the recycling report has shown a great percentage of agencies continuing their waste reduction and recycling efforts that were established several years ago, there are still challenges. Some agencies, including community colleges and a few universities, are struggling to recycle basic material like cardboard and aluminum cans. Sometimes this is a market issue. More often, it is a perceived barrier due to lack of education and funding, which stems from insufficient support internally.

Inconsistencies and inaccurate reports are still a problem, making finite conclusions complicated. For instance, a variable set of agencies report each year and there is missing data in many reports. In

addition, many departments neglect to report for their regional offices. The integrity of the data improves with annual updates to the report form.

Some of the variability in statistics can be attributed to the inability of agencies to accurately track tonnages. Solid waste and recycling weights are still estimated because collection companies have not integrated onboard truck scales. Exact weights can only be obtained if collection is completed at one facility and the truck is brought across scales to obtain an exact weight, which rarely



occurs. For these reasons, figures reported likely underestimate the true quantities and costs of waste being disposed. Incomplete tracking and estimation may also contribute to fluctuations in reported recycling over time.

The unreliability of the data prevents the natural and hopeful conclusion that increased recycling tonnages would cause a decrease in solid waste being disposed of in the state's landfills. This year's recycling tonnage increased by 40 percent from last year. Concurrently, the solid waste tonnages reported also increased – by more than 400 percent! **Therefore, this year's recycling rate is 22 percent, a significant decrease from last year.** Improved awareness of agency solid waste streams and more accurate data collection will make a more reliable comparison possible.

It is encouraging that some agencies have pulled forward as leaders in waste reduction and recycling efforts. Many universities provide reuse programs including large-scale collection and redistribution of clothing, furniture, household supplies, and even electronic products. A few universities have conducted sustainability audits over the last year or two, which include energy and water tracking mechanisms as well as waste audits of the campus. With the re-establishment of the recycling report, some community colleges and universities reached out for assistance to restart or revitalize their program.

DPPEA has outreach and education campaigns available to all universities and community colleges to help promote recycling programs. In FY 2009, many schools took advantage of the RE3 campaign to help promote the new legislation that bans plastic bottles from being disposed of in the landfill. At annual outreach events from job festivals to Earth Day celebrations, campus coordinators gave out promotional materials to encourage students to visit www.re3.org to learn more about recycling. DPPEA utilized cutting edge public communication tools, such as a web-blog, a FaceBook page, and viral marketing campaigns, which were all well received and enhanced efforts to increase recycling statewide.

Recommendations

Upon review and consideration of the data contained in this report, DPPEA submits the following recommendations to improve the solid waste reduction and recycling efforts of North Carolina state agencies.

- I. Use the Source Reduction and Recycling Report data to assist programs statewide. Tracking the amounts of solid waste disposed annually by state agencies is the best way to determine whether efforts to reduce waste, including recycling programs, are affecting the waste stream. This information, along with data on the costs for collection and disposal, can be used to evaluate the cost efficacy of agencies' waste management strategies, as well as the costs avoided through waste reduction and recycling. To maximize data recovery and assessment, it is recommended that agencies:
 - Conduct waste assessments at their constituent facilities, offices, and institutions.
 - Require full accounting for all costs associated with solid waste collection and disposal services.
- II. Develop a means to effectively communicate about recycling programs. Programs are ineffective if they are not visible and not explained to employees. This may be as simple as quarterly email reminders of what is accepted at the various bins in your facility, and where the bins are located (i.e. by the copy machine, in the staff lounge, in the lobby, etc.). Depending on the work environment, such efforts may include a full-fledged outreach and education program. Agencies should make use of materials available for promotional initiatives from DPPEA, including posters, stickers, and other advertising tools through the RE3 program at www.re3.org.
- III. Agencies should join NC Project Green (www.ncprojectgreen.com), a DPPEA program that focuses on sustainability in government. The audience for the project is state agencies and local governments. Universities and community colleges should consider joining Project Green, as well as the Carolina Recycling Association's Collegiate Recycling Coalition (www.cra-recycle.org/CRC). From these two programs, participants will be educated about recycling markets and how to set up a successful recycling program. Respondents may need training to review how to calculate some of this report data, and these programs can help, along with some direct training from DPPEA.