North Carolina Solid Waste and Materials Management Annual Report FY 2014-2015

A comprehensive report outlining the state's efforts regarding solid waste and materials management, recycling and the status of waste management facilities, with additional report contributions from the state departments of Administration and Transportation.

Department of Environmental Quality

NORTH CAROLINA SOLID WASTE AND MATERIALS MANAGEMENT ANNUAL REPORT FISCAL YEAR 2014-15

This consolidated annual report is required by the North Carolina General Statute 130A-309.06. The report combines annual reports by the N.C. Department of Environmental Quality, including the Solid Waste Management Report, the Scrap Tire Disposal Account Report, the White Goods Management Report and the Solid Waste Management Trust Fund Report. This report also includes information from the N.C. Department of Transportation regarding its use of recycled materials in contracts and data from the N.C. Department of Administration on bid procedures and purchases of sustainable and efficient supplies and materials.

Solid waste and materials management information in this report comes from 644 (100 county and 544 municipal) local government annual reports and more than 350 solid waste management facilities (including out-of-state facilities). These reports represent activities related to the management of solid waste for the period of July 1, 2014 through June 30, 2015.

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Contents

Executive Summary

The Division of Waste Management and the Division of Environmental Assistance and Customer Service report that the population in North Carolina increased by 1 percent in FY 2014-15 (July 1, 2014 - June 30, 2015), while the amount of waste disposed in municipal solid waste landfills and construction and demolition landfills increased by 4.4 percent.

North Carolina disposed of 9,635,874 tons of waste at in-state and out-of-state facilities. This represents a net increase in disposal of 362,303 tons from the previous fiscal year.

Last year, the state per capita disposal rate dropped to a record low of 0.94 tons of waste per person per year, and North Carolina continued to dispose of solid waste at a lower rate relative to the last decade, where the rate was as high as 1.36 tons of waste per person per year. In FY 2014-15, the rate climbed 3.2 percent to 0.97 tons of waste per person per year.

Historically, good economic growth has led to increased waste disposal. Landfill bans (such as those for plastic bottles, aluminum cans and electronics) and continuing recycling activity aid in keeping waste disposal from rising. Indications are that the North Carolina recycling economy is growing and helping to increase jobs, capital investment and tax base.

Overall tonnage diverted by county and municipal programs fell slightly from the previous year, mostly due to the lack of any major storm events in FY 2014-15, which had increased tonnage substantially in FY 2013-14. Still, the recovery of traditional materials – paper, bottles and cans – by local programs increased in FY 2014-15, a sign that North Carolinians remain engaged in recycling efforts. Recycling market conditions were relatively weak overall during the fiscal year, but the state still saw expansions in private recycling infrastructure.

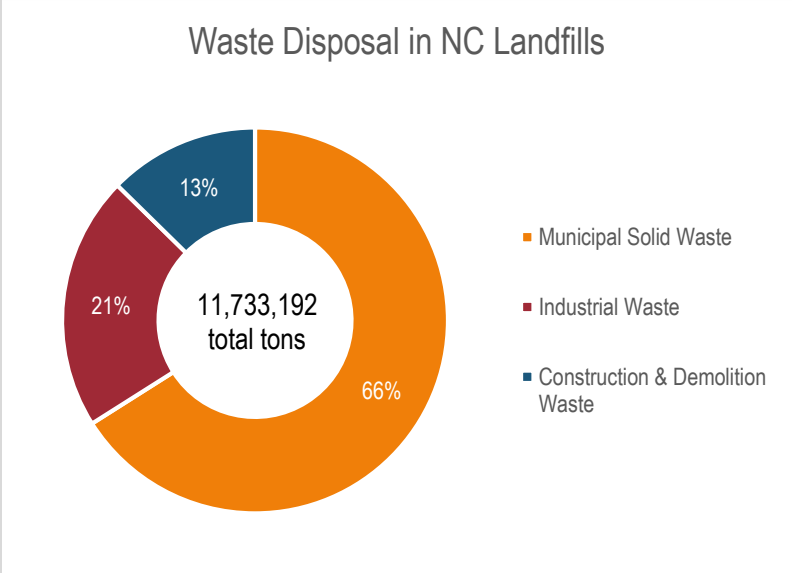
Data for much of the information in this report, along with other subsidiary reports, is available online at: http://portal.ncdenr.org/web/wm/sw2015.

Key Findings

- The state per capita disposal rate remains below one ton (0.97) of waste per person.
- North Carolina-permitted municipal solid waste landfills and construction and demolition landfills disposed of a total of 9,215,337 tons of solid waste.
- Waste originating from South Carolina and Virginia equaled 214,079 tons.
- North Carolina exported 643,148 tons for fiscal 2014-15 to South Carolina, Virginia, Tennessee and Georgia, an 114,521-ton increase from the previous year.
- Remaining capacity of North Carolina landfills equals 29.5 years of waste at the present rate of disposal.
- Fifteen industrial landfills received 2,517,855 tons of waste. Industrial waste in North Carolina is predominantly from the electric energy industry (coal combustion wastes) and from producers of paper products (pulp and paper sludges).
- Preparations were initiated for a possible avian influenza outbreak in North Carolina poultry farms and the resultant mortality waste. Hurricane and flood preparations continued, and resources and cleanup assistance to local governments after disaster events during FY 2014-15.
- North Carolina local recycling programs experienced a 4.8 percent increase in the recovery of traditional recyclable materials in FY 2014-15 over the previous year.
- North Carolina reached the highest rate of citizens served by curbside recycling programs to date in FY 2014-15 with 1.918 million households receiving collection from 319 local curbside programs.
- Difficult market conditions, affected by a variety of global economic factors, reduced material values for a wide range of commodities in FY 2014-15, creating challenges for material recovery facilities and other recyclers.

Department of Environmental Quality - Solid Waste Management

Waste types handled at North Carolina facilities include municipal solid waste, industrial waste, construction and demolition waste, land-clearing waste, scrap tires, medical waste, compost and septage. North Carolina disposed of a total of 9,635,874 tons of municipal solid waste [MSW] and construction and demolition [C&D] waste in in-state and out-of-state facilities. This represents an increase of 362,303 tons from the previous fiscal year.



The N.C. Department of Revenue reported solid waste tax collection of $18,177,700, which equates to 9,088,850 tons of taxable solid waste going into landfills in North Carolina and through transfer stations to landfills in neighboring states. The gap between reported disposed tonnage and tax-paid tonnage is due to federally-owned landfills on military bases being exempt from the solid waste tax, and some specific waste streams received at MSW facilities (for example, biosolids) also being exempt.

Revenue from the solid waste tax was distributed to:

- Inactive Hazardous Sites Cleanup Fund - 50 percent is used to fund the assessment and remediation of pre-1983 landfills,
- Local Governments – 18.75 percent to counties and 18.75 percent to municipalities to assist them with their waste and materials management programs, and
- 12.5 percent to the General Fund.

Industrial landfills, which contain primarily combustion byproducts of coal at power plants and pulp mill sludges at paper plants, accommodate the disposal of 2,517,855 tons of waste from on-site industrial complexes.

Municipal Solid Waste and Construction and Demolition Debris Disposal

Fiscal Year	Tons of waste disposed	NC population	Tons of waste per person in a year	Per capita waste change from Base Year 1991-92	Per capita waste change from previous year
2014-15	9,635,874	9,953,687	0.97	-9.5%	2.9%
2013-14	9,273,571	9,861,952	0.94	-12.1%	0.4%
2012-13	9,149,130	9,765,229	0.94	-12.5%	-4.1%
2011-12	9,443,380	9,669,244	0.98	-8.7%	-1.1%
2010-11	9,467,045	9,586,227	0.99	-7.7%	-1.4%
2009-10	9,395,457	9,382,609	1.00	-6.4%	-6.8%
2008-09	9,910,031	9,227,016	1.07	0.4%	-13.7%
2007-08	11,284,712	9,069,398	1.24	16.3%	-6.9%
2006-07	11,837,104	8,860,341	1.34	24.8%	-1.4%
2005-06	11,765,183	8,682,066	1.36	26.6%	4.9%
1991-92*	7,257,428	6,781,321	1.07		
1990-91	7,161,455	6,632,448	1.08		

* Baseline Year

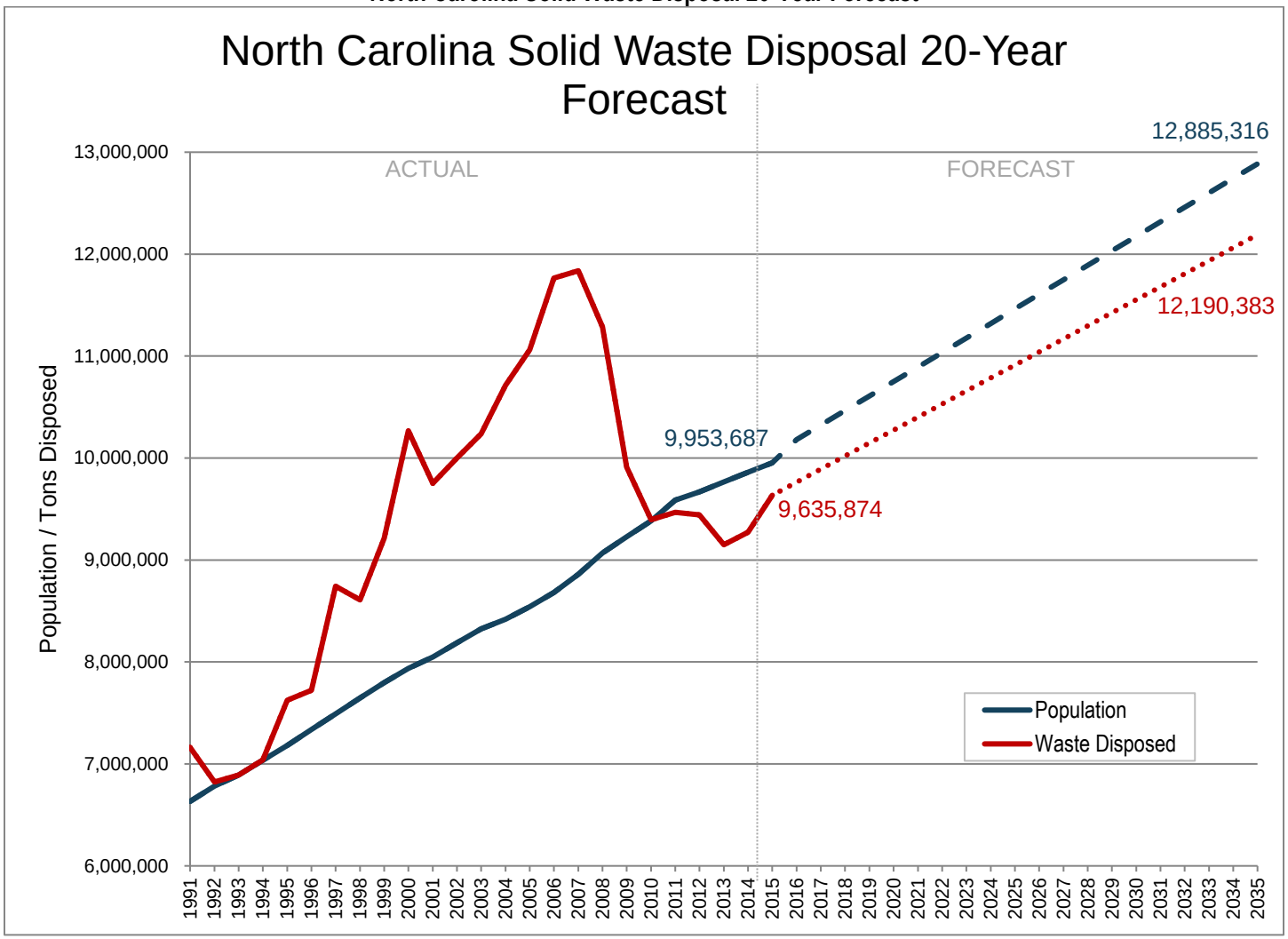
In past years, disposal consisting of municipal solid waste, waste from residences and businesses and C&D waste (waste which comes from the home and building construction trade) has consistently shown strong upward trends. However, beginning in FY 2006-07, disposal rates started to fall and have declined every year on a per capita basis until this year. The gap between future waste disposal

and population has narrowed. The following graph shows that if per capita disposal remains static (it is currently 0.97 tons of waste per person per year), in 20 years the disposal amount will be 12,190,383 tons.

The upswing in disposed tonnage after a long period of decline is mostly likely reflects a strengthening economy, leading to more generation and discard of solid waste materials. There is little evidence that this increase is due to rising construction activity, which was a big driver of waste increases in the 1990s and early 2000s. Rather, waste generation seems to be tied to more general economic and consumption activity.

The N.C. Department of Environmental Quality will evaluate its reporting mechanisms for the FY 2015-16 data cycle to try to better account for material flows and better explain gaps between total disposed tons and the amount of tonnage on which landfills submit the state disposal tax.

North Carolina Solid Waste Disposal 20-Year Forecast



Municipal Solid Waste (MSW) Landfill Capacity

The total remaining capacity of all North Carolina MSW landfills measures approximately 362 million cubic yards, equating to approximately 230 million tons, a decrease from last year. This estimate was calculated using 0.64 tons of waste per cubic yard of air space. The capacity does not include waste exported to out-of- state landfills. The state capacity equals 29.5 years of waste disposal if North Carolina's rate of landfill use remains steady at approximately 7.8 million tons per year. Continued efforts to increase recycling and material diversion should help the state maintain a strong landfill capacity. Much of the state's capacity is not available statewide due to permit conditions, franchise arrangements, service areas and distances. Although overall state capacity is sufficient, some

regions have limited waste disposal capacity. Those areas may experience higher disposal costs and possible disruptions in service as facilities close or fuel costs make transport of waste to distant facilities prohibitive.

Industrial Landfill Disposal

In North Carolina, onsite land disposal of waste at industrial sites requires a permit from the Division of Waste Management. Currently, there are 15 industrial landfills permitted to receive various kinds of industrial waste. The largest volume of waste disposed into industrial landfills is at electric power plants and consists of coal combustion waste. The paper product industry, which receives sludge and wood ash, is secondary in volume.

20

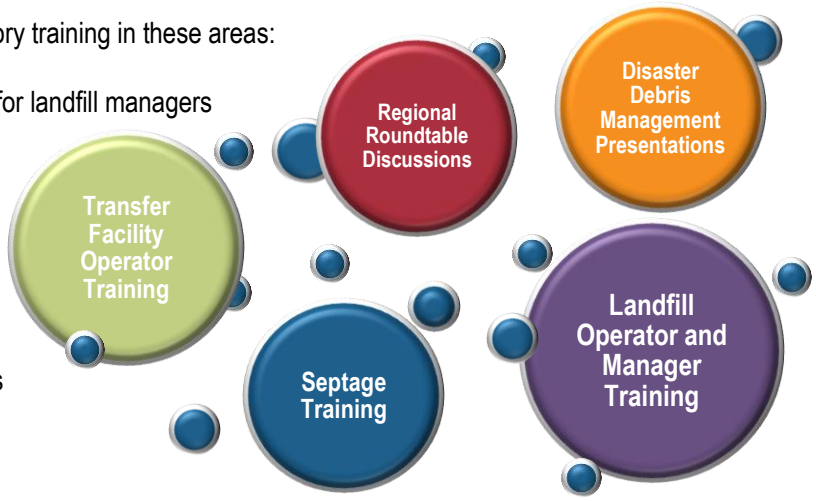
Permit Number	County	Permit Name	Tons in FY 2014-15
7302-INDUS-1988	Person	Duke Energy Roxboro Steam Electric Plant	506,638
1809-INDUS-	Catawba	Duke Energy Marshall Steam Plant FGD	397,894
4406-INDUS-1984	Haywood	Blue Ridge Paper Products, Inc.	343,709
8106-INDUS-2009	Rutherford	Duke Energy Cliffside Steam Plant CCP Landfill	325,842
2402-INDUS-1972	Columbus	International Paper	294,356
8504-INDUS-	Stokes	Duke Energy Belews Creek Craig Rd Landfill	196,052
3612-INDUS-2008	Gaston	Duke Energy Allen Steam Plant RAB Ash Landfill	144,791
8505-INDUS-	Stokes	Duke Energy Belews Creek FGD Residue Landfill	127,910
7305-INDUS-2012	Person	Duke Energy Mayo (under construction during FY)	112,514
4204-INDUS-1994	Halifax	Halifax County Coal Ash Landfill	41,570
9401-INDUS-2008	Washington	Domtar Paper Company Landfill, Lined #3	13,166
9703-INDUS-1981	Wilkes	Louisiana-Pacific Corporation	11,597
6004-INDUS-1981	Mecklenburg	Duke Energy McGuire	1,816
1812-INDUS-2008	Catawba	Duke Energy Marshall Steam Plant	0
7602-INDUS-1983	Randolph	Eveready Battery	0
		TOTAL	2,517,855

Facility operator training and public outreach

The Solid Waste Section is committed to the protection of public health and the environment through education, inspections and compliance, and environmental monitoring. The section has a long-standing history of promoting training for the regulated community and the public as required by statute, as well as through technical assistance, collaboration, outreach activities, and customer service.

In FY 2014-15, staff participated in and presented regulatory training in these areas:

- 11 classes for landfill operators and two classes for landfill managers
- 10 classes for transfer facility operators
- Six new septage firm operator trainings
- Seven septage annual operator trainings
- Three disaster debris management presentations
- Two regional roundtable discussions



- N.C. Chapter of Solid Waste Enforcement Officer Association (NC SWEOA), N.C. Chapter and Quad State Solid Waste Association of North America (SWANA), N.C. Composting Council Conference Presentations (NCCC)

Disaster Planning - Highly Pathogenic Avian Influenza

The North Carolina Department of Environmental Quality (DEQ) has a longstanding history of response to emergency management-related events that impact the environment. Response efforts from the department following hurricanes, tornadoes and other natural disasters have provided experience and an internal framework that has prepared the agency to assist in a potential outbreak of highly pathogenic avian influenza (HPAI) in North Carolina. The Animal and Plant Health Inspection Service (APHIS) of the U. S. Department of Agriculture (USDA) reported that 48,091,293 birds were affected by HPAI across 15 states (223 total detections) in late spring 2015. The potential economic impact to the state of North Carolina from HPAI is significant and unprecedented. North Carolina's poultry industry contributes $34 billion in total economic activity and supports approximately 109,000 jobs, according to testimony from North Carolina Department of Agriculture and Consumer Services (NCDA&CS) State Veterinarian Dr. R. Douglas Meckes at a U.S. House Committee on Agriculture oversight hearing.

DEQ staff were identified across the agency to form an internal HPAI task force to assist NCDA&CS and other state agencies in addressing an HPAI outbreak. Specific guidance was developed in collaboration with NCDA&CS on biosecurity, decontamination, burial/disposal, composting/litter disposal, transport/rendering, public water availability and air quality. DEQ does not expect to be involved in depopulation, but its role is to ensure environmentally-safe inactivation, transport and disposal of all infected birds, feed, wastes and other materials. In addition to assembling the guidance included with this document, DEQ staff have established points of contact within the private disposal industry sector, the N.C. Department of Transportation and other related areas to ensure that the vast disposal and resource needs can be met during an HPAI event. DEQ staff traveled to Minnesota and met with representatives from USDA, the Minnesota HPAI incident command, and the Minnesota Board of Animal Health. This onsite experience, coupled with conference calls with other industry representatives, including Iowa Department of Environment staff, provided the foundation and framework for DEQ's Avian Flu Task Force to provide substantive input on the management of a potential outbreak in North Carolina.

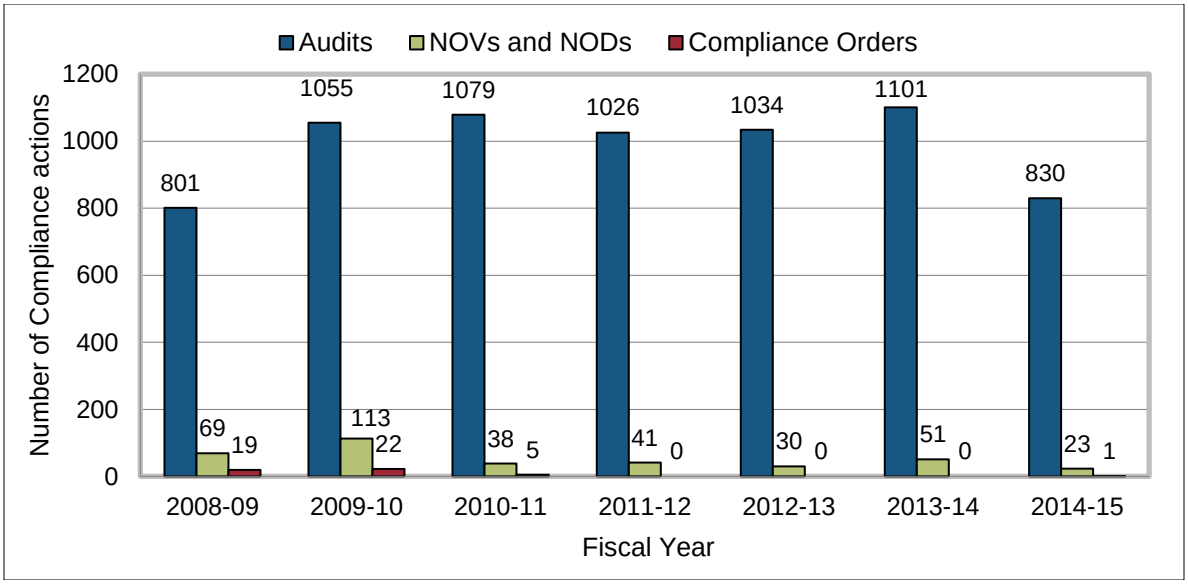
The HPAI task force and supporting department staff stand ready to participate in this potential state of emergency, which will require additional resources depending on the type of role assigned to staff. Ongoing efforts by the HPAI task force ensure that, in collaboration with NCDA&CS, North Carolina is prepared to address an outbreak of HPAI in a manner that preserves our current state of environmental quality and public health while also rapidly deactivating the virus to preserve our state's robust poultry industry.

Inspections and Compliance

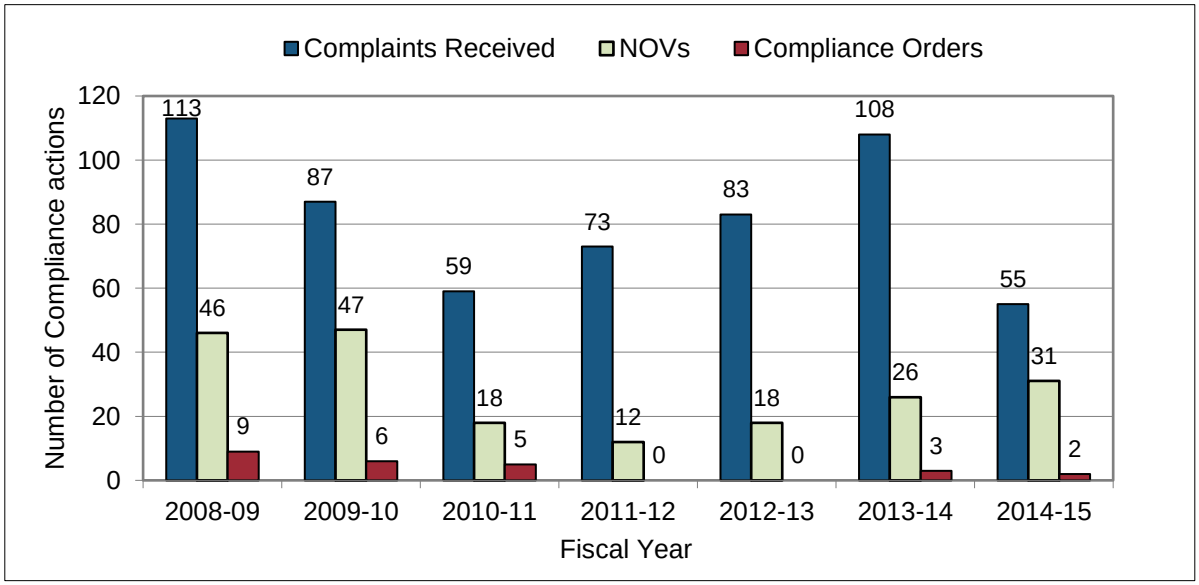
The field operations branch and the compost land application branch are responsible for conducting inspections/site visits at the following variety of facility types.

- C&D Landfills over MSW Landfills
- Closed Post-Closure Landfills
- Compost Facilities
- Construction & Demolition Landfills (C&D)
- Industrial Landfills
- Land Application Sites
- Land Clearing and Inert Debris Landfills (LCID)
- LCID Notification Landfills (open and closed)
- Municipal Solid Waste Landfills (MSW)
- Transfer Stations
- Treatment and Processing Facilities (T&P)
- Yard Waste Notifications
- Coal Combustion Product Landfills and Structural Fills
- Compost Demonstrations
- Household Hazardous Waste Collection Sites
- Illegal Dump Sites
- Material Recovery Facilities
- Medical Waste Treatment Facilities and Incinerators
- Septage Detention and Treatment Facilities
- Septage (hauler) Firms
- Tax Certifications for Recycling/Resource Recovery
- Temporary Disaster Debris Staging Sites
- Tire Monofills
- Tire Processing / Collection Facilities
- White Goods Collection

Regulated Solid Waste Facility Inspections & Enforcement



Illegal Site Compliance



Groundwater is a valuable resource and it is the source of drinking water for approximately half its residents. Ensuring that solid waste landfills statewide do not contaminate this valuable resource is a primary responsibility of the state's Solid Waste Section. Modern municipal solid waste landfill designs include liners and leachate collection systems. However, most sanitary landfills that opened in the state prior to 1993 were not constructed with such systems.

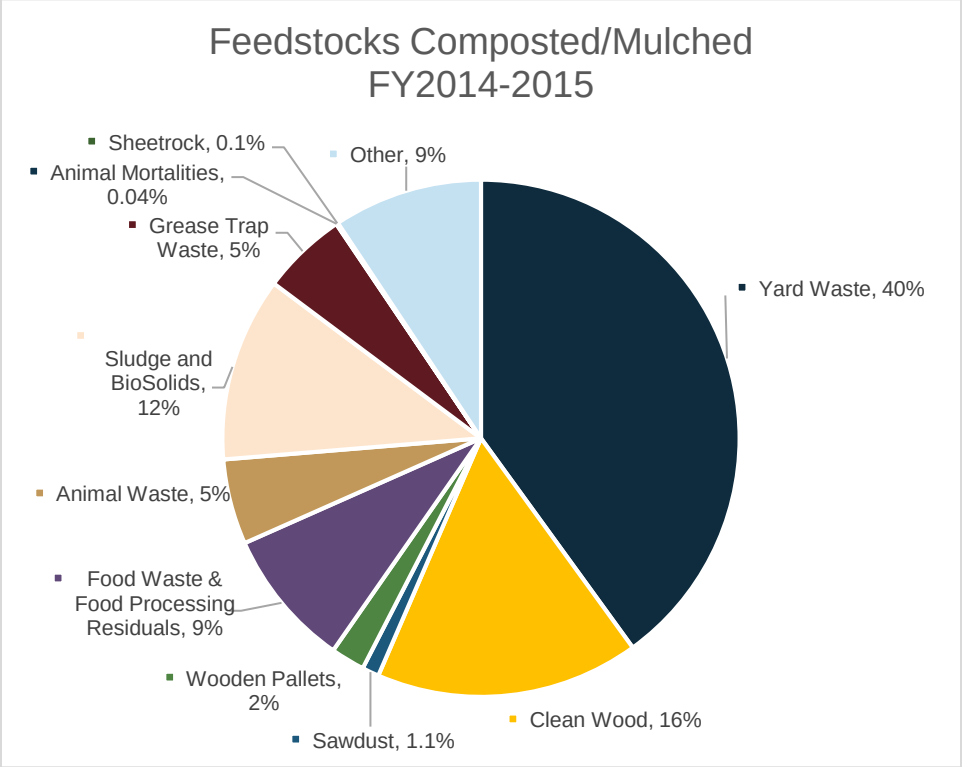
Changes in groundwater data reporting and the creation of groundwater databases have provided a better understanding of the quality of the groundwater around solid waste facilities. The Solid Waste Section continues to explore options for assessing and understanding landfill gas migration and groundwater contamination, if present, at landfill facilities statewide.

Composting

Compost Facilities in FY 2014-15 continued to divert organics from the municipal solid waste stream. Fourteen solid waste compost facilities accepted 36,428 tons of food waste in FY 2014-15. An additional 16,142 tons of food residuals, produced from industrial food processors, were accepted by solid waste compost facilities.

By weight, approximately two thirds of the materials processed are yard waste and various types of wood waste. The other one-third of feedstocks include food waste, biosolids and other wastes as depicted in the graph to the right.

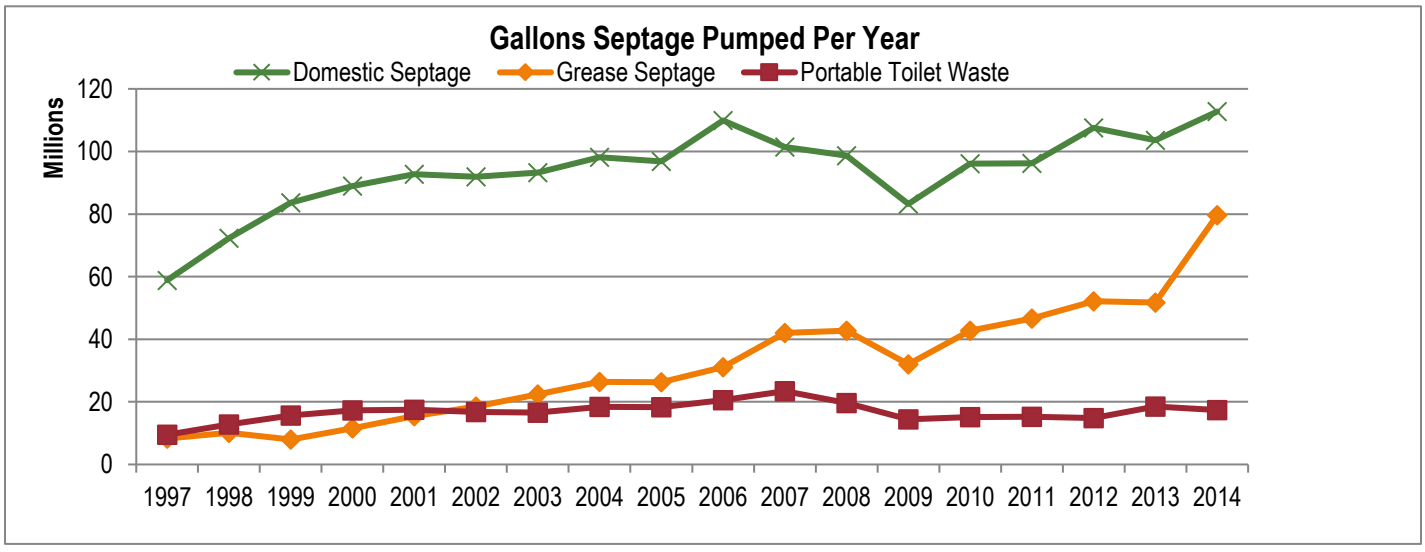
Facilities reported they processed more than 600,000 tons of feedstocks to create compost and mulch during FY 2014-15. Although food waste diversion continues to grow in importance, it only makes up 9 percent of feedstocks being reported as processed at facilities. There is significant opportunity in North Carolina for increased food waste diversion.



Land Application

Land application of septage waste is accomplished through staff permitting and compliance activities for more than 500 septage haulers, 17 storage detention and treatment (dewatering) facilities, and 128 land application sites (representing 1,564 acres). Most of the land-applied waste is septic tank, portable toilet and restaurant grease trap waste, although the program also assists waste generators with other wastes and by-products to determine if they are suitable for beneficial use through land application. Examples of beneficially reused waste includes wood ash and tobacco dust. Best management practices to be followed for each by-product to assure protection of public health and the environment are evaluated by staff and are included in the site operational plans.

The volumes of septage pumped in FY 2014-15 exceeded the previous industry high (FY 2006-07). The three septage streams (domestic septage, grease septage, and portable toilet waste) added together total 209,847,090 gallons of septage pumped for FY 2014-15. The spike in septage pumped is due to the increase of 27,950,014 gallons of grease septage in FY 2014-15. Grease septage volumes managed by permitted septage firms continue to increase, in part due to local government programs that require restaurants to have their grease traps pumped on a frequent basis.



Department of Environmental Quality - Local Government Waste Reduction Activities and Recycling Markets

Annual reports received from local governments provide data on public source reduction, reuse, recycling and composting activities statewide as well as other aspects of solid waste management. Data from these reports helps produce a picture of waste reduction, recycling, and materials management efforts in North Carolina. This data offers information that helps gauge the breadth and relative effectiveness of local government programs in diverting materials from disposal and delivering them to industry for reprocessing. Data from these annual reports also helps document the trends in recycling and reuse program implementation and the evolving nature of public materials recovery efforts in North Carolina.

Source Reduction and Reuse Programs

The total number of local governments operating source reduction and/or reuse programs was unchanged during Fiscal Year 2014-15; 108 communities provide at least one of these services. Promoting source reduction and local reuse options can be a cost effective method for helping reduce the amount of solid waste that is discarded. Source reduction and reuse programs are generally popular with residents and can often be operated with relatively small investments in education and outreach.

Local Source Reduction / Reuse Programs								
Program Type	**FY 2007-08**	**FY 2008-09**	**FY 2009-10**	**FY 2010-11**	**FY 2011-12**	**FY 2012-13**	**FY 2013-14**	**FY 2014-15**
Backyard Composting Programs	48	53	54	54	56	51	52	49
Source Reduction Programs	67	65	74	80	86	81	71	73
Public Reuse Programs	42	45	42	43	48	39	46	45
Total Local Governments with Source Reduction or Reuse Programs	97	96	105	108	113	107	108	108

Local Government Recovery

The following table documents local government materials recovery operations during the past decade. Total local government recovery decreased in FY 2014-15 when compared to the previous year. This decrease results exclusively from a downturn in yard waste recovery as seen in the "Total Organics" category in the table below. This decrease is explored in greater depth in the Yard Waste Management section of this chapter. Excluding yard waste, total local government recovery of other materials increased by 6.1 percent compared to FY 2013-14. Highlights from the table below will be examined in greater detail later in this chapter.

Local Government Recovery (Tons) and Performance Measures					
Material	**FY 2005-06**	**FY 2006-07**	**FY 2007-08**	**FY 2008-09**	**FY 2009-10**
Total Paper	292,641	305,615	321,019	342,008	343,031
Total Glass	45,421	51,883	56,837	69,446	75,124
Total Plastics	18,177	19,373	22,298	23,947	29,206
Total Metal*	108,488	96,884	84,740	69,242	61,251
Total Organics**	619,494	631,393	554,576	593,323	589,482
Special Wastes***	6,955	8,304	7,195	8,433	7,225
Electronics and Televisions***	N/A	N/A	N/A	N/A	4,574
Construction and Demolition Debris	24,001	40,352	59,501	33,209	20,832[t]
Tires****	146,177	187,273	142,160	147,055	119,177
Other	7,743	5,558	6,753	8,474	1,948
Totals	**1,269,097**	**1,346,635**	**1,255,079**	**1,295,137**	**1,251,848[t]**
Per Capita Recovery (lbs.)	**292.35**	**303.97**	**276.77**	**280.73**	**266.84[t]**
Recovery Ratio (Recycling:Disposal)	**0.11**	**0.11**	**0.11**	**0.13**	**0.13[t]**

Local Government Recovery (Tons) and Performance Measures *(continued)*					
Material	**FY 2010-11**	**FY 2011-12**	**FY 2012-13**	**FY 2013-14**	**FY 2014-15**
Total Paper	347,622	344,758	321,819	318,183	336,899
Total Glass	86,163	96,819	117,237	115,997	121,371
Total Plastics	36,047	36,670	39,322	44,407	45,374
Total Metal*	57,681	51,545	51,662	49,525	51,736
Total Organics**	635,495	706,560	604,889	842,282	757,778
Special Wastes***	7,085	6,961	6,496	6,870	7,053
Electronics and Televisions***	7,452	14,688	14,160	14,786	15,076
Construction and Demolition Debris	26,303[t]	93,858[t]	71,225	86,311	88,714
Tires****	97,323	121,552	120,013	136,943	151,069
Other	1,098	1,616	1,725	1,061	951
Totals	**1,302,27[t]**	**1,475,028[t]**	**1,348,548**	**1,616,334**	**1,576,021**
Per Capita Recovery (lbs.)	**271.70[t]**	**305.10[t]**	**276.19**	**327.79**	**316.67**
Recovery Ratio (Recycling:Disposal)	**0.14**	**0.16**	**0.15**	**0.18**	**0.16**

* Includes white goods, aluminum cans, steel cans and other metals.

** Includes yard waste, pallets, wood waste and food waste.

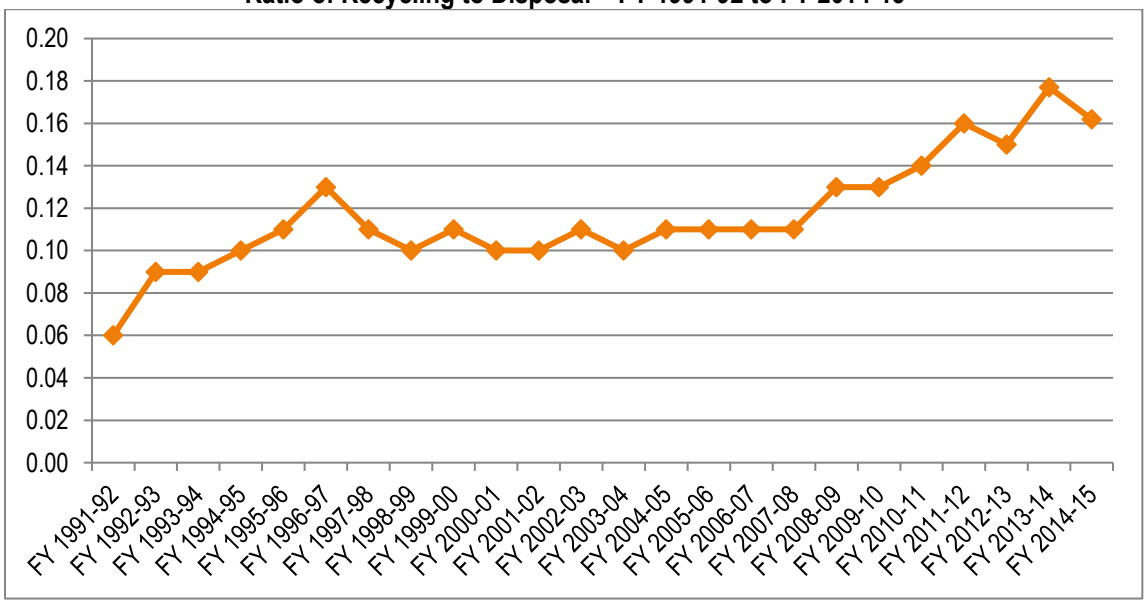
*** For FY 2000-01 through FY 2008-09 Special Wastes includes electronics, used oil, oil filters, antifreeze, paint and batteries. Beginning in FY 2009-10 and beyond, Special Wastes excludes electronics and includes recovery from the programs described in the Special Waste Management section in this chapter.

**** For FY 2010-11 and beyond, the tons of tires recovered includes only tires managed by N.C. local governments. In FY2009-10, this figure inadvertently included some tires from out-of-state sources and in fiscal years prior to FY 2009-10 the Tires figure reported included all tires recovered at the private tire facilities in North Carolina, including those tires received at those facilities from sources outside of North Carolina.

[t] Construction and Demolition Debris Tonnages, Total Recovery, and Per Capita Recovery for FY 2009-10, 2010-11, and 2011-12 were all revised in 2013 as a result of decreased Construction and Demolition Debris Recovery due to reporting errors. This change also resulted in a revised Recycling:Disposal Recovery Ratio for FY 2009-10.

The ratio of local government recycling to overall state disposal is used to examine the success of materials recovery from year to year relative to landfilling. For FY 2014-15 the ratio of recycling to disposal decreased when compared to FY 2013-14. Two key factors combined to create this result include the first substantial increase in overall disposal since FY 2006-07 and the aforementioned decrease in the recovery of yard waste as reflected above in the "Total Organics" row. The following chart demonstrates the changing ratio of materials recovery when compared to disposal in North Carolina and highlights the increased relevance of materials recovery through the past decades.

Ratio of Recycling to Disposal – FY 1991-92 to FY 2014-15

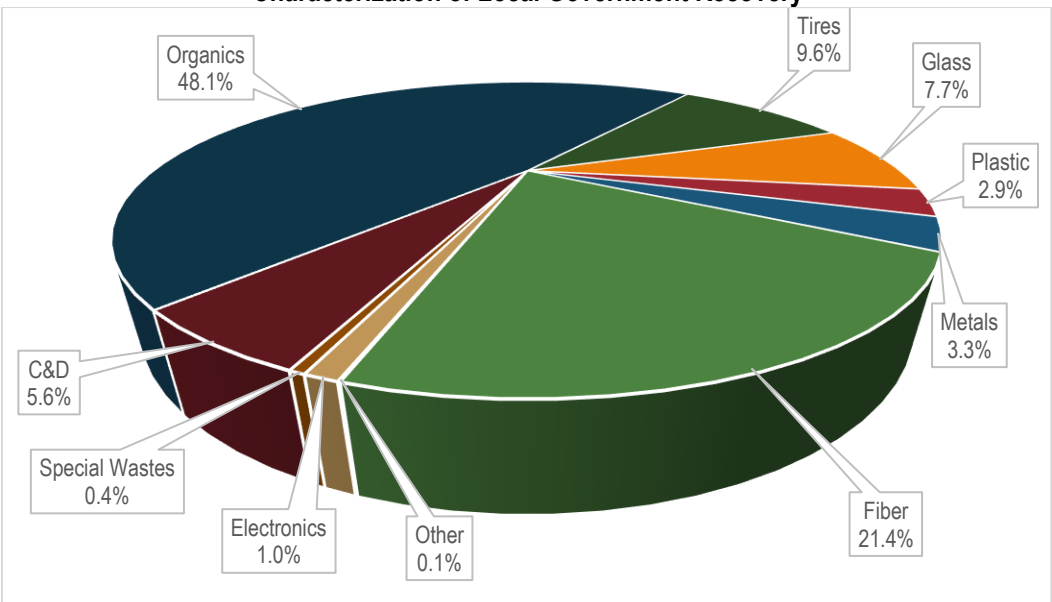


Recovery of Particular Materials

Significant demand exists in North Carolina and beyond for recovered materials as feedstock for a wide variety of industries. Public recycling programs play an increasingly important role in providing materials to the supply chain for private manufacturing.

The following chart provides a material-specific look at local government recovery operations in FY 2014-15.

Characterization of Local Government Recovery



Organics continue to represent the single largest category of materials recovered by local governments. In general, the recovery of organics is accomplished through mulching and composting programs, though organics recovery also includes efforts to manage materials such as clean wood (unpainted and untreated dimensional lumber), pallets, food waste, and oyster shells. Annual generation of organic materials can be erratic because the largest component of the organics stream, vegetative debris (or yard yaste), can vary widely from one year to the next as a result of weather conditions and storm events. During FY 2014-15 the recovery of organics constituted just over 48 percent of total local government recovery. Fiber and tires were the next two largest categories of materials recovered, contributing 21.4 percent and 9.6 percent respectively. Electronics and televisions are measured separately from other special wastes and combined represent 1 percent of total recovery.

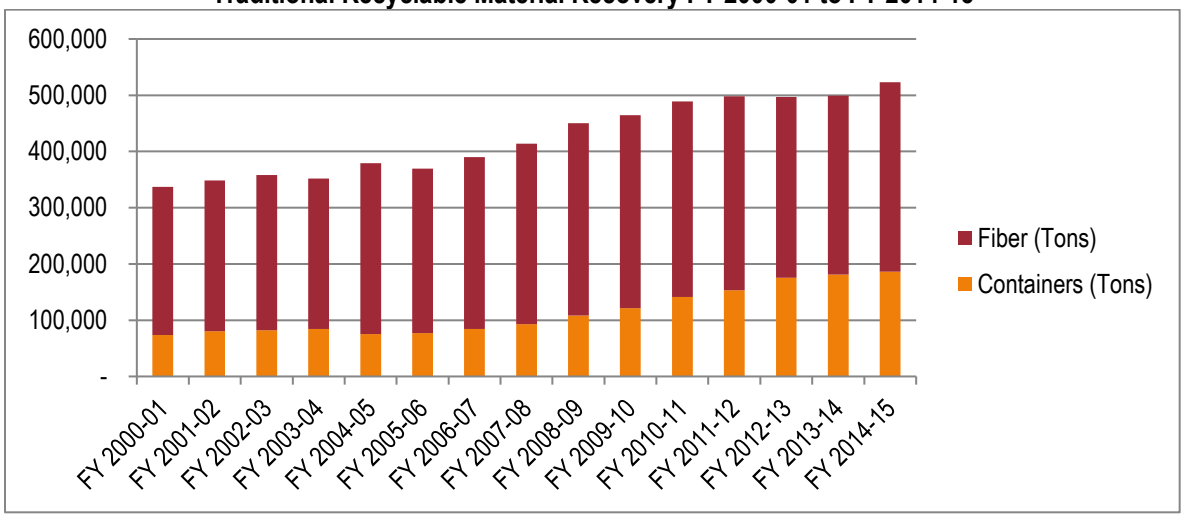
Recovery of Traditional Materials

Traditional recyclable materials include fiber or paper (corrugated cardboard, magazines, newspapers, office fiber and residential mixed paper) and containers (aluminum beverage cans, glass bottles and jars, plastic bottles and containers and steel food containers).

An examination of the recovery of traditional materials in FY 2014-15 reflects the continued growth of public recycling program effectiveness in the state, with an overall increase of 4.8 percent when compared to FY 2013-14. The amount of recovered containers increased by 2.8 percent when compared to the previous year, and total fiber (or paper) recovery increased for the first time since FY 2010-11, up by 5.9 percent or slightly more than 18,700 tons when compared to the previous year. The increase in paper recovery results in part from the inclusion of just over 8,000 tons of corrugated cardboard recovered as a result of local policies that “induce” or encourage recycling activities. For more information about this please see the section of this chapter on the types of public recycling efforts. Despite the growth in paper recovery shown in FY 2014-15, overall public recovery of fiber is down from the highpoint seen in FY 2010-11 when paper represented 71.1 percent of total public recovery of traditional materials. Paper still represented nearly two-thirds (64.4 percent) of the traditional materials recovered by local governments in FY 2014-15.

The following chart documents the trend in the recovery of traditional materials over the past 15 years and illustrates the growing importance of container recovery.

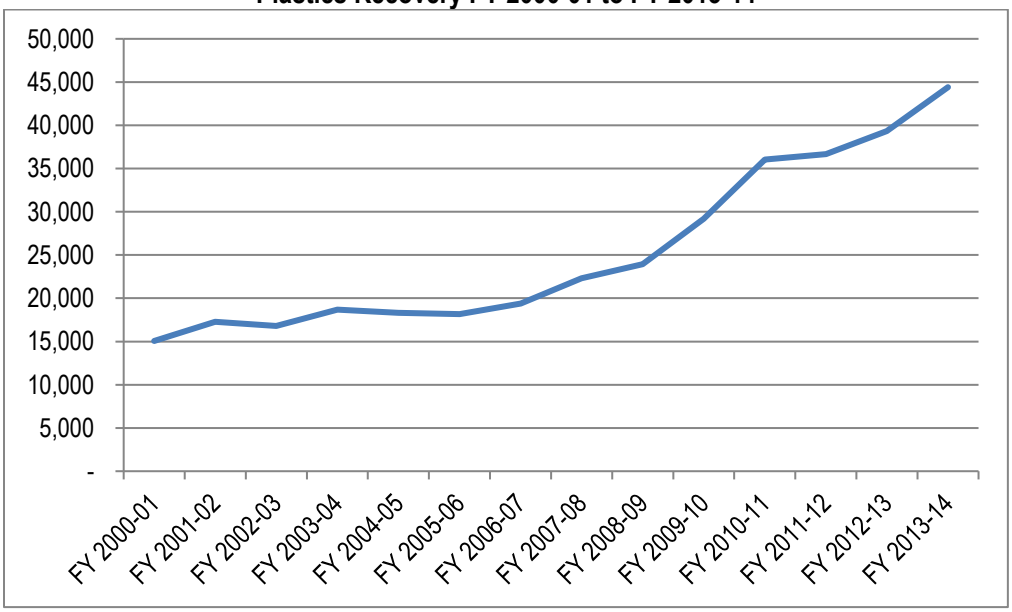
Traditional Recyclable Material Recovery FY 2000-01 to FY 2014-15



Plastic Recycling In North Carolina

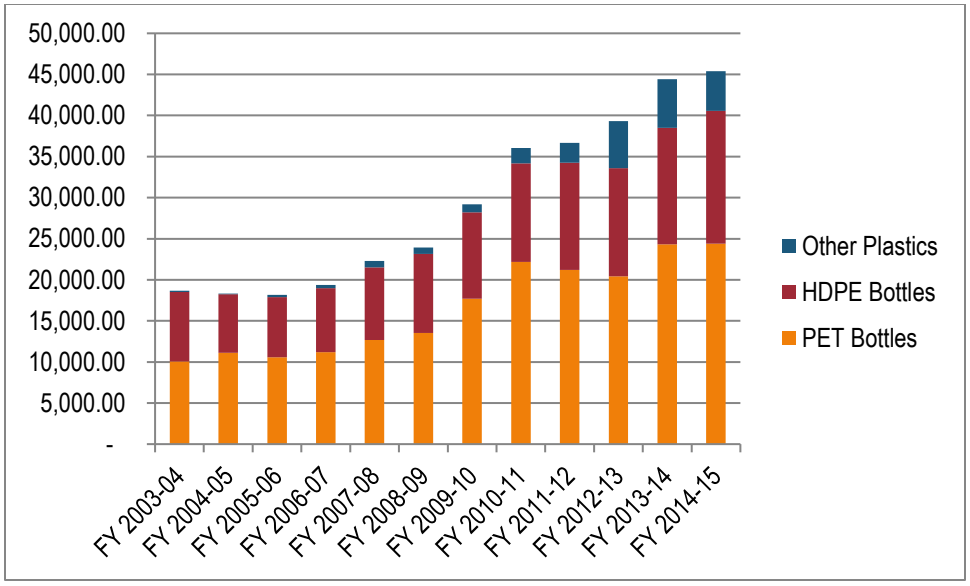
North Carolina's disposal ban on plastic bottles became effective on Oct. 1, 2009. Plastic bottle recovery has experienced significant growth since the disposal ban took effect, and the ban remains an important tool for driving plastic bottle recovery activities. The N.C. Department of Environmental Quality continues its efforts to help local governments increase the effectiveness of public efforts to recover plastics, especially as North Carolina-based industries continue to seek high quality recovered plastic resin as feedstock. The following chart illustrates the increased public recovery of plastic during the past 15 fiscal years.

Plastics Recovery FY 2000-01 to FY 2013-14



Plastic bottles made of polyethylene terephthalate (PET) and high-density polyethylene (HDPE) resins represented just under 90 percent of the public plastics recovery in FY 2014-15. The recovery of bulky rigid plastics and non-bottle plastic containers such as cups, tubs and "clam-shell" style plastic containers (e.g. berry containers), plus the recovery other plastic resins like Polypropylene (PP) represent an increasingly important proportion of the plastics recycling stream in North Carolina. The following chart provides an examination of the recovery of the different plastic resins over the last 12 fiscal years.

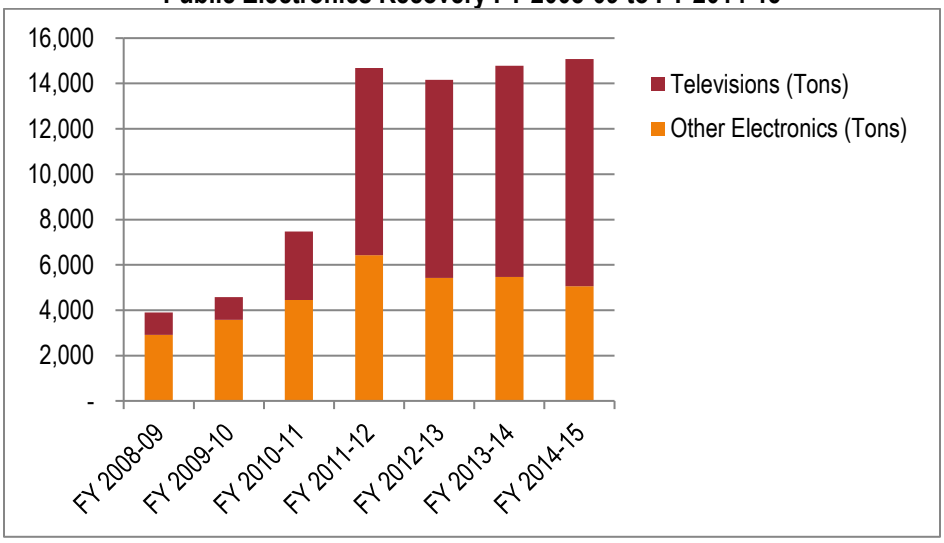
Plastics Recovery by Resin Type FY 2003-04 to FY 2014-15



Public Electronics Recycling

During FY 2014-15 there were 109 independent local government electronics recycling programs operating across the state. This reflects a decrease in the overall number of programs when compared to the 119 programs that operated in FY 2013-14. Local governments provide electronics recycling service in order to deal with the state disposal ban on computer equipment and televisions that went into effect on July 1, 2011. Data on public electronics recycling efforts measures the collection of television and of "other electronics" including computers, printers, scanners, and other devices that connect to computers, along with computer monitors, cell phones, stereos, video players, and other low grade electronic devices. The combined total amount of electronics and televisions recovered by local governments during FY 2014-15 increased slightly when compared to FY 2013-14, up by 2 percent to 15,076 tons. Televisions have continued to constitute a proportionally larger amount of the total electronics collected and managed by public programs since data on television recycling started to be collected in FY 2008-09. In FY 2008-09 televisions constituted 25.4 percent of materials collected while in FY 2014-15 televisions constituted 66.5 percent of materials collected. The following table examines public electronics recycling efforts since FY 2008-09 and shows the relative amounts of televisions and other electronics recovered each year.

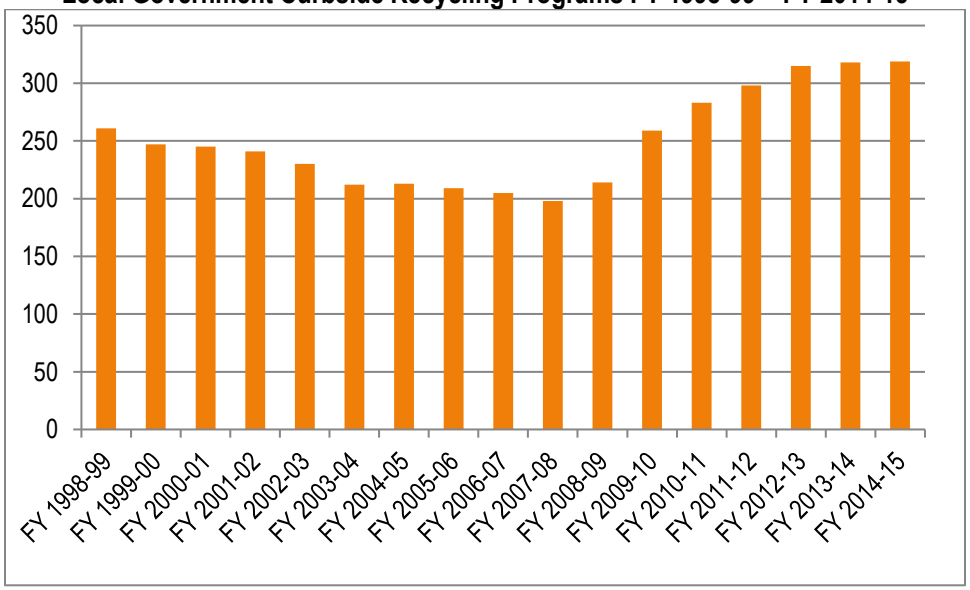
Public Electronics Recovery FY 2008-09 to FY 2014-15



Public Curbside Recycling Programs in North Carolina

The number of publicly-operated curbside recycling programs in North Carolina continued its upward trend during FY 2014-15, climbing to a new high of 319 total programs. While the rate of growth of new curbside recycling programs has declined over the past several years, curbside recycling continues to be the most popular way for people to access public recycling services in North Carolina.

Local Government Curbside Recycling Programs FY 1998-99 – FY 2014-15



The number of North Carolina households served by curbside recycling grew again in FY 2014-15 to more than 1.918 million, up from 1.885 million during FY 2013-14. The continued growth in the number of households served by curbside recycling has been a sustained trend, even during years when the state experienced a decrease in the total number of curbside recycling programs operated by local governments. Excluding yard waste, just under half of all public recycling tonnage, or 47.1 percent, was collected by curbside recycling programs in FY 2014-15.

Types of Public Recycling Efforts

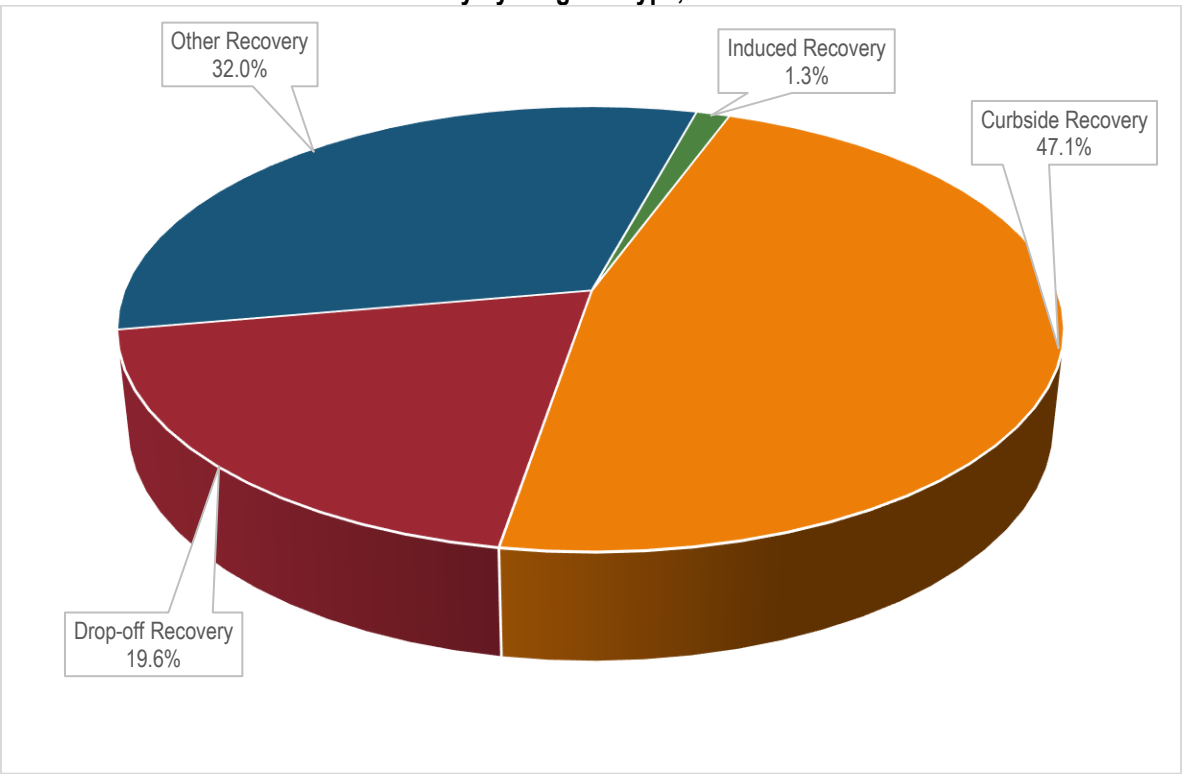
Public recycling programs use a variety of strategies to recover materials including curbside recycling for single family households, drop-off recycling programs, and other recycling programs that collect materials from schools, businesses and multifamily properties. Public recycling programs also offer services that manage special wastes, diverting potentially toxic materials from disposal. Finally, public recycling programs can offer services that target specific waste streams such as construction and demolition debris or food waste.

As indicated earlier, more North Carolinians have access to curbside recycling than ever before. Curbside recycling programs collected 331,457 tons during FY 2014-15, which is more than twice as much material as collected by drop-off recycling programs (137,681 tons). That being said, drop-off recycling programs remain a critical component of waste reduction system in the state, especially when it comes to providing recycling services to rural areas and for the collection of special wastes.

In FY 2014-15, information was again gathered on the use of public recycling strategies that encourage and/or facilitate recycling without necessitating that local governments directly or contractually operate collection efforts. Examples of these strategies include local disposal bans on materials like corrugated cardboard, mandatory recycling ordinances, or licensed hauler systems where service providers are required to offer recycling collection as a condition of doing business in a jurisdiction. These types of strategies induce or encourage the growth of private sector recovery activities and infrastructure. In FY 2014-15, 9,439 tons of recyclables were recovered through these types of strategies. This local government “induced” recycling equated to 1.3 percent of the materials recovered last year (excluding yard waste).

The following chart illustrates relative contributions of the various types of public recovery operations during FY 2014-15 as determined by the proportion of overall tonnage collected through each sector. Yard waste and tires are not included in this dataset, and “other” recycling programs include services such as multifamily, commercial, school and construction, and demolition recycling efforts.

Recovery by Program Type, FY 2014-15



Special Waste Management

Many local governments in North Carolina provide their residents opportunities to recycle a broad range of "special wastes" that include items such as used oil, fluorescent lamps, and household hazardous wastes (HHW). The programs that communities offer for these commodities help divert some of the most toxic and potentially polluting elements of the solid waste stream from disposal. In many cases, the recovery of these materials, such as various automotive products and used cooking oil, also help sustain and grow important and emerging elements of the North Carolina recycling economy.

The table below displays the last five years of local government collection of special wastes. In general, it paints a picture of stability in the number of programs offered and the amount of material recovered in those programs. Long-collected materials such as used oil are showing some decline likely due to fewer people engaging in "do-it-yourself" auto maintenance but also possibly because of longer intervals between oil changes needed in modern cars. The table also shows how the ramping up of collection efforts for relatively newer recyclable materials, such as cooking oil and fluorescent lamps, are now sustaining at steady levels of diversion. Still, as indicated in the relatively small number of programs across all materials, there is ample room to grow adoption of special waste collection among North Carolina local governments and to increase the overall capture of these commodities from disposal.
For this year's data, the uptick in dry cell battery numbers in part reflects a separation of collected batteries in the data provided by Greensboro, Forsyth County, and Mecklenburg County from their household hazardous waste tonnage. This more specific level of reporting allows for better accounting of dry cell collection, which should in turn help North Carolina improve its coordination with Call-to-Recycle, a national industry group working to expand dry cell battery diversion in the United States.

Also noteworthy in this year's report is that the number of permanent household hazardous waste programs has been reduced from previous years to be more in line with the official permit status of programs. The 17 programs reported in the table includes one joint effort between Guilford County and Greensboro, counted as one permanent program for the purpose of the table but supported by both jurisdictions.

Local Government Special Waste Management, FY 2010-11 to FY 2014-15

	FY 2010-11	FY 2011-12	FY 2012-13	FY 2013-14	FY 2014-15
Used Motor Oil					
Number of programs	129	129	127	128	129
Gallons collected	858,389	860,785	762,066	729,623	704,669
Oil Filters					
Number of programs	106	105	104	104	108
Tons collected	167.89	184.41	166.97	160.2	155.73
Antifreeze					
Number of programs	72	74	71	79	79
Gallons collected	39,089	35,159	22,916	25,400	24,005
Lead Acid Batteries					
Number of programs	96	93	91	93	91
Tons collected	500.87	362.69	316.23	350.94	371.09
Dry Cell Batteries					
Number of programs	36	37	34	38	43
Tons collected	41.30	45.37	33.91	27.51	73.95
Paint					
Number of exchange programs	17	21	13	17	15
Number of other collection programs	13	13	9	11	13
Total tons collected	143.27	117.94	111.74	160.21	182.14
Pesticide Containers					
Number of programs	60	66	64	60	59
Tons collected	105.49	118.32	143.45	128.03	170.6
Pesticides					
Number of programs	16	16	16	14	17
Tons collected	7.48	14.03	14.12	11.77	17.31
Lights Containing Mercury					
Number of programs	33	48	58	62	62
Tons collected	28.81	37.93	53.01	92.88	80.76
Propane Tanks					
Number of programs	NA	37	46	41	43
Tons collected	NA	47.22	61.33	63.47	63.23
Other Special Wastes					
Number of programs	6	8	7	9	9
Tons collected	7.14	1.71	.66	3.17	1.98
Used Cooking Oil					
Number of programs	NA	55	61	74	75
Tons collected	NA	142.15	133.05	213.28	197.35
Household Haz. Waste					
Number of communities offering programs	53	57	59	67	65
Number of permanent sites	20	20	20	20	17
HHW tons collected	3,116.44	2,905.63	3,239	3,241.07	3,443.51

Conversions: Oil, 1 gal = 7.4 lbs; Antifreeze, 1 gal = 8.42 lbs; Lead Acid Battery, 1 battery = 35.9 lbs; Paint, 1 gal = 11.5lbs;propane tank = 18 lbs; 1 gallon of used cooking oil = 7.5 lbs

Yard Waste Management

After adjustments in the accounting of yard waste data in last year's report, the FY 2014-15 figures now can be compared against a benchmark that includes yard waste going to a full range of destinations, including delivery to end-users (e.g., farmers), local government compost and mulch facilities, private mulch and compost facilities, and energy markets such as wood-fueled boilers. Altogether, diversion of yard waste to this range of outlets was down by about 90,000 tons from FY 2013-14. The drop is almost exclusively the result of previous year tonnages being inflated by a severe ice storm and coastal storms. Overall, the combined diversion of yard waste by local government programs in FY 2014-15 was 713,834 tons, an 11 percent decrease from FY 2013-14. The amount of yard waste diverted from disposal since the implementation of state's yard waste disposal ban in January 1993 is now at a cumulative 11.5 million tons of material, equivalent to 18.5 million cubic yards of landfill space.

The table below shows the total yard waste managed by local governments in North Carolina, including a portion that is disposed in land clearing and inert debris (LCID) landfills, which is allowed under the disposal ban. However, as in past years, not all of this material may actually be disposed. It is likely that at least some of it is converted by LCID operators to mulch, compost or biomass fuels, thus probably undercounting actual total diversion.

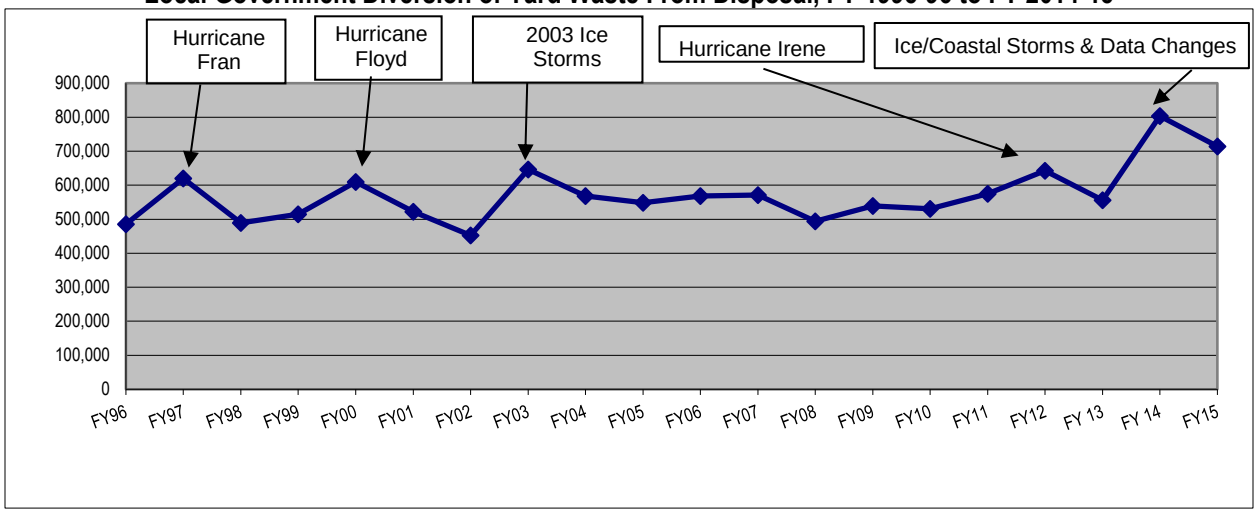
Local Government Yard Waste Management FY 2013-14 and FY 2014-15

Destination of Materials	FY 2013-14 Tons Managed	FY 2014-15 Tons Managed
End Users (direct delivery)	25,503	26,981
Local Mulch/Compost Facility	470,553	432,370
Local Government Yard Waste Diverted by Private Mulch and Compost Facilities.	103,883	109,876
Wood/Yard Waste Fuel Markets	203,597	144,607
TOTAL DISPOSAL DIVERSION*	**803,536**	**713,834**
Other Public Facility**	*164,919*	*156,668*
Local Government Yard Waste Taken to Private Facilities Where Material End-use is Unknown or is Disposed.	15,917	2,184
LCID Landfill	161,018	140,276
YARD WASTE TOTALS	**980,471**	**856,294**

* Tonnages under the row for "Total Disposal Diversion" are not included in diversion because of data redundancy, uncertainty about actual disposition of the waste, and actual disposal of noted tonnages.

** Yard Waste Totals exclude tons for "other public facilities" - it is assumed these tons were captured under other categories, particularly "Local/Compost Facility."

Local Government Diversion of Yard Waste From Disposal, FY 1995-96 to FY 2014-15



Recycling Markets and Prices

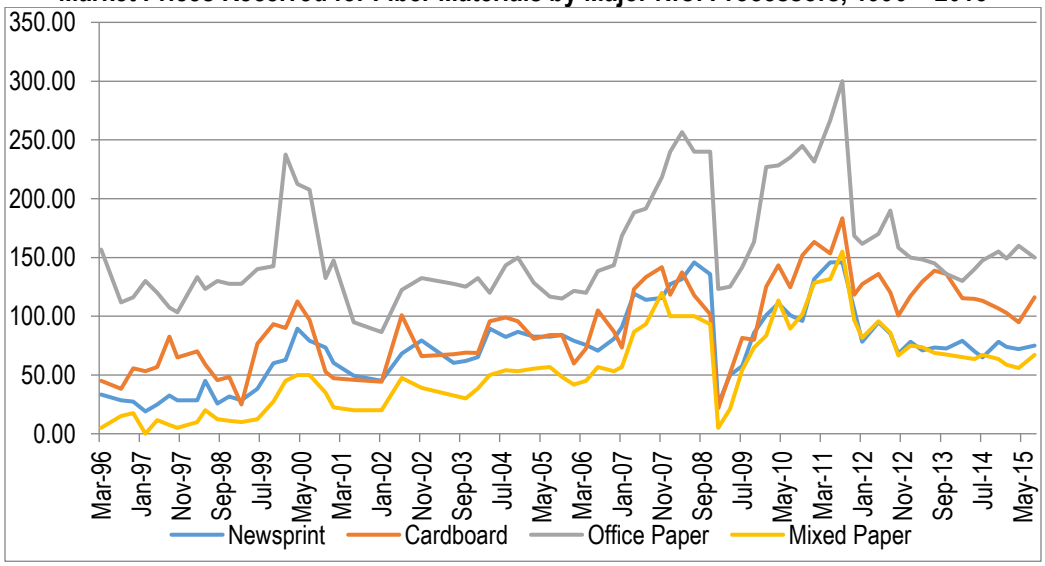
Recycling commodity prices were depressed throughout the course of FY 2014-15, reflecting a range of factors that combined to create a generally weak market picture. Material demand from China, a pillar of healthy pricing over the last decade or so, remained flat due to fundamental shifts in the Chinese economy and a growth rate that has fallen off record highs. At the same time, low petroleum and natural gas prices also persisted through the year, helping drive down the value of virgin plastics and recycled resins. A strong dollar made U.S. scrap metal exports more expensive while making finished metal imports cheaper, putting pressure on domestic scrap consumption. And glass continued to be a difficult material to process for value, further dragging down general pricing.

The combination of all these factors hurt the profitability of recyclers. Feeble metal prices affected scrap dealers, electronics recyclers, and construction and demolition waste processors. Plastic reclaimers navigated a tight margin between virgin and recycled prices with no relief in sight. Material recovery facilities (MRFs) struggled to stay in the black as the weighted average value of a ton of single stream material fell down to, and in some cases below, the operating costs of their facilities. This condition forced many MRFs to reconfigure their contract relationships with local government recycling programs, reducing or eliminating revenue sharing where feasible. It also helped focus attention on material quality issues and on increasing the efficiency of MRF operations.

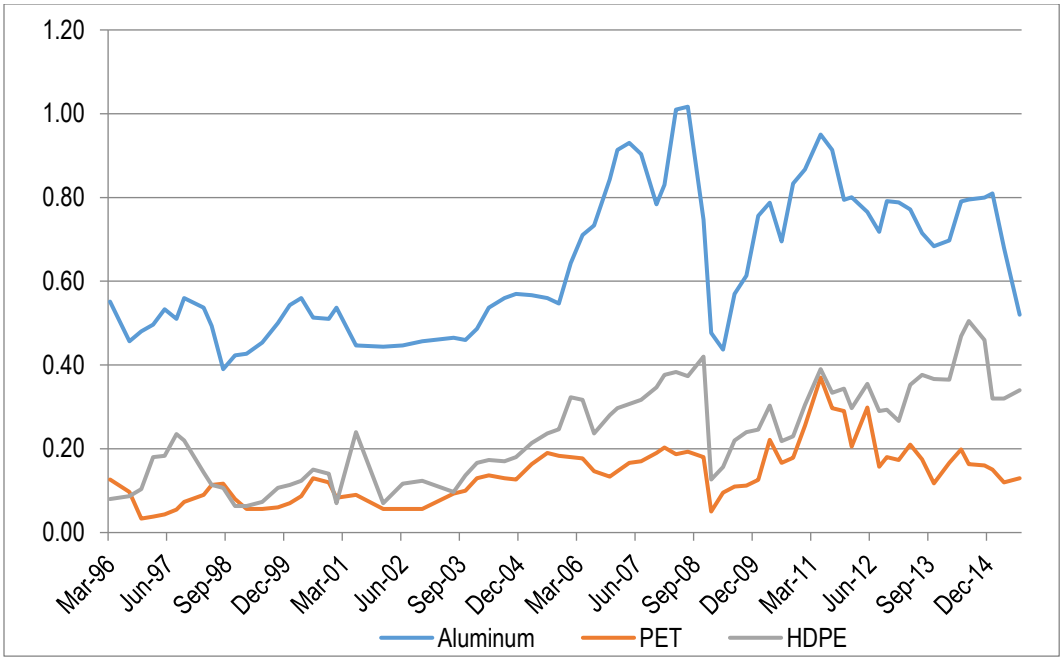
The table below shows the general decline of material pricing throughout FY 2014-15, with the only bright spot being a slight uptick in the paper grades toward the end of the year. The charts following the table provide a historical view of container and paper prices, showing declines in value for many recyclable materials since 2011. Still, the FY 2014-15 price picture is certainly not the lowest point in the 19 years represented in the graphs. Prices are essentially back to where they were in the early 2000s before the volatility of the Great Recession, the ensuing market rebound and recent price adjustments.

Recycling Market Prices Received by Major N.C. Processors, FY 2014-15					
Material	**Summer 2014**	**Fall 2014**	**Winter 2014-15**	**Spring 2015**	**Summer 2015**
Aluminum Cans, lbs., loose	$.80	$.80	$.81	$.68	$.52
Steel Cans, gross tons, baled	$160	$143	$127	$55	$63
PET, lbs. baled	$.16	$.16	$.15	$.12	$.13
HDPE Natural, lbs., baled	$.51	$.46	$.32	$.32	$.34
Newsprint, ton, baled	$65	$78	$74	$72	$75
Corrugated, ton, baled	$113	$107	$103	$95	$116
Office paper, ton, baled	$148	$155	$149	$160	$150
Mixed paper, ton, baled	$67	$64	$59	$56	$67
Mixed glass, ton	-$6	-$7	-$10	0	-$7

Market Prices Received for Fiber Materials by Major N.C. Processors, 1996 – 2015



Prices Paid to N.C. MRFs for Select Container Materials, 1996 – 2015



Recycling Market Developments in FY 2014-15

Despite lagging material values, North Carolina continued to see expanded private sector investment in recycling infrastructure in FY 2014-15. Sonoco Recycling announced it would develop a new MRF in Wilmington in coordination with New Hanover County, essentially filling in the last missing piece of the MRF map in North Carolina. Although Sonoco had to cease operations of its residential line at its Charlotte MRF due to processing overcapacity in the region, the company implemented two "hub and spoke" transfer operations in Rowan and Gaston counties to improve the efficiency of material transport.

Plastics recycling received a boost with a $10 million expansion of Unifi's REPREVE fiber plant in Yadkinville, increasing the plant's capacity by 60 million pounds and adding 28 new jobs. Plastics Revolutions added a new mixed rigids processing line and Verity Recycling saw a steady growth in the collection of agricultural plastics. In a sign of further internal integration of the state's recycling economy, New River Tire in Pilot Mountain became an important supplier of recycled rubber to Roll-Tech's facility in Hickory, which in turn makes composite wheels for garbage and recycling carts (many of which are manufactured in North Carolina).

Other additions to the state's recycling markets infrastructure included the opening of a large-scale composting facility by Wallace Farms in Davie County and the start-up of construction on BlueSphere's anaerobic digestion facility in Charlotte. New commitments to divert food waste from disposal by Food Lion, Harris Teeter, and other supermarket chains helped boost the need for collection services by companies such as Organix and SMART Recycling. On the electronics recycling front, Powerhouse expanded into a larger facility in Salisbury, and All Green brought its headquarters and main operations to Charlotte.

Construction waste recycling infrastructure experienced some growth in the start-up of operations at Green Recycling Solutions in Maysville. Data from private C&D recycling facilities showed a slight decrease of 10.6 percent in recovered tonnage from 225,329 tons in FY 2013-14 to 201,450 tons in FY 2014-15. The recycling of one kind of construction material, tear-off asphalt shingles, maintained a steady rate of diversion, with the N.C. Department of Transportation reporting 171,547 tons of shingles used in road building in FY 2014-15 (see NC DOT chapter of this report).

North Carolina supports the expansion of the private recycling infrastructure through a dedicated annual recycling business grant cycle aimed at helping finance capital investments. In FY 2014-15, Recycling Business Development Grants provided funding for improvements in food waste collection services in Durham and Asheville and for compost facility upgrades in Zebulon, Mocksville and New Hill. MRF operations were enhanced in Conover, Jacksonville and Wagram using RBDG funds, and construction waste processing expansions were supported in Nebo, Gatesville, Reidsville and Maysville. Additional materials that benefited from grant-funded projects included shingles, plastics, tires, and drywall. In general, Recycling Business Development Grant awards reflect the wide diversity of private recycling infrastructure in North Carolina, funding a wide spectrum of projects representing various materials, processes and areas of the state.

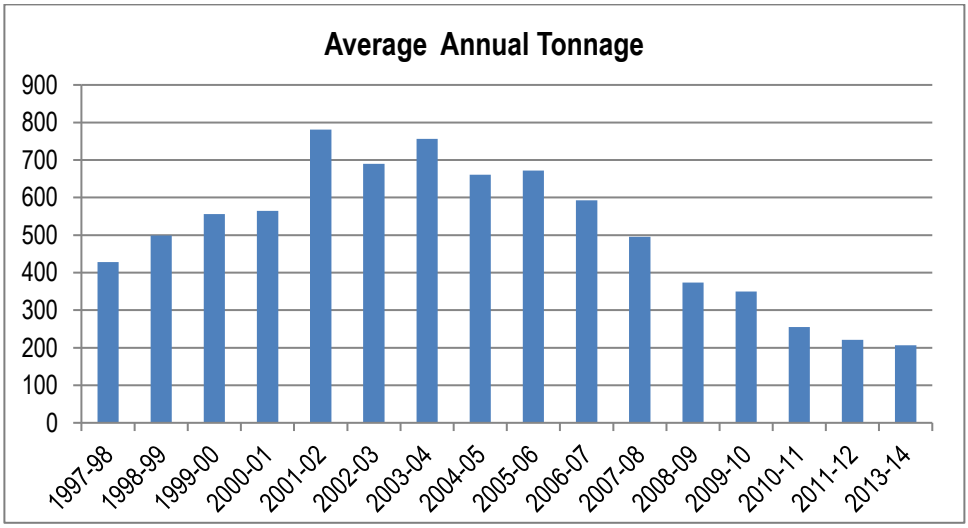
Department of Environmental Quality - White Goods Management

"White goods" are defined in G.S. 130A-290 as, "refrigerators, ranges, water heaters, freezers, unit air conditioners, washing machines, dishwashers, clothes dryers and other similar domestic and commercial large appliances." In 1993, the North Carolina General Assembly passed a white goods management law because white goods were difficult to dispose of and contained greenhouse gasses, particularly chlorofluorocarbon refrigerants [CFCs]. To fund this statute, the General Assembly imposed a $3 tax on new white goods purchases.

Counties were mandated to manage white goods by providing at least one disposal site, at no cost to residents, and to arrange for the removal of CFCs. Most of the white goods tax revenue, is distributed to county governments for use in running their programs.

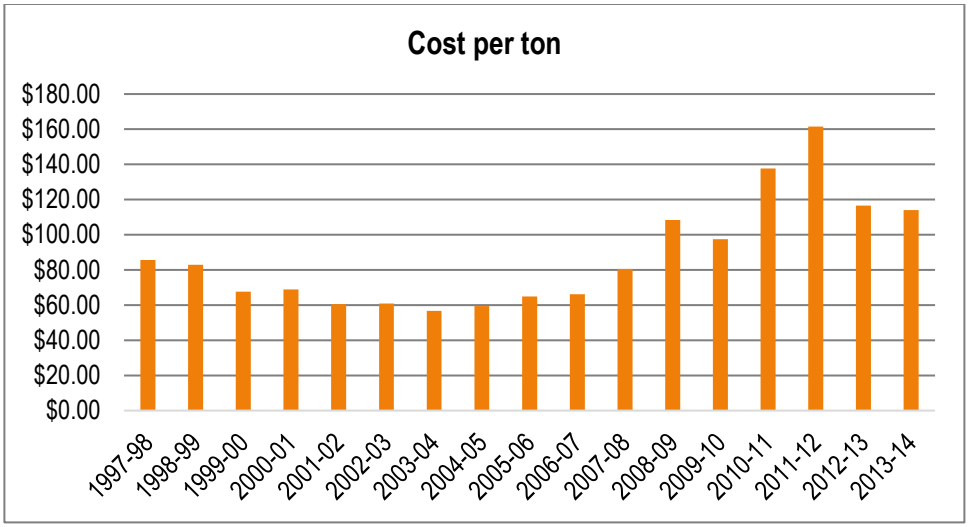
Counties that forfeited their White Goods Distributions:				
County governments with unspent funding exceeding 25 percent of what they received over the past year became ineligible to receive funding, creating forfeited funds which went into the General Fund. The counties that forfeited funds were taken from the 2013-14 Annual Fiscal Information Report (AFIR), which counties submit to the Local Government Commission (LGC) on or before Nov. 1 of each year.	Anson	Ashe	Avery	Burke
	Cherokee	Clay	Dare	Edgecombe
	Forsyth	Greene	Halifax	Harnett
	Henderson	Hoke	Jones	Lincoln
	Macon	Martin	Mecklenburg	Northampton
	Polk	Tyrrell	Wilson	Yancey

White Goods Program Data



Tonnage of Scrap Metal and Appliances

Average tonnage collected by counties has decreased through the decade, as the value of scrap metal rose.



Average costs per ton by counties to manage white goods

As daily operational costs have remained fairly steady and tonnages of scrap metal collected by counties has fallen, the cost to manage a ton of white goods and scrap metal has increased since the last decade. The data for these graphs was derived from the 2013-14 Annual Financial Information Reports.

White Goods Disposal Account

County governments can apply for grants for white good program cost overruns, white goods clean ups, and capital improvement grants. There was no need for cleanup grants this fiscal year because the high value of the metals resulted in small local businesses removing all abandoned appliances.

White Goods Tax Collection/Distributions	
Net Tax Collections by the Department of Revenue	$ 4,631,852.61
Department of Revenue Cost of Collecting	$ 272,244.26
To General Fund (includes $1,220,690.35 plus forfeited from ineligible counties $750,897.86)	$ 1,971,588.21
Distributions to Counties (72% of Revenue)	$ 2,663,161.47

White Goods Disposal Account		
Balance of Funds as of July 1, 2014		$2,084,544.84
Debits		
Cost Overrun Grants to County Programs	[$180,741.35]	
Site Cleanup Grants	$0	
Capital Improvement Grants	[$197,536.00]	
Total Debits		**[$378,277.34]**
Credits		
Distributions to White Goods Disposal Acct	$0	
Forfeited tax revenue to General Fund	$0	
Total Credits		**$0**
Ending Balance June 30, 2015		**$1,706,267.50**

Grant Requests & Awards from the White Goods Disposal Account

Cost Overruns for 1st Grant Period FY 2014 - 15			
County	**Tax Proceeds Reported**	**Requested Amount**	**Award Amount October 2014**
Alexander	$2,583.10	$16,602.32	$15,772.20
Chatham	$9,482.95	$2,595.83	$2,595.83
Mitchell	$2,191.74	$10,894.42	$10,894.42
Orange	$19,691.01	$16,021.31	$15,220.24
Scotland	$5,179.63	$3,163.87	$3,163.87
Stanly	$8,631.42	$23,374.74	$22,206.00
Stokes	$6,694.06	$7,004.76	$6,654.52
		Total	**$76,507.08**

Cost Overruns for 2nd Grant Period FY 2014 - 15			
County	**Tax Proceeds Reported**	**Requested Amount**	**Award Amount May 2014**
Alexander	$6,505.26	$7,543.25	$7,166.09
Beaufort	$8,326.79	$5,666.21	$5,382.90
Columbus	$10,069.68	$21,986.35	$20,887.03
McDowell	$7,869.46	$10,511.08	$10,511.08
Mitchell	$2,678.84	$10,138.36	$10,138.36
Orange	$24,193.13	$16,010.87	$15,210.33
Rockingham	$15,726.97	$5,358.69	$5,358.69
Rutherford	$4,645.54	$11,809.95	$4,645.54
Scotland	$6,312.27	$2,248.79	$2,248.79
Stanly	$10,543.88	$16,402.19	$15,582.08
Warren	$6,532.40	$917.30	$917.30
Washington	$4,076.03	$6,186.07	$6,186.07
		Total	**$104,234.26**
		FY TOTAL	**$180,741.34**

Capital Improvement Grants FY 2014 -15		
County	**Purpose**	**Amount**
Onslow	Ten - 40 yard steel containers	$48,556.00
Perquimans-Chowan-Gates	Excavator	$15,199.00
Swain	Fencing	$48,425.00
Vance	Concrete loading pad	$85,356.00
	Total	**$197,536.00**

Recent Changes and Future Direction

Legislative changes to the white goods program were made according to Session Law 2013-360. The N.C. Department of Revenue sent the portion of the white goods tax distributed after Aug. 1, 2013, which previously went to the White Goods Management Account and all forfeited funds, to the General Fund. All distributions to county governments continue to be made quarterly. The white goods program will continue to function as it has in the past, awarding grants as needed for cost overruns, capital improvements, and cleanups until funding is exhausted or until June 30, 2017.

Department of Environmental Quality - Scrap Tire Management

Scrap tires were banned from disposal in landfills by G.S. 130A-309.10 in 1990. The Solid Waste Section administers the Scrap Tire Management Program and manages the Scrap Tire Disposal Account. This account was created by the 1993 General Assembly. Its purpose is to provide each county with funds for the disposal of scrap tires at no direct cost to residents and businesses. To fund this statute, the General Assembly imposed a 1 percent tax on the sale of new large tires and a 2 percent tax on the sale of new small tires. The money is used to provide additional funding to counties for the cleanup of illegal tire dumps and for county-incurred deficits in their scrap tire management programs. Scrap tire legislation requires the division to consider county efforts to avoid free disposal of out-of-state tires and other ineligible tires and county program efficiency in using their allocated funds when making decisions about grant awards.

County Tire Disposal

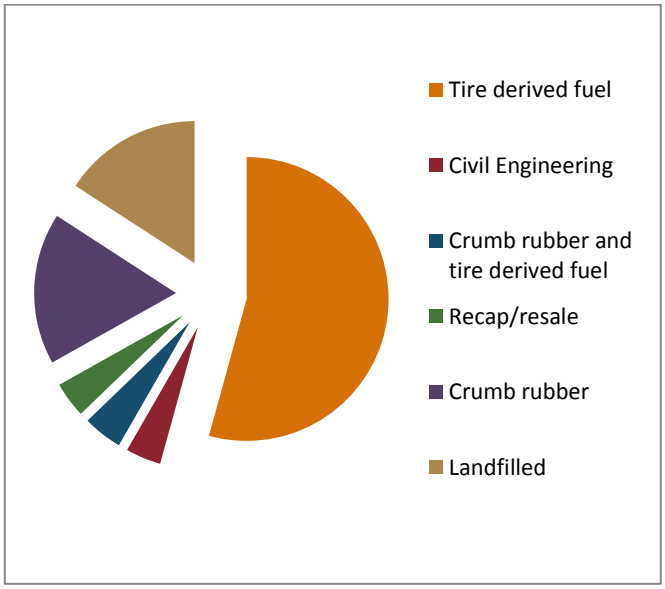
Ninety-eight (98) county programs, including one regional program (the Coastal Regional Solid Waste Management Authority, which serves Carteret, Craven and Pamlico Counties), reported that they generated 145,082 tons of scrap tires in North Carolina, of which 1,792 tons were sent to other states.

Counties reported spending a total of $11,848,477 for scrap tire management and disposal. Of the total spent, $10,840,494 was for direct disposal costs and $ 711,120 was for other costs, such as labor or equipment costs. North Carolina processors report that county contracts typically charge $50-75 per ton, including transportation and trailer rental costs. Counties at a distance from processing facilities may pay as much as $75-$100 per ton.

Tire Recycling

North Carolina tire processors reported they received 170,746 tons of scrap tires from North Carolina counties and 44,178 tons of tires from other states while 186 tons of scrap tires from North Carolina were disposed of in other states. In FY 2014-15, 136,912 out of 170,746 tons or roughly 80 percent of scrap tires managed by North Carolina counties from North Carolina were processed, recycled or reused. Reuse or disposal is as follows:

Final disposal/recycling of tires in N. C. (tons)	
Tires disposed (landfill)	35,312
Tires used as fuel	115,899
Tires used as crumb rubber	36,920
Tires re-used or re-capped	8,692
Tires used in civil engineering	8,607
Tires used for other purposes	442



Scrap Tire Disposal Account

Distributions of Scrap Tire Tax Revenue	
Net Tax Collections by the Dept. of Revenue	$17,608,909.05
Dept. of Revenue Cost of Collecting	$ 311,797.93
Amount distributed to counties (70%)	$12,107,977.78
Amount distributed to the General Fund	$ 5,189,133.34

Account Balance		
Balance of Funds as of July 1, 2014		**$3,320,553.83**
Administration of program	($460.00)	
Cost Overrun Grants to Counties	($1,261,611.32)	-
Clean Up Grants to Counties	($75,715.29)	-
Total Debits		($1,337,786.61)
Transfer from General Fund	$420,000.00-	
Total Credits	-	$420,000.00
Ending Balance June 30, 2015	-	**$2,402,767.22**

Cost Overrun

The first cost-overrun grant cycle (Table 1) for FY 2014-15 included grants to 40 counties. The second grant cycle (Table 2) included grants to 44 counties. The two grant cycles in 2014-15 totaled $1,261,611.32.

Table 1: County Tire Cost Over-Run Grants Awarded July 2014			
County	**Requested Amount**	**Distribution Reported**	**Award Amount**
Alleghany	$8,950.83	$13,041.93	$8,503.29
Ashe	$19,369.82	$16,683.03	$18,401.33
Bladen	$2,215.76	$21,457.30	$2,215.76
Brunswick	$4,831.84	$68,806.10	$4,831.84
Camden	$4,273.61	$6,151.59	$4,273.61
Catawba	$5,815.94	$94,845.96	$5,815.94
Cherokee	$7,740.62	$16,796.58	$7,740.62
Chowan	$24,256.75	$9,057.66	$24,256.75
Clay	$1,499.75	$6,550.25	$1,499.75
Cleveland	$101.22	$59,708.77	$101.22
CRSWMA	$13,139.66	$106,737.28	$13,139.66
Dare	$22,377.57	$21,255.84	$22,377.57
Edgecombe	$27,373.49	$34,212.89	$26,004.82
Gates	$6,116.07	$7,299.97	$6,116.07
Graham	$3,222.51	$5,371.35	$3,222.51
Halifax	$12,866.78	$33,156.07	$12,866.78
Haywood	$17,317.42	$36,189.13	$17,317.42
Hertford	$208.77	$15,037.69	$208.77
Hyde	$796.79	$3,490.96	$796.79
Iredell	$7,896.95	$99,629.99	$7,502.10
Lenoir	$17,317.65	$36,353.97	$17,317.65
Lincoln	$11,907.54	$48,543.59	$10,716.79
Macon	$6,819.32	$20,720.41	$6,819.32
McDowell	$3,297.40	$27,637.59	$3,297.40
Mecklenburg	$1,409.95	$587,681.43	$1,409.95
New Hanover	$12,684.53	$128,114.98	$12,684.53
Pasquotank	$55,837.14	$36,143.76	$55,837.14
Pender	$4,877.86	$33,126.15	$4,877.86
Perquimans	$4,485.51	$8,359.22	$4,485.51
Pitt	$3,467.45	$105,356.66	$3,467.45
Richmond	$1,991.64	$28,326.86	$1,991.64
Rutherford	$11,267.00	$41,535.00	$10,703.65
Scotland	$28,865.76	$65,697.76	$27,422.47
Surry	$14,568.77	$45,028.23	$14,568.77
Vance	$11,212.26	$27,803.64	$10,651.65
Warren	$4,647.57	$12,665.83	$4,647.57
Washington	$6,397.74	$7,887.91	$6,397.74
Wayne	$11,946.26	$75,912.54	$11,348.95
Wilkes	$9,145.10	$42,507.39	$8,687.84
Wilson	$3,806.90	$50,074.78	$3,806.90
Total			**$408,333.38**

Table 2: County Tire Cost-Overrun Grants Awarded January 2015			
County	**Requested Amount**	**Distribution Reported**	**Award Amount**
Alamance	$9,973.87	$91,092.20	$9,475.18
Alleghany	$3,214.28	$6,564.36	$3,214.28
Ashe	$25,760.77	$16,265.67	$24,472.73
Beaufort	$20,287.96	$28,576.54	$20,287.96
Bladen	$15,896.85	$20,920.49	$15,102.01
Brunswick	$19,856.69	$67,084.74	$19,856.69
Camden	$5,527.51	$5,997.69	$5,527.51
Cherokee	$10,169.61	$16,376.39	$10,169.61
Chowan	$35,732.94	$8,831.06	$35,732.94
Clay	$513.60	$6,386.40	$513.60
Cleveland	$19,283.47	$58,214.98	$18,319.30
CRSWMA	$13,740.46	$116,894.55	$13,740.46
Currituck	$5,289.88	$14,384.09	$5,289.88
Duplin	$54,875.65	$35,774.25	$49,388.08
Edgecombe	$40,751.39	$33,356.95	$40,751.39
Forsyth	$45,995.00	$212,790.10	$43,695.25
Gates	$13,562.65	$7,117.35	$13,562.65
Granville	$17,334.93	$34,545.66	$16,468.18
Halifax	$18,104.67	$32,326.58	$18,104.67
Hertford	$9,934.47	$14,661.49	$9,934.47
Iredell	$18,950.41	$97,137.48	$18,002.89
Macon	$10,738.47	$20,202.04	$10,738.47
McDowell	$47,088.83	$26,946.17	$44,734.39
Mecklenburg	$148,266.65	$572,979.03	$133,439.98
Mitchell	$14,127.50	$9,165.00	$13,421.12
Montgomery	$7,676.71	$16,564.49	$6,909.04
New Hanover	$22,253.03	$124,909.86	$22,253.03
Northampton	$8,324.73	$12,810.27	$8,324.73
Orange	$3,333.49	$82,340.29	$3,333.49
Pasquotank	$29,810.83	$23,916.36	$29,810.83
Pender	$9,921.23	$32,297.42	$9,921.23
Perquimans	$9,541.50	$8,150.10	$9,541.50
Pitt	$14,970.53	$102,720.91	$14,970.53
Richmond	$6,508.73	$27,618.20	$6,183.29
Rutherford	$21,579.12	$40,495.73	$20,500.16
Scotland	$13,124.07	$21,659.19	$12,467.87
Stanly	$7,890.50	$36,093.30	$7,101.45
Surry	$17,832.03	$46,074.37	$17,832.03
Transylvania	$720.30	$19,755.59	$720.30
Vance	$17,805.23	$27,108.12	$16,914.97
Warren	$16,260.18	$12,348.96	$16,260.18
Wayne	$8,861.95	$74,013.42	$8,418.85
Wilkes	$22,906.35	$41,443.94	$20,615.72
Wilson	$27,255.05	$48,822.03	$27,255.05
Total			**$853,277.94**

Tire Cleanups

In FY 2014-15, 29 nuisance tire sites were cleaned in 17 counties, using $75,715.29 in funds.

Table 3: County Clean Up Grants			
County	**Amount**	**Date Requested**	**Date Paid**
Madison County Solid Waste	$3,101.83	7/22/2014	7/30/2014
Union County Public Work	$406.72	7/22/2014	8/1/2014
Union County Public Works	$70.52	7/22/2014	8/1/2014
Guilford County Finance	$7,115.48	7/29/2014	7/31/2014
Iredell County Solid Waste	$405.60	8/12/2014	8/21/2014
Rockingham County Landfill	$3,490.22	8/19/2014	8/26/2014
Catawba County Finance	$685.60	9/2/2014	9/30/2014
Union County Public Works	$1,825.32	9/9/2014	10/6/2014
Rutherford County Finance Office	$1,352.55	9/23/2014	9/30/2014
Union County Public Works	$2,393.58	9/23/2014	10/1/2014
Iredell County Solid Waste	$156.00	10/7/2014	10/15/2014
Union County Public Works	$74.62	10/21/2014	10/30/2014
New Hanover County Finance	$1,054.50	11/25/2014	12/11/2014
Vance County Planning	$1,671.75	12/9/2014	12/17/2014
Robeson County Solid Waste	$19,286.88	12/17/2014	1/2/2015
Chatham County Finance	$1,886.10	1/20/2015	1/31/2015
Washington County Finance	$1,751.26	2/3/2015	2/28/2015
Iredell County Solid Waste	$112.00	2/10/2015	2/18/2015
Orange County Solid Waste Dept.	$211.00	2/10/2015	2/19/2015
Union County Public Works	$61.50	2/10/2015	2/20/2015
Iredell County Solid Waste	$176.80	4/7/2015	4/15/2015
New Hanover County	679.50	4/17/15	4/21/15
Union County Public Works	76.26	4/17/15	4/21/15
Coastal Regional Solid Waste (CRSWMA)	$5,165.45	5/5/2015	5/14/2015
Henderson County Finance Dept.	$389.46	5/19/2015	5/31/2015
Robeson County Solid Waste	$14,728.00	5/19/2015	5/27/2015
Buncombe Solid Waste Department	$4,046.95	6/9/2015	6/18/2015
Alamance County Landfill	$768.15	6/16/2015	6/23/2015
Catawba County Finance	$1,632.80	6/24/2015	6/30/2015
Chatham County Finance	$938.89	6/24/2015	6/30/2015
Total	**$75,715.29**		

Department of Environmental Quality - Electronics Management Program

North Carolina General Statute 130A-309.130 established the Electronics Management Program. The program directs manufacturers of electronics, retailers, consumers, and state and local governments to share accountability for the responsible recycling and reuse of electronic equipment.

The law applies to computer equipment and televisions intended for consumer use. Computer equipment includes desktop and portable computers, monitors and video displays for computers, printers, scanners or combination printer-scanner fax machines, mice, keyboards and other peripherals. Household items such as cell phones, video recorders, cable or satellite boxes, and all commercial devices such as printers and data networking systems are not covered devices under the law.

Manufacturers' Responsibilities

Before selling equipment in North Carolina, manufacturers must register with the state and pay a registration fee, which is dependent upon the type of equipment and recycling plan level. Television and computer equipment manufacturers have different recycling obligations under the law. Television manufacturers are assigned a target weight to recycle based on their market share. Computer manufacturers are required to have a plan in place to make recycling of computers available to consumers. The law is designed to provide electronics recycling opportunities for the "consumer," defined as an occupant of a dwelling who used the equipment for personal or home business use. A nonprofit organization with fewer than 10 employees is also considered a consumer.

Television manufacturers pay an annual fee of $2,500. Each television manufacturer is obligated to recycle or arrange for the recycling of its market share of televisions and must annually report the weight of televisions they recycled or arranged to recycle.

Computer manufacturers pay an initial fee of $10,000 to $15,000 and then an annual fee of $2,500 - $15,000, depending on the level of their plan. Computer equipment manufacturers must provide a plan which will provide a mechanism through which consumers can recycle their equipment. The plans must provide for free and reasonably convenient recycling. The related recycling and transportation must be accomplished using environmentally sound management practices. Manufacturers must provide a consumer recycling education program and a toll-free phone number. Each registered computer equipment manufacturer must also submit an annual report detailing the total weight of computer equipment collected for recycling and reuse for the previous year, summarizing the actions implemented from an approved plan.

Retailer's Responsibilities

Effective July 1, 2011, retailers in North Carolina may only sell televisions, computers, printers, scanners, printer-scanner-fax combinations, mice, keyboards, and other computer peripherals which display the manufacturer label of a registered manufacturer in compliance with the electronics management law.

State Agencies and Governmental Entities Responsibilities

State agencies and governmental entities in North Carolina may only buy televisions, computers, printers, scanners, printer-scanner-fax combinations, mice, keyboards, and other computer peripherals which are produced by registered manufacturers in compliance with the electronics management law. A list of manufacturers who are in compliance, updated whenever a change occurs, can be viewed on the following webpage: http://portal.ncdenr.org/web/wm/sw/electronics

Registration of facilities recovering or recycling electronics

As of Aug. 1, 2015, facilities that recover or recycle covered devices or other electronic devices diverted from the waste stream for transfer, treatment or processing must register annually with the department on or before Aug. 1 each year. The registration form can be found on the N.C. Division of Waste Management website's at http://portal.ncdenr.org/web/wm/ewasterecycler.

Recycling Rates within North Carolina

Data on the recycling of computer equipment and televisions comes from two major sources: manufacturer reports and local government solid waste annual reports. The table below presents information reported by manufacturers registered in North Carolina.

Type of Collection	Computer Equipment Manufacturers (lbs.)	Television Manufacturers (lbs.)
Mail-back Program	9,873	0
Retail Collection	558,737	2,221,202
Scheduled Collection Events	0	72,068
Permanent drop-off through local government programs	4,836,388	12,513,332
Permanent drop-off sponsored by manufacturers	1,818,123	3,440,741
Total	**7,223,121**	**18,247,343**

As in previous years, permanent drop-off and retail drop-off locations are the option consumers utilize for the majority of their electronics recycling. Although mail-back programs are an important option for rural areas with fewer drop-off locations available, the weight collected through these programs continues to be relatively small. Additionally, whereas most computer and peripheral manufacturers offer a free mail-back option to residents, television manufacturers do not. Almost 80 percent of televisions being recycled by consumers are brought to local government programs.

County and Municipal Collection Programs	FY2009-10 (tons)	FY2010-11 (tons)	FY2011-12 (tons)	FY2012-13 (tons)	FY2013-14 (tons)	FY2014-15 (tons)
Televisions	993.48	3,019.39	6,423.58	8,739.47	9,314.94	10,025.66
Other Electronics	3,580.15	4,432.15	8,264.91	5,419.81	5,470.99	5,050.77
Total	4,573.63	7,451.54	14,688.49	14,159.28	14,785.93	15,076.43

Local government recycling programs data show a continued small increase of approximately 8 percent in televisions collected by counties and municipalities from FY2013-14 to FY2014-15. Since these programs have been in place for several years, the overall weight of materials appears to be stabilizing. The total weight collected of computers and other electronics has already begun to decline, but the weight of televisions being collected has not yet begun to decline. Televisions make up 68 percent of the total weight collected through local government programs, which is a slight increase from last year. Counties with newer programs or fewer other options for consumers (such as retail drop-off or non-profit organizations accepting televisions for recycling) are still seeing a higher percentage of televisions.

Overall Recycling of Electronics	FY2009-10 (tons)	FY2010-11 (tons)	FY2011-12 (tons)	FY2012-13 (tons)	FY2013-14 (tons)	FY2014-15 (tons)
Manufacturer television collections	NA	1,754.23	2,732.96	1,623.54	2,460.26	2,834.12
Manufacturer computer equipment collections	NA	2,895.82	3,996.03	2,098.88	1,843.43	1,193.37
Local Government television	993.48	3,019.39	8,264.91	8,739.47	9,314.94	10,025.66
Local Government other electronics	3,580.15	4,432.15	6,423.58	5,419.81	5,470.99	5,050.77
Total Tons	**4,573.63**	**12,101.59**	**21,417.48**	**17,881.70**	**19,089.62**	**19,103.92**
Total Pounds Per Capita	**0.98**	**2.5**	**4.43**	**3.66**	**3.87**	**3.84**

Compliance and Enforcement of Electronics Laws

A small number of companies have not registered or paid their fees. These companies are ineligible to market their products in North Carolina. Residents and government agencies can check the N.C. Division of Waste Management's website, http://portal.ncdenr.org/web/wm/sw/electronics, to determine which companies may sell in North Carolina.

The Division of Waste Management and the Division of Environmental Assistance and Customer Service have been coordinating with manufacturer stakeholder groups, as well as a national consortium of states with electronics programs – Electronics Recycling Coordination Clearinghouse (ERCC), to seek ways to streamline and automate reporting requirements for North Carolina. Manufacturer reporting requirements vary greatly from state to state. North Carolina has joined with other states in allowing manufacturers to register via web access at http://www.ecycleclearinghouse.org.

Electronics Management Fund

The Electronics Management Fund, administered by the N.C. Division of Waste Management, consists of computer and television manufacturers' registration and annual fees. The majority of the fund is used to subsidize local government electronics recycling programs. Fees paid into the electronics management fund are used to support approved electronics management programs within North Carolina counties. The television equipment funds as well as up to 10 percent of the computer equipment funds may be used to administer the program.

Electronics Management Fund		
Balance of Funds as of July 1, 2014		**$443,773.25**
Debits		
Distributions to Local Government Programs	[$690,174.76]	
Cost of Market Share Data	[$6,162.09]*	
Cost of Market Share Data	[$6,162.09]**	
ERCC Membership	[$6,500.00]*	
ERCC Membership	[$6,500.00]**	
Administrative and Salary Costs	[$52,065.26]	
	Total Debits	**[$767,564.20]**
Credits		
Computer Equipment Manufacturer Fees	$910,000.00	
Television Manufacturer Fees	$117,500.00	
	Total Credits	**$1,027,500.00**
	Ending Balance June 30, 2015	**$703,709.05**

* 2014-15 Paid 6-9-15
**2013-14 Paid 7-8-14

Distributions to Local Governments from the Electronics Management Fund

Beginning in January 2013, the electronics programs were required to prove to the N.C. Division of Waste Management that all recycling of computer equipment and televisions is being conducted by R2 or e-Steward-certified facilities in order to receive future distributions. The funding is to be used only for management of electronics. The 88 local governments with approved electronics recycling plans received their per capita share of a total $600,000 in distributions from the Electronics Management Fund in Feb. 2014. The distribution amounts can be viewed at: http://portal.ncdenr.org/web/wm/sw/electronics and are shown below.

Electronic Management Distribution FY 2014-15				
County	**Distribution**		**County**	**Distribution**
Alamance	$11,783.62		Jones	$813.16
Alexander	$2,884.34		Lee	$4,576.00
Alleghany	$851.53		Lenoir	$4,535.08
Anson	$2,027.73		Lincoln	$6,143.99
Bladen	$2,712.76		Macon	$2,631.55
Brunswick	$8,915.61		Madison	$1,646.66
Buncombe	$19,174.93		Martin	$1,829.87
Burke	$6,780.09		McDowell	$3,484.93
Cabarrus	$8,659.04		Mecklenburg	$76,413.87
Caldwell	$5,499.23		Mitchell	$1,187.07
Camden	$780.41		Moore	$7,083.50
Carteret	$5,334.68		Nash	$8,643.71
Catawba	$12,037.80		New Hanover	$16,473.42
Chatham	$5,054.31		Northampton	$1,636.79
Cherokee	$2,116.57		Onslow	$14,918.45
Chowan	$1,141.46		Orange	$10,863.91
Clay	$831.65		Pamlico	$1,007.09
Cleveland	$7,588.39		Pasquotank	$3,043.60
Columbus	$4,448.64		Pender	$4,304.33
Concord, City of	$6,416.43		Perquimans	$1,061.02
Craven	$8,045.36		Person	$3,019.64
Cumberland	$25,622.33		Pitt	$13,411.17
Currituck	$1888.12		Polk	$1,588.41
Dare	$2,717.69		Randolph	$19,988.72
Davidson	$12,206.15		Richmond	$3,547.34
Davie	$3,198.		Robeson	$10,340.06
Durham, City of	$18,581.82		Rockingham	$7,107.93
Edgecombe	$2,990.59		Rowan	$9,956.75
Forsyth	$27,728.96		Rutherford	$5,224.35
Franklin	$4,754.44		Sampson	$4,957.00
Gaston	$16,065.14		Scotland	$2,775.94
Gates	$915.32		Stanly	$3,462.28
Graham	$682.18		Stokes	$3,648.50
Granville	$4,461.81		Swain	$1,124.12
Guilford	$39,699.50		Vance	$3,471.45
Halifax	$4,137.83		Wake	$74,639.54
Haywood	$4,597.72		Warren	$1,575.85
Henderson	$8,419.27		Washington	$988.21
Hertford	$1,896.98		Wayne	$9,642.78
Hyde	$447.34		Wilkes	$5,368.12
Iredell	$12,685.46		Wilson	$6,216.33
Jackson	$3,143.99		Yadkin	$2,937.89
Johnston	$13,673.52			

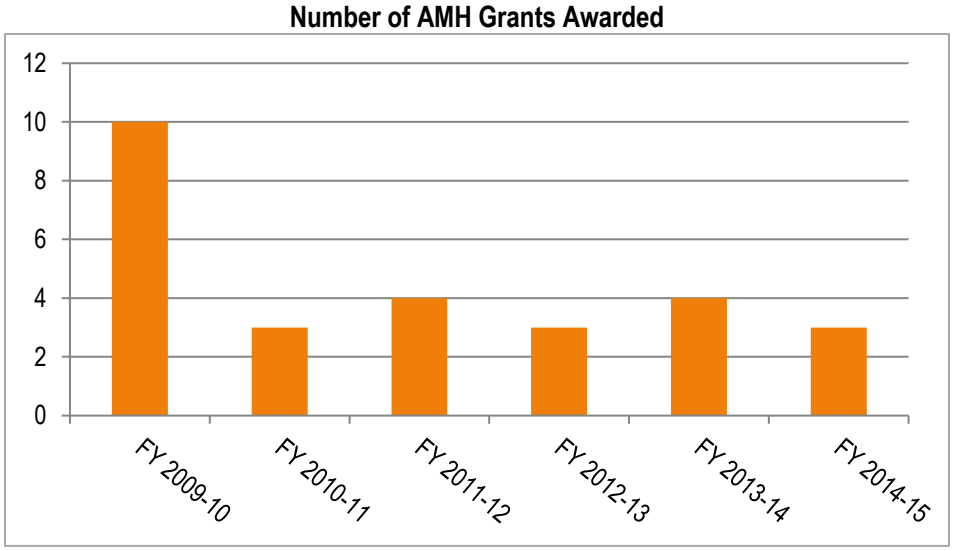
Total of Distribution: $690,174.76

Department of Environmental Quality - Abandoned Manufactured Homes (AMH) Program

As established in G.S. 130A-309.111, the N.C. Division of Environmental Assistance and Customer Service (DEACS) operates a grant program that provides funding to North Carolina counties to facilitate the identification, deconstruction, recycling and disposal of abandoned manufactured homes which are deemed unfit, unsafe and hazardous. The Abandoned Manufactured Homes Grant Program Request for Proposals (RFP) was originally developed and made available to North Carolina counties in October 2009, and FY 2014-15 was the sixth year of grant program operation.

AMH Grants Awarded By Fiscal Year

The chart below illustrates the number of grants awarded during each of these six years of the program's operation.



Three new AMH grant contracts were initiated during FY 2014-15 and these three grants represent a total expenditure of $74,500 from appropriated grant funds allocated to the Solid Waste Management Outreach Program. For the past two fiscal years the AMH Grant Program has allowed for grant contracts with terms of up to two years, whereas previously contracts were limited to one year terms. All three grant recipients during FY 2014-15, Robeson, Rockingham, and Stanly counties, opted for two-year grant contracts.

AMH Program Statistics

Each AMH grant program participant must submit an annual report to the state every August that documents and summarizes county program information from the previous fiscal year. Based on the August 2015 grantee reports, the following table shows the total number of AMH units deconstructed under the program and the resulting amount of waste disposed and recycled in FY 2014-15, including mercury thermostats, which are required to be removed prior to disposal.

Statistics for AMH Program for Fiscal Year 2014-15	
Units Deconstructed	63 Units
Materials Landfilled	736.9 Tons
Materials Recycled (percentage of total tonnage)	95.5 Tons (11.5 %)
Mercury Thermostats Recovered	9 Thermostats

There were twelve AMH program grants active during FY 2014-15. The number of units deconstructed during FY 2014-15 increased substantially when compared to Fiscal Year 2013-14, from 37 units to 63 units. As a result of this increase, the tons of materials landfilled and recycled were significantly higher than the previous year, although the overall percentage of materials recycled remained

small at just under 12 percent of total materials handled. The following table presents the individual AMH grants that were active during FY 2014-15 and provides details from those programs.

AMH Grant Program Participants during FY 2014-15						
County	Contract Start Date	Contract End Date	Grant Award	County Costs during FY	Responsible Party Fees Collected	# Units Deconstructed during FY
Alamance	5/23/2014	5/22/2016	$24,000	$9,175.00	$0.00	9
Bertie	5/3/2010	5/1/2015	$40,000	$9,946.67	$0.00	6
Franklin	2/26/2010	2/28/2015	$40,000	$1,824.32	$684.32	1
Harnett	7/1/2014	6/30/2016	$24,000	$29,686.60	$8,611.60	10
Henderson	6/20/2014	6/19/2015	$16,000	$22,988.94	$4,214.80	16
Iredell	6/20/2014	6/19/2016	$16,000	$5,496.50	$872.50	5
Jackson	9/17/2012	9/16/2014	$40,000	$0.00	$0.00	0
Onslow	3/1/2012	2/28/2016	$37,500	$25,550.00	$795.00	9
Robeson[1]	11/21/2014	11/22/2016	$24,000	$0.00	$0.00	0
Rockingham[1]	4/30/2015	4/29/2016	$26,500	$0.00	$0.00	0
Stanly[1]	11/1/2014	10/31/2016	$24,000	$8,278,92	$1,050.00	4
Warren	10/15/2012	10/14/2014	$37,500	$5,736.49	$885.50	3
1 – Grants initiated during FY 2014-15						

Program Participant Highlights, FY 2014-15

Bertie, Franklin, Henderson and Jackson counties all completed work on existing AMH Grants during FY 2014-15. Jackson County ended its AMH grant having only managed one abatement project during their two year grant term. Jackson County staff specifically expressed difficulty convincing property owners to participate in the county AMH program as a result of property owner reluctance to pay responsible party fees when the cost of abatement exceeded available grant funds. Henderson County completed work on its third AMH grant contract just prior to the end of FY 2014-15 and continues to operate one of the most effective and productive AMH programs in the state. Grant contract extensions were made during this period for Alamance and Onslow counties so that they could continue work on their existing grants. New “repeat grants” went into effect for Roberson and Stanly counties. Rockingham County also initiated a new AMH program and was issued a first-time AMH grant that included a one-time planning grant during FY 2014-15.

Additional Information on the AMH Program

In addition to providing AMH grant funding, DEACS continues to offer technical assistance and guidance to county AMH programs. During the winter months of 2014-15 staff provided several counties with support on the development of AMH programs, including assistance with code development and information about applying for AMH Grants.

Counties operating AMH programs with state grant assistance continue to report that their programs are well received by residents. However, convincing property owners or responsible parties to commit to the removal or deconstruction of an AMH unit remains a significant challenge in counties where program participation is strictly voluntary, especially when responsible parties are under financial stress. Where responsible parties face a financial obligation associated with an AMH deconstruction project they are often reluctant to enter into an abatement projects unless compelled to do so.

DEACS anticipates continuing the AMH program in FY 2015-16 and AMH Grants will continue to be awarded pending the availability of funds.

Department of Administration - Environmentally Preferred Purchasing

For more information regarding this report, please contact:
William Sam Byassee, deputy director of the N.C. Division of Purchase and Contract, at 919-807-4533 or sam.byassee@doa.nc.gov.

The N.C. Department of Administration continues to promote the purchase and use of sustainable, and efficient supplies and products. As the department progresses with this effort, more of these products are being added to statewide term contracts and agency specific term contracts awarded through open market bids. For more information, visit the Division of Purchase and Contract's website at: http://www.ncpandc.gov/.

Solicitations advertised by the Division to Comply with NC G.S. 130A - 309.14(a3)

Bids advertised in the N.C. Division of Purchase and Contract contain a Recycling and Source Reduction section in paragraph 8 of the Instructions to Bidders. Also, the division encourages bidders to support its sustainability efforts by requesting bidders to reduce use of paper and non-recyclable elements in their bid submission. When developing bid invitation language, requirements and specifications, purchasers are continuing to look at alternative methods and products that result in waste reduction, if their procurement is practicable and cost-effective.

Recycling and source reduction information provided by the contractors on bids received during the 2014-15 fiscal year indicate the sustainable features or criteria of those products. Sustainable attributes include reduction, more efficient, more durable, longer lasting, reusable, refillable, repairable, refurbished, recyclable, washable and less toxic than their traditional counterparts. Efficient resource use includes Energy Star products for reduced electric energy demand and reduced water consumption.

Refer to the Examples of Sustainable Open Market Awards and the listing of the Statewide Term Contracts with the applicable sustainable features identified.

Table 1 lists the IPS purchase awards by the type and dollar amounts awarded by the N.C. Division of Purchase and Contract.

Table 1

IPS Commodity Purchase by Bid Type	Number of awards by Bid Type	Percentage of Number of Awards by Bid Type	Award dollars by Bid Type	Percentage of Award Dollars by Bid type
Agency RFP (including services)	73	4.71%	$78,295,578.29	11.46%
Agency Specific Term Contract	215	13.86%	$63,449,008.33	9.28%
Contractual Service	3	0.19%	$26,222,289.00	3.84%
Open Market Purchase	361	23.28%	$55,119,841.38	8.07%
Purchase from Quote	326	21.02%	$146,885,063.35	21.49%
Statewide Term Contract	59	3.80%	$233,951,627.88	34.24%
Waiver of Competition	514	33.14%	$79,434,327.42	11.62%
Grand Total	1,551	100.00%	$683,357,735.65	100.00%

NC E-Procurement @ Your Service

As of June 28, 2015, the enterprise-wide system has 53,193 registered vendors and 10,031 users representing more than 200 entities statewide. This includes state agencies, hospitals and institutions, community colleges, K-12 public schools, universities and local governments. NC E-Procurement @ Your Service continues to contribute to a sustainable environment through significant reductions in hard copy document reproduction (paper, printers and supplies) through the use of electronic business transactions and electronic documents. NC E-Procurement also continues to support state priorities for environmentally preferable products with more than 74,000 catalog items clearly marked as "Recycled" of a total of more than 160,000 catalog items, as of June 30, 2015.

Purchasing Compliance Reviews

North Carolina Administrative Code (01 NCAC 05B .1605) mandates that the Division of Purchase and Contract conduct compliance reviews on purchasing practices of all state agencies (institutions, hospitals, community colleges, universities and state agencies). All compliance reviews, except universities, are conducted using data from the NC E-Procurement System. Electronic data reduces the necessity of conducting most phases of the analysis on-site, thereby increasing efficiency, as well as reducing travel costs, fuel emissions and operating expenses.

Procurement Training

Beginning in January 2013, the Division of Purchase and Contract has implemented a new training program to provide North Carolina public procurement personnel and contract administrators the skills necessary to more efficiently and effectively carry out their duties. The procurement training is specific to the state of North Carolina, developed and delivered by the N.C. Division of Purchase and Contract. The new procurement training includes three (3) new courses: North Carolina Procurement – Part 1, North Carolina Procurement – Part 2, and Contract Administration. Each course is a one-day instructor-led classroom training integrating case studies and role play activities to apply the information taught. The classes are offered free of charge. The only costs incurred by North Carolina agencies are travel-related expenses. In order to minimize impact to agency business operations and travel-related expenses, the classes are offered regionally throughout the state. This training better prepares purchasers across the state to recognize and seek out opportunities to provide reused, recycled and sustainable items to satisfy the state's needs.

In addition to the procurement and contract administration classes, the Division of Purchase and Contract also offers E-Procurement and E-Quote training. Each calendar year, the division offers some 22 E-Procurement and E-Quote classes offered, with about 240 total participants.

IPS (Interactive Purchasing System) & Vendor Link NC

The Division of Purchase and Contract continues to promote opportunities for vendors to do business with the state through electronic advertisement of goods, services and design/construction in IPS. The entities using this system consist of state agencies, institutions, universities, community colleges, K-12 public schools and local governments.

Vendor Link NC allows vendors to register to receive electronic notification of solicitations, eliminating multiple paper copies of purchase orders. Vendor Link had about 25,000 registered vendors as of June 30, 2015. The system continues to grow with the addition of users, increasing to some 600 agencies, schools and institutions in North Carolina, with 1,200 purchasers posting 6,000 solicitations through the database during the 2014-15 fiscal year.

Division of Surplus Property

The N.C. Division of Surplus Property in the state Department of Administration has the responsibility to dispose of the state's used property. It uses contracts coordinated through the state Division of Purchase and Contract to drive its recycling program. In 2014-15, it has recycled about 1,000 tons of electronic waste, 500,000 gallons of used oil, some 600,000 pounds of batteries and more than 1,000 tons of scrap metal.

Examples of Sustainable Open Market Awards

Table 2, on the following page, lists examples of used, recycled and refurbished open market (non-term contract) awards made through the Division of Purchase and Contract during the 2014-15 fiscal year, representing a total value of more than $1.4 million. These

purchases were made by the state's 24 principal departments and 58 community colleges using the division's NC E-Procurement @ Your Service electronic ordering system.

Table 2

Description	Purchasing Agency	Award Amount
Used Workstations	Dept. of Commerce	$50,115.97
USED 40mm Multi Launcher	Dept. of Public Safety	$22,500.00
Used Bauer Mini-Unicus Sys. Air Compressor/Fill Station	Rockingham CC	$28,638.96
Used Trailers	Dept. of Public Safety	$38,600.00
Used Van	Mitchell CC	$19,500.00
Used Multipro 1750 Sprayer	Wayne CC	$31,100.64
Refurbished Fire Trucks	Central Carolina CC	$130,000.00
Used 2011 New Holland Skid Steer L220	Davidson CC	$28,000.00
Used 2012 John Deere 450j Dozer	Wildlife Resources Com.	$97,488.00
Refurbished Hospital Beds-Brand Name Only	Asheville-Buncombe CC	$13,700.00
Refurbished Caterpillar Crawler / Dozer	Dept. of Agriculture	$116,638.54
Used Truck	Dept. of Cultural Res.	$18,999.00
Refurbished Parks Flo-Lab	Asheville-Buncombe CC	$25,000.00
Used Forklift	Wayne CC	$19,845.00
Used Lycoming Aircraft Engines	Wayne CC	$98,500.00
Recycled Paper	Dept. of Public Safety	$85,670.50
Recycled Plastic Lumber	Dept. of Public Safety	$198,325.20
Used Combine	Dept. of Agriculture	$85,000.00
Used Combine	Dept. of Agriculture	$57,794.00
Used Volvo Tractor	Cape Fear CC	$31,200.00
Used Chevrolet Service Truck	Dept. of Agriculture	$11,200.00
Used Cubicles	CC Systems Office	$26,415.64
Used Storage Containers	Isothermal CC	$11,760.00
Used 2000 Ford F-350 Dump Truck	Davidson CC	$18,535.00
Refurbished Encore Crown Sc-40 Sit-Down Rider Lift Truck	Rockingham CC	$20,950.00
Used Case 585 E 4wd 5000lb R/T Forklift	Dept. of Public Safety	$21,500.00
Refurbished Ge Ultrasound Systems	Cape Fear CC	$48,000.00
Refurbish & Repaint Maule Aircraft	Wildlife Resources Com.	$66,134.90
Used Workstations	Dept. of Commerce	$22,046.50
Refurbished Hospital Beds	Edgecombe CC	$23,233.00
Total Value:		$1,466,390.85

Statewide Term Contracts

As existing term contracts are re-bid and new term contracts are developed, the state Division of Purchase and Contract continues to improve contracts by offering a wide range of sustainable or environmentally friendly products. Examples of the sustainable features of these term contracts are listed below.

- **Air Conditioners, Room, 031A** - Items available through this contract were awarded based on the lowest energy efficiency, cost and meeting specifications. The majority of the items awarded are Energy Star Compliant, containing recycled materials and packaging.

- **Appliances, Domestic, 045A** – The majority of refrigerators, washers and dishwashers covered by this contract are Energy Star Qualified.

- **Automotive, Industrial Parts and Supplies, 060A** - Some products included have recycled materials with 10 percent-20 percent post-consumer content.

- **Batteries, Storage, 060B** - Battery casings are made from recycled material (96 percent). Batteries are exchanged as a core and picked up by the vendor. In addition, the contractor will pick up and properly dispose of junk batteries on quantities less than 10. Core (junk) batteries are considered to be an environmental hazard and are otherwise expensive to properly remove.

- **Tire, Automotive, Recapping and Repairing, 928A** – Retread tires extend the life of the original product. The purchase of retreads saves resources used in the production of new tires. The use of retread tires reduces tire disposal. Retread tires cost less than new tires.

- **2013 Models Passenger Cars, 070A** – Cars are available in four and six-cylinder gasoline engines with most flex fuel (E85) compatible. Contract includes a full electric car (Ford Focus) and plug-in hybrid cars (Toyota Camry and Prius C).

- **2013 Law Enforcement Vehicles, 070B** - Cars are typically four-door, available in 6 and 8 cylinder engines and some are flex fuel (E85) compatible. According to the Steel Recycling Institute, 67.7 percent of a vehicle is steel or iron. Of that steel or iron, 26.6 percent is post-consumer material.

- **Conventional School and Activity Buses, 070C; Conventional Activity Buses, 070D** – Vehicles typically contain approximately 20 percent post-consumer recycled material by weight and 80 percent of the vehicle by weight is recovered for reuse. Used school buses are usually sold or are used for spare parts.

- **2013 Model Year Trucks, Vans, Utility Vehicles, Crossovers-Conventional Fuels and AFVs, TC # 070G** – All diesel trucks and vehicles are required to additionally operate using B20 bio-diesel fuel. Gasoline-fueled vehicles were also bid with flex fuel as an alternative category. Awarded flex fuel vehicles comply with the intent of Senate Bill 2051. Vehicles noted as Flex Fuel or E85 can use both pure gasoline and E85 fuel.

- **Neighborhood Electric Vehicles, 070N** - Neighborhood Electric Vehicles (NEV) are battery operated vehicles that are "street legal" for use on roads with a posted speed limit of 35 mph or less. There are 14 different NEV models available from this contract from eight suppliers offering the brands; GEM, E-Ride, Columbia, Cushman, Polaris and Star brand vehicles. The contract vehicles are offered with a price range of $10,232-to-$30,123 and include an extended warranty. Because these vehicles do not consume hydrocarbon fuel, they produce zero direct emissions. These vehicles are considered good additions to agency fleets to help meet petroleum reduction goals.

- **Golf Cars, 070P** – Electric and gas fueled vehicles are available with two, four and six passenger models. Models are made with components of between 85 percent and 90 percent recycled steel, plastic and aluminum.

- **Light Transit Vehicles, 070U** – Vehicles accommodate public transportation needs and are compliant with the Americans with Disabilities Act (ADA). Engines meet current EPA emissions guidelines. Alternate fuel/engine options include flex fuel (E85), propane and gas/electric motor hybrid engines.

- **Remanufactured Toner Cartridges, 615A** - Common use Hewlett Packard and Lexmark cartridges are remanufactured to equivalency with the original OEM performance. New Brother Brand drum assemblies and toner hopper assemblies were also added. Product specifications are being transitioned from mandated construction requirements to the use of product and vendor performance requirements. This is expected to allow a wider variety of brands and models to be covered as requested by the office supplies contract users. This contract reduces the number of reusable cartridges added to the waste stream.

- **Ballasts, 285B** – Ballasts of all types are available, including electronic types that are more energy efficient, support variable illumination and reduce electromagnetic radiation. A link is provided to Federal Energy Management Program (FEMP) that illustrates a return on investment for retrofitting with more energy efficient lamps and ballasts. Electronic ballasts contain no PCBs and can be disposed in the trash. Reduced product shape and size (form factor) also minimizes packaging and metal enclosure requirements.

- **LED Lighting, 285C** – Contract consists of lamps for cove lighting, area lighting, downlights, troffers and wall packs employing LED illumination for energy savings. Packaging is 60 percent recycled materials. Technology uses LED illumination for energy savings.

- **Energy Saving Devices, 285D** – Contract includes T8 size tubular fluorescent retrofit kits, LED exit signs, LED exit sign retrofit kits, occupancy/vacancy sensors, electronic dimmable ballasts, and controls. Products use LED illumination and dimmable ballasts for energy savings.

- **Paper, Computer and Labels, 395B** - Computer paper contains from 30 percent-to-50 percent recycled with 30 percent post-consumer content.

- **Propane Tankwagon, 405A** – Contract vendors have reported 4,194,408 gallons of this clean burning fuel were purchased last year.

- **Oils, Lubricants, Greases, and Antifreeze, 405H** – The following synthetic, bio-degradable and recycled lubricants were reported as supplied under this contract: Biodegradable Bar & Chain Oil (18 gallons), Biodegradable Two Cycle Oil (11 gallons), Synthetic Motor Oil (1,841 gallons), Biodegradable Hydraulic Oil (945 Gallons), Synthetic Gear Lubricant (16,110 Pounds), Synthetic Automatic Transmission Fluid (2,342 Gallons), and Synthetic Grease (3,068 Pounds). Additional synthetic type oils and transmission fluids have been added to the contract to allow increased service life to reduce consumption and decrease maintenance cycles. State Surplus Property disposes of waste oil and antifreeze under contract. This year, 18,078 gallons were purchased of Diesel Exhaust Fluid (DEF), an aqueous urea solution used in diesel engines to lower nitrogen oxides concentration in exhaust emissions. Nitrogen oxides, like hydrocarbons, are precursors to the formation of ozone and also contribute to the formation of acid rain.

- **Propane Transport, 405K** – Contract vendors have reported 2,218,099 gallons of this clean burning fuel were purchased last year.

- **B-20 Transport, 405L** - B20 blended fuel contains 80 percent diesel fuel and 20 percent virgin soy or reprocessed vegetable oil. This means that of the reported 7,350,323 gallons of B20 blended fuel purchased, 1,470,064 gallons were produced from plant matter. This results in a reduction of crude oil consumption.

- **Gasohol, E-10 Transport, 405M** - E-10 blended fuel contains 90 percent unleaded gasoline and 10 percent ethanol. This means that of the 4,332,599 gallons of E10 blended fuel reported as purchased, 433,259 gallons were derived from ethanol. This results in a reduction of crude oil consumption.

- **Pipeline Natural Gas, 405N** – Contract vendors have reported 2,398,146 dekatherms of this clean-burning fuels was purchased last year.

- **Ultra-Low Sulfur Diesel Transport, 405P** – Contract offers 15 parts per million (ppm) of sulfur content compared to 500 parts per million sulfur content on the previous low sulfur diesel contract. Transport loads are more than 6,000 gallons per delivery, and are typically used heavily by the N.C. Department of Public Instruction and the N.C. Department of Transportation. Approximately 26,637,104 gallons were reported as purchased. This will help to provide compliance with clean air mandates.

- **Ultra-Low #2 Sulfur Diesel Tankwagon, 405Q** - Identical to the 405P contract except in form of delivery. Tankwagon loads are less than 6,000 gallons down to a minimum of 500 gallons. Approximately 495,834 gallons were reported as purchased. This will help to provide compliance with clean air mandates.

- **E-85 Flex Fuel, 405R** - E-85 blended fuel contains 15 percent unleaded gasoline and 85 percent ethanol derived from corn production. This alternative fuel is provided in transport quantities of 6,000 gallons or more. This means that of approximately 35,787 gallons of the blended E85 fuel reported as purchased, 30,418 gallons were derived from ethanol which reduces crude oil consumption.

- **E-10 Tankwagon, 405S** - E-10 blended fuel contains 90 percent unleaded gasoline and 10 percent ethanol. Tankwagon loads are less than 6,000 gallons down to a minimum of 500 gallons. This means that of approximately 714,417 gallons of the blended E10 fuel purchased, 71,441 gallons were derived from ethanol, which reduces crude oil consumption.

- **Ultra-Low Sulfur Diesel #2 Emergency Transport, 405T** – Contract offers 15 ppm of sulfur content compared to 500 ppm sulfur for the standard diesel #2 fuel. This contract is used in emergency cases when there is a pipeline interruption. The ultra-low sulfur content will help to provide compliance with clean air mandates. No sales were required from this contract during the fiscal year.

- **E-10 Emergency Transport, 405U** – E-10 blended fuel offers 90 percent unleaded gasoline and 10 percent ethanol. This contract is used in emergency cases when there is a pipeline interruption. The ethanol blend can reduce crude oil consumption. No sales were required from this contract during the fiscal year.

- **Bio-Diesel Fuel, B-20 Tankwagon, 405V** – B20 blended fuel contains 80 percent diesel fuel and 20 percent virgin soy or reprocessed vegetable oil. Tankwagon loads are less than 6,000 gallons down to a minimum of 500 gallons. This means that of 236,347 gallons purchased, 47,269 gallons are derived from plant matter. This results in a reduction of crude oil consumption.

- **E-85 Tankwagon, 405X** - E-85 blended fuel contains 15 percent unleaded gasoline and 85 percent ethanol derived from corn production. Tankwagon loads are less than 6,000 gallons down to a minimum of 500 gallons. From the approximately 43,681 gallons reported sold of the blended E85 fuel, 37,128 gallons were derived from ethanol, which reduces crude oil consumption.

- **Aviation Fuels, 405Y** - Contract includes aviation gasoline (avgas) and Jet A fuels. The aviation gasoline provided has a lower lead content of the fuel. From this contract, approximately 8,099 gallons were reported sold. Lead from engine exhaust fumes is classified as an irreversible neurotoxin, and the lower lead content gasoline would be less toxic than the traditional formulation.

- **Furniture, Metal, Folding Chairs, Tables, Storage Units, Wood Library Furniture, 420A** - Furniture, Desks (Wood), **Credenzas, Conference Tables, Etc. & Bookcases, Furniture, 420A** - Contractors support sustainability through different practices. Mechanical parts can be recycled or replaced, thereby extending service of the item. Packaging is recyclable. Products may be ground up into particleboard. Packaging may contain from 15 percent-to-75 percent post-consumer waste and is reusable. Wood, plastic and metal contain recycled post-consumer content and are recyclable. Product offerings are using more sustainable methods because they offer a competitive price advantage compared to those who use all virgin materials. Soy foam in chair seats and backs is now becoming available and is more environmentally friendly because it is made partly from soybeans, a renewable resource.

- **Furniture, Library, Wooden, 420A** – Packaging is recycled. Wood scraps from the manufacturing process are either mulched for recycled materials or converted into energy. Manufacturing may use a water-based top coat in wood finishing process.

- **Furniture Contracts, 420A** - Product offerings are using more sustainable methods because they offer a competitive price advantage over those who use all virgin materials. Soy foam in chair seats and backs is now becoming available and is more environmentally friendly because it is made partly from soybeans, a renewable resource.

- **Bedding Mattress Term Contract, 420E** - Mattresses comprised of innersprings (similar to the type used primarily in the residential and hospitality bedding industries) now require successful evaluation to the 16 CFR Part 1633, the Consumer Product Safety Commission's new mattress flammability testing standard, "Standard for the Flammability (Open Flame) of Mattress Sets." Successful evaluation of products offered continue to require the 16 CFR Part 1632, Standard for the Flammability of Mattresses and Mattress Pads (directed toward cigarette ignition of mattresses). The revised specifications promote increased safety and durability to extend product life.

- **Furniture, Chairs, Ergonomic, 420E** – Fabric and chair cushions may contain up to 100 percent post-consumer recycled content. Packaging contains post-consumer materials, is reusable and recyclable for continued use. Product offerings are using more sustainable methods because they offer a competitive price advantage over those who use all virgin materials. Some manufacturers are now offering soy foam in chair seats and backs as well as recycled wood components. Fabric and

chair cushions contain up to 100 percent post-consumer recycled content with approximately 40 percent total recycled content for the complete product. Packaging contains up to 100 percent recycled materials and is recyclable.

- **Metal Cabinets, Lateral, Vertical and Storage, 425H** - Cabinets contain from 10 percent-to-30 percent recycled content. Corrugated boxes have a minimum of 50 percent post-consumer waste and are recyclable.

- **Industrial, Medical and Specialty Gases, 430A** - Are delivered statewide in reusable cylinders and are exchanged when replacement cylinders are needed.

- **Disinfectants, Janitorial Cleaners, Environmental Cleaners, and Odor Counteractants, 435A** – Numerous environmentally friendly janitorial cleaners are available through this contract that are Certified Compliant to Green Seal GS-37 Environmental Standard For Cleaning Products For Industrial and Institutional Use, dated September 2011, or the EcoLogo Certification Criteria Document CCD-146, Environmental Standard for Hard Surface Cleaners, dated August 2011. These products include General Purpose Cleaner, Environmentally Friendly Neutral Cleaner, Environmentally Friendly Window and Glass Cleaner, Environmentally Friendly Hydrogen Peroxide, and Environmentally Friendly Cleaner Degreaser. Pre-moistened towelettes are available to provide an alternative for chemicals from being aerosoled or dispensed in the indoor air. Disinfectants included contain various active ingredients and end-use concentrations to allow proper selection for limiting contact and exposure to amounts required to be efficacious for specific pathogens targeted. All disinfectants are EPA-registered for efficacy of pathogens identified by the N.C. Statewide Program for Infection Control and Epidemiology within health care-related facilities. Chemical dilution control equipment for designated products is supported to improve sanitation quality, deliver accurate recommended product dilution and control costs. Contractors are required to provide the product use training and MSDS sheets.

- **Maintenance, Repair & Operation Supplies, 445B** – Items which were offered under the following contracts are now covered under this contract: Lamps, Large & Specialty (285A), Material Handling Carts/Trucks (560A), Low-Flow Plumbing Fixtures (670A), and Safety Equipment, Eye/Face Protectors (345A). Lamps may contain up to 65 percent recycled content, including glass and mercury. Lamp packaging that may contain 73 percent recycled content. Some of the lamps are low mercury (TCLP compliant), non-hazardous. Low-flow plumbing fixtures are offered to reduce water consumption.

- **Locks, Locking Devices & Accessories, 450B** – Product metal content includes 26-31 percent pre-consumer recycled materials and 4-6 percent post-consumer recycled materials. Some models support the material and resources credits for Leadership in Energy and Environmental Design (LEED) building certifications.

- **External Defibrillators, 465B** - Defibrillators can be refurbished and packaging materials can be recycled.

- **Incontinent Care Products, Disposable, 475C** - Disposable washcloths (wipes) contain a minimum 50 percent of fully biodegradable paper (cellulose fibers).

- **Grounds Maintenance Equipment, 515B** – Contract includes, walk behind products/equipment, mowers and lawn and garden tractors, hand held equipment (hand-held type), hand held equipment, tractors, utility vehicles, golf and turf equipment, and other equipment. Equipment is manufactured with typically 20 percent recycled steel and plastic.

- **LED Vehicle Traffic Signal Modules, 550A** - Traffic signals and crosswalk notification employing the high efficiency light emitting diode (LED) technology consume 90 percent less energy than conventional signals, while providing greater reliability, longer life, and low-maintenance performance. Signals are certified for ENERGY STAR certification for reduced energy consumption.

- **Traffic Signal Equipment, 550D** - Lenses and signal head hardware are compatible with energy efficient LED lamps. Depending on brand, aluminum components may have up to 85 percent recycled content.

- **Traffic Cones and Drums, 550F** – Contract includes caution drums and cones with up to 35 percent recycled content in the plastic body and up to 100 percent post-consumer recycled content for the rubber support base for either product.

- **Trailer-Mounted Solar Powered Flashing Arrow Board, 550G** - Agency specific term contract provides availability of a trailer-mounted, solar charged 15 lamp LED array arrow board and related parts for the N.C. Department of Transportation.

Amber lights on panel board are electronically actuated to form various configurations to signal, control, and direct high speed vehicle traffic. Portable solar powered unit includes energy efficient lamps and controls.

- **Office Supplies, 615A** - Contractors are required to the extent feasible and practical, to offer recycled products, including packaging, especially those having post-consumer waste content. Wherever possible and practical, such products should be identified as such.

- **Napkins, Bathroom Tissue & Paper Towels, 640A** – All products on the contract are certified to Green Seal standards GS-1 or GS-9, or Ecologo CCD-084 or CCD-086. Paper products are manufactured from 100 percent recycled fiber, with 40 percent-to-80 percent of that recycled content being from post-consumer content. Products are manufactured using either elemental chlorine-free or chlorine-free systems. This is an example of the use of recycled materials.

- **Office Paper, 645A** - Various products contain both post-consumer recycled content from 100 percent to 30 percent, and chlorine-free copy paper, as specified in the solicitation. Other recycled and virgin paper products including envelopes are supported.

- **Laminators & Laminating Film, 665A** - Some of the film contains 5 percent post-consumer content. Packaging contains 25 percent-80 percent post-consumer content.

- **Bags, Plastic, Trash, 665B** - Liners contain a minimum of 10 percent post-consumer or 10 percent pre-consumer reprocessed copolymer. All the liners awarded were thoroughly evaluated for strength and performance.

- **Ammunition, 680A** - Brass shell casings can be saved and recycled and others can be reloaded.

- **Vending Machines and Money Changers, 740B** - Vending machines purchased for the N.C. Department of Health and Human Services are twice as energy efficient as machines made five (5) years ago. Equipment features high-efficiency refrigeration, foam-injected insulation and LED display lighting. Refrigerated versus chilled storage space allocation is adjustable for varied product dispensing. Wireless monitoring systems boost efficiency with 24/7 communication and report diagnostics including amount of product needed to refill unit. This is an example of reduced energy consumption with the reduced cost of service/refill trips on an as needed basis. Packaging, refrigerant and metal components may contain recycled content and are recyclable.

- **Construction Equipment, 760H** – Construction Equipment covers excavators, wheel excavators, track loaders, compact track loaders, wheel loaders, skid steer loaders, backhoe loaders, crawler dozers, crawler loaders, wheel dozers, motor graders, utility cranes, and compactors. Appropriate attachments or equivalent products are included in the contract. Equipment manuals and parts catalogs are provided in hard copy and electronic copies. Engines meet current EPA Tier and emissions guidelines.

- **Forestry Equipment, 760L** – Equipment includes feller bunchers, knuckleboom loaders, forestry swing machines, and harvesters. Appropriate attachments are included in the contract. Equipment manuals and parts catalogs are provided in hard copy and electronic copies. Engines meet current EPA Tier requirements.

- **Tires and Tubes, 863A** - Tires depending on manufacturer may contain from 1.55 percent-to-2.5 percent of recycled materials based on the product attributes, speed rating and performance criteria.

- **Teaching Equipment, Electricity/Electronics Courses, 924A** - Office paper, cardboard and metal enclosures have recycled content. Documentation may be provided in soft copy instead of hard copy printed materials.

- **Recycling Services for Fluorescent Lamps, Ballasts & Other Mercury Containing Devices, 926B** – Contract assists agencies and local governments with contracted disposal of discarded electronic products that are diverted from landfill disposal.

- **Electronic Equipment Recycling Services, 926C** –North Carolina requires that its recycled electronics not contribute to unsafe and environmentally damaging processing practices. The purpose of this contract is to assist agencies in complying with the state's electronic recycling requirements by providing recycling service options for end-of-life electronic equipment,

including the collection, de-manufacturing, and recycling of computer monitors, televisions, desktop CPUs, laptop computers, printers, scanners, keyboards and mice, copy machines, DVD players, VCRs, stereo systems, tape players, CD players, radios, telephones, cell phones, readers, network equipment, servers, fax machines, electronic games, and other consumer electronics generated by State of North Carolina agencies and other eligible users. Eligible contract users include county and municipal governments, local education agencies, community colleges, state universities, and other local public agencies or authorities. Some recycled products generate a revenue stream that may be used to pay for the recycling of other products.

Items Aiding Waste Reduction Purchased By State Agencies through Term Contracts and Open Market Purchases

The following items purchased by state agencies meet the criteria for aiding waste reduction by being reusable, refillable, repairable, more durable, and/or less toxic than their traditional counterparts:

Reusable
Refrigerant Recovery System (filters reusable refrigerant),
Recycled Carpet fiber,
Recycled Paper fiber,
Recycled Content Furniture (not traditional wood),
Printers,
Tire Recapping & Repairing Service,
Uniforms, Wiping Cloths

More Durable
Above-Ground Vaulted Fuel Storage Tanks,
Classroom Furniture, Electronic Lamps & Ballasts,
Vacuum Cleaners, Floor Polish,
Grader Slope Attachment,
Plastic Lumber, Mattresses,
Vertical File Cabinets, Wood Case goods,
Wood library furniture

Energy Star – Reduced Energy Consumption
Audio Visual System,
Changeable Message Signs – Solar Powered,
Domestic Appliances,
Lighting Fixtures,
Room Air Conditioners,
Lamps,
Traffic Signals – LED,
Warning Lights - Vehicles Safety,
Water Coolers

Flow Plumbing Fixtures for Reduced Water Consumption – 0.5 GPM lavatory facet nozzles and 1.5 GPM showerheads support the Governor's water conservation initiative during severe water restrictions throughout the state.

Washable - HVAC Filters, Wiping Cloths

Used - Automobiles and trucks

Refillable
Ammunition - Cartridge Refills,
Batteries - Vehicle & Storage,
Drums – Steel, Fire Extinguishers,
Cylinders for Welding, Medical & Specialty Gases
Fuel Tanks,
Self-Contained Breathing Apparatus

Repairable
Defibrillators, Musical Instruments,
Tire Recapping & Repairing Service

Refurbished/Rebuilt
Medical Diagnostic Equipment & Instrumentation,
Remanufactured Toner Cartridges,
Scientific Equipment, Sewing Machines

Less-Toxic
Alternative Fuel Vehicles, Dry Cell Batteries, Electronic Lamps & Ballasts, Fertilizers/Farm Chemicals, Inks for printing (using non-petroleum based inks), Instructional Art Materials, Markerboard Markers, Mattresses, Scientific Products (eliminating Freon), Refrigeration and A/C Equipment

Longer-Lasting
Floor Maintenance Machine Batteries, Library Furniture, Aluminum Nuts and Bolts – non-rusting alloys, Fluorescent electronic ballasts permit longer lamp life.

Recyclable
Commodity Packaging, Commodity Metal enclosures & parts, Plastics, Steel & Reinforced Concrete Pipe, Chain Link Fencing, Electrical Wire, Treated Lumber, and Motor Oil – refined, HVAC & Refrigeration Equipment – Refrigerants.

Department of Transportation - Recycling and Solid Waste Management Report for Highway Construction and Maintenance Projects

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Recycling and Solid Waste Management Report For Highway Construction and Maintenance Projects

State Fiscal Year 2014-2015

Executive Summary

This report is a summary of the recycling and solid waste management efforts on highway construction and maintenance projects within the North Carolina Department of Transportation for state fiscal year 2015 (July 1, 2014 - June 30, 2015) as required by G.S. 136-28.8(g) and G.S.130A-309.14(3). These statutes mandate that the department prepare an annual report on the amounts and types of recycled materials specified or used in construction and maintenance projects during the previous state fiscal year and review of bid procedures, respectively. The types of recycled materials incorporated into this report would routinely contribute to the consumer and industrial waste streams, compounding the problem of declining space in landfills.

Efforts to use recycled and solid waste materials are in response to the requirements of G.S 136-28.8(b) which mandates the department use recycled materials in highway projects. All applications of recycled materials are to be consistent with economic feasibility, applicable engineering, and environmental quality standards. In addition, the department continues to comply with Chapter 136 of the General Statues to encourage the purchase or use of reusable, refillable, repairable, more durable and less toxic supplies and product.

Highway Construction and Maintenance Projects

The department has used crushed concrete as an Aggregate Base Course (ABC) since the mid-1990s with success. The diverted concrete waste from C & D landfills is significant. One project to note is the I-40/440 Fortify Project, fortifyNC.com. The contractor, Granite Construction Co. in addition to stockpiling asphalt to reuse on the project is crushing, blending and stockpiling the existing concrete and reusing it on the project as ABC on this 11.5-mile stretch of roadway. To date, the Fortify project has diverted more than 239,000 tons of concrete from the landfill.

NCDOT continues to encourage the use of recycled products in highway construction projects, such as guardrail offset blocks and flexible delineator posts. Glass beads are used for retro-reflective pavement markings and are manufactured from 100 percent recycled glass. NCDOT is continuously looking for new and innovative ways to reuse materials, reduce waste and recycle used products in our efforts to be sustainable.

Reclaimed asphalt pavement (RAP) may constitute up to 50 percent of the total material used in most recycled asphalt mixtures, and RAP mixtures are used on a majority of projects. Other material used in asphalt mixes are postconsumer and manufacturers waste roofing shingles. Encapsulated fly ash is sometimes used as a concrete component for up to 20 percent by weight of the required cement content. Some of the notable recycled or solid waste materials utilized this fiscal year are:

- 1,564,718 tons of Reclaimed Asphalt Pavement (RAP) were used as an asphalt mix additive.
- 171,547 tons of Reclaimed Asphalt Shingles (RAS) were used as an asphalt mix additive.
- 18,038 tons of coal combustion fly ash were used in concrete mixes.
- Maintenance personnel across the state continue to reuse products, including: aggregate base course, concrete pipe, guardrail, signs and posts, and steel beams.

See Attachment I for quantities of recycled and solid waste materials used during the 2014-2015 state fiscal year and Attachment II for averages from 1989 to date.

Procedure Review

The department reviews bidding procedures and processes to continuously encourage the purchase and use of recycled and reusable products in construction and maintenance projects. During 2013, the NCDOT Standard Specifications for Roads and Structures Specification 104-13 was revised to include a website which provides contractors locations to recycle construction waste. Along with this website, the department provides a reporting form for the contractors to submit as a tool to capture material types and quantities that are being recycled.

In addition, Value Management is developing a process to identify the recycled content of products submitted by vendors to the department for inclusion on the department's Approved Products List. This process will also enhance the department's ability to track the recycled material usage.

Attachment I

North Carolina Department of Transportation
Recycled Products & Solid Waste Utilization in Construction & Maintenance Projects
Fiscal Year July 1, 2014 – June 30, 2015

Product Category and Description	Usage	Quantity	Unit of Measure
1-Asphalt:			
Reclaimed Asphalt Pavement (RAP)	Asphalt Mix Additive	1,564,718	Tons
Reclaimed Asphalt Shingles (RAS)	Asphalt Mix Additive	171,547	Tons
Reclaimed Asphalt Pavement (RAP)	Shoulder Reconstruction	26,010	Cubic Yards
Hot-In-Place Asphalt Recycling	Pavement	20,123	Square Yards
Full-Depth Reclamation	Pavement	16,350	Cubic Yards
2-Clearing and Grubbing Debris:			
Mulch	Mulch	465	Acres
Mulch	Mulch - Roadside Environmental	4,345	Cubic Yards
Mulch	Erosion Control	8,585	Cubic Yards
3-Coal Combustion Products:			
Fly Ash	Concrete Mix Additive	*18,038	Tons
4-Concrete:			
Recycled Concrete	Aggregate Base Course (ABC)	185,450	Tons
Recycled Concrete	Fill Material	1,240	Tons
Crack and Seat	Base Material	125	Tons
Rubblized Concrete	Base Material	1,440	Tons
5-Glass:			
Recycled Glass Beads	Pavement Markings	46	Tons
6-Plastic:			
Recycled Plastic Offset Blocks	Guardrail Offset Blocks	125,389	Each
Recycled Plastic Pipe (All Types and Sizes)	Pipe	225	Linear Feet
Recycled Plastic Flexible Delineators	Flexible Delineators	100	Each
7-Scrap Tires:			
Tire Sidewalls	Traffic Drum Ballast	1,678	Tires
Whole Tires	Retaining Wall	130	Tires
8-Roadside Environmental:			
Animal Waste	Fertilizer/Soil Amendment	100	Tons
9-Other:			
Asphalt Millings	Pot holes/Shoulder drop-offs	1400	Tons
Scrap Metal	Aluminum	22,000	Tons
10-Reused Materials:			
Aggregate Base Course	Aggregate Base Course	4,985	Tons
Concrete Pipe	Concrete Pipe	460	Linear Feet
Guardrail	Guardrail	16,835	Linear Feet
Portable Concrete Barrier	Portable Concrete Barrier	7,503	Each
Sign Posts	Sign Posts	1,777	Each
Signal Heads	Signal Heads	175	Each
Signs	Signs	1,048	Each
Steel Beams	Steel Beams	115,200	pounds

**Estimate based on calculations and percentage of design.*

Attachment II

North Carolina Department of Transportation
Recycled Products & Solid Waste Utilization in Construction & Maintenance Projects
Averages from January 1989 to June 30, 2015

Product Category and Description	Usage	Average	Unit of Measure
1-Asphalt:			
Reclaimed Asphalt Pavement (RAP)	Asphalt Mix Additive	428,657	Tons
Reclaimed Asphalt Shingles (RAS)	Asphalt Mix Additive	21,739	Tons
Reclaimed Asphalt Pavement (RAP)	Shoulder Reconstruction	6,569	Cubic Yards
Hot-In-Place Asphalt Recycling	Pavement	124,742	Square Yards
Full-Depth Reclamation	Pavement	12,118	Cubic Yards
2-Clearing and Grubbing Debris:			
Mulch	Mulch	63	Acres
Mulch	Mulch - Roadside Environ.	3,164	Cubic Yards
Mulch	Erosion Control	2,892	Cubic Yards
3-Coal Combustion Products:			
Fly Ash	Concrete Mix Additive	14,416	Tons
Fly Ash	Embankment Fill	33,276	Cubic Yards
Fly Ash	Flowable Fill	54	Cubic Yards
Bottom Ash	Embankment Fill	104	Cubic Yards
4-Concrete:			
Recycled Concrete	Aggregate Base Course (ABC)	9,698	Tons
Recycled Concrete	Fill Material	2,208	Tons
Crack and Seat	Base Material	10,053	Tons
Rubblized Concrete	Base Material	12,018	Tons
5-Glass:			
Recycled Glass Beads	Pavement Markings	3,837	Tons
Crushed Glass	Subdrain Backfill	5	Cubic Yards
Crushed Glass	Aggregate Base	8	Cubic Yards
Crushed Glass	Pipe Foundation	13	Tons
6-Plastic:			
Recycled Plastic Offset Blocks	Guardrail Offset Blocks	137,188	Each
Recycled Plastic Fence Posts (All Sizes)	Fence Posts	320	Each
Recycled Plastic Pipe (All Types and Sizes)	Pipe	2,437	Linear Feet
Recycled Plastic Sign Supports	Sign Supports	5	Each
Recycled Plastic Flexible Delineators	Flexible Delineators	213	Each
7-Scrap Tires:			
Chipped Tires	Embankment Fill	449,728	Cubic Yards
Chipped Tires	Lightweight Aggregate	1,952	Cubic Yards
Crumb Rubber	Crack Sealant	3,339	Pounds
Crumb Rubber	Asphalt Mix Additive	6,017	Pounds
Rubber Mulch	Mulch	139	Cubic Yards
Tire Sidewalls	Traffic Drum Ballast	3,229	Each
Whole Tires	Retaining Wall	178	Tires
Chipped Tires	Sound Wall Panels	162	Tires
Tire Scraps on Roadway	Taken to Tire Recycler	2	Tons

Continued on following page

8-Roadside Environmental:			
Animal Waste	Fertilizer/Soil Amendment	46	Tons
Bioremediated Petroleum Affected Soils	Soil Amendment	44	Cubic Yards
Sludge	Soil Amendment	331	Tons
Advanced Alkaline Sludge	Soil Amendment	16,190	Tons
Aged Leaf Mold & Yard Debris	Soil Amendment	401	Tons
Ammonium Sulfate Liquid	Fertilizer/Soil Amendment	44	Gallons
Bark mulch	Soil Amendment	301	Tons
Cotton Gin Waste	Soil Amendment	1	Cubic Yards
Hurricane Fran Mulch	Soil Amendment	7,694	Cubic Yards
Hydromulch	Mulch	3,429	Pounds
Lime-Stabilized Municipal Sludge	Soil Amendment	27	Tons
Soil Derived from Demolition Debris	Soil Amendment	331	Tons
Compost Material	Compost Blanket	16	Cubic Yards
Tobacco By-product	Soil Amendment	3	Tons
Pallets	Designer Mulch	12	Cubic Yards
9-Other:			
Asphalt Millings	Pot holes/Shoulder drop-offs	59	Tons
Scrap Metal	Metal	2,237	Tons
Class B Rip Rap	Road Base	15	Tons
Silt Fence Post	Metal	15	Each
Rubberized RRX Material		2	Linear Feet
Recycled Shoulder & Ditch Material		1,772	Cubic Yards
Timber	Caps	44	Linear Feet
Timber	Flooring	58	Linear Feet
Timber Bridge Deck/Rail		342	Linear Feet
Wood Pallets	Wood Pallets	123	Each
Processed Silica	Embankment Fill	8	Cubic Yards
Recycled Polyester Resin	Weedmat	112	Sq. Yd.
Recycled Bridge Items	Decking & Beams (wood)	50	Linear Feet
Reclaimed Asphalt Pavement (RAP)	Patching	10	Tons
Used Unclassified Structure	Borrow	2	Cubic Yards
Mabey Bridge	Bridge	8	Each
Drainage Ditch Excavation	Borrow	7	Cubic Yards
Corrugated Metal Pipe	Metal Pipe	308	Linear Feet
White Roofing Rock	Mulch, Ditch Liner	3,925	Cubic Yards
Aluminum	Traffic Signal Cabinets	544	Each
10-Reused Materials:			
Aggregate Base Course	Aggregate Base Course	5,906	Tons
Concrete Pipe	Concrete Pipe	646	Linear Feet
Guardrail	Guardrail	5,327	Linear Feet
Portable Concrete Barrier	Portable Concrete Barrier	4,377	Each
Sign Posts	Sign Posts	2,545	Each
Signal Heads	Signal Heads	80	Each
Signs	Signs	1,954	Each
Steel Beams	Steel Beams	36,271	Linear Feet
Rip Rap		3	Tons
Timber Bridge Joist	Wood	5	Linear Feet
Timber Bridge Deck	Wood	14	Linear Feet
Sheet Pile	Metal	23	Linear Feet
10-Reused Materials: (continued)			

Prestressed Concrete Cored Slab Beams	Storage Platform for Equipment	1	Each
Concrete Block		13	Each
Silt Fence & Post	Silt Fence	27,626	Linear Feet
Guardrail Offset Blocks		439	Each
Signal Pole Replacement		1	Each
Signal Repair		8	Each
Cable Guiderail Reset	Guiderail	543	Linear Feet

For more information regarding this report, please contact:
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NCDOT 3R Program
Reduce-Reuse-Recycle

NCDOT 3R PROGRAM
• REDUCE • REUSE • RECYCLE

State Fiscal Year 2014-2015

Top-Down Support Leads the way to the success of NCDOT 3R Program

Secretary of Transportation- - Nick Tennyson

"By reducing waste, recycling, and reusing materials - whether on construction sites or day-to-day in the office – we are ensuring that we are operating as efficiently as possible, thereby being good stewards of taxpayer dollars as well as the natural environment."

Chief Financial Officer - David Tyeryar

"It's part of being effective and efficient."

Commissioner Kelly Thomas

"As part of our DMV Reform, we are continuously searching for ways to operate more efficiently. Reducing waste, recycling and reusing materials are simple ways we can achieve this goal, while at the same time supporting jobs in this industry and preserving North Carolina's natural resources."

NCDOT 3R Program

2014-2015 NCDOT employees continue to demonstrate their commonsense approach to handling its waste stream, and prove to be successful in diverting materials from the landfill. N.C. Department of Transportation (NCDOT) employees recycled the following for 2014-2015 year:

2014-2015 Waste Material	Weight
Paper: newspaper, magazines, cardboard, office paper, telephone books, hardback books, etc.	476 tons
Metal: aluminum cans, steel cans, scrap metal, white goods, etc.	1,175 tons
Glass Containers: clear, brown, green, and mixed glass	3.8 tons
Plastic: PETE #1, HDPE #2, LDPE #4, mixed plastic, etc.	27 tons
Commingled Containers: single stream collection of aluminum and steel cans, glass and plastic	25.3 tons
Electronics: monitors, computers, printers, copiers ,televisions, etc.	42 tons
Organic materials: wooden pallets, other wood, yard waste, food scraps, cooking grease, etc.	392 tons
Other materials: lead acid batteries, motor oil, white goods , etc.	512 tons
Grand Total	**2,253** tons

2014-2015 NCDOT upgraded and added more recycling containers state-wide at our Rest Areas/ Visitor Centers as well as the Ferry Division and Rail Division and it is paying huge dividends in materials collected and recycled from the public. This year, more than 32 tons of plastic and glass containers, aluminum cans, newspapers and cardboard were collected and recycled from these facilities.

2014-2015 NCDOT continued with the statewide wide fluorescent light bulb recycling program with success. Facility Maintenance diverted 1,868 fluorescent lamps from the landfill. The program diverted more than 2,300 bulbs from the landfill.

NCDOT's continuous focus on waste management is educating employees on source reduction, reuse and recycle practices. These practices will continue to significantly reduce our waste stream and lessen our environmental footprint.