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ANNUAL REPORT ON THE ENVIRONMENT

**CHAPTER V**

# **SOLID WASTE**

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# V. SOLID WASTE

## A. ISSUES AND OVERVIEW

Fairfax County's solid waste program operated well during FY 2003. The County exceeded its contractual obligations to the Covanta Energy Resource Recovery Facility (E/RRF), processing the second highest amount of waste ever disposed of at the waste-to-energy facility. The Transfer Station celebrated 20 years of service to the community in consolidating smaller loads of waste into larger trailers, thereby reducing traffic congestion and air pollution. A new program was initiated to help identify commercial waste disposed of by companies that use the Citizens' Disposal Facilities. Special recycling collection programs for computer electronics were developed in partnership with ServiceSource, a non-profit organization providing employment and training to persons with disabilities, and Computer Donation Management, Inc. ServiceSource labor is used to disassemble computers and Computer Donation Management Inc. sells valuable components retrieved. This partnership helps to provide employment to persons with disabilities while reducing the quantity of potentially-hazardous materials managed in the County.

There are two solid waste divisions within the County government, the Division of Solid Waste Collection and Recycling (DSWCR) and the Division of Solid Waste Disposal and Resource Recovery (DSWDRR). These two Divisions form a single Business Area, the Solid Waste Management Program. The Program has been functioning under the High Performing Organization model for over a year. During this year, as part of the County Executive's Framework for Excellence, the Program reviewed its Mission, Vision, and Values. In preparation for developing a Strategic Plan for the next five years, staff completed an Environmental Scan, identifying the strengths, weaknesses, threats and opportunities for the Program. The Strategic Plan will form the basis for enhancing existing performance measures that will demonstrate how the Program is performing on a family of measures ranging from simple output to qualitative measures. The Program has focused its efforts in supporting Fairfax County's vision elements of:

- maintaining safe and caring communities;
- creating a culture of engagement with the community;
- maintaining healthy economies;
- exercising Corporate responsibility for County resources and results; and
- practicing environmental stewardship.

### 1. Contractual Issues and Landfill Capacity Backup

Although Covanta Fairfax, Inc. had declared Chapter 11 bankruptcy on April 1, 2002, Covanta continued to operate the E/RRF with minimal problems during the year. All payments to the County are current and maintenance has continued as scheduled.

The County had formalized agreements with other Virginia landfills for backup/emergency disposal capacity last year, because a combination of events

necessitated using landfills to bypass excess waste that could not be accommodated at the E/RRF. The increase in waste generated, coupled with regularly scheduled outages and several days of unplanned outages at the Facility, resulted in the County bypassing over 54,000 tons to landfills outside the County in FY 2003. This was slightly less tonnage than the bypassed amount for FY 2002, which was approximately 57,000 tons.

## **2. Solid Waste Management Plan (SWMP)**

The development of a new SWMP for Fairfax County began in FY 2003. The Virginia Department of Environmental Quality (VDEQ) requires jurisdictions or planning areas to develop a plan describing how and where waste and recyclables will be managed during the next 20 years. The plan requires significant community input, so efforts have been made to engage citizens and businesses in the Plan development. To provide for that input, County staff has contacted each magisterial district office to obtain information about community groups to contact for plan input. County staff has made many presentations to the suggested groups and staff intends to make the same presentation to any other County organization that is interested in plan development. Details about the plan and opportunities for public input are available on the County's Web site at <http://www.fairfaxcounty.gov/dpwes>. To support the presentations, brochures have been developed to educate interested parties about the requirements and process. A survey is available to County residents, on the County's Web site and via printed media, to help obtain public opinion about various solid waste issues. County staff will continue to attend community meetings and events during FY 2003 and throughout FY 2004 to obtain public input for the plan development. The plan will be submitted to VDEQ by July 1, 2004, after a Public Hearing process is completed and the Plan is approved by the Board of Supervisors.

## **3. Solid Waste Disposal Fee**

The contract waste disposal rate, offered to companies that sign agreements with Fairfax County, was raised to \$39.95 per ton in FY 2003, and will remain at that rate through FY 2004. The contract disposal fee covers transportation and disposal of waste, but does not fully cover all community benefit programs initiated by the Solid Waste Management Program. The County has been able to maintain participation from local hauling companies at this rate. The spot market rate varied during the year as the County needed to attract more or less waste depending upon Facility availability.

The associated waste disposal fee charged by Covanta to Fairfax County rose by \$2 per ton for FY 2003, necessitating the increased contract fee for collection companies. The E/RRF's fee increased due to:

- the equipment added for the Clean Air Act retrofits that makes the facility one of the cleanest processes for waste disposal and electrical energy production in the area;
- increased chemical and remediation costs for ash management;
- reduced interest and miscellaneous revenues, and
- increased cost of operations and maintenance of the Facility.

The E/RRF continued to produce up to 80 megawatts of electricity that is sold to Dominion Virginia Power. This is enough electricity to power nearly 70,000 homes. The revenue from electrical generation is used to keep the tip fees as low as possible.

The tip fee traditionally has covered the cost of community benefit programs such as household hazardous waste, recycling education and awareness, and community cleanups. While the tip fee does not cover all the costs, the amount required to support these programs from the General Fund decreased this year. Staff will continue to monitor the situation closely to ensure that costs are met, contractual requirements fulfilled, and changes to procedures are made as required.

## **B. PROGRAMS, PROJECTS, AND ANALYSIS**

### **1. Waste Disposal**

#### **a. I-95 Sanitary Landfill**

##### i. Groundwater Monitoring

Groundwater samples continue to be collected twice a year for analyses, typically in March and September. Results from groundwater monitoring events in 2002 and early 2003 exceeded the Groundwater Protection Standards (GPS) established for the facility in several wells, and pursuant to the landfill's permit, VDEQ was notified. These wells, located very close to the actual buried waste, were anticipated to trigger the notification requirement. Exceeding the GPS limits required that the County perform an Assessment of Corrective Measures (ACM) in August, 2002 to measure the impact of the groundwater to potential receptors, measure the delineation of contamination, and hold a public meeting to discuss the remedy to the problem. The County has been very active in delineating the nature and extent of the contamination detected and drilled eleven additional groundwater monitoring wells. The semi-annual results continue to be analyzed by hydrogeological professionals hired by the County. Initial reports indicate that the contaminants of concern are located near the actual waste depository and have not migrated away from the facility. The ACM dictated that a Presumptive Remedy needed to be implemented as the next step in the groundwater evaluation process specified by VDEQ regulations. As a result, the County has begun to cap the upper reaches of the landfill with a clay liner. This cap will prevent surface water from infiltrating into the landfill and moving off-site. Additionally, no residents use groundwater as their potable water supply, consistent with the Risk Assessment prepared for the facility.

The engineering equipment installed at the landfill remains a critical link in maintaining good environmental control at the facility. Actions such as landfill closure and landfill gas extraction have worked to reduce groundwater impacts.

The groundwater monitoring program will continue to follow the assessment monitoring requirements of VDEQ, where 216 compounds are monitored. The County will continue to monitor groundwater and identify potential impacts of landfill operations outside the boundaries of the landfill site.

ii. Landfill Gas Systems

The I-95 Landfill also has one of the largest landfill gas collection systems installed at any facility in the state of Virginia, with over 250 extraction wells installed specifically for the purpose of collecting methane gas for power production. The collected landfill gas is distributed to a variety of utilization devices, including five enclosed flares and two power plants operated by Michigan Cogeneration Systems (MCS), generating over 6.1 megawatts of electricity.

The gas distribution pipeline, which the County and MCS installed between the I-95 Landfill and the Noman M. Cole, Jr. Pollution Control Plant (NMCCPCP), continues to convey landfill gas to NMCCPCP for the biomass incineration facility. This pipeline is over three miles in length and continues to result in significant savings in energy costs at the NMCCPCP, estimated in 2002 at nearly \$1 million for the year.

The establishment of the gas control systems, significantly ahead of State and federal requirements, has not only provided the landfill with outside revenue sources, but has significantly contributed to an improvement in air quality in the County.

iii. Energy/Resource Recovery Facility

As previously stated, the Energy/Resource Recovery Facility (E/RRF) owned by Covanta Fairfax, Inc., has operated well since the bankruptcy filing on April 1, 2002. Daily operations at the plant have been unaffected as the company works through the bankruptcy process. All payments due to the County are current and no further financial impact to the County is anticipated at this time. Covanta employees have indicated that the company's reorganization plan should be completed by December, 2003, and that the company would emerge from bankruptcy shortly thereafter.

Several visual and functional improvements have been undertaken at the E/RRF this year:

- the chimney is in the process of being repainted;
- tip floor walls and guardrails have been painted to improve visibility;
- the ash conveyor upgrade has been completed, covering the conveyor area and allowing for easier maintenance access;
- grounds have been hydroseeded;

- fire hydrants have been replaced or refurbished; and
- siding has been replaced in several areas, improving the appearance of the facility.

Operational items that were improved this year include:

- Covanta worked to establish seven-day outage periods for scheduled maintenance and met the schedules;
- County staff conducted monthly inspections of the facility along with an independent engineering firm, Dvirka and Bartilucci, to ensure that Covanta is operating the facility using best industry practices;
- cranes are being retooled and enhanced;
- an unburned carbon test was performed to demonstrate compliance with VDEQ air quality permit limits; and
- County and Covanta sponsored meetings between their staffs to discuss and resolve operational issues about the facility.

A review of the Supplemental Waste program is underway by VDEQ to determine if legislative changes in 1999 have had an effect on the types of supplemental materials that can be combusted. Until such time as a final determination is made, supplemental waste being processed through the facility is limited to document destruction materials only.

Fairfax County staff was able to broker a settlement to a longstanding dispute between Covanta Fairfax, Inc. and Dominion Virginia Power for the payment of gross receipts tax. The agreement provides for Dominion Virginia Power to retain the money already held and to receive payment for power recently used by Covanta Fairfax Inc. Fairfax County had to return power payments to Dominion Virginia Power that had already been received from Covanta. Final accounting of the settlement occurred in January, 2003.

#### iv. Air Quality

The I-95 E/RRF monitors flue-gas emissions from the facility on a daily and annual basis. The results of this comprehensive air quality monitoring program are reported annually to VDEQ.

The almost \$7.75 million in capital improvements required by the Clean Air Act Amendments of 1990 have resulted in significant changes in the quality of the air emissions from the facility. While the facility already had many emission controls installed during its construction, the retrofit processes have resulted in significant improvements in the quality of air emissions for the E/RRF. Figure V-1 shows the preliminary reductions in the emissions from the E/RRF:

## **Summary of Initial Performance Data After Retrofits were Implemented**

### ***I-95 Resource Recovery Facility ...***

- 94.5% Removal of SO<sub>2</sub>
- 98.2% Removal of HCl
- 93.4% Removal of Mercury
- 45% Reduction in NO<sub>x</sub>
- Very Low Dioxin Emissions

Figure V-1 - Prepared by HDR Engineering

The NO<sub>x</sub> emissions were well below the air permit mass emission limit during FY 2003.

The independent engineering firm of HDR Engineering is currently conducting a further review of the air emissions from the facility. As that information becomes available, County staff will provide it to EQAC. The preliminary results of this new analysis demonstrates the continued reductions in emissions produced by the Facility. The HDR study also compares the air emissions from the production of electricity from waste-to-energy facilities to the air emissions from the production of electricity from coal-fired power plants and facilities using other fuel sources. Waste-to-energy is proving to be a much cleaner overall way to produce electricity with the side benefit of reducing the amount of waste that must be landfilled.

#### v. Ash Characterization

Ash resulting from the combustion process reduces the volume of refuse to only 10% and its weight to about 25% of the original quantity of refuse. Ash generated by the E/RRF is disposed of in a much smaller area of the I-95 Landfill when compared to the amount of space needed to dispose of the same quantity of uncombusted waste. Ash produced was analyzed by an independent lab and found to be well within permit limits for all constituents, including arsenic, chromium, lead, mercury, selenium, and silver. One analyte, cadmium, while below the regulatory threshold, has shown an increase over a previous year's analysis. Staff believes this increase is due to the increasing number of

nickel-cadmium (NiCd) batteries being used and subsequently disposed of in the County. County staff is exploring ways to remove these batteries from the waste stream before combustion, and this is discussed further in the recycling section.

#### vi. Wastewater Discharge

Quarterly wastewater discharge testing was conducted throughout FY 2003 and consistently demonstrates compliance with permit requirements. There were no exceedances of permitted wastewater flow rate limits or other constituents regulated by the permit.

County staff continues to work with Covanta to build a cooling water discharge system to dechlorinate water used in the cooling process before it is discharged. Increasing amounts of water are required for the cooling process because of the increasing conductivity of the water supplied by the Fairfax County Water Authority. Covanta has also obtained a permit to discharge the clean water into Mills Branch rather than into the wastewater system, preserving capacity at the wastewater treatment plant.

#### vii. Quantity of Waste Managed

The Guaranteed Annual Tonnage (GAT) requirement for the E/RRF is 930,750 tons per year and remains fixed until February 2011 when the contract between the County and Covanta terminates. The amount of waste delivered to the Facility in FY 2003 was almost 1,094,000 tons.

During FY 2003, the County shipped over 54,000 tons of solid waste to landfills when the capacity (or availability) of the E/RRF could not accommodate the waste generated. Staff has worked to maintain the E/RRF at full capacity, therefore maximizing energy production and decreasing costs. The following efforts have been undertaken to continue to meet or exceed the GAT commitment:

- Continuation of the waste agreement with Prince William County ;
- Continuation of an agreement with the District of Columbia's solid waste contractor to deliver waste to the E/RRF;
- Entrance into contracts with haulers operating in Fairfax County to deliver all waste collected in the County in exchange for a reduced disposal price; and,
- Continuation of the spot market program to attract out of County waste to the facility.

Staff is carefully analyzing solid waste tonnage projections for the preparation of the Solid Waste Management Plan. Accurate waste quantities and estimated projections of quantities to be generated in the future are necessary to develop strategies to ensure that there is sufficient disposal and recycling capacity for the County's increasing waste management needs.

Figure V-2 shows the recent total amounts of waste generated in Fairfax County.

**TOTAL FAIRFAX COUNTY WASTE**



Figure V-2- Historical Quantities of Refuse Generated in Fairfax County

viii. I-66 Transfer Station, Landfill & Citizens Recycling & Disposal Facility

The Transfer Station celebrated its 20th year of operation during FY 2003. The Transfer Stations continues to operate for the purpose of consolidating loads of refuse and recyclables to assist in reducing truck traffic and air emissions associated the operation of a fleet of transportation vehicles.

VDEQ inspected the Transfer Station several times during 2003 for compliance with state environmental regulations. VDEQ did not note any deficiencies during these inspections.

Staff continues to work with an outside contractor to assist with transport of waste to the various disposal locations. The outside contractor serves to add trucks when peak demand requires waste transport while the County fleet maintains a stable base. The County fleet is somewhat less expensive to operate than that managed by the outside contractor; however, the flexibility to optimize transportation during peak times is advantageous to the County and serves to lower overall costs.

Additionally during FY 2002, the County leased seven tractor units instead of purchasing them outright; the County continues to analyze this utilization methodology for further consideration. This is another strategy to reduce overall operating expenses.

The Transfer Station consolidates smaller waste loads into tractor trailers, reducing the number of smaller trucks that need to travel County roads to dispose of refuse at the I-95 complex. It is estimated that each trailer holds waste from two to three smaller trucks. Approximately 125 trailer loads of waste move from the Transfer Station to the I-95 complex daily, reducing by two-thirds the number of trucks traveling to the I-95 complex.

County drivers had driven over 7.4 million miles before they sustained one chargeable accident in February, 2003. This low vehicle accident rate is truly noteworthy, especially given the traffic congestion in the area and conditions of the roads traveled from the I-66 Transfer Station to the I-95 Landfill complex.

A study is underway to determine if ultra low sulfur fuels can be efficiently used in the County's diesel truck fleet. Again the purpose is to reduce air emissions resulting from the operation of diesel equipment in as many ways as practicable.

A new program began at both the I-66 and I-95 locations to better distinguish commercial waste from citizens' waste because a different payment scale is applied to the different sources of waste. The Commercial Cash program for businesses operating in Fairfax County was such a successful pilot program during FY 2003 that it will be integrated into the full service waste management activities available at both locations. The Commercial Cash program is designed for smaller businesses that generate waste while conducting their business. They may obtain a permit, without providing a bond, and pay cash to dispose of waste at either facility. More than 2,500 companies now have the permits.

#### ix. Household Hazardous Waste (HHW) Program

The County continues to operate two household hazardous waste collection centers: one at the I-66 Transfer Station and the other at the I-95 Landfill. Both locations are open three days each week. However, in early FY 2003, staff added a pilot program to begin opening the HHW facility at the I-66 Transfer Station on Sundays, adding a fourth day of operation each week. This was done using a combination of outside contract personnel and County staff altering their hours to work each Sunday.

There were a total of 16,149 customers that used the HHW service at either of the two Citizen's Disposal Facilities located at the I-66 or I-95 complexes. The total quantity of hazardous waste managed at the two facilities in FY 2002 was 359,840 pounds of HHW.

Staff has reestablished the Conditionally Exempt Small Quantity Generator (CESQG) service as a portion of the HHW program. Use, however, remains limited and minimal. Solid Waste Management Program staff continued outreach during FY 2003 to the Fire Marshall's Office and the Industrial Waste Section to have their staffs inform potential customers about the program.

x. Program Enforcement

Solid Waste Management Program staff continues to respond to ordinance complaints related to solid waste issues. In FY 2003, complaints continued to rise slightly, with complaints mostly focusing on solid waste collection haulers and private long-haul trucking companies parking loaded vehicles around the County.

## **2. Waste Reduction and Recycling Programs**

### **a. Overview of Recycling Programs**

The Fairfax County Division of Solid Waste Collection and Recycling (DSWCR) is responsible for the management and implementation of the Countywide recycling program to ensure compliance with Fairfax County's solid waste management code, Chapter 109, and state law and associated regulations. The VDEQ is responsible for administering regulations that require all municipalities in the Commonwealth to recycle at least 25 percent of the total volume (by weight) of municipal solid waste (MSW) generated in the jurisdiction. These regulations are codified as 9 VAC 20-130-10 and became effective on August 1, 2001. Annual reports documenting the recycling rate for the preceding calendar year are now due to the VDEQ by April 30 each year.

To comply with the requirement to measure and track the recycling rate, Fairfax County currently administers Chapter 109, which provides the requirements for solid waste collection, recycling, and disposal for residences and commercial properties located within Fairfax County.

The County requires annual reports on the tonnages of recyclables collected by individual solid waste haulers permitted within the County, commercial businesses that generate regulated quantities of MSW, and the Material Recovery Facilities (MRFs) and other recycling entities operating in Fairfax County. These reports are due to DSWCR by the end of February of each year. These reports are evaluated and compiled to calculate the Countywide recycling rate, which for calendar year 2002 was 32%. The following chart (Figure V-3) depicts the historical rates of recyclables generated in the County since the recycling program's inception in 1988.

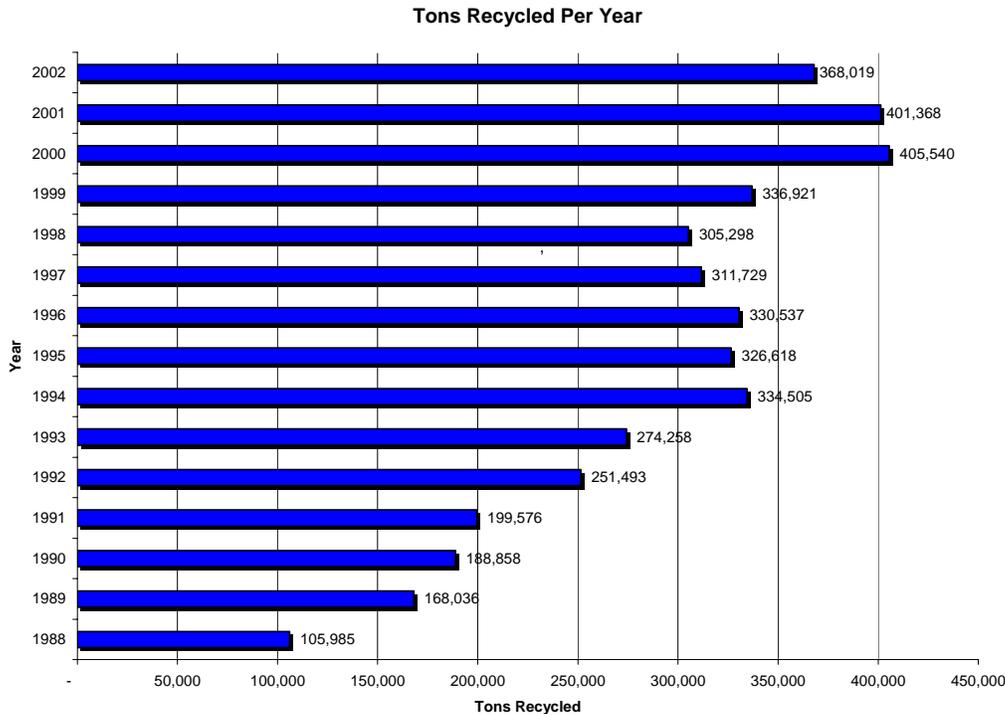


Figure V-3 - Historical Quantities of Materials Recycled from Fairfax County

The recycling rate of 32% is less than the rate calculated for calendar year 2001, which was reported as 34%. The reasons for this are twofold: first, the quantity of paper collected for recycling in the County was reduced by approximately 16,000 tons and yard debris was reduced by almost 6,000 tons; and secondly, the Fairfax County MSW generation rate increased by more than 47,000 tons. The cumulative effect of these actions caused a 2% reduction in the 2002 recycling rate. Because the recycling rate is directly linked to the quantity of refuse generated in the County, anytime the quantity of refuse generated in the County is increased, it has a negative effect on the recycling rate. However, Fairfax County still exceeds the State's recycling requirement where 25% of the total tonnage of MSW generated in the County must be recycled.

Several other factors, codified in Chapter 109, affect the ability of the County to increase the quantity of materials recycled. To thoroughly understand how recycling works in the County, it is important to distinguish between the types of recycling programs in effect in the County. The two major County recycling programs are the curbside residential collection of recyclables and business recycling program. Curbside residential collection of recyclables is mandated by Chapter 109, which requires the collection of newspaper, glass food and beverage containers, metal food and beverage containers, and yard waste. Chapter 109 does not require private refuse collection companies to collect any other types of paper (including office paper or cardboard), nor does it require the collection of any plastic. However, in the County Sanitary Districts, the Solid Waste Management

Program staff elected to expand curbside residential recyclables collection by including mixed paper (magazines, newspaper inserts, paperboard, cardboard, office paper, etc.) and plastic bottles. This expansion has resulted in a 20% increase in the quantity of recyclables collected within Sanitary Districts as compared to the quantity collected in residential areas served by private haulers operating in the County.

Business recycling in Fairfax County is limited by County guidelines, which do not require participation by the majority of businesses operating in the County. Only the following businesses are required to recycle in the identified fashions:

- Office buildings - recycling is required only if the office building has more than 200 full-time employees. If recycling is required, then only the recyclable material generated in the highest quantity must be recycled.
- Commercial Business Centers (strip malls, large shopping malls, commercial business parks etc.) - recycling is required only if the businesses in the commercial business center generate more than 100 tons of refuse per year. If the commercial business center generates more than 100 tons of refuse per year, then only the recyclable material generated in the highest quantity must be recycled.
- Multi-family housing (apartment and condominium complexes only - not townhome developments) - recycling is required only if the building has more than 100 units; no recycling is required if the building has 99 units or less. If the building has more than 100 units, only newspaper and no other commodity must be recycled.

The thresholds of recycling requirements are being re-evaluated as part of the new Solid Waste Management Plan for Fairfax County; this may result in thresholds being modified for greater mandatory participation.

#### **b. Other Collection and Recycling Programs**

In addition to Countywide recycling program management, the Solid Waste Management Program staff is responsible for the:

- Collection of refuse and recyclables from about 40,000 residences primarily on the east side of the County;
- Collection of refuse and recyclables from the County agency buildings;
- Vacuum leaf collection for 19,000 residences
- The Recycling Drop Off Centers (RDOCs);
- Refuse removal due to evictions and other court orders; and
- All public outreach and education for recycling and waste management programs.

The Solid Waste Reduction and Recycling Centers (SWRRCs, or Park Outs) were eliminated at the end of June, 2003 due to significant drops in the participation level in the program. The reduction in participants resulted in a shortfall in covering the costs of the program, and in April, 2003, the Board of Supervisors voted to eliminate the program. Residents who used the SWRRCs can choose to have curbside collection of trash and recyclables or self-transport their refuse and recyclables to either the I-66 or the I-95 complexes. Two private solid waste collection companies have also started to offer park out collection services at these locations.

Brief descriptions and updates of programs are provided in the subsequent sections of this report.

#### i. Residential Recyclables Collection Programs

Residential recycling of several Principal Recyclable Materials (PRMs as defined by VDEQ regulations) became mandatory in 1992 for all single family homes, residential townhouses, apartment complexes, condominium units, and residential duplexes with curbside collection. PRM recycling became mandatory in 1993 for residential units and building complexes with dumpster service. Curbside residential collection of recyclables is controlled by Chapter 109 which requires the collection of newspaper, glass food and beverage containers, metal food and beverage containers, and yard waste. Chapter 109 does not require private refuse collection companies to collect any other types of paper (including office paper or cardboard), nor does it require the collection of any plastic. However, in the County Sanitary Districts, the Solid Waste Management Program staff elected in 2000 to expand curbside residential recyclables collection by including mixed paper (magazines, newspaper inserts, paperboard, cardboard, office paper etc.) and plastic bottles. This recyclables collection expansion in the County Sanitary Districts has resulted in a documented increase of 20% by weight of the quantity of recyclables collected from approximately 40,000 customers who get their refuse and recyclables collection services from the County. As stated previously, privately-owned refuse and recyclables collection companies are not required by Chapter 109 to collect these additional types of recyclables.

Weekly curbside collection of newspaper, and glass and metal food and beverage containers is required to be conducted at all residences with curbside collection services provided either by County employees in the Sanitary Districts or by the other private haulers permitted to operate in the County. For multifamily dwellings such as apartment buildings or condominiums, recycling is required only if the building has more than 100 units; no recycling is required if the building has 99 units or less. If the building has more than 100 units, only newspaper and no other commodity must be recycled.

In order to ensure that new multifamily dwellings are designed (prior to construction) to provide adequate common areas for the installation and operation of recycling equipment, amendments were made to the Fairfax County Public Facilities Manual which became effective for new Site Plans submitted after September 1, 2003. The amendments require that, in any new construction of multifamily residential complexes with more than 100 units, a space must be designated to accommodate recycling for the building. A Recycling System Statement on the Site Plan cover sheet identifies properties required to recycle, so that appropriate facilities may be designed prior to building construction. These requirements do not apply to townhome residential complexes that will have curbside collection of refuse and recyclables because they are provided with curbside recycling service.

The collection and recycling staff of the Solid Waste Management Program for Fairfax County provides refuse and recyclables collection for approximately 40,000 single family homes and 1,200 public housing units. The balance of the County's residential single family homes or townhomes receive trash and recyclables collection services from approximately 30 private haulers that must be permitted by the County.

ii. Yard Debris

Recycling of yard debris (small branches, leaves and grass) is also required in Fairfax County. Curbside collection of yard debris is required to be provided by the privately owned refuse and recyclables collection companies operating in the County and the County staff providing similar service to approximately 40,000 customers in Sanitary District areas.

Woody materials, referred to as brush, comprise a portion of the overall quantity of yard debris collected in the County. Brush is managed at either the I-66 or I-95 facility to be ground into mulch. The mulch from these facilities is available for free to County residents who can self-haul the material to the end use location. Mulch is typically used as a topdressing around decorative plantings to reduce weed growth and to maintain soil moisture. Leaves and grass comprise the balance of the total quantity of yard debris managed in the County. This material is sent to either of two composting facilities, where the material undergoes a biological decomposition to turn it into compost which is used as a soil substitute. In 2002, Fairfax County recycled 106,768 tons of yard debris. Yard debris decreased by approximately 6,000 tons in FY 2003 due to the very dry summer period, resulting in less vegetative growth.

During 2002, County staff was made aware of the impact of plastic bags on the production of compost from yard debris. When leaves, grass, or brush is contained by the homeowner in plastic bags for collection at the curb, the plastic bags go to the composting facility, where a bag spitting machine cuts the bags open to release the yard debris. This equipment revolves in a circular fashion

during operation. While rotating, the split plastic bags entangle the yard debris, especially the brush, into a mass where the plastic bags cannot be removed. The yard debris contaminated with plastic bags cannot be composted because there is no feasible technique to remove the plastic bag from the entangled brush. Compost has little value on the open market when contaminated with plastic bags. The collection of yard debris in transparent plastic bags is specifically allowed as provided by Chapter 109. The reason that yard debris is permitted to be collected in transparent bags is to allow the collection staff to discern that the bag contains yard debris rather than trash. The County Code also allows for the collection of yard debris in reusable containers and paper bags, which eliminates the plastic contamination problem. The Solid Waste Management Program staff will evaluate this situation for the long-term waste management program currently under development.

### iii. Recycling Drop Off Centers (RDOCs)

Fairfax County operates eight Recycling Drop Off Centers located at various points throughout the County. The number of RDOCs has decreased from the fourteen available in 1995, since participation in curbside recyclables collection reduces the need for the RDOCs. However, the RDOCs provide additional recycling opportunities for residents served by privately-owned refuse and recyclables collection companies that are not required by Chapter 109 to collect these additional materials at the curb (mixed paper, cardboard and the Nos. 1 and 2 plastics bottles and jugs). These RDOCs are relied upon by small commercial operations in the County to facilitate their recycling while significantly reducing their costs for refuse disposal. However, the RDOCs are part of the community benefit programs which do not generate sufficient revenue to cover the cost of operation.

### iv. Privately-Owned Solid Waste Haulers

For areas of the County where refuse and recyclables services provided by County employees have not been requested via the Sanitary District Petition process, privately-owned and operated refuse and recyclables collection firms permitted by the County collect these material curbside from residences and commercial businesses. The independent haulers do not operate within specific geographic areas but rather compete for individual homes, contracts with civic or homeowner's associations, and commercial or office contracts. As such, there are instances within the County where refuse/recyclables collection trucks from several companies operate on the same street on the same day. This creates the obvious issues of truck traffic, air emissions, safety, roadway use and certain operational inefficiencies with respect to duplicating collection routes. Moreover, during FY 2003, the consolidation of collection companies continued. Fewer and fewer choices are available for residents since the largest residential collection company now collects from about 65% of individual homes in the County.

All solid waste haulers permitted in Fairfax County are required to report residential recycling tonnages annually to the County. Reports requesting this information are sent out at the end of the calendar year and are due to the County by the end of February. These reports provide an accounting of the tonnages of individual recyclable commodities collected by individual haulers for use in the preparation of the recycling rate report due to VDEQ annually. Private solid waste haulers typically rely on weight tickets to provide the tonnages of recyclables collected and are required to maintain documentation of recyclables collected on file in their offices for review and inspection upon request of the County.

v. Commercial Recycling Programs

The County also administers a commercial recycling program that is mandatory for businesses operating in the County based on the quantity of refuse generated or the number of employees occupying the building. Those commercial properties generating 100 tons of waste annually or housing 200 office workers are required to recycle the predominant Principal Recyclable Material (PRM) in the waste stream (typically office paper) and report these quantities annually to the County.

vi. Voluntary Commercial Source Reduction Programs

The County has promoted source reduction within the private sector by using case studies to publicize the efforts and cost savings realized by businesses that have set up successful source reduction programs. Technical assistance is provided to the private sector to assist in the development of voluntary and mandatory recycling and source reduction programs. Source reduction in Fairfax County is a challenge because of the lack of manufacturing base where source reduction activities typically are concentrated. The most effective voluntary source reduction strategy that is feasible for Fairfax County is the management of grass clippings and other yard debris in home composting systems or by simply leaving them on the lawn for natural decomposition.

vii. County Agency Routes

All County agencies serviced by County staff for the collection of refuse and recyclables participate in recycling for their particular locations. In calendar year 2002, County agency locations recycled approximately 824 tons of materials. The Solid Waste Management Program staff provides all backup support to ensure adequate communication of the recycling requirements as well as operational support for general programs or other special activities as needed.

### viii. Public Education

Public education and outreach form the basis of any county's public outreach effort. To that end, the County's Solid Waste Management Program focuses on the development and implementation of creative education programs that can take advantage of partnerships with County agencies, Fairfax County Public Schools, commercial businesses, and private haulers. Outreach programs consist of attendance at County events, the support and advertisement of several days every year specifically dedicated to recycling efforts, public speaking opportunities, and technical support of recycling activities and issues.

Annually, the Solid Waste Program participates in Clean Fairfax Council's Earth Day/Arbor Day event, Celebrate Fairfax, and Fall for Fairfax. These events are a major portion of the Program's overall public outreach campaign and provide the Program with the opportunity to provide technical guidance as well as practical information about the County's solid waste and recycling programs. In FY 2002, the Solid Waste Program won the Best of Show Award at the Celebrate Fairfax event in June with an interactive display of equipment and programs. In FY 2003, the Solid Waste Management Program also won a blue ribbon for content for the Celebrate Fairfax event.

The Solid Waste Management Program is also a financial sponsor of the annual Earth Day/Arbor Day event promoted by Clean Fairfax Council. This year, the Solid Waste Management Program was a financial sponsor of the Johnnie Forte Jr. Environmental Scholarship, which awarded six \$500 scholarships to applicants from the Fairfax County Public Schools. This award program is a portion of SCRAP, the Schools/County Recycling Action Partnership. The SCRAP partnership was created by the Fairfax County Public Schools and Fairfax County Division of Solid Waste Collection & Recycling to provide opportunities for the students of Fairfax County Public Schools to learn about recycling and other environmental issues and to enhance recycling throughout the system. The Partnership functions in a cooperative and collaborative manner to assist in increasing the recycling awareness and practice at Fairfax County Public Schools by:

- Developing opportunities for students to learn about recycling and other environmental issues;
- Providing support for school recycling activities to assist in achieving recycling goals; and
- Providing environmental science expertise to support student projects and activities.

The Partnership unites the resources of both organizations in a unique relationship to expand upon and enhance the existing FCPS recycling program for the benefit of the schools and the environment.

The Solid Waste Program also promotes an annual Clean Your Files Day geared to County Agency staff to remind staff of the benefits of recycling of office paper and America Recycles Day (November 15), when recycled products purchasing is emphasized.

Public outreach and education is accomplished through involvement in community events and public speaking opportunities as well as the Solid Waste Program's membership in the Lorton Citizens Alliance Team (LCAT) and Citizens' Advisory Committee on Solid Waste.

The Solid Waste Management Program takes full advantage of the internet by placing pertinent information about timely subjects on the County's Web site. Information about involvement in community events as well as new information about solid waste matters is constantly updated on the Web at [www.fairfaxcounty.gov/gov/dpwes](http://www.fairfaxcounty.gov/gov/dpwes).

An extensive public outreach effort this year has focused on obtaining citizens' input for the development of the Solid Waste Management Plan. Staff has engaged citizens in defining the questions to be used for an online public opinion survey. Staff attended various community association and business group meetings and events to present information about the existing solid waste management program and the needs for the future. Brochures explaining the Plan and its elements were distributed and surveys collecting public input were disseminated. This public awareness and education effort will continue through FY 2004.

Program staff is solicited to make presentations to a variety of citizen's groups every month of the year, and staff makes every effort to accommodate the quantity of requests. The Solid Waste Management Program staff prepared formal presentations on a variety of issues and is available to community groups upon request.

Staff is in the process of updating all of the written publications to account for changes in programs and activities. Publications are being rewritten to ensure the clarity of the contents and that they are informative and present information in a suitable fashion to address a particular question or issue. All publications will eventually be available on the County Web site to allow for the ease of access and printing for distribution. Additionally, the County maintains an automated recycling information line (324-5052) for citizen access to recycling opportunity information.

The Solid Waste Management Program staff is also using the Web to collect information from citizens as well as the regulated community as a service to customers to aid in the provision of information back to the County. The forms developed by the Solid Waste Management Program to collect data from recyclers in the County used to calculate the recycling rate are on the Web site in

a format which automatically totals the tonnages of recyclables collected. More opportunities to use the internet will avail themselves as technology advances.

## **C. LEGISLATIVE AND REGULATORY CHANGES**

The 2003 session of the Virginia General Assembly addressed only a few pieces of legislation associated with solid waste management issues. There were several specific pieces of legislation introduced regarding solid waste and recycling. The successful pieces of legislation, effective July 1, 2003, are listed below:

- **Cathode Ray Tube Recycling Program.** Requires the Virginia Waste Management Board to adopt regulations to encourage cathode ray tube and electronics recycling. The bill also authorizes localities to prohibit the disposal of cathode ray tubes in any privately operated landfill within its jurisdiction, so long as the locality has implemented a recycling program that is capable of handling all cathode ray tubes generated within the jurisdiction.
- **Waste Tire and Tire Recycling Fee.** Strengthens the VDEQ's ability to clean up the remaining tire piles throughout the State. The civil and criminal liability provisions of the bill are conformed to the penalties of other environmental statutes. The bill authorizes the establishment of tire convenience centers, which are collection points for the temporary storage of tires. To be classified as a convenience center, the collection point cannot receive waste tires from collection vehicles that have collected waste from more than one property owner. The bill exempts Department of Motor Vehicle licensed salvage yards that are holding fewer than 300 tires and convenience centers having up to 1,500 tires from having to obtain a permit from VDEQ. The bill also establishes a strict liability standard for damages incurred by neighboring property owners when a tire pile burns. To expedite the cleanup of tires piles, a three-year increase in the tire recycling fee from \$0.50 per new tire sold to \$1.00 is proposed. The revenue generated by the increased fee is required to be used solely for the removal of tire piles.

## **LIST OF REFERENCES**

*2003 General Assembly Final Report*, Memorandum from Sue Rowland, Legislative Liaison, to Members, Northern Virginia Waste Management Board, April 21, 2003.

The narrative and illustrations were supplied by the Division of Solid Waste Collection and Recycling and the Division of Solid Waste Disposal and Resource Recovery.