

Arlington County Solid Waste Management Plan



June 12, 2004

Department of Environmental Services
Solid Waste Bureau
4300 29th Street, South
Arlington, Virginia 22206

[This page intentionally left blank]

Arlington County, Virginia

County Board

Barbara Favola, Chairman
Jay Fisette, Vice-Chairman
Paul Ferguson, Member
J. Walter Tejada, Member
Chris Zimmerman, Member

Office of the County Manager

Ron Carlee, County Manager
Joyce Wilson, Deputy County Manager

Solid Waste Committee

Marie Sansone, Chair

Dean Amel	Avi Garbow
Laura Dely	Carlos Stern
Alexandra Fredericks	Carolyn White

Department of Environmental Services

Randy Bartlett, Director
John Mausert-Mooney, Utilities and Environmental Policy Division
Erik Grabowsky, Solid Waste Bureau
Carl Newby, Solid Waste Bureau / General Services Division (Acting)
Scott MacDonald, Waste Reduction Office



Thank you to the citizens of Arlington County
who assisted in the preparation of the
Solid Waste Management Plan

Arlington County Vision:

Arlington will be a diverse and inclusive world-class urban community with secure, attractive residential and commercial neighborhoods where people unite to form a caring, learning, participating, sustainable community in which each person is important.

**ARLINGTON COUNTY
SOLID WASTE MANAGEMENT PLAN**

June 12, 2004

Acknowledgements	v
Executive Summary	vii
List of Tables and Figures	xi
Solid Waste Management Planning Regulation Checklist	xiii
1.0 Introduction	1
1.1 Summary.....	1
1.2 Goals for Plan.....	1
1.3 Solid Waste Management Plan Development Approach.....	3
1.4 Solid Waste Management Plan Adoption	3
2.0 Projections and Waste Quantities	5
2.1 Description of the Plan Area.....	5
2.2 Population Data and Projections	9
2.3 Solid Waste Generation Projections and Flow Patterns.....	14
2.4 Markets for Recycling and Reuse of Materials.....	19
3.0 Waste Composition, Collection, and Disposal	23
3.1 Waste Type Profiles.....	25
Municipal Solid Waste.....	25
Construction and Demolition (C&D) Waste.....	38
Industrial Waste	41
Regulated Medical Waste (RMW).....	42
Vegetative and Yard Waste.....	44
Incinerator/Combustion Ash	46
Sludge	47
Tires	49
White Goods	51
Friable Asbestos.....	54
Petroleum Contaminated Soil	56
Special Wastes	57
3.2 Public Education.....	63
3.3 Public/Private Partnerships	65
3.4 Litter Control Program	65

*Arlington County
Solid Waste Management Plan*

4.0	Hierarchy (140.1)	67
4.1	<i>Source Reduction</i>	67
4.2	<i>Reuse</i>	68
4.3	<i>Recycling</i>	68
4.4	<i>Resource Recovery (Waste-to-Energy)</i>	69
4.5	<i>Incineration</i>	69
4.6	<i>Landfill</i>	69
5.0	Citizen Advisory Committee	71
5.1	<i>Committee Description</i>	71
5.2	<i>Committee Meetings</i>	72
5.3	<i>Committee Report</i>	72
6.0	Objectives (120.A.3, 140.2)	73
6.1	<i>County Goals for Meeting State’s Requirements</i>	73
6.2	<i>Additional Voluntary Goals</i>	74
7.0	Implementation Plan (120.A.2, A.4)	79
7.1	<i>Voluntary Program Enhancements: Initial Five-Year Period</i>	79
7.2	<i>Voluntary Program Enhancements: Beyond Five Years</i>	85
8.0	Funding & Construction Schedules (120.A.5, A.6)	87
8.1	<i>Current Funding</i>	87
8.2	<i>Future Funding</i>	87
9.0	Public Participation	89
9.1	<i>Public Advisory Committee</i>	89
9.2	<i>Meetings with Identified Stakeholders</i>	89
9.3	<i>Public Information Sessions</i>	93
9.4	<i>Specific Comments Received from the Public</i>	95
9.5	<i>Public Hearings, Meetings, Resolution</i>	96
10.0	References	97
11.0	Acronyms	99
12.0	Glossary	101

Appendix A Adoption Resolution	103
Appendix B Notes for Tables 2-5 and Table 2-6	105
Appendix C Virginia DEQ Recycling Report	109
Appendix D Recycling Reports	115
Appendix E SWC Meeting Minutes	119
Appendix F E2C2 Meeting Minutes.....	135
Appendix G SWC Recommendations.....	143
Appendix H Public Hearing Summary.....	161
Appendix I Staff Response to Public Comments at Public Hearing	165

[This page intentionally left blank]

Acknowledgements

The County would like to thank GBB, Inc. Solid Waste Consultants for their help with preparing the core document component of this Solid Waste Management Plan. The preparation of the core document was funded by the Alexandria/Arlington Waste-to-Energy Facility Trust Fund, and as a result, the County would like to thank the Waste-to-Energy Trustees for their contribution to this planning document.

The County would also like to thank the County staff who lent their support and expertise to this effort:

Department of Environmental Services

William Clem
Charles Goyette
Jeff Harn
Lisa Ingmarsson
Phil Loar
Robert Mace
Nancy Mathewson
Kathryn McCarty
Molly Oberst
Aileen Winquist

Department of Management and Finance

Carolyn Gershfeld

[This page intentionally left blank]

Executive Summary

Introduction

Arlington County has developed an updated Solid Waste Management Plan (SWMP) in response to the Virginia Department of Environmental Quality's (DEQ) 2001 regulations that require every city, county, or town in the Commonwealth of Virginia to develop a SWMP, or update an existing SWMP, by July 1, 2004.¹

One of the key requirements of the regulations is that every city, county, and town meets a minimum recycling rate of 25%. Arlington County currently meets this rate (the County reported a rate of 31.7% for Calendar Year 2002), and anticipates that it will continue to do so over the next 20 years with its existing programs. The regulations also require the County to use extensive public participation in the development of the SWMP, which the County did by holding stakeholder meetings, public information sessions, and public hearings.

Plan Development Process

The SWMP was developed over a 14-month period. In April 2003, the Arlington County Manager identified the Solid Waste Committee (SWC) of the Environment and Energy Conservation Commission as the citizen advisory committee for the SWMP. The County Manager also identified a set of solid waste issues that the SWC should consider in developing the SWMP. County staff researched and prepared background information on the issues identified by the County Manager to aid the SWC. The SWC reviewed these issues and put forth 50 recommendations for improving the County's solid waste management system over the next 20 years.

In response to the Solid Waste Committee's recommendations, the County developed a set of voluntary goals and objectives for solid waste management in the County over the next 20 years. See Section 6.0 for a discussion of the County's goals for solid waste management. The County also developed corresponding program enhancements, and a strategy for implementing these program enhancements over the next 20 years. The County has prioritized four program enhancements to be implemented in the first five-year period following SWMP adoption, and proposes to implement the remaining program enhancements in the period beyond five years. These voluntary program enhancements are subject to the annual budget process, feasibility studies, and County prioritization, giving the County the flexibility to implement new programs as resources become available.

¹ 9 VAC 20-130-10, et seq.

Overview of Plan Components

The County's SWMP contains three major components:

Base document: The base document is structured to meet State requirements for solid waste planning. The base document includes the County's waste management strategy for the next 20 years; goals, objectives, and an implementation schedule; how the County plans to meet recycling requirements; a strategy for public education; updated demographic and waste generation projections; and a funding strategy for solid waste programs.

Voluntary program enhancements, first five years: The County has identified four voluntary program enhancements that are prioritized for the initial five-year period following SWMP adoption. These include:

1. Environmental Investment Fee Study – The County proposes to conduct a comprehensive feasibility study on implementing a community-wide environmental investment fee (EIF), or solid waste generator fee. The EIF could fund community-wide solid waste programs such as litter collection, street sweeping, and waste stream assessments. The revenues from the EIF could also be used to stabilize the tip fee at the Alexandria/Arlington Waste-to-Energy (WTE) Facility, so that all users of the WTE Facility pay the same fee for waste disposal. This feasibility study could be conducted by the Solid Waste Planner (see 3. below).
2. Solid Waste Franchising Study – The County proposes to give, following an adequate preparatory period, the State-mandated five-year notice of intent to implement solid waste franchising at the time of SWMP adoption. The County would then propose to begin a comprehensive feasibility study on implementing solid waste franchising. Solid waste franchising could increase the County's control of its waste stream, stabilize the tip fee at the Alexandria/Arlington WTE Facility so that all users of the WTE Facility pay the same fee for waste disposal, and generate revenues for solid waste programs. This feasibility study could be conducted by the Solid Waste Planner (see 3. below).
3. Solid Waste Planner – The County proposes to expand existing solid waste planning capacity, by creating a Solid Waste Planner position in the Solid Waste Bureau or employing some form of contractual support. If created, the Solid Waste Planner position would largely be dedicated to oversight of the feasibility studies proposed in the SWMP, monitoring of industry “best practices,” and support of solid waste initiatives as needed.
4. Improve Multi-Family and Commercial Recycling Programs – The County proposes to create additional staff capacity and resources for the mandatory multi-family and commercial recycling programs. This increased capacity would largely be dedicated to enforcement and administration of the multi-family and commercial recycling programs.

Voluntary program enhancements, beyond five years: The County has identified additional voluntary program enhancements that it proposes to implement in the period beyond five years. They are listed below, in no particular order:

- Study hazardous materials collection for "backdoor" residents and Conditionally Exempt Small Quantity Generators, and implement if feasible;
- Improve waste assessment and tracking (implement waste tracking system; conduct periodic waste assessments);
- Create new position to improve education and outreach for solid waste programs;
- Create new position to improve enforcement and inspection capabilities for solid waste programs;
- Expand seasonal yard waste collection program to be a year-round program;
- Implement yard waste ban, and build yard waste transfer station;
- Study unit-based pricing structure for residential refuse collection, and implement if feasible;
- Study improvements to curbside recycling program (expand accepted materials; implement single-stream recycling collection), and implement if feasible;
- Study food waste collection program for residents and businesses, and implement if feasible; and
- Improve litter programs.

The voluntary program enhancements identified for the next 20 years (first five-year period and period beyond five years) largely reflect the 50 recommendations put forth by the SWC. See Section 5.0 for a discussion of the SWC recommendations. See Section 7.0 for more information about the County's proposed implementation plan for the voluntary program enhancements. The actual implementation of these program enhancements is subject to the annual budget process, feasibility studies, and County prioritization.

[This page intentionally left blank]

List of Tables and Figures

Tables

Table 2-1	Arlington County Population	9
Table 2-2	Arlington County Household Projection.....	9
Table 2-3	Arlington County Employment.....	11
Table 2-4	Arlington County Developed Commercial Space Projection.....	12
Table 2-5	Summary of Historic and Predicted MSW Generation and Flows.....	17
Table 2-6	Known Arlington County Waste Material Flows in Tons (Unless Noted).....	18
Table 2-7	Local Recyclable Materials Prices, September 2003	20
Table 3-1	Materials Generated in the U.S. Municipal Waste Stream: 1998 Through 2000	26
Table 3-2	Estimated Composition of Residential/Commercial MSW	28
Table 3-3	Arlington County Licensed Haulers [as of January 2004]	32
Table 3-4	Major Landfills & Transfer Stations	36
Table 3-5	Active Material Recovery Facilities in Northern Virginia and Maryland.....	37
Table 3-6	Major C&D Facilities in Region	40
Table 3-7	Scrap Metal Collection Firms Serving Arlington County	52
Table 3-8	Materials Accepted at County Household Hazardous Materials Collections.....	58
Table 3-9	Summary of Outreach Efforts	64
Table 7-1	Voluntary Program Enhancements, First Five Years: Implementation Timeframe	82
Table 7-2	Voluntary Program Enhancements, First Five Years: Summary of Implementation Costs	84
Table 7-3	Voluntary Program Enhancements, Beyond Five Years: Implementation Timeframe and Annual Costs	86
Table 8-1	Summary of Current Funding	87
Table 9-1	Summary of General Public Information Sessions	93

Figures

Figure 2-1	Metropolitan Washington Council of Governments Area Map.....	6
Figure 2-2	Arlington County Map Showing Corridors.....	7
Figure 2-3	Arlington County Household Density.....	10
Figure 2-4	Arlington County Growth Trends.....	13
Figure 4-1	Solid Waste Management Hierarchy	67

[This page intentionally left blank]

Solid Waste Management Planning Regulation Checklist

9 VAC 20-130-120	Mandatory plan contents	Section(s)
1)	Integrated waste management strategy	4.0
2)	Discussion of plan implementation.....	7.0
3)	Objectives for solid waste management within the jurisdiction	6.0
4)	Definition of incremental stages of progress toward objectives	6.0
	- Schedule for implementation	7.0
5)	Description of necessary funding and resources.....	8.0
	- Consideration of fees dedicated to future facility development	8.0
6)	Strategy for provision of necessary funds and resources.....	8.0
7)	Strategy for public education and information	9.0
8)	Consideration of public and private sector partnerships.....	3.3
9)	Minimum recycling rate of 25% of municipal solid waste.....	3.0
10)	DEQ standard recycling rate calculation methodology	App D
9 VAC 20-130-130	Public Participation	App I, App J
9 VAC 20-130-150	Incorporated data	
1)	Population information and projections for 20 years.....	2.2
2)	Data and analysis of:	
	- Urban concentrations	2.2
	- Geographic conditions	2.1
	- Economic growth and development.....	2.2
	- Markets for reuse and recycling of materials.....	2.4
	- Transportation conditions	2.1
3)	Solid waste generation estimates	2.3
4)	Existing and planned solid waste management facilities.....	3.0
5)	Implementation milestones and responsible parties	7.0
6)	Program descriptions for solid waste (by waste stream):	
	- Reduction	3.1
	- Reuse.....	3.1
	- Recycling	3.1
	- Resource recovery.....	3.1
	- Incineration	3.1
	- Storage	3.0
	- Treatment	3.0
	- Disposal.....	3.1
	- Litter control	3.1, 3.4
7)	Outreach programs for waste exchange, public education, and public participation	3.2, 9
8)	Evaluation of solid waste collection; procedures and results	3.1
9)	Solid waste management needs for 20 yr. period; associated actions	3.0

[This page intentionally left blank]

**ARLINGTON COUNTY
SOLID WASTE MANAGEMENT PLAN
July 2004**

1.0 Introduction

1.1 Summary

The Arlington County Solid Waste Management Plan (SWMP) is Arlington County's planning document that summarizes all of the County's solid waste management activities and alternatives. The existing SWMP was adopted on October 26, 1991. The new plan includes an analysis of and strategy for solid waste management activities in Arlington County for the next 20 years.

On August 1, 2001, the Commonwealth of Virginia promulgated regulations for solid waste management planning (9 VAC 20-130-10, et seq.). These regulations replaced previous regulations promulgated in 1990, under which the 1991 Arlington County SWMP was developed. Section 9 VAC 20-130-110 states that "Every city, county, and town in the Commonwealth shall develop a solid waste management plan or amend an existing solid waste management plan and submit it for approval in accordance with [9 VAC 20-130-10, et seq.] ... A complete, revised solid waste management plan in compliance with [9 VAC 20-130-10, et seq.] shall be provided to the department no later than July 1, 2004."

Arlington County has prepared its comprehensive solid waste management plan for submission to the Virginia Department of Environmental Quality (DEQ) in accordance with the terms of the planning regulations. The plan addresses the County's solid waste management needs through 2025 and describes the County's plans for continuing to meet the Commonwealth's 25% recycling mandate.

The County's SWMP builds on previous planning efforts. The SWMP also prescribes methods for developing efficient, economically feasible, and technically and environmentally sound waste management programs for the County. The SWMP is intended to serve as a management tool for Arlington County. Portions of the plan discuss joint efforts among Arlington County, neighboring jurisdictions, and private industry in public/private partnerships. In particular, the disposal method presented for both Arlington County and the City of Alexandria utilizes the Waste-to-Energy (WTE) Facility operated by Covanta Energy (Alexandria/Arlington WTE Facility) and the ash monofill operated by Fairfax County.

1.2 Goals for Plan

Document Goals

This SWMP is intended to comply with the Code of Virginia (Section 10.1-1411) and Virginia's solid waste management planning regulations (9 VAC 20-130-10, et seq.),

which gave local governments statutory authority, and regulatory responsibility and accountability, to plan for the handling of all types of non-hazardous solid waste.

The County has identified a set of goals for the SWMP, based on the mandatory objectives identified in 9 VAC 20-130-120. The SWMP will clearly demonstrate how these goals, provided below, will be accomplished.

- Develop an integrated waste management strategy;
- Discuss how the SWMP will be implemented;
- Describe the solid waste management objectives within Arlington County;
- Define the incremental stages of progress toward the solid waste plan objectives and their implementation schedule;
- Describe the necessary funding and resources, including consideration of fees dedicated to future facility development;
- Describe strategy for provision of necessary funds and resources;
- Describe strategy for a public education and information strategy on source reduction, reuse, and recycling, and;
- Consider the extent of the public and private sector partnerships and private sector participation in the SWMP execution; and
- Demonstrate how the 25% recycling rate has been met, and will continue to be met.

Solid Waste Management Planning Goals

In response to the SWMP requirements put forth by Virginia DEQ, the County is reinforcing the following goals from the 1991 SWMP:

- Employ a comprehensive solid waste management system that considers the Commonwealth's hierarchy.
- Ensure that the County implements a strong recycling program and that the County recycle at a rate that, at a minimum, meets the Commonwealth's recycling goals.
- Carefully evaluate the waste management needs of the county for the next 20 years and identify actions to be taken to meet those needs.

In addition to the goals for meeting the SWMP requirements put forth by the Virginia DEQ, including the goal of a 25% recycling rate, the County has established a set of voluntary goals for the 20-year planning period. The County will strive to meet these voluntary goals and objectives as resources are available. SWMP goals and objectives are covered in more detail in Section 6.0.

- Arlington County should be a leader in solid waste reduction and in recycling
- Reduce waste below the U.S. Environmental Protection Agency's national average waste generation rate (4.3 pounds / person / day)
- Increase recycling rate by 5% first 10 years, and then 5% every 5 years:
 - ⇒ 37% by 2014
 - ⇒ 42% by 2019
 - ⇒ 47% by 2024

1.3 Solid Waste Management Plan Development Approach

In accordance with 9 VAC 20-130-130, Arlington County has provided for extensive participation of the public through various stakeholder meetings, public information sessions, and public hearings. The County’s public participation process is discussed in more detail in Section 8.

1.4 Solid Waste Management Plan Adoption

The Arlington County Board received the revised SWMP on June 12, 2004, for adoption consideration. On June 12, 2004, the County Board of Arlington County adopted the SWMP and approved its submission to the Virginia DEQ. A copy of the resolution is provided in Appendix A.

[This page intentionally left blank]

2.0 Projections and Waste Quantities

This Solid Waste Management Plan (SWMP) addresses the twelve waste streams specified by the Virginia Department of Environmental Quality (DEQ) Waste Management Waste Regulations (Chapter 130), as follows:

1. Municipal Solid Waste (MSW) (Residential, Commercial, and Institutional Waste)
2. Construction and Demolition Debris
3. Industrial Waste
4. Regulated Medical Waste
5. Vegetative and Yard Waste
6. Incinerator Ash
7. Sludge
8. Tires
9. White Goods
10. Friable Asbestos
11. Petroleum Contaminated Soil
12. Other Special Waste

The “Other Special Waste” category includes solid wastes that are difficult to handle or require special precautions because of hazardous properties.

Characteristics of the planning area, such as population, employment, income level, land use, topography, etc., are significant factors in the composition and quantities of waste streams generated. This section presents a brief description of the Arlington County planning area, summary descriptive information, composition estimates of the waste streams, and historical information of waste streams for which quantity information is received from collection and management program operators. Finally, detailed transaction records are not maintained for each waste type, so projected quantities of the major waste streams were developed for the 20-year planning period where reasonable estimates could be developed.

2.1 Description of the Plan Area

Arlington County is an urban county of 25.8 square miles. It is one of nineteen jurisdictions that make up the Metropolitan Washington Council of Governments, as shown in Figure 2-1. It is separated from Washington, D.C. by the Potomac River, which forms its northern and eastern boundaries. The highest point in the County is 461 feet above sea level and the shore of the Potomac River is essentially at sea level. Figure 2-2 presents a general map of the County. The County has no incorporated towns or cities.

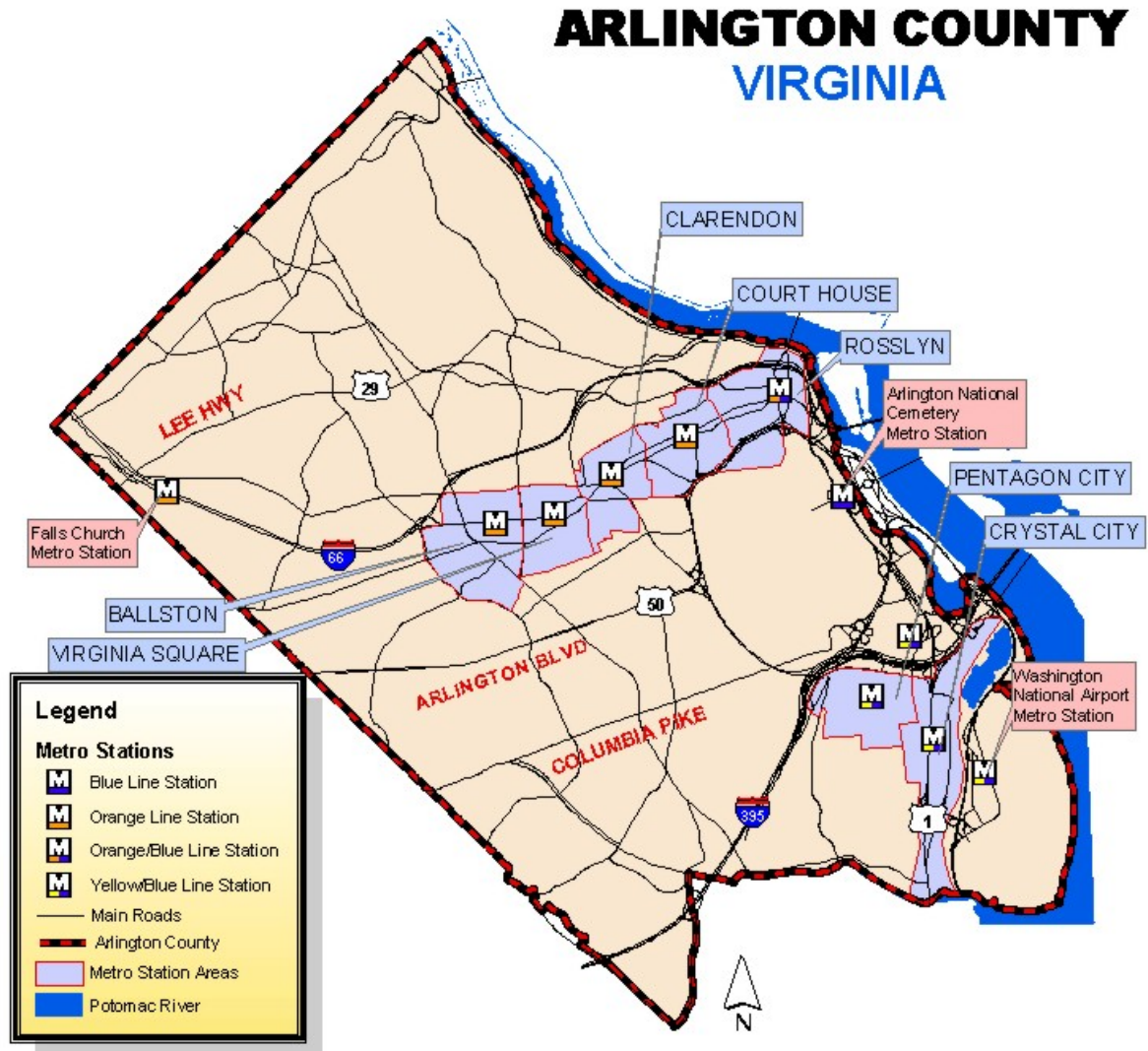
Arlington County has two major development corridors, Rosslyn-Ballston and Jefferson Davis, shown on the map in Figure 2-2.

**Figure 2-1
Metropolitan Washington Council of Governments Area Map**



Source: Metropolitan Washington Council of Governments website.

Figure 2-2
Arlington County Map Showing Corridors



Institutional and commercial activity in Arlington County is predominantly government and private office space. Several federal government agencies have operations that significantly impact waste generation in the County, the largest being the Department of Defense's Pentagon and Navy Annex buildings. Retail establishments, including several indoor and outdoor shopping centers, are also located in the County, but their occupied space is less than private office space. Furthermore, the County has nearly 10,000 hotel rooms. Total developed commercial space, including office, retail, and hotel rooms, has grown steadily in the past decade, reaching five percent growth between 2000 and 2002. Commercial space growth is presented in Table 2-4.

Arlington County contains many transportation assets, including Ronald Reagan Washington National Airport, a north-south rail line, major east-west and north-south road arteries, and two rapid transit (Metro) lines. These two Metro lines are the key factors in the two development corridors discussed earlier. The Rosslyn-Ballston Corridor has access to I-66, which allows cars and buses but not commercial trucks. The County also has many urban streets and roadways, bicycle and pedestrian systems, and a comprehensive bus system. Sustained growth in the region and in Arlington County has added to the traffic in and through the County in recent years.

Arlington County contains I-395, the primary north-south road artery that serves the central core of the Metropolitan Washington region. I-395 also connects with the Beltway and I-95, the primary north-south route on the east coast. Due to the location of major regional solid waste landfills in Virginia (Virginia is the second largest importer of solid waste in the country), a significant portion of the solid waste transfer originating in the region uses I-395 to transport solid waste. Rail lines are also utilized to transport solid waste from solid waste transfer stations to the landfills in Virginia. Currently, however, solid waste originating at transfer stations in the Metropolitan Washington area is not transported by rail.

2.2 Population Data and Projections

In the past two decades, the population of Arlington County has grown rapidly. In 1990, the County had a population of 170,936, about 12% greater than 1980 levels. In 2000, the population had increased to 189,453, an increase of about 11% above 1990 levels. In each ten-year period, the population increased by about 18,500 residents.

Table 2-1 shows the County’s population in Calendar Year 2000, as well as population projections for 2005 through 2025. The population is projected to increase approximately 16% by 2025, to more than 219,500. Average household size has been stable in recent years, although the County projects it will decrease about four percent over the planning period.

**Table 2-1
Arlington County Population
Calendar Years 2000 Through 2025**

	2000	2005	2010	2015	2020	2025
Population¹	189,453	197,338	202,468	209,087	215,509	219,520

¹2000 Population from U.S Census data. Population in 2005, 2010, 2015, and 2020 based on MWCOG Round 6.3a projections.

Number of Households

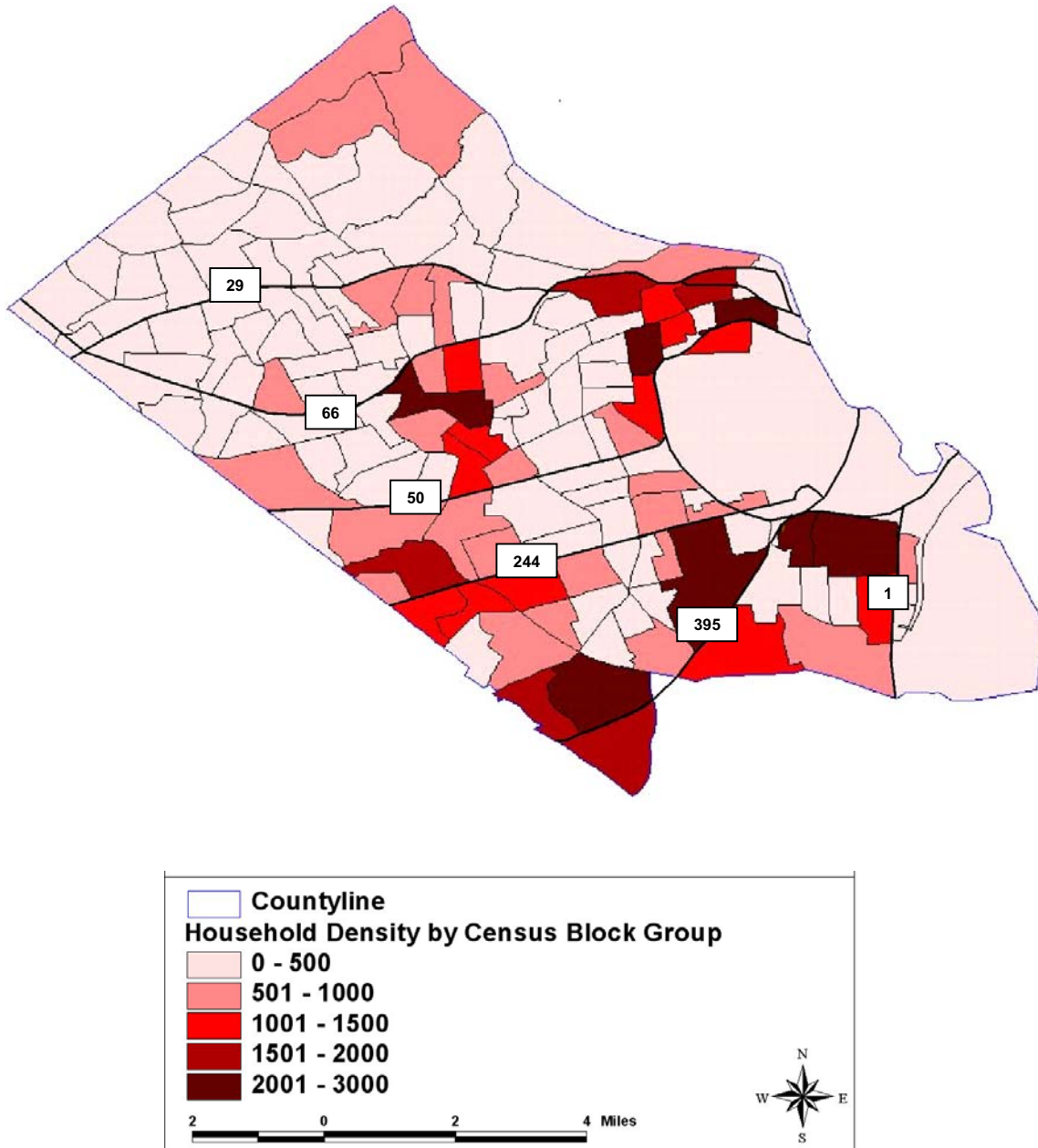
The number of households in Arlington County in Calendar Year 2000 was 86,352, or 2.19 residents per household. Of these households, approximately 57% live in multi-family dwellings; the remaining 43% live in single-family or duplex residences. The number of households is projected to rise approximately 21% between 2000 and 2025 (See Table 2-2). The map in Figure 2-3 shows the household density in the various areas of the County. Most of the expected growth will likely occur along the Rosslyn-Ballston and Jefferson Davis development corridors.

**Table 2-2
Arlington County Household Projection
Calendar Years 2000 Through 2025**

	2000	2005	2010	2015	2020	2025
Number of Households²	86,352	90,873	94,582	98,730	102,506	104,850

²Source of Households for 1998 through 2003: Arlington County Department of Community Planning, Housing & Development, Planning Division. Projected years beyond 2003 are estimated using the population growth rate.

**Figure 2-3
 Arlington County Household Density**



Employment Trends

Employment in Arlington County is growing at a faster rate than the population. In Calendar Year 2000, 206,700 people were employed in the County (approximately 17,000 more employment positions than there are residents), clear evidence of the significant net commuter flow into the County each business day. Employment between 2002 and 2025 is projected to rise approximately 26%, which is ten percent more than the population is expected to grow. Table 2-3 shows actual employment data for the year 2000, with projections through 2025. For the purpose of this table, “Other” sectors

include Agricultural Services and Construction. As the table demonstrates, the amount of employees in the “Office” sector will decrease slightly. The largest jump will be in the “Retail” sector, with an approximate increase of 45% between 2000 and 2025. Employment in the “Industrial” and “Other” sectors are projected to increase slightly.

Table 2-3
Arlington County Employment
Calendar Years 2000 Through 2025 (thousands)

Employer Category	2000	2005	2010	2015	2020	2025
Office	82.4	82.0	81.8	81.7	81.7	81.8
Retail	115.3	125.6	135.8	146.2	156.9	167.7
Industrial	3.5	3.8	4.0	4.2	4.3	4.3
Other*	5.5	5.8	6.1	6.3	6.6	6.8
Total	206,740	217,180	227,580	238,330	249,360	260,660

* “Other” sectors include Agricultural Services and Construction.

Source: Arlington County Virginia Business Data and Statistics derived from Woods and Poole Economics, Inc. 2001.

Commercial Space Trends

Arlington County had 44,942,519 square feet of developed space in Calendar Year 2000. Based on Table 2-4 below, the amount of developed commercial space between 2000 and 2025 is projected to rise approximately 59%. Table 2-4 shows the developed commercial space figures projected by the Arlington County Department of Community Planning, Housing, and Development. The total space includes office, retail, industrial, hotel and other space. Hotel room space is estimated at 200 square feet per room. Projections beyond 2002 are based on build out occurring by 2023.

Table 2-4
Arlington County Developed Commercial Space Projection
Calendar Years 2000 Through 2025 (Sq Footage)

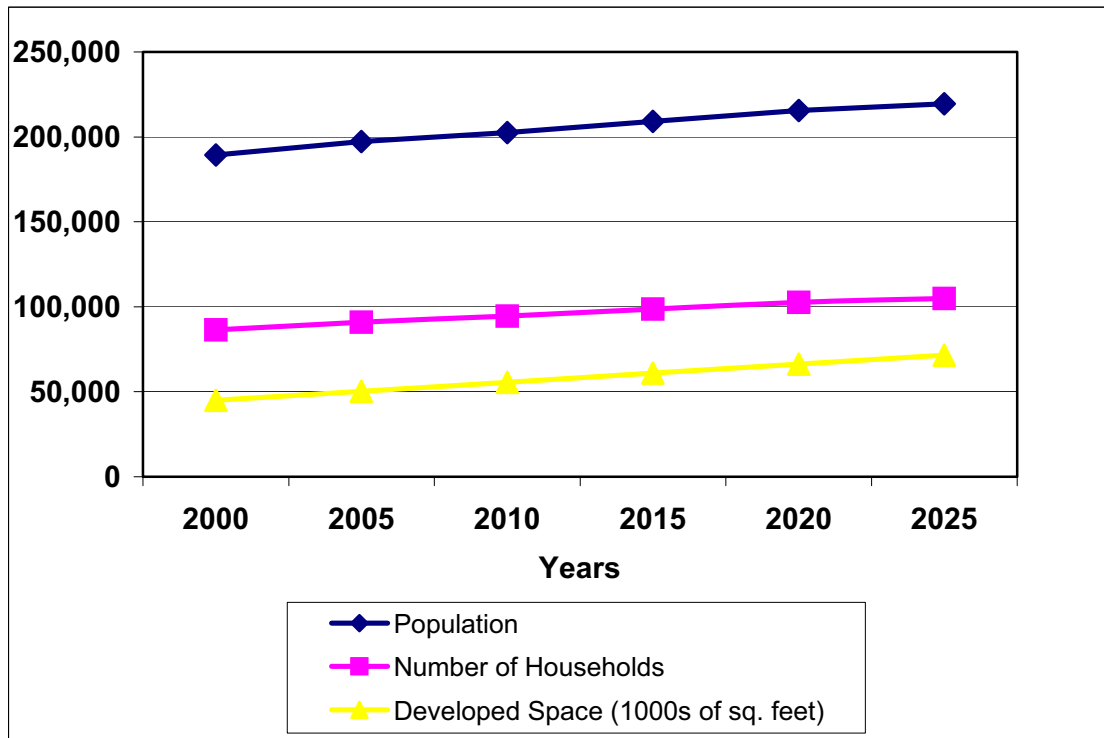
Year	Developed Space
2000	44,942,519
2005	50,275,479
2010	55,608,439
2015	60,941,398
2020	66,274,358
2025	71,607,318

Source: Arlington County Planning Department 2000-2023 and GBB estimate 2024-2025.

Overall Growth Trends

As discussed above, the individual demographic indicators for Arlington County are all showing rapid growth. This is illustrated graphically in Figure 2-4 and is indicative of the more intensive development that is occurring in the County as it transitions from a suburban area to an urbanized core. The graphs reflect the expectation that the County will be built out by 2023.

**Figure 2-4
Arlington County Growth Trends**



Industrial Facility Trends

According to Arlington County’s 2000 *Industrial Land Use and Zoning Study*, “industrial” uses are defined as those uses permitted in the “CM” Limited Industrial, “M-1” Light Industrial, and “M-2” Service Industrial Districts. Industrial uses include manufacturing businesses, storage lots (equipment, towing), warehouses, junkyards, wholesale businesses, distribution plants, and building material sales yards.

More than half of all industrial businesses in the County are located in the Four Mile Run Drive/Shirlington Road area. The County’s *Industrial Land Use and Zoning Study* indicates that industrial zoning is limited to lighter industrial uses and that expansion is not projected. These industrial-zoned areas contain mostly service commercial uses such as auto repair and service shops, with only a few true industrial uses, such as warehouses or concrete manufacturing, mixed among them. “Service Industry” areas comprise 178 acres, or 1% of the total land area in the County; industrially zoned areas comprise 298 acres, or two percent of the total land area. Currently the Arlington Economic Development Department indicates there are 1,619,405 total square feet of industrial space in the County.

In 2000, there were approximately 39 existing industrial businesses, making for a limited industrial environment when compared to other land uses in Arlington County. Based on the high cost of land and rent in the County, it is unlikely that many new industrial

facilities will be developed. County projections show that industrial uses will continue to decline to the point of being insignificant by the year 2020.

2.3 Solid Waste Generation Projections and Flow Patterns

Effective solid waste management planning requires methods for approximating the quantities of each waste type generated. Arlington County keeps detailed records for the individual wastes it manages (e.g., residential refuse and recycling, yard waste, scrap metal, household hazardous materials) and solicits the cooperation of the private sector in reporting the remaining waste quantities and compositions (e.g., multi-family wastes, commercial wastes). The Commonwealth’s reporting program, administered by Virginia DEQ, requires permitted solid waste facilities to report waste quantities by the 12 waste types and by state of origin. These reports do not provide quantities or composition by originating jurisdiction within the Commonwealth of Virginia, and therefore make it difficult for the County to accurately track waste leaving the County.

As previously discussed, the County’s solid waste generation rate depends on various factors, including population, number of households, employment, type of commercial activity, commercial space square footage, and other factors. For the purpose of this SWMP, the County has estimated the total amount of MSW generated by the residential and commercial (including institutional) sectors. Although the County assumes that all non-residential waste collected by private haulers (grouped as commercial) incorporates the remaining waste types (e.g., construction and demolition, regulated medical waste, industrial waste), this cannot be confirmed based on the information available.

Municipal Solid Waste

MSW generation numbers for Arlington County are presented in Table 2-5. Generation includes both waste disposed and waste recycled. Table 2-5 includes estimated generation numbers for past years (FY 2000 – FY 2003), and projects generation numbers for the next 20 years (through FY 2025). Generation numbers are presented for single-family and duplex residences, multi-family residences, and commercial properties. The table also presents a total generation number for the whole County, based on the sum of the three sectors. The method for estimating and projecting waste generation for each of the three sectors is described below.

1. Single-family and Duplex Residential Sector

For waste generation in the single-family and duplex residential sector in past years (FY00 – FY03), the County used actual MSW disposal and recycling tonnage data. Tonnage data for disposal were obtained from scale records at the Alexandria/Arlington Waste-to-Energy (WTE) Facility, where County-contracted crews bring refuse collected from the residential curbside program. Recycling tonnages (tracked by Calendar Year, not Fiscal Year) are the sum of the curbside collection of recyclables (reported by the County’s curbside recycling collection contractor), and yard waste and scrap metal collected by County crews.

The County calculated the waste generation rate for past years (FY00 – FY03) by dividing the total tons MSW generated by the number of single-family and duplex households. The average of these generation rates (2.13 tons per household per year) was then multiplied by the projected number of households for FY04 – FY25 to estimate the generation rate for this sector during future years.

The County estimates an average household size of 2.26 in owner-occupied units in the County. The single-family and duplex generation rate of 2.13 tons per household per year translates to 0.94 tons per person per year, or 5.16 pounds per person per day. This generation rate includes only waste disposed or recycled while at the place of residence (not waste generated in the work place).

2. Multi-family Residential Sector

In Arlington County, commercial haulers collect refuse and recycling from multi-family properties. While the County requires commercial haulers to submit annual reports on the amount of refuse and recycling collected from multi-family properties, it is unclear how accurate these data are. First, the County may not be receiving tonnage numbers from all the haulers operating in the County. Second, many of these haulers may not be able to differentiate accurately between wastes collected in the County and in other communities they service. As a result, the County has opted to use generation rates from a recognized study to estimate waste generation in the multi-family residential sector for both past and future years.

The County has used generation rates from the U.S. Environmental Protection Agency (U.S. EPA) 2001 report, *Multi-Family Recycling: A National Study*, to estimate MSW generation in the multi-family residential sector for FY00 - FY25. The study analyzed multi-family recycling in 40 communities, and found that, on average, communities with a multi-family diversion rate of 10% - 20% generated 1.079 tons of MSW per household per year. This generation rate includes only waste disposed or recycled while at the place of residence (not waste generated in the work place). This generation rate was then multiplied by the projected number of multi-family households for FY00 – FY25 to estimate the generation rate for this sector during past and future years.

The County estimates an average household size of 2.06 in renter-occupied units in the County. The multi-family generation rate of 1.079 tons per household per year translates to 0.52 tons per person per year, or 2.87 pounds per person per day. This indicates that multi-family residents generate roughly half as much waste as single-family residents (5.16 pounds per person per day).

3. Commercial Sector (Businesses and Institutions)

In the County, commercial haulers collect refuse and recycling from commercial properties. While the County requires commercial haulers to submit annual reports on the amount of refuse and recycling collected from commercial properties, it is not clear

how accurate these data are. First, the County may not be receiving tonnage numbers from all the haulers operating in the County. Second, many of these haulers may not be able to differentiate accurately between wastes collected in the County and in other communities they service. As a result, the County has opted to use generation rates from different studies to estimate waste generation in the multi-family residential sector for both past and future years.

The County has chosen to use a generation rate of 0.572 tons per employee per day (or 4.4 pounds per person per working day) to estimate waste generation in the commercial sector. The County assumed that people generate waste at the workplace 260 days per year (5 working days in a week, 52 weeks per year). The U.S. EPA 2001 report, *Municipal Solid Waste in the United States: 2001 Facts and Figures*, indicates that MSW generation in 2001 in the U.S. was 4.4 pounds per person per day. While this number includes all a person's activities throughout the day (including waste thrown out at the residence and at work), the U.S. EPA does not include construction and demolition debris, municipal waste water treatment sludges, and nonhazardous industrial wastes in this generation number. As a result, Arlington County chose to apply this generation rate (4.4 pounds per person per working day, or 0.572 tons per person per year) to the number of employees in the County.

In 1998, the City of Seattle, WA, issued an updated Solid Waste Plan, *On the Path to Sustainability*, which used a waste generation module to analyze historical waste generation, and to forecast waste generation. The City used this module to estimate that in 1995, the average amount of waste generated by workers (not including construction debris) was 4.2 pounds per employee per day. This number is very similar to the generation rate used by the County to estimate commercial waste generation (4.4 pounds per person per day, or 0.572 tons per employee per year), lending strength to the County's decision to use this number. Given that the data presented in Seattle's Plan are almost a decade old, Arlington County assumes that its slightly higher estimated waste generation rate for the commercial sector is appropriate.

Total Waste Generation

In addition to presenting waste generation information for each of the three sectors described above, Table 2-5 presents the estimated total waste generation in the County for FY00 – FY25, based on the sum of these three sectors. The County estimates that the total waste generated will increase from 255,579 tons in FY03 to 299,951 tons in FY25, which indicates that the total waste generation in the County will increase as the County population grows.

Table 2-6 shows the quantities of the different materials managed by Arlington County, including materials collected in the County's curbside recycling program, inert materials and yard waste collected from the curb and processed by the County, and materials collected by the County's household hazardous materials program. This table shows the different materials, and material amounts, recycled in 2000 through 2003. Details of materials management are discussed in Section 3.

**Table 2-5
Summary of Historic and Predicted MSW Generation and Flows**

Fiscal Year	Population ¹	Single-Family and Duplex Residences			Multi-Family Residences			Commercial Properties			Total
		Households ²	Gen. Rate ³ (t/hh/yr)	Gen. ⁴ (tons)	Households ⁵	Gen. Rate ⁶ (t/hh/yr)	Gen. ⁶ (tons)	Employment ⁷	Gen. Rate ⁸ (t/emp/yr)	Gen. ⁸ (tons)	
2000	189,453	31,850	2.16	68,925	54,502	1.079	58,808	206,740	0.572	118,255	245,988
2001	189,686	31,850	2.09	66,529	54,628	1.079	58,944	208,828	0.572	119,450	244,922
2002	193,649	31,944	2.13	68,075	56,676	1.079	61,153	210,916	0.572	120,644	249,872
2003	196,837	32,005	2.21	70,794	58,338	1.079	62,947	213,004	0.572	121,838	255,579
2004	197,088	32,046	2.15	68,866	58,646	1.079	63,279	215,092	0.572	123,033	255,178
2005	197,338	32,086	2.15	68,953	58,787	1.079	63,431	217,180	0.572	124,227	256,611
2006	198,364	32,253	2.15	69,312	59,362	1.079	64,051	219,260	0.572	125,417	258,780
2007	199,390	32,420	2.15	69,670	59,937	1.079	64,672	221,340	0.572	126,606	260,949
2008	200,416	32,587	2.15	70,029	60,511	1.079	65,291	223,420	0.572	127,796	263,116
2009	201,442	32,754	2.15	70,387	61,086	1.079	65,912	225,500	0.572	128,986	265,285
2010	202,468	32,921	2.15	70,746	61,661	1.079	66,533	227,580	0.572	130,176	267,454
2011	203,792	33,136	2.15	71,208	62,276	1.079	67,196	229,730	0.572	131,406	269,810
2012	205,116	33,351	2.15	71,671	62,890	1.079	67,858	231,880	0.572	132,635	272,165
2013	206,439	33,566	2.15	72,133	63,505	1.079	68,522	234,030	0.572	133,865	274,520
2014	207,763	33,782	2.15	72,596	64,118	1.079	69,184	236,180	0.572	135,095	276,875
2015	209,087	33,997	2.15	73,059	64,733	1.079	69,847	238,330	0.572	136,325	279,230
2016	210,371	34,206	2.15	73,507	65,279	1.079	70,436	240,536	0.572	137,587	281,530
2017	211,656	34,415	2.15	73,956	65,825	1.079	71,026	242,742	0.572	138,848	283,830
2018	212,940	34,623	2.15	74,405	66,373	1.079	71,616	244,948	0.572	140,110	286,131
2019	214,225	34,832	2.15	74,854	66,919	1.079	72,205	247,154	0.572	141,372	288,431
2020	215,509	35,041	2.15	75,302	67,465	1.079	72,795	249,360	0.572	142,634	290,731
2021	216,311	35,171	2.15	75,583	67,804	1.079	73,160	251,620	0.572	143,927	292,669
2022	217,113	35,302	2.15	75,863	68,142	1.079	73,525	253,880	0.572	145,219	294,608
2023	217,916	35,432	2.15	76,144	68,480	1.079	73,890	256,140	0.572	146,512	296,545
2024	218,718	35,563	2.15	76,424	68,470	1.079	73,879	258,400	0.572	147,805	298,107
2025	219,520	35,693	2.15	76,704	68,721	1.079	74,150	260,660	0.572	149,098	299,951

Notes: See Appendix B for footnotes.

**Table 2-6
Known Arlington County Waste Material Flows in Tons (Unless Noted)**

Material Type	Calendar Year			
	2000 ¹	2001	2002	2003
1. MSW Disposed ²	147,773	136,243	163,197	175,694
MSW Recycled:				
A – Commingled ³				
- Residential Curbside	2,937	2,857	3,215	3,818
- Commercial	1,047	1,752	2,107	2,054
- Drop-off ⁴	N/A	N/A	N/A	88
B – Paper				
- Residential ⁵	7,422	6,781	7,170	7,510
- Commercial ⁶	18,695	15,669	20,448	17,816
- Drop-off ⁷	726	781	756	764
- County Government ⁸	446	214	141	116
C – Commercial Recyclables ⁹				
- Metal	9,586	9,316	12,332	13,777
- Plastic	87	304	155	115
- Glass	231	228	197	154
2. Construction & Demolition ¹⁰				
- Residential (Inert)	18,006	11,472	12,270	13,926
- Commercial	0	96	0	0
3. Industrial Waste ¹¹	N/A	N/A	N/A	N/A
4. Regulated Medical Waste ¹²	N/A	N/A	N/A	N/A
5. Vegetative and Yard Waste	15,095	14,390	13,867	14,501
- Yard Waste ¹³	14,720	13,198	13,518	14,461
- Wood Waste ¹⁴	375	177	349	40
- Tree Stumps ¹⁵	0	1,015	0	0
6. Incineration Ash ¹⁶	56,001	55,682	57,389	63,984
7. Sludge ¹⁷	37,151	9,393	35,677	36,519
8. Tires ¹⁸	0	119	130	1,521
9. White Goods / Metal ¹⁹	599	78	525	562
11. Petroleum Contaminated Soil ²⁰	N/A	N/A	N/A	N/A
12. Special Waste				
A – Dead Animals ²¹	N/A	N/A	18.2	23.4
B – Waste Dirt ²²	25,766	20,542	23,203	15,227
C – Street Sweepings ²³	1,764	1,782	1,800	7,290
D – HHM ²⁴	63.75	63.86	73.62	75.36
E – Other Materials				
- Used Oil ²⁵	3,733	1,353	1,218	1,607
- Used Oil Filters ²⁶	N/A	0	43	33
- Used Antifreeze ²⁷	351	142	123	151
- Lead Acid Batteries ²⁸	11	14	19	35
- Electronics ²⁹	0	110	9	21
- Agricultural / Mining ³⁰	N/A	N/A	N/A	N/A
- Spill Residues ³¹	N/A	N/A	N/A	N/A

N/A = Not available (not tracked by or reported to the County)

Notes: See Appendix B for footnotes.

2.4 Markets for Recycling and Reuse of Materials

Markets for Recyclable Materials

Recycling industry observers suggest the recent steady-as-she-goes performance of the U.S. recycling industry has positioned materials recovery to move forward in 2004, spurred by a global pick-up in recycling market demand. This expansion of global recycling markets, plus a probable rebound in the economy in 2004 - and an increase in the demand for raw materials - will cause a strong up-tick in recovered materials demand and pricing.²

The recyclable materials collected by Arlington County's contractor from the single-family and duplex sector are currently brought to a materials recovery facility in Burke, Virginia for processing. Private haulers that collect recycling from commercial and multi-family properties in the County bring recyclables to various processors in the region. The County anticipates that the amount of recyclable materials collected in the County will increase over the planning period; however, the County also anticipates that the capacity of the processors (collectively) will increase accordingly and meet future recycling needs.

In general, the markets for recyclable materials generated in Arlington County, and the Washington, D.C. area at large, are well developed. Certain processors in the region are in the process of consolidating; however, the County does not foresee this change impacting the markets for the materials it generates. Given Arlington County's proximity to two major port cities (Washington, D.C., and Baltimore, MD), the recyclable materials generated in the County also have potential markets in other cities and overseas.

Several types of paper (high-grade office paper, white ledger paper, computer laser paper), most plastics, and aluminum used beverage cans have the highest values in the current recycling market. In comparison, the market prices for glass, cardboard, and newspaper are low. Markets for recyclable materials will likely continue to grow, both for materials with existing markets and for those materials that currently do not have a market in the region.

Table 2-7 provides market prices for recyclable materials in the Washington D.C. area.

² Jerry Powell, "Another Year in the Recycling Bin: Ten Key Recycling Trends from 2003," *Resource Recycling*, January 2004.

**Table 2-7
 Local Recyclable Materials Prices, September 2003**

Material	Price (\$ / ton)
Metals	
Ferrous	
Used steel cans	75
No.2 bundles	80
Municipal shredded	80
Shredded auto scrap	120
Nonferrous	
Aluminum used beverage containers (UBCs)	920
Auto batteries	60-80
Plastics, baled	
Clear PET	240
Green PET	200
Natural HDPE	180
Mixed HDPE	100
Mixed PET	120-140
Mixed HDPE and PET	20-40
Paper, post-consumer	
Corrugated	40
Newspaper 6	35-40
Newspaper 8	60-65
High-grade office	180-185
Colored ledger	75-80
White ledger	120-130
Computer laser	126-136
Computer laser-free	130-138
Glass	
Clear	29
Green	11
Brown	14

Source: Recycling Manager, a service of American Metal Market, 2003.

Markets for Reuse in Arlington County

Currently, Arlington County residents may dispose of small amounts (3 cubic yards) of inert materials at the County’s Earth Products Yard drop-off facility, located at the Arlington Trades Center at 4300 29th Street South. Accepted materials include bricks, masonry block, concrete, asphalt, sand, soil and sod. The Earth Products Yard also

receives waste dirt from County Public Works projects. A portion of this dirt is provided to residents as backfill, or is reused in County construction projects.

There are a number of community service companies, usually not-for-profit, which collect used clothing and household items for resale. The Salvation Army, Goodwill Industries, and Purple Heart are a few of these firms that provide service in Northern Virginia. Reuse also takes place as a result of yard sales and sales through consignment stores. However, Arlington County does not currently identify or track reuse activities of private citizens or not-for-profit organizations that operate in the County. It does, however, promote reuse by residents and businesses, and will continue to do so in the future, as appropriate.

[This page intentionally left blank]

3.0 Waste Composition, Collection, and Disposal

As discussed previously in Section 2.0, Virginia Department of Environmental Quality (DEQ) identified 12 different waste types to be addressed by the County. Section 3.1 provides a profile of each of these 12 waste types in more detail, including waste composition and generation (if available), and waste management.

Waste Composition

The profiles of the 12 waste types in Section 3.1 each include a section on waste composition. Understanding the composition and quantity of the solid waste stream is essential for sound planning. Waste stream characterization forms the basis for projecting future requirements for waste reduction, reuse, recycling, disposal and other integrated solid waste management programs, and for measuring the effectiveness of those programs. Composition data are also useful for determining solid waste heat content and the amounts of noncombustible materials in the waste stream, which are important in waste-to-energy programs.

A detailed physical sorting and characterization of the County's waste stream is the most desirable approach for assessing the composition of the County's waste stream. For the purpose of this plan, the County has based its waste composition on a combination of known waste quantities it manages, quantities reported by private solid waste companies, detailed waste stream evaluations completed by nearby area jurisdictions, and national averages published by U.S. Environmental Protection Agency (U.S. EPA).

Waste Management Overview

Section 3.1's waste management description for each waste type describes existing programs and approaches used to manage solid waste in Arlington County. The management system involves citizens, private companies, and local government. Components of the system include: collection, disposal, recycling, reuse, and reduction. The County's solid waste management programs reflect its commitment to environmental quality, efficient public service, and the economic vitality of the community.

There are currently no waste disposal facilities (e.g., municipal solid waste landfills, construction and demolition waste landfills) located in Arlington County. However, the County has been proactive in providing municipal solid waste (MSW) disposal as described below. Other types of waste are managed by the private sector. There are a variety of disposal facilities in the Metropolitan Washington area that are easily accessible from the County. There are also no transfer stations, material recovery facilities, or other solid waste management facilities in the County.

In 1990, the Commonwealth of Virginia issued regulations that required all localities to develop ways to meet and maintain a 25% recycling rate. To meet this goal, the County developed a comprehensive recycling program that included residential curbside collection, drop-off collection centers, and mandatory commercial and multi-family recycling. The County's recycling program has successfully exceeded the Commonwealth's goal. In CY02, the County submitted a recycling rate of 31.7% to

Virginia DEQ using the official formula. A copy of the County’s submission to Virginia DEQ for CY02 is provided in Appendix C.

Waste Management Elements

Collection. Currently, Arlington County collects MSW for both disposal and recycling from single-family and duplex residents. Managers of commercial and multi-family properties are responsible for securing refuse and recycling collection services from a private waste hauler. The County anticipates that the amount of waste generated in the County by both the residential and commercial sectors will continue to increase (as shown in Table 2-5). However, the County also anticipates that collection capacities in the County will expand accordingly. Since May 2004, the County contracts out all refuse and recycling collection provided to single-family and duplex homes. Additionally, there are several haulers that collect refuse and recycling from commercial and multi-family properties. The solid waste collection market in Arlington is sufficient to meet future collection needs.

Arlington County collects household hazardous materials (HHM) from residents for safe disposal, both year-round at the HHM Facility at the Water Pollution Control Plant and at biannual HHM collection events. The County also collects electronics, including computers, for recycling at the biannual collection events. The County anticipates that disposal options for HHM, and recycling options for electronics, will continue to exist over the planning period.

Disposal. Currently, the waste generated in Arlington County is disposed of in a variety of places. The refuse collected by contracted crews (and, formerly, County crews) from the single-family and duplex residential sector is brought to the Alexandria/Arlington Waste-to-Energy (WTE) Facility for disposal. Arlington County is obligated until 2014 by the operating agreement with Covanta to send at least 135,000 tons per year of MSW to the WTE Facility. From 2014 to 2024 the WTE Facility is operated by a contracted operator and the County is not obligated to take waste or in any other way to support the WTE Facility. However, the County can continue using the WTE Facility during this time. In 2024, the WTE Facility lease expires and WTE Facility ownership reverts to the jurisdictions.

The waste generated by the commercial and multi-family sectors is collected by private haulers and disposed of at different facilities in the region. At this time, it is not clear how much of the waste generated by these sectors is going to the WTE Facility and how much is going to other facilities. The WTE Facility has a capacity of 356,000 tons per year. The WTE Facility regularly allows “spot haulers” to dispose at the WTE Facility in order to meet the daily capacity (975 tons). As a result, the County assumes that the capacity of the WTE Facility will continue to partially meet the disposal needs of the commercial and multi-family properties. There are a variety of other disposal facilities in the Metropolitan Washington area that are easily accessible from the County (See Table 3-4). The County anticipates that these disposal opportunities will continue to exist, and that all future disposal needs will be met.

In many cases, construction and demolition (C&D) waste managed by the private sector is disposed in sanitary landfills along with MSW; however, there are also specialized facilities available. The Alexandria/Arlington WTE Facility has prohibited C&D waste from being disposed at the WTE Facility, if the quantities exceed those normally found in solid waste generated in residential, commercial, or light industrial areas. Several jurisdictions in the Metropolitan Washington area have identified a potential shortage in disposal capacity for C&D waste in the future. The County intends to work with neighboring jurisdictions to develop more disposal opportunities on a regional level.

Recycling. The recyclable materials collected by Arlington County’s contractor from the single-family and duplex sector are currently brought to a materials recovery facility in Burke, Virginia for processing. Private haulers that collect recycling from commercial and multi-family properties in the County bring recyclables to various processors in the region (See Table 3-5). The County anticipates that the amount of materials collected in the County will increase over the planning period; however, the County also anticipates that the capacity of the processors (collectively) will increase accordingly and meet future recycling needs.

Yard waste that is collected from the residential community is brought to the County’s Earth Products Yard, where it is processed. Once processed, it is available to residents as mulch, or it is brought to an area facility for composting. A large portion of the yard waste generated by the commercial sector is the result of landscaping activities by private landscaping companies. Several of the larger companies bring the yard waste to a regional composting facility for recycling. The region has a handful of facilities that accept yard waste for composting, and as a result, the County assumes that future recycling needs for yard waste will be met.

Source Reduction and Reuse. Inert materials brought to the Earth Products Yard (bricks, masonry block, concrete, asphalt, sand, soil, and sod) are reused in County construction projects. Waste dirt generated during County projects is partially reused as backfill. Beyond small amounts of inert materials, the County does not offer reuse opportunities to residents, nor does it track reuse activities by residents. However, there are a number of community service companies, usually not-for-profit, which collect used clothing and household items for resale. The Salvation Army, Goodwill Industries, and Purple Heart are a few of these firms that provide service in Northern Virginia. Reuse also takes place as a result of yard sales and sales through consignment stores. The County does promote reuse opportunities through its outreach activities, and will continue to do so, as appropriate. The County anticipates that reuse opportunities will expand as well.

3.1 Waste Type Profiles

Municipal Solid Waste

Waste Composition and Generation

MSW is comprised of those wastes generated daily by residential, institutional, and commercial sources. Examples include: household refuse, food waste, inorganic wastes, container packaging, durable and non-durable goods, and yard wastes. In Arlington

County’s waste generation, MSW tops the 12 waste categories identified by Virginia DEQ (See Table 2-6).

The U.S. EPA report, *Municipal Solid Waste in the United States: 2000 Facts and Figures*, describes the national figures for generation, recovery, and disposal by weight and percentage for the MSW stream. These data are aggregated for the entire United States based on data collected between 1960 and 2000. This report uses an industrial production model to estimate the goods produced and their useful life, and projects when the products become waste. Using this model, the U.S. EPA developed a breakdown of the materials generated in the United States and their percentage by weight in solid waste. The most recent update of this report, *Municipal Solid Waste in the United States: 2001 Facts and Figures*, provides similar information for 2001. Table 3-1 below is a summary table of waste generation in the U.S. for 1998-2001.

**Table 3-1
Materials Generated in the U.S. Municipal Waste Stream: 1998 Through 2001**

Percent of Total MSW Generation (by weight)

	1998	1999	2000	2001
Materials in Products				
Paper and Paperboard	37.7	38.2	37.4	35.7
Glass	5.7	5.6	5.5	5.5
Metals (Ferrous & Nonferrous)	7.5	7.7	7.8	7.9
Plastics	10.0	10.4	10.7	11.1
Rubber, Leather, Textiles	7.0	6.6	6.7	7.1
Wood	5.4	5.4	5.5	5.7
Other	1.7	1.7	1.7	3.4
Total	75.0	75.6	75.4	76.4
Other Wastes				
Food Scraps	11.2	10.9	11.2	11.4
Yard Trimmings	12.4	12.0	12.0	12.2
Miscellaneous Inorganic Wastes	1.5	1.5	1.5	--
Total	25.0	24.4	24.6	23.6
Total MSW Generated (%)	100.0	100.0	100.0	100.0

Source: U.S. EPA Municipal Solid Waste in the United States: 2000 Facts and Figures; 2001 Facts and Figures.

In 1999, PBS&J, Inc., R.W. Beck, Inc., and Waste Science, Inc. completed a four-season waste composition study for Montgomery County, MD, where wastes from residential (single-family and multi-family) and non-residential (commercial, institutional, and industrial) sources received at the County’s Transfer Station.

Comparison of the two tables highlights some of the recent trends in solid waste composition. For example, the U.S. EPA report shows more metals (ferrous and non-ferrous) and yard waste than the Montgomery County characterization study. On the other hand, the Montgomery County study shows more food waste and paper products,

which most likely reflects characteristics and activities of the people and the businesses in the area.

**Table 3-2
Estimated Composition of Residential/Commercial MSW**

Waste Component	Residential		Commercial ³	Aggregate ⁴
	Single-Family ¹	Multi-Family ²		
Paper				
ONP	6.4%	8.0%	3.8%	5.4%
OCC	5.0%	4.6%	10.1%	7.2%
OMG	5.8%	3.3%	1.3%	3.5%
Kraft	1.2%	0.9%	0.6%	0.9%
Paperboard	3.7%	3.2%	1.5%	2.7%
Polycoated	1.0%	0.8%	0.9%	0.9%
Asceptic	0.0%	0.0%	0.0%	0.0%
Office	1.4%	0.9%	4.5%	2.7%
Phone Books	1.2%	1.2%	0.1%	0.7%
Other Books	1.2%	0.8%	0.7%	0.9%
Mixed Paper	5.3%	4.2%	2.5%	3.9%
Other Paper	10.1%	9.8%	8.6%	9.4%
	42.1%	37.6%	34.7%	38.2%
Plastic				
PET #1 Bottles	0.7%	1.0%	0.6%	0.7%
HDPE #2 Bottles Natural	0.3%	0.7%	0.2%	0.3%
HDPE #2 Pigmented Bottles	0.3%	0.5%	0.1%	0.2%
#3-#7 Bottles	0.1%	0.1%	0.0%	0.1%
Polystyrene	0.7%	0.7%	0.9%	0.8%
Other Plastic Containers	1.2%	1.1%	1.1%	1.2%
Film Plastic	5.2%	5.1%	4.1%	4.7%
Other Rigid Plastics	2.2%	2.3%	2.4%	2.3%
	10.7%	11.4%	9.4%	10.2%
Organics				
Food Waste	17.9%	18.7%	12.0%	15.3%
Clothing & Linens	1.8%	2.5%	0.6%	1.4%
Other Textiles & Leather	1.0%	1.7%	0.9%	1.0%
Carpets & Rugs	0.9%	0.4%	1.7%	1.2%
Rubber	0.5%	0.4%	0.6%	0.5%
Tires	0.0%	0.0%	0.2%	0.1%
Diapers & Sanitary Products	4.5%	5.0%	0.9%	2.9%
Fines	2.4%	2.9%	2.4%	2.4%
Miscellaneous Organics	3.2%	2.9%	1.9%	2.5%
	32.1%	34.5%	21.1%	27.4%
Ferrous Metal				
Ferrous/Bi-Metal Cans	0.9%	1.4%	0.6%	0.8%
Other Ferrous Metal	2.2%	1.8%	5.5%	3.7%
	3.1%	3.2%	6.1%	4.5%
Non Ferrous Metal				
Aluminum Cans	0.3%	0.7%	0.3%	0.4%
Aluminum Tins/Foil	0.3%	0.4%	0.2%	0.2%
Other Aluminum	0.3%	0.2%	0.3%	0.3%
Other Non-Ferrous	0.2%	0.2%	0.5%	0.4%
	1.2%	1.5%	1.3%	1.2%

Glass				
Clear	1.6%	2.7%	1.2%	1.6%
Brown	0.5%	1.0%	0.3%	0.5%
Green	0.5%	0.9%	0.3%	0.4%
Broken Container Glass	0.3%	1.1%	0.3%	0.4%
Non-Container Glass	0.5%	0.8%	1.4%	0.9%
	3.4%	6.5%	3.5%	3.8%
Wood				
Lumber/Pallets	0.8%	0.7%	8.0%	4.1%
Other Wood	1.5%	1.1%	3.0%	2.1%
	2.4%	1.8%	11.0%	6.2%
Inorganic				
Concrete/Brick/Rock	0.3%	0.2%	2.8%	1.4%
Sheet Rock	0.4%	0.2%	2.8%	1.4%
Latex Paint	0.2%	0.3%	0.5%	0.3%
Miscellaneous Inorganic	1.5%	1.3%	2.6%	2.0%
	2.3%	2.1%	8.7%	5.2%
Yard Waste				
Brush/Prunings	1.1%	0.4%	1.6%	1.2%
Leaves	0.3%	0.1%	0.8%	0.5%
Grass	0.7%	0.3%	0.8%	0.7%
	2.0%	0.7%	3.2%	2.4%
Hazardous Waste				
Lead Acid Batteries	0.2%	0.1%	0.0%	0.1%
Other Batteries	0.0%	0.1%	0.0%	0.0%
Oil-Based Paints/Solvents	0.3%	0.1%	0.1%	0.2%
Poisons	0.0%	0.0%	0.0%	0.0%
Corrosives	0.0%	0.0%	0.0%	0.0%
Medical	0.0%	0.0%	0.2%	0.1%
Fuel/Lubricants/Auto	0.2%	0.3%	0.7%	0.4%
Other Hazardous	0.0%	0.0%	0.0%	0.0%
	0.7%	0.7%	1.1%	0.9%
TOTAL	100.0%	100.0%	100.0%	100.0%

Source: Montgomery County Solid Waste Composition Study: 1999.

¹ Composition based on 100 samples.

² Composition based on 80 samples.

³ Composition based on 120 samples.

⁴ Composition based on 300 samples (total of above).

Waste Management

Collection

A. Residential: Single-Family and Duplex

The Arlington County Solid Waste Bureau (SWB), within the Department of Environmental Services (DES), is responsible for providing weekly curbside refuse and recycling collection to approximately 32,100 single-family and duplex residences in the County. Refuse collection is semi-automated utilizing 96-gallon refuse carts provided by the County. Residents may also use their own refuse containers or plastic bags. As of May 2004, all single-family, duplex, and County government refuse is collected by private haulers under contract to the County.

Some items are not acceptable for disposal, including explosives, liquids, including liquid paints, rocks, soil, sand, bricks, masonry block, concrete, hazardous wastes, unbundled lumber, contractor building materials, asphalt, ceramic tile, fire extinguishers, and helium, propane, or other pressurized tanks. The County reserves the right to refuse collection of material deemed to be unsafe for solid waste workers to pick up or any materials that may be rejected for disposal at the Alexandria/Arlington WTE Facility.

Since refuse collection is containerized in 96-gallon carts, “special request” collections are provided for unbundled brush, appliances/metal items, automobile batteries, and large, bulky items. All special request collections must be scheduled in advance by contacting the SWB Customer Service Center³. Household items that are too bulky to be bagged, bundled, or put in the refuse cart, such as furniture or home construction debris, are collected via special request on the same day as regular refuse collection. Unbundled brush and metal items, such as white goods, are collected by mechanical boom trucks on regular refuse collection day, but in alternating weeks – brush one week and appliances the next.

A fee is charged to collect some metal items requiring special handling (typically, appliances). Currently, the fee is \$20.00 for the first item and \$10.00 for each additional item. The fee is added to the resident’s quarterly utility bill.

The County Recycling Code (Article 10-31) requires that the responsible party of each dwelling that is eligible for the County curbside collection program must establish a system to separate newspapers, glass bottles and jars, and metal food and beverage cans from refuse for collection. Curbside recycling collection is conducted on the same day as refuse collection. Curbside recyclables are collected by a contractor.

³ The SWD has a Customer Service Center staffed with Customer Service representatives. These individuals track all service requests and complaints from residents. This allows the County to continuously monitor the refuse and recycling programs for quality and customer satisfaction. The Customer Service Center conducts spot surveys of residents regularly throughout the year to receive feedback on the quality of the different solid waste services provided by the County.

In addition to the materials listed above, the County currently collects magazines, mixed paper, and corrugated cardboard in the curbside recycling program. Each residence is provided an 18-gallon yellow bin for recyclables, which is placed curbside for collection. Residents are instructed to place glass, metal, and plastic containers in the yellow bin and to place mixed paper in a paper bag or tied with twine and placed beside the recycling bin for collection. Corrugated cardboard must be flattened, reduced to a size smaller than three feet by three feet, and set out loose or in bundles less than six inches thick.

The County continuously evaluates its collection programs for efficiency and customer service quality. Both the refuse and recycling collection programs have personnel designated for contract oversight. These personnel are in the field, monitoring workers and responding to any problems that may arise. Accordingly, the County has performance measures established for both programs. The County also updates its refuse and recycling ordinances, as needed, to respond to collection issues as they arise.

B. Residential: Multi-Family

Multi-family property owners/managers in Arlington County are responsible for securing solid waste and recycling collection services through a private contractor. In response to the Commonwealth of Virginia's statutory requirement that all localities achieve a 25% recycling rate by 1995, the County enacted a mandatory commercial and multi-family recycling ordinance in 1994. The ordinance requires every business and multi-family residential property in Arlington County to have a recycling program in place. This requires a recycling collection system separate from trash collection for designated materials. In addition, education materials must be disseminated periodically to employees and tenants to keep them up to date with their respective programs.

Multi-family residential properties must provide recycling services for newspapers, glass jars and bottles and metal food and beverage containers at a minimum, and must complete an Arlington County DES Recycling Report every third year. See Appendix D for a copy of the Multi-family Recycling Report. SWB staff provides limited technical support to commercial and multi-family properties, and manage approximately 2,000 recycling plans.

As of April 1, 2004, the County had 124 haulers in its database. Of these 124, 28 were not actively collecting refuse or recycling in CY03. Of the 96 active haulers, 37 are licensed by the County to collect refuse from multi-family and commercial properties in the County. There are 53 that are not licensed; the majority of these are haulers that collect recyclables only (not refuse). The County Refuse Code (Article 10-7) does not require recycling haulers to be licensed. Although permitting recycling haulers would help the County better track these service providers, it may also serve as a disincentive for haulers to provide recycling collection in the County.

The remaining haulers that report their waste tonnages to the County via the annual hauler reporting process, but that are not licensed, include properties that self-haul their recyclables, or reflect unique situations where the haulers report their tonnages to the County but are not required to be permitted. Table 3-3 provides a list of the licensed refuse haulers in the County.

**Table 3-3
Arlington County Licensed Haulers [as of January 2004]**

NAME	ADDRESS	CITY	ST	ZIP
AAA Recycling & Trash Removal	4619 West Ox Rd.	Fairfax	VA	22030
Affordable Refuse & Comp. Serv.	P.O. Box 430	Cheltenham	MD	20623
A.P. Taylor Light Hauling	4825 Heath St.	Hillside	MD	20743
Arlington Condo. Assoc.	2733 S. Walter Reed Dr	Arlington	VA	22206
Arlington National Cemetery		Arlington	VA	22211
Arlington Village	1400 S. Edgewood St.	Arlington	VA	22204
Barcroft Management	1130 S. George Mason Dr.	Arlington	VA	22204
Barton House	2525 10th St. North	Arlington	VA	22201
Bates Trucking & Trash Removal Inc.	P.O. Box 91	Bladensburg	MD	20710
BFI	2813 Juniper St.	Merrifield	VA	22116
Capital Services	5001 Seminary Rd. #1606	Alexandria	VA	22311
Con-Serv Industries Inc.	45713 Woodland Rd.	Sterling	VA	20166
Dittmar Company	P.O. Box 489	Dunn Loring	VA	22027
ETW, LLC	1402 Ritchie Marlboro Rd.	Capital Hgts.	MD	20743
Fairlington Meadows Condo.	12701 Fairlakes Cr. #400	Fairfax	VA	22033
Fillmore Garden Apartments	805 S. Walter Reed Dr.	Arlington	VA	22204
Fitzhugh Sanitation Service	6416 Airlie Rd.	Warrenton	VA	20187
Fort Henry Garden	2470 S. Lowell St.	Arlington	VA	22206
Glenayre Apartments	399 N. Park Dr.	Arlington	VA	22203
Hall's Refuse Service	33 S. Fillmore St.	Arlington	VA	22204
Henderson Moving Service	2709 S. Oakland St.	Arlington	VA	22206
Industrial Disposal Services	5765F Burke Centre Pkwy306	Burke	VA	22015
Jeffrey Trash	11300 Braddock Road	Fairfax	VA	22030
Joe's Trash Service	422 N. Patrick St.	Alexandria	VA	22314
Johnson Associates	4619 N. Lee Hwy.	Arlington	VA	22207
MetalPro	7956 Twist Lane	Springfield	VA	22153
Mike's Hauling Service	7200 Algor Rd.	Falls Church	VA	22042
Nightingale Trucking Company	8018 Richmond Hwy.	Alexandria	VA	22306
Olivio Trash Service	3616 S. 16th Street	Arlington	VA	22204
Park Glen Condo.	824 S. Arlington Mill Dr.	Arlington	VA	22204
Red Top Cab Company	1200 N. Hudson St.	Arlington	VA	22201
Trashaway INC	1225 First St.	Alexandria	VA	22314
United Refuse	P.O. Box 157	Triangle	VA	22172
W & G Services	P.O. Box 5262	Arlington	VA	22205
Washington Lee Apartments	2200 N. 2nd Street #1	Arlington	VA	22201
Waste Management	1505 Moran Rd.	Sterling	VA	20166
Wingate of Arlington	2506A S. Wakefield Dr.	Arlington	VA	22206

Arlington County also operates two recycling drop-off centers, one at North Quincy Street and 5th Road (*see photo below*), and the other at Columbia Pike and South Four Mile Run Drive. County residents (single-family, duplex, and multi-family) and small businesses may dispose of materials at the two facilities. The centers have large containers with marked openings for the deposit of recyclables. Acceptable materials include glass jars and bottles, plastic jugs and bottles, ferrous metal and aluminum cans, corrugated cardboard, and mixed paper.



Recycling Drop-Off Center at North Quincy Street and 5th Road

C. Commercial

Each business in the County is responsible for securing solid waste collection services through a private contractor. A business is defined as any person, partnership, corporation, institution, or other entity operating in Arlington County. This definition includes churches, non-profit organizations, private schools, and all federal, state, and local entities. As indicated above, the County enacted a mandatory commercial and multi-family recycling ordinance in 1994. The ordinance requires that each business designate and recycle the two materials that it generates in the greatest quantity. Businesses may also recycle additional materials, although they are only required to recycle two. For properties such as office buildings or strip malls where individual businesses do not manage their own refuse removal, the two materials are based on the property's combined waste stream. The ordinance also requires businesses to submit a Recycling Report every three years.

Disposal

MSW from single-family and duplex homes, and some multi-family and commercial properties, is disposed of at the Alexandria/Arlington WTE Facility located in the City of Alexandria and operated by Covanta Energy, Inc. (*see photo below*). This 975 tons-per-day WTE Facility, developed jointly by Arlington County and the City of Alexandria, has

played a key role in disposal of the jurisdiction’s solid waste since it began operations in 1988. The plant burns MSW and converts it into steam, which is then used to generate electricity for sale to Dominion Virginia Power. The WTE Facility has a capacity to process 356,000 tons of waste annually and has a gross energy output of 24 megawatts with approximately 21 megawatts exported to Dominion Virginia Power, which is enough to power approximately 23,000 homes. In FY03, the Alexandria/Arlington WTE Facility processed a total of 357,999 tons of MSW.



Alexandria/Arlington Waste-to-Energy Facility



Alexandria/Arlington Tipping Floor

Arlington County is obligated by the operating agreement with Covanta Energy, Inc. to send at least 135,000 tons per year of MSW to the WTE Facility (the City of Alexandria is obligated to provide 90,000 tons). To ensure that sufficient amounts of waste were received at the WTE Facility to cover operating expenses, Arlington County enacted a “flow control” ordinance in 1985. This ordinance controlled the flow of solid waste by designating that solid waste generated within the County be taken to the WTE Facility for disposal. Flow control was legal and deemed essential for long-term solid waste management planning, guaranteeing the economic viability of the disposal system through tipping fee revenue. This was important for any large, capital-intensive investment such as a WTE facility that had long-term financing. Repayment of bond or other financing depends on the waste supply for both disposal fee and for energy generation revenue.

In the 1994 landmark decision, *Carbone vs. Town of Clarkstown, NY*, the U.S. Supreme Court ruled that flow control interferes with interstate commerce and is therefore a violation of federal interstate commerce statutes. This decision invalidated the Arlington County ordinance, and MSW has been free to go to large, private landfills in Virginia, Maryland and Pennsylvania. To remain competitive with these landfills, the County, the City of Alexandria and Covanta developed a competitive pricing strategy that utilizes the plant to capacity. Two large private haulers (BFI and Republic) have entered into contracts to dispose of trash at the WTE Facility. Per these agreements, the two haulers guarantee to bring a certain minimum tonnage amount per month, for which they receive a discounted tip fee. The material must be from the City of Alexandria, Arlington County, or other jurisdictions (except for Fairfax County).

County-contracted crews and the City of Alexandria crews dispose of residential waste at the WTE Facility. The WTE Facility assumes that Arlington County’s share of this residential waste has been 60% historically (and Alexandria’s has been 40%). This assumption is based on a house count comparison of the two communities: Arlington County has roughly 30,000 single-family and duplex homes, whereas Alexandria has roughly 20,000.

After undergoing a \$43 million retrofit in 2001 to install an advanced emissions control system and to upgrade the scales, scale house, and facility’s appearance, the WTE Facility is currently operating well within its air emissions permit limits. These investments were made so the WTE Facility could meet the requirements of the 1990 Amendments to the Clean Air Act.

It is important to note that some of the MSW collected by the licensed commercial haulers is disposed in privately operated landfills and transfer stations instead of being brought to the WTE Facility. Table 3-4 below shows the most convenient licensed landfills and transfer stations accessible to haulers servicing Arlington County.

**Table 3-4
Major Landfills & Transfer Stations**

Facility Name	Location	Facility Type	Owner	Public or Private	TPD Limit
Benning Road	District of Columbia	Transfer Station	District of Columbia	Public	600
Fort Totten	District of Columbia	Transfer Station	District of Columbia	Public	900
I-95 Sanitary Landfill	Fairfax County	Landfill	Fairfax County	Public	--
I-95 Ash Monofill	Fairfax County	LF/Ash Monofill	Fairfax County	Public	N/A
I-95 Energy Resource Recovery Facility	Fairfax Count	WTE	Covanta Energy, Inc.	Public	3,000
Brown Station Road Landfill	Prince George's County, MD	Landfill	Prince George's County, MD	Public	N/A
I-66 Transfer Station	Fairfax County	Transfer Station	Fairfax County	Public	--
Independent Hill Sanitary Landfill	Prince William County	Landfill	Prince William County	Public	--
Loudoun Co. Sanitary Landfill	Loudoun County	Landfill	Loudoun County	Public	--
Old Dominion Transfer Station	Loudoun County	Transfer Station	Waste Management	Private	460
Manassas Transfer Station	Manassas City	Transfer Station	Waste Management	Private	350
King George Landfill	King George County	Landfill	King George County/WM	Private	4,000 – 4,500
King and Queen Landfill	King & Queen County	Landfill	King & Queen County/BFI	Private	4,000
First Street T.S. SE	District of Columbia	Transfer Station	Waste Systems, Inc.	Private	--

Recycling

A. Residential

The majority of recyclables collected from Arlington County's curbside program are taken to Fairfax Recycling, a materials recovery facility (MRF) in Fairfax, Virginia, for processing. A small portion is delivered to FCR, Inc., in Alexandria, Virginia.

Arlington County uses roll-off trucks to take the paper materials from the recycling drop-off centers to Capitol Fiber, Inc., in Springfield, Virginia, to be processed for marketing. The County currently has a three-year contract with Capitol Fiber, Inc., with two one-year renewal options.

B. Commercial

Commercial recycling collection and disposal is handled by the private sector. Most materials are taken to a MRF where they are sorted and processed for marketing. Facilities that are available and convenient to process recyclables from Arlington County are listed in Table 3-5 below.

**Table 3-5
Active Material Recovery Facilities in Northern Virginia and Maryland**

Facility Name/Owner	County/City	Materials Accepted
BFI Fredericksburg Recyclery	Fredericksburg	Cardboard, plastics, scrap metal, aluminum & metal cans, pizza boxes, white paper
Capitol Fiber, Inc.	Annandale	Paper and commingled recycling
Con-Serv Industries	Sterling	Mixed paper, newspaper and cardboard, glass, metal and aluminum cans, plastics, C&D waste
Davis Industries, Inc.	Lorton	Scrap Metal
Metal Properties, Inc.	District of Columbia	Scrap Metal
Environmental Recycling Inc.	Alexandria	Paper
Fairfax Recycling, Inc.	Burke	Aluminum and ferrous cans, glass, and plastic
Metalpro, Inc.	Springfield	Used Tires
Metro Recyclers, Inc.	Sterling	C&D waste
Office Paper Systems, Inc.	Gaithersburg	All paper and cardboard
Potomac CDD (Crippen Companies)	Alexandria	Construction & Demolition Debris
Southeast Paper Recycling	Bristow	All paper and cardboard
USA Waste of Virginia	Fairfax/Leesburg/ Sterling	Newspaper, glass bottles, aluminum cans, cardboard (Fairfax), office paper, plastics

Source: GBB; Active Solid Waste Facilities in Virginia’s DEQ Northern Regional Office, Virginia DEQ - Office of Waste Programs.

Construction and Demolition (C&D) Waste

Waste Composition and Generation

Construction and demolition (C&D) wastes are generated from the construction and renovation of homes and buildings. Also included are wastes resulting from other development activities, including land clearing and demolition of old buildings. Because the County is essentially built out, most construction of new space requires demolition of older structures. The management of most C&D waste is handled in the private sector, and the recycling and disposal takes place outside the County. Although commercial haulers report tonnages to the County, neither the County nor the private waste companies keep data on the C&D composition breakdown. However, the County's Green Building Program provides incentives for C&D recycling.

Refer to Table 2-6 for tons of C&D waste generated in recent years.

Waste Management

Collection

A. Residential: Single-Family and Duplex

Single-family and duplex residents who utilize the County's curbside refuse collection program can put out lumber and other building materials from home do-it-yourself projects in their refuse carts for disposal. Large quantities resulting from contractor work will not be collected by the residential refuse program.

Single-family and duplex residents can dispose of small amounts (3 cubic yards) of inert materials, including bricks, masonry block, concrete, asphalt, sand, soil and sod, at the County's Earth Products Yard drop-off facility located at the Arlington Trades Center at 4300 29th Street South. The facility is open Monday through Friday, 8 a.m. to 3 p.m. Residents are requested to call the Solid Waste Bureau Customer Service Center to schedule an appointment. In addition, the facility is open the first Saturday of each month from 8 a.m. to 4:30 p.m. for walk-up drop offs; residents do not need to make an appointment for Saturday drop offs. Contractors and non-residents are not allowed to use the facility.

B. Residential: Multi-Family

Multi-family property owners and multi-family residents can dispose of small amounts of lumber or other building materials generated by do-it-yourself projects in the refuse system provided by their property. Large quantities of C&D waste resulting from contractor work should be collected and disposed by an appropriate hauler. Multi-family residents can also dispose of small amounts (3 cubic yards) of inert materials, including bricks, masonry block, concrete, asphalt, sand, soil and sod, at the County's Earth Products Yard drop-off facility.

C. Commercial

The vast majority of C&D wastes generated in Arlington County are managed by the private sector. Some of the 37 licensed refuse collectors in the County provide C&D

collection services. In addition, there are specialized demolition firms that transport demolition debris.

Disposal

A. Residential: Single-Family and Duplex

Small amounts of lumber and other building materials that are disposed of in the residential refuse carts and collected by the curbside program are disposed at the WTE Facility. Large quantities generated by contractor work, which should be collected by a commercial refuse hauler, are brought to an appropriate facility for disposal. The inert materials collected through the County residential drop-off program are reprocessed and reused in County construction projects.

B. Residential: Multi-Family

Small amounts of lumber and other building materials that are disposed of by multi-family property owners and residents in the regular refuse system are brought to an area facility for disposal. Large quantities generated by contractor work, which should be collected by a commercial refuse hauler, are brought to an appropriate facility for disposal. The inert materials collected through the County residential drop-off program are reprocessed and reused in County construction projects.

C. Commercial

In many cases, C&D waste managed by the private sector is disposed in sanitary landfills along with MSW; however, there are also specialized facilities available. Table 3-6 shows the major C&D disposal facilities accessible to haulers serving Arlington County. The Alexandria/Arlington WTE Facility has prohibited C&D waste from being disposed at the WTE Facility, if the quantities exceed those normally found in solid waste generated in residential, commercial, or light industrial areas (smaller quantities set out by single-family and duplex residents are accepted).

Several jurisdictions in the Metropolitan Washington area have identified a potential shortage in disposal capacity for C&D waste in the future. The County intends to work with neighboring jurisdictions to develop more disposal opportunities on a regional level.

**Table 3-6
Major C&D Facilities in Region**

Facility Name	County/City	Owner	Year Permitted
Hilltop Sand & Gravel Co. Inc.	Fairfax	Hilltop Sand and Gravel	1980
Lorton CDD Landfill	Fairfax	Furnace Road Associates	1981
Potomac CDD MRF	Alexandria	Crippen Companies	1995
Potomac Landfill	Prince William	Crippen Companies	1985
Rainwater Concrete Co. Landfill	Fairfax	Rainwater Concrete Co.	1980
Merrifield MRF	Fairfax	Waste Management	N/A
FG Pruitt Debris Landfill	Goochland	Six Two Three Landfill	1987
Ashcake C&D Debris LF	Henrico	Unknown	1994
US Army/Fort AP Debris	Caroline	U.S. Army	N/A
Metro Recycling	Loudoun	Waste Management	--
Con-Serv Industries (CSI)	Loudoun	CSI	--

Recycling

A. Commercial

Arlington County requires that developers commit to recycling as much of their construction and demolition debris as possible and to inform the County Manager as to how they will recycle the debris. In addition, the County has adopted the U.S. Green Building Council's green building rating system called Leadership in Energy and Environmental Design (LEED™), which is a voluntary, consensus-based national standard (based on a point rating system) for developing high-performance buildings. The LEED™ rating system allots points within six specific categories for environmentally beneficial building materials and design, in categories such as site location, water efficiency, energy and the atmosphere, materials and resources, and indoor environmental quality.

All site plan applications (for buildings such as high-rises, office buildings, and town homes) in Arlington County are required to include a completed LEED™ scorecard. The scorecard allows the developer to assess the options for including green components in a project. It also allows the County to measure a project's overall performance. In addition, the County offers a bonus density incentive to developers who design green buildings as outlined by the LEED™ rating system. The developer may be granted additional density ranging from .15 floor area ratio (FAR) to .35 FAR if the project meets one of four LEED™ ratings.

Arlington County is also committed to constructing public projects using the LEED green building rating system. The Langston-Brown School and Community Center, completed in September 2003, is the first LEED silver-rated project in Virginia. The project succeeded in diverting 2,444 tons of C&D materials for an 81% recycling rate.

Industrial Waste

Waste Composition and Generation

According to the Virginia DEQ, industrial waste is any solid waste generated by manufacturing or industrial processes that is not regulated hazardous waste. Such waste may include, but is not limited to, waste resulting from the following manufacturing processes: electric power generation; agricultural chemicals; food and related products/byproducts; inorganic chemicals; iron and steel manufacturing; leather; nonferrous metals; organic chemicals; plastics and resins; pulp and paper; rubber; stone, glass, clay and concrete; textiles; transportation equipment; and water treatment.

The composition of industrial waste is generally industry-specific and depends on the industrial process. In Arlington County, industrial waste is generated mostly by light industry; there is no heavy industry in the County. Industrial waste produced inside the County includes waste coming from warehouses, distribution facilities, light assembly (such as paper box facilities), and concrete from the Virginia Concrete Company, Inc. The Virginia Concrete Company is located in Shirlington, and produces more than 100,000 cubic yards of concrete per year. As a result, the industrial waste composition in the County consists largely of packing materials (including pallets, corrugated boxes, plastic wrap, metal and plastic strappings) and concrete and asphalt.

Industrial waste tonnages are not reported separately to the County. As a result, industrial waste tonnage generated is not known.

Waste Management

Collection

Within the County's current solid waste system, industrial solid waste is treated as commercial solid waste and collected along with business solid waste by the commercial haulers. Thus, insofar as the quantities of industrial solid waste are captured, it is only by incorporation into the broader category of commercial solid waste.

Disposal

Within the County's current solid waste system, industrial waste is disposed of as commercial solid waste. A portion of the County's commercial waste is brought to the WTE Facility for disposal and combustion, while some of the waste is disposed of at facilities outside the County. At this time, the exact distribution of waste that is disposed of inside and outside the County is not known. It is also unclear whether any industrial waste is being recycled, and if so, how much.

Regulated Medical Waste (RMW)

Waste Composition and Generation

Virginia DEQ is responsible for regulating the generation, transportation and disposal of all medical waste inside the Commonwealth of Virginia. In addition, Virginia DEQ requires that any operators of transfer stations, steam sterilizers and incinerators that store over 64 gallons of regulated medical waste (RMW) register with Virginia DEQ.

RMW is generated by hospitals, clinics, medical facilities, doctor and dentist offices, and funeral homes. Examples include: human blood and body fluids or items contaminated with these fluids, discarded vaccines, organs, tissues, body parts, and sharps (i.e., needles and syringes). According to a representative from Stericycle, one of the companies that collects RMW from various facilities in the County the majority of waste collected involves sharps and bodily fluids.

Animal carcasses, body parts, bedding, and related wastes that have been intentionally infected with organisms likely to be pathogenic to healthy humans for the purposes of research, in vivo testing, production of biological materials, or any other reason, are regulated by the Virginia DEQ and are also classified as RMW. The disposal of dead companion animals is regulated by the Virginia Department of Agriculture and Consumer Services, and is addressed under the “Other Special Waste” waste type profile.

The largest generator of RMW in Arlington County is the 334-bed Virginia Hospital Center – Arlington, located on 1701 N. George Mason Drive. The second largest producer of RMW in the County is the 164-bed Northern Virginia Community Hospital, located on 601 South Carlin Springs Road.

RMW tonnages are not reported to the County. As a result, RMW tonnage generated is not known.

Waste Management

Collection

A. Residential

Currently, the County does not have a program in place for separating out, collecting, and recycling household medical wastes (i.e., sharps). Residents are advised to put household medical wastes in a hard plastic container, capped securely, and placed in the refuse container for disposal.

B Commercial

The RMW generated by dental offices, medical clinics, emergency medical services, and related facilities in the County is managed by private contractors (such as Stericycle) and transported out of the County. Stericycle, for example, treats the medical waste in an incinerator or an autoclave.

C. Institutional

The largest generator of RMW in the County, the Virginia Hospital Center, operates an on-site medical waste treatment facility that shreds and sterilizes medical waste, resulting in a non-hazardous sterile residue that can be disposed of as MSW. Arrowmark is contracted by the Virginia Hospital Center to operate the sterilization equipment, and is responsible for setting up hauling of the resulting residue (which is done by Environmental Management Services, Inc.).

Disposal

A. Residential

Household medical waste should be disposed of in the refuse (in a capped, plastic container), and is then brought to the WTE Facility for disposal.

B. Commercial

Commercial RMW is not accepted at the WTE Facility. RMW, and any products resulting from the sterilization of RMW, is disposed of outside the County.

Vegetative and Yard Waste

Waste Composition and Generation

Vegetative and yard waste includes materials generated by lawn and yard care and landscaping activities. Residential and commercial units generate the same constituents of this waste type but in different quantities. The constituents include:

- Grass clippings (seasonal: spring and summer)
- Leaves (seasonal: fall)
- Brush, including tree and shrub trimmings
- “Woody waste,” including tree trunks, logs, and stumps
- Christmas trees

Refer to Table 2-6 for tons of yard waste generated in recent years.

Waste Management

Collection

A. Residential

The County collects yard waste from single-family and duplex residential households. This yard waste includes unbundled brush collected by a crane truck on residents’ regular refuse collection day, in alternating weeks; seasonal collection of leaves by vacuum trucks or in bags during November and December; and collection of spring yard waste materials during the month of April. During the first two full weeks in January, the County provides curbside Christmas tree collection services to refuse customers.

For the seasonal collection of leaves, residents can rake their leaves into a loose pile at the curb or they can put their leaves out in biodegradable paper bags provided by the County. Leaf vacuum trucks do two sweeps of the County during November and December, while bagged leaves are collected the day after regular refuse collection. For the seasonal collection of spring yard waste, residents are asked to place their material in rigid trashcans or biodegradable paper bags provided by the County, which are collected the day after regular refuse collection. Yard waste in plastic bags will not be accepted for recycling; it will be collected as refuse. The County does not collect grass clippings as part of seasonal yard waste collection because its high nitrogen content would require special handling.

Yard waste put out during months that are not designated for yard waste recycling will be collected as refuse.

The County does not offer yard waste collection for the multi-family residential sector. Multi-family properties generate yard waste through landscaping activities. Landscaping companies either haul the yard waste they generate out of the County for disposal or composting or leave it on-site to be collected and disposed by the waste hauler servicing the property being landscaped.

B. Commercial

The commercial sector generates yard waste through landscaping activities at large office buildings, federal institutions, and more. Typically, landscaping companies either haul the yard waste they generate out of the County for disposal or composting or leave it on-site to be collected and disposed by the waste hauler servicing the property being landscaped.

Disposal

A. Residential

The following yard waste is disposed of at the WTE Facility:

- Yard waste set out to the curb in plastic bags (instead of paper bags or rigid containers);
- Grass clippings, which are not accepted in the County’s yard waste program; and
- Yard waste generated during the months where yard waste collection is not provided (i.e., January – March; May – October).

B. Commercial

Yard waste collected from the commercial sector that is not composted is disposed of at the WTE Facility or at landfills outside the County.

Recycling

A. Residential

All yard waste collected from single-family and duplex residences by the County is brought to the Earth Products Yard for processing. Brush is ground into wood chips. Leaves and spring yard waste are ground into a compost product. Products are sold by the truckload, or can be picked up by residents at no cost at two locations. Any excess mulch that is not sold or that exceeds the Earth Products Yard’s capacity is brought to area farms for various uses.

In addition to collecting yard waste, the County encourages residents to do backyard composting. The SWB makes compost bins available to residents for a small fee. The County also encourages residents to practice “grass cycling”, where grass clippings are left on the lawn, instead of being disposed as refuse. In priority order, environmental best practice is grasscycling, backyard composting, and then off-site recycling.

B. Commercial

A portion of the yard waste collected from the commercial sector is being recycled (i.e., composted) when specific landscaping companies and private haulers transport the material to mulch processors and composting facilities in the region. Many landscaping firms also leave grass clippings on the lawn.

Incinerator/Combustion Ash

Waste Composition and Generation

Incinerator/combustion ash includes those largely inert materials that remain following the combustion of one of the other waste types. MSW is the only type of waste from Arlington County that is burned at the Alexandria/Arlington WTE Facility. The ash from the WTE Facility is approximately 3% ferrous metal, 1% nonferrous metal, and 96% inert materials. The ash produced by the WTE Facility is tested on a monthly basis. To date, the tests have shown the ash to be classified as non-hazardous.

Refer to Table 2-6 for tons of incinerator/combustion waste generated in recent years.

Waste Management

Collection

Covanta contracts for the collection and transport of the ash generated at the WTE Facility to the I-95 Ash Monofill.

Disposal

The combined fly and bottom ash collected at the WTE Facility is hauled for disposal at the Fairfax County I-95 Ash Monofill. The ash monofill is operated by Fairfax County under a Memorandum of Understanding initiated in 1981 among the District of Columbia, the City of Alexandria, Arlington County, and Fairfax County. This landfill initially received MSW, but that portion of the facility has been closed. Currently, it receives ash only from the Alexandria/Arlington WTE Facility and the Fairfax County WTE Facility. Fairfax County has estimated sufficient disposal capacity at the monofill through 2025.

Covanta, on behalf of Arlington County and the City of Alexandria, has investigated several times possible beneficial re-uses of its incinerator ash. To date, process limitations (lack of space for metal extraction) and lack of market, among other issues, have prevented this re-use.

Sludge

Waste Composition and Generation

Sewage sludge, regulated by the Virginia Department of Health (VDH), includes any solid, semisolid, or liquid residue removed during the treatment of municipal wastewater or domestic sewage. Sewage sludge includes, but is not limited to, solids removed during primary, secondary, or advanced wastewater treatment, scum, domestic septage, portable toilet pumpings, Type III marine sanitation device pumpings, and sewage sludge products. Sewage sludge does not include grit or screenings, or ash generated during the incineration of sewage sludge.

The County Water Pollution Control Plant (WPCP) treats its sludge so that it can be land applied. This sludge material is called biosolids, which VDH defines as sewage sludge that has received an established treatment for required pathogen control and is treated or managed to reduce vector attraction to a satisfactory level, and contains limited levels of pollutants, such that it is acceptable for use by land application, marketing or distribution in accordance with the Biosolids Use Regulations (12 VAC 5-585-10 et seq.) of the Code of Virginia. The biosolids generated at the WPCP are approximately 30% solids and 70% water.

Septic tanks are illegal in the County; therefore, the County assumes that it does not generate septage. The County does not track portable toilet pumpings generated by residents.

Refer to Table 2-6 for tons of biosolids generated in recent years.

Waste Management

Collection

Off-site hauling of biosolids from the County's WPCP requires about 6 truckloads per day, which is managed by the commercial firm that currently has a contract with the County for transportation and disposal of the sludge. The County has been reviewing options for improved management of sewage sludge on an ongoing basis since 1995. The County's WPCP does not accept trucks delivering septage.

Disposal

In April 2003, the County began the sixth year of a ten-year contract for the hauling of their biosolids for land application. Although the commercial hauler accepts responsibility for the material once it is loaded on its trucks, the County retains ultimate responsibility. The County has retained the services of Synagro for the hauling and land application of the County's biosolids. Synagro holds these permits and is required to submit reports to the Virginia DEQ & VDH. Maryland Environmental Services (MES) has been retained by the County to monitor the land application and hauling of this sludge. MES submits reports to the County. Previously, application of the County's biosolids was generally restricted to remote secluded sites located in Virginia. However,

this restriction has now been lifted, and the County's biosolids are brought to any approved agricultural or forestry site for land application.

If logistics or inclement weather makes both land application and field storage impractical, the biosolids are taken to a solid waste landfill for disposal. Table 3-4 contains the names of the major landfills available for disposal. Virtually all of the County's biosolids were taken to a permitted landfill in Virginia from February through October 2001. During this period, the County made improvements to the treatment process to help reduce odors in the biosolids. Since October 24, 2001, shortened storage times of dewatered biosolids prior to lime stabilization has resulted in significantly reduced odors. Subsequently, VDH allowed land application at remote sites and reduced the buffer distance requirement to the nearest residence around field sites where the County's biosolids are applied. In 2003, VDH decided to lift the remaining restrictions on the County's biosolids that exceed the current state regulations for the land application of Class B biosolids. As a result, the County's biosolids are now brought to any approved agricultural or forestry site. Additional improvements are in design at the wastewater treatment facility to continue to minimize odors associated with its biosolids.

Tires

Waste Composition and Generation

Tires used on passenger cars and trucks are primarily rubber, both natural and synthetic, with steel wire and/or fabric reinforcements. A typical passenger tire weighs approximately 20 pounds, with between 5 and 6 pounds of steel wire.

In Arlington County, waste tires come from a number of sources, with the greatest volume coming from retail tire dealers. Other sources are discount stores and auto service shops.

Currently, the County does not have a community-wide tire recycling program in place. However, the County does collect tire tonnages from private waste haulers. Refer to Table 2-6 for tons of waste tires collected by private haulers in recent years.

Waste Management

Collection

A. Residential

Single-family and duplex residential tires are collected for disposal by the County or County contractors along with MSW. The County assumes that tires generated by the multi-family residential sector are also collected as refuse by the private haulers that service these properties.

B. Commercial

There are 56 commercial tire haulers that have active registrations with the Virginia DEQ to handle waste tires in the Commonwealth of Virginia. These haulers operate in Virginia, Illinois, Maryland, North Carolina, Pennsylvania, South Carolina, and Tennessee. Of these 56 haulers, seven are based in the Metropolitan Washington area.

Tires generated by the County Equipment Division (from County vehicles that it maintains) are collected and hauled separately. These tires are weighed before disposal. In FY 2002, the County reported that 36.5 tons of tires were generated by the Equipment Division; in FY 2001, 43 tons of tires were generated.

Disposal

A. Residential

Residential tires are collected by County crews or County contractor crews along with MSW, and are disposed at the WTE Facility. When tires are collected (as part of regular refuse) from multi-family properties by private haulers, these tires are disposed of at one of the regional disposal facilities along with the other refuse collected.

B. Commercial

There are currently nine waste tire processors in Virginia, plus 6 processors outside the State, that handle Virginia waste tires. The 56 commercial tire haulers currently registered with the Virginia DEQ bring the waste tires they collect to these facilities. Any waste tires not diverted for processing are disposed of at a disposal facility in the region.

The County Equipment Division has a contract with a vendor to retread reusable tires casings. Tires that cannot be reused are brought to the I-95 Energy Resource Recovery Facility for processing.

Recycling

A. Commercial

The majority of the seven haulers in the Metropolitan Washington area that are registered with Virginia DEQ to haul waste tires utilize the Fairfax County I-95 Energy Resource Recovery Facility for waste tire processing.

The County Equipment Division has a contract with a vendor to retread reusable tires casings. Tires that cannot be reused are brought to the I-95 Energy Resource Recovery Facility for processing.

White Goods

Waste Composition and Generation

White goods are large appliances, such as stoves, washers, hot water heaters, etc. These are comprised primarily of ferrous metal (iron and steel) and contain smaller quantities of other metals (aluminum, copper, etc.). Recent trends show an increased use of plastic in white goods.

White goods are generated by both the residential and commercial sectors in Arlington County. In its collection district, the County employs certified staff to extract refrigerants from the white goods to prevent the release of chlorofluorocarbons (CFCs). Commercial establishments that generate white goods use private haulers to dispose or recycle the items.

Refer to Table 2-6 for tons of white goods and scrap metal generated in recent years.

Waste Management

Collection

A. Residential: Single-Family and Duplex

White goods and scrap metal are collected from single-family and duplex residences via curbside “special requests.” Items are collected either through standard collection or by collection with a special crane truck if items weigh over 50 pounds. In addition to curbside collection, residents may drop off metal items not accepted in the regular refuse collection program at the County’s Earth Products Yard drop-off facility, located at the Arlington Trades Center, 4300 29th Street South. Small quantities of scrap metal (50 pounds maximum, each item) are accepted as part of this program. The County requires that metal items larger than 50 pounds be collected via special curbside collection, and charges a fee for this service.

In addition to County collection and disposal, private companies that sell appliances will remove old appliances for a fee when replacing them with new ones. Residents can also hire a private scrap metal collection firm to collect these materials. Table 3-7 is a list of scrap metal collection firms serving the County.

B. Residential: Multi-Family

The County does not collect white goods or scrap metal from multi-family residents; however, these residents can utilize the Earth Products Yard drop-off facility to dispose of small quantities of scrap metal (50 pounds maximum, each item). Multi-family residents can also use private scrap metal collection firms (see Table 3-7). In addition, private companies that sell appliances will remove old appliances for a fee when replacing them with new ones.

Any scrap metal that is not dropped off at the Earth Products Yard or collected by a private scrap metal collection firm for recycling, is either collected by the commercial waste haulers serving multi-family properties, or brought by multi-family residents to a

regional disposal facility.

C. Commercial

Businesses and other non-residential entities that generate white goods and scrap metal contract out for collection and disposal.

D. Institutional

The County Equipment Division has a contract with Davis Industries, Inc., for collection of scrap metal generated by the Division. Davis Industries hauls the scrap metal to their facility in Fairfax, VA.

**Table 3-7
Scrap Metal Collection Firms Serving Arlington County**

Company	Location
ABC Recycling Services	Washington, DC
Cambridge Iron & Metal Co	Baltimore, MD
Clinton Metal Company	Clinton, MD
Davis Industries, Inc.	Lorton, VA
G & L Industries, Inc.	Fairfax, VA
Leesburg Iron & Metal, Inc.	Leesburg, VA
Manassas Scrap Metal	Manassas, VA
Metals & Residues Processing Co.	Baltimore, MD
Metro RE-UZ-IT Company, Inc.	Hyattsville, MD
Montgomery Scrap Corp.	Rockville, MD
Potomac Metals, Inc.	Sterling, VA
Prince George’s Scrap, Inc.	College Park, MD
Simsmetal America	Richmond, VA
Super Salvage, Inc.	Washington, DC

Disposal

A. Residential: Single-Family and Duplex

Any scrap metal that is not collected by the County from single-family and duplex residences for recycling, or dropped off at the Earth Products Yard, is collected by refuse crews and brought to the WTE Facility for disposal.

B. Residential: Multi-Family

Any scrap metal that is not dropped off at the Earth Products Yard or collected by a private scrap metal collection firm for recycling, is disposed of at an area disposal facility for disposal (by either the commercial waste haulers serving multi-family properties or by residents).

C. Commercial

Scrap metal generated collected from commercial generators is either brought to a scrap metal processor for recycling, or brought to an area disposal facility (WTE Facility, landfill, or C&D Facility) for disposal.

Recycling

A. Residential: Single-Family and Duplex

The material generated by single-family and duplex residents that is collected by the County or brought to the Earth Products Yard is brought to a scrap yard for recycling.

B. Residential: Multi-Family

The material generated by multi-family residents that is brought to the Earth Products Yard or collected by a private scrap metal collection firm is recycled.

C. Commercial

Businesses and other non-residential entities that recycle scrap metal contract out for collection and recycling.

D. Institutional

Davis Industries, Inc., collects and recycles scrap metal generated by the County's Equipment Division.

Friable Asbestos

Waste Composition and Generation

Friable asbestos means any material containing more than 1% asbestos by weight that, when dry, may be crumbled, pulverized or reduced to powder by hand pressure and is regulated as a special waste. Friable asbestos comprises less than 1% (0.18%) of the overall waste stream in Virginia. In Virginia, U.S. EPA, the Department of Transportation, the Commonwealth and local entities regulate the removal, transportation and disposal of all asbestos containing waste. Primary sources of friable asbestos include older buildings.

The Virginia Uniform Statewide Building Code requires that all buildings to be renovated or demolished be inspected for the presence of asbestos-containing materials, and that appropriate response actions be taken. Arlington County requires that all applicants for building permits for renovation or demolition fill out a form, indicating whether the building contains asbestos, and if it does, that the asbestos-containing materials will be handled by a licensed contractor. Residential buildings, buildings where the original permit was acquired after 1985, and buildings where the amount of asbestos-containing materials involved in the renovation is below a certain level, are exempt from these inspection requirements.

The County only requires that its own asbestos removal contractor submit a manifest to them showing that the asbestos was disposed in an environmentally sensitive way. Data are not available regarding how much friable asbestos (cubic yard measurements) is collected in the County by private contractors.

Waste Management

Collection

A. Residential: Single-Family and Duplex

Residential buildings (those with four or fewer units) that are to be renovated or demolished are not required by the County to be inspected for the presence of asbestos-containing materials. However, there are licensed contractors certified to handle asbestos, which single-family and duplex residents should employ to safely remove and handle asbestos in their homes. Materials that may contain non-friable asbestos, like shingles and tiles, can be safely handled by homeowners.

B. Residential: Multi-Family

Multi-family properties (containing more than four units) are required to be inspected for asbestos-containing materials before any renovation or demolition occurs. Any asbestos-containing materials must be handled by a licensed contractor.

C. Institutional

When Arlington County government buildings are to be renovated, the County uses either an asbestos abatement contractor or requires that the general contractor conducting

the renovation be responsible for asbestos abatement (by subcontracting out to a certified asbestos contractor).

MARCOR Remediation, Inc. is responsible for asbestos removal from County school buildings. The current contract with MARCOR is for two years with a rollover option for another two years. Asbestos from the northern Virginia area is brought to the MARCOR yard where it is loaded onto a tractor-trailer before being transported for disposal.

D. Commercial

Commercial properties are required to be inspected for asbestos-containing materials before any renovation or demolition occurs. Any asbestos-containing materials must be handled by a licensed contractor.

Disposal

A. Residential: Single-Family, Duplex, and Multi-Family

Licensed asbestos contractors utilized by single-family and duplex residents, or multi-family properties, to handle asbestos-containing materials during renovation or demolition projects are required to dispose of these materials in a safe manner.

B. Institutional

Licensed asbestos contractors used to handle asbestos-containing materials during renovation or demolition projects are required by contract to dispose of these materials in a safe manner, and required to submit a waste manifest to the owner of the building.

MARCOR has a contract with Service Transport, Inc. to haul the asbestos it collects to the BFI Imperial Landfill in Pennsylvania for environmentally sound disposal.

C. Commercial

Licensed asbestos contractors used to handle asbestos-containing materials during renovation or demolition projects are required to dispose of these materials in a safe manner.

Petroleum Contaminated Soil

Waste Composition and Generation

According to Virginia DEQ, petroleum contaminated soil is a soil that, as a result of a release or human usage, has absorbed or adsorbed only petroleum or petroleum by-products at concentrations above those consistent with nearby undisturbed soil or natural earth materials. Examples include diesel fuels, kerosene, gasoline, hydraulic fluids, jet engine fuel and motor oil.

The Virginia DEQ regulates the contamination of soils by petroleum products. When a release occurs from an aboveground storage tank (AST) or underground storage tank (UST), the owner and/or operator of the tank is required to report the release to Virginia DEQ and/or other governmental agencies. Release reporting requirements are dependent upon the statutes and regulations governing the tank from which the release occurred, the contents of the tank, and the nature of the release.

Suspected and confirmed releases from USTs subject to the requirements of the UST Technical Regulation must be reported to Virginia DEQ within 24 hours of discovery of the release. Discharges of oil from sources other than tanks subject to the UST Technical Regulation (e.g., home heating oil tanks, ASTs, farm tanks) must be reported to Virginia DEQ immediately upon discovery of the discharge.

Contamination can be the result of spills or leaking underground storage tanks at residences, filling stations, and other commercial establishments. Spills of quantities as small as 25 gallons can trigger remediation, which results in soil removal and/or treatment. The amount of soil contaminated by a spill or leak depends on the amount spilled, type of soil, and its permeability.

Petroleum contaminated soil tonnages are not reported to the County. As a result, petroleum contaminated soil tonnages generated are not known.

Waste Management

Collection and Disposal

Data are not available regarding how much petroleum-contaminated soil was collected in the County by private contractors, or how and where it was disposed of. However, the Metropolitan Washington area has approximately 70 environmental engineering firms that manage contaminated soil remediation. Generally, collection and disposal are specified by the engineering firm to prevent further environmental damage.

Special Wastes

Waste Composition and Generation

Special wastes are solid wastes that are difficult to handle, require special precautions because of hazardous properties, or create waste management problems. These wastes are often subject to special programs and recycling, and include household hazardous materials (e.g., used oil, antifreeze and batteries); electronics; dead animals; waste dirt; and street sweepings. Refer to Table 2-6 for tons of different special wastes generated in recent years.

For the purposes of this plan, Arlington County is including Agricultural and Mining wastes under special wastes. According to Virginia DEQ, agricultural waste includes all solid waste produced from farming operations, or related commercial preparation of farm products for marketing. Because of the high population and developmental density in Arlington County and its location in the urban areas of Northern Virginia, the County has little, if any, agriculturally used land. No land in the County is zoned “Agricultural.” As a result, there is very little, if any, agricultural waste being generated or disposed in the County, nor does the County track these tonnages.

While the Virginia DEQ does not have a definition for Mining Waste, it can be assumed that in Virginia, the definition would include any waste such as minerals, waste dirt, contaminated water, vegetation and soils. Arlington County contains no open mining operations. As with agricultural waste, because of the high population density, and the County’s location adjacent to the District of Columbia, the majority of land has been developed for Retail and Office space, with residential development along certain corridors. As a result, very little, if any, mining waste is being generated or disposed in the County, nor does the County track these tonnages.

For the purposes of this plan, the County is also including spill residues under special wastes. The Arlington County Fire Department is the first responder to any sort of hazardous materials spill. As such, the Department’s role is to secure the spill to prevent any further spreading. However, the individual or organization that caused the spill is ultimately responsible for cleaning up the spill. The County generates and disposes very little spill residue.

Waste Management

Collection

A. Hazardous Materials: Residential Sector

Since 1985, the County has offered household hazardous materials (HHM) collection and disposal to residents. The County offers two ways for residents to dispose of HHM. One, a HHM drop-off facility is located on the grounds of the WPCP on South Glebe Road. Drop-off hours are 9 a.m. to 3 p.m. every Saturday, and Monday through Friday by appointment only. The facility is closed on Sundays. Two, there are two drop-off events held each year, one in the spring and one in the fall.

Acceptable HHM items are summarized in Table 3-8. Unacceptable items are rejected, including asbestos products, building or construction debris, tires, furniture, appliances, scrap metal, broken glass, ammunition, explosives, prescription medications, radioactive materials, medical wastes, and smoke detectors.

**Table 3-8
Materials Accepted at
County Household Hazardous Materials Collections**

Home, lawn and garden chemicals used for pest, insect and weed control	Flammable, corrosive, or poisonous solid, liquid, and aerosol household products
Oil and latex paint, varnish, stains, polyurethane	Propane tanks (small hand held type, not larger one from gas grills)
Windshield wiper fluid	Automotive fuel
Corrosives such as muriatic acid, and oven or drain cleaners with lye	Thermometers, thermostats, and barometers containing mercury
Brake fluid	Photo chemicals
Transmission fluid	Swimming pool additives
Gas additives	Antifreeze
Gear oil and most car care products	Lamp and heating oil
Flammable cleaning solvents such as kerosene, turpentine, varsol, mineral spirits, parts cleaners, floor strippers, rug cleaners, and spot removers	Fluorescent tubes

Source: Arlington County website, May 2003.

B. Hazardous Materials: Commercial Sector

Commercial entities that generate hazardous waste are subject to Virginia Hazardous Waste Management Regulations. Hazardous waste generators are responsible for securing disposal for such materials at an approved disposal facility. In Arlington County, most businesses that generate hazardous waste are classified as Conditionally Exempt Small Quantity Generators (CESQGs), or generators that generate less than 100 kg/month of all hazardous wastes, or less than 1kg/month of acutely hazardous wastes. These generators are subject to reduced management requirements for hazardous wastes. Oftentimes, however, CESQGs mistakenly assume that they are completely exempt. While some communities offer hazardous waste collection programs for CESQGs, the County does not. Nor does the County track hazardous wastes generated by the commercial sector at large.

C. Used Motor Oil: Residential Sector

Residents should take motor oil to a participating automotive station or the County HHM facility for recycling. Residents should contact gas stations to ensure that they accept

used oil. Residents can also contact DES for a list of some of the automotive stations that accept used oil, or they can log onto the Department of Environmental Services website to find this information. However, if the waste oil has been mixed with water, solvents or fuel, residents should take the contaminated oil to the WPCP for disposal in the HHM program.

D. Used Motor Oil: Commercial Sector

In the commercial sector, private haulers collect used motor oil and oil filters, and used antifreeze for recycling. U. S. Filter Recovery Services in Alexandria, Virginia, collects the bulk of these items. Other private haulers that collect used motor oil include International Petroleum Corp.; MetalPro, Inc.; Mid States Oil Refining; and Safety-Kleen Systems, Inc.

E. Batteries: Residential Sector

The County offers curbside collection of car batteries for single-family and duplex residents. Collection must be arranged by calling the SWB Customer Service Center to schedule a special collection. The batteries are picked up on the same day as regular trash collection day. Batteries must be placed beside the refuse cart and should not be placed in plastic bags or cardboard boxes. Residents can also bring used batteries back to the point of purchase (battery retailers are required to accept old batteries of the same type and quantity sold to customers). The County does not offer collection of car batteries for multi-family residents; however, these residents can bring used batteries back to the point of purchase.

All County residents may dispose of household batteries, such as rechargeable, lithium, silver oxide, and mercury batteries, in special collection boxes located at most County Fire Stations, or by bringing them to the household hazardous materials drop-off site located on the grounds of the WPCP. Rechargeable batteries can also be brought to a variety of locations in the County for recycling by the Rechargeable Battery Recycling Corporation (use the Corporation's website to find locations in Arlington County). All other batteries (i.e., regular alkaline and carbon-zinc batteries) can be disposed of as refuse; the County does not currently have a recycling program in place for these batteries.

F. Batteries: Commercial Sector

Commercial property owners and managers can bring any used car batteries they generate back to the point of purchase (battery retailers are required to accept old batteries of the same type and quantity sold to customers). However, commercial properties that generate used car batteries in larger quantities may choose to use a private hauler to collect these batteries.

The County does not offer commercial properties a recycling program for household or rechargeable batteries. However, businesses can bring rechargeable batteries to a variety of locations in the County for recycling (check the Rechargeable Battery Recycling Corporation website to find battery recycling locations in the County). All other batteries (i.e., regular alkaline and carbon-zinc batteries) can be disposed of as refuse; the County does not currently have a recycling program in place for these batteries.

G. Electronics: Residential Sector

Currently, Arlington County does not regulate the collection or disposal of electronics, such as computers and monitors. However, in the future, the County may decide to regulate the disposal of electronics in an environmentally sound way. Residents of Arlington County may dispose of computer and electronics materials at recycling events held in conjunction with the semi-annual household hazardous materials collection events, or they can log onto the County's website to find electronics recyclers in the area. The County is in the process of constructing an expanded HHM facility at the WPCP, and plans to collect electronics on a regular basis once the facility is completed.

H. Electronics: Commercial Sector

The semi-annual HHM collection events are not open to businesses; however businesses can contact various electronics recyclers in the area (see County website) to dispose of computers and other electronics. Businesses may also be able to dispose of computers via their computer manufacturer (e.g., Dell).

I. Dead Animals: Residential and Commercial Sectors

Dead animals are collected by the Animal Welfare League of Arlington. The Welfare League collects carcasses they see on County streets, as well as responding to calls from citizens. They will also euthanize ailing pets for residents.

J. Waste Dirt: Residential Sector

Residents can drop off small quantities of waste dirt (up to three cubic yards) to the Earth Products Yard. The Earth Products Yard also accepts waste dirt generated by County construction projects. Larger quantities of waste dirt generated by residents (e.g., from home construction projects) should be disposed via a private contractor.

K. Waste Dirt: Commercial Sector

Commercial entities are responsible for securing collection and disposal of any waste dirt they generate.

L. Street Sweepings: Residential and Commercial Sectors

The County provides residential and commercial areas with street sweeping service five times a year between May and November. In addition, the County now provides one additional sweeping pass to the residential and commercial areas outside the Rosslyn-Ballston corridor during the November and December leaf season. The County sweeps major commercial areas, such as Ballston, Rosslyn, Clarendon, Columbia Pike, the Courthouse area, and Crystal City.

M. Agricultural and Mining Waste: Commercial Sector

There are no farms or mining operations located in the County. The County does not have information on agricultural or mining wastes collected but assumes that there is little or no such waste collected.

N. Spill Residues: Commercial Sector

The County generates and disposes very little spill residue. The individual or organization that caused a spill is ultimately responsible for cleaning up the spill and disposing of any spill residue.

Disposal

A. Hazardous Materials: Residential Sector

The County contracts out for the disposal of HHM collected from residents; Environmental Management Services, Inc. disposes of HHM collected from residents.

B. Hazardous Materials: Commercial Sector

Private haulers that collect hazardous materials from commercial generators should dispose of these materials at an appropriate facility, as required by the Virginia Hazardous Waste Management Regulations. Any household hazardous waste that is incorrectly disposed of and collected as regular refuse is brought to an area facility for disposal.

C. Used Motor Oil: Residential Sector

Used oil collected through the County's residential HHM program is processed and reused by U.S. Filter; used oil collected by gas stations is also likely processed for reuse. The County assumes that any used oil not collected for recycling is disposed of in residents' regular refuse.

D. Used Motor Oil: Commercial Sector

Commercial oil is processed and/or disposed of by private firms.

E. Batteries: Residential Sector

Household alkaline batteries are believed to be safe for disposal in regular refuse. Alkaline batteries that are disposed of by residents in the refuse are brought to the Alexandria/Arlington WTE Facility for disposal. The County assumes that any car batteries or rechargeable batteries that are not recycled are also disposed of in residents' regular refuse.

F. Batteries: Commercial Sector

Used car batteries brought back to the point of purchase are generally refurbished for reuse (battery retailers are required to accept old batteries of the same type and quantity sold to customers); any batteries not brought back to the point of purchase are likely disposed. Any rechargeable batteries that are not recycled through collection programs in the County are disposed. All other batteries (i.e., regular alkaline and carbon-zinc batteries) should be disposed of as refuse; the County does not currently have a recycling program in place for these batteries.

G. Electronics: Residential Sector

The County holds biannual electronics recycling events in conjunction with the semi-annual household hazardous materials collection event. The County assumes that any computers or other electronics that are not recycled through the County's program, or through other means, are disposed of with residents' regular refuse.

H. Electronics: Commercial Sector

Businesses can contact various electronics recyclers in the area (see County website) to recycle computers and other electronics. Businesses may also be able to recycle

computers via their computer manufacturer (e.g., Dell). Any computers or other electronics not recycled are disposed of at area disposal facilities.

I. Dead Animals: Residential and Commercial Sector

The Virginia Department of Agriculture and Consumer Services regulates disposal of dead domesticated animals. The Animal Welfare League of Arlington is a nonprofit organization that handles, among other duties, the disposal of dead animals (domesticated and some animal carcasses found on the roadside) collected in the County. The League sends the dead animals to Northern Virginia Funeral Choices in Fairfax, Virginia. The Animal Welfare League has a contract with the funeral parlor for cremation of dead animals. Private veterinary clinics are responsible for arranging for the disposal of dead animals generated by their establishment.

J. Waste Dirt: Residential Sector

Waste dirt collected from County projects, or brought to the Earth Products Yard by residents, is processed at the County's Earth Products Yard. The majority of the waste dirt is transferred to the I-95 Ash Monofill where it is used for daily cover. Of the 23,203 cubic yards of waste dirt collected by the County in FY 2002, 16,830 cubic yards went to the I-95 Ash Monofill. The remaining waste dirt is reused in County construction projects or provided to residents as backfill. Fines from street sweeping operations are added to the waste dirt that is brought to the Monofill for daily cover, but not to the waste dirt that is reused by the County and its residents.

K. Waste Dirt: Commercial Sector

Commercial entities are responsible for securing disposal of any waste dirt they generate. The County does not track disposal or reuse of commercially-generated waste dirt.

L. Street Sweepings: Residential and Commercial Sectors

The fines collected by street sweepings operations in the County's street sweeping program are added to the waste dirt piles in the Earth Products Yard that are being transferred to the I-95 Ash Monofill to be used as daily cover. Street sweeping fines are not added to the dirt that is reused in County construction projects or provided to residents as backfill.

Recycling

A. Used Motor Oil: Residential Sector

Used motor oil collected for recycling is commonly cleaned up and used as an industrial fuel. Only a small percentage of used oil is recycled into petroleum products. Used oil collected by gas stations is likely collected by a processor for recycling. Used oil collected through the County's residential HHM program is processed and reused by U.S. Filter; used oil collected by gas stations is also likely processed for reuse.

B. Used Motor Oil: Commercial Sector

Commercial oil is processed and/or disposed of by private firms.

C. Batteries: Residential Sector

Car batteries that are collected via special collection from the curb are brought to a collection point at the County's Equipment Division, where a contractor picks them up for recycling. Rechargeable batteries brought to one of the County's fire stations are recycled through the same vendor that accepts the County's household hazardous materials for disposal. Rechargeable batteries brought to a location identified by the Rechargeable Battery Recycling Corporation are recycled. Lead acid batteries for cars, trucks, lawnmowers, etc., that are brought back to the point of purchase are typically refurbished for resale.

D. Batteries: Commercial Sector

Any used car batteries that are brought back to the point of purchase are generally refurbished for reuse (battery retailers are required to accept old batteries of the same type and quantity sold to customers). Rechargeable batteries can be recycled at different locations in the County (check the Rechargeable Battery Recycling Corporation website to find battery recycling locations in the County). All other batteries (i.e., regular alkaline and carbon-zinc batteries) can be disposed of as refuse; the County does not currently have a recycling program in place for these batteries.

E. Electronics: Residential Sector

The County holds semi-annual electronics recycling events in conjunction with the semi-annual household hazardous materials collection event. Electronics that are brought to these events are accepted by an electronics recycling contractor, who strives to resell, recycle, or reuse the different parts of the computers. Any parts that cannot be recovered are disposed of in an environmentally responsible manner. Other electronics recyclers in the area, as identified on the County's website, operate in a similar fashion.

F. Electronics: Commercial Sector

Businesses can contact various electronics recyclers in the area (see County website) to recycle computers and other electronics. Businesses may also be able to recycle computers via their computer manufacturer (e.g., Dell). Any computers or other electronics not recycled are disposed of at area disposal facilities.

Reuse

A. Waste Dirt: Residential Sector

A portion of the waste dirt collected at the County's Earth Products Yard is reused in County construction projects, or provided to residents as backfill.

3.2 Public Education

Arlington County has a comprehensive public outreach program to inform residents of available solid waste programs and services and to educate residents about the influence their actions have on the environment. A summary of these efforts is provided below.

**Table 3-9
Summary of Outreach Efforts**

Outreach Initiative	Brief Description
Ongoing Efforts	
DES website	The website provides residents with information about refuse and recycling programs, Earth Products Yard operations and services, special events, household hazardous materials collections, and other solid waste services.
SWB Customer Service Representatives	Customer services representatives staff the SWB Customer Service Call Center, which handles customer service requests for the Solid Waste Bureau.
Customer Service Center telephone queue menus and system	The Customer Service Call Center telephone queue menus provide Arlington County residents the ability to obtain information on SWB services 24 hours a day, 7 days a week. The telephone system offers citizens easy and convenient access to Division programs, services, and collection information.
Outreach materials <ul style="list-style-type: none"> • Arlington Residents' Guide to Solid Waste Services and Waste Reduction • The Citizen • Cart hangers 	<ul style="list-style-type: none"> • <i>The Guide</i> provides a broad range of information about the various services offered by the SWB, and is distributed to single-family and duplex residents. It is also made available at Solid Waste Bureau events. • <i>The Citizen</i> is Arlington County Government's quarterly newsletter to residents. It provides information and updates on County programs, services and issues. • Cart hangers are used to disseminate information about seasonal solid waste services, such as leaf collection; hangers are placed on all single-family and duplex refuse carts.
Special Events	
Arlington County Fair	DES hosts a booth at the County Fair to distribute information about programs and services to residents.
Environmental Extravaganza	The Extravaganza is a twice-a-year event for the collection of household hazardous materials for correct disposal and recycling, and electronics, old bicycles, and old eyeglasses for recycling and reuse. Compost bins are also sold at the Extravaganza.
America Recycles Day	The County celebrates America Recycles Day by hosting a Recycle Right contest for residents, Recycler of the Year Awards for County employees, setting up displays in libraries, and promotions on the County website and various other County information networks.

Outreach Initiative	Brief Description
Presentations to school groups, community organizations, and County employees	Arlington County will make presentations to various community groups, including schools, as these are requested.
Arlington County Government Cable Channel 71	DES regularly works with the County Cable Channel to produce cable channel pieces for various Department events.

3.3 Public/Private Partnerships

Arlington County relies heavily on the private solid waste collectors and private materials processors to successfully operate its solid waste management program. The County will continue to utilize the facilities and services provided by the private sector to implement the policies of the SWMP. Arlington County utilizes partnerships with the private sector to provide solid waste services, as follows:

- There are many refuse and recycling collection service providers in the private sector available to Arlington County. These haulers are utilized in various forms to augment the County’s integrated Solid Waste Management Program. As of May 2004, all of the residential refuse collection is contracted out to Con Serv Industries and Bates Trucking.
- Arlington County was a sponsor in the development of the WTE Facility owned and operated by Covanta Energy, Inc. in Alexandria.
- Republic Services/AAA Recycling and Trash Removal Services is under contract to collect curbside recyclables. Fairfax Recycling processes and markets these materials under a separate contract.
- Drop-off center recyclables are occasionally hauled and always processed by the private sector.
- Scrap metal is processed and marketed by the private sector in addition to County operations.
- Refuse and recycling services for the County government offices buildings are managed under a contract.
- The Arlington County WPCP has a contract with Synagro for biosolids hauling and land application.
- Motor oil, cooking oil, antifreeze, battery, etc. collection and recycling are done in the private sector.
- The County is served by several C&D landfills in nearby areas of the region.

3.4 Litter Control Program

The County has developed a litter control program to enhance the appearance of the community and to protect the environment by removing pollutants that pose a threat to local streams and the Chesapeake Bay. The Street Sweeping and Litter Control Program provides cleaning of County streets and commercial corridors such as Columbia Pike (a major thoroughfare in the County). The program also provides hand and vacuum litter

collection for bus stops and heavily traveled pedestrian routes. The residential street sweeping program cleans streets by removing debris and winter sand.

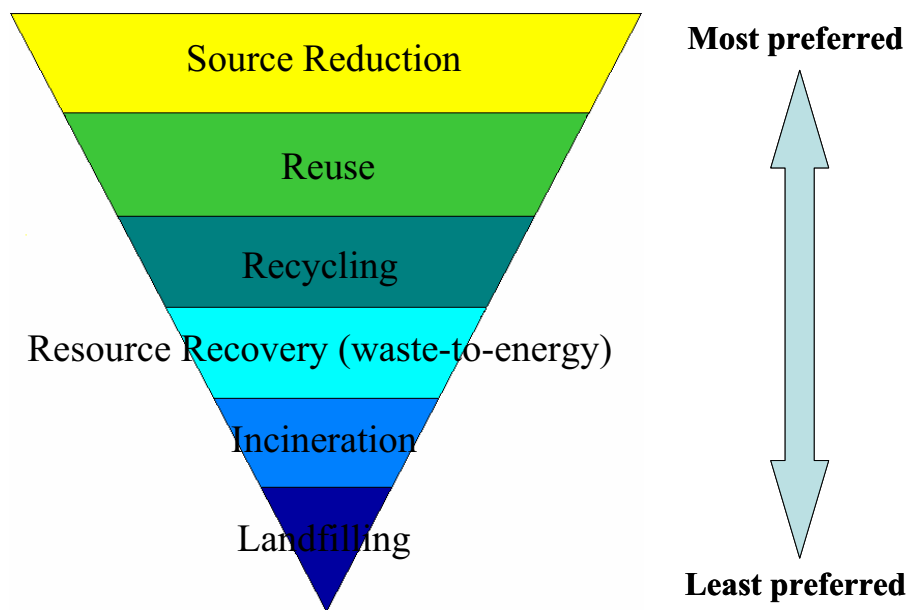
The County also operates the Urban Operations Initiative (UOI) to maintain and enhance the appearance of the Columbia Pike and Rosslyn-Ballston Corridors. The UOI serves as part of the County's effort to keep major commercial districts as premier urban localities for business investment. The County played a major role in the creation of the Rosslyn Business Improvement District (BID), to do the same in Rosslyn. One of the main components of the Rosslyn BID is beautification, cleaning, and maintenance, which includes litter collection.

In addition, Arlington County works with a local non-profit organization, Arlingtonians for a Clean Environment (ACE), to conduct litter cleanup events for area streams. The Street Sweeping and Litter Control program, the UOI, and the ACE stream clean-up events are all key components of the County's litter control efforts, and serve as central components of the County's watershed management programs.

4.0 Hierarchy (140.1)

The Code of Virginia and the Virginia Solid Waste Management Regulations require local governments to develop a comprehensive and integrated Solid Waste Management Plan (SWMP). An integrated SWMP is one that addresses the six management strategies embodied in the solid waste management hierarchy originally developed by U.S. Environmental Protection Agency (U.S. EPA) and modified and adopted by the Commonwealth of Virginia (9 VAC 20-130-30), as shown in Figure 4-1.

**Figure 4-1
Solid Waste Management Hierarchy**



Arlington County's SWMP must provide a strategy that encompasses all elements of the hierarchy in the major waste management operations of generation, collection, processing, transportation and disposal. The goal is to move solid waste management up the hierarchy, away from landfilling and towards source reduction. The plan must demonstrate how the local jurisdiction has met the mandatory requirement of recycling 25% of the municipal solid waste (MSW) generated each year.

4.1 Source Reduction

Source reduction is any action that reduces or eliminates the generation of waste at the source, usually within a process. Source reduction measures include process modifications, feedstock substitutions, improvements in feedstock purity, improvements in housekeeping and management practices, increases in the efficiency of machinery, and recycling within a process. One example of source reduction is a manufacturer reducing the amount of packaging used to ship and display a product. An individual resident could achieve source reduction by bringing bags to the grocery store to package their purchases. An example of source reduction for offices is double-sided copying. This can save up to

50% of the paper used in documents. There are several U.S. EPA partnership and voluntary programs that are available to encourage and recognize source reduction, including Businesses for the Bay, WasteWise, National Waste Minimization Project, and Design for the Environment.

Many source reduction decisions are beyond the realm of municipal programs. However, in addition to practicing source reduction in County facilities, the County can influence decisions made by residents and businesses by public education and promotion. The fundamental goal of this effort is to influence attitudes and change behavior. In the past, the County has prepared and distributed materials about source reduction, including a grass clippings brochure, a backyard composting guide, and tips for purchasing products that incorporate source reduction in their packaging. Current activities are summarized in the section on public education.

Arlington County does not currently identify or track source reduction activities of private citizens in the County.

4.2 Reuse

Reuse is the process of separating a given solid waste material from the waste stream and using it, without processing or changing its form, other than possible size reduction, for the same or another end use. For example, building materials that are removed during renovation or demolition, such as a sink, can be installed in another building. There are a number of community service companies, usually not-for-profit, which collect used clothing and household items for resale. The Salvation Army, Goodwill Industries, and Purple Heart are a few of these firms that provide service in Northern Virginia. Reuse also takes place as a result of yard sales and sales through consignment stores.

Arlington County does not currently identify or track reuse activities of private citizens or not-for-profit organizations that operate in the County.

4.3 Recycling

Recycling is the process of separating a given waste material from the waste stream and processing it so that it may be used again as a raw material for a product, which may or may not be similar to the original product. Recycling primarily addresses materials such as: ferrous metals, aluminum, other non-ferrous metals, glass, plastic and paper fiber. These materials must be collected, separated, cleaned and aggregated into industrial quantities before they can be utilized by industry in new products. Recycling saves the extraction and processing of virgin materials such as iron ore and avoids the resulting environmental impacts. A number of recycling processes save energy when compared to the utilization of virgin materials.

As described in Sections 2 and 3, the County achieved a recycling rate of 31.7% in CY 2002. This exceeds the mandatory Virginia requirement of 25% by 6.7 %.

4.4 Resource Recovery (Waste-to-Energy)

Resource recovery is the recovery of energy from the combustion of solid waste. Combustion of MSW will reduce the volume of material by about 90% and the weight by about 75%. The resulting ash is usually landfilled in a Subtitle D landfill in a cell dedicated to ash. The combustion of MSW in a waste-to-energy (WTE) facility captures the energy released and converts it to steam. This steam can be used directly for heating or to drive a turbine generator to generate electricity. The extraction of the energy from the combustion gases reduces the volume and, consequently, the capacity and costs of, the emission controls needed.

Arlington County was a sponsor of the development of the Alexandria/Arlington WTE Facility located in the City of Alexandria. The WTE Facility has a long-term contract with Dominion Power for the sale of the electricity generated. The County has a long-term contract for disposal of the ash produced with the I-95 landfill in Fairfax County, as discussed in Section 3.

4.5 Incineration

Incineration is the controlled combustion of MSW for disposal, without energy recovery. For the most part, incineration of MSW without energy recovery is no longer practiced in the United States, mainly due to the cost of pollution control equipment. There are no incinerators operating in Arlington County, except for private incinerators like the one at Virginia Hospital Center – Arlington (see Section 3.1).

4.6 Landfill

Sanitary landfilling of MSW is mandated by federal legislation, Resource Conservation and Recovery Act (RCRA) Subtitle D and controlled by a permit process managed by Virginia DEQ. A sanitary landfill is an engineered waste burial facility designed to minimize the likelihood of environmental impacts, including surface and ground water pollution and air pollution. The designs of these facilities include liners and leachate capture systems, capping to minimize water penetration and gas capture and treatment systems. In integrated waste management systems, all waste that is not source reduced, recycled, or combusted is landfilled.

Arlington County, as noted in the previous sections, does not own, operate or utilize a landfill for MSW disposal. MSW under control of the County is burned in the WTE Facility and the ash disposed in the I-95 Landfill operated by Fairfax County.

[This page intentionally left blank]

5.0 Citizen Advisory Committee

On April 30, 2003, the Arlington County Manager issued a memorandum outlining the scope, process, and timetable for the Solid Waste Management Plan (SWMP) update. One part of the process identified in the Manager’s memorandum was the opportunity for public participation. As a result, the County provided a number of opportunities for participation by the public, including the citizen advisory groups (the Solid Waste Committee and the Environment and Energy Conservation Commission).

The Solid Waste Committee (SWC) held five meetings during the SWMP process, during which they finalized a set of policy issue recommendations for the Plan. The County conducted three public hearings and four public information sessions. The County scheduled other meetings with various stakeholders, who were identified in the County Manager’s memorandum and by staff in the Department of Environmental Services (DES) (for a list of stakeholder meetings, see Table 9-1). Information about the SWMP process was posted on the County’s website. The public was also able to submit comments by contacting the Waste Reduction Program Manager directly via telephone or email, or by submitting electronic comments via the DES website.

5.1 Committee Description

As indicated above, the primary citizen’s advisory committee involved with the Arlington County SWMP update was the Environment and Energy Conservation Committee (E2C2), represented by the SWC. The SWC is comprised entirely of Arlington County residents. The objective of the SWC during the SWMP update was to review the plan, to provide input, to discuss and prioritize potential recommendations presented in the plan, to guide the public participation process, and to provide general guidance to the County on solid waste issues.

The SWC was formed in the early 1990s as a successor to the Pilot Recycling Program Advisory Committee, established when the County’s curbside recycling program began. The Arlington County Board established the SWC of E2C2 in order to have citizen review and input into the broad range of solid waste management issues. The SWC reports directly to E2C2.

At the time of this SWMP, the Solid Waste Committee members are:

Marie Sansone, Chair
Dean Amel
Carolyn While
Carlos Stern
Avi Garbow
Laura Dely
Alexandra Fredericks (Student Representative)

5.2 Committee Meetings

As stated previously, the objective of the SWC during the SWMP update was to review the plan, to provide input, to discuss and prioritize potential recommendations presented in the plan, to guide the public participation process, and to provide general guidance to the County on solid waste issues. The SWC conducted its first meeting related to the SWMP on September 15, 2003. In preparation for this meeting, and for all subsequent meetings, County staff distributed the following materials:

- The Arlington County Manager’s April 30, 2003, memorandum;
- The core SWMP, initially prepared by GBB Consultants;
- A list of the policy issues identified for the SWMP;
- Virginia’s State Regulations related to the SWMP; and
- Arlington County’s 1991 SWMP.

The Committee conducted subsequent meetings on September 24, 2003; October 7, 2003; October 20, 2003; and November 12, 2003. The Committee completed its discussion and review on November 12, 2003, and formally approved the recommendations generated during earlier meetings at that time. Meeting minutes for all SWC meetings related to the SWMP are included in this document as Appendix E.

5.3 Committee Report

The SWC put forth 50 recommendations for the SWMP. These were submitted to E2C2 for approval during a public hearing on December 15, 2003 (minutes from this meeting are included in this document as Appendix F). E2C2 approved the SWC recommendations, and submitted them to the County Manager on January 6, 2004. The final recommendations are included in this document as Appendix G.

The County will endeavor to implement these recommendations, as resources are available (see Section 7.0 for the County’s implementation plan). Note, however, that the County currently meets the Commonwealth’s 25% recycling rate requirement, and anticipates that it will continue to do so during the 20-year lifetime of the plan with the programs currently in place. Any plans to implement program enhancements beyond the existing programs are subject to approval by the County Board, the annual budget cycle, feasibility studies, and staff prioritization.

6.0 Objectives (120.A.3, 140.2)

One of the key requirements of the solid waste planning regulations promulgated by Virginia Department of Environmental Quality (DEQ) in 2001 is that every city, county, and town in Virginia meets a minimum recycling rate of 25%. Arlington County currently meets this rate (the County reported a rate of 31.7% for Calendar Year 2002), and anticipates that it will continue to do so over the next 20 years with its existing programs. The County has developed a set of goals in order to continue meeting the state's minimum recycling rate requirements. These are discussed in Section 6.1.

In addition to meeting the State's solid waste planning requirements, the County has developed a set of voluntary goals and objectives for solid waste management for the next 20 years. The County will strive to meet these additional voluntary goals and objectives, further described in Section 6.2 below, as resources are available.

6.1 County Goals for Meeting State's Requirements

Goal A: Employ a comprehensive solid waste management system that considers the Commonwealth's hierarchy.

Related Objectives:

1. Encourage residents, businesses, and government agencies to practice source reduction principles that reduce waste at the source.
2. Encourage the reuse of reusable items by residents, businesses, and government agencies located in the County.
3. Provide recycling programs for residents, businesses, and government agencies located in the County.
4. Continue to jointly operate the Covanta Alexandria/Arlington Waste-to-Energy (WTE) Facility with the City of Alexandria to provide for the reliable disposal of municipal solid waste (MSW) and the conversion of MSW into electricity.
5. Secure disposal at an appropriate and permitted sanitary landfill for those materials that cannot be recycled or processed at the Alexandria/Arlington WTE Facility.
6. Periodically review the County's waste management system to ensure that it addresses the Commonwealth's waste hierarchy.

Goal B: Ensure that the County implements a strong recycling program and that the County recycling rate, at a minimum, meets the Commonwealth's recycling goals.

Related Objectives:

1. Provide regular collection of recyclable materials from single-family and duplex households.
2. Require multi-family properties (of three or more units) to submit a recycling plan that documents their waste reduction and recycling programs.
3. Require commercial and institutional properties to submit a recycling plan that documents their waste reduction and recycling programs.

Goal C: Carefully evaluate the waste management needs of the County for the next 20 years and identify the actions necessary to meet those needs.

Related Objectives:

1. Actively participate in the development of a regional solution for the disposal, recycling, and processing of construction and demolition (C&D) wastes.
2. Continue ongoing evaluation of the County's current contractual relationship with Covanta Energy and the City of Alexandria to determine if it is meeting the County's needs.
3. Monitor collection capacities of commercial refuse and recycling haulers.
4. Monitor disposal capacities of regional facilities.
5. Monitor processing capacities of regional transfer stations and materials recovery facilities.

6.2 Additional Voluntary Goals

Arlington County wants to be a leader in solid waste reduction and recycling in the Commonwealth. To that end, the County will endeavor to be at or below the U.S. Environmental Protection Agency's current estimate of the national waste generation rate: 4.3 pounds per person per day. In addition, the County will endeavor to increase its recycling rate by 5% in the first 10 years following Solid Waste Management Plan (SWMP) adoption (37% by 2014), and then by 5% every 5 years (42% by 2019; 47% by 2024). In order to achieve these overarching goals, the County has developed a set of voluntary goals and objectives for the next 20 years, and may work to achieve these goals as resources are deemed available. The County is not, by establishing these voluntary goals, creating a commitment to achieve them.

Goal A: Build upon and enhance the County's existing solid waste management programs for waste reduction and recycling.

Related Objectives:

1. Coordinate and direct the flow of all commercial MSW generated within the County through a mechanism like franchising all solid waste collection in the County.
2. Support regulations requiring greater product stewardship and recycling for special, hard-to-handle wastes.
3. Ensure that all multi-family residents and commercial tenants have access to convenient, safe, and sanitary recycling facilities.
4. Evaluate existing waste reduction programs for single-family and duplex residences and make improvements, if feasible (e.g. expand yard waste collection to year-round program, start accepting aseptic cartons in the curbside recycling program).
5. Evaluate existing collection containers for the single-family and duplex recycling program and make adjustments, if feasible.
6. Study the feasibility of establishing a food waste recycling program for single-family and duplex residents.

Goal B: Monitor industry and regulatory “best practices” to minimize air, land, and water pollution resulting from the County’s solid waste management activities.

Related Objectives:

1. Work with local jurisdictions to promote regional strategies for improving air quality, and seek opportunities to lower NOx levels at area WTE facilities.
2. Actively participate in the development of a regional solution for the disposal, recycling, and processing of C&D wastes.
3. Work with state and local officials to promote regional strategies for improving treatment options for biosolids resulting from the County’s wastewater treatment process.
4. Continue investigating new and existing technologies for raising the County’s biosolids to a Class A standard.
5. Work with state and local jurisdictions to evaluate technologies and options for food waste recycling.
6. Examine needs of elderly and disabled residents with respect to collection of household hazardous materials.
7. Study hazardous materials disposal needs of the County’s small businesses and evaluate options for enhancing the existing hazardous materials program.
8. Supplement litter control efforts by the Virginia Department of Transportation, as necessary.

Goal C: Encourage public participation in the County’s waste management programs through a combination of financial incentives, education, and compliance programs.

Related Objectives:

1. Enhance outreach programs for “grasscycling,” backyard composting, and litter prevention.
2. Utilize a compliance approach for solid waste management programs that incorporates regulatory, financial incentives, and educational elements.
3. Simplify and reduce the paperwork necessary to impose penalties under the Mandatory Recycling Program, while at the same time maintaining due process and fairness.
4. Place a greater emphasis on education and outreach as a compliance method, especially in the multi-family, commercial, and institutional sectors.
5. Increase knowledge of existing waste reduction and recycling activities by multi-family and commercial properties in the County.
6. Educate multi-family, commercial, and institutional building owners/managers to ensure that they understand the County’s requirements for waste reduction and recycling, as well as “best practices” in the industry.
7. Provide information on, and encourage businesses and institutions to take advantage of, voluntary waste reduction programs.

8. Evaluate financial incentive options for discouraging waste generation, such as unit-based pricing for refuse collection (“Pay-As-You-Throw,” or volume-based pricing), where residents pay according to how much waste they generate.
9. Cooperate with surrounding jurisdictions in litter prevention and control programs.

Goal D: Develop new funding strategies for solid waste management programs that equitably allocate the cost of programs and use rate- and taxpayer money wisely and efficiently.

Related Objectives:

1. Support statewide waste disposal surcharges that could be used to fund solid waste management programs.
2. Funding for single-family and duplex customers should remain fee-based; evaluate different variations of a fee-based system (e.g., “Pay-As-You-Throw,” or volume-based, pricing system for refuse collection).
3. Identify a funding mechanism, like an environmental investment fee, that can be used to fund countywide solid waste programs such as litter collection, solid waste management planning, and disposal infrastructure (in addition to the solid waste fee charged for residential collection programs).
4. Identify and evaluate additional funding sources for solid waste programs, like charging private haulers in the County a solid waste franchising fee.
5. Continue ongoing evaluation of the County’s current contractual relationship with Covanta Energy and the City of Alexandria to determine if it is meeting the County’s needs.
6. Study the costs and benefits of reducing the County’s special Household Hazardous Materials (HHM) collection events from two per year to one per year, especially given the expansion of the HHM program at the Water Pollution Control Plant (WPCP).

Goal E: Expand capacity for planning for solid waste management, including improving information and data collection on waste generation and management.

Related Objectives:

1. Hire Solid Waste Planner to increase solid waste planning capacity, and to support program development and implementation.
2. Seek ways to improve the quality of information on solid waste generation and management within the County.
3. Gain greater control over privately collected waste to better understand the flow of waste in the County, through a mechanism like solid waste franchising.

Goal F: Provide high quality customer service.

Related Objectives:

1. Ensure that all multi-family residents and commercial tenants have access to convenient, safe, and sanitary recycling facilities.
2. Establish performance measures for the Mandatory Recycling Program for multi-family and commercial/institutional properties, in order to track progress in key areas.
3. Assess the need for public litter control containers; employ new bins and remove old bins as appropriate.
4. Continue with current plans to expand the HHM manager position to full time, expand the hours of operation and materials accepted in the program, and create an improved HHM facility on the grounds of the WPCP.

Goal G: Increase citizen involvement in the County's solid waste management system.

Related Objectives:

1. Enhance and develop programs that engage and educate the public.
2. Encourage active public participation in the County's solid waste planning, regulations, and programmatic efforts.
3. Continue supporting the Environment and Energy Conservation Commission's Solid Waste Committee.
4. Support community-wide clean-up of streams, roadsides, and parks to encourage civic involvement in waste management.

[This page intentionally left blank]

7.0 Implementation Plan (120.A.2, A.4)

Arlington County currently meets the requirements of the solid waste planning regulations promulgated by the Virginia Department of Environmental Quality (DEQ) in 2001, and anticipates that it will continue doing so over the next 20 years with its existing programs. However, as discussed in Section 6.0 of this Solid Waste Management Plan (SWMP), the County has opted to identify voluntary goals and objectives for solid waste management over the next 20 years. In order to meet these goals and objectives, the County has developed a set of voluntary program enhancements for the current solid waste management system. This section outlines these program enhancements, and presents an approach for implementing them over the next 20 years.

The County has prioritized four of these program enhancements to be implemented in the first five-year period following SWMP adoption (see Section 7.1), and proposes to study implementation of the remaining program enhancements in the period beyond five years (see Section 7.2). These voluntary program enhancements are subject to the annual budget process, feasibility studies, and County prioritization, giving the County the flexibility to implement new programs as resources become available.

7.1 Voluntary Program Enhancements: Initial Five-Year Period

The County has identified four voluntary program enhancements that are prioritized for the initial five-year period following SWMP adoption. They are each listed below with a brief description. The voluntary goal and objective that the program enhancement supports, action steps for implementing the program enhancement, and the party responsible for the action steps are also listed.

- 1. Environmental Investment Fee Study** – The County proposes to conduct a comprehensive feasibility study on implementing a community-wide environmental investment fee (EIF), or solid waste generator fee, similar to those currently being used by Prince William, Prince George, and Montgomery Counties. The EIF could fund community-wide solid waste programs such as litter collection, street sweeping, and waste stream assessments. The revenues from the EIF could also be used to stabilize the tip fee at the Alexandria/Arlington Waste-to-Energy (WTE) Facility, so that all County users of the WTE Facility pay the same fee for waste disposal.

Goal Supported: Develop new funding strategies for solid waste management programs that equitably allocate the cost of programs and use rate- and taxpayer money wisely and efficiently (Section 6.2-Goal D).

Related Objective Supported: Identify a funding mechanism, like an environmental investment fee, that can be used to fund countywide solid waste programs such as litter collection, solid waste management planning, and disposal infrastructure (in addition to the solid waste fee charged for residential collection programs) (Section 6.2-Goal D-Objective 3).

Action Steps:

- Conduct comprehensive feasibility study of implementing a community-wide environmental investment fee.
- If environmental investment fee is deemed feasible, secure funding for implementation and administration of fee.
- Create staff capacity to implement and administer program.
- Implement program.

Responsible Party: The Solid Waste Bureau is responsible for a feasibility study, and implementing the environmental investment fee if deemed feasible.

2. **Solid Waste Franchising Study** – The County proposes to give, following an adequate preparatory interval after SWMP adoption, the State-mandated five-year notice of intent to implement solid waste franchising. The County would then propose to begin a comprehensive feasibility study on implementing solid waste franchising. Solid waste franchising could increase the County’s control of its waste stream, stabilize the tip fee at the Alexandria/Arlington WTE Facility so that all users of the WTE Facility pay the same fee for waste disposal, and generate revenues for solid waste programs.

Goal Supported: Develop new funding strategies for solid waste management programs that equitably allocate the cost of programs and use rate- and taxpayer money wisely and efficiently (6.2-D).

Related Objective Supported: Identify and evaluate additional funding sources for solid waste programs, like charging private haulers in the County a solid waste franchising fee (6.2-D-4).

Action Steps:

- Give State-mandated five-year notice of intent to implement solid waste franchising.
- Conduct comprehensive feasibility study of implementing solid waste franchising.
- If solid waste franchising is deemed feasible, secure funding to implement and administer program.
- Create staff capacity for implementation and oversight of program.
- Implement program.

Responsible Party: The County Board is responsible for giving the State-mandated five-year franchising notice (with advisement from the Solid Waste Bureau). The Solid Waste Bureau is responsible for conducting the feasibility study, and implementing solid waste franchising if it is deemed feasible.

3. **Solid Waste Planning** – The County proposes to expand existing solid waste planning capacity, by creating a Solid Waste Planner position in the Solid Waste Bureau or employing some form of contractual support. If created, the Solid Waste Planner position would largely be dedicated to oversight of the feasibility studies proposed in the SWMP, evaluating County waste management data and trends,

monitoring of industry “best practices,” and support of solid waste initiatives as needed.

Goal Supported: Expand capacity for planning for solid waste management, including improving information and data collection on waste generation and management (6.2-E).

Related Objective Supported: Hire Solid Waste Planner to increase solid waste planning capacity, and to support program development (6.2-E-1).

Action Steps:

- Secure funding for Solid Waste Planner position.
- Develop position (identify tasks and responsibilities).
- Hire individual to fill position.

Responsible Party: The Solid Waste Bureau is responsible for developing this position, securing funding, and hiring an individual to fill this position.

4. **Enhance Multi-Family and Commercial Recycling Programs** – The County proposes to create additional staff capacity and resources for the mandatory multi-family and commercial recycling programs. This increased capacity would largely be dedicated to education, outreach, and enforcement for the multi-family and commercial recycling programs.

Goal Supported: Build upon and enhance the County’s existing solid waste management programs for waste reduction and recycling (6.2-A).

Related Objective Supported: Ensure that all multi-family residents and commercial tenants have access to convenient, safe, and sanitary recycling facilities (6.2-A-3).

Action Steps:

- Determine whether to create new position(s) or reallocate existing staff resources.
- If creating new position:
 - Secure funding.
 - Develop position (identify tasks and responsibilities).
 - Hire individual to fill position.
- If reallocating existing resources:
 - Secure additional funding, if necessary.
 - Develop any new position(s).

Responsible Party: The Solid Waste Bureau will be responsible for creating additional staff capacity and resources for the multi-family and commercial recycling programs.

The proposed implementation schedule for the initial five-year period is shown in Table 7-1. Note that feasibility studies are proposed for the Environmental Investment Fee and solid waste franchising (FY05). The proposed schedule in Table 7-1 is subject to change based on the findings of these feasibility studies.

**Table 7-1
Voluntary Program Enhancements, First Five Years:
Implementation Timeframe**

Program Enhancements		FY05	FY06	FY07	FY08	FY09	FY10
1.	Environmental investment fee						
	Feasibility study						
	Implement						
2.	Franchising ¹						
	State-mandated 5-year notice						
	Feasibility study						
	Establish program administration						
	Franchise agreements						
3.	Solid waste planning capacity						
4.	Expand multi-family and commercial recycling programs						

¹ If the feasibility study for solid waste franchising indicates that franchising should be implemented, the County proposes to do so in FY10 (when the five-year notice is complete). The County assumes that at least two FTEs will need to be created in FY09 to facilitate implementation.

Table 7-2 below presents a summary of personnel and non-personnel costs for implementing the program enhancements that are prioritized for the initial five-year period. These costs reflect *preliminary* planning level cost estimates prepared by County staff, and are based on the following assumptions:

- The feasibility studies for implementing an environmental investment fee and solid waste franchising (proposed for FY05) will indicate that the County should implement these two programs.
- The County will create two new permanent positions for administration of the environmental investment fee. The County will also create a one-year temporary position during the implementation of the fee.
- The County will give the State-mandated notice of intent to implement franchising in FY05, following an adequate preparatory interval after SWMP adoption. The County assumes that administration of franchising will require a minimum of two positions, plus overall administration costs of 2-4% of the County’s solid waste collection market (which is estimated at \$16 million⁴). The County will create the two new positions in the year preceding franchising implementation (FY09) to support the implementation process; the full cost of administration would be realized at the time of implementation (FY10).
- The County will hire a software consultant to update existing or develop new software for administration of the environmental investment fee.
- The County will dedicate significant funds to the commercial and multi-family recycling programs for outreach and education efforts.

These preliminary cost estimates are subject to change based on feasibility studies and further evaluation. Implementation of these voluntary program enhancements is subject to the annual budget process and County prioritization.

⁴ The 2001 *City of Alexandria Commercial Waste Analysis* report, prepared by GBB Solid Waste Consultants, estimates that the current commercial waste collection system market value is \$11,058,707. Arlington County estimates that the County’s market value is 1.5 times the City of Alexandria’s market.

The budget for FY05 is already approved. As a result, the County will implement the program enhancements proposed for FY05 to the extent that existing resources can be reallocated. Specifically, the County will implement some of the planning work for FY05 using a reallocated FTE and \$84,838 of the savings from the contracting out of the three remaining in-house curbside refuse collection routes. Staff is working to identify additional existing resources that can be reallocated to start some of the commercial and multi-family recycling initiatives in FY05. The costs for FY05 reflect half-year costs; these proposed changes would be implemented starting at the mid-year (December 2005). This will give the County more time to plan for the implementation of these program enhancements, and to better reallocate existing funds.

**Table 7-2
Voluntary Program Enhancements, First Five Years:
Summary of Implementation Costs**

	FY05 ¹	FY06	FY07	FY08	FY09
PERSONNEL (Department)					
<i>Environmental Investment Fee</i>					
Management Specialist II (DES)	0	1	1	1	1
Info System Analyst II (DMF)	0	1	1	1	1
Temp Admin Support (DES)	0	1	0	0	0
<i>Solid Waste Franchising</i>					
Management Specialist IV (DES)	0	0	0	0	1
Management Specialist I (DES)	0	0	0	0	1
<i>Solid Waste Planning Capacity</i>					
Solid Waste Planner (DES)	1	1	1	1	1
<i>Commercial and Multi-Family Recycling</i>					
Enforcement/Education/Administration Position (DES) ²	0	1	1	1	1
Total FTEs	1	5	4	4	6
Sub-total Personnel	\$31,738	\$284,629	\$261,343	\$261,343	\$376,267
OPERATING					
Annual	\$15,600	\$46,075	\$44,675	\$44,675	\$45,875
<i>Environmental Investment Fee</i>					
Phone	\$0	\$1,800	\$1,200	\$1,200	\$1,200
Outreach	\$0	\$8,500	\$7,700	\$7,700	\$7,700
Property tax bill distribution (portion of)	\$0	\$1,925	\$1,925	\$1,925	\$1,925
<i>Solid Waste Franchising</i>					
Phone	\$0	\$0	\$0	\$0	\$1,200
<i>Solid Waste Planning Capacity</i>					
Phone	\$0	\$600	\$600	\$600	\$600
Conference attendance	\$0	\$2,000	\$2,000	\$2,000	\$2,000
Publication subscriptions	\$0	\$150	\$150	\$150	\$150
<i>Commercial and Multi-Family Recycling</i>					
Phone	\$300	\$600	\$600	\$600	\$600
Indoor Recycling Containers (\$5 each)	\$1,250	\$2,500	\$2,500	\$2,500	\$2,500
Postage	\$500	\$1,000	\$1,000	\$1,000	\$1,000
Branding campaign	\$2,500	\$5,000	\$5,000	\$5,000	\$5,000
Tool Kit for property managers	\$2,500	\$5,000	\$5,000	\$5,000	\$5,000
Outreach	\$8,550	\$17,000	\$17,000	\$17,000	\$17,000
One-time	\$37,500	\$163,654	\$50,000	\$30,000	\$32,436
<i>Environmental Investment Fee</i>					
Feasibility study	\$35,000	\$35,000	\$0	\$0	\$0
Software consultant	\$0	\$75,000	\$0	\$0	\$0
Computers	\$0	\$3,654	\$0	\$0	\$0
<i>Solid Waste Franchising</i>					
Feasibility study	\$0	\$50,000	\$50,000	\$30,000	\$30,000
Computers	\$0	\$0	\$0	\$0	\$2,436
<i>Commercial and Multi-Family Recycling</i>					
Online reporting system	\$2,500	\$0	\$0	\$0	\$0
Sub-total Operating	\$53,100	\$209,729	\$94,675	\$74,675	\$78,311
Total Personnel and Operating	\$84,838	\$494,358	\$356,018	\$336,018	\$454,578
Less General Fund	\$84,838	\$494,358	\$0	\$0	\$0
Less General Fund and/or EIF (proposed)	\$0	\$0	\$356,018	\$336,018	\$454,578
Net Costs	\$0	\$0	\$0	\$0	\$0

¹ The costs for FY05 reflect half-year costs; these proposed changes would be implemented starting at the mid-year (December 2005). Because the budget for FY05 is already approved, the County will implement the program enhancements proposed for FY05 using reallocated FTEs and funding.

² Staff is working to identify additional existing resources that can be reallocated to start some of the commercial and multi-family recycling initiatives in FY05.

7.2 Voluntary Program Enhancements: Beyond Five Years

Four of the voluntary program enhancements identified by the County for the next 20 years have been prioritized for the initial five-year period following SWMP adoption. The County proposes to implement the remaining program enhancements in the period beyond five years. County staff has prepared a preliminary implementation schedule for these program enhancements beyond five years, shown in Table 7-3. This table also includes the costs associated with the implementation schedule.

Note that while the County has proposed to begin a feasibility study on implementing franchising in FY05, and also proposes to give the State-mandated five-year notice in FY05 (following an adequate preparatory interval after SWMP adoption), actual implementation would not occur until FY10 (after the five-year notice period). As a result, the implementation costs for franchising are included in Table 7-3, while costs for the proposed franchising feasibility study and establishing program administration are included in Table 7-2. The County assumes that administration of franchising will require a minimum of two positions, plus overall administration costs of 2-4% of the County's solid waste collection market (which is estimated at \$16 million⁵). The County will create the two new positions in the year preceding franchising implementation (in FY09) to support the implementation process; the full cost of administration would be realized at the time of implementation (FY10).

The implementation costs shown are annual costs. Generally, costs increase through FY15, after which they start to decrease. For several of the program enhancements, implementation costs are higher than ongoing costs. This is especially true of the curbside recycling program improvements, which may require the County to purchase new recycling carts for all single-family and duplex residences in the County, and the assumed (but possibly unnecessary) construction of a yard waste transfer station (note the significant cost increase in FY12). By FY17, however, all the program enhancements would be implemented and annual costs would become stabilized.

The costs in Table 7-3 reflect *preliminary* planning level cost estimates prepared by County staff, and are subject to change based on feasibility studies and further evaluation. Implementation of these voluntary program enhancements is also subject to the annual budget process and County prioritization.

⁵ The 2001 *City of Alexandria Commercial Waste Analysis* report, prepared by GBB Solid Waste Consultants, estimates that the current commercial waste collection system market value is \$11,058,707. Arlington County estimates that the County's market value is 1.5 times the City of Alexandria's market.

**Table 7-3
Voluntary Program Enhancements, Beyond Five Years:
Implementation Timeframe and Annual Costs**

Implementation Components	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24
Franchising															
Franchise agreements															
1. Expand HHM program															
Expand existing program and facilities															
Study collection for "backdoor" residents and CESQGs															
Implement collection for "backdoor" residents and CESQGs															
2. Waste assessment and tracking															
Waste tracking system															
Periodic waste assessments (every 5 years)															
3. Education/outreach position															
4. Community inspector position															
5. Year-round yard waste															
6. Yard waste transfer station															
7. PAYT: study															
Feasibility study															
Implement program															
8. Curbside recycling improvements															
Feasibility studies															
Implement program improvements															
9. Food waste collection															
Feasibility study															
Implement program															
10. Improved litter programs															
(Costs (in thousands; annual)	\$464	\$470	\$1,829	\$1,474	\$1,462	\$2,237	\$2,008	\$1,597	\$1,597	\$1,597	\$1,697	\$1,597	\$1,597	\$1,597	\$1,597
FTEs (cumulative; includes positions from initial 5 yrs)	6	8	14	15	17	20	20	20	20	20	20	20	20	20	20

8.0 Funding & Construction Schedules (120.A.5, A.6)

This section discusses Arlington County’s plans for funding its solid waste programs over next 20 years. Section 8.1 describes the County’s current funding sources, and Section 8.2 describes future funding sources. The County currently does not have any plans to construct new buildings or structures for solid waste management. As a result, this section does not include a construction schedule.

8.1 Current Funding

In Arlington County, the Department of Environmental Services (DES) works to maintain and protect the environment through the collection, treatment, and disposal of wastes; to conserve natural resources; and to plan for the future environmental needs of the people who live, work and do business in the County. Within DES is the Solid Waste Bureau (SWB), which includes the following programs: Customer Service and SWB Administration; Refuse Collection and Disposal; Recycling and Solid Waste Reduction; Leaf Collection; Street Sweeping and Litter Control; and Earth Products Recycling.

The programs of the SWB are funded by the General Fund. The revenue for the General Fund comes in part from the annual Household Solid Waste Rate (HSWR), which is a fee charged to all single-family and duplex households in Arlington County for solid waste services, including curbside refuse and recycling collection. The HSWR is reviewed as part of the annual budget process and adjusted, if necessary, by the County Board after a public hearing. The fee is based on total curbside program costs, net of fees received from special services and revenues received from recycling rebates.

The annual HSWR in FY04 is \$232.60, and will be \$245.64 in FY05. The HSWR includes \$8.00 per year per household for leaf collection services. The HSWR is billed quarterly on the utility invoice.

Table 8-1
Summary of Current Funding

Budget	FY05	FY04
Total SWB Operating Budget	\$10,681,000	\$10,082,000
HSWR revenue	\$7,897,000	\$7,467,000
Net General Fund supported	\$2,784,000	\$2,615,000

8.2 Future Funding

As discussed in Sections 6.0 and 7.0, the County has developed a set of voluntary goals for solid waste management in the County over the next 20 years. The County has also developed corresponding program enhancements, and a strategy for implementing these program enhancements over the next 20 years. These voluntary program enhancements are subject to the annual budget process, feasibility studies, and County prioritization, giving the County the flexibility to implement new programs as resources become available.

If the County chooses to implement any of these program enhancements, the increased costs for the programs will require an increase in funding either from the HSWR or by implementing new funding mechanisms.

The voluntary program enhancements identified by the County include comprehensive feasibility studies for implementing (1) a community-wide environmental investment fee and (2) solid waste franchising of private waste haulers. If implemented, these program enhancements could generate additional funding for solid waste programs in the County. They are described below.

Environmental Investment Fee (EIF): An EIF, or solid waste generator fee, would be charged to both residents and businesses, and is based on each entity’s estimated waste generation rate. The revenues generated by this fee could fund community-wide solid waste programs such as litter collection, street sweeping, waste stream assessments, and solid waste planning. The revenues could also be used to stabilize the tip fee at the Alexandria/Arlington Waste-to-Energy (WTE) Facility, so that all County users of the WTE Facility pay the same fee for waste disposal. Specifically, the revenues could be used to fund the \$20 difference in the full tip fee paid for waste generated by the single-family and duplex sector, and the reduced, market-based tip fee paid by private refuse haulers for commercially generated waste.

Solid Waste Franchising: Solid waste franchising allows communities to manage their solid waste collection and disposal needs through contracting out solid waste services for different sectors of the community to private haulers. Solid waste franchising could increase the County’s control of its waste stream. Specifically, the County could require that some or all of the commercial waste collected in the County be brought to the WTE Facility for disposal. This would ensure that the WTE Facility operates at capacity, thereby eliminating the need for the WTE Facility to offer reduced (subsidized) tip fees to private haulers. As a result, the tip fee at the WTE Facility would be stabilized, so that all users of the WTE Facility pay the same fee for waste disposal. The County could also generate revenues for solid waste programs by charging a franchising fee to the hauler(s) it chooses to contract with.

9.0 Public Participation

In accordance with Virginia regulations regarding public participation, Arlington County has published a notice and held a public hearing on the Solid Waste Management Plan (SWMP). A record of the public hearing, a copy of all written comments, and the submitter's response to all comments received is included with this Plan. Arlington County has also provided for extensive participation by the public through the use of a citizen advisory committee and public meetings during the development of the SWMP.

9.1 Public Advisory Committee

The public advisory group designated for the SWMP process was the Solid Waste Committee (SWC) of the Environment and Energy Conservation Committee (E2C2). The SWC and its role in the Plan process are discussed in more detail in Section 5.0.

9.2 Meetings with Identified Stakeholders

In accordance with state regulations, Arlington County provided for extensive participation by the public through the use of public meetings and meetings with specific stakeholder groups. In April 2003, the County Manager identified particular stakeholders that the County should ensure be given the opportunity to provide input on the Arlington County SWMP.

As a result, the County scheduled a variety of meetings with the identified stakeholders. The type of meeting depended on the size of the group, available meeting times and agenda space, and the group's level of involvement with solid waste management in the County. The meetings are listed below in chronological order. For each meeting, the following is included: the meeting date and place; stakeholders present; and a summary of discussion and/or comments provided by the stakeholders.

1. Arlington Chamber of Commerce

August 29, 2003

Chamber of Commerce; 2009 14th St., Ste 111; Arlington, VA

Summary:

- The Department of Environmental Services (DES) Director met with Richard Doud, President of the Arlington Chamber of Commerce, to brief Mr. Doud on the SWMP.
- During this meeting, the Chamber of Commerce indicated that they wanted to be kept updated on the final recommendations.

June 2, 2004

Chamber of Commerce Office; 2009 14th Street, Suite 111; Arlington, VA

Summary:

- The Utilities and Environmental Policy Division Director spoke with Richard Doud, Chamber President, to update him on the status of the SWMP, to answer questions, and to receive comments. Mr. Doud indicated that he had no opposition to the adoption of the Plan, with the understanding that stakeholders would participate in the detailed

feasibility studies. He would urge Chamber members to participate in those studies.

2. Arlingtonians for a Clean Environment (ACE)

August 12, 2003

Fairlington Community Center; 3308 South Stafford Street; Arlington, VA

Summary:

- DES attended a regular ACE Board of Directors meeting to brief Board members on the SWMP, to answer questions, and to receive comments.
- Key issues discussed: (1) household battery disposal; (2) Waste-to Energy (WTE) Facility, including location, stack emissions, operation agreement, financing of the Plant, and how WTE compares to other disposal options; and (3) how ACE can help County staff. In addition, ACE recommended that the County use the ACE Listserv to poll membership on issues that may be of interest to members.

June 10, 2004

SRA; 2425 Wilson Boulevard; Arlington, VA

Summary:

- DES attended a regular meeting of the ACE Board to update the group on the status of the SWMP, to answer questions, and to receive comments.
- The key issues discussed: (1) The County's four priorities for the first five years (multi-family and commercial recycling, solid waste planning, solid waste franchising, and charging an environmental investment fee) and (2) how ACE can be supportive of the SWMP.

3. Covanta WTE Facility Trustees

October 21, 2003

Alexandria/Arlington WTE Facility; 5301 Eisenhower Avenue; Alexandria, VA

Summary:

- Solid Waste Bureau Chief briefed the Covanta Plant Manager and the Covanta Business Manager about the SWMP process, including the fact that the County was examining, among other issues, its relationship with the WTE Facility and cost equity issues.
- WTE Trustees did not provide any specific comments about the SWMP during this meeting.

4. Waste haulers providing services in Arlington County

October 30, 2003

Arlington County Solid Waste Bureau; 4300 South 29th Street; Arlington, VA

Summary:

- DES organized a meeting for waste and recycling haulers that provide services to Arlington County businesses and multi-family residences. During this meeting, DES briefed the attending haulers on the SWMP, answered questions, and received comments.
- Key issues discussed: (1) the possibility of the County switching to single stream recycling collection for single-family and duplex homes; (2) the

County's relationship with the WTE Facility, including the balance between an increased recycling rate and decreased tonnage being sent to the WTE Facility; (3) the possibility of the County implementing a "Pay-As-You-Throw" (volume-based) pricing system for single-family and duplex residences; (4) the potential expansion of the existing, part-year yard waste program to be year-round; (5) the possibility of adding food waste to the County's organics recycling program; and (6) enforcement as a means of increasing recycling in the commercial sector. Haulers indicated that many businesses are not recycling successfully, and that ticketing is an effective method of enforcement.

June 3, 2004

Arlington County Solid Waste Bureau; 4300 South 29th Street; Arlington, VA

Summary:

- DES organized a meeting for waste and recycling haulers that provide services to Arlington County businesses and multi-family properties. During the meeting, DES updated the group on the status of the SWMP, answered questions, and received comments.
- Key issues discussed: (1) the public input process for the SWMP, including when and how SWMP contents were made available to the public, how meetings were publicized, and the involvement of private haulers in the process; (2) the County's proposed solid waste franchising initiative, including the County's reasons for proposing franchising, legal aspects of franchising, the fact that the County proposes to issue the State-mandated five-year notice of intent before conducting a comprehensive feasibility study, and which communities the County benchmarked with in regards to solid waste franchising; and (3) future opportunities for private haulers to provide input to the County on the SWMP.

5. Economic Development Commission (EDC)

November 10, 2003

Arlington Business Center; 1100 North Glebe Road; Arlington, VA

Summary:

- DES attended a regular meeting of the EDC to brief the Commission on the SWMP, to answer questions, and to receive comments.
- The key issue raised was the commercial recycling program. In addition, the EDC offered to help with the Plan, as needed.

May 24, 2004

Arlington Business Center; 1100 North Glebe Road; Arlington, VA

Summary:

- The Utilities and Environmental Policy Division Director met with the EDC to update the group on the status of the SWMP, to answer questions, and to receive comments. The EDC response to the SWMP was supportive, including the four program initiatives that have been prioritized for the first five years. EDC members indicated that their support of franchising was contingent on the County's doing a detailed

feasibility study. Further, the EDC indicated that it would like to issue a letter of support for the Plan.

6. Arlington County Civic Federation (ACCF)

November 11, 2003

John T. Hazel Conference Center of Arlington Hospital; 1701 North George Mason Drive; Arlington, VA

Summary:

- DES attended a regular meeting of the ACCF to brief the Federation on the SWMP, to answer questions, and to receive comments.
- Key issues discussed: (1) what the County's 32% recycling rate means; (2) what data contractors are providing to the County to track waste; (3) Arlington's future plans for recycling of residential medical waste (currently, there is no program); (4) electronics disposal options in Arlington, and impacts of electronics disposal on WTE Facility; (5) would PAYT apply to yard waste.

June 1, 2004

John T. Hazel Conference Center of Arlington Hospital; 1701 North George Mason Drive; Arlington, VA

Summary:

- DES attended a regular meeting of the ACCF to update the group on the status of the SWMP, to answer questions, and to receive comments.
- The key issues discussed: (1) the proposed solid waste franchising initiative for multi-family and commercial properties and (2) the proposed environmental investment fee.

7. Northern Virginia Apartment Association (NVAA) and Apartment and Office Building Association of Metropolitan Washington (AOBA)

November 20, 2003

Arlington Economic Development; 1100 North Glebe Road, Suite 1500; Arlington, VA

Summary:

- DES organized a meeting for commercial and apartment building owners. During this meeting, DES briefed this sector of the business community on the SWMP, answered questions, and received comments.
- Key issues discussed: (1) the current state of recycling in multi-family properties, including the recycling rate for this sector, Virginia recycling requirements, and the current reporting requirements for multi-family and commercial properties; (2) general lack of awareness of recycling reporting requirements for multi-family property owners; (3) Arlington County's solid waste management goals should not be stricter than Virginia's goals; (4) Virginia's recycling requirements should be lower than they currently are; (5) the need to increase education and outreach in the multi-family sector, particularly multicultural tenants, and who should be responsible for creating, translating, and distributing these multi-lingual materials; (6) the possibility of the County picking up materials from

multi-family properties, in order to better monitor recycling efforts in this sector and to better focus improvement efforts; (7) the relationship between multi-family property owners/managers and haulers (there were mixed reviews); (8) the County should build a consortium for small businesses, in order to help this sector improve solid waste services; (9) County should conduct a study of the relationship between rent levels and recycling rates in the County, in order to identify problem areas; and (10) County should increase technical assistance for property owners/manager.

June 3, 2004

Arlington County Fire Station #1; 555 South Glebe Road; Arlington, VA

Summary:

- DES organized a meeting for commercial and apartment building owners. During the meeting, DES updated the group on the status of the SWMP, answered questions, and received comments.
- Key issues discussed: (1) the lack of multi-family/commercial sector representation on the Solid Waste Committee and in solid waste issues in general; (2) the County’s recycling rate, including how the rate is calculated and how the single-family/duplex and multi-family/commercial sector rates compare; (3) the timeframe for the proposed feasibility studies; (4) the proposed Environmental Investment Fee, including how it would be charged to multi-family/commercial properties and how it would affect existing solid waste collection costs; (5) the current tip fee rate structure at the WTE Facility; (6) the proposed shift to solid waste franchising, including implementation timeframe and how franchising might affect solid waste collection rates for multi-family/commercial properties; and (7) the current status of recycling in the commercial/multi-family sectors, plus the proposed expansion of the commercial/multi-family recycling program (i.e., increased education and enforcement).

9.3 Public Information Sessions

In order to increase public awareness about the SWMP process, the County hosted four public information sessions during the month of November 2003. These sessions were conducted in conjunction with another County project, the Water/Sewer Rate Study. The four public information sessions were held on November 5, 2003, and November 10, 2003, with two 1-hour segments held each night. Each of these 1-hour segments included a 15-minute presentation on each of the projects, plus a 30-minute question and answer period. A summary of comments and discussion is provided below in Table 9-1.

**Table 9-1
Summary of General Public Information Sessions**

Date and Time	Location	Key Issues
November 5, 2003 7:30 pm	Aurora Hills Library 735 South 18 th Street Arlington, VA	(1) Citizen inquired about the implementation of “Pay-As-You-Throw” waste disposal systems.
November 5, 2003	Aurora Hills Library	Citizens did not attend or raise any issues.

8:30 pm	735 South 18 th Street Arlington, VA	
November 10, 2003 7:30 pm	Central Library Auditorium 1015 North Quincy Street Arlington, VA	(1) Citizens inquired about what other local jurisdictions are doing in regards to solid waste management plans; (2) Citizens asked how waste is tracked that private haulers take away from Arlington County; and (3) Citizens requested more information on unit-based pricing, including what a unit is, how disposal fees are determined, and how the County would manage accounting for such a system.
November 10, 2003 8:30 pm	Central Library Auditorium 1015 North Quincy Street Arlington, VA	(1) Citizens raised the issue of public education, and a lack thereof. Citizens asked where residents can obtain education materials and information about recycling in the County; and (2) Citizens inquired about the enforcement system in place in Arlington County, specifically for residential curbside recycling.

9.4 Specific Comments Received from the Public

- Comment #1
Submitted on DES website by Keith Oberg on September 11, 2003
 - (1) Mr. Oberg urges the County to develop a manageable mechanism to charge individual residents by volume of waste, i.e., those who generate more, pay more.
 - (2) Mr. Oberg has been involved personally in re-use efforts involving bicycles, and is very appreciative of staff efforts in support of this. He further suggests that:
 - The County charge individual homeowners for special pick-up of bicycles (currently it does not, so there is no incentive for channeling bicycles to existing re-use alternatives); and
 - The County identifies a means to encourage, or compel, multi-family buildings to channel abandoned bicycles to existing and future re-use opportunities, such as a local County-sponsored "earn-a-bike" program or international programs such as Pedals for Progress. (Mr. Oberg has seen many hundreds of abandoned bicycles in Arlington County apartment buildings, and many managers simply throw them away, going to landfills.)

- Comment #2
Received from John O'Connor via telephone on October 27, 2003
 - (1) Mr. O'Connor commented that he would like to see fall leaf bag collection start earlier, two weeks to one month earlier to more closely match the falling of leaves.
 - (2) Mr. O'Connor commented that he would like to see year round residential yard waste collection happen.

- Comment #3
Received from John Marston and Kirsten Mortimer via email on December 9, 2003
 - (1) Residents suggested that there perhaps be a future system to provide for biweekly pickups if there is a corresponding reduction in solid waste fees to such households.

9.5 Public Hearings, Meetings, Resolution

In accordance with Virginia regulations, Arlington County conducted three public hearings during the SWMP update period.

- (1) The County E2C2 conducted a public hearing on May 19, 2003, to launch the process for updating the SWMP, including the anticipated schedule, key milestones, and identified stakeholders.
- (2) The County E2C2 conducted a public hearing on December 15, 2003, to put forth for review and public comment the draft recommendations for the SWMP, as submitted by the Solid Waste Committee. The County did not receive any comments from the public during the hearing. During the hearing, E2C2 reviewed and discussed the recommendations, and agreed that the Commission would submit them to the County Manager for review. Minutes from this meeting can be found in Appendix F.
- (3) The County Board conducted public work sessions with the members of the Arlington County Board on the SWMP during the week of May 3, 2004.
- (4) The County Board conducted a public hearing on June 12, 2004, at which the SWMP was adopted by resolution (Appendix A). See Appendix H for a summary of public comments submitted during the public hearing. See Appendix I for County staff response to the public comments received.

10.0 References

Arlington County Department of Community Planning, Housing & Development, Planning Division. Provided demographic data.

Arlington County Department of Community Planning, Housing & Development. *Arlington County Industrial Land Use and Zoning Study*. 2000.

Arlington County Virginia Business Data and Statistics derived from Woods and Poole Economics, Inc. 2001.

City of Seattle, WA. *On the Path to Sustainability: 1998 Solid Waste Plan*.
<http://www.cityofseattle.net/util/solidwaste/SWPlan/documents.htm>.

GBB Solid Waste Consultants. *City of Alexandria Commercial Waste Analysis*. Draft: June 6, 2001. Submitted to: City of Alexandria/Arlington County Solid Waste Disposal Trust Fund.

Metropolitan Washington Council of Governments. Website: www.mwcog.org.

Montgomery County Solid Waste Composition Study: 1999. Prepared by PBS&J, Inc. and R.W. Beck, Inc. August 1999. Task Order 109, Quarterly MSW Sampling and Analysis, Final Report.

Powell, Jerry. “Another Year in the Recycling Bin: Ten Key Recycling Trends from 2003,” *Resource Recycling*, January 2004.

Recycling Manager, a service of American Metal Market, September 2003.
<http://www.amm.com/recman/index.htm>.

U.S. Census Bureau. U.S. Census Data, 2000.

U.S. EPA. *Multi-family Recycling: A National Study*. November 2001. EPA530-R-01-018.

U.S. EPA. *Municipal Solid Waste in the United States: 2000 Facts and Figures*. June 2002. EPA530-R-02-001.

U.S. EPA. *Municipal Solid Waste in the United States: 2001 Facts and Figures*. October 2003. EPA530-R-03-001.

Virginia Department of Environmental Quality, Waste Management. Active Solid Waste Facilities in Northern Virginia.

[This page intentionally left blank]

11.0 Acronyms

Acronym List

ACCF	Arlington County Civic Federation
ACE	Arlingtonians for a Clean Environment
AOBA	Apartment and Office Building Association of Metropolitan Washington
AST	Aboveground Storage Tank
BID	Business Improvement District
C&D	Construction and Demolition
CESQG	Conditionally Exempt Small Quantity Generator
CFCs	Chlorofluorocarbons
DES	Department of Environmental Services
DMF	Department of Management and Finance
E2C2	Environment and Energy Conservation Committee
EDC	Economic Development Commission
EIF	Environmental Investment Fee
FAR	Floor area ratio
FTE	Full Time Equivalent
HDPE	High Density Polyethylene
HHM	Household Hazardous Materials
HHW	Household Hazardous Waste
HSWR	Household Solid Waste Rate
LEED	Leadership in Energy and Environmental Design
MES	Maryland Environmental Services
MRF	Materials Recovery Facility
MSW	Municipal Solid Waste
NVAA	Northern Virginia Apartment Association
OCC	Old Corrugated Containers
ONP	Old Newspaper
PAYT	Pay-As-You-Throw
PET	Polyethylene Terephthalate
PVC	Polyvinyl Chloride
RCRA	Resource Conservation and Recovery Act
RMW	Regulated medical waste
SWC	Solid Waste Committee
SWB	Solid Waste Bureau
SWMP	Solid Waste Management Plan
UBC	Used Beverage Can
UOI	Urban Operations Initiative
U.S. EPA	United States Environmental Protection Agency
UST	Underground Storage Tank
Virginia DEQ	Virginia Department of Environmental Quality
VDH	Virginia Department of Health
WPCP	Water Pollution Control Plant
WTE	Waste-to-Energy

[This page intentionally left blank]

12.0 Glossary

Biosolids

Sewage sludge that has received an established treatment for required pathogen control and is treated or managed to reduce vector attraction to a satisfactory level, and contains limited levels of pollutants, such that it is acceptable for use by land application, marketing or distribution in accordance with the Biosolids Use Regulations (12 VAC 5-585-10 et seq.) of the Code of Virginia.

Construction and Demolition (C&D) Waste

C&D wastes are generated from the construction and renovation of homes and buildings. Also included are wastes resulting from other development activities, including land clearing and demolition of old buildings.

Friable Asbestos

Friable asbestos means any material containing more than 1% asbestos by weight that, when dry, may be crumbled, pulverized or reduced to powder by hand pressure and is regulated as a special waste.

Incinerator/Combustion Ash

Incinerator/combustion ash includes those largely inert materials that remain following the combustion of one of the other waste types.

Industrial Waste

Industrial waste is any solid waste generated by manufacturing or industrial processes that is not regulated hazardous waste.

Municipal Solid Waste (MSW)

MSW is comprised of those wastes generated daily by residential, institutional, and commercial sources. Examples include: household refuse, food waste, inorganic wastes, container packaging, durable and non-durable goods, and yard wastes.

Petroleum Contaminated Soil

Petroleum contaminated soil is a soil that, as a result of a release or human usage, has absorbed or adsorbed only petroleum or petroleum by-products at concentrations above those consistent with nearby undisturbed soil or natural earth materials.

Recycling

Recycling is the process of separating a given waste material from the waste stream and processing it so that it may be used again as a raw material for a product, which may or may not be similar to the original product.

Regulated Medical Waste (RMW)

RMW is generated by hospitals, clinics, medical facilities, doctor and dentist offices, and funeral homes.

Resource Recovery (Waste-to-Energy)

Resource recovery is the recovery of energy from the combustion of solid waste. The combustion of MSW in a waste-to-energy (WTE) facility captures the energy released and converts it to steam. This steam can be used directly for heating or to drive a turbine generator to generate electricity. The extraction of the energy from the combustion gases reduces their volume and, consequently, the capacity and costs of the emissions controls needed.

Reuse

Reuse is the process of separating a given solid waste material from the waste stream and using it, without processing of changing its form, other than size reduction, for the same or another end use.

Sludge

Sewage sludge includes any solid, semisolid, or liquid residue removed during the treatment of municipal wastewater or domestic sewage. Sewage sludge includes, but is not limited to, solids removed during primary, secondary, or advanced wastewater treatment, scum, domestic septage, portable toilet pumpings, Type III marine sanitation device pumpings, and sewage sludge products. Sewage sludge does not include grit or screenings, or ash generated during the incineration of sewage sludge.

Source Reduction

Source reduction is any action that reduces or eliminates the generation of waste at the source, usually within a process.

Special Wastes

Special wastes are solid wastes that are difficult to handle, require special precautions because of hazardous properties, or the nature of the waste creates waste management problems.

Vegetative and Yard Waste

Vegetative and yard waste includes materials generated by lawn, yard care and landscaping activities.

White Goods

White goods are large appliances, such as stoves, washers, hot water heaters, etc. These are comprised primarily of ferrous metal (iron and steel) and contain smaller quantities of other metals (aluminum, copper, etc.).

Appendix A
Solid Waste Management Plan
Adoption Resolution



TONI COPELAND
CLERK TO THE
COUNTY BOARD

**ARLINGTON COUNTY, VIRGINIA
OFFICE OF THE COUNTY BOARD**

#1 COURTHOUSE PLAZA, SUITE 300
2100 CLARENDON BOULEVARD
ARLINGTON, VIRGINIA 22201-5406
(703) 228-3130 • FAX (703) 228-7430
E-MAIL: countyboard@arlingtonva.us



MEMBERS

BARBARA A. FAVOLA
CHAIRMAN
JAY FISETTE
VICE CHAIRMAN
PAUL FERGUSON
J. WALTER TEJADA
CHRISTOPHER ZIMMERMAN

**RESOLUTION OF THE COUNTY BOARD
OF ARLINGTON COUNTY, VIRGINIA**

WHEREAS, the County Board of Arlington, Virginia, adopted its current Solid Waste Management Plan (SWMP) in 1991;

WHEREAS Arlington County has met or exceeded all the required elements of the 1991 plan;

WHEREAS, the Virginia Department of Environmental Quality (DEQ), pursuant to Virginia Administrative Code 9 VAC 20-130-10 et seq., has required all Virginia local governments to adopt a SWMP or revise their existing plans to ensure environmentally and financially sustainable solid-waste services for the next twenty years, and to submit them to DEQ prior to July 1, 2004;

WHEREAS, Arlington County has conducted an extensive public process, as prescribed by Code 9 VAC 20-130-10 et seq., under the leadership of the Solid Waste Committee of the Arlington County Environment and Energy Conservation Commission; and

WHEREAS, the Solid Waste Committee and the Environment and Energy Conservation Commission have recognized that, while the County's existing 1991 plan is still valid for the next twenty years, additional solid-waste initiatives could increase the level of services for the community, promote environmental sustainability, and ensure that solid waste services are funded adequately and equitably;

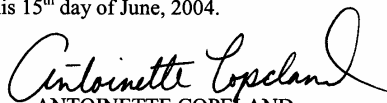
NOW, THEREFORE, BE IT RESOLVED that the Arlington County Board hereby adopts the state-mandated portion of the Arlington County Solid Waste Management Plan as its required SWMP under Code 9 VAC 20-130-10 et seq.;

BE IT FURTHER RESOLVED that the Arlington County Board hereby adopts the voluntary portion of the Arlington County Solid Waste Management Plan as additional, local-option goals, objectives, and program initiatives to be implemented over the next twenty years solely at the discretion of the County Board, contingent upon detailed feasibility analysis, program prioritization, and annual funding availability; and

BE IT FINALLY RESOLVED that the Arlington County Board approves the program initiatives for FY 2005 through FY 2009 contained in the Solid Waste Management Plan and direct the County Manager to implement the program initiatives identified for FY 2005.

I hereby certify that the Arlington County Board adopted the above resolution at its June 12, 2004 meeting.

Given under my hand on this 15th day of June, 2004.


ANTOINETTE COPELAND
CLERK TO THE COUNTY BOARD

Appendix B

Notes for Tables 2-5 and Table 2-6

Table 2-5

- (1) Population prior to 2000 interpolated between 1990 and 2000 U.S Census data. Population in 2005, 2010, 2015, and 2020 based on MWCOG Round 6.3a projections and intermediate years projected by Arlington County Planning Department.
- (2) Source of households for FY 1998 through FY 2003: Arlington County Solid Waste Bureau. Projected years beyond FY 2003 based on population.
- (3) Generation rate is calculated as total MSW generation divided by number of single-family and duplex households served by County collection system. Generation rate for FY 1998 through FY 2003 reflects actual recycled and disposed quantities. Projected rate for FY 2004 and beyond is based on the average generation rate for FY 2000 through FY 2003.
- (4) Total MSW generation is the sum of recycled and disposed quantities. For FY 1998 - FY 2003, data for recycled quantities are from Arlington County Annual Solid Waste Bureau Reports (*numbers reported by Calendar Year*) for recyclables collected from single-family and duplex homes by the Arlington County Solid Waste Bureau collection system. Data for disposed quantities, which reflect refuse collected from single-family and duplex homes by Arlington County Division of Solid Waste collection system, are from Covanta Waste-to-Energy Facility Tonnage Data Reports (Fiscal Year).
- (5) The number of multi-family households (served by the commercial collection system) is calculated by subtracting the number of single-family and duplex households served by County collection system from the total number of County households. Multi-family households include apartments, condominiums, and town houses.
- (6) Total MSW generation is based on multi-family households generating 0.145 tons of recyclables and 0.934 tons of disposed waste, for a total generation rate of 1.0793 tons per household. Source: U.S. EPA, *Multi-Family Recycling: A National Study*.
- (7) MSW calculations for the commercial sector are based on the total employment population in Arlington County. Source of projections: Arlington County Virginia Business Data and Statistics derived from Woods and Poole Economics, Inc. 2001.
- (8) Total MSW generation is based on generation rate of 0.572 tons per person per year (4.4 pounds per person per working day), multiplied by total employment population. Source: U.S. EPA, *Municipal Solid Waste in the United States: 2001 Facts and Figures*; City of Seattle, *On the Path to Sustainability*, 1998.
- (9) Total of all residential and commercial waste quantities generated.

Table 2-6

- (1) Arlington County submitted a voluntary recycling report to Virginia Department of Environmental Quality (DEQ) for CY00. Recycling reports submitted for CY01 – CY03 were required by Virginia DEQ.
- (2) Includes waste disposed by single-family and duplex, multi-family, and commercial sectors.
- (3) Residential curbside tonnages are recyclables collected from single-family and duplex homes. Commercial tonnages are recyclables collected by private haulers from the commercial and multi-family residential sectors. Commingled materials include glass, plastic, aluminum and metal cans.
- (4) As of March 2003 (CY03), glass, plastic, aluminum and metal cans are collected commingled at County Recycling Drop-off Centers. Previously, containers were collected in separate streams at the County Recycling Drop-off Centers. As a result, commingled numbers are only available for CY03 (March – July, 2003). Tonnages for glass, plastic, aluminum and metal cans collected separately in CY00 – CY02 are included in the commercial tonnages for these materials.
- (5) Includes newspaper and mixed paper from curbside residential collection.
- (6) Includes office paper, ONP/magazines, and OCC.
- (7) Includes mixed paper (including newspaper and magazines) and cardboard. Arlington County residents (single-family, duplex, and multi-family) and small commercial entities are able to use the Recycling Drop-off Centers.
- (8) Includes cardboard and office paper from Arlington County Government offices such as schools, institutions, buildings, etc.
- (9) Tonnages reported for recyclables collected from commercial and multi-family properties, including ferrous and non-ferrous scrap metal and aluminum and tin/steel cans; plastics; and glass. Numbers also include tonnages of glass, metals, and glass collected at the Drop-Off Centers for CY00 – CY02 (these materials were collected separately until CY03, at which point they started to be collected as commingled).
- (10) Residential C&D tonnages are from the Inert Materials Drop-off program. This includes debris waste, such as concrete and asphalt generated by County Public Works projects. Commercial C&D tonnages include C&D materials (including land-clearing debris) reported by private haulers as being recycled.
- (11) Industrial waste tonnages not reported to the County – mixed in with commercial waste stream.
- (12) Regulated Medical Waste tonnages not reported to the County.
- (13) Includes residential “Special Materials Recycling” (unbundled brush, vacuumed leaves, bagged leaves and spring yard waste) plus small amount of commercial (leaves/grass & brush) yard waste.
- (14) Wood waste is reported as commercial tonnages only.
- (15) Includes tree stumps greater than 6”. Tree stumps reported as commercial tonnages only.
- (16) Incineration ash tonnages reported by Fiscal Year, not Calendar Year. Tonnage numbers listed represent 60% (or Arlington’s assumed portion) of the total ash tonnage generated by the WTE Facility (total numbers provided by Tom Reardon).

-
- (17) Includes commercial (wet) tonnages for biosolids (sludge that has been treated to allow land application) that were land applied CY00 through CY03. As of CY02, Virginia DEQ does not allow land-applied sludge (i.e., biosolids) to be counted in the recycling rate; thus biosolids tonnages were not included in the CY02 and CY03 recycling rates (but tonnages are still listed in Table 2-6). The County does not generate septage; therefore, septage is not included in this table. Any portable toilet wastes generated by private residents are not reported to the County; therefore, these wastes are not included in this table.
 - (18) As reported by commercial haulers only.
 - (19) From “Special Materials Recycling” program, including curbside collection and drop-off at the Earth Products Yard.
 - (20) Arlington County does not track petroleum contaminated soil tonnages.
 - (21) Includes companion animals and small wildlife sent to Arlington County Animal Shelter, where they are cremated and disposed off on a per ton basis.
 - (22) Waste dirt reported in cubic yards, by Fiscal Year. Information provided by Mark Eskridge of Arlington County Solid Waste Bureau.
 - (23) Street sweepings reported by Fiscal Year, not Calendar Year. FY02 is an estimate, and FY01 number estimated based on average of FY00 and FY02 data. FY03 numbers were provided by John Miser, Solid Waste Bureau. Particulate matter collected during street sweeping operations is counted in cubic yards, while litter is collected in 60-gallon bags and then converted to cubic yards (1 60-gallon bag = 0.345 cubic yards).
 - (24) Household Hazardous Materials are reported by Fiscal Year, not Calendar Year. Includes material collected through drop-off at the Water Pollution Control Plant (weekly or by appointment) or the biannual Environmental Extravaganza HHM Collection Events.
 - (25) Motor oil numbers are reported by commercial haulers only (7.4 gallons/pound calculation rate).
 - (26) Oil filter numbers are reported by commercial haulers only.
 - (27) Antifreeze numbers are reported by commercial haulers only (8.4 gallons/pound calculation rate).
 - (28) Lead acid battery numbers are reported by commercial haulers only.
 - (29) Electronics numbers are reported by commercial haulers only.
 - (29) There is very little or no agricultural or mining waste generated or disposed in the County.

Appendix C

**Virginia DEQ Recycling Report
As Submitted by Arlington County for CY 2002**



**Commonwealth of Virginia
Locality Recycling Rate Report
For Calendar Year 2002
*** Revised*****

Contact Information

Reporting Jurisdiction: Arlington County

Person Completing This Form: Scott MacDonald

Title: Waste Reduction Program Manager, DES/Solid Waste Division

Address: 4300 29th Street, South Arlington VA 22206
Street/P.O. Box City State Zip

Phone #: (703) 228-6491 **Fax #:** (703) 228-6493

Email Address: smacdonald@co.arlington.va.us

Member Governments (The local governments identified in your regional solid waste management plan): n/a

Calculated Recycling Rate: Using the formula provided below and the information identified on Page 2 calculate your recycling rate for the reporting period.

$$[P + S] / [P + S + M] \times 100 = \text{Recycling Rate}$$

$$\left[\frac{61,099 + 14,623}{61,099 + 14,623 + 163,197} \right] \times 100$$

[Total PRM (P) + Total SRM (S)] / [Total PRM (P) + Total SRM (S) + Total MSW (M)] X 100

= 31.7 %
Recycling Rate

I certify that I have personally examined and am familiar with the information submitted in this form and any attached documents, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. These records will be made available for auditing purposes, if requested.

[Signature] Waste Reduction Mgr. 7-16-03
 Authorized Signature Title Date

Return completed form by April 30, 2003 to: Virginia DEQ, Attn: Recycling Rates, P.O. Box 10009, Richmond, VA 23240.

**Locality Recycling Rate Report
County of Arlington**

For Calendar Year 2002

Part I: Principal Recyclable Material (PRM): Report only PRM generated within the reporting jurisdiction(s), NOT imported PRM.

PRM TYPE	RECYCLED AMOUNT (TONS)
Paper	28,515
Metal	12,857
Plastic	155
Glass	197
Commingled	5,322
Yard Waste (composted or mulched)	13,518
Waste wood (chipped or mulched)	349
Textiles	186
TOTAL PRM (P)	61,099

Part II: Supplemental Recyclable Material (SRM): Report only SRM generated within the reporting jurisdiction(s), NOT imported SRM.

SRM TYPE	RECYCLED AMOUNT/Tons	
Waste Tires	130	
Used Oil	1,218	
Used Oil Filters	43	
Used Antifreeze	123	
Abandon automobiles removed	0	
Batteries	19	
Sludge (composted)	0	
Electronics	9	
Tree Stumps (>6" Diameter)	0	
Other (from Page 3)	812	
SUBTOTALS	2,353	
	(RECYCLED SRM)	REUSED* AMOUNT/Tons*
Construction Waste		0
Demolition Waste		
Debris Waste		12,270
Ash		0
Other (from Page 3)		0
SUBTOTALS		12,270
		(REUSED SRM)
TOTAL SRM (S)	14,623	

Part III: Total Municipal Solid Waste (MSW) Disposed:** Report only MSW generated within the reporting jurisdiction(s), NOT imported waste.

MSW TYPE	TOTAL AMT. DISPOSED (TONS)
Household	65,717
Commerical	97,480
Institutional	
Other***	
TOTAL MSW DISPOSED (M)	163,197

*Material separated from the waste stream and used, without processing or changing its form, for the same or another end use.

**Disposed for the purpose of this report means delivery to a permitted sanitary landfill or waste incinerator for disposal.

***May add total amounts of SRM generated, if known.

Locality Recycling Rate Report Instructions
 County of Arlington

OPTIONAL: Use this page to report and summarize information for the "Other" categories on Page 2 of this form.

SRMs, "other" material:

<u>Material</u>	<u>Tons Recycled</u>
Cooking oil	812.11
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
Total SRMs Recycled	812.11 (to "other" entry. Page 2)

SRMs, "other" material:

<u>Material</u>	<u>Tons Recycled</u>
_____	0
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
Total SRMs Reused	0 (to "other" entry. Page 2)

[This page intentionally left blank]

Appendix D
**Multi-family and Commercial Property
Recycling Reports**



ARLINGTON COUNTY MULTI-FAMILY RECYCLING REPORT



Arlington's recycling ordinance requires each multi-family residential property in the County to provide its tenants with an on-site recycling program for newspapers, metal food and beverage cans (aluminum and tin/steel), and glass bottles and jars. The ordinance also requires new recycling reports in February of every third year. Please complete and submit this form to: Recycling Reports, Solid Waste Division 4300 S. 29th Street, Arlington, VA 22206 or fax to (703) 228-6493. If you have any questions, please call (703) 228-6570.

1. Property name: _____

Property address: _____ Zip Code: _____

Contact person: _____ Phone: _____

2. Management company: _____

Management address: _____

3. Number of units at this property: _____ Number of buildings at this property: _____

4. Please attach the names of any commercial businesses located in your Multi-family property that utilize your refuse and recycling containers.

5. Name, address, and phone number of company that collects your recyclables separately from trash: _____

6. In addition to the required materials (newspaper, aluminum/steel cans and glass bottles/jars), does your recycling program include:

Plastic Bottles? Corrugated Cardboard? Other _____?

7. Check the locations of your property where tenants will place their recyclables for collection:

(1) At their individual unit (2) Trash closet on each floor (3) One central location (4) Multiple locations

If you checked #3 or #4 above, please describe the type and location of the collection containers you will use:

8. How will you tell your tenants about the recycling program at this property (check all that apply)?

Tell them face-to-face Put labels on collection containers
 Post notices in common areas Give them written instructions
 (Please enclose a copy of notice) (Please enclose a copy of instructions)

9. I certify that the information herewith provided is true and accurate to the best of my knowledge and realize that the reporting of false information can result in a violation of Chapter 10 of the Arlington County Code.

Signature: _____ Date: _____

Print Name: _____ Title: _____



ARLINGTON COUNTY COMMERCIAL RECYCLING REPORT



Arlington's recycling ordinance requires each business and commercial property in the County to recycle the two materials it generates in the greatest quantities. The ordinance also requires new recycling reports in February of every third year. Please complete and submit this form to: Recycling Reports, Solid Waste Division, 4300 S. 29th Street, Arlington, VA 22206 or fax to (703) 228-6493. If you have any questions, please call (703) 228-6570.

1. Name of Arlington business or commercial property: _____

Business/Property Address: _____ Zip Code: 222 _____

Contact Person: _____ Phone: _____

2. If you are a property manager filing a report for a multi-tenant site, provide the mailing address of your company and **attach a list of the businesses located at the property you listed above.**

Management Company Name: _____

Management Company Address: _____

3. Check the **TWO** materials recycled at this business/property (**at least two items must be checked**):

- | | | | |
|--|---|---|---|
| <input type="checkbox"/> Office paper | <input type="checkbox"/> Aluminum cans | <input type="checkbox"/> Kitchen grease | <input type="checkbox"/> Brush, leaves, grass |
| <input type="checkbox"/> Newspaper | <input type="checkbox"/> Steel/Tin cans | <input type="checkbox"/> Scrap metal | <input type="checkbox"/> Cloth |
| <input type="checkbox"/> Cardboard Boxes | <input type="checkbox"/> Glass | <input type="checkbox"/> Used motor oil | <input type="checkbox"/> Clean wood/Pallets |
| <input type="checkbox"/> Plastic | <input type="checkbox"/> Anti-freeze | | |

Additional materials to be recycled, if any: _____

4. List your private recycling haulers by material or check the box below if material is self-hauled.

Material 1	Material 2	Material 3
Bus Name: _____	Bus Name: _____	Bus Name: _____
Address: _____	Address: _____	Address: _____
Phone: _____	Phone: _____	Phone: _____

transported by an employee to a drop-off center or home recycling bin.

5. How will you educate employees, customers, or tenants about the recycling program at this property (check all that apply and enclose copy of instructions)?

- | | |
|---|--|
| <input type="checkbox"/> Tell them face-to-face | <input type="checkbox"/> Put labels on collection containers |
| <input type="checkbox"/> Post notices in common areas | <input type="checkbox"/> Give written instructions |

6. Business/Property Type: (check all that apply):

- | | | | | |
|--------------------------------------|---|--------------------------------------|---|----------------------------------|
| <input type="checkbox"/> Office | <input type="checkbox"/> Service | <input type="checkbox"/> Retail | <input type="checkbox"/> Bar/Restaurant | <input type="checkbox"/> Grocery |
| <input type="checkbox"/> Education | <input type="checkbox"/> Health/Medical | <input type="checkbox"/> Auto Repair | <input type="checkbox"/> Hotel/Motel | |
| <input type="checkbox"/> Other _____ | | | | |

7. How many employees are at this business/property (check one)?

- Less than 10 11-50 51-100 101-300 301-500 More than 500

8. I certify that the information herewith provided is true and accurate to the best of my knowledge and realize that the reporting of false information can result in a violation of Chapter 10 of the Arlington County Code.

Signature: _____ Date: _____

Print Name: _____ Title: _____

[This page intentionally left blank]

Appendix E
Solid Waste Committee
Meeting Minutes

September 15, 2003 E2C2 Solid Waste Committee Meeting

MINUTES

A meeting of the Citizen's Solid Waste Committee (SWC) convened on Monday, September 15, 2003, at 7 p.m. Members of the SWC in attendance included Marie Sansone, Dean Amel, Laura Dely, Alexandra Fredericks, Avi Garbow, David Koehler, Carlos Stern, and Carolyn White. Staff in attendance included Carl Newby, Scott MacDonald, Kathryn McCarty, and Lisa Ingmarsson.

- 1) Approval of May 12, 2003 Minutes—approved as amended.
- 2) Old Businesses:
 - a) Code Amendment Update: The County Board approved changes to Chapter 10 of the County Code in an effort to reduce overnight refuse vehicle parking in Arlington County. The Code change has proven successful. The Code will be distributed to Committee members once it has been updated.
 - b) Solid Waste Management Plan: County staff initiated this part of the meeting by providing an overview presentation of the Solid Waste Management Plan (SWMP) update. The presentation included information such as the background of the plan, the purpose of the plan, identified stakeholders, the identified policy issues, public participation opportunities, and the role of the Solid Waste Committee (SWC).

The SWC reviewed the list of policy issues, and discussed how these should be addressed. The group decided to break them into the following sub-groups: 1 and 2; 3, 11, and 12; 4, 5, 6, and 10; and 7 and 8. DES staff will address Issue #9. The Committee then agreed that issues 1 and 2 (the vision and goals papers) would be discussed at the next meeting (scheduled for September 24, 2003, at 7pm). At this meeting, the Committee will also set up workgroups and additional meeting times to discuss the remaining issue papers, with the assumption that members will likely meet at least three times in the month of October in order to have a finished product for the November 24, 2003 public hearing. County staff indicated that the issue papers (in their current draft format) are being reviewed by the Deputy County Manager, and will be distributed to Committee members as early as possible before the September 24, 2003 meeting.

The group reviewed and discussed the SWMP core document, as prepared by GBB Consultants. Committee members provided certain substantive comments to County staff, and were instructed to send any detailed comments to Scott MacDonald via email by September 30, 2003.

- Lastly, the Committee discussed the role of stakeholders in the SWMP update process. The SWC requested County staff assistance in scheduling meetings with applicable stakeholders.
- c) History of the SWC: Marie distributed a SWC history piece, and solicited feedback. Carolyn will provide specific input to Marie directly.
 - d) E2C2 Report, less solid waste plan stuff: Dean reported that there would be an update on the Water Sewer Rate Study at the next E2C2 meeting. He invited Committee members to attend the meeting, which is being held on Monday, September 22, 2003, at Courthouse Plaza in conference rooms C & D, at 7:30pm.
- 3) New Business:
- a) Solid Waste Committee vacancy: There is a vacant position on the SWC. Discussion indicated that various potential members have been contacted. Committee members will continue outreach efforts.
 - b) Collection of Bio-Bags After End of Program: Carlos stated his concern that bio-bags, distributed seasonally by the County for yard waste collection, are often misused by residents, including being left out after the collection season. The concern is that the bags become an eyesore in the community and they should just be picked up. The group discussed related issues such as penalization, codes enforcement, and the role of the collection crews in addressing this issue. Staff agreed to follow up and enforce existing regulations.
- 4) Set Next Meeting & Agenda Items:
- a) SWMP meeting(s)

The meeting concluded at 9:23 p.m.

September 24, 2003 E2C2 Solid Waste Committee Meeting

MINUTES

A meeting of the Citizen’s Solid Waste Committee (SWC) convened on Wednesday, September 24, 2003, at 7 p.m. Members of the SWC in attendance included Marie Sansone, Dean Amel, Laura Dely, Alexandra Fredericks, Avi Garbow, and Carlos Stern. Staff in attendance included Carl Newby, Chip Goyette, Kathryn McCarty, and Lisa Ingmarsson.

The purpose of this meeting of the Solid Waste Committee (SWC) was to discuss the vision and the goals for the Solid Waste Management Plan.

- 1) Vision discussion:
 - a) Policy Issue Paper #1 was presented as the basis for this discussion. SWC members provided comments on the paper, including the importance of considering costs in the policy papers.
 - b) The group discussed the difference between a vision and a goal, indicating that a vision is less quantifiable, while goals are more specific and attainable, and can be measured.
 - c) The group decided to use the vision statement in Policy Issue Paper #1 as a starting point: “To provide dependable, affordable, environmentally responsive solid waste services for Arlington County residents and businesses.” They also brought up concepts such as economic value, progress, leadership role in the Commonwealth, customer friendly, convenient, defining the environment (Arlington, regional, national, global; air, land, water, and living organisms), target audience (institutional, commercial, residential), citizen participation, partnerships and links.
 - d) The group decided on the following vision statement: “Arlington is an environmentally responsible and participative community, providing essential solid waste services to its residential, commercial, and institutional communities in an economic and dependable manner that demonstrates leadership in the Commonwealth.”

- 2) Goals discussion:
 - a) The SWC decided that the goals listed in Issue Paper #1 would be a starting point for the goals discussion. Issue Paper #2 (the waste reduction goals issue paper) will be addressed as part of the sub-committee discussions. The goals identified in Issue Paper #1 are as follows:
 - Implement solid waste processes that reduce the waste stream, promote recycling, and provide separation of waste before incineration;
 - Use ratepayer money wisely and efficiently;
 - Reduce environmental impacts caused by solid waste [*needs to be more quantifiable*];

- Improve reuse and recycling opportunities for our community;
- Increase solid waste system efficiency;
- Forecast accurately the long-term solid waste needs of Arlington County;
- Implement a solid waste program that maximizes public health and environmental impacts [*needs to be more quantifiable*];
- Provide for citizen input;
- Promote energy conservation by generating electricity from incineration; and
- Develop the most economically responsible means of solid waste management that recognizes the cost and need for environmental protection and service to the residents and businesses of Arlington County.

b) The following goals were also discussed:

- Collect data to accurately measure the waste stream and the effectiveness of solid waste programs;
- Provide technical assistance on recycling and waste reduction efforts in institutional, residential, and commercial settings [*key is to energize*];
 - Responsive, high quality customer service;
- Regulations should include source reduction and recycling;
- Convenience to encourage recycling; and
- Help reduce non-attainment status in Washington D.C. area.

The SWC agreed that these goals, in their draft form, should be viewed more as topics and less like set goals. SWC should keep these topics in mind as they meet in their sub-committees, with the intention of developing more specific goals and recommendations.

c) Carl clarified that the issue papers, as is, will not be presented to the County Board. They are intended to be internal background documents. Certain parts will be included in the draft plan for public review.

d) The SWC decided to break into the following sub-committees to review the issue papers:

Issue Paper Sub-Committees			
<i>3-11-12</i>	<i>2-4-5-6-10</i>	<i>7-8</i>	<i>9</i>
Laura	Alexandra	Carlos	DES staff
Dean	Avi	Marie	--

The sub-committee groups will meet to review and discuss each Issue Paper, with the goal of identifying specific goals and recommendations for each issue. Any questions and requests for further information should be directed towards DES staff. The SWC will meet to discuss each of the issues as a group on the following dates:

October 7, 2003, at 7pm – Issues 2-4-5-6-10

October 20, 2003, at 7pm – Issues 3-11-12, and 7-8.

- 3) Set Next Meeting & Agenda Items:
 - a) SWMP meeting(s)

The meeting concluded at 9:00 p.m.

September 24, 2003 Minutes

October 7, 2003 E2C2 Solid Waste Committee Meeting

MINUTES

A meeting of the Citizen's Solid Waste Committee (SWC) convened on Tuesday, October 7, 2003, at 7 p.m. Members of the SWC in attendance included Marie Sansone, Dean Amel, Laura Dely, Alexandra Fredericks, and Avi Garbow. Staff in attendance included Carl Newby, Chip Goyette, Scott MacDonald, and Lisa Ingmarsson.

The purpose of this meeting of the Solid Waste Committee (SWC) was to discuss Issue Papers #2, 4, 5, 6, and 10 of the Solid Waste Management Plan.

- 1) Housekeeping Items:
 - a) Scott asked the SWC how they would like to approve meeting minutes: after each meeting or all at once. The Committee asked that minutes be sent out for review after each meeting.
 - b) Chip gave an update on the stakeholder process, indicating that staff will be contacting specific stakeholders (e.g., Arlington County Civic Federation, Northern Virginia Apartment Association, waste haulers, etc.) to schedule meetings. There will also be two informational sessions for the public. These meetings will provide information about both the SWMP and the Water/Sewer Rate Study being conducted by the Department of Environmental Services. Laura offered to help staff schedule a meeting with the Arlington County Civic Federation. Staff will send out details to the SWC as these various meetings are scheduled.
 - c) Scott asked the group how they would like staff to present information about Issue #9. The SWC would like staff to lead a discussion on Issue #9 at the next scheduled meeting on October 20, 2003.
- 2) Discussion of Issue #2 -- Waste Reduction Goals

The SWC reviewed the recommendations presented in Issue Paper #2. A summary of the discussion is provided below. *Alexandra will finalize and submit the recommendations for this issue by October 15, 2003.*

- The group discussed what Arlington's recycling goal(s) should be and the timeframe for the goal(s). The group agreed on the following milestones: 35% by 2005 (as an EPA benchmark, not an official goal), 40% by 2010, and 50% by 2015.
- The SWC agreed with the conceptual goal of achieving near-zero waste generation, but noted that it is not possible to achieve this goal in Arlington County alone.
- The SWC agreed with the recommendation of decreasing the overall tonnage of municipal solid waste generated within the community while maintaining

recycling targets. Alexandra noted that EPA's goal for waste generation is 4.3 pounds/person/day.

- The SWC agreed with the recommendation to maintain priority on waste prevention and broaden programs to incorporate sustainability concepts.
- Staff indicated that the recommendation to improve the current yard debris program to increase recycling was included because it is considered "low hanging fruit." The SWC will expand this recommendation to encompass the concept of assessing and focusing on program enhancements that are the most cost-efficient, and will combine it with the recommendation to periodically assess the waste stream.
- The SWC agreed with the recommendation to assess the waste stream every five years to help identify materials remaining in the waste stream, and added that these assessments should be done geographically and by sector (multi-family, commercial, single-family, and institutional). The SWC will combine this recommendation with the recommendation to assess and focus on program enhancements that are the most cost-efficient.
- The SWC indicated that the recommendation to develop a tracking system to measure and document waste reduction programs should be made more specific to identify specific methods that can be used to track waste reduction programs (e.g., waste exchange). Tracking should be done by sector (multi-family, commercial, single-family, and institutional).

3) Discussion of Issue #4 – Single-family and Duplex Recycling

The SWC reviewed the recommendations presented in Issue Paper #4. A summary of the discussion is provided below. *Avi will finalize and submit the recommendations for this issue by October 15, 2003.*

- The SWC discussed the issue of adding additional materials to those currently collected at curbside, particularly aseptic containers. The group agreed with the recommendation for County staff to research this possibility further.
- The SWC recommended that the County conduct a comprehensive study of single-stream versus dual-stream collection before the next contract cycle of the curbside recycling collection program. Staff will send contract cycle dates to Avi for this recommendation.
- The SWC indicated that they would prefer a collection container pilot program that issued carts, rather than two 18-gallon bins. The group also indicated that a collection container pilot program is not recommended until after a study of single-stream versus dual-stream collection is completed.
- Lastly, the SWC agreed that a change in collection schedule is directly linked to a change in collection container size. As a result, the group recommended that collection schedules and collection containers be combined into one pilot program (once the single-stream versus dual-stream study is completed).

4) Discussion of Issue #5 – Multi-family Recycling

Discussion focused on the two options provided in this issue paper. A summary of the discussion is provided below. *Marie will finalize and submit the recommendations for this issue by October 15, 2003.*

- SWC members noted that multi-family housing recycling is an important issue because a significant number of Arlington residents live in multi-family housing.
- The SWC agreed with the first option presented in this issue paper, which is to increase enforcement and education efforts, and to expand material requirements.
- The group discussed the role of the County, waste haulers, and apartment building owners/managers in promoting recycling in this sector (e.g., the possibility of partnering with a major landlord to promote recycling in this sector).
- The SWC discussed the need to establish standards for recycling at multi-family buildings.
- The SWC discussed the need to increase County staffing (i.e., full-time employees devoted to the program) in order to implement and maintain any new initiatives.
- The SWC agreed to defer the discussion of franchising for the multi-family sector to the October 20, 2003 meeting.

4) Discussion of Issue #6 – Commercial Recycling

Discussion of commercial recycling focused on the two options presented in this issue paper: continuing the current program, or expanding the program in the form of new funding sources, additional FTEs, new material requirements, and new promotional items. A summary of the discussion is provided below. *Marie will finalize and submit the recommendations for this issue by October 15, 2003.*

- The group discussed the effectiveness of the current commercial recycling program. Staff indicated that there is no proactive element to this program; it is enforced using a combination of the 3-year recycling plans and any complaints that are received.
- Dean suggested that the two-material recycling requirement for businesses be more specific to indicate what two materials each type of business should be recycling (e.g., glass and cardboard for restaurants).
- Marie noted the value of recognition, including voluntary programs, in increasing recycling in the commercial sector.
- The SWC discussed the need to increase County staffing (i.e., full-time employees devoted to the program) in order to implement and maintain any new initiatives.
- The SWC agreed to defer the discussion of franchising for the commercial sector to the October 20, 2003 meeting.

5) Discussion of Issue #10 – Organic Material Recycling

Discussion of organic material recycling focused on the two options presented in the issue paper: expanding the curbside collection of yard waste to be year-round, and adding a food waste component to the organics recycling program. A summary of the discussion is provided below. *Dean will finalize and submit the recommendations for this issue by October 15, 2003.*

- Staff suggested a community-wide yard waste ban, and the group discussed the impact of such a ban on different sectors.
 - The group discussed a year-round yard waste collection program for single-family homes, including pricing of yard waste bags and collection schedules.
 - The group discussed the impact of a yard waste ban on the commercial sector; particularly small lawn care companies that may not have the economic means to store or transport yard waste for recycling or commercial composting. The group discussed the possibility of opening the County's Earth Products Yard to businesses for yard waste drop-off and recycling. Staff will contact Falls Church, which has implemented a yard waste ban, to gather more information on the impacts of such an initiative.
 - Dean noted that promotion of "grasscycling" and backyard composting should be included in the recommendations for the County's yard waste program.
 - Staff indicated that food waste recycling is necessary to reach the 50% recycling goal, but that there are currently no markets for food waste recycling in the region. The SWC recommended 5-year periodic assessments of food waste markets.
- 6) SWC members will submit their recommendations for each of the issues discussed to Lisa by COB October 15, 2003. The group agreed that the recommendations for each issue should include (1) a statement to crystallize the policy issues; (2) recommendations in simple, bulleted form; and (3) reasons/justifications for each recommendation. Staff will then expand each submitted set of recommendations to the appropriate size in preparation for the October 20, 2003, SWC meeting.
- 7) Set Next Meeting & Agenda Items:
- a) The SWC will meet on October 20, 2003, at 7pm at the SWD. Issue papers #3, 7, 8, 9, 11, and 12 will be discussed. In addition, staff will lead a discussion on the issue of litter control.

The meeting concluded at 9:30 p.m.

October 20, 2003 E2C2 Solid Waste Committee Meeting

MINUTES

A meeting of the Citizen’s Solid Waste Committee (SWC) convened on Monday, October 20, 2003, at 7 p.m. Members of the SWC in attendance included Marie Sansone, Dean Amel, Laura Dely, Alexandra Fredericks, and Carlos Stern. Staff in attendance included John Mausert-Mooney, Carl Newby, Chip Goyette, Scott MacDonald, Phil Loar, and Lisa Ingmarsson.

The purpose of this meeting of the Solid Waste Committee (SWC) was to discuss Issue Papers # 3, 7, 8, 9, 11, and 12 of the Solid Waste Management Plan, plus the issue of litter control. A summary of each Issue Paper discussion is provided below, in the order that the SWC addressed them.

8) Discussion of Issue #11 – Household Hazardous Wastes

The SWC reviewed the recommendations presented in Issue Paper #11. A summary of the discussion is provided below. *Dean and Laura agreed to finalize and submit the recommendations for this issue by October 27, 2003.*

- The SWC agreed with the staff recommendation to expand the household hazardous waste (HHW) manager position to full-time, to expand the hours and materials accepted in the program, and to create an improved HHW facility.
- The SWC suggested that the County conduct a study of the feasibility of collecting hazardous waste from Conditionally Exempt Small Quantity Generators (CESQGs) before initiating a pilot collection program for hazardous waste generated by these businesses. The group discussed these types of programs in other communities, and discussed the possibility of having a contractor handle collection for this sector.
- The SWC suggested that the County conduct a study of the feasibility and value of implementing an on-call HHW collection program for elderly and handicapped residents.
- The SWC discussed the possibility of reducing the number of special collection events to one per year because the events are costly to the County in proportion to the regular HHW drop-off program. Staff indicated that the events are politically popular. The SWC recommended that the County conduct a study of the feasibility of reducing the number of special collections.
- The SWC agreed with staff’s opinion that curbside collection of HHW would be too costly, and is not recommended.

9) Discussion of Issue #3 – Compliance Methods

The SWC reviewed the recommendation presented in Issue Paper #3. A summary of the discussion is provided below. *Laura agreed to finalize and submit the recommendations for this issue by October 27, 2003.*

- The SWC agreed with the staff recommendation to implement a hybrid approach to compliance, including regulatory, financial, and promotional methods.
- The SWC suggested that the County move towards the use of civil penalties (i.e., tickets) as an enforcement method. The County would retain its current complaint-based system, but would make it a more time-efficient system that issues a few key warnings and ultimately a civil penalty, rather than the current checklist of actions that need to be taken against the non-compliant party before they are summoned to court. The group discussed related issues, including burden of proof, the role of enforcement in the different sectors, and the need to increase County staffing in order to increase enforcement.
- The SWC indicated that the County should focus more on education and outreach as a compliance method, particularly in the multi-family sector. The group suggested that outreach be more energetic and engaging, and noted that the County Guide to Solid Waste Services should be multi-lingual and should be less “government looking.” The group also noted the value of educating children about issues.

3) Discussion of Issue #12 – Unit-Based Pricing

The SWC reviewed the staff recommendation presented in Issue Paper #12. A summary of the discussion is provided below. *Dean agreed to finalize and submit the recommendations for this issue by October 27, 2003.*

- The SWC supports the staff recommendation for the County to embark on an analysis of variable rate pricing (or Pay-As-You-Throw (PAYT)) for curbside services, noting that the SWC has recommended PAYT to the County Board twice in the past without success.
- The groups discussed the value of PAYT in meeting recycling targets, the importance of having alternatives to disposal when implementing a PAYT system, and the possibility of implementing PAYT in different sectors (e.g., franchising would enable PAYT in the multi-family sector).
- The SWC discussed the possibility of conducting on-the-ground benchmarking by visiting a regional community that has a PAYT program.

4) Discussion of Issue #7 – Financing Solid Waste Programs

The SWC reviewed the recommendations presented in Issue Paper #7. A summary of the discussion is provided below. *Carl agreed to finalize and submit the recommendations for this issue by October 27, 2003.*

- The SWC agreed with the staff recommendation for the residential solid waste programs to remain fee-based, recognizing that it may be converted to unit-based pricing in the future.
- The SWC agreed with the staff recommendation to incorporate costs for community-wide solid waste management programs into an environmental investment fee system, as this would assign program costs to the appropriate program user.
- The SWC discussed the two options presented in the issue paper for funding the Waste-to-Energy (WTE) facility: an environmental investment fee system and franchising.
 - Staff indicated that franchising would give the County maximum control over the waste stream and would force private haulers to offer more competitive prices. Implementation of franchising would increase administrative costs and staffing needs for the County.
 - Franchising requires a 5-year notice.
 - The SWC expressed concern that a recommendation to implement franchising may be unfavorably received, and may thereby negatively impact the other recommendations presented in the Solid Waste Management Plan. Staff indicated that franchising would be well researched by staff before it is presented to the County Manager's Office.
 - Carl will provide the SWC with a sample rate structure for an environmental investment fee for the next SWC meeting.
- The SWC recommended that the County implement an environmental investment fee system as soon as practicable and give 5-year notice of the intention to implement franchising.

5) Discussion of Issue #8 – Long-term Waste-to-Energy Relationship

The SWC reviewed the options presented in Issue Paper #8. A summary of the discussion is provided below. *Carl agreed to finalize and submit the recommendations for this issue by October 27, 2003.*

- The SWC agreed with the following modified version of Option 1, as presented in this Issue Paper: “Continue with the County’s current contractual relationship with Covanta Energy and the City of Alexandria until 2014. Review relationship periodically.”
- The SWC indicated that when the County’s contract with Covanta expires in 2014, the County should seek to pay competitive, market-based costs to use the WTE facility, rather than the service fee established in the current contract.

6) Discussion of Issue #9 – Future Regulatory Impacts

The SWC reviewed the recommendations presented in Issue Paper #9. A summary of the discussion is provided below. *Chip agreed to finalize and submit the recommendations for this issue by October 27, 2003.*

- The SWC agreed with staff recommendations B, D, and E as presented in this Issue Paper.
 - The SWC decided to merge recommendations A and F to indicate that recycling and waste reduction, in addition to product stewardship, are to be supported in the legislative process.
 - The SWC indicated that recommendation C was not specific enough to be meaningful, and decided to remove it.
 - Marie recommended that the County monitor closely changes in recycling and disposal technologies, to anticipate how these changes will affect regulatory programs and the County's waste management options; the SWC agreed.
 - Marie recommended that the County incorporate source reduction, reuse, recycling, and environmentally sound waste management policies into the County's other policies, plans, ordinances, and programs; the SWC agreed.
 - The SWC made a general recommendation that the County stay aware of future regulations.
- 7) The SWC briefly discussed the issue of litter control. Staff provided a handout describing current litter control services, noting that several roads in Arlington County are state-owned roads that the County is not responsible for maintaining. The group discussed potential funding sources for litter control programs, the issue of litter in streams, and the impact of storms on litter. The SWC will circulate recommendations by e-mail, and will revisit the issue at the next SWC meeting.
- 8) SWC members will submit their recommendations for each of the issues discussed to Lisa by COB October 27, 2003. Staff will then expand each submitted set of recommendations to the appropriate size in preparation for the November 12, 2003, SWC meeting.
- 9) Scott informed the SWC of two public information sessions being held to brief the public about (1) the Solid Waste Management Plan and (2) a Water/Sewer Rate Study being conducted by the Department of Environmental Services. Scott asked SWC members to be present at the various stakeholder meetings.
- 10) Set Next Meeting & Agenda Items:
- a) The SWC will meet on November 12, 2003, at 7pm at the SWD. Discussion will include the issue of litter control, review of the recommendations for each of the 12 policy issues, and review of the Solid Waste Management Plan vision statement.

The meeting concluded at 9:30 p.m.

November 12, 2003 E2C2 Solid Waste Committee Meeting

MINUTES

A meeting of the Citizen’s Solid Waste Committee (SWC) convened on Wednesday, November 12, 2003, at 7 p.m. Members of the SWC in attendance included Marie Sansone, Dean Amel, Laura Dely, and Carlos Stern. Staff in attendance included Carl Newby, Chip Goyette, Scott MacDonald, and Lisa Ingmarsson.

The purpose of this meeting of the Solid Waste Committee (SWC) was to review, finalize, and adopt the issue recommendations drafted by SWC members for the Solid Waste Management Plan (SWMP); to review the preliminary vision and overarching goals for the SWMP; and to finalize the SWC history document.

5) Approval of minutes for earlier meetings:

- a) Approval of September 15, 2003, minutes – approved
- b) Approval of September 24, 2003, minutes – approved
- c) Approval of October 7, 2003, minutes – approved
- d) Approval of October 20, 2003, minutes – approved as amended

6) The SWC reviewed and finalized the preliminary vision for the SWMP and made modifications. The final vision reads:

- Arlington is an environmentally responsible and participative community, providing essential solid waste services to its residents, businesses, and institutions in an efficient manner that demonstrates leadership in the Commonwealth.

The SWC agreed to discuss the preliminary overarching goals for the SWMP after discussing the recommendations for all the issues.

7) The SWC reviewed and finalized the issue recommendations, drafted by SWC members, which resulted from the October 7, 2003, and October 20, 2003, SWC meetings. The SWC also discussed litter control and construction and demolition (C&D) waste as potential issues for the SWMP. The group agreed to add litter control as a new issue, and incorporated a recommendation for C&D waste into the existing Future Technological and Regulatory Impacts issue. The group then reviewed and updated the numbering of the issues to group similar issues together, and agreed on the following order:

- 1) Arlington County’s Waste Reduction Goal
- 2) Single-family and Duplex Residence Recycling
- 3) Multi-family Recycling
- 4) Commercial Recycling
- 5) Yard and Food Waste Recycling
- 6) Household Hazardous Waste Program
- 7) Litter Control

- 8) Financing Solid Waste Programs
 - 9) Long-term Waste-to-Energy Facility Relationship
 - 10) Pay As You Throw
 - 11) Compliance and Enforcement Methods
 - 12) Future Technological and Regulatory Impacts
- 8) After finalizing the issue recommendations, the SWC reviewed and finalized the preliminary overarching goals for the SWMP. The final goals read as follows:
- 1) Implement solid waste processes that reduce the waste stream, promote reuse and recycling, and provide separation of waste before incineration;
 - 2) Use ratepayer money wisely and efficiently;
 - 3) Minimize air and water pollution resulting from solid waste activities;
 - 4) Provide for meaningful citizen input;
 - 5) Promote energy conservation by generating electricity from incineration;
 - 6) Collect data to accurately measure the waste stream and the effectiveness of solid waste programs, and to accurately forecast the long-term solid waste needs of Arlington County; and
 - 7) Provide responsive, high quality customer service.
- Staff agreed to route the final goals to the SWC so that members could rank the goals in terms of priority.
- 9) The SWC unanimously adopted the final issue recommendations, as amended, and recognized that the recommendations are subject to change throughout the remainder of the SWMP update process.
- 10) Marie asked that SWC members submit any outstanding comments on the SWC history, so that she can finalize it.
- 11) The SWC left the next meeting unscheduled, but agreed to be available for an additional meeting if the SWMP update process requires it.

The meeting concluded at 10:00 p.m.

Appendix F

**Environment and Energy Conservation Commission
December 15, 2003
Meeting Minutes**

ENVIRONMENT AND ENERGY CONSERVATION COMMISSION
APPROVED

Summary of December 15, 2003 meeting

Members Present: Dean Amel, Michael Raizen, Peter Guerrero, Rose-Barbara Neustadt, Louise Chesnut, Carolyn White, George Silva, Liz Birnbaum, Eric Harold,

Members Absent: Marie Sansone, Kevin Chisholm, Michael Murtha

Staff Present: Joan Kelsch (DES); Scott MacDonald (DES); Erik Beach (PRCR), John Mausert-Mooney (DES), Lisa Ingmarsson (DES), Carl Newby (DES), Chip Goyette (DES)

Guests: Don Hunter, Bill Hicks (NVRC), Carlos Stern (Solid Waste Committee)

1. Public Comment

No public comment.

2. Public Hearing on the Proposed Solid Waste Management Plan

Scott MacDonald, Waste Reduction Office Coordinator (DES)

Dean Amel, as a member of the Solid Waste Committee, presented the information on the Solid Waste Management Plan. The Plan is due to the State in June 2004. Staff and a consultant are working on the base plan. The policy recommendations were distributed to E2C2 members in the mailing.

There are 12 policy issues:

- Waste Reduction Goal. Arlington recycles 32% of its waste currently. The SWC recommended the County move to a 40% recycling rate by 2009, a 50% recycling rate by 2014, and a near-zero waste goal by 2024. Several other components of this goal address waste reduction, documentation, and education.
- Single-family and duplex recycling. Comingling recycling might help because it makes it easier.
- Multi-family recycling program. Make the requirements more specific to make it easier. Increased staff would improve data collection, outreach, and enforcement.
- Enhance the commercial program over the next 20 years. Currently, businesses have to recycle the two most-used materials. Evaluate technologies for recycling food waste. Increased staff would enable better management.
- Yard and Food Waste Recycling. Expand to a year round yard waste collection program. Ban yard waste from regular refuse pick-up. Eliminate free bags for yard waste disposal. Commissioners commented that many homes don't have space to store multiple Eagle carts, if they are required for yard waste and recycling. Others were concerned about eliminating the bag program, since there are few other options for yard waste collection. Promote grasscycling and composting.
- Household Hazardous Waste. Expand the program, including a full time position and better collection facilities. HHW pickup for residents who receive backdoor refuse

pickup. Study benefits of better serving small businesses who generate small quantities of hazardous waste. Reduce the special HHW collections to once per year with an expanded year round program.

- Litter Control. Maintain litter cleanup with enhancements as necessary. Streetsweeping is limited by on-street parking and restricted parking may be evaluated.
- Financing Solid Waste Programs. Evaluate how the County should finance solid waste programs. Tip fee at Waste-to-Energy Plant remains an issue in order to maintain private haulers' use of the facility. Recommendations are to maintain a fee-based system, and evaluate a pay-as-you-throw program. Recommend a community wide environmental investment fee to cover litter collection, countywide recycling efforts, planning, and disposal infrastructure. County should begin evaluating a solid waste franchising program. (Would allow County to meet put-or- pay at WTE. Achieves more equitable sharing of costs for WTE Facility. Also gives County more control of its waste stream. Concern was expressed about labor issues including living wage, strikes, etc.) Franchising would likely lower costs, despite opposition from haulers.
- Long-term WTE Facility Relationship. We have a contract with the WTE facility until 2014 and the operator has a lease until 2024. How that relationship develops, particularly between 2014 and 2024, is an issue.
- Pay as You Throw (PAYT). This is a unit based system that would make the system more equitable. To date the County Board has not been interested in evaluating PAYT. These programs are used by 20% of the US population, increase recycling, and wouldn't impact relationship with the Waste to Energy plant. The Committee recommends a Study.
- Compliance and Enforcement Methods. Continue education, but increase civil penalties (fines) as enforcement.
- Future Technological and Regulatory Impacts. Evaluate how Arlington's solid waste program may change based on upcoming regulations (air regulations, construction and demolition debris, biosolids processing.)

Once approved the Plan will be forwarded to the County Manager and the County Board in early 2004. Recycling markets may drive the process and the program.

Public Hearing: Mr. Don Hunter noted that the plan is impressive and he would like to study it some more.

John Mausert-Mooney noted that the Solid Waste Committee has worked very hard to put together a comprehensive plan. The parts support the overarching goal to reduce waste generation in the County. This program would likely move Arlington into a leadership position regionally, statewide, and nationally. The plan is very ambitious and has significant cost implications. Therefore, a phasing plan is necessary in order to implement efficiently. Carl Newby noted that the plan is a leadership program and is based on solid research and achievable goals.

Louise Chesnut asked whether commercial waste is counted as part of the County's waste generation. All commercial haulers and recyclers have to report to the County the

tonnages collected in the County even if they dispose of the waste at landfills outside the County. Chip Goyette said that that these reports are hard to confirm and single family recycling brings the rate up. Louise also asked about mercury. Mercury should be handled by the household hazardous waste program. Food waste is also a concern due to vermin. Carl Newby responded that the focus would be on restaurant preparation waste.

Liz Birnbaum encouraged staff to pursue the waste franchising concept, despite potential opposition. Fairlington may have issues with this concept, since the contracting system they currently use works well. George Silva noted again that whatever program is adopted, focus should be given to labor issues to ensure that service is consistent.

Michael Raizen expressed concern that recyclables are actually recycled. He is particularly concerned about plastic bags at grocery stores.

Dean Amel proposed that he and Marie Sansone draft a letter to the County Manager with copies to the County Board for circulation and comments by Commissioners no later than mid-January.

**3. Presentation on Four Mile Run Bacteria TMDL Implementation Plan
Bill Hicks, Senior Water Resources Planner, Northern Virginia Regional
Commission (NVRC)**

NVRC is an agency that helps bridge the gap between regional and state issues. Bill Hicks discussed the TMDL program, project approach and the implementation plan. The TMDL program is intended to bring Four Mile Run into compliance for water quality. There were many stakeholders who participated – Arlington County agencies, State DEQ, DCR, and DOT, and NVRC composed the technical advisory committee. A Pet Waste Focus group was also part of the process.

The process has been underway since May 2003. The Four Mile Run watershed crosses 4 political jurisdictions. The watershed is just under 20 square miles in size. Most of it is in Arlington (but also Alexandria, Falls Church, and Fairfax). The original program addressed water quantity issues. Other issues are litter, sediment transport, excess nutrients, public access and perception, water quality standards, and loss of habitat. All these issues are a function of urbanization. (the Four Mile Run watershed is nearly 40 percent impervious). The issue of concern as part of this issue is the bacteria water quality standard.

The Clean Water Act (1972), the Virginia Water Quality Monitoring, Information and Restoration Act (WQMIRA) (1997), and a 1999 Consent Decree (American Canoe Association) all play into moving the TMDL process forward. The Clean Water Act requires states to develop water quality criteria, requires monitoring to meet criteria, and requires development of Total Maximum Daily Loads (TMDL) for specific pollutants. The Virginia WQMIRA requires that an implementation plan be developed to meet the TMDL. It is the Implementation Plan for bacteria TMDL that is the focus of the current effort.

The Clean Water Act requires the State to develop criteria for various water quality components, including bacteria. EPA issues a list of impaired waters, called the 303(d)

list. States are required to put together TMDL allocations for specific pollutants. (In the case of Four Mile Run, bacteria is the concern. The tidal portion of Four Mile Run also has a recently released TMDL requirement for PCBs).

Fecal coliform and E. coli are the two bacteria of concern. The old standard for fecal coliform bacteria was recently replaced by an E. coli standard. Data indicate that the standards are comparable. EPA approved a TMDL for Four Mile Run and now NVRC is working on the implementation study. The TMDL for Four Mile run applies to all but the tidal portion of Four Mile Run and does not include the Arlington County Water Pollution Control Plant.

In order to implement a TMDL for bacteria information about the sources and types of bacteria are required. Samples were collected and analyzed the DNA and traced back to the source contributors. About 18% of bacteria is from human sources and about 13% is from canine sources. The remainder comes from wildlife sources.

The data were modeled along with hydrology and climate data to determine the allowable amount of TMDL. Various scenarios were developed to reduce the bacteria loadings from specific sources. If we reduce human and dog sources by 98% and all other sources by 95%, the TMDL will be met. This will be very difficult to achieve. All anthropogenic sources (human and dogs) will be addressed first. Wildlife sources will be looked at to determine if the standard needs to be changed. The standard is currently established for primary contact standard. The secondary contact standard is much lower. So a change in the status of the stream may be considered.

Human and canine sources will be evaluated. The implementation plan is designed to achieve the TMDL in Four Mile Run. In order to do this, they want to leverage efforts underway and fill in gaps where they exist with new or enhanced efforts. There is little money to implement this program. The plan covers 10 years (until 2013). Monitoring will be conducted throughout. The strategy looks at controlling pollution at its source, mitigating measures in the drainage, and outreach and education efforts (indirect measures).

Pollution prevention will focus on sanitary sewer overflows, inappropriate connections to stormsewer system, septic systems, and improper pet waste disposal. Mitigation measures include stormwater treatment, managing street and stormwater infrastructure (streetsweeping, etc.), stream corridor restoration, and stormwater runoff reduction and reuse. Technological solutions could include UV, ozone, and flocculant treatment, such as those used in the wastewater treatment industry. Indirect measures include general outreach, directed outreach (pet waste campaigns), and signs.

The Implementation Plan includes 156 commitments involving jurisdictions, non-profit organizations, and state agencies.

The comment period opened on December 10 and continues to January 8. E2C2 may review the entire plan and provide comments. Information can be found at www.novaregion.org/tmdlresource.htm.

Liz Birnbaum commented that bacteria is a result of urbanization and increased imperviousness. She asked how wildlife sources will be addressed. Bill Hicks commented that there are a lot of unknowns. Pollution prevention measures are focused on pet and human waste. Mitigation measures will address all types of bacteria since this involves treating waste that is already in the stream.

Liz also asked if the stream is downgraded to secondary contact (primary contact is swimming and bathing). Secondary contact is defined as wading and other limited contact activities. This would mean that the lower water quality would then meet the intended use. Liz asked if the stream would be posted to warn people. DEQ is currently discussing posting the lower portion of Four Mile Run because of the PCB in fish issue. Liz is concerned that acknowledging that the water is never going to be clean, means that education and potentially posting is required. This may have a negative impact because we would like the public to have a positive impression of our streams.

Eric Harold commented that the costs of meeting a primary standard may be very expensive. He also asked if there are real connections between human health effects and the levels of fecal coliform and E. coli found in the stream. Bill reported that there are no documented cases of anyone getting sick due to contact with Four Mile Run. Peter Guerrero expressed concern that there may be more impact than is reported to health agencies. Eric Harold noted that enhanced coordination among agencies is part of this program.

The total cost of phase I is hard to identify. Bill reported that Arlington County paid \$3.5 million on stormsewer maintenance. If BMPs are installed at all the impervious cover areas in the County, costs would approach \$240 million. Stream corridor restoration would also be expensive. Sanitary sewer replacement will help as well. Inflow and infiltration programs to look for sewer line repairs are underway.

Peter Guerrero handed out some comments he put together when he reviewed the plan. He referred to a map showing the sources of contamination. He suggested that solutions be focused on the areas where one particular source is significant. Dean expressed concern that dogs are being targeted, but addressing these sources won't solve the problem.

Eric Harold volunteered to draft comments on behalf of E2C2. The draft will be circulated to E2C2 members for comment. The letter is due to NVRC by January 8. Comments and a draft will be coordinated by Joan and Dean.

4. Update from the North Tract Work Group

Erik Beach, Planner (PRCR), and Toby Smith (Chair, North Tract Work Group)

The Task Force presented the plan in public forum in November. On February 21 the plan will be presented to the County Board. The site is 46 acres, 28 acres of which is owned by the County. The plan incorporates the Davis Industries site, despite contamination issues. The process has been underway for over 2 years. The final proposal is being presented tonight.

The first phase consisted of analyzing critical site information. There are height restrictions due to avigation easements and various environmental constraints (soil contamination). A large portion of the site was registered with the Virginia Voluntary Remediation program. No new hot spots were found in the last round of sampling. A remediation program will be developed and implemented. Lead in soils is the issue of concern. The Davis Industries site implemented a remediation plan and they are working with the State to get their final closure letter, which will include on-site controls due to residual contamination. The Davis site is fenced and capped. The fence is supposed to be temporary.

Several themes were identified for site planning. The final Master Plan consists of a community recreation center located in the 6th through 10th Street area. Two large components include an aquatics and fitness center. Longer term, a multiple-activity center would be incorporated. Four rectangle artificial turf fields are proposed (soccer and other activities). Dean asked about runoff from artificial fields. Toby responded that the fields are pervious and they are constructed so that they retain water. Turf fields are so compacted that they don't allow water to penetrate. Artificial fields are more commonly used for college play because they are more durable. The artificial nylon "grass" surface is placed over a mix of sand and rubber which is underlain by a drainage system. Water drains through the field and drainage can then be managed. Dean noted that they can be used morning through night so it requires fewer fields. The fields are cost effective because they can be used more and the demand for other fields is reduced.

Open areas are incorporated around the fields. There is also discussion about gaining access to Roaches Run with a walking bridge over the railroad track. The park Service maintains an underpass in Crystal City and they would like to install a trail to Roaches Run. NPS would like to connect the underpass and the bridge. This would also address the desire to watch trains. A long strip along the northern portion of the site is slated for a future garden (along the old Twin Bridges site). A network of walks and bike paths could connect the surrounding community.

A transportation analysis was conducted. The overall impact on transportation is not huge. Peak demand on the site would not coincide with rush hours. Public transportation options are being evaluated. ART bus or Metro bus and shuttle buses will be considered. Toby noted that the reality is that most people will drive to the site. Parking must be provided. All modes of transportation are available in the area.

A 50-meter pool and a recreational pool and a therapeutic pool are proposed. A diving well could be added later. An outdoor spray garden and retractable roof for a recreational pool could be added. The fitness center may incorporate an elevated track, climbing wall, etc.

Concession and restrooms at the outdoor fields would be provided. Passive seating and play and a fountain area may be incorporated near the soccer fields. Access to Roaches Run provides excellent passive recreation opportunities. Public gathering space (concerts, festivals, etc) could be added. The narrow strip at the far north of the site could incorporate many different creative features (maze, playground, canine area, etc.)

Trees and walkways between the fields are important. Bike trail connections to the Mount Vernon Trail will be evaluated.

Toby noted that Rose-Barbara Neustadt has been an instrumental member of the Task Force and will continue in her role on the environmental task force. He also noted that structures at the site will be built to green guidelines.

The Task Force goes to the Board on February 21. They would like E2C2's endorsement on the project. They are accepting comments now. The plan is on the web. Passive recreation, bike trails, transit, green buildings, and the artificial fields, are issues of concern. Liz will draft a letter. Joan will send it to the Board and the Task Force before Jan 21, 2004.

5. Approval of Meeting Summary – November 17, 2003

Approved as amended.

6. Review and Finalize 2003 E2C2 Annual Report

Members should provide comments on the draft Annual Report by Thursday and Joan will deliver it to the County Board before the holidays.

The 2004 Workplan is also due to the Board this month. Joan will follow-up with the Fire Dept about the existence of the LEPC. Remove the Westover Reed project from the plan.

Old/new Business

Joan Kelsch reported that the County Board adopted the Green Building program as proposed by staff.

E2C2 would like a briefing on dog parks, particularly the one in Shirlington.

Adjourn 10:55pm

Appendix G
Solid Waste Committee
Recommendations for Solid Waste Management Plan

**Policy Recommendations from the
Solid Waste Committee and Environment and Energy Conservation Commission
on the
Solid Waste Management Plan**

January 16, 2004

Issue #1 – Arlington County’s Waste Reduction Goal

Statement of Issue: Arlington County currently (2002) achieves an overall recycling rate of 32%⁶. The State-mandated recycling rate goal is 25% and EPA has established a national goal of recycling 35% of municipal solid waste generated by 2005. **What should Arlington County’s waste reduction goal be?**

Recommendations:

- 1) The Solid Waste Committee recommends that Arlington work to meet the following goals:
 - A 40% recycling rate by CY 2009 (State methodology)
 - A 50% recycling rate by CY 2014 (State methodology)
 - Move towards near zero waste generation by 2024
- 2) As outlined in the Solid Waste Management Plan vision statement, Arlington County believes that it should be a leader in both recycling and solid waste reduction.
- 3) Arlington County should work, in accordance with EPA targets and benchmarks, towards decreasing the overall tonnage of municipal solid waste generated.
- 4) The County should maintain priority on waste prevention and broaden programs to incorporate sustainability concepts. The County should incorporate waste reduction, reuse, recycling, and environmentally sound waste management policies into the County’s other policies, plans, ordinances, and programs.
- 5) The County should assess the waste stream every five years to identify materials remaining in the waste stream and to aid in future waste reduction and recycling program planning and development. The County should use these assessments to identify and focus on lowest cost means of meeting recycling goals.
- 6) The County should develop a tracking system to better manage and document waste reduction programs. This data would be beneficial in assessing the overall impact of solid waste on the environment and community.
- 7) The County should develop programs to educate and engage the public in waste reduction and recycling.

⁶ For the purposes of this plan, Arlington County has used the Virginia Department of Environmental Quality’s methodology for calculating past recycling rates. Arlington County intends to continue using this calculation methodology when striving to meet future recycling goals (e.g., 40% recycling rate by 2009).

- 8) The County should continue to encourage meaningful public participation in its solid waste planning, regulations, and programmatic efforts, including maintaining and supporting its citizen advisory Solid Waste Committee.

Background:

- The Virginia Department of Environmental Quality requires that all municipalities maintain a recycling rate of at least 25%. Arlington County should strive to demonstrate leadership in the Commonwealth by continuing to exceed this requirement.
- The County also strives to meet targets and benchmarks set forth by the U.S. Environmental Protection Agency, including a recycling rate of 35% by 2005 and to reduce waste generation to 4.3 pounds per person per day.
- Arlington should identify and target waste reduction and recycling programs that can be implemented in the most efficient and cost-effective manner. These programs will increase the County’s recycling rate at the lowest cost; they are considered “low-hanging fruit.” This can be accomplished by periodically assessing and tracking the County waste stream.

Issue #2 – Single-family and Duplex Residence Recycling

Statement of Issue: The County’s curbside recycling program strives to achieve the highest possible diversion rate, while taking into consideration factors such as financing, the interest of the community, public policy, and the impact on the environment. **What should the County’s curbside recycling program for single-family and duplex residences be?**

Recommendations:

- 1) The County should research adding additional materials to the curbside collection program for single-family and duplex residences.
- 2) The County should conduct a comprehensive study of converting from dual-stream collection to single-stream collection for the curbside collection of recyclables for single-family and duplex residences. This study should include an evaluation of types of recycling containers and collection schedules. The County should prepare this study at least six months before the completion of the initial term of the current recyclable collection contract.
- 3) The County should implement those changes to the collection system that are determined by these studies to be cost effective in reaching the established recycling goals.

Background:

- Although it may not be as economical for the County to recycle certain materials (e.g., plastics #3 - #7, aseptic containers⁷) collecting and recycling these materials may increase public support and participation, and may decrease contamination of collected materials as some people already (incorrectly) include them in their recycling bins.
- Results of single-stream collection programs in other jurisdictions have indicated that single-stream collection can increase resident participation in curbside recycling programs, and therefore increases the tonnage that is diverted. Although there is no large-scale single-stream processor in the region, the County anticipates that there will be regional processors available in coming years. The County should complete a study of the possibility of converting to single-stream collection before the next curbside collection contract begins in order to allow for a corresponding adjustment in contract specifications.
- Assuming single-stream collection programs increase resident participation rate, the County may need to increase the size of the current collection container. With larger containers, residents will likely not fill up an entire container each week. As a result, it may be more effective to change curbside collection to a biweekly schedule. It would be useful to conduct a pilot study to accurately gauge the need for larger bins and/or a different collection schedule.

Issue # 3 – Multi-Family Recycling

Statement of the Issue: Arlington County’s multi-family community consists of approximately 600 properties with more than 58,000 housing units, and is growing. The County’s recycling program is primarily administered as a tracking program with County staff collecting plans from property managers both when they acquire a property and on a 3-year cycle. **What should Arlington County's multi-family recycling program look like over the next 20 years?**

Recommendations:

- 1) The County should amend the Recycling ordinance to establish performance standards for multi-family recycling programs; or, alternatively, provide guidance to building owners and property managers on performance standards.
- 2) The County should increase staff resources to:

⁷ Aseptic containers are those made with multiple layers of materials, typically paper, aluminum, and plastic (e.g., juice boxes, milk cartons, soy milk containers). Aseptic containers are more difficult to recycle than single-material containers (e.g., plastic milk jugs, aluminum cans) because the paper part of the container (which constitutes the largest percentage of the container) must be separated from the aluminum and plastic parts before it can be recycled.

- Improve data collection, including electronic reporting, and analysis for tracking performance;
 - Increase outreach to residents;
 - Increase outreach and technical assistance for building owners and property managers; and
 - Increase compliance and enforcement.
- 3) The County should amend building and related codes to require safe, accessible, and sanitary recycling facilities in multi-family dwellings.

Background:

- Multi-family properties are the biggest challenge for communities trying to recycle and reduce waste. The multi-family sector is achieving a much lower recycling rate when compared to residents living in single family homes. This is attributed to a number of factors relating to low participation and contamination such as resident turnover, lack of promotion, cultural barriers, and lack of interest.
- Because multi-family properties are oftentimes contacted only once every three years under the current program, it is difficult to determine the success of their individual programs. From the inspections conducted to date for the most recent three-year cycle, it is apparent that most if not all properties have programs in place.
- The multi-family sector has the greatest opportunity for significantly increasing their recycling rate.

Issue #4 – Commercial Recycling

Statement of Issue: Arlington County’s commercial recycling program is primarily administered as a tracking program, with County staff collecting plans from businesses and property managers both when they acquire a property and on a 3-year cycle. Currently, the County tracks approximately 1,500 commercial properties that submit plans and recycling reports. **What should Arlington County's commercial recycling program look like over the next 20 years?**

Recommendations:

- 1) The County should amend the Recycling ordinance to establish performance standards for commercial recycling plans; or, alternatively, provide guidance to businesses and institutions on performance standards.
- 2) The County should increase staff resources to:
 - Improve data collection, including electronic reporting, and analysis for tracking performance;
 - Increase outreach and technical assistance for businesses and institutions;

- Provide information on, and encourage businesses and institutions to take advantage of, voluntary waste reduction programs, including Businesses for the Bay, WasteWise, Design for the Environment, the National Waste Minimization Partnership Program, and the National Pollution Prevention Roundtable; and
 - Increase compliance and enforcement.
- 3) The County should amend building and related codes to require safe, accessible, and sanitary recycling facilities in commercial and institutional buildings.
- 4) The County should periodically evaluate technologies and options for recycling food waste.

Background:

- Because commercial properties are oftentimes contacted only once every three years under the current program, it is difficult to determine the success of their individual programs.
- The County currently tracks approximately 1,500 commercial properties that submit plans and recycling reports. This number will continue to grow as new buildings are constructed, as businesses turn over in the County, and as property managers provide less in the form of trash/recycling services to their tenants (the responsible party is now the tenant in many situations). As a result, solid waste generation will increase. In addition, the increased number of businesses required to participate in the County's recycling program will stretch County resources.

Issue #5 – Yard and Food Waste Recycling

Statement of Issue: Currently, the County has several yard waste programs, including the fall leaf, spring yard waste, year-round brush (by request), and Christmas tree collection and recycling. In considering the revision/expansion of the yard waste collection program, Arlington County must take into account the environmental benefits of increased recycling, increased collection costs, avoided disposal costs, hauling costs, increases in air pollution from additional trucks, and appropriate outreach methods to educate the community about the new program. **Should the County expand its yard waste recycling program, and consider adding food waste recycling?**

Recommendations:

- 1) The County should expand its current spring, fall, and Christmas tree yard waste recycling programs for single-family and duplex households into a year-round program.
- Yard waste should be banned from regular refuse pick-up and diverted to a recycling program.
 - Single-family yard waste should be collected in paper bags or rigid containers of up to 30 gallons volume.

- The County should discontinue its current practice of providing free bags for yard waste disposal since such bags are readily available from the private sector.
- 2) The County should add yard waste to its list of materials that must be recycled by multi-family dwellings, commercial establishments, and institutions in the County.
 - Multi-family residences, commercial establishments, and institutions should be allowed to drop off their yard waste at a County transfer station, with the County charging only the cost of disposal for this service.
 - 3) The County should step up its promotion of “grasscycling” and backyard composting to limit the cost and environmental impact of yard waste disposal.
 - 4) The County should study the feasibility of establishing a food waste recycling program for all County residents and businesses, but implementation of such a program should be delayed until a year-round, County-wide yard waste program is well established and concerns regarding vermin are addressed.

Background:

- Yard waste makes up a large percentage of the municipal solid waste stream. In CY 2002, 22% of all Principal Recyclable Materials (61,099 tons) were classified as yard waste (13,518 tons).
- Food waste is estimated to also make up a large percentage of the waste stream. A report from the U.S. Environmental Protection Agency estimates that in 2000, 11.2% of the U.S. municipal solid waste stream was composed of food wastes.
- The County's current programs work well, but expansion of yard waste collection programs to cover the entire year and the multi-family, commercial, and institutional sectors of the County could increase the County's recycling rate substantially at modest cost.
- Because of its high moisture content, yard waste does not burn well in the waste-to-energy facility, so removal of yard waste from the trash stream would not adversely affect the operation of that facility.
- Year-round operation would improve the efficiency of the collection program by allowing the hiring of full-time employees, thereby reducing repeated training costs of the current, temporary programs.
- Mandatory separation of yard waste from the refuse stream would increase the County's recycling rate substantially and reduce tipping fees at the waste-to-energy plant.

Issue #6 – Household Hazardous Waste Program

Statement of Issue: Currently, the County operates a permanent, year-round and no-fee Household Hazardous Waste (HHW) drop-off facility at the Water Pollution Control Plant (WPCP) for residents. The County also has twice-yearly special HHW collection events as part of its spring and fall Environmental Extravaganzas. **Should the County modify its programs for diverting/collecting hazardous waste from the waste stream?**

Recommendations:

- 1) The County should continue with its current plans to expand the HHW manager position to full time, expand the hours of operation and materials accepted in the program, and create an improved HHW facility on the grounds of the WPCP. In particular, the County should consider developing educational materials relating to mercury and adding electronics containing cathode ray tubes (e.g., TVs, monitors) to the materials accepted in the County's HHW program.
- 2) The County should study the provision of a pick-up service for HHW for those residents who qualify for "back door" trash pick-up.
- 3) The County should conduct a study of the costs and benefits of a program to collect hazardous waste from Conditionally Exempt Small Quantity Generators (CESQGs) in the business sector.
- 4) The County should study the costs and benefits of reducing its special HHW collection events from two per year to one per year. This change should not be made until the changes outlined in recommendation (1) have been completed.

Background:

- Resident participation in the Arlington County HHW program continues to increase. In FY 2001, about 2,700 citizens dropped off material at the permanent facility or at the two special events held in spring and fall.
- Most County residents that participate in the existing HHW collection program express their admiration and appreciation for the service provided by the County.
- A full-time staff person can devote more time to public education and generate participation by more County residents and expand the program to include more types of materials.
- A permanent HHW facility can be expanded to facilitate collection, sorting, bulking, and storage of materials. This would make it more convenient for citizens to drop off their HHW materials. It would also make the collection, storage, and management of materials easier for staff, and safer for citizens, staff, and the environment.
- Targeting the hazardous waste generated by CESQGs could be of great benefit to the environment because such hazardous waste is not subject to full regulation as

hazardous waste (full regulation provides greater environmental protection), and as a result, it could be disposed of improperly.

Issue #7 – Litter Control

Statement of Issue: Litter control in Arlington County encompasses hand and vacuum collection of debris, and street sweeping, along predetermined routes, primarily commercial areas and heavily traveled pedestrian routes. The County also supports various stream cleanup initiatives to help reduce the amount of litter in County waterways and associated recreation areas. **What should Arlington County’s litter control program look like over the next 20 years?**

Recommendations:

- 1) The County should maintain existing litter collection vacuum routes.
- 2) The County should increase public education about litter control.
- 3) The County should support stream, roadside, and park cleanups.
- 4) The County should assess the need for trash bins, and should employ new bins and remove old bins as appropriate.
- 5) The County should cooperate with surrounding jurisdictions in litter control programs.
- 6) The County should supplement litter control efforts by the Virginia Department of Transportation (VDOT), as necessary.
- 7) The County should increase staff resources and funding to implement the above recommendations, as appropriate.

Background:

- Arlington County is divided into three mobile litter collection vacuum routes. Staff on each route checks “hot spots” daily (such as alleys and certain bus shelters). The County also operates four street sweepers. One sweeper is assigned commercial areas such as Four Mile Run in the Shirlington area and Crystal City, while the remaining three are assigned residential areas and regular sweeping of all County streets. Residential sweeping is suspended during leaf collection season and sweeping services are limited during the winter months.
- The County Parks, Recreation & Community Resources (PRCR) Department is responsible for maintaining the Rosslyn-Ballston corridor and has separate staff and funding (included in the PRCR’s own budget).
- VDOT is responsible for litter maintenance on all state routes within Arlington County, which includes I-395 and principal highways such as Routes 1, 29, 50, 110,

120 (Glebe Road), 237 (Wilson Boulevard), and 244 (Columbia Pike). VDOT has a separate cleaning schedule from the County, including a spring street sweeping and litter collection. They mow right-of-ways on major thoroughfares, but rarely perform housekeeping services on a consistent basis.

- Virginia Department of Environmental Quality provides annual “non-competitive” grant monies (approximately \$20,000) to support local governments’ litter prevention and recycling efforts. Historically, Arlington has used these funds for litter cans, sweeper equipment, and recycling equipment and educational materials.
- Litter is a pervasive problem in Arlington County streams because storm sewers are efficient litter delivery systems. A dense network of underground storm sewers has replaced more than half of the County's original stream network. During storms, these storm sewers convey a large volume of runoff, pollutants, and litter to streams at high velocities, causing streambank erosion, water quality problems, and habitat degradation.

Issue #8 – Financing Solid Waste Programs

Statement of Issue: How should the County finance its solid waste programs?

- How should the residential collection programs be funded (fee based, General Fund, line item on tax bill)?
- How should the County’s other solid waste management programs, other than the residential collection programs, be funded?
- How can equitable allocations (especially between homeowners and commercial) of the costs of the Waste-to-Energy (WTE) plant (capital and operating) be established?

Recommendations:

- 1) **Residential Community.** The County’s funding source for residential collection programs should remain fee-based. Maintain the current fee system unless the County adopts a “pay-as-you-throw” system (see Issue #10).
- 2) **Various Community Solid Waste Management Programs.** A community wide environmental investment fee should fund solid waste management services other than the residential collection programs. An environmental investment fee system based on estimates of waste generation rates (similar to fee systems in Prince George, Prince William, and Montgomery Counties) should be charged on the property tax bill. The charges would cover such services as litter collection, Countywide recycling efforts, solid waste management planning, and disposal infrastructure.

The County should also begin the study of implementing a County solid waste franchising system, as a method to support long term funding issues and to maximize the County’s potential to reach the recommended long term recycling goals. The County should give the state-mandated 5-year notice to local haulers that the County is considering franchising. Any franchising program should be flexible enough to

both accommodate large commercial or multifamily developments that currently contract for cost-effective waste collection services and to avoid severe disruptions from labor problems or insolvencies by contractors.

- 3) WTE Funding. The County should use a portion of the revenues from the environmental investment fee (and franchising) recommended above to equitably allocate the financial costs of the WTE facility throughout the community.

Background:

- Arlington’s method of charging for residential refuse collection services on the County’s residential quarterly water bills is a fairly typical and accepted method for the billing of refuse services. There have been few citizen complaints with this billing method.
- Other than the residential collection program, the County’s solid waste management infrastructure programs (i.e., Household Hazardous Waste program, Mandatory Commercial Recycling Program, and the Earth Product Yard material processing services) are not fee-based. Currently, these program costs are included in the General Fund or the Utility Fund. There has been minimal citizen concern received about this method.
- Using an environmental investment charge to fund non-fee-based solid waste management programs would establish a community-wide fee based on waste generation rates. This method spreads the community’s waste management capital and operational costs across all waste generators according to their waste generation levels.
- Three counties in the region (Prince George, Prince William, and Montgomery) use a form of environmental investment charge to fund part or all of the non fee-based types of programs cited above.
- If the County were to fund the WTE Facility by establishing waste districts and franchising commercial haulers, the County would be able to establish economic control of the community’s waste stream. Under this system, the franchised haulers would pay franchise and/or disposal fees that would fund the full cost of disposal and other community solid waste management needs. This method would require the County to formally give a state-mandated 5-year notice to the community before implementation.

Issue #9 – Long-term Waste-to-Energy Facility Relationship

Statement of Issue: **What should be Arlington’s current and long-term relationships to the Alexandria/Arlington Waste-to-Energy (WTE) Facility?**

Recommendations:

- 1) Continue with the County’s current contractual relationship with Covanta Energy and the City of Alexandria until 2014. Review relationship periodically.

Background:

- The current contractual relationship with Covanta is functional and within economic viability.
- The WTE Facility meets and exceeds all state and federal air quality requirements, which are stiffer for WTE facilities than for coal-fired and other energy groups. Notwithstanding the WTE Facility’s excellent performance and compliance with all air regulatory limits, it is located in a metropolitan region that is in non-attainment for ozone and does have NOx emissions, which contribute to the region’s non-attainment status. As the region works to meet air quality mandates, the WTE facility may be highlighted as a point source and required to meet new standards.
- The facility operator has lease agreements to operate the facility until 2024.
- It is reasonable to assume that the WTE facility will be economically viable and will continue operations beyond 2014 (the year the County’s commitment ends). The County could seek alternate municipal solid waste disposal capacity to supplement community’s needs in the market place beginning in 2014.
- Adoption of this recommendation will satisfy the state’s solid waste management planning requirements.
- The Alexandria/Arlington WTE facility produces enough electricity to meet the energy needs of approximately 23,000 homes. The production of electricity through WTE depletes less of the earth’s natural resources than oil, coal, or natural gas-powered electricity generation. By replacing fossil fuels, WTE reduces the build up of carbon dioxide in the air. In addition, WTE power, as an alternative to coal, prevents the release of nearly 25,000 tons of nitrogen oxides and 5,000 tons of volatile organic compounds per year.

Issue #10 – Pay as You Throw

Statement of Issue: Currently, the County charges the same amount to each household for waste collection and disposal services, no matter how much waste a household produces. This is in contrast to most County services, for which citizens pay more for a service the more they use that service. **Should the County consider implementing a Pay-As-You-Throw (PAYT) pricing system for solid waste services offered to residential customers?**

Recommendations:

1) The County should conduct a detailed study of establishing a PAYT pricing system for single-family and duplex households in Arlington. Such a pricing system should be evaluated for adoption because:

- Such systems have been adopted by thousands of municipalities, covering an estimated 20% of the U.S. population.
- Adoption of such systems has been found to reduce solid waste volume by 15% or more in other municipalities.
- If the County adopts the future recycling rate goals of 40% and 50% put forward elsewhere in this report, it would be extremely difficult to meet those goals without pricing incentives such as those in PAYT systems.
- Projections indicate that the County would not come close to violating its "put-or-pay" contract with its Waste-to-Energy (WTE) facility under such a system.
- It would be more equitable to charge residents more if they make more use of County solid waste services.

Background:

- Arlington County is a progressive community where sustainability and innovation are both pursued and expected. This is clear through statements made by the elected Board and County Manager, as well as inquiries received from concerned citizens.
- The County is striving to meet a proposed goal of 40% recycling rate by 2009 and 50% recycling rate by 2014, along with a reduction of solid waste generated to 4.3 pounds per person per day. Implementing a pricing structure for solid waste services that is based on how much one generates will help the County achieve these goals and more, while at the same time rewarding citizens that choose to reduce waste.
- Beyond the pressures and expectations above, a capacity issue at the WTE Facility may force the County to implement a more aggressive waste reduction strategy. Implementing PAYT would reverse the pattern of increased generation and extend the life of the WTE Facility at its current capacity.
- A 2002 report by the Reason Public Policy Institute states that jurisdictions implementing PAYT can expect to see reductions of more than 15% in tons of waste disposed. This comes from increases in recycling, yard-waste diversion, and waste reduction. This demonstrates the direct relationship between waste generation and cost of disposal.

Issue #11 – Compliance and Enforcement Methods

Statement of Issue: The Arlington County Solid Waste Division (SWD) currently utilizes various methods above to educate, motivate, and regulate its citizens and how they store, handle or dispose of various waste items. **What compliance methods (regulations, education, marketing, enforcement, incentives) would improve our current and proposed (future) solid waste programs?**

Recommendations:

- 1) The County should implement a hybrid approach to compliance, including regulatory, financial, and educational methods.
- 2) The County should move towards the use of civil penalties (i.e., tickets) as a compliance method. Under the civil penalty system, the County would issue warnings against the non-compliant party before a civil penalty is imposed and they are summoned to court. The County should amend the County code to incorporate the use of civil penalties as a compliance method.
- 3) The County should focus on education and outreach as a compliance method, particularly in the multi-family, commercial, and institutional sectors. Outreach materials should be more energetic and engaging. They should also be multilingual and/or use universal symbols or other graphic presentations.
- 4) The County should establish performance standards for multi-family and commercial/institutional properties.
- 5) The County should increase program funding and staff resources in order to implement these recommendations. Funding should be adequate to attract and retain high quality staff, and to provide opportunities for staff development.

Background:

- The County currently utilizes various methods above to educate, motivate, and regulate its citizens and how they store, handle or dispose of various waste items.
- The County currently distributes a number of informational pieces about its programs. Brochures, press releases, paid ads, newsletter articles, a department website, County events, and more, are all used to inform citizens about our services. County staff does receive some feedback from citizens on the efficacy of a few of the promotions; however, most are not measured in that way.
- The County does have specific regulations in the County code relating to proper setout of materials, storage of the refuse cart, specific recycling requirements for various groups, and more. Some of the requirements in the code are clearly being followed; however, there may be others that do not receive enough attention.
- The County is striving to meet a proposed goal of 40% recycling rate by 2009 and 50% recycling rate by 2014, along with a reduction of solid waste generated to 4.3 pounds per person per day. Modified or additional compliance methods may be required to meet these goals.

Issue #12 – Future Technological and Regulatory Impacts

Statement of Issue: The County currently meets or exceeds all state and federal regulations pertaining to its management of solid waste and supports specific legislative initiatives that are intended to improve the natural environment. The County also utilizes state of the art Waste-to-Energy (WTE) technology as part of its integrated solid waste management strategy. **How will technological and potential state and federal regulatory changes impact the County’s solid waste programs?**

Recommendations:

- 1) The County should monitor closely the regional strategies concerning air quality and ash disposal, evaluate opportunities to lower NOx levels, and seek to maximize the performance of the WTE facility.
- 2) The County should participate in the legislative process to influence the development of waste disposal surcharges and the use of any resulting revenues. The County should support landfill disposal surcharges with resulting revenues being used for environmental purposes.
- 3) The County should participate in the legislative process to encourage the development and passage of flow control authority for local jurisdictions. As per the issue on funding solid waste programs in Arlington, establishing economic flow control through franchising or the use of an environmental investment fee would negate the need for flow control authority.
- 4) The County should support the development of product stewardship and recycling laws (including Environmentally Preferable Purchasing regulations), along with any legislative initiatives that improve waste reduction.
- 5) The County should monitor innovations in recycling and disposal technology to anticipate how they will affect regulatory programs and the County’s waste management options.
- 6) The County should participate regionally in the development of disposal, recycling, and processing options for Construction and Demolition (C&D) wastes.
- 7) Arlington County should continue treating the biosolids resulting from the County wastewater treatment process to Class B standards. The County should continue to land-apply these biosolids. Lastly, the County should continue investigating new and existing technologies to treat its biosolids to Class A standards, as Class A material can be land-applied in more locations with fewer restrictions.

Background:

- The state and federal governments have set minimum regulatory standards for communities to meet in the provision of solid waste management needs, including the collecting and handling, transportation, and disposal of wastes, and for various other community waste management needs.

- The WTE Facility meets and exceeds all state and federal air quality requirements, which are stiffer for WTE facilities than for coal-fired and other energy groups. Notwithstanding the WTE Facility's excellent performance and compliance with all air regulatory limits, it is located in a metropolitan region that is in non-attainment for ozone and does have NOx emissions, which contribute to the region's non-attainment status. As the region works to meet air quality mandates, the WTE facility may be highlighted as a point source and required to meet new standards.
- Many states use waste disposal surcharges to fund environmental and solid waste management programs. The Virginia General Assembly has considered (but not chosen) this option several times in recent years. Surcharge recommendations are typically for landfill disposal only, but often include WTE plants. A waste disposal surcharge on landfills would create a market pricing advantage for WTE plants. The most contentious issues with disposal surcharges have been about who would receive the funds and for what purposes.
- Several bills have been introduced to Congress concerning granting states and localities the ability to establish flow control regulations. Flow control is the ability to direct waste generated in a locality to a particular facility, or to require that waste generated outside of a locality not come into the locality. The ability to control the importation of waste may result in limiting imports and the conservation of landfill capacity in the state. The ability to establish local flow control would give a locality the ability to charge tip fees that recovery the full costs of related solid waste management programs. A side effect of import limits might be a lowering of disposal prices regionally that might hurt the WTE facility's ability to compete.
- There is a national debate concerning the obligation of manufacturers to take into consideration in the development and manufacture of products, the ability to re-use, recycle, or remanufacture the products at the end of their useful life. This obligation of manufacturers is often envisioned as including the return of the product to the manufacturer for reclamation or processing. Several states and Congress are considering establishing requirements for requiring various forms of product stewardship, particularly in the electronics industry.
- The Northern Virginia Regional Commission issued during September 2003 a report on regional disposal capacity for C&D waste. Based on current capacity available and waste generation rates, the combined remaining capacity for the region will be consumed in less than 5 years. While capacity "down state" is available, the potential impact of adding significant haul distances for 2.84 million tons per year of waste will impact regional C&D disposal costs and will negatively affect regional air quality.
- The biosolids resulting from Arlington County's wastewater treatment process are treated to a Class B standard, which means that the biosolids contain small amounts of trace metals and organic compounds. Class B biosolids are very beneficial to land reclamation and provide valuable nutrients for secondary feed crops. These biosolids are land applied on permitted sites throughout rural Virginia and Maryland. Land-

application is the most beneficial manner of returning the nutrients and organic material from biosolids to the soil. Biosolids are transported and applied at approved farm sites by a contracted service. The County is also investigating new and existing technologies to treat its biosolids to a Class A standard. The Class A material can be land-applied in more locations with fewer restrictions. Arlington will continue trials over the next two to three years to determine which technology may work best for the County.

[This page intentionally left blank]

Appendix H
Public Hearing Summary
June 12, 2004

1. Conrad Mehan, Potomac Disposal Services

Mr. Mehan expressed serious concern about the SWMP, particularly the proposed five-year notice of the intent to implement solid waste franchising and the fact that the County proposes to give the notice before conducting a feasibility study. He discussed the implications of franchising on the hauler community. Mr. Mehan expressed concern about the stakeholder process for the SWMP, including the fact that the SWMP was not available to the public until May 25, 2004 and that during the stakeholder meetings held August - November 2003, it was never documented that franchising would be part of the SWMP, even though the minutes for the October 20, 2003, Solid Waste Committee meeting include a recommendation to implement franchising. Mr. Mehan also raised the issue of the environmental impacts of the Plan, and stated that the Plan is a revenue policy not an environmental policy.

2. Eugene Suslowicz, Waste Management

Mr. Suslowicz indicated that Waste Management is the largest solid waste management company in North America. As a result, solid waste franchising will not put them out of business. However, it could severely impact their local national customers. Mr. Suslowicz expressed concern about the SWMP development process, including both stakeholder involvement and the County's preliminary research on franchising. He does not believe that franchising will necessarily increase routing efficiency, citing issues of increased routing density, traffic patterns, and safety. Mr. Suslowicz requested that the County Board strike the language from the SWMP referring to the five-year notice, and recommended that the County form task force of stakeholders to examine feasibility of franchising.

3. Peter Crane, AAA Refuse and Recycling

Mr. Crane expressed concern that the five-year notice of intent to implement franchising would eliminate the current competitive marketplace and would cause the business community to lose its freedom of choice. He stressed that commercial solid waste collection in highly urban environment involves hundreds of schedules and equipment variations; it is not as simple as the service provided to the residential sector. Mr. Crane requested that the five-year notice be removed from the Plan, and stated that a task force be established so that all stakeholders can work together.

4. John Antonelli, citizen

Mr. Antonelli indicated that while he does not support an environmental investment fee (which he thinks sounds like "pay as you throw" pricing), he does support franchising. Due to the potential for reduced costs and reduced truck traffic, the County should pursue franchising.

5. JoAnn McCoy, Champion Services

Ms. McCoy indicated that she is the Director of Business Development of a small minority-owned business, and that Arlington has typically been proactive in efforts to work with such businesses. She raised three concerns about the SWMP: (1) private haulers were not included in the SWMP development process, even though they were identified by the County as stakeholders; (2) the franchising initiative proposed in the SWMP could cause the eradication of small businesses (Ms. McCoy indicated that her company lost 32% of its residential business when the five-year notice was given to the residential community, even though she was promised a place at the table during these decisions); and (3) her size company cannot compete with larger solid waste management companies for contracts. Ms. McCoy indicated that Arlington should not approve the SWMP without small minority- or women-owned business participation.

6. Robert Atkins, citizen

Mr. Atkins indicated that the SWMP is sufficient to be submitted to [the state] by July 1, 2004. He indicated that he supports franchising, and reiterated that giving the five-year notice does not mean that franchising will be implemented. Mr. Atkins indicated that while he supports the proposed environmental investment fee feasibility study, he does not think that it would be useful. Mr. Atkins also raised the issue of the WTE Facility and whether it will meet the County's needs for the next 20 years without major capital improvements while continuing to meet all state and federal regulations; he recommended that the County study this as part of the Plan process. Lastly, Mr. Atkins also recommended that the County study demographics as part of the Plan process.

7. Carlos Stern, Solid Waste Committee and Arlingtonians for a Clean Environment

Mr. Stern indicated that he was disappointed to hear that haulers feel they were not involved, and added that the Solid Waste Committee would like haulers to participate. Mr. Stern is in favor of the SWMP, and emphasized that it is a planning document, not an action document.

[This page intentionally left blank]

Appendix I

**Staff Response to Public Comments at Public Hearing
June 12, 2004**

1. Conrad Mehan, Potomac Disposal Services

Mr. Mehan expressed serious concern about the SWMP, particularly the proposed five-year notice of the intent to implement solid waste franchising and the fact that the County proposes to give the notice before conducting a feasibility study. He discussed the implications of franchising on the hauler community. Mr. Mehan expressed concern about the stakeholder process for the SWMP, including the fact that the SWMP was not available to the public until May 25, 2004 and that during the stakeholder meetings held August - November 2003, it was never documented that franchising would be part of the SWMP, even though the minutes for the October 20, 2003, Solid Waste Committee meeting include a recommendation to implement franchising. Mr. Mehan also raised the issue of the environmental impacts of the Plan, and stated that the Plan is a revenue policy not an environmental policy.

County Response:

The County would like to thank Mr. Mehan for taking the time to review and comment on the SWMP.

In response to Mr. Mehan's comment about the fact that the County proposes to give the five-year notice before conducting a feasibility study, the County would like to clarify that giving the five-year notice does not obligate the County to implement franchising; rather, it gives the County the option to do so if a study deems it feasible. Note that the County has already done a preliminary feasibility and benchmarking study that led the County to include franchising as a key part of the SWMP; the County is now proposing to do a more detailed and comprehensive feasibility study.

Regarding Mr. Mehan's comment about the SWMP stakeholder process, the County would like to clarify that the County did not discuss franchising at the stakeholder meetings held in August – November 2003 because the Solid Waste Committee did not finalize and approve their recommendations for the SWMP until their November 12, 2003 meeting. Minutes from earlier meetings reflect discussions of franchising, not a final decision to recommend this initiative. As a result, it would have been premature for the County to discuss franchising with the private haulers at the October 30, 2003, stakeholder meeting with private haulers.

The County would also like to clarify that while the SWMP document did not become available to the public until May 25, 2004, the recommendations put forth by the Solid Waste Committee – including a recommendation to consider franchising – were approved by the larger Environment and Energy Conservation Commission (E2C2) at a public hearing on December 15, 2003. Members of the public were able to attend the hearing and receive a copy of the recommendations at this time.

The County would like to note that it intends to reach out to private haulers to encourage their participation in, and gather their input on, solid waste issues –

particularly the proposed franchising initiative. In order to give the State-mandated five-year notice of intent to begin franchising, the County is required to hold at least one public hearing. The County must provide at least forty-five days' written notice of the hearing, delivered by first class mail, to all private companies which provide the service in the locality, and must provide public notice of the hearing. After a public hearing, the County Board has the discretion to either approve or not approve the five-year notice. The County welcomes the public – including private haulers – to participate in the public hearing process.

2. Eugene Suslowicz, Waste Management

Mr. Suslowicz indicated that Waste Management is the largest solid waste management company in North America. As a result, solid waste franchising will not put them out of business. However, it could severely impact their local national customers. Mr. Suslowicz expressed concern about the SWMP development process, including both stakeholder involvement and the County's preliminary research on franchising. He does not believe that franchising will necessarily increase routing efficiency, citing issues of increased routing density, traffic patterns, and safety. Mr. Suslowicz requested that the County Board strike the language from the SWMP referring to the five-year notice, and recommended that the County form task force of stakeholders to examine feasibility of franchising.

County Response:

The County would like to thank Mr. Suslowicz for taking the time to review and comment on the SWMP.

In response to Mr. Suslowicz's comment about routing efficiency, the County would like to reiterate that while the County has already done a preliminary feasibility and benchmarking study that led it to include franchising as a key part of the Plan, it now proposes to conduct a detailed and more comprehensive study on the feasibility of implementing franchising in the County. Such a study would address all aspects of franchising, including routing efficiencies, traffic patterns, and safety issues.

The County would also like to note that it intends to reach out to private haulers to encourage their participation in, and gather their input on, solid waste issues – particularly the proposed franchising initiative. In order to give the State-mandated five-year notice of intent to begin franchising, the County is required to hold at least one public hearing. The County must provide at least forty-five days' written notice of the hearing, delivered by first class mail, to all private companies which provide the service in the locality, and must provide public notice of the hearing. After a public hearing, the County Board has the discretion to either approve or not approve the five-year notice. The County welcomes the public – including private haulers – to participate in the public hearing process.

3. Peter Crane, AAA Refuse and Recycling

Mr. Crane expressed concern that the five-year notice of intent to implement franchising would eliminate the current competitive marketplace and would cause the business community to lose its freedom of choice. He stressed that commercial solid waste collection in highly urban environment involves hundreds of schedules and equipment variations; it is not as simple as the service provided to the residential sector. Mr. Crane requested that the five-year notice be removed from the Plan, and stated that a task force be established so that all stakeholders can work together.

County Response:

The County would like to thank Mr. Crane for taking the time to review and comment on the SWMP.

In response to Mr. Crane’s comment about businesses losing freedom of choice, the County would like to clarify that it proposes to conduct a comprehensive study on the feasibility of implementing franchising in the County. Franchising can be implemented in a variety of ways. Note that the County has already done a preliminary feasibility and benchmarking study that led the County to include franchising as a key part of the SWMP; the County is now proposing to do a more detailed and comprehensive feasibility study.

The County would also like to note that it intends to reach out to private haulers to encourage their participation in, and gather their input on, solid waste issues – particularly the proposed franchising initiative. In order to give the State-mandated five-year notice of intent to begin franchising, the County is required to hold at least one public hearing. The County must provide at least forty-five days’ written notice of the hearing, delivered by first class mail, to all private companies which provide the service in the locality, and must provide public notice of the hearing. After a public hearing, the County Board has the discretion to either approve or not approve the five-year notice. The County welcomes the public – including private haulers – to participate in the public hearing process.

4. John Antonelli, citizen

Mr. Antonelli indicated that while he does not support an environmental investment fee (which he thinks sounds like “pay as you throw” pricing), he does support franchising. Due to the potential for reduced costs and reduced truck traffic, the County should pursue franchising.

County Response:

The County would like to thank Mr. Antonelli for taking the time to review and comment on the SWMP, and for supporting the proposed solid waste franchising initiative. The County would also like to reiterate that it proposes to conduct a comprehensive feasibility study on implementing an environmental investment fee to assess whether it is appropriate for Arlington County.

5. JoAnn McCoy, Champion Services

Ms. McCoy indicated that she is the Director of Business Development of a small minority-owned business, and that Arlington has typically been proactive in efforts to work with such businesses. She raised three concerns about the SWMP: (1) private haulers were not included in the SWMP development process, even though they were identified by the County as stakeholders; (2) the franchising initiative proposed in the SWMP could cause the eradication of small businesses (Ms. McCoy indicated that her company lost 32% of its residential business when the five-year notice was given to the residential community, even though she was promised a place at the table during these decisions); and (3) her size company cannot compete with larger solid waste management companies for contracts. Ms. McCoy indicated that Arlington should not approve the SWMP without small minority- or women-owned business participation.

County Response:

The County would like to thank Ms. McCoy for taking the time to review and comment on the SWMP.

The County recognizes that implementing franchising in Arlington County could negatively impact haulers conducting business in the County. However, franchising can be implemented in a variety of ways. Arlington County proposes to conduct a comprehensive feasibility study to assess (1) whether franchising should be implemented and (2) if so, how it should be implemented and administered to promote equitable pricing, routing efficiency, and better control over the County's waste stream. Note that the County has already done a preliminary feasibility and benchmarking study that led the County to include franchising as a key part of the SWMP; it now proposes to conduct a more detailed and comprehensive feasibility study.

The County would also like to note that it intends to reach out to private haulers to encourage their participation in, and gather their input on, solid waste issues – particularly the proposed franchising initiative. In particular, the County Board directed, and staff indicated their intent to insure, that small and minority businesses have input into the proposed feasibility studies. In order to give the State-mandated five-year notice of intent to begin franchising, the County is required to hold at least one public hearing. The County must provide at least forty-five days' written notice of the hearing, delivered by first class mail, to all private companies which provide the service in the locality, and must provide public notice of the hearing. After a public hearing, the County Board has the discretion to either approve or not approve the five-year notice. The County welcomes the public – including private haulers – to participate in the public hearing process.

The County would also like to clarify that it has provided refuse collection to single-family and duplex homes for many years. These services were provided using County crews until the 1990s, at which time the County began contracting out these services to the private sector. Refuse collection services are now

entirely contracted out to private contractors. Curbside recycling collection services have been provided by private contractors since they began in the early 1990s.

6. Robert Atkins, citizen

Mr. Atkins indicated that the SWMP is sufficient to be submitted to [the state] by July 1, 2004. He indicated that he supports franchising, and reiterated that giving the five-year notice does not mean that franchising will be implemented. Mr. Atkins indicated that while he supports the proposed environmental investment fee feasibility study, he does not think that it would be useful. Mr. Atkins also raised the issue of the WTE Facility and whether it will meet the County's needs for the next 20 years without major capital improvements while continuing to meet all state and federal regulations; he recommended that the County study this as part of the Plan process. Lastly, Mr. Atkins also recommended that the County study demographics as part of the Plan process.

County Response:

The County would like to thank Mr. Atkins for taking the time to review and comment on the SWMP.

In response to Mr. Atkin's comments, the County would like to clarify that implementation of franchising and an environmental investment fee are subject to feasibility studies, resource availability, and County Board approval. Note that the County has already done a preliminary feasibility and benchmarking study that led the County to include franchising as a key part of the SWMP; the County is now proposing to do a comprehensive, detailed feasibility study. The County also notes that it anticipates that the WTE Facility will continue to meet all state and federal regulations. The County will continue to periodically review its relationship with the WTE Facility.

7. Carlos Stern, Solid Waste Committee and Arlingtonians for a Clean Environment

Mr. Stern indicated that he was disappointed to hear that haulers feel they were not involved, and added that the Solid Waste Committee would like haulers to participate. Mr. Stern is in favor of the SWMP, and emphasized that it is a planning document, not an action document.

County Response:

The County would like to thank Mr. Stern, as a representative of Arlingtonians for a Clean Environment, for taking the time to review and comment on the SWMP.