Chapter 11 Solid Waste Management Plan Actions

Fairfax County's Solid Waste Management Plan Actions

This chapter presents Fairfax County's SWMP actions.

This chapter presents Fairfax County's comprehensive and integrated plan for its solid waste management (SWM) system over the next 20 years, from the top to bottom levels of the waste hierarchy.

Overview of the Fairfax County SWMP Actions

Table 11-1 outlines Fairfax County's plan for its SWM system over the next 20 years for each stage of the hierarchy, as well as collection and transfer. The SWMP actions are described in more detail later in this chapter.

Source reduction, also known as "waste prevention," is the practice of designing, manufacturing, purchasing, or using materials (such as products and packaging) in ways that reduce the amount or toxicity of trash created.

Both source reduction and reuse can help reduce waste disposal and handling costs by avoiding the costs of recycling, municipal composting, landfilling, and combustion. Source reduction and reuse also decrease resource use, protecting the environment.

Table 11-2 presents actions selected by Fairfax County for the source reduction and reuse of solid waste in the county over the next 20 years.

Table 11-1. Summary of Fairfax County SWMP Actions

	Future Solid Waste Management System
Source Reduction and Reuse	Improve public outreach and education to promote source reduction and reuse Promote public/private source reduction and reuse programs Promote a residential yard waste composting and/or grasscycling program Develop a regional approach to CDD source reduction and reuse with the MWCOG and others Implement county internal source reduction and reuse programs
Recycling	Promote public/private recycling programs Improve public outreach and education to promote recycling Increase business recycling by reducing commercial recycling thresholds Expand curbside recyclables collected to include mixed paper, plastic bottles, and cardboard Encourage increased CDD recycling by promoting CDD recycling at a county location Revise regulations to enhance recycling, including: • Revise county code to require CDD recycling and/or recycling plans • Expand recyclables collected at government buildings • Encourage increased MSW recycling in county schools • Increase MSW recycling inspections Address suitable recycling alternatives for multiunit buildings Continue current yard waste recycling system; contract with out-of-county composting facilities for dedicated capacity Explore additional waste exchange agreements to increase recycling Encourage VDOT to use recycled materials in road construction Support expansion of the capacity of existing MRFs, if quantities of recyclable materials warrant expansion Continue using the current special wastes management system
Disposal	Continue using the current disposal system (as the preferred alternative) – E/RRF as the primary disposal facility with out-of-county landfills for overflow and emergencies – CDD landfills both in- and out-of-county; contract with CDD landfills for dedicated disposal capacity If negotiations with Covanta Fairfax, Inc. are unsuccessful, the county will use only out-of-county landfills for MSW disposal Foster a regional approach for CDD disposal Improve public outreach and education, specifically for CDD disposal issues
Collection	Partner with private waste collection companies and community stakeholders to improve residential collection service Revise County Code to improve residential service Continue current vacuum leaf collection system Improve public outreach and education, specifically education for CDD collection options Consider program to promote best management practices for CDD haulers Promote use of special fuels, filters, and special vehicles for collection Implement a collection and disposal strategy for emergencies Expand special wastes collection
Transfer	Continue using the current transfer system Reconfigure or construct waste handling areas at the I-66 Transfer Station, including: – Unloading areas for citizens and commercial cash customers (for increased safety and efficiency) – Areas to handle increased CDD and/or yard waste – Recycling center for CDD, if needed, at a county location Add transfer capabilities to the I-95 Landfill Complex, if increases in transfer quantities or waste exchange agreements require it Improve public outreach and education to promote SWMP transfer actions

Table 11-2. Fairfax County Source Reduction and Reuse SWMP Actions

Source Reduction and Reuse SWMP Actions
Improve public outreach and education to promote source reduction and reuse
Promote public/private source reduction and reuse programs
Promote a residential yard waste composting and/or grasscycling program
Develop a regional approach to CDD source reduction and reuse with the Metropolitan Washington Council of Governments (MWCOG) and others
Implement county internal source reduction and reuse programs

Improve Public Outreach and Education

Public education and outreach are the most effective and efficient techniques for increasing source reduction and reuse in the county.

Public education and outreach are the most effective and efficient techniques for increasing source reduction and reuse in the county. Organizing education, technical assistance, and promotions aimed at increasing participation in source reduction and reuse activities, like reusing material and minimizing packaging, are crucial to successful source reduction and reuse programs.

Most of the potentially viable source reduction and reuse programs for Fairfax County involve creating incentives for its citizens and businesses. An important part of source reduction involves "making voluntary or imposed behavioral changes in the use of materials."[1]

The challenge in implementing source reduction and reuse initiatives is to influence the way people purchase and use products and packaging. A county goal could be to encourage county residents to reuse products and packaging and buy products with an eye for waste reduction (for example, purchasing products with minimal packaging). Other valuable source reduction practices include purchasing durable, long-lasting goods and extending product useful life through preventive maintenance and repairs.

Appendix F of this document includes specific best practices for consumers, businesses, and manufacturers. A few key public outreach and education initiates are discussed below.

Publicize the Network of Charitable Organizations and Other Reuse Shops

One public outreach and education initiative is for the county to more extensively publicize the county's network of charitable organizations and other reuse shops. Fairfax County has an established network of charitable organizations and thrift stores. By continuing to publicize and

[1] Philip O'Leary and Patrick Walsh, *Decision-Makers' Guide to Solid Waste Management, Volume II*, EPA530-R-95-023, U.S. Environmental Protection Agency, August 1995.

expand this network, the county can increase both source reduction and reuse efforts. These organizations accept a wide range of reusable items, from furniture and electronics to books and clothing for sale or donation to the public. These organizations are effective at diverting items from the MSW stream and reducing the burden on the county's SWM system.

Assist in Reducing Unsolicited Mail

One key public outreach and education initiative is assisting citizens in reducing paper waste from unwanted mail.

Another key public outreach and education initiative is assisting citizens in reducing unsolicited mail. Large quantities of paper generated in the county result from unwanted mail. Fairfax County can help minimize unnecessary paper generation by identifying mass mail reduction options and assisting in stopping delivery of free newspapers. Some practices include adding a link and endorsement on the county website to a do-not-mail organization that reduces unwanted mail and providing guidance to residents on asking United States Postal Service (USPS) and bulk mailers to remove addresses from their mail lists.

Promote CDD Source Reduction and Reuse Best Practices

Effective public outreach and education initiatives must be used to target builders and contractors and encourage them to employ best practices in reducing the volume of CDD generated at construction sites. Some CDD source reduction practices include leaving trees when possible during site clearing, altering floor plans to eliminate excess cut-offs, reusing off-cuts and plywood, and using crushed masonry material as fill for slabs or garages.[2]

The county will investigate requiring all new building and remodeling permits to contain language encouraging reduction of CDD as a condition for the permit.

Promote Yard Waste Source Reduction and Reuse Best Practices

Effective public outreach and education initiatives for yard waste focus on promoting source reduction and reuse best practices. Some of these practices include managing food scraps and yard trimmings through on-site composting, allowing grass clippings to remain on the lawn after mowing (grasscycling), and using mulching mowers.

Promoting public/private partnerships is a cost effective method to increase source reduction and reuse rates in Fairfax County.

Promote Public/Private Source Reduction and Reuse Programs

Promoting private sector source reduction and reuse programs is a cost-effective method for the county to increase source reduction and reuse rates. By supporting, encouraging and publicizing these public/private partnerships, the county can enhance source reduction and reuse while minimizing the use of scarce county resources. Some potential public/private programs are discussed below.

[2] South Carolina Department of Health and Environmental Control's Office of Solid Waste Reduction and Recycling, *Construction and Demolition Debris Guidebook*, January 2001.

Materials Exchanges

One promising source reduction and reuse initiative that the county may consider promoting is a materials exchange. Materials exchanges help reduce waste generation by matching businesses that need materials with companies that have reusable, surplus, or byproduct materials available. Materials exchanges range from catalogs and simple informational exchanges over a centralized website to exchange warehouses. By assisting businesses in Fairfax County in finding alternatives to the disposal of valuable materials or wastes, materials exchanges reduce the burden on the SWM system.

Materials that are well suited to waste exchanges include packaging, such as the wooden pallet. Businesses and industries often have a large supply of used pallets that require costly disposal. Through waste exchanges, these pallets can be reused several times prior to final use or disposal.

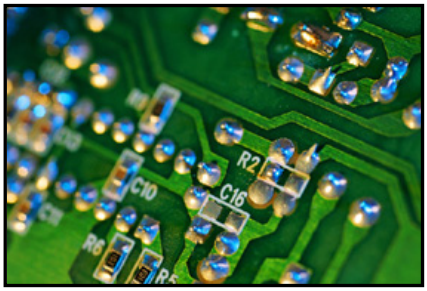
CDD materials exchanges provide a means for contractors, home remodelers, and others to exchange any quantity of used or surplus building materials. By assisting businesses in Fairfax County in finding alternatives to the disposal of valuable CDD materials or wastes, materials exchanges help keep building materials and resources from going to landfills.

Repair Resources

Another source reduction and reuse initiative the county may promote is repair resources. Repair programs can extend the useful life of resources, reducing the rate of waste generation. Potential programs for Fairfax County include supporting repair businesses or reuse organizations, supporting repair training programs at technical colleges, and sponsoring programs such as neighborhood repair centers or neighborhood tool banks.

Extended Producer Responsibility (EPR) Program for Electronics

To increase electronics source reduction and reuse, the county may consider promoting an EPR program. Also known as product stewardship, EPR programs seek those in the product life cycle—manufacturers, retailers, users, and disposers—to share responsibility for reducing the environmental impacts of products. EPR programs provide a system, including a viable financing mechanism, "to maximize the collection, reuse, and recycling of used electronics, while considering appropriate incentives to design products that facilitate source reduction, reuse and recycling, reduce toxicity, and increase recycled content."[3]



[3] National Electronics Product Stewardship Initiative (NEPSI) site: http://eerc.ra.utk.edu/clean/nepsi/.

CDD Reuse Shops

The county may consider promoting reuse shops to increase CDD source reduction and reuse. Reuse shops, like materials exchanges, provide a method for reusable CDD to be sold on the open market. These outlets divert CDD from landfills, create revenue for generators that employ CDD reuse practices, and provide consumers a low cost alternative to purchasing new construction materials.

Establish CDD Source Reduction and Reuse Demolition and Construction Guidelines

Fairfax County can help increase CDD source reduction and reuse by incorporating green or sustainable design and development standards into building guidelines. These requirements may include specifying the reuse of salvaged building and landscape materials and designing interior building components for future disassembly, reuse, and recycling.[4]

Promote a Residential Yard Waste Composting and/or Grasscycling Program

Promoting backyard composting and grasscycling will help reduce yard waste generation in the county.

Backyard composting is a source reduction initiative to prevent yard waste from entering the municipal waste collection system.[5] Yard trimmings comprise almost 10 percent of Fairfax County MSW.

As discussed in Chapter 8, Fairfax County currently promotes backyard composting to reduce yard waste. Key to this effort is educating the public about methods of composting and training members of the community. Future initiatives can build on this program to further decrease yard waste that must be handled by the SWM system. The county may consider supplying residents in the future with compost bins at cost or free of charge to increase the level of yard waste diversion.

The county can also promote grasscycling, the natural recycling of grass by leaving clippings on the lawn when mowing. Grasscycling is an effective method to reduce the quantities yard waste generated. Research indicates that mowing lawns can generate approximately 300 pounds of grass clippings per 1000 square feet annually, or 6.5 tons per acre each year.[6]

[4] EPA, *WasteWise Update: Building for the Future*, February 2002. Available from http://www.epa.gov/epaoswer/non-hw/reduce/wstewise/wrr/updates.htm.

[5] See Note 6.

[6] California Integrated Waste Management Board site: http://www.ciwmb.ca.gov/

Develop a Regional Approach to CDD Source Reduction and Reuse

CDD management issues, especially the shrinking disposal capacity in the area, are regional concerns. Through sponsorship of a regional component of an existing Northern Virginia and/or Washington area organization, the county can help develop sound regional responses to CDD issues. Some potential regional groups that could be approached include the Metropolitan Washington Council of Governments (MWCOG) and the Northern Virginia Regional Commission.

Implement County Internal Source Reduction and Reuse Programs

Expanding Fairfax County Government source reduction and reuse efforts can significantly reduce waste generation.

Fairfax County Government accounts for substantial purchasing power in the area since it employs 11,400 people full-time, maintains over 7 million square feet of space in 150 buildings, and owns over 20,000 acres of developed and undeveloped land.[7] By practicing source reduction and reuse strategies such as buying in bulk, establishing waste exchanges with nearby businesses, and reducing paper use, government can significantly reduce the waste produced.

The Fairfax County government already incorporates source reduction and reuse practices in its purchasing and operating procedures. The county can further reduce the waste stream by (1) reinvigorating its existing source reduction and reuse efforts and (2) requiring other governmental organizations (e.g., federal, state) that use county buildings to follow county source reduction and reuse requirements.

The county has an opportunity to lead by example through reemphasizing its source reduction and reuse efforts and measuring and publicizing the results. The county can continue to foster source reduction and reuse initiatives by prioritizing source reduction and reuse in its purchase and procurement of products and packaging and day-to-day operations. Also required is extensive “publicity” within the organization and employee education about how to reduce waste.

Fairfax County government also has a large amount of construction purchasing power. By encouraging source reduction and reuse practices in construction contracts for county buildings, county government can significantly reduce the quantities of CDD requiring disposal.

County staff will continue to require environmentally friendly practices for the maintenance of yards and common areas around public buildings and encourage private companies and landscapers to follow similar practices.

Recycling (including composting), the process by which materials otherwise destined for disposal are collected, processed, and remanufactured, follows source reduction and reuse in the solid waste management hierarchy.

Table 11-3 presents actions selected by Fairfax County for the recycling of solid waste in the county over the next 20 years.

Table 11-3. Fairfax County Recycling SWMP Actions

Recycling SWMP Actions
Promote public/private recycling programs
Improve public outreach and education to promote recycling
Increase business recycling by reducing commercial recycling thresholds
Expand curbside recyclables collected to include mixed paper, plastic bottles, and cardboard
Encourage increased CDD recycling by promoting CDD recycling a county location
Revise regulations and policies to enhance recycling, including: • Revise county code to require CDD recycling and/or recycling plans • Expand recyclables collected at government buildings • Encourage increased MSW recycling in county schools • Increase MSW recycling inspections
Address suitable recycling alternatives for multiunit buildings
Continue current yard waste recycling system; contract with out-of-county composting facilities for dedicated capacity
Explore additional waste exchange agreements to increase recycling
Encourage VDOT to use recycled materials in road construction
Support expansion of the capacity of existing MRFs, if quantities of recyclable materials warrant expansion
Continue using the current special wastes management system

Promote Public/Private Recycling Programs

Promoting public or private recycling programs is a cost-effective method for the county to increase recycling quantities. By supporting, encouraging and publicizing these public/private partnerships, the county can increase recycling while minimizing the use of and impact on county resources. Some potential public/private programs are discussed below.

Establish and Promote a Rechargeable and NiCad Battery Recycling Program

As discussed in Chapters 2 and 6, heavy metals present in rechargeable and NiCad batteries may have a harmful environmental impact if

disposed. Efforts are needed to remove these materials from the waste stream to prevent their disposal at the E/RRF or landfill.

A national program is already in place, the Rechargeable Battery Recycling Corporation (RBRC - www.rbrc.com), that accepts rechargeable batteries from customers and ships them for appropriate disposal. The RBRC helps recycle portable rechargeable batteries, commonly found in cordless power tools, cellular and cordless phones, laptop computers, camcorders, digital cameras, and remote control toys. Local participating companies include Home Depot, Target, Walmart, Verizon Wireless, Radio Shack, Cingular, Staples, Office Depot and others. Other locations to take batteries for disposal can be found on the web site by zip code. County staff will promote this partnership through its public outreach and education program and on the county's website.

Promote Manufacturing Facilities that Use MSW Recyclables

As discussed in Chapters 6 and 7, the economic viability of recycling may increase with stronger local markets for recyclable materials and shorter transportation distances to markets. Fairfax County can improve local recyclable markets and reduce transportation requirement by promoting the development of additional manufacturing facilities in the county that use recyclables as raw materials. The manufacturing facilities will likely enhance demand for recyclable materials, thereby increasing the recycling rate in the county.

Promote a "Buy Recycled" Program

Promoting a Fairfax County "buy recycled" campaign may help the development of local markets for recyclable materials. Under a "buy recycled" program, the county publicizes policies and practices for local businesses, government, and residents to purchase recycled-content products, as well as support activities that promote waste reduction and management. These practices help close the recycling loop by increasing the demand for products made from recycled materials.

Promote an E-Cycling Program

Fairfax County expects e-cycling (recycling of electronic equipment and items) to become a more important solid waste management practice over the SWMP planning period. Electronics are one of the fastest growing components of MSW. Coupled with the potential environmental hazards of disposal and high value of recyclable materials, recycling of electronics promises to have real impact on future recycling programs and the environment.

The county's role in e-cycling will be as a facilitator, providing program coordination, communications, promotion and publicity. The county can promote e-cycling by providing collection opportunities, alone or in partnership with retailers or recyclers, and assisting in getting collected products to consolidation points. Through partnerships with retailers, the county can establish a network of convenient, ongoing, drop-off facilities where the public can take used electronic equipment for recycling. In addition, the county can collaborate with recyclers for collecting, transporting and sorting the electronics for recycling.

Improve Public Outreach and Education

Education and outreach are the primary vehicles for the county to promote wider participation in recycling programs. Successful education of the public helps ensure that recyclable materials are recycled rather than disposed. Most businesses and residents are not recycling experts; education and outreach helps the public become more effective recyclers of solid waste.

Roughly **74 percent** of responders to the SWMP Public Opinion Survey that live in **single family homes participate in recycling.** Efforts are needed to target residents who live in townhomes and condo/apartment dwellers who indicated curbside recycling rates of only 20 percent and 4 percent, respectively.

County recycling education and outreach efforts have helped achieve county recycling levels that consistently exceed the state mandated recycling rate of 25 percent. Increased and improved communication coupled with an effective and consistent targeted recycling message will result in further increases in the county recycling rate. Potential improvements to public education and outreach efforts include producing a countywide waste management newsletter, enhancing advertising and promotions, developing courses for residents, simplifying recycling requirements, and offering technical assistance.

Education will be aimed not only at single-family residential neighborhoods, but also at apartment buildings, condominium complexes, and businesses. Expanded recycling participation will help reduce the burden on disposal in the solid waste management system.

Fairfax County can also increase CDD recycling (and help reduce CDD disposal) by promoting separation of materials at the job site. Job site separation requires builders and contractors to collect different recyclable materials in separate containers or piles on-site. The builder or contractor then contracts with a recycling service to collect the materials.

Increase Business Recycling

Fairfax County currently requires all businesses that employ 200 people or more or that generate 100 tons or more of waste annually to recycle their principal recyclable materials (white office paper, for example). Many businesses in the county with less than 200 employees generate large volumes of recyclables but do not recycle. By lowering the size of businesses that must recycle, Fairfax County can dramatically increase the business recycling rate and the overall county recycling rate.

County staff will study various alternatives for reducing the mandatory recycling threshold. Another option that would further increase recycling rates would be to require larger businesses to also recycle other materials beyond the principal recyclable material. Staff will work with the Business Advisory Committee, the Small Business Commission, and the Chambers of Commerce to phase in a program that will encourage all businesses to recycle more materials.

Expand Curbside Recyclables Collected

Under County Code, Section 109-2-1, Fairfax County baseline recycling requirements for households include the following: green, clear, and brown container glass; metal food and beverage containers; and newspaper. These requirements establish the recyclables that must be collected; some haulers in the county provide collection of other recyclables.

Requiring more recyclables to be collected will likely increase the residential recycling rate in the county. County staff is currently investigating the new materials to be recycled, but consider the markets developed sufficiently to potentially handle the addition of cardboard, plastic bottles, and mixed paper to the mandatory recycling list of materials to be collected curbside.

Public education efforts will also benefit from expanded recycling requirements. Expanded recycling requirements for collectors would enable the county to simplify and standardize its countywide recycling message.

The SWMP Public Opinion Survey revealed that **83.5% of the respondents routinely recycle at the curb.** Expanding recyclable materials collected will likely increase recycling quantities since so many residents already recycle.

Promote CDD Recycling at a County Location

Fairfax County can increase CDD recycling by constructing or promoting the construction (by a private firm) of a CDD waste processing and recycling facility. The major constituents of CDD can all be recovered and processed into recycled-content products. Concrete, asphalt, metals, wood, gypsum wallboard, and asphalt shingles, if not too severely contaminated, have all been processed and recycled.

Fairfax County may promote the construction of the CDD recycling facility through a public/private partnership with a private firm. By promoting the construction of the facility rather than building it, the county eliminates most of the facility's financial responsibilities. The county will need to evaluate whether eliminating the financial burden surpasses the reduced influence over CDD recycling operations.

Revise Regulations and Policies to Enhance Recycling

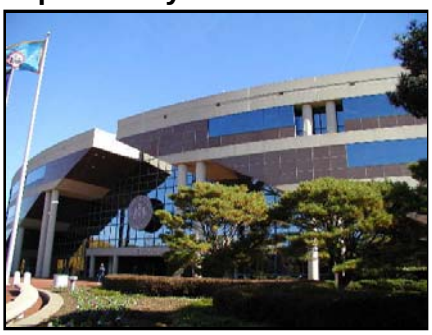
Fairfax County can increase MSW recycling rates by revising County Code, policies and/or procedures. Using County Code and policy can effectively advance programs and policies that encourage increased recycling. Some potential regulatory and policy revisions are discussed below.

Revise County Code to Require CDD Recycling and/or Recycling Plans

Currently, there are no requirements in Fairfax County to recycle CDD. Using County Code, the county can establish CDD recycling standards and guidelines for new construction and remodeling projects. Through these requirements, the county can substantially increase CDD recycling from its current low levels. The county may consider establishing these requirements with a threshold, similar to commercial recycling. For example, the county may require all building projects with costs that exceed $25,000, including construction and demolition, to recycle materials generated on-site. County staff will evaluate alternative implementation strategies and working with Business Advisory Committee find ways to phase in increased requirements.

Fairfax County will investigate requiring recycling plans as a condition in the building permitting process. Through mandating the development of recycling plans, the county will oblige building contractors to implement processes that divert CDD to recycling rather than disposal.

Expand Recyclables Collected at Government Buildings



Fairfax County Government generates a significant quantity of MSW; the county employs 11,400 people full-time and maintains over 7 million square feet of space in 150 buildings. The Fairfax County Government currently mandates the recycling of the principal recyclable material within its buildings. By expanding the required recyclable materials in county managed buildings, the county can help increase recycling rates. Integral to this effort is extensive "publicity" within the organization and employee education about recycling practices. Implementation of this initiative will be coordinated with the Employee Recycling Committee.

Expand MSW Recycling in County Schools

Schools (public and private, primary and secondary) in Fairfax County generate large quantities of paper that is often not recycled. By expanding paper recycling in schools through additional collection containers and education, the county can increase recycling rates while using minimal resources.

County staff will partner with the Clean Fairfax Council to expand and enhance its efforts to develop programs with the public and private schools in the county.

Increase MSW Recycling Inspections

By increasing adherence to recycling requirements, the county can promote increased recycling rates. County Code, Section 109-1-2, provides authority to enforce compliance with Chapter 109 recycling requirements through use of civil penalties. The county can enhance compliance with county code through increasing inspections and enforcement procedures, if public education programs are not generating increased recycling.

Find Suitable Recycling Alternatives for Multiunit Buildings

Fairfax County can employ a series of best practices to improve the recycling participation rate in multiunit buildings. These buildings, which range from duplexes to high-rises, are a challenge to cost-effective and convenient recycling services because many of the older buildings simply do not have enough space to allow for recycling containers inside the buildings. The county will evaluate best practices to maximize the success of multiunit recycling.

Fairfax County may consider increased requirements for recycling in new construction designs, specifically providing for collection of multiple materials. Retrofits of existing multiunit building are more challenging, but staff will work with individual properties to encourage the maximum amount of recycling for the space available, such as single-stream recycling. Input from the management companies and residents of these buildings will be considered also in planning for the retrofits.

EPA has suggested the following best practices for multiunit building recycling:[8]

- *Containers*. Equip buildings with large containers. Optimally, communities should furnish one set of containers for each group of 15 to 19 households.

- *Collection*. High diversion rate communities typically collect nonstandard materials, including phone books, magazines, mixed waste paper, old corrugated cardboard, and other plastics.

- *Participation*. Recommend establishing a mandatory program, with fines or other sanctions for multiunit buildings that violate the regulations.

Continue Using the Current Yard Waste Recycling System

Fairfax County prefers to continue the use of brush mulching and out-of-county composting facilities for the recycling of yard waste. Fairfax County can guarantee yard waste composting capacity over the SWMP planning period by contracting for capacity at out-of-county facilities. The county currently sends yard waste for composting at two out-of-county facilities, the Prince William County Compost Facility at Balls Ford Road and Loudoun Composting in Loudoun County. These facilities and others may be willing to guarantee yard waste composting capacity for Fairfax County.

Promote Additional Waste Exchanges among Jurisdictions

County staff will pursue additional waste exchanges with other jurisdictions to help with reuse/recycling of materials. The existing program with Prince William County has been very successful in allowing additional yard waste from Fairfax County to be recycled (composted)

[8] EPA, *Multifamily Recycling: A Golden Opportunity for Solid Waste Reduction* [online document]. April 1999 [cited October 2003]. Available from http://www.epa.gov/epaoswer/non-hw/recycle/multi.pdf.

while disposing of Prince William County MSW in the waste-to-energy facility instead of landfilling it.

Encourage VDOT to Use Recycled Materials in Road Construction

Fairfax County can increase CDD recycling rates by encouraging VDOT to use recycled materials in road construction. VDOT uses high volumes of concrete in construction projects. By incorporating recycled materials, including reclaimed asphalt pavements, crumb rubber and scrap PVC plastic into various concrete construction applications, VDOT can significantly reduce CDD disposal requirements as well as conserve limited resources. Research by the Texas Department of Transportation supports the feasibility of substituting "recycled asphalt pavement or scrap plastic for up to 10 percent of the coarse aggregate in portland cement concrete, and substituting crumb rubber for up to 10 percent of the fine aggregate in portland cement concrete." [9]

Moreover, VDOT has been asked in the past to use crushed glass in its road construction projects and has not agreed to use that material. Efforts will be made to have the county legislative committee or the County Executive notify VDOT of the county's desire to have VDOT explore using various recycled materials in its work.

Support Expansion of MRF Capacity

With projected increases in recycling quantities resulting from these SWMP actions, Fairfax County may exceed existing MRF capacity over the SWMP planning period. If recyclables exceed MRF capacity, Fairfax County will support the necessary expansion of the private MRFs (e.g., permitting).

Continue Using the Current Special Wastes Management System

Fairfax County prefers to continue its current special wastes management system (described in Chapter 9) over the SWMP planning period.

Disposal

Disposal management methods, including resource recovery (or waste-to-energy), incineration, and landfilling are at the bottom of the waste hierarchy. Resource recovery is preferred to landfilling since the method reduces the bulk of municipal waste and can provide the added benefit of energy production.

[9] The University of Texas at Austin Center for Transportation, *Investigation Into Organic Scrap Material Substitutions In Portland Cement Concrete, Research Report 1349-1F.* May 1996.

Table 11-4 presents actions selected by Fairfax County for the disposal of solid waste in the county over the next 20 years.

Table 11-4. Fairfax County Disposal SWMP Actions

Disposal SWMP Actions
Continue using the current disposal system – E/RRF as primary with out-of-county landfills for overflow amounts – CDD landfills both in- and out-of-county; contract with CDD landfills for dedicated disposal capacity
Use out-of-county landfill for MSW disposal, if negotiations with Covanta Fairfax, Inc. (CFI) are unsuccessful
Foster a regional approach for CDD disposal
Improve public outreach and education, specifically for CDD disposal capacity issues

Continue Using the Current Disposal System

Fairfax County prefers to continue the use of the E/RRF for the disposal of MSW. During times when waste disposal volumes exceed the storage capacity of the E/RRF, the county sends waste to other disposal facilities, typically out-of-county landfills. As Fairfax County waste generation nears capacity of the E/RRF, the county can lower the amount of non-county waste sent to the facility. However, when the county MSW generation rate exceeds the capacity of the E/RRF, the county must find alternative disposal methods for the overflow MSW, either in landfills or other disposal facilities.

As discussed in Chapter 6, the current operating agreement with CFI will expire in 2011. Fairfax County has several options concerning use of the E/RRF past this date:

- *Contract Renogotiation.* One option for Fairfax County is to renegotiate the contract with CFI when the current contract expires in 2011 to extend the use of the E/RRF. Extending the contract would allow Fairfax County to continue to dispose of its MSW through the E/RRF.

- *E/RRF Purchase.* Another option for Fairfax County is to purchase the E/RRF from CFI and assume responsibility for its operation. Four primary issues are associated with selecting this option:

  – Operating the E/RRF must be economically viable for the county.

- The county incurs the risks of operating and maintaining an aging WTE facility.
- The county must either hire an operator or develop proficiency in operating a WTE facility.
- County residents must be willing to approve a bond referendum to finance the purchase.

The county will continue to use out-of-county landfills for E/RRF overflow and MSW disposal during maintenance of the E/RRF or as a contingency or emergency backup. The county currently has contracts with the following landfills: Prince William County; King George County (operated by Waste Management); Shoosmith Brothers in Chester, VA; Atlantic Waste Landfill in Waverly, VA; the King and Queen County Landfill operated by Allied Waste; and the National Waste Landfill in Luray, VA.

Fairfax County will also continue the use of in-county and out-of-county landfills for the disposal of its CDD. Although VDEQ data suggest Virginia CDD disposal quantities will exhaust disposal capacity within seven years, Fairfax County assumes that the private sector will secure additional CDD disposal capacity during the SWMP planning period. The county will also investigate whether to support the capacity expansion of existing in-county CDD landfills over the SWMP planning period.

Fairfax County can guarantee CDD disposal capacity over the SWMP planning period by contracting for capacity at an out-of-county CDD landfill. The county currently disposes CDD at three out-of-county landfills (Potomac Landfill and WMI Transfer Station both in Prince William County and Corral Farm Landfill in Fauquier County) on a per-ton basis. These facilities and others may be willing to guarantee CDD landfill space for Fairfax County.

Discontinue Use of E/RRF after 2011 and Use Out-of-County Landfills

If contract negotiations with CFI are unsuccessful, Fairfax County may discontinue using the E/RRF when the contract expires in 2011. Fairfax County would then use of out-of-county landfills as the sole disposal method for MSW. Out-of-county landfills (with transportation costs) remain a cost-effective disposal option. Table 6-17 presents the

primary out-of-county landfills available for Fairfax County MSW.

Four factors may reduce the attractiveness of this alternative compared to using the E/RRF: availability, environmental concerns, traffic concerns, and risk. Although capacity likely exists in current landfills, quarterly permit limits may limit the availability of out-of-county landfills to accept all MSW requiring disposal from the county. Costs are expected to rise considerably in the future, since new landfills are difficult to permit in the Commonwealth. No new landfill capacity has been added recently. In addition, this alternative will result in higher environmental concerns due to increased transportation requirements, that results in additional truck traffic and air emissions in the region. Finally, this alternative increases the risk to the county's solid waste management system by relying on a single MSW disposal system that is out of the county's control.

Foster a Regional Approach for CDD Disposal

CDD management issues, especially the shrinking disposal capacity in the area, are regional concerns. Through regional coordination of Northern Virginia and/or Washington area local governments, the county can help develop sound regional responses to CDD issues.

Improve Public Outreach and Education

Fairfax County can assist in reducing CDD disposal issues though improved public education and outreach. As CDD disposal capacity diminishes, the county can focus public outreach and education to assist private companies in finding alternatives to disposal or additional CDD disposal capacity.

Collection and Transfer SWMP Actions

Although not levels in the solid waste hierarchy, collection and transfer of solid waste are key to implementation of the county's solid waste management strategies over the next 20 years. Table 11-5 presents actions selected by Fairfax County for the future collection and transfer of solid waste in the county.

Construction of solid waste transfer facilities in Virginia are permitted by rule — facility operators are only required to notify VDEQ of the intent to operate and provide documentation and certification that the facility meets VDEQ requirements. Nonetheless, all facilities governed by permit-by-rule in Fairfax County must be in accordance with this SWMP.

Table 11-5. Fairfax County Collection and Transfer SWMP Actions

Collection SWMP Actions
Partner with private waste collection companies and community stakeholders to improve residential collection service
Revise County Code to improve residential service
Continue current vacuum leaf collection system
Improve public outreach and education, specifically education for CDD collection options
Consider program to promote best management practices for CDD haulers
Promote use of special fuels, filters, and special vehicles for collection
Implement a collection and disposal strategy for emergencies
Expand special wastes collection
Transfer SWMP Actions
Continue using current transfer system
Reconfigure or construct waste handling areas at the I-66 Transfer Station, including: – Unloading areas for citizens and commercial cash customers (for increased safety and efficiency) – Areas to handle increased CDD and/or yard waste – Recycling center for CDD, if needed
Add transfer capability to the I-95 Landfill Complex if increases in transfer quantities or waste exchange agreements require it
Improve public outreach and education to promote SWMP transfer actions

COLLECTION

Partner with Private Waste Collection Companies and Community Stakeholders to Improve Residential Collection Service

County staff will work with waste collection companies and community stakeholders to resolve issues identified in the development of this plan and other concerns that arise during the planning period. County staff, waste collection companies, and community stakeholders will ensure that all residents have appropriate waste collection service by:

- addressing service issues identified during the development of this Plan;
- strengthening and enforcing Fairfax County Code;
- developing cooperative agreements to handle waste generated by disasters or emergencies;
- evaluating the use of lower emission fuels for collection vehicles; and,
- collaborating on public outreach and education messages so that consistent information is provided to residents.

Fairfax County will continue using its current MSW and yard waste collection system. The current collections system includes residential curbside collection provided by private haulers and county collectors, county-provided disposal centers and recycling DOCs, commercial collection provided by private haulers, and the County Agency Route Program. Fairfax County DSWCR will continue to collect MSW and yard waste in a portion of the county (sanitary districts), through county staff and /or contract service providers.

The CDD collection system will continue to include commercial collection by private haulers.

The yard waste collection system will continue to include residential curbside collection of leaves and grass (seasonal), and brush (year-round) as well as yard waste processing at the I-66 Transfer Station and I-95 Landfill Complex.

Revise County Code to Improve Residential Service

Fairfax County will periodically revise County Code, policies and/or procedures to improve collection service and the solid waste management program. Under County Code, Chapter 109, Article 5, Fairfax County will establish requirements for collection of solid waste in the county, including the manner of collection, materials to be collected, collection frequency, collection points and procedures, collection vehicles, special collections, and rates. These requirements establish minimum service levels; some haulers in the county provide additional collection services.

Continue Current Vacuum Leaf Collection System

Fairfax County will continue to provide vacuum leaf collection service to residents in specially created leaf collection districts during the leaf collection period. Vacuum leaf collection is conducted seasonally for those customers who pay a special fee for the service based on the assessed value of the residence and property. Vacuum leaf collection will be addressed in the implementation phase of the SWMP to determine how this leaf collection practice would be encouraged countywide by all haulers in the future.

Improve Public Outreach and Education – CDD Collection

Fairfax County can improve CDD collection though improved public education and outreach. The county can help promote CDD collection best practices by providing lists of CDD collection companies that offer recycling services and guidance on how to separate CDD from MSW.

Consider Program to Promote Best Management Practices for CDD Haulers

Fairfax County may consider increasing its oversight over the CDD collection industry to promote CDD collection best management practices or county CDD policy. By maintaining an active role in the CDD collection industry, the county can help improve the baseline service level for CDD collection. In addition, the county can assist CDD haulers in finding CDD recycling and disposal alternatives.

Promote Use of Special Fuels, Filters, and Special Vehicles for Collection

Fairfax County already has a plan for county vehicles to use environmentally preferential fuels. Using biodiesel as an alternative fuel can significantly reduce emissions of carbon monoxide, hydrocarbons, and particulate matter. Biodiesel is also a cost effective alternative to diesel, with a similar price per gallon and requiring no modifications to collection vehicles or fueling equipment. The county may choose to make the use of special fuels a requirement for using the county's disposal facilities.

Fairfax County may also require (for county vehicles) and promote (for private vehicles) the use of vehicle exhaust system filters to reduce air emissions from collection vehicles. Many of these filter systems are effective at removing nitrous oxides and particulates from diesel exhaust.

Fairfax County may promote the use of special collection vehicles, such as compactor trucks. The vehicles reduce trash volume, thereby increasing the number of households served per collection trip. By reducing the frequency of trips to unload, collection compactor trucks help reduce truck traffic and air pollution.

Implement Collection and Disposal Strategy for Emergencies

Fairfax County will develop a strategy for the countywide collection and disposal of solid waste generated from emergency events, including natural and homeland security disasters. Emergency events are disasters of sufficient magnitude that the President of the United States declares an emergency, enabling assistance from the Federal Emergency Management Agency. Normal severe weather events, such as thunderstorms, are not considered emergencies. Fairfax County will proactively plan to secure emergency collection services before disasters, possibly through contracts or regional agreements.

Expand Special Wastes Collection

Fairfax County currently accepts most special wastes at the I-66 Transfer Station and the I-95 Landfill Complex recycling DOCs. For some county

citizens, these facilities may not be convenient so they use alternative disposal methods. By expanding collection hours or opening additional special waste collection centers, the county could attract additional residents to use the special wastes program.

However, the expanding the special wastes program is costly. Fairfax County must weigh the benefits of removing special wastes from the MSW stream with the cost of opening new collection centers.

Fairfax County will also evaluate whether to require new restaurants to collect fat, oil, and grease wastes for special collections. These wastes can clog water and sewer systems and can be recycled. While fat, oil, and grease wastes do not meet the definition of special wastes, they are wastes of concern to the Fairfax County community.

TRANSFER

Continue Using Current Transfer System

The county will continue to transfer solid waste as it does currently, using the I-66 Transfer Station. As waste generation in Fairfax County grows, solid waste transfer requirements may exceed the current capacity of the I-66 Transfer Station (roughly 3,500 tons per day). When incoming volumes begin to consistently exceed 3,500 tons per day, the county will need to increase the number of trailer trucks hauling material for disposal. When inbound waste volumes exceed 4,500 tons per day, the facility will need to increase both the number of bays at the Transfer Station and county trailer trucks hauling waste for disposal.

Reconfigure or Construct Waste Handling Areas at the I-66 Transfer Station

Fairfax County may consider reconfiguring or constructing new waste handling areas at the I-66 Transfer Station. These waste handling areas include unloading areas for citizens and commercial cash customers (for increased safety and efficiency), a recycling center for CDD, and areas to handle increased CDD and/or yard waste, which are discussed below.

Unloading Areas for Citizens and Commercial Cash Customers

The county may construct unloading bays specifically for citizens and small commercial loads at the I-66 Transfer Station. By constructing separate unloading areas, the county can reduce the safety issues associated with citizens entering the same bays where larger trash trucks are being off loaded.

Construct Areas to Handle Increased CDD and/or Yard Waste

As the capacity of CDD landfills dwindles, Fairfax County can improve the state of CDD disposal capacity by managing a greater percentage of the CDD at the I-66 Transfer Station. The county could construct additional CDD bays and increase the number of trucks used to transfer the material for disposal. Additional recycling of useful CDD could be accomplished at the same time materials are being screened and loaded for transport.

Yard waste quantities in the county are projected to increase over the SWMP planning period. When inbound yard waste quantities exceed the current transfer station processing capacity, the county may need to increase the size of yard waste processing areas.

Recycling Center for CDD

(See “Promote CDD Recycling at a County Location” under “Recycling” in this Chapter.)

Add Transfer Capabilities to the I-95 Landfill Complex (if needed)

As waste quantities increase, the county may consider building or supporting construction of a transfer station at the I-95 Landfill Complex or other county location. Locating a transfer facility near the E/RRF will provide another method for the county to control the MSW volume to be processed at the E/RRF. If the quantity of MSW entering the county system is insufficient to maintain the E/RRF operations, the county can contract with other municipalities or private firms for the additional quantity required. If MSW quantities received at the proposed transfer facility are greater than the E/RRF capacity, the county can transport the “overflow” waste to sanitary landfills outside of the county.

Improve Public Outreach and Education –Transfer

Fairfax County can improve transfer operations though improved public education and outreach. Public education and outreach will be targeted towards promoting the SWMP transfer actions. For example, the county can focus public outreach and education to promote the use of new unloading areas by citizens and commercial cash customers, CDD transfer facilities by private haulers, and a new transfer station at the I-95 Landfill Complex (if needed).