
ANNUAL REPORT ON THE ENVIRONMENT

CHAPTER V

SOLID WASTE

V. SOLID WASTE

A. ISSUES AND OVERVIEW

Fairfax County's Solid Waste Management Program experienced a truly successful and productive year in FY 2008. Expansion of the recycling program was the primary focus of the program this year, as changes to Chapter 109.1 of the Fairfax County Code were implemented requiring everyone in the county to recycle. This focus on recycling resulted in an increased recycling rate of 38 percent of all waste generated in Fairfax County, exceeding the state requirement of 25 percent. As always, the county met its minimum annual waste delivery obligations to Covanta Fairfax Inc., owner and operator of the I-95 Energy/Resource Recovery Facility. During this year, the SWMP also provided waste collection and recycling services to over 45,000 homes in designated County Sanitary Districts and moved a daily average of 200 tractor-trailer loads of municipal solid waste from the I-66 Transfer Station to the E/RRF or other appropriate disposal locations.

1. Energy/Resource Recovery Facility and Landfill Capacity

The E/RRF continued to serve as the primary disposal location for county MSW, processing approximately 1,030,000 tons of waste in FY 2008. This is a decrease of 2.7 percent from the FY 2007 level. Due to increased availability at the facility and management of the tipping floor, the county had to bypass less than 3,000 tons of waste to an MSW landfill. This also reflects our efforts to keep waste at the facility, if at all possible, to reduce trucks having to haul materials downstate.

Due to capacity availability, the E/RRF was able to accept an increased amount of waste from neighboring jurisdictions outside the county. Approximately thirteen percent of waste sent to the E/RRF was from local jurisdictions such as Prince William and Loudoun Counties and the District of Columbia. The remaining tonnage of waste processed at the facility was generated in Fairfax County.

2. Solid Waste Management Plan Implementation

The Solid Waste Management Plan was approved by the Board of Supervisors in 2004. Highlights of the implementation actions include:

a. Additional Clarifications and Revisions to the Solid Waste Management Ordinance

A revision was made to the county's solid waste management regulations (formerly Chapter 109), now found in Chapter 109.1 of the County Code. The new ordinance updated and clarified certain provisions. The clarifications:

- Reestablished county control of waste destined for disposal outside the state;
- Required collectors using single-stream recycling to identify the vehicles as recycling vehicles when performing that function;
- Extended time limits for temporary permits;

- Required all collectors to provide a Statement of Service to their customers;
- Defined terms such as collector and brush; and
- Aligned parking controls on collection vehicles to match those of the police.

b. Non-Residential and Multi-Family Residential Recycling Requirements.

The SWMP continues to implement the nonresidential and multifamily property recycling requirements that went into effect in July 2007 as defined by the changes to Chapter 109.1. To accompany the implementation of the new recycling requirements of the code, changes were made to the county Public Facilities Manual. The PFM is the document that defines all of the site design requirements for new buildings in Fairfax County. The change was necessitated to delineate design requirements for outdoor trash and recycling containers or dumpsters for new construction.

The new PFM requires that engineers and architects ensure that adequate space is allocated on the site for both a trash container and a recycling container. The containers must be of appropriate size to store the volume generated by businesses on the property. Adequate space must be allocated on the site for trucks to approach the container and empty it safely. Building site plans must show the dimensions and location of the container area and this information must be submitted to the Department of Public Works and Environmental Services' Division of Land Development Services for approval prior to construction. These changes are intended to ensure that an area adequately designed and sized for trash and recycling collection is available for storage in a safe and clean manner.

c. Resources for Recycling Construction/Demolition Debris

Chapter 109.1 required that beginning July 1, 2007, construction and demolition contractors must recycle corrugated cardboard. Education activities have been underway to inform companies of the new requirement and to educate their customers about the need to recycle.

d. Remote Household Hazardous Waste (HHW) Collection Events

In addition to its permanent collection sites at the I-66 and I-95 complexes, the SWMP conducted five remote HHW events during FY 2008. The collection events were held at locations in the Mount Vernon, Mason, Dranesville, Hunter Mill and Springfield Districts. These remote events are part of the county's Environmental Improvement Program and are dependent upon separate funding by the Board of Supervisors on an annual basis.

e. Environmental Excellence. The SWMP continued to maintain its Environmental Enterprise (E2) certification with the Virginia Environmental Excellence Program, administered by the Virginia Department of Environmental Quality.

Other Solid Waste Management E2 goals and objectives for 2009 include the following:

- Continue to support a progressive policy through which currently 14 employees telecommute (28 percent of eligible employees).
- Maintain involvement with the Businesses for the Bay Certification Program.
- Continue to celebrate Earth Day as well as support Virginia Recyclers Association’s designation of April as Electronic Recycling month.
- Continue with the Noman M. Cole Pollution Control Plant evaluation of using the effluent as a source of water for the E/RRF.
- Continue to sponsor at least four community recycling events and, where possible, include computers and peripheral equipment, cellular telephones, rechargeable batteries, bicycles and eye glasses are reused and recycled. These recycling events are conducted in partnership with a variety of non-governmental organizations and private businesses.

Accomplishments of E2 Program in FY 2008

Continued to operate six hybrid vehicles and two electric vehicles, reducing air emissions from the operating fleet.

Continued to work for a new landfill gas-to-energy project at the closed I-66 Landfill and Vehicle Repair Facility.

Continued to operate two LFGTE projects at the I-95 Landfill complex and the newest LFGTE space heat project.

Held five E-waste and specialty recycling events in 2007. Collected approximately 100 tons of obsolete electronic equipment and other usable items that were donated to charity.

Held three Conditionally Exempt Small Quantity Generator events, collecting a total of 8,610 pounds of Hazardous Waste.

Held five remote HHW collection events, in addition to two permanent drop-off centers.

Worked with property managers to educate them about new recycling requirements.

Expanded recycling in county buildings by providing new containers to collect cans and bottles.

Determined that the project designed to have the E/RRF provide emergency backup power for the Fairfax Water plant and the NMCPCP was not cost effective and ended the project.

f. Solid Waste Management Award from the Solid Waste Association of North America.

Fairfax County’s SWMP was awarded a national excellence award from the Solid Waste Association of North America. The award is for excellence in the category of “Integrated Solid Waste Management Systems” where the county was

recognized for its superior performance in the management of the entire countywide solid waste management program.

3. Solid Waste Disposal Fee

The contract waste disposal fee, offered to companies that sign agreements with the county, increased to \$49.95 in FY 2008. Due in part to losing its General Fund support for the programs such as recycling education and household hazardous waste, the SWMP was forced to increase its solid waste disposal fee by 10 percent to \$55.00 for FY 2009. The county posted an explanation of the impact of the disposal fee increases, about \$1.00 per household per month, on its Web site. Prices for disposal at the citizens' facilities remained at \$57 per ton. A complete list of fees for various materials is posted on the county's Web site and at the facilities.

Due to a significant reduction in use, prepaid punch cards that could be purchased by residents were discontinued beginning July 1, 2008. The administrative costs of the program were too high for the small number of residents using the cards.

B. PROGRAMS, PROJECTS AND ANALYSIS

1. Waste Disposal Program

a. I-95 Landfill Complex and Citizens Disposal Facility

i. Groundwater Monitoring

Groundwater Protection Standards were established for the I-95 Landfill complex on November 20, 2000, through an amendment to the facility permit. In accordance with Waste Management Regulation 9 VAC 20-80-250.D.6.g, an Assessment of Corrective Measures report was submitted to VDEQ in August 2002. VDEQ commented on the ACM and the county addressed VDEQ's comments by submitting a revised ACM and Corrective Action Plan on April 30, 2004. The reports describe the nature and extent of groundwater contamination, provide a risk assessment for these conditions and establish a proposed program of corrective action. The county has proposed to implement a five-part remedy for groundwater at the I-95 Landfill complex. Proposed components of the program consist of:

- Institutional controls;
- Engineering controls;
- Monitored natural attenuation;
- Accelerated bioremediation (reductive dehalogenation); and
- Direct oxidation.

The county will implement institutional controls in accordance with the closure and post-closure care plan. A variety of engineering controls (leachate collection, landfill gas system and placement of cover) will be used. As

presented in the ACM, the concentration of most regulated constituents began to attenuate relatively abruptly after engineering controls were implemented during the 1990s. Natural attenuation will be enhanced by injection of food grade material that will enhance microbial activity via reductive dehalogenation. Direct oxidation will be employed in one area of the facility. Two common forms of permanganate (potassium and sodium) will be used. Both are strong oxidizing agents. This will be done in the selected areas. A Corrective Action Monitoring Plan has been submitted to VDEQ along with the Corrective Action Plan. The county will implement the CAP after final approval from VDEQ.

As part of the investigation, the county has drilled and sampled 16 additional monitoring wells to further delineate and remediate any groundwater problems. Staff will continue to perform the groundwater monitoring to comply with VDEQ's requirements of assessment monitoring. Further, staff will monitor the additional parameters at supplemental locations as specified in the CAP.

These proactive steps will be used at the I-95 Landfill to assure protection of the groundwater resources. These advanced steps are believed to be among the first used at a Virginia landfill. The county continues sampling and monitoring the groundwater and is in compliance with VDEQ's regulations.

ii. Landfill Closure

Capping of the municipal solid waste section of the landfill (an area of 260 acres) has been completed. Phase II of the closure consisted of capping 135 acres of landfill with a thick, low permeability soil layer to minimize surface water infiltration. Phase I of the MSW closure was completed by placing synthetic cap over an area of 125 acres. Additional landfill gas control systems were installed as part of the closure design. The project was awarded Project-of-the-Year by the VA-DC-MD Chapter of the American Public Works Association in 2007.

Partial closure of the ash landfill continued during FY 2008. Side-slopes of filled cells are capped by using a synthetic landfill cap.

iii. Landfill Gas System and Air Emissions

The I-95 Landfill operates one of the largest LFG collection systems in Virginia, with over 330 installed wells extracting LFG for energy recovery. Approximately 3,000 cubic feet per minute of this LFG is distributed to a variety of energy recovery systems, including the six-megawatt Michigan Cogeneration Systems electric generating facility and the three-mile LFG pipeline that provides fuel as a substitute for natural gas at the Noman M. Cole Pollution Control Plant. The LFG pipeline project continues to provide significant energy cost savings at the NMCPCP.

During FY 2008, county staff continued to install new landfill gas wells to replace existing wells that cease to function properly due to normal landfill settlement.

County staff has also converted space heating at the landfill shop facility to LFG (the original heating system used bottled propane gas). This conversion is expected to save approximately \$6,000 per year in heating costs. In 2006, the project received a National Award from the U.S. Environmental Protection Agency's Landfill Methane Outreach Program.

During the reporting period, the county continued its solid compliance history with Virginia's air pollution and LFG control regulations. Quarterly methane gas surface emission and perimeter monitoring were conducted as required, and annual air emission reports were submitted to the VDEQ. VDEQ has found all submittals to be acceptable.

iv. Ash Landfill

Ash resulting from the E/RRF combustion process reduces the processed waste to only 10 percent of its original volume and about 25 percent of its original weight. Therefore, ash disposal requires significantly less landfill space than that which is consumed by the disposal of raw MSW. Incinerator ash from the E/RRF, a similar Covanta facility serving the City of Alexandria and Arlington County and the NMCPCP are disposed at the I-95 Ash Landfill. Ash is placed in a double-composite lined landfill, controlled by state-of-the-art leachate collection and detection systems.



Phase IIB of the ash landfill (the third cell) began accepting ash in May 2005. Approximately 1,000 tons of ash is placed daily in the cell, which has capacity for ash disposal for over three years. Approximately 6,000 tons of shredded tires were used as a protective layer for the cell. Using this material not only

recycled the tires, but also saved approximately \$86,000 in the cost of gravel and other aggregate materials. Construction of Phase IIIA of the Ash Landfill has been completed and the county is awaiting approval from VDEQ. Phase IIIA will support five years of as disposal capacity.

The E/RRF's suite of pollution control equipment includes a dolomitic lime system that chemically treats the ash to reduce the possibility of metals leaching from the ash after landfilling. During FY 2008, ash produced at the

Covanta facilities was analyzed by an independent lab and was found to be within the regulatory limits for all constituents (i.e., it is non-hazardous).

A metallic constituent of the E/RRF's ash of particular concern is cadmium. The SWMP supports and actively publicizes efforts to collect rechargeable nickel-cadmium batteries separately for recycling. Through a partnership with the Rechargeable Battery Recycling Corporation, large retailers such as Wal-Mart, Radio Shack and Best Buy are collecting old batteries as new ones are sold. The batteries are recycled at a permitted waste management facility specifically designed to recover these metals. This effort is anticipated to significantly reduce the amount of cadmium present in E/RRF ash.

v. Citizens Disposal Facility

The CDF allows county residents and small businesses to bring their MSW directly to the I-95 Complex for disposal. The CDF offers a full range of recycling opportunities, as well as household hazardous waste disposal service. Recycling is free to residents. In FY 2008, users visited the I-95 CDF over 75,000 times.

b. Energy/Resource Recovery Facility

i. Overview



E/RRF operations continue to meet or exceed accepted industry standards, as evidenced by the annual independent engineering report prepared by Dvirka and Bartilucci Consulting Engineers in November 2007.

This report states, "CFI has complied with the requirements of the Service Agreement, as amended, and has complied with the Facility's various environmental permit and regulatory obligations."

The E/RRF requested and was approved by the State Commerce Commission to generate and sell over 80 megawatts of electricity to be sold to Dominion Virginia Power. This change allows Covanta Fairfax, the facility owner, to take advantage of technology and process improvements to generate more electrical power for the grid, using essentially the same amount of waste. Steam that was previously dumped and not used can now generate an additional 5 to 8 megawatts to be sold. Revenue from the sale of electricity is used to keep the disposal fees low.

During March 2008 the facility underwent a cold iron outage to inspect and repair several infrastructure items within the facility that cannot be repaired when any of the combustion trains are operating. Significant work was done to plant valves, dump condenser and tank cleanout.

ii. Quantity of Waste Processed

The county has guaranteed to provide and the E/RRF has agreed to process at least 930,750 tons of MSW per year. In FY 2008, the E/RRF processed approximately 1,030,000 tons of waste (almost 86,000 tons per month). Approximately 893,000 tons of this waste originated in Fairfax County, with the remainder coming primarily from Prince William County and the District of Columbia. The quantity of Fairfax County waste generated has been reduced, partly due to increased recycling initiatives, the economic slowdown and dry weather conditions.

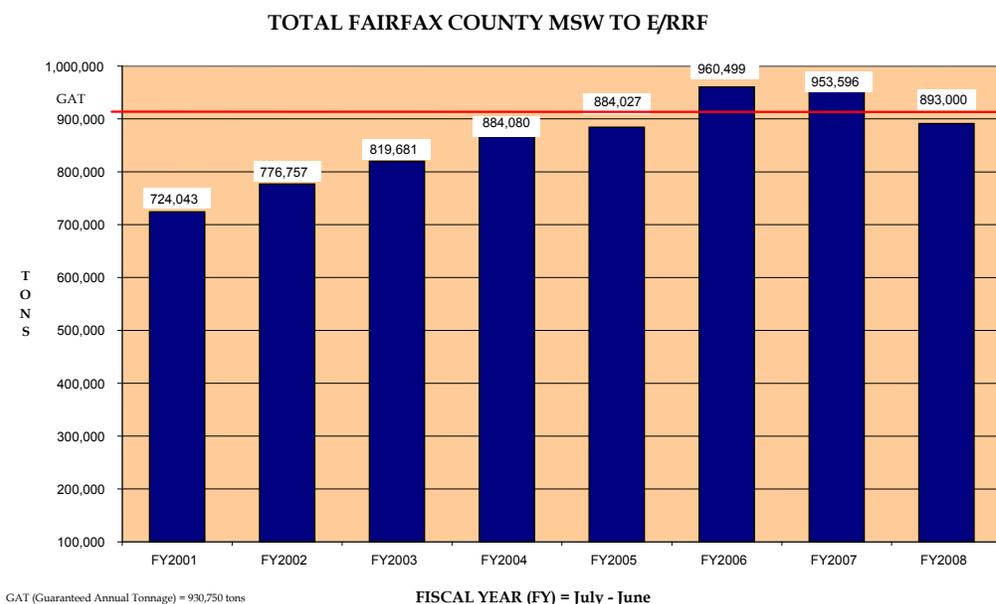


Figure V-1. Total Fairfax County Municipal Solid Waste to E/RRF FY2001-2008

iii. Air Quality

The E/RRF's continuous emissions monitoring system samples flue gas from the combustion process and alerts Covanta operating personnel when emissions are approaching the concentration limits specified in the facility's air pollution control permits. Permit excesses must be reported to VDEQ, with an explanation as to the circumstances of the event and proposed solutions, as warranted. The E/RRF continues to operate well under its air permit limits. The following stack emissions were documented by an independent lab test in June 2007 and reported to VDEQ.

**Table V – 1
Energy/Resource Recovery Facility Emissions Results
June 2007**

Parameter	Permit Limit	Average E/RRF Result
Sulfur Dioxide (SO ₂)	29 ppm	5.25 ppm
Carbon Monoxide (CO)	100 ppm	6.5 ppm
Nitrogen Oxides (NO _x)	205 ppm	194.75 ppm
Hydrochloric Acid (HCl)	29 ppm	10.64 ppm
Particulate Matter (PM)	27 mg/dscm	4.66 mg/dscm
Mercury (Hg)	0.080 mg/dscm	0.00178 mg/dscm
Dioxin/Furans	30 ng/Nm ³	0.646 ng/Nm ³

ppm = parts per million
Dscm = dry standard cubic meter

mg = milligram

ng = nanogram

Covanta Fairfax, Inc, Annual Compliance Stack & RATA Test Reports, (COV Report No. 3194), 08/07/07

A similar stack test was conducted in June 2008, but the test results were not available.

iv. Material Recovery

In addition to recovering energy from MSW to generate electricity, metals are recovered from the ash residue and recycled. In FY 2008, 23,244 tons of ferrous metal were recovered from the ash and sold for recycling. A new non-ferrous process was installed this year and has yielded over 411 tons of non-ferrous metal.

c. I-66 Transfer Station & Citizens' Recycling and Disposal Facility



The I-66 Transfer Station continues to handle approximately 75 percent of the county's MSW destined for disposal. The Transfer Station consolidates waste delivered by individual collection vehicles into large transfer trailers, hauling these trailers over the road, primarily to the

E/RRF, for final disposal. As mentioned previously, an average of 200 loads were hauled from the facility each day in FY 2008. Primary benefits from this type of transfer system are a reduction in the number of vehicles traversing the county to reach the E/RRF and reduced operating costs for the county's solid waste management system as a whole. Further, the Transfer Station plays a pivotal role when waste needs to bypass the E/RRF to landfills; in FY 2008, approximately 3,000 tons of waste were hauled from the Transfer Station to alternative disposal

sites. VDEQ regulates the Transfer Station, and it is regularly inspected by this agency. During all inspections of the facility during FY 2008, VDEQ found the facility to be in full compliance.

i. Transfer Operations

The main responsibility of the Transfer Station is to move waste from northern and western parts of the county to the E/RRF. With increased development and population growth, waste collection companies are bringing more and more waste to the Transfer Station. Moreover, advanced technologies used by collection companies to control their costs have resulted in collection vehicles that deliver more waste per trip. As the daily tonnage being managed by the transfer operations has grown, the county has supplemented its fleet of tractor trailers with private trucking contractors.

The county vehicle fleet, including the transfer trucks at the Transfer Station, now uses ultra-low-sulfur diesel fuel. This reduces air pollutant emissions as much as possible while performing the mission of transporting increased amounts of waste.

An automated truck wash system has been installed in the existing truck wash building. The state-of-the-art system will better recover and recycle water, discharging minimal amounts to the sewer, while reducing manpower requirements to wash large vehicles. Other county vehicles, including waste collection vehicles, are washed here as well.

County staff is in the process of completing the conversion of the space heaters to use landfill gas at the Department of Vehicle Services shop near the closed I-66 landfill. The gas transmission pipeline and the gas conditioning system were installed during FY 2008. The space heater conversion work is proceeding with the project to be completed by late 2008. This project is expected to save \$50,000 annually on fuel cost.

ii. Citizens Recycling and Disposal Facility

The Transfer Station Complex also has one of the county's two Citizens' Recycling and Disposal Facilities, where residents and small businesses can self-haul their waste and recyclables. In FY 2008, users visited the I-66 CDF more than 300,000



Photo of the Citizens Disposal Facility under construction in April 2008

times. The CDF is undergoing construction to accommodate growing demands for disposal and recycling services at that location. New scales and booths, improved entrance and egress and more technology are planned in order to

improve customer service, increase capacity and reduce wait times. The construction work is expected to be completed by April 2009.

d. Household Hazardous Waste Program

The Household Hazardous Waste and the Conditionally Exempt Small Quantity Generator collection programs are operated by the Solid Waste Management Program; however, the statistics about the program results are provided in the Hazardous Materials chapter of this report.

e. Other Relevant Activities

All solid waste collection companies in Fairfax County must hold a Certificate to Operate and individual vehicle permits, both issued by the SWMP. Due to better definition of the type of work performed by companies and consolidation in the waste industry, the number of CTOs has decreased to 27 companies from a previous level of as many as 35 firms. An integral requirement of these permitting programs is that permitted collectors comply with all applicable provisions of Chapter 109.1, the county's solid waste management ordinance.

The SWMP has responsibility for enforcing Chapter 109.1 and to resolve any potential violations observed by Program staff. In addition to this responsibility, the SWMP also coordinates with other county agencies as necessary to lead enforcement of relevant provisions of other chapters of the County Code related to the solid waste management aspects of public health menaces, nuisance noise and debris landfills.

2. Waste Reduction and Recycling Programs

a. Overview

The SWMP's Division of Solid Waste Collection and Recycling assumes the lead role regarding the management and implementation of the countywide recycling program. VDEQ is responsible for establishing the regulations that require all municipalities in the commonwealth to recycle a certain percentage of the total volume (by weight) of MSW generated in the jurisdiction. These regulations are codified as 9 VAC 20-130-10, and Fairfax County is responsible for meeting a 25 percent threshold. Smaller communities, with low population or low employment statistics across the Commonwealth, are required to meet a lower threshold set at 15 percent. Reports documenting the recycling rate for the preceding calendar year are required to be sent to VDEQ each year in the spring. Fairfax County's recycling rate for calendar year 2007 was 38 percent, which represents a full three percentage points above the required rate of 25 percent.

Chapter 109.1 requires annual reports on the tonnages of recyclables collected by solid waste collection companies, nonresidential businesses and commercial establishments, material recovery facilities and other entities operating in Fairfax County. These reports are evaluated and their data compiled to calculate the

countywide recycling rate. Figure V-2 depicts the historical quantities of recyclables collected in the county since calendar year 2000. Since the recycling program's inception in 1988, the county has recycled over 6.5 million tons and continues to exceed the state-mandated requirement.

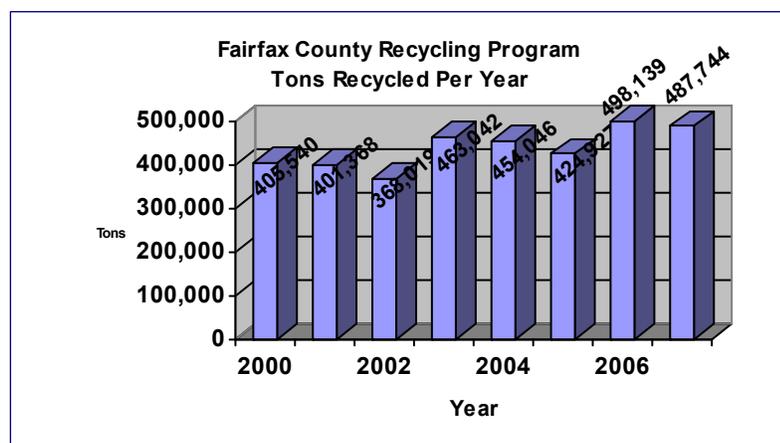


Figure V-2 - Historical Quantities of Materials Recycled in Fairfax County

Currently, all residential properties in Fairfax County receiving curbside trash collection must also be provided with recycling collection. Recyclables that must be collected at the curb, in conformance with Chapter 109.1, include: metal food and beverage containers; glass bottles and jars; plastic bottles and jugs; mixed paper; cardboard; and yard waste.

Recycling of mixed paper and cardboard is required for all nonresidential properties in the county. All nonresidential entities that generate a principal recyclable material other than mixed paper and cardboard are required to recycle that PRM in addition to the mixed paper and cardboard.

Recycling of mixed paper and cardboard is required for all multifamily buildings in existence prior to July 2007.

Recycling of mixed paper, cardboard, metal food and beverage containers, glass bottles and jars and plastic bottles and jugs is required for all multifamily buildings constructed after July 2007. Appliances from these properties are also required to be recycled.

Recycling of mixed paper and cardboard is required for all schools and institutions.

All construction and demolition contractors are required to recycle cardboard.

b. Changes for FY 2009

Fairfax County constantly reviews its solid waste management practices to stay abreast of the ever-changing waste generated within the county. Based on these community needs, the SWMP assesses new waste streams that are generated and attempts to provide solutions for managing new and problematic wastes. Two emerging waste streams have been identified by the SWMP and plans are in progress to ensure that these wastes can be appropriately managed. They are:

compact fluorescent lamps or CFLs (and other fluorescent lamps) and televisions with cathode ray tubes.

The management of CFLs and other fluorescent lamps from residences in the county is addressed in several ways. CFLs and other fluorescent lamps can be taken to either of the county's Household Hazardous Waste facilities at the I-66 Transfer Station complex in Fairfax or the I-95 Landfill complex in Lorton. Both of the facilities take these lamps at no charge to county residents. In addition, the SWMP has hosted five HHW collection events around the county for the past two years and is doing the same in calendar year 2008. These one-day events are intended to give residents a convenient way to properly dispose of these light bulbs.

The county has been fortunate to partner with Covanta Fairfax, LLC in a pollution prevention effort to address the potential contaminants in the CFLs. Covanta has donated funding to the SWMP to allow for the collection of CFLs at other collection events sponsored by the county. CFL collection will/has occur(ed) at the five roving HHW events as well as the electronics recycling and document shredding events held (or to be held) around the county in CY 2008. Nine of these events are planned around the county (five of them have already taken place). These events are intended to continue into future years.

Information about these events is placed on the county Web site and advertisements are placed in local newspapers to announce the service to residents. The SWMP has also prepared a brochure describing the energy-saving benefits of using these lamps and how to dispose of them properly at the end of their useful life. A copy of the brochure is available at <http://www.fairfaxcounty.gov/dpwes/publications/recycling/fluorescent.pdf>.

Staff continues to work to develop longer-term plans to make convenient disposal of CFLs available to county residents. This effort has been initiated and may include several approaches including collection in certain county buildings and partnering with commercial businesses to provide collection in their establishments. Additional approaches for collecting these materials may be developed in the future.

With the end of analogue television broadcasting pending in February 2009, the SWMP is in the process of addressing the disposal of televisions from residents who purchase new digital equipment. The SWMP is now accepting televisions at electronic collection events around the county. Three electronic collection events have been conducted in 2008 and about 400 televisions have been collected. This program is also funded by the generous support of Covanta and is intended to continue into the future.

The funding provided by Covanta has also allowed the electronic recycling program, the Keep It Green partnership with ServiceSource, to avoid asking residents for donations to support ServiceSource's efforts. Electronics recycling in Fairfax County has been accomplished through the Keep It Green program.

ServiceSource is a non-profit organization that finds employment for persons with disabilities. They partnered with a computer recycling firm that uses ServiceSource's labor pool to disassemble computers and peripherals. Since Covanta has provided funding to cover the donation to the Keep It Green program, electronics and televisions are now being collected at the events at no charge to county residents.

c. Review of Collection and Recycling Programs

In addition to county-wide recycling program management, the SWMP is responsible for the:

- Collection of refuse and recyclables from about 44,000 residences primarily on the east side of the county in designated areas entitled Sanitary Districts;
- Collection of refuse and recyclables from county-owned buildings;
- Seasonal curbside vacuum leaf collection for approximately 23,000 residences;
- The management of eight Recycling Drop-Off Centers;
- Refuse removal due to evictions and other court orders;
- Assistance in the removal of materials damaged by storm, floods or other emergency situations; and
- Public outreach and education on recycling, household hazardous waste and solid waste management.

The Megabulk program was originally established for county refuse and recycling customers in Sanitary Districts to collect oversized piles of refuse and yard debris. Customers schedule this service and pay an additional fee for the collection of oversized quantities of materials that are not part of the basic level of service for routine weekly collections. The service now is being made available to residents countywide, based upon equipment and personnel availability.

Working in conjunction with the Fairfax County Health Department, the SWMP's Clean Streets Initiative is designed to address complaints from residents about piles of refuse that are placed in neighborhoods where the property owner does not take responsibility for its timely removal, or where no responsible party can be found. Under CSI, the property owner is notified that the refuse must be removed. If the property owner fails to respond in a timely manner or refuses to cooperate, the SWMP removes the refuse and bills the property owner for removal of the material. If the property owner refuses to pay the county for the removal of the material, a lien is placed on the property.

i. Yard Waste

Recycling of yard waste (brush, leaves and grass) is required for all residential properties in Fairfax County. Curbside collection of yard waste is required to be provided by all refuse and recycling collection companies operating in the county, from March 1st through December 24th of each year. The revisions to Chapter 109.1 clarified that yard waste collection for recycling would begin in

March each year and that yard waste could be collected with trash during January and February, other than Christmas tree collection. The reason that yard waste recycling from residential properties is suspended in the months of January and February is because very few leaves and virtually no grass are generated during that part of the year.

Townhouse communities may apply to the county for approval of an alternative yard waste recycling system. The reason for this flexibility is because lawns are typically small and these communities contract with landscaping firms that groom common areas. In 2007 and continuing in 2008, Fairfax County required all townhouse communities to apply for approval of an alternative yard waste recycling system. Approximately 200 townhouse communities have approved alternative recycling systems for yard waste.

Woody materials, referred to as brush, comprise a significant portion of the yard waste collected in the county. Brush is managed at either the I-66 or I-95 facility and is ground into mulch. The mulch from these facilities is available free to county residents who can self-haul the material to the end use location. Typically, mulch is used as a top-dressing around decorative plantings to reduce weed growth and to maintain soil moisture.



Leaves and grass comprise the balance of the yard waste managed in the county. This material is generally collected in bags or by curbside vacuum collection and is sent to either of two composting facilities where the material undergoes biological decomposition to turn it into compost. Typically,

compost is used as a soil amendment or substitute. In 2007, over 168,000 tons of yard waste were recycled in Fairfax County.

Leaves collected in the fall by the county for customers receiving (and paying for) curbside vacuum leaf collection are ground during the vacuuming process. These ground leaves are taken to several Fairfax County parks where the ground leaf mulch is available for use by the Park Authority and by residents who can haul it away themselves for use in their yards.

ii. Recycling Drop-Off Centers

Fairfax County operates eight Recycling Drop-Off Centers at various locations throughout the county. The RDOCs are unmanned facilities, open 24 hours, and there is no fee to use them. No new RDOCs have been added to the county system in approximately 10 years, but the existing facilities are used frequently

by residents and about 6,000 tons of recyclables are collected annually in the drop-off centers. RDOCs continue to play an important role in supporting recycling in the community, serving patrons in multifamily units and small businesses.

iii. County Agency Routes

All county agencies receiving refuse collection and recycling services from the SWMP participate in the county recycling program. In calendar year 2007, county agency locations recycled approximately 776 tons of material. In 2008, the SWMP invested in containers for the collection of bottles and cans (plastic bottles, aluminum beverage cans and glass bottles) from buildings owned and occupied by Fairfax County and its employees. These plastic containers have been placed in all of the county's larger office buildings and most of the smaller agency buildings in areas where beverages are sold and consumed like cafeterias and conference rooms. Existing can and bottle collection containers already placed in county buildings were all relabeled in the hope of refocusing county employee efforts on recycling. Additionally, cardboard containers used to collect paper from county buildings were replaced due to damage or age.

iv. Document Shredding

Fairfax County offers residents the opportunity to shred personal documents at certain locations around the county, usually in conjunction with electronic recycling events or HHW collection events. This service is offered to help residents protect their personal financial information while directing the shredded paper to a recycling facility. In calendar year 2008, nine document shredding events have been planned or have already taken place. As of June 2008, approximately 15 tons of personal documents had been shredded.

v. Public Education and Outreach

Public education and outreach are key components of any successful municipal recycling program. To that end, the SWMP has focused on developing creative education programs that take advantage of its partnerships with county agencies, Fairfax County Public Schools, community organizations (e.g., scouts, youth groups, Jaycees), commercial businesses and privately-owned collection companies. Outreach programs consist of: activities and displays at county festivals; support and publicity for several events specifically dedicated to recycling; public speaking opportunities; and technical support in the research of recycling technologies and issues.

The SWMP continues to partner with the Fairfax County Wastewater Treatment Program in its educational effort entitled "Sewer Science." This program is a hands-on class that Wastewater Management employees have introduced into Fairfax County high schools. The program teaches high school students about municipal wastewater treatment through a week-long laboratory that simulates wastewater treatment processes. Sewer Science, which supports

the Virginia Standards of Learning for biology and chemistry, is taught by the science teachers with assistance and support from county employees.

Both the county's stormwater program and the solid waste management program have been invited to assist in the Sewer Science program to teach high school students about how stormwater is managed and what happens to refuse and recyclables in the county. Staff from all three of these county environmental programs collaborate with high school science teachers to tailor information to meet the educational needs of the students. To date, the SWMP has made about 60 presentations to Fairfax County high school students about how trash and recycling are managed in the county.

The SWMP continues to work closely with the Northern Virginia Regional Commission on a regional public information program entitled "KnowToxics." The purpose of this program is to educate business owners about their responsibility to comply with federal and state regulations that require proper disposal or recycling of spent fluorescent lamps, rechargeable batteries and computers and related electronics. The program is centered on its Web site: www.KnowToxics.com which provides a resource where businesses can learn how to legally and appropriately manage these materials.

The SWMP has also continued a rechargeable battery recycling program, in collaboration with the Rechargeable Battery Recycling Corporation Program. RBRC is an industry-funded program where rechargeable batteries can be collected and sent for recycling at no charge. Collection boxes for rechargeable batteries are now located at offices of all members of the Fairfax County Board of Supervisors and at major county buildings. A complete listing of collection locations is on the county Web site at: <http://www.fairfaxcounty.gov/dpwes/recycling/mat-bat.htm>

The Fairfax County Solid Waste Management Program partnered with the Metropolitan Washington Council of Governments to produce the Builder's Guide to Refuse and Recycling.

Annually, the Solid Waste Management Program participates in Celebrate Fairfax and Fall for Fairfax. At the Celebrate Fairfax event in 2008, the SWMP display received a first place ribbon in design for its "Green Begins in Your Backyard" themed exhibit. The display, visited by county residents and guests, provided brochures, photos and responses to questions about the integrated solid waste management program in Fairfax County.



Both of these events are a major portion of the county's overall public outreach campaign and provide the program with opportunities to disseminate technical guidance and practical information on using the county's solid waste management system.

The SWMP is a proud financial sponsor of the annual Earth Day/Arbor Day celebrations promoted by Clean Fairfax Council. The SWMP also supports the Johnnie Forte Jr. Environmental Scholarship, which awarded twelve \$500 grants to applicants from the Fairfax County Public Schools. Student



groups receiving the grants are invited to make a presentation regarding their use of the grant in front of members of the Board of Supervisors, at the annual Earth Day/Arbor Day celebration at Northern Virginia Community College. The annual Fairfax County Business Recycling Awards are also presented at this same event, recognizing businesses that excel in their recycling efforts.

This scholarship program is a portion of the Schools/County Recycling Action Partnership. The SCRAP partnership was created by the Fairfax County Public Schools and the SWMP 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 SWMP developed the scrapbook, a resource tool distributed to all science teachers in the FCPS system, that details all of the opportunities provided by the SWMP and the Clean Fairfax Council to aid in the instruction of students, including training and presentations, tours and how to apply for the Johnnie Forte grant award.

The SWMP also supports the county's Employee Recycling Committee. The ERC meets monthly and works on projects designed to encourage county



employee participation in recycling. The group coordinated the county employee's Earth Day Expo celebration and the Employee Recycling Committee Recycler of the Year Award.

The county Earth Day Expo is held annually at the Government Center, in conjunction with another

event for all administrative assistants in the county. Many county agencies with responsibility for environmental protection and stewardship in the county participate, with informational booths staged in the Government Center during the lunch hour. These booths provide an opportunity for attending employees to better understand the services provided by these agencies.

America Recycles Day 2007 was celebrated on November 10, 2007, with the Community Recycling Roadshow at Herndon High School. At the end of the day, the SWMP collected 502 pairs of eyeglasses for the Lion's Club of Fairfax and 547 cellular telephones for OAR of Fairfax County. Safeguard Shredding



reported five tons of paper shredded and took an additional five totes collected for shredding back to its facility. Bikes for the World received over 150 bicycles.

ServiceSource and CDM E-Cycling received over 40 tons of computer and peripheral equipment (including televisions, CD and DVD players and telephones). Art for Humanity collected 20 boxes of shoes, 33 boxes of bed sheets, pillowcases and towels, 50 microwaves and 30 sewing machines. Diana's Books collected over one ton of books, CDs, DVDs and VHS tapes. RBRC received more than 350 pounds of rechargeable batteries.

Another aspect of the SWMP's public outreach and education effort is active involvement in community events and public speaking opportunities and support to various community special interest groups such as the Lorton Citizens Alliance Team and the annual Residents Solid Waste Forum. The Residents Solid Waste Forum meeting invitation list was broadened this year and this strategic change resulted in additional participation and a very successful meeting in April 2008.

The SWMP also uses the Internet by posting pertinent information about timely subjects on the program's Web site. Information about the program's involvement in community events, as well as new information about solid waste matters, can be found at: www.fairfaxcounty.gov/living/recycling.

Staff continues to update the SWMP Web site to improve its ease of use for residents and businesses. More information was added to help county residents, solid waste industry companies and schools access forms, data and publications about the program.

The SWMP also published an electronic "listserv" to county collection customers to automatically send updates to customers on the program and to

provide updates regarding service changes due to inclement weather. A similar “listserv” tool was developed to give vacuum leaf collection customers the most up-to-date information on the exact dates that the leaf collections would be conducted on their streets in order to ensure that residents would have time to rake their leaves to the curb.

The SWMP published for distribution to county residents (and others, upon request) a brochure that consolidates and summarizes information about the program. Printed on recycled paper, the color brochure briefly provides an overview of the program.

vi. Awards and Recognition

The Solid Waste Association of North America recognizes outstanding solid waste programs and facilities through its Excellence Awards Program. These annual awards are presented to governmental organizations that advance the practice of environmentally and economically sound solid waste management through their commitment to: 1) utilizing effective technologies and processes in system design and operations; 2) advancing worker and community health and safety; and 3) implementing successful public education and outreach programs. Programs also must demonstrate that they are fiscally and environmentally responsible through their compliance with all applicable federal, state and local regulations. In 2007, Fairfax County’s Solid Waste Management Program was awarded the annual Excellence Award in the category of “Integrated Solid Waste Management” at the bronze level by SWANA.

3. Clean Fairfax Council

Clean Fairfax Council is a private, nonprofit (501(c)(3)) corporation dedicated to the education of the residents of Fairfax County on issues relating to litter prevention and recycling. Environmental education is provided to students and adults throughout the county. The council has many approaches to public education, including brochures, a newsletter, educational videos, interactive programs for students, community service opportunities for students (i.e., support at the council’s office), classroom presentations and presentations to homeowner associations and other groups. All of the council’s informational brochures are translated into the six major foreign languages used in Fairfax County: Korean; Spanish; Urdu; Farsi; Vietnamese; and Chinese.

A key effort of the council is the sponsorship of spring and fall cleanups. These cleanups are accomplished by the council sending information regarding the cleanups to all homeowner associations, public schools and assorted churches and businesses. The council asks volunteers to plan their cleanup by selecting a site, gathering volunteers and setting a date and time. Then, if they fill out a sign-up form and send it to the council, they are provided trash bags, recycling bags, vests and safety tips along with an automobile litter bag and a memento for each participant. In its 2006/2007 annual report, the council notes that there were 9,582 participants at 110 cleanup events; the volunteers worked over 41,565 hours, which would be an equivalent of

nearly \$750,000 of effort at the state average hourly value of volunteer time as provided by the Virginia Center for Charitable Statistics.

The council also sponsors an "Adopt-A-Spot" program whereby residents can adopt a spot for two years and pledge to clean it up four times a year. Additionally, the council produces the annual Fairfax County Earth Day/Arbor Day Celebration held in late April.

There are many other programs offered by the Clean Fairfax Council, including programs that are beyond litter prevention/control aspects. For more information, please visit the Web site at www.cleanfairfaxcouncil.org.

C. RECOMMENDATIONS

No new recommendations are proposed this year.

REFERENCES

Much of the narrative and illustrations were supplied by the following agencies of the Department of Public Works and Environmental Services:

- Division of Solid Waste Collection and Recycling.
- Division of Solid Waste Disposal and Resource Recovery.

The information about the Clean Fairfax Council was provided by Rosemary Byrne, Executive Director, Clean Fairfax Council

