

# Spotsylvania County Solid Waste Management Plan



Prepared For Compliance With 9 VAC 20-130-10

Benjamin L. Loveday, P.E.  
Director, Solid Waste Division  
Spotsylvania County  
600 Hudgins Road  
Fredericksburg, Va 22408

February 25<sup>th</sup>, 2015

***Five-Year Update***  
***Certification***

---

# County of Spotsylvania Founded 1721

## *Board of Supervisors*

GREG CEBULA  
ANN L. HEIDIG  
TIMOTHY J. McLAUGHLIN  
DAVID ROSS  
GARY F. SKINNER  
PAUL D. TRAMPE  
CHRIS YAKABOUSKI



## *Director of Utilities/Public Works* EDWARD PETROVITCH

600 HUDGINS RD  
FREDERICKSBURG, VIRGINIA 22408-4147  
OFFICE: (540) 507-7300  
FAX: (540) 898-3674

*Service, Integrity, Pride*

March 3, 2015

Spotsylvania County's Solid Waste Management Plan has been updated in compliance with Section 9 VAC-20-130-120.C. The Solid Waste Management Plan within this document is an updated version of the 2009/2010 Solid Waste Management Plan. The 2010/2015 plan has been updated by County Staff and updates submitted to the Virginia Department of Environmental Quality.

Any questions regarding this plan should be submitted to:

Spotsylvania County  
Division of Solid Waste  
600 Hudgins Road  
Fredericksburg, VA. 22408



MAR 17 2010

# COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY  
Street address: 629 East Main Street, Richmond, Virginia 23219  
Mailing address: P.O. Box 1105, Richmond, Virginia 23218  
TDD (804) 698-4021  
www.deq.virginia.gov

Douglas W. Domenech  
Secretary of Natural Resources

David K. Paylor  
Director

(804) 698-4000  
1-800-592-5482

March 15, 2010

Mr. Benjamin L. Loveday, P.E., Director  
Solid Waste Division  
Spotsylvania County  
600 Hudgins Rd.  
Fredericksburg, VA 22408-4147

**Subject: Spotsylvania County Solid Waste Management Plan Five-Year Update**

Dear Mr. Loveday:

This letter is to acknowledge the receipt of the Five-year Certification to the Solid Waste Management Plan for Spotsylvania County by the Department of Environmental Quality on March 11, 2010.

If you have any questions, please call me at (804) 698-4218.

Sincerely,

Daniel S. Gwinner  
Environmental Engineer Senior  
Waste Technical Support  
Waste Division

cc: Richard Doucette-VADEQ  
Sanjay Thirunagari-VADEQ

*County of Spotsylvania*  
*Founded 1721*

*Board of Supervisors*

HENRY CONNORS, JR.  
GARY A. JACKSON  
JERRY I. LOGAN  
EMMITT B. MARSHALL  
BENJAMIN T. PITTS  
GARY F. SKINNER  
THOMAS C. WADDY, JR.



*Director of Utilities*  
EDWARD PETROVITCH

600 HUDGINS RD  
FREDERICKSBURG, VIRGINIA 22408-4147  
OFFICE: (540) 507-7300  
FAX: (540) 898-3674

*Service, Integrity, Pride*

March 1, 2010

Spotsylvania County's Solid Waste Management Plan has been updated in compliance with Section 9 VAC-20-130-120.C. The Solid Waste Management Plan within this document is an updated version of the 2004/2005 Solid Waste Management Plan prepared by:

Draper Aden Associates  
2206 South Main Street  
Blacksburg, Virginia 24060  
540-552-0444

The 2009/2010 plan has been updated by County Staff and updates submitted to the Virginia Department of Environmental Quality. Any questions regarding this plan should be submitted to:

Spotsylvania County  
Division of Solid Waste  
600 Hudgins Road  
Fredericksburg, VA. 22408

## EXECUTIVE SUMMARY

The following solid waste management plan for Spotsylvania County, Virginia is submitted in accordance with 9 VAC 20-130-10 et seq. The County has no incorporated towns within its jurisdictional boundaries and is not part of a region. The County's solid waste program falls under the umbrella of Utilities/Public Works and consists of the following components:

***Refuse Collection*** - provides collection and hauling of refuse, sludge, and recyclables from the County's 13 convenience sites, schools, and waste water plants; and performs maintenance on refuse and recycling vehicles and equipment.

***Refuse Disposal*** - operates the County's only Sanitary landfill in an efficient manner, and ensures that it meets and complies with all County, State and Federal guidelines and regulations; maintains the County's four closed landfills in regard to post-closure care/maintenance, groundwater monitoring, and methane gas monitoring.

***Compost Operation*** – operated the County's compost facility in an efficient and responsible manner. The operation ensures that all County, State and Federal guidelines and regulations are met.

***Environmental Programs*** - provides residents the opportunity and means to protect and enhance their natural environment. Responsible for educating and encouraging residents to conserve natural resources and divert waste by implementing the following guidelines: source reduction, recycling, pollution control and energy/water conservation. Also responsible for promoting and educating the public in areas of source reduction, reuse, recycling, conservation, and waste-to-landfill diversion through recycling. The program is responsible for scheduling and tracking results of road cleanups with County personnel, Juvenile Community Service Program, Rappahannock Security Center, Adopt-A-Highway, community volunteers, Adult Services Program, and VDOT.

In addition to the day-to-day record keeping, the County documents their solid waste activities in several ways as follows:

- Annual reports to the Board of Supervisors indicating how the goals and objectives of the program have been met.
- Periodic updates presented to the Board of Supervisors as requested.
- Annual submittal by March 31 of each year of the Waste Information and Assessment Report (Form 50-25) to DEQ.
- Annual submittal by April 30 of each year the Recycling Rate Report (Form 50-30) to DEQ.
- Annual submittal to DEQ usually by December of each year, of the update for financial assurance.

All these reports, updates, and DEQ submittals as well as the background information are kept in the central archive (files) of the solid waste program located at 600 Hudgins Road, Fredericksburg, Virginia.

The Director of DEQ receives copies of the appropriate information through the following sources:

- Direct submittal to DEQ of Form 50-25 (Waste Assessment) and Form 50-30 (Recycling).
- New permit requests.
- Permit amendments.
- Updates to the solid waste management plan.

The following table summarizes important key elements of the County’s existing program:

**TABLE 1  
KEY ELEMENTS  
EXISTING SOLID WASTE PROGRAM**

ELEMENT	DESCRIPTION	COMMENTS
Collection	Responsible for collection from the following entities: <ul style="list-style-type: none"> <li>• 13 convenience sites</li> <li>• Schools</li> <li>• Wastewater treatment plants (sludge)</li> </ul> There are a number of private collection companies working in the County collecting from the commercial, industrial and some residential sectors.	A total of 63,812.07 tons of material was collected through the County’s collection program.
Disposal	<ul style="list-style-type: none"> <li>• Permitted landfill – Permit No. 547.</li> <li>• Estimated date of closure of Phase 1 is 2023. Actual fill date is 2022.</li> <li>• Estimated life of remaining phases is approximately 125 years. These phases are not yet designed or permitted.</li> </ul>	A total of 135,792 tons of waste materials were delivered to the Livingston facility in 2013 of which 101,523 tons were landfilled.
Recycling	<ul style="list-style-type: none"> <li>• Operates 13 drop off sites at the collection convenience centers.</li> <li>• Collects single stream (newspaper, corrugated cardboard, magazines, phone books, aluminum, glass bottles and jars, plastic #1 to #7), yard waste, antifreeze, used motor oil, propane tanks, and appliances.</li> <li>• Promotes recycling and litter control through an award winning public education program.</li> </ul>	County achieved a recycling rate of 42% in 2014.
Composting	<ul style="list-style-type: none"> <li>• Composts sewage sludge and mulched yard waste.</li> </ul>	Composted 21,545 tons of sewage sludge and 23,873 tons of yard waste in 2013.

ELEMENT	DESCRIPTION	COMMENTS
Litter Control	<ul style="list-style-type: none"> <li>• Uses multiple programs to clean up litter including:               <ul style="list-style-type: none"> <li>• Juvenile Community Service</li> <li>• Rappahannock Security Center</li> <li>• Adopt-A-Highway</li> <li>• VDOT</li> <li>• Volunteers</li> <li>• County Personnel</li> </ul> </li> </ul>	

Even with an extensive integrated solid waste management system as outlined above already in place, the County continues to try to improve their program. Goals for the program as outlined through the FY 2016 budget summary include the following:

**Overall - Goals and Objectives:**

- ◆ Construct Cell 6 of the Livingston Landfill
- ◆ Implement a larger landfill compactor and GPS monitoring system to increase landfill utilization factors.
- ◆ Install at grade compactors for single stream recycling at 7 additional convenience centers. Currently single stream collected in 6 yard front load containers.
- ◆ Develop a leaf and grass composting program located at the Livingston Landfill to increase diversion.
- ◆ Secure additional competitive state grants to fund additional environmental education programs
- ◆ Maintain markets and create a broader customer base for Livingston's Blend, which will create additional revenue.

# *Section 1.0*

---

## *Introduction*

## **1.0 INTRODUCTION**

### **1.1 Legislation**

The following solid waste management plan has been prepared in accordance with the Virginia Waste Management Board's, Regulations for Solid Waste Management Planning, Amendment 1, 9 VAC 20-130-10 et seq., effective date August 1, 2001.

### **1.2 Authority (9 VAC 20-130-20)**

The regulations were promulgated pursuant to Chapter 14 (Sec.10.1-1400 et seq. and specifically Sections 10.1-1402, 10.1-1411 and 10.1-1413 of Title 10.1 of the Code of Virginia which authorized the Virginia Waste Management Board to promulgate and enforce such regulations as may be necessary to carry out its duties and power, and the intent of the Virginia Waste Management Act and the federal acts.

### **1.3 Purpose (9 VAC 20-130-40)**

The purpose of the regulations as generally stated in 9 VAC 20-130-40 and elsewhere in the regulations is to:

1. Establish minimum solid waste management standards and planning requirements for protection of public health, public safety, the environment, and natural resources throughout the Commonwealth;
2. Require the development of a comprehensive and integrated solid waste management plan that addresses all components of the solid waste hierarchy established by the United States Environmental Protection Agency (EPA) as embraced by the Commonwealth as follows:
  - ◆ Source Reduction (most desirable activity)
  - ◆ Reuse
  - ◆ Recycling
  - ◆ Resource Recovery (waste-to-energy)
  - ◆ Incineration
  - ◆ Landfilling (least desirable activity)
3. Promote local and regional planning that provides for environmentally sound and compatible solid waste management with the most effective and efficient use of available resources;
4. Establish procedures and rules for designation of regional boundaries for solid waste management plans;
5. Establish state, local government, or regional responsibility for meeting and maintaining the minimum recycling rates of 25%;
6. Establish the requirement to withhold permits for failure to comply with the regulations;
7. Provide a method to request reasonable variance or exemptions from the regulations;
8. Provide for reporting and assessment of solid waste management in the Commonwealth.

#### **1.4 Planning Area**

The planning area for this solid waste management plan is Spotsylvania County. The County is not part of a region and does not have any incorporated towns within its boundary. See Figure 1 for a vicinity map indicating the location of the County within Virginia. See Figure 2 for a more detailed map of the County.

#### **1.5 Planning Period**

The planning period for this solid waste management plan is 20 years from 2015 – 2035.

## *Section 2.0*

---

### *Background Information*

## **2.0 BACKGROUND INFORMATION**

To provide background to the discussions contained in this solid waste management plan, a discussion of the status of solid waste management nationally and an overview of the key points of the County's original Solid Waste Management Plan dated May 15, 1991, are being provided in this Section.

### **2.1 Status of solid waste management nationally**

This plan incorporates by reference the "Municipal Solid Waste in the United States: 2012 Facts and Figures Executive Summary," produced by the Office of Solid Waste and Emergency Response, United States Environmental Protection Agency (EPA). A full copy of this document has been included in the appendix. No unusual circumstances or waste characteristics exist within Spotsylvania County that would supersede EPA's current waste characterization.

### **2.2 Highlights from original solid waste plan (1991)**

The original solid waste management plan for Spotsylvania County was prepared for the County by Draper Aden Associates and dated May 15, 1991. To project into the future, it is important to understand the past history of the solid waste program of the County. The following sections provide highlights from the original plan.

#### *2.2.1 Waste generation projections*

In 1991, the County was generating approximately 136 tons per day, which equated to 4.7 pounds per person per day for the total waste stream or 4.0 pounds per person per day exclusive of sludge, construction waste or business waste. The County was anticipating a population growth of 2-5% (the higher growth rate projected for the early 1990's with the lower growth rate projected for the early 2000's), and, based on national averages anticipated an increase in waste per person of 1.08%.

In 2013 the following data was observed:

- Total received at facility                      372 tpd (7)
- Total landfilled at facility                    278 tpd (7)
- Per capita – total                                5.9 lbs/person/day
- Per capita – landfill                             4.4 lbs/person/day

### *System components (As of 1991)*

The solid waste management system consisted of the following components:

#### Collection:

- 23 green box sites consisting of a total of 204 green boxes
- 3 sites with 40 cy open top roll offs
- 1 site with two 40 cy compactors
- Private haulers contracted directly by the waste generator

#### Disposal

- Livingston Landfill No.1 (Unlined landfill); Permit 99
- Berkeley Landfill – CDD (Unlined landfill); Permit 100
- The County also had several other landfills recently closed including Chancellor Landfill and Lee Hill.

#### Recycling

- Seven drop off sites
- Collected (although not all the sites): glass, aluminum, newspapers, oil, batteries, white goods, tires and brush
- Recycling rate of County collection program was 4.8% with the mulch program included or 1.8% without the mulch program.
- When commercial/industrial recycling was added the recycling rate was identified to be 18.8%. This was the first time the County has cataloged the recycling in this sector so information was incomplete at the time of the plan.

### *2.2.3 Goals and Objectives*

Under the original plan, the following goals and objectives were identified: (Note that the current status is indicated in bold)

- **Collection**
  - Expansion of drop off system as necessary (**Drop off system was actually consolidated into fewer staffed convenience sites reflecting the current trend across the state in drop off collection**).
  - Consider privatization of the collection program (**County collects all roll-off and front load boxes from their collection sites.**)
  - Construct a transfer station in the Route 1 corridor to reduce the number of commercial haulers coming to the landfill and to provide a recycling staging area. (**Long range potential need for County generated refuse**).
- **Disposal:**
  - Complete the permitting on the new Livingston Number 2 landfill (**Completed**).
  - Install scales at the site (**Completed**).
  - Construct the first cell (**Completed. Cell 6 is planned for 2014 at this time.**)
  - Complete closure of other landfills (**Completed**).

- **Recycling**
  - Expand drop off system from 7 to 9 sites (**Completed. Recycling now is represented at 13 sites**).
  - Construct staging area at new transfer station (**Dropped from consideration**).
  - Expand the commercial and industrial reporting (**Completed**).
  - Continue and expand the yard waste mulching program (**Completed**).
  - Consider implementing a yard waste composting program (**Initiated in conjunction with sludge composting program**).
  - Consider franchising curbside collection of recyclables (**Dropped from consideration although private collectors could provide the service if requested by residences.**)
  - Encourage homeowner composting program. (**Plan to provide information and workshops on home composting efforts**)

## *Section 3.0*

---

### *Demographic Data*

### 3.0 DEMOGRAPHIC DATA

#### 3.1 Population

Spotsylvania County, consisting of 400 square miles, is located approximately 60 miles from Washington D.C., 46 miles from Richmond and 60 miles from Fairfax County. The County is bounded by Caroline County on the east, and Louisa and Hanover Counties along the North Anna River on the south, and Culpeper and Stafford Counties, as well as the City of Fredericksburg, on the north. Orange County resides to the west. See Figure 1 for the vicinity map and Figure 2 for a County map.

The 2014 population estimate of Spotsylvania County is approximately 127,000 people; this based on the results of the 2013 Census data and growth trends. Based on current County develop rates it can be expected that the County will see on average a minimum 2% per year growth rate of the planning period. Table 7 summarizes the population data to the year 2035 with an estimated population of 192,500.

**TABLE 7  
POPULATION ESTIMATE  
2014 - 2035**

<b>YEAR</b>	<b>POPULATION</b>	<b>RATE OF CHANGE (ANNUAL)</b>
2014	127,000	2.0%
2015	129,540	2.0%
2016	132,131	2.0%
2017	134,773	2.0%
2018	137,469	2.0%
2019	140,218	2.0%
2020	143,023	2.0%
2021	145,883	2.0%
2022	148,801	2.0%
2023	151,777	2.0%
2024	154,812	2.0%
2025	157,909	2.0%
2026	161,067	2.0%
2027	164,288	2.0%
2028	167,574	2.0%
2029	170,925	2.0%
2030	174,344	2.0%
2031	177,831	2.0%
2032	181,387	2.0%
2033	185,015	2.0%
2034	188,715	2.0%
2035	192,490	2.0%

Sources: U.S. Census Bureau; Weldon Cooper Center for Public Services; Spotsylvania County Planning Department

### **3.2 Land Use**

This plan incorporates by reference Chapter 2, Land Use of the 2013 Comprehensive Plan adopted on November 14, 2013. Chapter 2 is provided as an appendix to this document.

## *Section 4.0*

---

### *Waste Generation and Composition*

## **4.0 WASTE GENERATION AND COMPOSITION**

Spotsylvania County operates a landfill, composting facility and yard waste mulching program at the Livingston Landfill, which is located in the center of the County off of State Route 602, approximately 3 miles southeast of Brokenburg. Figure 2 illustrates the location of the landfill. All wastes entering this site regardless of the ultimately handling are weighed and recorded. For the solid waste plan, the integrated waste management system at the landfill will be referred to as “the facility” and a distinction will be made between the waste delivered and weighed at the facility (total tonnage) and the waste disposed of in the landfill (landfilled tonnage).

### **4.1 Existing Conditions (2014)**

The County tracks their waste in accordance with the categories outlined on DEQ form 50-25 which includes the following:

- Municipal Solid Waste
- Construction/Demolition/Debris
- Industrial Waste
- Regulated Medical Waste
- Vegetative/Yard Waste
- Incinerator Ash
- Sludge
- Tires
- White Goods
- Friable Asbestos
- Petroleum Contaminated Soil

The County also tracks the following materials under their recycling program which are identified as special wastes under 9 VAC 20-130-150.3:

- Waste Tires
- Used Oil
- Used Oil Filters
- Used Antifreeze
- Abandoned automobiles removed
- Batteries

The County does not receive any mining or agricultural waste and records land clearing debris as vegetative/yard waste.

Septage is not received at the landfill and is not tracked by the Waste Resources Division of the County.

Appendix 1 contains the DEQ Form 50-25 for Livingston Landfill Number 2 for 2013. Based on this information, the County received 135,793 tons of waste materials at the facility in the following categories (all values represent tons):

**TABLE 8  
DEQ FORM 50-25 SUMMARY  
2013**

<b>WASTE TYPE</b>	<b>RECEIVED</b>	<b>RECYCLED</b>	<b>COMPOSTED</b>	<b>LANDFILL</b>
<b>Municipal Solid Waste</b>	89,472	0	0	89,472
Construction/ demolition/ Debris	12,051	0	0	12,051
Industrial Waste	0	0	0	0
Vegetative/Yard Waste	11,207	0	11,207	0
Sludge	21,545	0	21,545	
Tires	231	231	0	0
White Goods	1286	1286	0	0
<b>TOTAL</b>	<b>135,793</b>	<b>2,248</b>	<b>19,408</b>	<b>51,652</b>
<b>% of Total Received</b>	<b>100%</b>	<b>1.1%</b>	<b>24.1%</b>	<b>74.8%</b>

## 4.2 Historical Waste Generation (2009 – 2014)

### 4.2.1 Total Tonnage Delivered

Table 9 summarizes the data submitted to DEQ on Form 50-25 from 2009 through 2014. The data represents total tonnage delivered to the facility and does not represent the tonnage landfilled.

**TABLE 9  
DEQ FORM 50-25 SUMMARY  
2009 – 2014**

Year	2009		2010		2011		2012		2013		2014 (est)	
	Tonnage	% Total	Tonnage	% Total	Tonnage	% Total						
Municipal Solid Waste	35,951	53.69%	35,327	52.37%	34,468	52.85%	35,631	49.95%	89,472	65.89%	100,000	66.33%
Construction/Demolition/Debris	5,228	7.81%	5,526	8.19%	5,048	7.74%	7,114	9.97%	12,051	8.87%	20,000	13.27%
Industrial Waste	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Vegetative/Yard Waste	6,072	9.07%	9,396	13.93%	8,796	13.49%	10,651	14.93%	11,207	8.25%	10,000	6.63%
Sludge	17,515	26.16%	15,392	22.82%	15,656	24.00%	16,319	22.88%	21,545	15.87%	19,500	12.94%
White Goods	1,802	2.69%	1,474	2.19%	866	1.33%	1,274	1.79%	1,286	0.95%	1,000	0.66%
Petroleum Contaminated Soil	0		0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Tires	389	0.58%	347	0.51%	389	0.60%	347	0.49%	231	0.17%	250	0.17%
<b>Total</b>	<b>66,956</b>		<b>67,461</b>		<b>65,221</b>		<b>71,335</b>		<b>135,793</b>		<b>150,750</b>	
<i>% Change</i>	-8.09%		0.75%		-3.43%		8.57%		47.47%		9.92%	

In 2012/2013 a substantial increase was observed due to an increase of commercial volume accepted at the Livingston Facility. This commercial volume was previously leaving the County for private sector landfills in adjoining regions. In addition it is anticipated that moderate waste growth will be observed in 2014 due to an increase in area economic activity and the facility capturing the majority of any waste leaving the County. Staff anticipates that the total annual tonnage managed will peak in 2014 with moderate growth in following years.

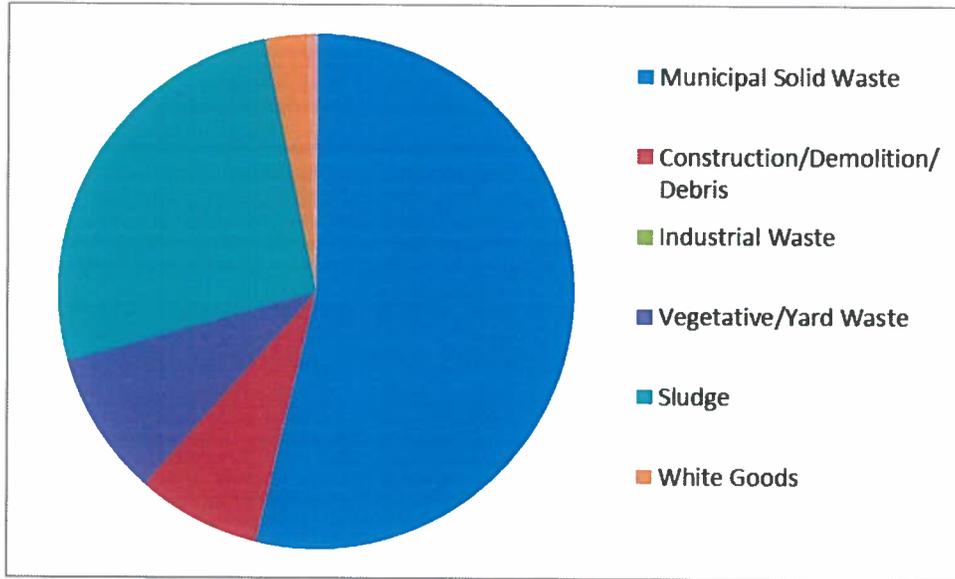
### 4.2.2 By Category of Waste

Table 9 also provides information on the historical trends by category of waste delivered. In their form DEQ 50-25, DEQ identifies 11 waste categories for tracking plus a category for other types of materials. Historically, the County has needed to only track six categories as follows:

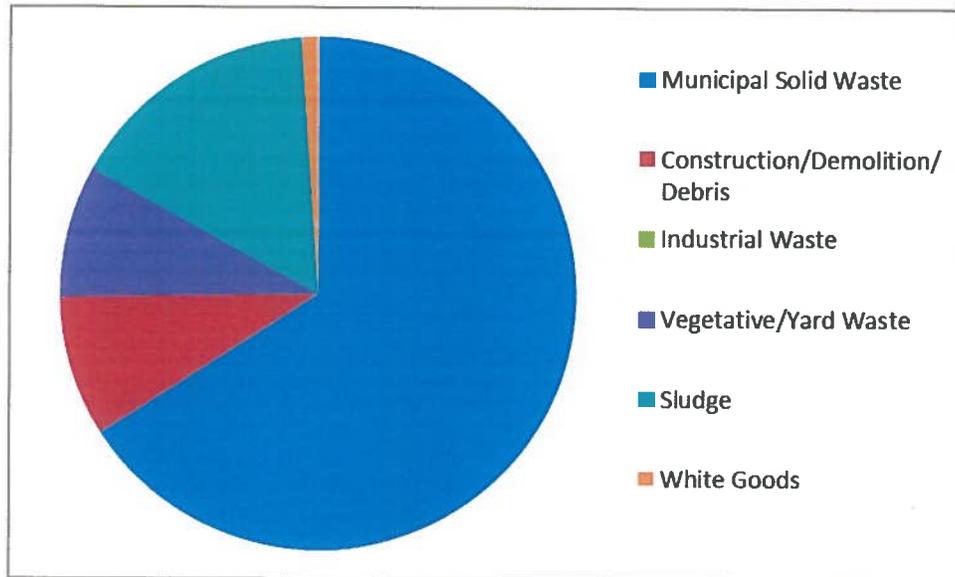
- Municipal Solid Waste (MSW)
- Construction/Demolition/Debris (CDD)
- Industrial Waste
- Vegetative/Yard Waste
- Sludge
- White Goods

The following pie diagrams illustrate the difference in the waste stream composition for the years 2009 and 2013:

**FIGURE 5**  
**WASTE STREAM COMPOSITION**  
**2009**



**FIGURE 6**  
**WASTE STREAM COMPOSITION**  
**2013**



In 2009, MSW represented 54% of the total waste stream; 2013 number indicates that the MSW accounts for 66% of the waste delivered. Upon review of Table 9 it can be

determined that the MSW amount has been increasing at the facility; this is due to increased commercial use of the Livingston Facility

#### 4.2.3 Tonnage Landfilled

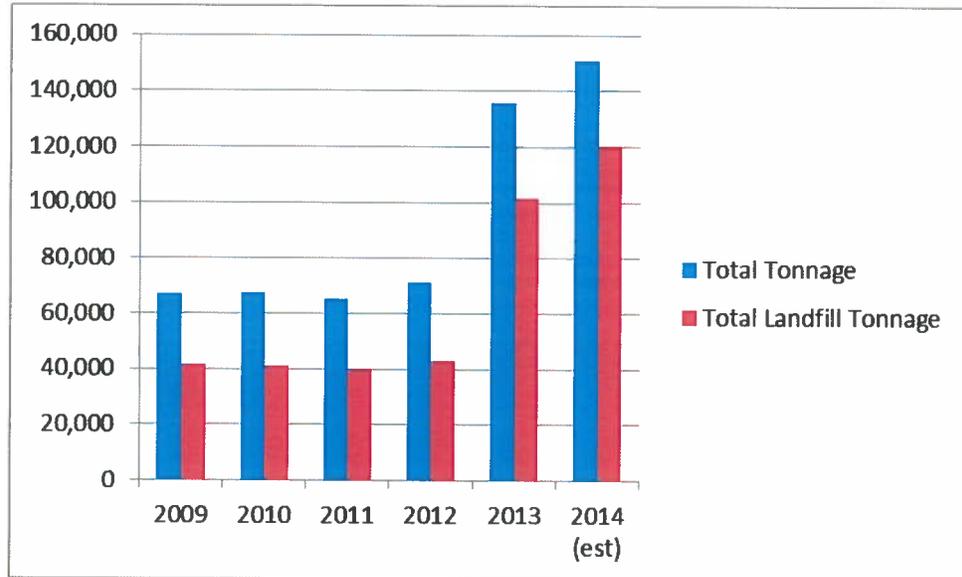
Table 10 summarizes the data from the DEQ 50-25 forms for the total tonnage delivered to the facility and the total tonnage landfilled. One hundred percent of the MSW, construction debris, and industrial waste was landfilled for the years indicated. Currently, none of the yard waste is landfilled and varying amounts of sludge are landfilled.

**TABLE 10  
TOTAL TONNAGE DELIVERED VS. TOTAL TONNAGE LANDFILLED  
2009 – 2013**

<b>Year</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014 (est)</b>
<b>Material</b>	<b>Tonnage</b>	<b>Tonnage</b>	<b>Tonnage</b>	<b>Tonnage</b>	<b>Tonnage</b>	<b>Tonnage</b>
Municipal Solid Waste	35,951	35,327	34,468	35,631	89,472	100,000
Construction/Demolition/	5,228	5,526	5,048	7,114	12,051	20,000
Industrial Waste	0	0	0	0	0	0
Vegetative/Yard Waste	6,072	9,396	8,796	10,651	11,207	10,000
Sludge	17,515	15,392	15,656	16,319	21,545	19,500
White Goods	1,802	1,474	866	1,274	1,286	1,000
Petroleum Contaminated Soil	0	0	0	0	0	0
Tires	389	347	389	347	231	250
<b>Total Tonnage</b>	<b>66,956</b>	<b>67,461</b>	<b>65,221</b>	<b>71,335</b>	<b>135,793</b>	<b>150,750</b>
<b>Total Landfill Tonnage</b>	<b>41,179</b>	<b>40,853</b>	<b>39,516</b>	<b>42,745</b>	<b>101,523</b>	<b>120,000</b>
<b>Percent Landfilled</b>	<b>38.08%</b>	<b>37.72%</b>	<b>37.73%</b>	<b>37.47%</b>	<b>42.78%</b>	<b>44.32%</b>

The bar graph on the following page illustrates the data:

**FIGURE 7  
LANDFILLED WASTE vs. TONNAGE DELIVERED**



Review of this data indicates the observed growth in 2013 and 2014 due to the increase in commercial use of the facility. This will be an important consideration when projecting the tonnages over the 20-year planning period relative to disposal capacity.

The data also provides useful information necessary to evaluate the annual change in the tonnage of landfilled waste as consideration is given to the changes expected over the 20-year planning period. Using the data from Table 9, the following annual changes were noted between 2009 and 2014:

**TABLE 11  
ANNUAL CHANGE IN LANDFILLED WASTES  
LIVINGSTON LANDFILL NO. 2**

YEAR	ANNUAL CHANGE
2009-2010	(-0.4%)
2010-2011	0.1%
2011-2012	(-.3%)
2012-2013	5.1%
2013-2014	1.5%
Average	1.25%

#### 4.2.4 Pounds per person per day

The population data from Section 3.1 can be coupled with the tonnage data reported above to consider the waste stream as average pounds per person per day. The following table summarizes the data both for the total municipal solid waste tonnage received at the facility:

**TABLE 12  
EVALUATION OF WASTE TONNAGE  
AS POUNDS PER PERSON PER DAY**

<b>YEAR</b>	<b>POPULATION</b>	<b>TOTAL MSW TONNAGE RECEIVED</b>	<b>POUNDS PER PERSON PER DAY</b>
2009	121,000	35,951	1.6280312
2010	122,400	35,327	1.5814755
2011	124,000	34,468	1.5231109
2012	125,600	35,631	1.5544455
2013	126,300	89,472	3.8816907
2014	127,000	100,000	4.3145292
Average	124,383	55,142	2.4291454

The data indicates that based on population the County Solid Waste facilities were managing a small portion of the County waste stream in 2009 through 2012. In 2013 and 2014 with the increased commercial use of the facility the pounds per person per day increased to numbers that would be expected based on County population and EPA estimates. To put these values in perspective, the national average for MSW generation as reported by the EPA for the year 2012 was 4.38 pounds per person per day. MSW as defined by the EPA does not include CDD waste, sludge or industrial wastes.

#### 4.3 Projected Waste Generation Rates Relative to Disposal Needs

It is important to consider the various ways in which the waste generation within the County may change to anticipate future needs relative to disposal and collection. Because the County owns their own landfill with considerable room for expansion and because the County provides only residential collection through convenience sites, they have significant control over their system and future planning. With complete ownership and control of their residential program, the County can make adjustments as necessary in their solid waste disposal system if the character or quantity of the waste stream changes over time.

#### 4.3.1 Population Growth Rate

The Spotsylvania County Planning Department currently estimates the County will see a 2% annual population increase over the planning period. This number is subject to change due to economic conditions and other factors that may change over the 20 year period.

#### 4.3.2 Commercial and industrial growth

As Section 3.5 indicated, the County is considered to be pro-business and continues to encourage growth in the commercial and industrial sectors. In addition, given the projected population increase, the commercial sector will need to grow to provide the necessary services for the County's citizens. It is impossible to predict the actual growth rate in this sector's waste because there is limited information currently available on the actual tonnage of commercial waste generated within the County. The County records the commercial waste as MSW at the landfill, which also includes all the residential collection, and hence a historical perspective cannot be developed. In addition, a significant amount of the commercial waste is hauled outside of the County for disposal.

#### 4.3.3 Annual change in MSW tonnages as noted on DEQ Form 50-25

Changes in the MSW component of the County's waste stream as identified under the category "Municipal Solid Waste" on Form 50-25, can be summarized as follows:

**TABLE 14  
ANNUAL CHANGES IN MSW WASTE COMPONENT**

<b>YEAR</b>	<b>TOTAL MSW TONNAGE</b>	<b>PERCENT CHANGE</b>
2009	35,951	-
2010	35,327	-1.7%
2011	34,468	-2.4%
2012	35,631	3.4%
2013	89,472	151.1%
2014	100,000	11.8%

The MSW component above includes the residential, commercial and institutional waste delivered to the facility and does not include the CDD materials, industrial waste or sludge that is also landfilled. The County's decreased rate reflects the economic downturn and the continued trend for private haulers to utilize other facilities. The significant increase in 2013 was due to the increased use of the facility by commercial haulers.

#### 4.3.4 Annual change in total tonnage with population considered

Another way to consider the annual change in solid waste is to couple the population with the total tonnage delivered to the facility as determined in the calculation for pounds per person per day as follows:

**TABLE 15  
ANNUAL CHANGE  
POUNDS PER PERSON PER DAY  
TOTAL TONNAGE  
2009 - 2014**

<b>YEAR</b>	<b>POUNDS PER PERSON PER DAY</b>	<b>PERCENT CHANGE</b>
2009	1.63	-
2010	1.58	-2.9%
2011	1.52	-3.7%
2012	1.55	2.1%
2013	3.88	149.7%
2014	4.31	11.2%
Average	2.41	31.3%

Up until 2013 most of the refuse generated in the County was being diverted to private facilities. In 2013 the commercial tonnage returned to Spotsylvania County and the pounds per day reset to a number more in line with expectation. Based on the wide spread range of this data it would not be a reliable basis for projecting solid waste tonnages over the next 20 years.

#### *4.3.6 Annual change in sludge and yard waste*

It is not anticipated that significant increases in sludge will be forthcoming over the next 20 years. Yard waste will increase as residential areas of the County develop. With the completion of the Livingston Blend Compost Facility all sludge is diverted from the landfill waste stream. Additional composting programs planned for construction in 2016 will reduce the amount of vegetative waste (leave and grass) being placed in the landfill over the planning period. The composting and mulching operations will be enlarged as necessary and as funding is available to handle additional tonnage in these categories.

#### *4.3.7 Projected tonnages*

As stated at the beginning of this section, there is no single methodology to use to predict the future changes in the County's waste stream. It is obvious that the County will grow and that the waste stream (MSW) will grow at least as fast as the population. The County's planning department projects this growth to remain relatively moderate and

steady over the next 20 years. The following table compares the annual change in population from 2009 through 2014 with the change in MSW:

**TABLE 17  
COMPARISON OF ANNUAL RATE OF CHANGE  
POPULATION VS MSW**

YEAR	POPULATION ANNUAL RATE OF CHANGE (From Table 7)	MSW ANNUAL RATE OF CHANGE** (From Table 11)
2009 – 2010	8.7%	-1.7%
2010 – 2011	4.0%	-2.4%
2011 – 2012	2.5%	3.4%
2012 – 2013	1.2%	151.1%
2013 - 2014	0.70%	11.8%
Average	3.4%	33.4%

The 33.4% average increase in MSW identified in Table 17 is due to the County recapturing the commercial waste stream in 2013. Since the County has only seen 1 full year of actual data concerning the full commercial waste stream the MSW annual rate of change cannot be factored into the anticipated MSW growth rate.

Based on historical growth factors and the estimate continued population change of XX% it is recommended that a 3.0% growth factor be applied to the MSW component of the County's waste stream.

Relative to the commercial and industrial sector, it is also obvious that there will be growth in the commercial and industrial sectors to support the population growth, and that this growth will influence the future growth rate of the solid waste stream generated in the County. The MSW growth factor should be increased by 0.5% to compensate for potential commercial and industrial growth.

Thus for this report, a growth rate of 3.5% of the MSW waste is assumed. Sludge and vegetative/yard waste were assumed to remain relatively constant because their tonnages are not critical to the County's collection or disposal programs but are instead tied to the mulching and composting programs. In addition, the CDD and industrial components reported at the facility were assumed to remain relatively constant.

**TABLE 18  
ESTIMATED WASTE TONNAGE 2015-2035**

<b>Estimated rate of change for landfilled waste</b>		<b>3.50%</b>	<b>/year</b>	
<b>Estimated rate of change for other waste materials</b>		<b>0%</b>	<b>/year</b>	
<b>Population growth factor</b>		<b>2.00%</b>	<b>/year</b>	
<b>YEAR</b>	<b>MSW TONNAGE (100% landfilled) Sludge not included</b>	<b>CDD/Industrial TONNAGE (100% LANDFILLED)</b>	<b>TONS LANDFILLED PER DAY</b>	<b>POPULATION</b>
			<b>(7 DAYS PER WEEK)</b>	
<b>2015</b>	<b>100,000</b>	<b>20,000</b>	<b>329</b>	<b>127,000</b>
2016	103,500	20,000	338	130,175
2017	107,123	20,000	348	132,779
2018	110,872	20,000	359	135,434
2019	114,752	20,000	369	138,143
<b>2020</b>	<b>118,769</b>	<b>20,000</b>	<b>380</b>	<b>140,906</b>
2021	122,926	20,000	392	143,724
2022	127,228	20,000	403	146,598
2023	131,681	20,000	416	149,530
2024	136,290	20,000	428	152,521
<b>2025</b>	<b>141,060</b>	<b>20,000</b>	<b>441</b>	<b>155,571</b>
2026	145,997	20,000	455	158,683
2027	151,107	20,000	469	161,856
2028	156,396	20,000	483	165,093
2029	161,869	20,000	498	168,395
<b>2030</b>	<b>167,535</b>	<b>20,000</b>	<b>514</b>	<b>171,763</b>
2031	173,399	20,000	530	175,198
2032	179,468	20,000	546	178,702
2033	185,749	20,000	564	182,276
2034	192,250	20,000	582	185,922
<b>2035</b>	<b>198,979</b>	<b>20,000</b>	<b>600</b>	<b>189,640</b>
2036	205,943	20,000	619	193,433

#### 4.4 Waste Composition

The County does not receive significant quantities of unusual or special wastes or industrial wastes. Therefore its composition would be assumed to be similar to the national estimates discussed in Section 2.1.2.

## *Section 5.0*

---

### *Existing Solid Waste Management System*

## 5.0 EXISTING SOLID WASTE MANAGEMENT SYSTEM

The following section describes the major components of the County's current solid waste management system in existence in 2014.

### 5.1 Collection

#### 5.1.1 Residential collection

The County's collection system consists of 13 convenience sites. Figure 8 contained in Appendix 2 illustrate the locations of the sites. The County collects all the roll-off and front load dumpsters. The following tables indicate the operation and types of facilities available at each site and the tonnage collected during FY 2014:

**TABLE 21  
SUMMARY OF COLLECTION SITES  
STAFFING, SERVICING AND TONNAGE  
2013**

SITE	STAFFED (Y/N)	FY 2013 TONNAGE
The Barn	Y	Front load in 2013
Belmont	Y	1,593
Berkeley	Y	3,087
Chancellor	Y	28,036
Chewing Park	Y	Front load in 2013
Cole Hill Creek	Y	Front load in 2013
Lee Hill	Y	Front load
Livingston	Y	2,312
Marshall Park	Y	Front load
Mine Road	Y	Front load
Post Oak	Y	627
Todd's Tavern	Y	Front load in 2013
Wilderness	Y	1,593
Schools	N	1,651
Total Front Load	Y	8,401
Total Collected		47,300

The facilities noted are staffed seven days a week. Sites are open and staffed from 8:00AM – 6:00PM year round.

**TABLE 22  
SUMMARY OF COLLECTION SITES  
FACILITIES**

SITE	FACILITIES
The Barn	<p><b>General Household Refuse</b></p> <ul style="list-style-type: none"> <li>• 3 yard at-grade compactor</li> </ul> <p><b>Recycling</b></p> <ul style="list-style-type: none"> <li>• Single stream containers (various size)</li> <li>• One 550 gallon tank for oil recycling</li> </ul>
Belmont	<p><b>General Household Refuse</b></p> <ul style="list-style-type: none"> <li>• One Marathon 575 EHD/PC trash compactor</li> <li>• One - 40 cubic yard open top roll-off container for overflow</li> </ul> <p><b>Recycling</b></p> <ul style="list-style-type: none"> <li>• Single stream containers (various size)</li> <li>• One 550 gallon tank for oil recycling</li> </ul>
Berkeley	<p><b>General Household Refuse and Debris</b></p> <ul style="list-style-type: none"> <li>• One Marathon 575 HD/PC</li> <li>• Three - 40 cubic yard open top roll-off containers</li> </ul> <p><b>Recycling</b></p> <ul style="list-style-type: none"> <li>• Single stream containers (various size)</li> <li>• One 500 gallon tank for oil recycling</li> <li>• Wood waste is also collected at this site and transported to either Chancellor or Livingston for grinding</li> </ul>
Chancellor	<p><b>Refuse and Debris</b></p> <ul style="list-style-type: none"> <li>• Two Marathon 575HD/PC compactors, one 575HD compactor</li> <li>• Six open top - 40 cubic yard containers</li> </ul> <p><b>Recycling</b></p> <ul style="list-style-type: none"> <li>• Three 3 yard at-grade compactors for single stream</li> <li>• Two 500 gallon tanks for oil recycling</li> <li>• One 550 gallon tank for antifreeze collection</li> <li>• Collect refrigerators, freezers, and A/C units and extract the freon prior to disposal/recycling</li> <li>• Brush and wood products suitable for mulching are collected and processed with a Z tub grinder</li> </ul>
Chewning Park	<p><b>General Household Refuse</b></p> <ul style="list-style-type: none"> <li>• 3 yard at-grade compactor</li> </ul> <p><b>Recycling</b></p> <ul style="list-style-type: none"> <li>• Single stream containers (various size)</li> <li>• One 550 gallon tank for oil recycling</li> </ul>
Cole Hill Creek	<p><b>General Household Refuse</b></p> <ul style="list-style-type: none"> <li>• 3 yard at-grade compactor</li> </ul> <p><b>Recycling</b></p> <ul style="list-style-type: none"> <li>• Single stream containers (various size)</li> <li>• One 550 gallon tank for oil recycling.</li> </ul>

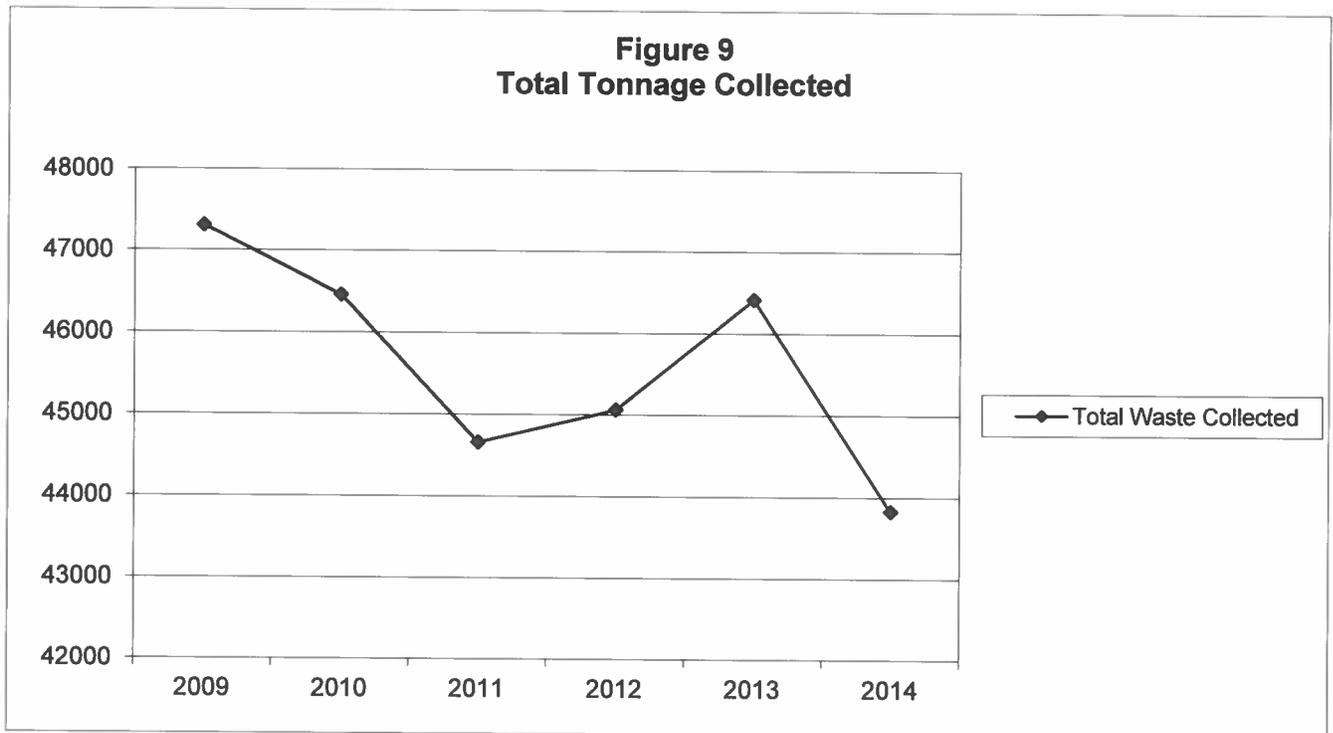
SITE	FACILITIES
Lee Hill	<p><b>General Household Refuse</b></p> <ul style="list-style-type: none"> <li>• 17 - six cubic yard dumpsters that are dumped on Mon., Wed., Fri., Sat., &amp; Sun.</li> </ul> <p><b>Recycling</b></p> <ul style="list-style-type: none"> <li>• Single stream containers (various size)</li> <li>• One 550 gallon tank for oil recycling</li> <li>• One 250 gallon tank for antifreeze recycling</li> </ul>
Livingston	<p><b>General Household Refuse and Debris</b></p> <ul style="list-style-type: none"> <li>• Four - 40 cubic yard open top containers</li> </ul> <p><b>Recycling</b></p> <ul style="list-style-type: none"> <li>• Single stream containers (various size)</li> <li>• One 500 gallon tank for oil recycling</li> <li>• Battery Collection</li> <li>• Propane Container Collection</li> </ul>
Marshall Park	<p><b>General Household Refuse</b></p> <ul style="list-style-type: none"> <li>• 21 - six cubic yard dumpsters that are dumped daily and twice daily on weekends and holidays</li> </ul> <p><b>Recycling</b></p> <ul style="list-style-type: none"> <li>• Single stream containers (various size)</li> <li>• One 550 gallon tank for oil recycling</li> </ul>
Mine Road	<p><b>General Household Refuse</b></p> <ul style="list-style-type: none"> <li>• 18 - six cubic yard dumpsters which are dumped daily and twice daily on weekends and holidays</li> <li>• A 40 cubic yard open top roll-off container is provided for overflow</li> </ul> <p><b>Recycling</b></p> <ul style="list-style-type: none"> <li>• Single stream containers (various size)</li> <li>• One 500 gallon tank for oil recycling</li> <li>• One 250 gallon tank for antifreeze</li> </ul>
Post Oak	<p><b>General Household Refuse</b></p> <ul style="list-style-type: none"> <li>• Three - 40 cubic yard open top containers</li> </ul> <p><b>Recycling</b></p> <ul style="list-style-type: none"> <li>• Single stream containers (various size)</li> <li>• One 550 gallon tank for oil recycling</li> </ul>
Todd's Tavern	<p><b>General Household Refuse</b></p> <ul style="list-style-type: none"> <li>• 3 yard At-grade compactor</li> </ul> <p><b>Recycling</b></p> <ul style="list-style-type: none"> <li>• Single stream containers (various size)</li> <li>• One 550 gallon tank for oil recycling</li> </ul>
Wilderness	<p><b>General Household Refuse</b></p> <ul style="list-style-type: none"> <li>• One Marathon 575 HD trash compactor</li> <li>• One - 40 cubic yard open top container for overflow</li> </ul> <p><b>Recycling</b></p> <ul style="list-style-type: none"> <li>• Single stream containers (various size)</li> <li>• One 550 gallon tank for oil recycling</li> </ul>

Table 23 summarizes the tonnage data for the sites since 2009. As this data indicates, the total tonnage collected from the sites has decreased by approximately 7.5% between 2009 and 2014. The table and graph represents MSW and C&D only, it does not include sludge collection. The following figure illustrates the increasing tonnages.

**TABLE 23  
COLLECTION TONNAGES  
2009 – 2014**

SITE	2009	2010	2011	2012	2013	2014
COUNTY COLLECTION	47305	46457	44657	45061	46415	43823

**FIGURE 9  
TOTAL WASTE COLLECTED FROM COUNTY SYSTEM**



Review of the above graphic indicates a drop in tonnage collected at the County Collection Centers between 2009 and 2014. This drop is the result of an increased number of private curbside collections programs in the County diverting waste from collections centers.

The following table provides data on the County collection for FY 2013:

**TABLE 24  
COUNTY COLLECTION  
TONNAGE BY SITE AS % OF COLLECTION  
FY 2013**

SITE	TONNAGE	% OF TOTAL COUNTY COLLECTION
Berkeley	3,088	6.7%
Chancellor	28,036	60.4%
Livingston	2,312	5.0%
Belmont	706	1.5%
Post Oak	627	1.4%
Wilderness	1,593	3.4%
Front Loader Sites	8,402	18.1%
Schools	1,652	3.6%
Total	46,416	100%

Front loader sites are Mine Road, Lee Hill, Todd's Tavern, Marshall Park, Cole Hill Creek, The Barn, Chewing Park.

As can be seen from this table, the Chancellor site represents over 60% of the total waste collected in the County system. This site receives heavy usage and has been expanded several times over its life.

#### *5.1.2 Commercial haulers*

There are a number of commercial haulers in the County who provide privatized collection to certain residential areas and to the commercial and industrial sectors. These private haulers are required to submit for inspection and license based on the size and number of trucks annually. The largest commercial hauler in the County as of 2014 was County Waste.

Commercial haulers are regulated under Chapter 19, Article II, Sections 19-26 through 19-32 and 19-51 through 19-57 of the County Code. Highlights of these sections are as follows:

- Only waste collected in the County may be brought to a County facility,
- Collections may be made only during daylight hours,
- Vehicles must be watertight and completely enclosed,
- Vehicles must be inspected by the County annually,
- Permit to collect is required,
- Application for permit requires the following information:
  - Area to be served within the County
  - Number of vehicles to be used in the business

- The size, weight, and other information concerning each vehicle to be used in the business
- License numbers for all vehicles

*5.1.3 Commercial and Industrial Collection*

The County does not provide collection for the commercial or industrial sector. This is contracted privately and hence records of the tonnages collected are not available. It is thought that a significant portion of this waste is hauled out of the County for disposal.

*5.1.4 Operations*

The collection program currently employees the following people:

Full – time employees	19
Part – time employees	5
Gate attendants (part time)	44

This information is provided as an example of the County’s staffing for the program. The plan will not be revised every time personnel change.

**5.2 Disposal**

*5.2.1 General Description*

The County owns and operates one sanitary landfill, the Livingston Landfill No. 2, Virginia DEQ (VDEQ) Permit 547. At one time the County owned and operated other facilities, which have now been closed and are under various post closure monitoring programs. Section 5.2.8 discusses these older landfills.

The Livingston Landfill No. 2 is located north of State Route 602 and east of Route 208, approximately 3 miles southeast of Brokenburg, in Spotsylvania County, Virginia. The site is the primary landfill for municipal solid waste generated within Spotsylvania County. The County owns 537.96 acres of which ultimately approximately 250 acres will be permitted as a solid waste landfill. Eighty-five (85) acres are currently permitted under VDEQ Permit Number 547 as Phase I. Phase I is adjacent to the closed Livingston Landfill No. 1. Figure 2 provides the location of the facility and Figure 10 in Appendix 2 illustrates the layout of the facility. The Part A permit application for the facility addressed the entire acreage. The Part B permit application addressed only the detailed design of Phase 1.

The permit for Livingston Landfill Number 2 was issued on January 5, 1993, and the permit has been amended 11 times.

The facility is permitted to accept up to 800 tons/day. Estimates in Table 25 indicate that the facility will not reach maximum daily disposal tonnage in this planning period.

*5.2.2 Materials permitted for acceptance at landfill*

In accordance with the Virginia Solid Waste Management Regulations, the landfill may accept the following wastes subject to permit specific limitations:

- a. Agricultural waste
- b. Ashes and air pollution control residues that are not classified as hazardous waste. Incinerator and air pollution control residues should be incorporated into the working face and covered at such intervals as necessary to prevent them from becoming airborne.
- c. Commercial waste
- d. Compost
- e. Construction waste
- f. Debris
- g. Demolition waste
- h. Discarded material
- i. Garbage
- j. Household waste
- k. Industrial waste meeting all criteria contained herein [DEQ Regulations]
- l. Inert waste
- m. Institutional waste except anatomical waste from health care facilities or infectious waste as specified in Waste Management Board's Infectious Wastes Regulations (VR 672-40-01).
- n. Municipal solid waste
- o. Putrescible waste. Occasional animal carcasses may be disposed of within a sanitary landfill. Large number of animal carcasses shall be placed in a separate area within the disposal unit and provided with a cover of compacted soil or other suitable material.
- p. Refuse
- q. Residential waste
- r. Rubbish
- s. Scrap metal
- t. Sludges. Water treatment plant sludges containing no free liquid and stabilized, digested or heat treated wastewater treatment plant sludges containing no free liquid may be placed on the working face along with municipal solid wastes and covered with soil or municipal solid wastes, or the sludges may be mixed with soil at a ratio of 1:1 and stockpiled on the lined disposal areas for later use. The quantities accepted should be determined by operational conditions encountered at the working face.
- u. Trash
- v. White goods
- w. Non-regulated hazardous wastes by specific approval only
- x. Specific wastes as approved by the Director

### *5.2.3 Materials not accepted at the landfill*

The following wastes **are prohibited** at the landfill:

1. Under the DEQ regulations (taken from 9VAC 20-80-250.C.16):
  - a. Free liquids

(1) Bulk or non-containerized liquid waste, unless:

- (a) The waste is household waste; or
- (b) The waste is leachate or gas condensate derived from that landfill and the facility is designed with a composite liner and leachate collection system.

(2) Containers holding liquid waste, unless:

- (a) The container is a small container similar in size to that normally found in household waste;
- (b) The container is designed to hold liquids for use other than storage; or
- (c) The waste is household waste.

- b. Regulated hazardous wastes
- c. Solid wastes, residues, or soils containing more than 1.0 ppb (parts per billion) of Dioxins
- d. Solid wastes, residues, or soils containing more than 50.0 ppm (parts per million) of PCB's
- e. Unstabilized sewage sludge or sludges that have not been dewatered
- f. Pesticide containers that have not been triple rinsed and crushed
- g. Drums that are not empty, properly cleaned, and opened
- h. Waste oil that has not been adequately adsorbed in the course of a site cleanup
- i. Contaminated soil unless approved by the Director

2. Additional wastes not accepted by Spotsylvania County:

- a. Friable Asbestos – defined as any waste material containing more than 1.0% asbestos as determined using the polarized light microscopy methods specified in 40 CFR Part 763, Appendix E, Subpart E, Section 1, that when dry, is capable of being crumbled, pulverized or reduced to powder by hand pressure.
- b. Hazardous Waste - defined as a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical or infectious characteristics may:

1. cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness;
2. pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed;
3. have at least one of four characteristics: ignitability, corrosivity, reactivity, and toxicity; or
4. Hazardous wastes are regulated under the Virginia Department of Environmental Quality Hazardous Waste Management Regulations (9 VAC 20-60).

#### 5.2.4 Disposal Capacity and Life Expectancy

In 2014 a design study was performed to determine the life expectancy of the landfill based on a disposal rate of 130,000 tons per year with an anticipated growth rate 3.5%. Based on aerials surveys and current landfill utilizations rates it anticipated that the facility has approximately 238 years of useable life remaining. A breakdown by phase is provided below:

Phase 1	9 years
Phase 2	21 years
Phase 3A&B	87 years
Phase 4	5 years
Phase 5	63 years
Phase 6	21 years
Phase 7	23 years

There is sufficient disposal capacity for the County at it's own landfill throughout the planning period and beyond regardless of the growth rate over the next 20 years.

#### 5.2.5 Operations

Currently the landfill operations utilize the following equipment:

- 3 front end loaders (Cat 953, two Cat 963s)
- 1 compactor (Cat 826)
- 2 dozers (Cat D4, D6)
- 1 articulated hauler (Cat 725)

Currently the landfill operations utilize the following personnel:

- 5 operators
- 1 assistant superintendent
- 1 superintendent

The equipment and personnel will vary over time as operations are adjusted. This plan will not be adjusted when equipment or personnel change.

#### 5.2.6 *Landfill Design*

##### A. Liner System

The following table summarizes the liner and leachate collection system components as constructed or as designed for the Phase 1 cells of the Livingston Landfill No. 2 from the bottom up:

**TABLE 28  
LINER SYSTEM  
LIVINGSTON LANDFILL NO. 2**

COMPONENT	CELL 1	CELLS 2 - 6
Subgrade	Compacted	Compacted
Secondary liner	60 mil HDPE	<ul style="list-style-type: none"> <li>• 12" – soil liner with a permeability of <math>1 \times 10^{-5}</math> cm/sec. The upper 6" will not be larger than 3/8".</li> <li>• GCL placed over the soil liner</li> <li>• 60 mil HDPE</li> </ul>
Secondary drainage layer	12" – granular material with a permeability of 0.02 cm/sec	Geonet geocomposite
Primary liner	60 mil HDPE	60 mil HDPE
Primary drainage layer	12" – granular material with a permeability of 0.02 cm/sec	Geonet geocomposite
Geotextile	10 oz. Non woven	None
Cushion layer	6" – sand or granular material with a permeability of 0.02 cm/sec	18" – soil material or tire chips. Tire chips will only be used in the top 12".
Leachate collection	<p>Leachate from Cells 1 and 2 drains by gravity into Pump Station No. 1 where it is pumped into the leachate holding basin.</p> <p>Leachate is pumped from the holding basin into a tanker and hauled to one of the County's WWTP.</p>	<p>Leachate from Cells 3 – 6 will drain by gravity into Pump Station No. 2, where it will be pumped into the leachate holding basin.</p> <p>Leachate is pumped from the holding basin into a tanker and hauled to one of the County's WWTP.</p>

The estimated cost for the Cell 2 – 6 liner system is \$155,000 per acre based on recent 2003 bids.

**B. Cap System**

The following table summarizes the components of the cap system for Phase 1, Cells 1 - 6 from the bottom up:

**TABLE 29  
CAP SYSTEM  
LIVINGSTON LANDFILL NO. 2**

COMPONENT	DESIGN
Intermediate Cover	12" – soil placed during operations
Infiltration Layer	18" – soil layer compacted to a permeability of no more than $1 \times 10^{-5}$ cm/sec. Layer will generally contain no particles greater than ¾".
Liner	40 mil LDPE
Liner protection	10 oz. Non-woven geotextile
Erosion / vegetative support layer	21" – soil material capable of supporting vegetative growth.
Vegetative growth layer	3" – top soil or soil mixed with sludge at a ratio of 1:1.

The estimated cost for construction of this cap system is \$100,000 per acre (2004 dollars)

*5.2.7 Household hazardous waste collection*

The County sponsors two household hazardous waste collection days, one in the spring and one in the summer. The types of materials collected during previous programs include the following:

- Aerosols
- Solvents (e.g. cleaners, gasoline and fuels)
- Paints
- Pesticides
- Roofing cement with asbestos
- Bulk acids (e.g. muriatic acid, battery acids)
- Bulk bases (e.g. pool chemicals, household cleaners)
- PCB ballasts

The types of materials vary with every collection and are dependent on the materials brought in by the public and accepted by the processor.

*5.2.8 Previously operated landfills*

Prior to the permitting of Livingston Landfill No. 2, the County had operated four other landfills in the County. These included the following:

- |                           |                   |
|---------------------------|-------------------|
| Chancellor Landfill       | Sanitary landfill |
| Livingston Landfill No. 1 | Sanitary landfill |
| Berkeley Landfill         | CDD landfill      |
| Lee Hill Landfill         | CDD landfill      |

Figure 2 indicates the approximate location of these landfills.

Table 30 summarizes the information on these landfills. All these landfills are closed and involved in some type of post closure care per the Virginia Solid Waste Management Regulations.

**TABLE 30  
SUMMARY OF PREVIOUSLY CLOSED LANDFILLS**

LANDFILL PERMIT NUMBER	NAME	TYPE OF LANDFILL	ACREAGE	DATE PERMITTED	DATE CLOSED	ADDITIONAL INFORMATION (Monitoring status, liner type, cap type, current usage)
097	Chancellor Landfill	Sanitary	25 ±	1973	1999	No post closure activity required. Currently used as ball fields.
503	Chancellor Landfill Expansion	Sanitary	12 ±	1986	1993	<ul style="list-style-type: none"> <li>• Post Closure monitoring for gas and groundwater.</li> <li>• GW Current status: In assessment monitoring; no corrective action required at this time.</li> <li>• Gas: No longer required to monitor</li> <li>• Liner – compacted clay; synthetic</li> <li>• Cap: 40 mil VLDPE</li> <li>• Leachate collection: several small holding ponds/tanks with pump and haul as required.</li> </ul>
098	Lee Hill	CDD	50 ±	1973	1981	Covered. No post closure activities required.
099	Livingston Landfill No. 1	Sanitary	14	1973	1995	<ul style="list-style-type: none"> <li>• Post closure monitoring for gas and groundwater.</li> <li>• Groundwater: Assessment monitoring with corrective action.</li> <li>• Gas: Monitored quarterly, in compliance.</li> <li>• Liner: double synthetic membrane for 6 ± acres, unlined for remainder of acreage.</li> <li>• Cap: 40 mil VLDPE</li> <li>• Leachate collection; holding pond with pump and haul.</li> </ul>
100	Berkeley Landfill	CDD	6.1	1973	1995	<ul style="list-style-type: none"> <li>• Post closure monitoring for gas and groundwater.</li> <li>• Groundwater: Phase II</li> </ul>

LANDFILL PERMIT NUMBER	NAME	TYPE OF LANDFILL	ACREAGE	DATE PERMITTED	DATE CLOSED	ADDITIONAL INFORMATION (Monitoring status, liner type, cap type, current usage)
						<ul style="list-style-type: none"> <li>• Gas: No longer required to monitor</li> <li>• Liner: Unlined</li> <li>• Cap: 40 mil VLDPE</li> </ul>

### 5.2.9 Central Archive

The County maintains records of all closed and active solid waste disposal sites within the files of the General Services Department at the following address:

Utilities/Public Works Department  
600 Hudgins Road  
Fredericksburg, VA 22408  
Phone: 540-507-7307

These files constitute the operating record of all the permitted landfills within the County. New landfills or expansions to existing facilities will be documented in these files. All correspondence to and all correspondence from DEQ is also maintained in these files.

In addition, the County has developed the Solid Waste Management Plan to serve as a central archive and summary of all solid waste disposal activities within the County. The plan will be revised when significant changes occur in these activities and the plan once revised will be submitted to the Director of DEQ or other appropriate persons as designated by DEQ for review and approval.

## 5.3 Recycling

### 5.3.1 Historical overview of recycling activities

The County has been providing voluntary residential drop off facilities for recycling since 1989 when special programs were developed at the Chancellor landfill site. As the program expanded, the County built a recycling center at the Chancellor site in 1992 at a cost of \$63,000. The County takes interest in its recycling program and has received awards for its recycling operations and environmental education programs. The following table summarizes important recycling activities implemented over the past seven years. It is provided to indicate the County's degree of interest in recycling and in constantly improving its program.

**TABLE 31**

**SUMMARY OF ACCOMPLISHMENTS  
RECYCLING AND COMPOSTING PROGRAMS  
FY 2005 THROUGH FY 2009**

<b>FISCAL YEAR</b>	<b>GENERAL CATEGORY</b>	<b>DESCRIPTION</b>
FY 2005	Recycling and Litter Control	<ul style="list-style-type: none"> <li>• Expanded the recycling program to include cardboard at a limited number of sites.</li> <li>• Recycling staff also coordinated the pick-up and delivery of baled plastics via larger tractor-trailer trucks thereby reducing transportation costs.</li> <li>• Implemented the Juvenile Court Services Program to utilize juveniles found guilty of misdemeanors and truant activities to clean area roadsides.</li> <li>• Achieved a recycling rate of 30%</li> <li>• Sponsored 34 special recycling campaigns.</li> <li>• Sponsored 50 public education campaigns.</li> <li>• Sponsored 260 litter pickup campaigns.</li> </ul>
FY 2006	Recycling and Litter Control	<ul style="list-style-type: none"> <li>• Secured a more stable and profitable market for old newsprint.</li> <li>• Added magazines as a new recycling commodity.</li> <li>• Added Ni-cad battery recycling to County administration offices.</li> <li>• Brought two additional schools on line for white paper recycling.</li> <li>• Produced a play and video to enhance the educational program in the schools.</li> <li>• Distributed litter control and prevention materials in the schools and at special events.</li> <li>• Achieved a recycling rate of 31%.</li> <li>• Sponsored 36 special recycling campaigns.</li> <li>• Sponsored 71 public education campaigns.</li> <li>• Sponsored 268 litter pick-up campaigns.</li> <li>• Contacted &gt;8,000 people with litter control campaigns.</li> <li>• Received \$76,180 in revenues from recycling.</li> </ul>
FY 2007	Recycling and Litter Control	<ul style="list-style-type: none"> <li>• Implemented a magazine recycling program at four convenience sites and within the County Administration offices.</li> <li>• Brought three additional schools on-line for white paper recycling.</li> <li>• Expanded newspaper recycling to include all convenience centers.</li> <li>• Implemented the Abandoned Vehicle program to aid in the beautification of the County and to capture additional recycling revenues.</li> <li>• Produced a play and video to enhance education program in schools.</li> <li>• Received an Environmental Education award from Keep Virginia Beautiful.</li> </ul>

FISCAL YEAR	GENERAL CATEGORY	DESCRIPTION
		<ul style="list-style-type: none"> <li>• Achieved a recycling rate of 29%</li> <li>• Sponsored 99 public education campaigns.</li> <li>• Sponsored 296 litter pick-up campaigns.</li> <li>• Contacted 10,915 people through environmental education programs.</li> <li>• Received \$111,615 in recycling revenues.</li> </ul>
FY 2008	Recycling and Litter Control	<ul style="list-style-type: none"> <li>• Received several grants for educational programs</li> <li>• Received a Virginia Recycling Association Award for environmental education programs.</li> <li>• Received three Environmental Education awards from Keep Virginia Beautiful</li> <li>• Introduced “Trash Talk” to 3<sup>rd</sup> through 5<sup>th</sup> grade students.</li> <li>• Achieved a recycling rate of 34%.</li> <li>• Sponsored 106 public education campaigns.</li> <li>• Sponsored 282 litter pick-up campaigns.</li> <li>• Contacted 12,497 people through environmental education programs.</li> <li>• Received \$101,920 in revenues from recycling.</li> </ul>
FY 2009	Recycling and Litter Control	<ul style="list-style-type: none"> <li>• Implemented a lead acid battery recycling program at the Chancellor and Livingston sites.</li> <li>• Received a non-competitive grant to fund environmental education programs.</li> <li>• Received the Keep America Beautiful Award</li> <li>• Presented the Wildlife Center of Virginia “Critters Don’t Need Litter” to 3,200 students.</li> <li>• Partnered with the Spotsylvania Extension Office to provide an environmental theme for the 4-H camp</li> <li>• Served on the Virginia Council for Litter Prevention and Recycling Board, which secured two grants.</li> <li>• Achieved a recycling rate of 34%.</li> <li>• Sponsored 146 public education campaigns.</li> <li>• Sponsored 300 litter pick-up campaigns.</li> <li>• Contacted 24,920 people through environmental education programs.</li> <li>• Received \$83,250 in revenues from recycling</li> </ul>

### 5.3.2 *Drop off facilities*

The County currently operates 13 drop off centers throughout the County for recycling. These sites are located at the convenience centers and collect a variety of materials. The Table in Appendix 3 lists each center, provides location information and lists the materials that are accepted. The following materials are collected although not all materials are collected at all sites:

Newspaper	Aluminum
Magazines	Used motor oil
Corrugated Cardboard	Used antifreeze
Phone books	Propane tanks
Glass bottles and jars	White Goods
Plastic bottles (#1 through #7)	Yard waste

In addition, the County hosts two household hazardous waste collection days a year (fall and spring) and promotes the recycling of phone books.

### 5.3.3 *Industrial & Commercial*

As directed in the County code (Article I Section 19-9) the generation and management of commercial waste are audited on a voluntary basis. The 2008 audit showed that the County's business sector reported recycling 13,970 tons of material. The materials with the highest levels of recycling included paper, plastic and wood.

### 5.3.4 *Private Programs*

Multiple commercial haulers in the County provide pick up commercial and residential waste & recyclables. Some of the major providers are Davis Disposal, J&E Recycling, American Disposal, Waste Management and First Choice. These providers collect refuse and recyclables and transport them to most economically viable facility based on tipping fees and transport costs.

J&E Recycling operates the largest local recyclable sorting facility in the Fredericksburg area. Single stream recyclables are collected from commercial clients including the Spotsylvania County School System and delivered to the facility. One there the recyclables are dumped on the tipping floor and then sorted for further distribution.

### 5.3.5 *Volunteer Programs*

Various volunteer organizations within the County host or sponsor recycling programs and also participate in clean up campaigns. The County does not track the total materials collected by these programs. The following organizations have participated in voluntary programs:

- Boy Scouts
- Girl Scouts
- Brownie Troops
- Environmental clubs at the Middle and High Schools
- 4-H clubs
- Local churches

The County's Director of Special Programs assists these organizations as necessary and provides educational programs as requested.

### 5.3.6 *Operations*

The County is fortunate to have readily available markets for a wide variety of materials. In addition, some of these markets provide the collection boxes and the hauling requiring the County to minimize their processing time. As indicated above, the County constructed a small processing facility at the Chancellor convenience site for recyclables in 1992. The facility is currently used to process plastics, paper (white ledger) and cardboard. A Marathon baler is used to bale these materials. The recycling program including collection from the convenience sites, mulching operations for the yard waste materials and processing operations utilizes 2 full time and 3 part time people at this time. However, the personnel are supplemented by landfill or other department personnel as necessary to support the program. The operations are very fluid and change as markets change.

The following equipment is currently dedicated to the program:

- Partitioned roll-off containers
- IT-18 rubber tired loader
- 924G rubber-tired loader
- Marathon baler
- Diamond Z tub grinder
- Knuckle boom to load grinder
- Case Uniloader used to load bales
- Forklift used to move bales
- CFE removal equipment
- Roll-off truck

This list is provided as an example of the County's operations. The plan will not be updated every time a piece of equipment changes.

The following table summarizes the current operations as related to the various types of materials:

**TABLE 32  
SUMMARY OF CURRENT RECYCLING OPERATIONS**

MATERIAL	OPERATIONS
Single Stream Recycle	<ul style="list-style-type: none"> <li>• All collection centers have single stream recycling.</li> <li>• Items included: glass (all color), paper, cardboard, plastics, cartons, steel and aluminum cans.</li> <li>• Material is hauled to local private transfer station.</li> </ul>
Used Oil	<ul style="list-style-type: none"> <li>• Collected at 14 sites including County maintenance facilities.</li> <li>• Pumped directly by processor at the sites.</li> </ul>
White Goods	<ul style="list-style-type: none"> <li>• Collected at Chancellor, Berkeley and Livingston.</li> <li>• County removes the CFC's.</li> <li>• Hauled to Livingston for processing.</li> <li>• Processor comes to Livingston and crushes appliances and hauls to market.</li> </ul>

This table is provided as an example of the type of information available for the County. The actual operations will vary over time. This plan will not be updated every time a market or operation changes.

### *5.3.7 Recycling Markets*

Appendix 4 outlines the markets currently used by the County. It also provides information on the agreement type held by the County and the renewal dates as applicable. This information will vary throughout the planning period as new markets develop and as existing markets change. The County evaluates the markets frequently and modifies their program accordingly. This list is provided as an example of the type of information collected by the County. The plan will not be updated every time a market changes.

5.3.8 *Diversion of waste from the landfill*

The following table summarizes the diversion rate of materials away from the landfill using data provided on Form 50-25 for the waste capacity evaluation:

**TABLE 33  
DIVERSION OF WASTE FROM LANDFILL  
(YARD WASTE, TIRES, WHITE GOODS AND SLUDGE)**

<b>YEAR</b>	<b>% DIVERSION OF TOTAL TONNAGE</b>
2009	61.92%
2010	62.28%
2011	62.27%
2012	62.53%
2013	57.22%
2014	55.68%

Recycled materials consist of yard waste, tires and white goods. Composted materials consist of yard waste and sludge.

The total tonnage recycled and composted consists primarily of yard waste and sludge. This recycling is included in the County's recycling report to DEQ.

5.3.9 *Historical recycling rates as outlined in annual budget reports*

The following table outlines the historical recycling rates for Spotsylvania County as reported to the Board of Supervisors in the annual reports:

**TABLE 34  
HISTORICAL RECYCLING RATES**

<b>YEAR</b>	<b>RECYCLING RATE (%)</b>
2009	37.2%
2010	39.7%
2011	41.2%
2012	44.6%
2013	42.0%
2014 est	44.0%

5.3.10 DEQ recycling reporting

Table 35 summarizes the information contained in the recycling reports submitted to DEQ for 2013. The 2013 DEQ report is included in Appendix 6.

**TABLE 35  
SUMMARY OF RECYCLING DATE 2013**

		2013	
		Tonnage	Total %
<b>Total Principle RM</b>			
	Paper	3,354	4.53%
	Metal	1,967	2.65%
	Plastic	313	0.42%
	Glass	297	0.40%
	Yard Waste	23,873	32.21%
	Commingled	22,021	29.71%
<b>Total Supplemental RM</b>			
	Waste Tires	459	0.62%
	Used Oil	223	0.30%
	Used Oil Filters	2	0.00%
	Used Antifreeze	4	0.01%
	Batteries	56	0.08%
	Sludge	21545	29.07%
<b>Total PRM and SRM</b>		74,114	
<b>Recycling Rate (Adjusted)</b>		42.00%	

Data from: DEQ Locality Recycling Rate Report for calendar year indicated.

As can be seen from this information, the mulching and composting of yard waste contributes significantly to the County's recycling program.

The County requests each business in the County to identify the amount of materials recycled and landfilled on an annual basis. A copy of the letter and form used by the County is included in Appendix 7. The information is requested at the time of the annual business license renewal. Only businesses with gross receipts of \$200,000 or more are required to be licensed in the County and hence asked to report. The commercial recycling values are then added into the recycling totals as reported to DEQ.

### *5.3.11 Projected recycling rates*

The County's overall rate of recycling for 2013 was 42.0 %. Based on this data and the extensive nature of the recycling program, the County should continue to meet the 25% recycling requirement.

## **5.4 Composting**

The County is committed to composting of materials to increase landfill diversion. Currently the County composts 100% of the bio-solids produced from the City of Fredericksburg and the County's two wastewater plants. In addition, the County is working to develop a green-waste composting facility to compost the leave and grass accepted through the County collections centers.

### *5.4.1 Location*

The composting facility is located at the Livingston Landfill on its own parcel within the larger facility. The compost facility is located outside of the Livingston Landfill No.2 Disposal boundary.

### *5.4.2 Permitting*

The facility is permitted by the Virginia Department of Environmental Quality under a Biosolids Use - Construction Permit, Number C-1, effective date May 20, 2003 and Biosolids Use – Operations Permit, Number VDH BUR 125 effective date May 20, 2003. This permitting is required to allow the County to engage in the bulk distribution of compost in Virginia under the brand name, "Livingston Blend."

### *5.4.3 General Description of Program*

The compost program was initiated in Spotsylvania County as part of a solids management program. The ultimate goal of this program was to divert all sludge and wood waste from the landfill facility. The first phase of this program involved the development of a pilot program using aerated static piles. This pilot program produced a very marketable Class A compost product and proved successful for the County. Based on the success of the initial Pilot Program the County decided to expand the operation to a permanent facility. This permanent facility diverts all sludge products and wood wastes from the Livingston Landfill. This saves the County landfill air space, defers capital costs, and in return produces a revenue stream for the County through compost sales.

#### *5.4.4 Equipment and facility requirements*

The composting operation consists of the following facilities and equipment:

- Compost Hall
- 2- Biofilters
- Product storage building
- Blowers and air distribution piping
- 2 – rubber tired loaders (John Deere 644 and Cat 918)
- 1 – tractor (Ford 8640)
- 2 – Stationary Kuhn Knight mixers
- 1 – Wildcat trommel screen
- Hauling tractor and 2 trailers

This information is provided as an example of the County's program. The plan will not be revised when equipment or facilities are modified.

#### *5.4.5 Operations*

The basic steps in the composting process for the new facility are as follows:

- Dewatered biosolids cake generated at the Massaponax WWTP and the FMC Plan are hauled to the Livingston Landfill Composting Facility in 20 cubic yard roll off containers. The cake is then discharged into a protect biosolids bunker area to await the mixing process.
- An operator using a front-end loader (FEL) loads two stationary mixers at the desired proportions of bulking agent to biosolids cake. A weight scale on the mix box indicates when the correct amount of material has been added.
- The batch mixer discharges on to a conveyor system that carries the mixture over a concrete push wall into the aeration bay of the compost hall.
- The material is then moved from the end of the conveyor and piles are built within the compost hall over negative aeration grates.
- After PFRP and VAR requirements are met (approximately 21 days), compost is removed from the active composting area for screening.
- The compost is screened using a rotary trammel screen. Overage is mixed back into the process and the final product is cured.
- The compost is cured for approximately 21-30 days. After curing, the product is ready for distribution.

#### *5.4.6 Personnel*

The composting program currently uses the following personnel in its program:

- 3 Operators
- 1 Compost manager

This information is provided as an example of the operations. The plan will not be revised every time personnel change.

#### 5.4.7 Tonnage

In 2013, the County processed over 21,000 tons of biosolids at the composting facility, which equates to approximately 81 tons per operating day. The facility is sized to handle up to 143.8 tons per operating day.

### 5.5 Treatment

Based on the definition included in the Solid Waste Management Regulations, the County “treats” their waste through their mulching and compost operations. These operations were previously described under Section 5.4.

### 5.6 Public Education

#### 5.6.1 Residential

The County currently has an environmental education program for providing information to the public. The program has been designed to focus on basic environmental awareness issues, recycling, composting, litter control and pollution prevention education. The goal of the program is to educate the community through special promotional programs and organized community environmental events. This program will continue to be expanded as interest and funding allow.

The following table summarizes the public education efforts from FY 2009 - FY 2013:

**TABLE 38  
SUMMARY  
PUBLIC EDUCATION EFFORTS**

<b>ACTIVITY / YEAR</b>	<b>FY 2009</b>	<b>FY 2010</b>	<b>FY 2011</b>	<b>FY 2012</b>	<b>FY 2013</b>
Sponsored special recycling campaigns	2	2	2	2	2
Number of public education campaigns	88	61	59	57	68
Sponsored Litter Pick-up Campaigns	282	213	184	473	559
Number of persons contacted through public education programs.	9,075	11,195	10,941	11,358	11,251
Grants for education programs	\$16,440	\$18,958	\$16,284	\$23,499	\$23,730

The public education campaigns include sponsorship of Earth Day/Arbor Day programs, attendance at local events to promote recycling, development of programs for the summer camps, and classroom work in the elementary and middle schools in the County.

In addition, the County has received multiple environmental education awards from Keep Virginia Beautiful and awards from the Virginia Recycling Association and Commonwealth of Virginia for public education programs. The County has also received grants for this program and continues to seek outside funding. Over the past several years, the County has provided a summer Environmental Education camp "Journey Through The Chesapeake Bay".

Appendix 9 contains examples of the materials used by the County in their education programs.

The County also maintains a database of contacts to allow for the organized dissemination of information and to facilitate planning. The database contains the following information:

- School contacts including administrators, PTO presidents, recycling coordinator, environmental club sponsors, and earth science teachers.
- Local media sources including contacts, advertisement requirements, press release protocols etc.
- Homeowner associations including presidents and key or interested people.
- Day care centers including administrators and interested teachers.
- Civic, fraternal and professional organization including presidents and interested persons.
- Environmentally concerned organizations including:
  - Water and Soil Conservation District
  - Virginia Cooperative Extension
  - Friends of the Rappahannock
  - Virginia Recycling Association
  - Keep America Beautiful
  - Keep Virginia Beautiful
  - Virginia Council for Litter Prevention and Recycling

Special programs that the County sponsors through out the year which require some promotion and which allow further opportunities for public education include the following:

- |                                      |                      |
|--------------------------------------|----------------------|
| • Household Hazardous Waste Days     | May and October      |
| • Earth Day Programs                 | April                |
| • Tree Sale                          | March                |
| • Holiday Tree Recycling Program     | December and January |
| • Phone Book Recycling Program       | April and July       |
| • The Great Pumpkin Chase            | October              |
| • Journey Through The Chesapeake Bay | June                 |

The tree sale is sponsored by the Tri-County/City Soil and Water Conservation District.

### *5.6.2 Industrial/Commercial*

The County does not currently have any specific out reach program that educates businesses in the areas of recycling, reuse, or waste reduction techniques.

## **5.7 Public/Private Partnership**

The County seeks to support all activities relative to reuse, reduction and recycling. However, at this time, it does not have any contracted partnerships with the private sector except for the hauling of its wastes from its green box sites.

## **5.8 Litter Control**

The County works diligently to control litter through the following programs:

- Adopt-A-Highway
- Juvenile Community Service Program
- Rappahannock Security Center Inmate Program
- Adult Services Program
- Community Volunteers
- VDOT
- County Personnel

The County also has an extensive education program within the schools and during community events.

## *Section 6.0*

---

### *Budget*

## 6.0 BUDGET

### 6.1 Operating Budget

The operating budget for the integrated waste management system represents only a small portion of the total County budget as the following table indicates:

**TABLE 39  
TOTAL COUNTY BUDGET  
FY 2015**

<b>FY 2015 AMENDED BUDGET</b>	<b>TOTAL COUNTY BUDGET</b>	<b>SOLID WASTE BUDGET *</b>	<b>% of TOTAL BUDGET</b>
Revenues	\$450,920,551	\$1,750,000	0.39%
Expenditures	\$450,920,551	\$3,634,164	0.81%
Deficit for Solid Waste budget to be made up from General Fund		\$1,884,164	48.15%

\*Includes collections, disposal, recycling

Less than 1% of the total County budget is required for the solid waste management system of the County. It is projected that this percentage will remain approximately the same over the planning period.

#### 6.1.1 FY 2015 Budget

The following table summarizes the budget for FY 2015 by various categories of interest:

<b>TABLE 43</b>		
<b>FY 2015 ANNUAL OPERATIONS COST</b>		
<b>CATEGORY</b>	<b>COST</b>	<b>PERCENTAGE OF TOTAL</b>
<b>REFUSE COLLECTION</b>		
Personnel	\$1,699,045	42
Non-Personnel	\$448,165	11
<b><i>SUBTOTAL</i></b>	<b><i>\$2,147,210</i></b>	
<b>REFUSE DISPOSAL</b>		
Personnel	\$818,786	20
Non-personnel	\$668,168	16
<b><i>SUBTOTAL</i></b>	<b><i>\$1,486,954</i></b>	
<b>RECYCLING / LITTER CONTROL</b>		
Personnel	\$287,938	7
Non-personnel	\$165,708	4
<b><i>SUBTOTAL</i></b>	<b><i>\$453,646</i></b>	
<b>TOTAL</b>	<b>\$4,087,810</b>	

As can be seen from this budget, half of the County's expenses are focused on collections with disposal requiring 53% of the budget. Recycling represents only 11 percent of the County Budget allocation for waste management. The compost program was shifted entirely to the Utilities Department Enterprise Fund in FY 2010.

## 6.2 Revenues

The County receives revenues for the solid waste program from several sources including refuse disposal fees, recycling revenues, litter control grants, abandoned vehicle program, and competitive litter grant. The following table outlines the current refuse disposal fees at the landfill:

**TABLE 44**  
**USE CHARGES AT THE LANDFILL**  
**(Section 19-96 through 19-99 of County Code)**

<b>USER or MATERIAL TYPE</b>	<b>FEE</b>
Commercial haulers, contractors, businesses	\$29.00/ton 0 to 1000/month \$24.00/ton 1000 to 1500/month \$19.00/ton 1500/month plus
If scales are not available:	
Pick-up truck	\$14.00/truck
Flat-bed/stake truck (Single axle dump truck)	\$36.00/truck
Flat-bed/stake truck (Double axle dump truck)	\$74.00/truck
Truck or dumpster (Uncompacted waste)	\$5.00/cubic yard

<b>USER or MATERIAL TYPE</b>	<b>FEE</b>
Truck or dumpster (Compacted waste)	\$7.00/cubic yard
<b>Tires</b>	
Non commercial disposal	No charge
Commercial disposal – passenger tires	\$2.00/tire
Commercial or noncommercial disposal – truck or heavy equipment	\$5.00/truck tire \$15.00/heavy equipment tire
Split tires	\$29/ton
<b>Major appliances</b>	
Noncommercial disposal	No charge
Commercial disposal	\$1.00/appliance
Industrial waste	\$10/cubic yard If special handling required, fee adjusted.

The revenues received are not enough to cover the full expenses of the solid waste program. Supplemental funding is provided from the General Fund or from the Capital Budget fund. The following table indicates the annual budget expenses, revenues and amount required from the General Fund in estimated in 2014/2015.

**TABLE 45  
SUMMARY OF BUDGET EXPENSES AND REVENUES  
SOLID WASTE PROGRAM**

<b>Operational</b>	<b>Capital</b>	<b>Equipment</b>	<b>Total</b>	<b>Revenue</b>	<b>General Fund</b>
\$3,634,164	\$79,000	\$350,000	\$4,063,164	\$1,750,000	\$2,313,164

From review of the data above, it can be seen that a significant amount of the funding for the Solid Waste Program comes from the General Fund of the County. There are no significant changes anticipated during the planning period that would deviate from this funding model.

### **6.3 Capital Improvement Program**

Each year during the budgeting process, each department of the County must evaluate their long-range capital expenditures. A separate CIP budget is established by the County to allow the items to be purchased or constructed as necessary. These documents are reviewed and approved annually during the budget process based on funding availability.

## *Section 7.0*

---

### *Waste Management Hierarchy*

## **7.0 WASTE MANAGEMENT HEIRARACHY**

Under 9 VAC 20-130-30, the following policy is set forth:

*“It is the policy of the Virginia Waste Management Board to require each region designated pursuant to 9 VAC 20-130-180 through 9 VAC 20-130-220, as well as each city, county and town not part of such a region, to develop comprehensive and integrated solid waste management plans that, at a minimum, consider and address all components of the following hierarchy:*

- 1. Source reduction*
- 2. Reuse*
- 3. Recycling*
- 4. Resource recovery (waste to energy)*
- 5. Incineration*
- 6. Landfilling*

Section 9 VAC 20-130-150.6, also addresses this requirement by stating:

*“The local government or regional solid waste management plan shall include data and analyses of the following type for each jurisdiction. Each item below shall be in a separate section and labeled as to content:*

- 6. A description of programs for solid waste reduction, reuse, recycling, resource recovery, incineration, storage, treatment, disposal and litter control.”*

The following section provides the information as available as required by the regulations.

### **7.1 Source reduction**

Source reduction refers to any change in the design, manufacture, purchase, or use of materials or products (including packaging) to reduce their amount or toxicity before they become municipal solid waste. Source reduction can help reduce waste disposal and handling costs, conserve resources, and reduce pollution. Section 2.1.5 previously discussed the trends in source reduction nationally noting that the reduction of yard waste in landfills is the most significant source reduction activity at the moment as localities and states ban yard waste from landfills.

While individuals can attempt to reduce their volume of waste, source reduction policies will be aimed primarily at businesses and industries. Many source reduction policies are not feasible at the local level but are best handled at the state or federal level. An example of this is the banning of yard waste from landfills, or requiring minimum packaging standards. Financial incentives and disincentives, broad regulations concerning source reduction and changes to manufacturing processes are difficult to implement on a local basis. As waste tipping fees increase at the County’s landfill and the outside facilities, the commercial sector will become more sensitive to the expenses involved in their disposal programs, and will begin to consider source reduction more closely.

The most effective source reduction activity that can occur at the local level is public education. As documented in Section 5.5, the County conducts an extensive public education program.

It should be noted that the County seeks information annually from its commercial sector relative to recycling and disposal activities. This exercise in and of itself can serve as an educational tool as the businesses and industries compile the data and consider the expense of their disposal programs. It is also an opportunity for the businesses or industries to report any major changes in their waste disposal programs, including source reduction.

The County conducts an extensive yard waste mulching program and a sludge composting program, which has reduced the amount of waste materials entering the landfill significantly. The County will continue to enhance, expand and improve these two programs to continue their emphasis on source reduction.

In summary, the County is currently engaged themselves or entities within the County are currently engaged in the following source reduction efforts:

- Yard waste mulching program,
- Sewage sludge composting program,
- White good recycling,
- Environmental education programs for citizens relative to the need for source reduction.

The following activities are proposed under this plan as interest and funding are available:

- Expansion of yard waste mulching program,
- Expansion of composting program,
- Enhanced educational programs for the commercial and industrial sector.

## **7.2 Reuse**

Reuse is similar to source reduction as it prevents materials from entering the waste stream, but involves separating a given solid waste material from the waste stream and using it, without processing or changing its form, other than size reduction, for the same or another end use. Examples of reuse include such activities as swap shops or thrift stores, clothing collection centers, pallet reuse, use of refillable bottles and reconditioning of drums or barrels.

As with source reduction, private citizens can make an effort to reuse or encourage reuse of many items that would normally be discarded to the landfill. However, the focus of the program would be better aimed at the commercial sector including the County's businesses and industries. The County does not currently focus their educational programs on the commercial sector and does not currently collect specific information on reuse by the commercial sector. However it does have the ability to require its businesses to report these efforts during the annual business license process, which requires the businesses to report to the County information on their waste stream and their recycling efforts.

Currently there are three reuse centers available to the public including the following:

- Salvation Army Thrift Store, Fredericksburg, VA
- Goodwill Store, Fredericksburg, VA
- Spotsylvania Emergency Concerns Association, Spotsylvania, VA

The following activities are proposed under this plan relative to reuse, as interest and funding are available:

- Continue to educate public relative to the need for reuse,
- Expansion of education to commercial sector to address reuse,
- Collection of data on commercial reuse programs.

### **7.3 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. Section 5.3 outlined the recycling activities in the County extensively. Highlights from this section include the following:

- The County conducts recycling at 13 drop off sites through out the County located at the convenience centers.
- In 2013, the County collected 18,105 tons of principle recycled materials from their program as follows:
  - Paper
  - Metal
  - Plastic
  - Glass
  - Yard Waste (mulched)
- In 2013, the County collected 21,822 tons of supplemental recycled materials from their program as follows:
  - Tires
  - Used Oil
  - Used Antifreeze
  - Auto Bodies
  - Batteries
  - Sludge (composted)
- In 2013, the commercial sector reported recycling 26,123 tons of materials primarily in the paper, plastics and wood categories.
- The County operates an extensive yard waste mulching and sludge composting program.
- If the recycling tonnages remain the same, while the overall waste tonnage increases at the rate projected, the County would still realize a 30% recycling rate in 2030. However, the County will continue to actively support recycling activities within the County and to improve and expand their programs as markets and funding allow.

The following activities are proposed under this plan as markets and funding become available:

- Continue to seek new markets,
- Continue to promote cardboard and white paper recycling in commercial sector,
- Increase processing capacity as necessary,
- Continue to expand education programs.

**7.4 Resource recovery and incineration**

Resource recovery refers to a system that provides for collection, separation, recycling and recovery of energy from solid wastes, including disposal of non-recoverable waste residues. Incineration means the controlled combustion of solid waste for disposal. According to the EPA burning MSW can generate energy while reducing the amount of waste by up to 90 percent in volume and 75% in weight. The two activities are similar and are therefore combined for this discussion.

At this time, the County does not generate enough waste to make resource recovery or incineration feasible. In addition, the markets for the steam or electricity generated from the combustion of the wastes would be located in the northern, more urban area of the County where siting such facilities would be difficult.

The County may in the future explore the beneficial use of landfill gas, which could involve the combustion of the gas for the production of steam or electricity. However, Livingston Landfill No. 2 is not yet large enough to consider implementation of a gas recovery system for energy, nor is there a market for the steam if so produced. The County will continue to evaluate this option during the planning period.

**7.5 Landfilling**

Landfilling is the primary disposal mechanism for the County. Section 5.2 outlined the County’s disposal activities in detail. The County currently owns and operates the Livingston Landfill Number 2, under Permit 547 originally issued by the Virginia Department of Waste Management (now the Virginia Department of Environmental Quality). The permit covers the first phase of the landfill that encompasses approximately 85 acres. The total acreage of the site is 538 acres of which an estimated 250 acres will ultimately be developed.

Important dates for the Phase I permit include the following:

Permit issued (Phase 1)	January 5, 1993
Amended	January 17, 1993
Temporary Authorization	September 10, 1996
Amended	November 25, 1997
Amended	March 12, 2001

Phase I of the landfill has approximately 9 years remaining in its currently permitted phase with an anticipated fill date of 2024. The remaining phases are estimated to have a conceptual life of approximately 50 years. There is sufficient disposal capacity for the County through and beyond the planning period. Section 5.2.4 summarizes the disposal capacity and construction schedule in detail for Phase 1.

Section 5.2.5 outlined the cost for operation of the landfill. Section 10.0 below addresses the costs associated with the construction of the landfill.

## *Section 8.0*

---

### *Goals and Objectives of Program*

## 8.0 GOALS AND OBJECTIVES OF PROGRAM

The following section outlines the goals and objectives for the County's solid waste management program. The County operates an integrated solid waste management system and will continue to improve on the program as interest is expressed by the Board of Supervisors, as markets open up and as funding is made available. Also included under each section is a schedule of implementation and an estimated cost where applicable. A majority of the items so noted, do not have specific tasks or projects identified at this time but represent on-going activities already incorporated into the program.

### 8.1 Collections

Collections includes the operation of convenience centers, green box sites, and the yard waste mulching operations. The County does not collect from the commercial or industrial sector nor does it provide door-to-door residential collection. Instead, the County allows private collectors to provide the services for its citizens and businesses. The County Code does require the permitting of the private collectors. The following table summarizes the goals of the collection program and identifies action items. As noted, some of the action items are included in the Comprehensive Plan.

**TABLE 47  
COLLECTION SYSTEM  
GOALS AND ACTION ITEMS**

<b>ITEM NUMBER</b>	<b>GOAL</b>	<b>ACTION ITEM</b>	<b>SCHEDULE</b>	<b>ESTIMATED COST (2004 dollars)</b>
C-1	Continue to provide a cost effective collection system for the citizens of the County	Add additional sites or expand existing sites as necessary.	As BOS approves and as funding becomes available.	\$200,000/site
C-2	Continue to provide comprehensive services at the collection sites including trash disposal, bulky item collection, recycling, yard waste handling	Expand the services as interest and funding become available.	As interest and need dictates and as funding becomes available.	No specific project at this time

### 8.2 Disposal

Disposal consists of the operation of the Livingston Landfill No. 2 and the continued post closure activities of the older closed landfills. The County currently has 85 acres permitted for a landfill under Phase 1 with an additional 250 acres available for expansion in the future. The County will continue to construct liners and caps on an on-going basis as required under their permit. There is sufficient disposal capacity at the existing facility to last the County beyond the

planning period under consideration. The County will continue to only accept waste materials generated within the County at the Livingston Landfill.

**TABLE 48  
DISPOSAL SYSTEM  
GOALS AND ACTION ITEMS**

<b>ITEM NUMBER</b>	<b>GOAL</b>	<b>ACTION ITEM</b>	<b>SCHEDULE</b>	<b>ESTIMATED COST (2014 dollars)</b>
D-1	Continue to operate the Livingston Landfill No. 2 in an environmentally sound manner and in accordance with all federal, state and local regulations.	A. Provide adequate training to all personnel in the operations and permitting of the landfill.	On-going	\$4,000/year for travel and educational expenses.
		B. Conduct monthly internal inspections to assure compliance	On-going	No funding required.
		C. Contract professional engineering services as necessary to assure compliance	On-going	\$70,000/yr including operational assistance and environmental monitoring.
D-2	Provide adequate planning time for construction and permitting	A. Conduct an aerial survey every two years to evaluate the disposal capacity and landfill utilization factor of the facility. Review data against most current planning schedule.	Every Two Years	\$10,000
		B. Initiate Part B application for Phase 2 of landfill.	2018	\$250,000
D-3	Expand life of existing facility	Seek ways to reduce waste materials coming into the landfill especially bulky items or industrial wastes.	On-going	No specific funding required at this time.
D-4	Reduce leachate handling costs	Continue to pursue leachate recirculation over the alternate liner system, as the regulations will allow.	Requires a regulatory change or approval by DEQ and a	No specific funding required at this time.

ITEM NUMBER	GOAL	ACTION ITEM	SCHEDULE	ESTIMATED COST (2014 dollars)
			permit amendment.	
D-5	Effectively control the release of landfill gas	County received a DOE grant for \$474,000 to install an active gas system in Cells 1 and 2 (will be completed in 2011). County will continue to expand system. It is the County's intention to market the carbon credits for the gas destruction.	2017-2020	\$200,000
D-6	Provide for the construction of new liner and cap in a cost effective manner	Continue to act as the project manager during construction to assure the most competitive costs.	See table under Section 5.2.4	Current cost estimates for lining new cells is \$155,000 per acre and for closure \$100,000 per acre.

The following table summarizes the estimated construction costs over the planning period for the Livingston Landfill No. 2.

**TABLE 49  
SUMMARY OF ESTIMATED CONSTRUCTION COSTS  
LIVINGSTON LANDFILL NO. 2**

ACTIVITY	LIVINGSTON NO. 2	ACREAGE	ESTIMATED COST (2014 dollars)
Begin filling Cell 1	8/25/93	7.8	Completed
Begin filling Cell 2	2/10/98	7.0	Completed
Construction Cell 3	2003	6.0	Completed
Partial Closure Cells 1 and 2	2005	14.8	Completed
Construction Cell 4	2005	5.4	Completed
Construction Cell 5	2011	6.2	Completed
Construction Cell 6	2016/2017	6.2	\$2,500,000
Develop Phase I Infill	2018-2021		\$2,500,000
Final closure Phase 1	2020-2025	38.6	\$7,750,000
<b>TOTAL</b>			<b>\$12,750,000</b>

### 8.3 Recycling

The County has a comprehensive recycling program including a series of drop off facilities operated at their existing staffed convenience sites, yard waste mulching operation at two locations, and sludge composting facility. They work continuously to improve the program and to educate the public. The County will continue to look for new programs and markets based on the interest of the citizens and Board of Supervisors. The County recognizes the importance of a committed recycling program and takes their stewardship role seriously. In 2013, the County met a recycling rate of 42%.

**TABLE 50  
RECYCLING SYSTEM  
GOALS AND ACTION ITEMS**

<b>ITEM NUMBER</b>	<b>GOAL</b>	<b>ACTION ITEM</b>	<b>SCHEDULE</b>	<b>ESTIMATED COSTS (2014 dollars)</b>
R-1	Increase the amount of materials collected in the County program	A. Continue to seek new markets as funding is available.	On going.	Public Outreach Efforts
		B. Increase capacity at the County's processing center as necessary to handle the additional materials.	As need arises and BOS approves funding.	No specific project identified at this time.
		C. Continue to promote single stream, cardboard and white paper recycling programs for businesses that do not have their own recycling programs. Encourage private collection of this material.	On going	Public Outreach Efforts
		D. Aggressively educate public on the need for recycling.	On going	Public Outreach Efforts
R-2	Increase recycling revenues	Continuously evaluate recycling markets to determine if better opportunities exist	On going	Public Outreach Efforts

ITEM NUMBER	GOAL	ACTION ITEM	SCHEDULE	ESTIMATED COSTS (2014 dollars)
R-3	Increase participation rates in recycling programs	Continue sponsoring education programs in the classroom and during special events to promote recycling.	On going	Public Outreach Efforts
R-4	Increase commercial sector participation in annual reporting.	Sponsor educational opportunities to encourage the commercial sector to track and report their recycling and disposal tonnages.	On going	Public Outreach Efforts
R-5	Improve reporting on commercial sector recycling.	Provide educational opportunities to encourage the commercial sector to track and report their recycling tonnages as accurately and as completely as possible.	On going	Public Outreach Efforts
R-6	Decrease yard waste entering the landfill.	Continue to promote the yard waste mulching program and development of a leaf/green waste compost program	On going	Public Outreach Efforts; Leaf/Green Waste Project Development

#### 8.4 Composting

When the County was banned from further land applying their wastewater treatment sludge on lands within the County in 2000, the sludge began to come to the landfill. Because of the required ratio of waste to sludge of 5:1, the County could not accept all the sludge generated within the County at the landfill. In 2002, the County experimented with the composting of the wastewater treatment sludge utilizing mulched yard waste as a bulking agent. In 2003, the County received Virginia Department of Health permits to expand the facility and will be able to process up to 38.4 tons per operating day, or approximately 9,600 tons of sludge per year. Since 2003, the facility has been expanded to process up to 12,500 tons of sludge per year. In 2008, the County moved forward with expansion plans to divert all of the County sludge from the landfill to the composting facility. That expansion was completed in 2010 and the facility accepts over 20,000 tons per year of sludge. The compost is marketed as Livingston Blend and is being sold at a rate that exceeds its current production.

**TABLE 51  
COMPOSTING SYSTEM  
GOALS AND ACTION ITEMS**

<b>ITEM NUMBER</b>	<b>GOAL</b>	<b>ACTION ITEM</b>	<b>SCHEDULE</b>	<b>ESTIMATED COSTS (2004 dollars)</b>
COM-1	Expand program to handle all the WWTP sludge of county.	Completed facility redesign and construction	2010	\$17,500,000
COM-2	Improve usage of product	A. Work with state agencies on research projects using the product. Use data to promote interest in the project.	On going	No specific funding required at this time.
		B. Educate the citizens relative to the use of compost through County sponsored pilot projects	On going	No specific funding required at this time.
COM-3	Promote use of composting state wide	A. Continue to promote educational programs that can be shared with other local governments. Provide information at technical meetings.	On going	Funding through Utilities division.
		B. Work with VDH and DEQ as appropriate	On going	No specific funding required at this time.
		C. Register product as appropriate with composting organizations.	On going	No specific funding required at this time.
COM-4	Develop Leaf/Green Waste Compost Program	Design and implement a leaf/green waste diversion program.	2015-2016	\$1,000,000

### 8.5 Treatment

Treatment of solid waste is not performed as a separate operation. Composting is a form of treatment and its future goals have been discussed under Section 8.4.

## 8.6 Litter Control

The County works diligently to control litter through education and sponsorship of periodic cleanups. They will continue to promote their existing programs and to expand as resources and interest allow.

ITEM NUMBER	GOAL	ACTION ITEM	SCHEDULE	ESTIMATED COSTS (2004 dollars)
LC-1	Educate public relative to litter control.	Continue to support existing educational programs as noted in Section 5. Expand as resources are available.	On-going	No specific funding required at this time
LC-2	Reduce litter in County	Continue to support road cleanups by Juvenile Community Service, Rappahannock Security Center, Adult Service Program, Adopt-A-Highway, community volunteers and VDOT. Expand as resources are available.	On-going	No specific funding required at this time.
LC-3	Minimize illegal dumping.	Continue to patrol County. Provide comprehensive collection services at convenience sites. Expand as necessary.	On-going	No specific funding required at this time.
LC-4	Encourage cleanup of illegal dumps.	County will continue to map sites and to work with communities for clean up. Expand as necessary.	On-going	No specific funding required at this time.

## *Section 9.0*

---

### *Implementation Schedule*

## **9.0 IMPLEMENTATION SCHEDULE**

The implementation schedule for the County's integrated waste management program has been summarized under separate sections above. The majority of the proposed expenditures over the planning period will be associated with construction of new cells, closure of old cells at the landfill and equipment purchases. Some minor additional expenditures on the recycling and composting programs will be needed. However, most of these expenditures are already included in the existing operating budget.

## *Section 10.0*

---

### *Funding and Financing*

## 10.0 FUNDING AND FINANCING

The Solid Waste Program budget for FY 2015 represents approximately 1% of the County's total budget and is anticipated to remain a relatively insignificant part of the overall budget. For FY 2015, solid waste expenditures represent approximately \$32.00/person/year.

Tables 52 and 53 summarize the projected program costs to the County over the 20-year planning period.

**TABLE 52  
ESTIMATED PROGRAM COSTS FY 2015 - 2035**

Annual inflation rate for total budget			2.00%	(Inflation + increased expenses for additional tonnage)		
Annual rate of increase for revenues			1.00%			
FISCAL YEAR	OPERATIONS BUDGET (Collection and Disposal)	LANDFILL COSTS	EQUIPMENT OR OTHER PROGRAM COSTS	TOTAL COSTS	REVENUES	DEFICIT FROM GENERAL FUND or CAPITAL BUDGET FUND
2015	\$3,634,164	\$79,000	\$350,000	\$4,063,164	\$1,750,000	\$2,313,164
2016	\$3,706,847	\$2,011,000	\$350,000	\$6,067,847	\$1,767,500	\$4,300,347
2017	\$3,780,984	\$90,000	\$350,000	\$4,220,984	\$1,785,175	\$2,435,809
2018	\$3,856,604	\$229,000	\$350,000	\$4,435,604	\$1,803,027	\$2,632,577
2019	\$3,933,736	\$143,000	\$350,000	\$4,426,736	\$1,821,057	\$2,605,679
2020	\$4,012,411	\$2,169,000	\$350,000	\$6,531,411	\$1,839,268	\$4,692,143
2021	\$4,092,659	\$402,600	\$350,000	\$4,845,259	\$1,857,660	\$2,987,599
2022	\$4,174,512	\$5,733,000	\$350,000	\$10,257,512	\$1,876,237	\$8,381,275
2023	\$4,258,002	\$185,000	\$350,000	\$4,793,002	\$1,894,999	\$2,898,003
2024	\$4,343,162	\$3,060,000	\$350,000	\$7,753,162	\$1,913,949	\$5,839,213
2025	\$4,430,026	\$0	\$350,000	\$4,780,026	\$1,933,089	\$2,846,937
2026	\$4,518,626	\$0	\$350,000	\$4,868,626	\$1,952,420	\$2,916,207
2027	\$4,608,999	\$0	\$350,000	\$4,958,999	\$1,971,944	\$2,987,055
2028	\$4,701,179	\$2,500,000	\$350,000	\$7,551,179	\$1,991,663	\$5,559,515
2029	\$4,795,202	\$0	\$350,000	\$5,145,202	\$2,011,580	\$3,133,622
2030	\$4,891,106	\$0	\$350,000	\$5,241,106	\$2,031,696	\$3,209,411
2031	\$4,988,928	\$0	\$350,000	\$5,338,928	\$2,052,013	\$3,286,916
2032	\$5,088,707	\$0	\$350,000	\$5,438,707	\$2,072,533	\$3,366,174
2033	\$5,190,481	\$2,500,000	\$350,000	\$8,040,481	\$2,093,258	\$5,947,223
2034	\$5,294,291	\$0	\$350,000	\$5,644,291	\$2,114,191	\$3,530,100
2035	\$5,400,177	\$0	\$350,000	\$5,750,177	\$2,135,333	\$3,614,844

**TABLE 53  
ESTIMATED PROGRAM COSTS PER TON/PER PERSON**

Annual inflation rate for operations budget				2.00%			
Annual rate of increase for revenues				1.00%			
FISCAL YEAR	TOTAL COSTS	POPULATION (See Table 7)	COST PER PERSON	TONNAGE DELIVERED TO FACILITY		TOTAL COST PER TON DELIVERED TO FACILITY	OPERATIONS COST PER TON DELIVERED TO FACILITY
				MSW	C&D		
2015	\$4,063,164	127,000	\$31.99	100,000	20,000	\$33.86	\$30.28
2016	\$6,067,847	129,540	\$46.84	103,500	20,000	\$49.13	\$30.01
2017	\$4,220,984	132,131	\$31.95	107,123	20,000	\$33.20	\$29.74
2018	\$4,435,604	134,773	\$32.91	110,872	20,000	\$33.89	\$29.47
2019	\$4,426,736	137,469	\$32.20	114,752	20,000	\$32.85	\$29.19
2020	\$6,531,411	140,218	\$46.58	118,769	20,000	\$47.07	\$28.91
2021	\$4,845,259	143,023	\$33.88	122,926	20,000	\$33.90	\$28.63
2022	\$10,257,512	145,883	\$70.31	127,228	20,000	\$69.67	\$28.35
2023	\$4,793,002	148,801	\$32.21	131,681	20,000	\$31.60	\$28.07
2024	\$7,753,162	151,777	\$51.08	136,290	20,000	\$49.61	\$27.79
2025	\$4,780,026	154,812	\$30.88	141,060	20,000	\$29.68	\$27.51
2026	\$4,868,626	157,909	\$30.83	145,997	20,000	\$29.33	\$27.22
2027	\$4,958,999	161,067	\$30.79	151,107	20,000	\$28.98	\$26.94
2028	\$7,551,179	164,288	\$45.96	156,396	20,000	\$42.81	\$26.65
2029	\$5,145,202	167,574	\$30.70	161,869	20,000	\$28.29	\$26.37
2030	\$5,241,106	170,925	\$30.66	167,535	20,000	\$27.95	\$26.08
2031	\$5,338,928	174,344	\$30.62	173,399	20,000	\$27.61	\$25.80
2032	\$5,438,707	177,831	\$30.58	179,468	20,000	\$27.27	\$25.51
2033	\$8,040,481	181,387	\$44.33	185,749	20,000	\$39.08	\$25.23
2034	\$5,644,291	185,015	\$30.51	192,250	20,000	\$26.59	\$24.94
2035	\$5,750,177	188,715	\$30.47	198,979	20,000	\$26.26	\$24.66
Average	\$5,721,543.01	\$155,927.68	\$36.97	\$144,140.48	\$20,000.00	\$35.65	\$27.49

**TABLE 54  
PROJECTED BUDGET  
COST PER PERSON AND COST PER TON  
COMPARISON**

ITEM	COST PER PERSON	TOTAL COST PER TON	OPERATING COST PER TON
FY 2015	\$31.99	\$33.86	\$30.28
FY 2035	\$30.47	\$26.26	\$24.66
Average	\$36.97	\$35.65	\$27.49
% Change (FY 2015 – FY 2035)	-5%	-22%	-19%

Funding from the General Fund and Capital Outlay Fund will be required to support the solid waste program over the 20 year planning period. The County has an appropriate planning mechanism in their budgetary process to allow ample time to project the funding needed and to provide the funding as necessary. All funding for all programs is determined ultimately by the Board of Supervisors, which must weigh requests from the solid waste program for additional expenditures against the backdrop of the total County budget.

---

***Section 11.0***  
***Public Participation***

## **11.0 PUBLIC PARTICIPATION**

Spotsylvania County held a public meeting to allow an opportunity for the public to comment on the Solid Waste Management Plan on May 20, 2004. The notice for the meeting and the results of the meeting are included in Appendix 10. No written comments were received on the plan.

The Resolution adopting the plan is included in Appendix 11. The Board of Supervisors adopted the plan on June 8, 2004.

***Section 12.0***  
***Record Keeping***

---

## 12.0 RECORD KEEPING

In addition to the day-to-day record keeping, the County documents their solid waste activities in several ways as follows:

- Annual reports to the Board of Supervisors indicating how the goals and objectives of the program have been met.
- Periodic updates presented to the Board of Supervisors as requested.
- Annual submittal by March 31 of each year of the Waste Information and Assessment Report (Form 50-25) to DEQ.
- Annual submittal by April 30 of each year the Recycling Rate Report (Form 50-30) to DEQ.
- Annual submittal to DEQ usually by December of each year, of the update for financial assurance.

All these reports, updates, and DEQ submittals as well as the background information are kept in the central archive (files) of the solid waste program located at the General Services Department, 8800 Courthouse Road, Spotsylvania, Virginia.

The Director of DEQ receives copies of the appropriate information through the following sources:

- Direct submittal to DEQ of Form 50-25 (Waste Assessment) and Form 50-30 (Recycling).
- New permit requests.
- Permit amendments.
- Updates to the solid waste management plan.

*Appendix 1*

---

*DEQ Form 50-25 (2014)*

**SOLID WASTE INFORMATION AND ASSESSMENT PROGRAM REPORTING TABLE - FORM DEQ 50-25**

1 Facility Name - <b>Spotsylvania County - Livingston Landfill No. 2</b>	3 Date Submitted to DEQ	4 Annual Reporting Period - <b>2014</b>	
2 Permit Number - <b>SWP 547</b>	Middle Initial	Last Name -	6 Telephone <b>540-507-7735</b>
5 Preparer's First Name -	An email address will be used to contact you in case of questions about this form submission.		
7 Preparer's E-mail Address - <b>tautry@spotsylvania.va.us</b>	Last Name -		
Has there been a change to the Annual Fee Billing Contact, Address or Telephone Number? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N			
Contact First Name	Last Name		Contact Phone
Address			
8 City	State	Zip Code	
9 Remaining Permitted Capacity	1,758,782	Cubic Yards	
10 Expected Remaining Permitted Life	9.3	Years	

**Waste amounts measured in :  Tons or  Cubic Yards**

Waste Type	11A Statement of Economic Benefits submitted? <input type="checkbox"/> Y <input type="checkbox"/> N											
	Total Amount of Waste Received (a)	Recycled Site (b)	On-site Composted (c)	Landfilled On-site (d)	Incinerated Site (e)	Sent Off-Site to be:			Stored On-Site:		Other (h)	
						Recycled	Treated, Stored, Disposed	Beginning of Reporting Period	End of Reporting Period	Mulched		Other Than Mulched
12 Municipal Solid Waste	105,973.85			105,973.85								
13 Construction/Demolition/Debris	17,014.80			17,014.80								
14 Industrial Waste	0.00											
15 Regulated Medical Waste	0.00											
16 Vegetative/Yard Waste	8,940.72		9,349.80	150.44				4045.80	3,486.28			
17 Incineration Ash	0.00											
18 Sludge	22,673.94		22,389.59	284.35								
19 Tires	189.00						189.00					
20 White Goods	1,448.89						1,448.89					
21 Friable Asbestos	0.00											
22 Petroleum Contaminated Soil	0.00											
23 Other Wastes (specify)	0.00											
24 Total	156,241.20	0.00	31,739.39	123,423.44	0.00	1,637.89	0.00	4045.80	3486.28	0.00	0.00	0.00

General Comments

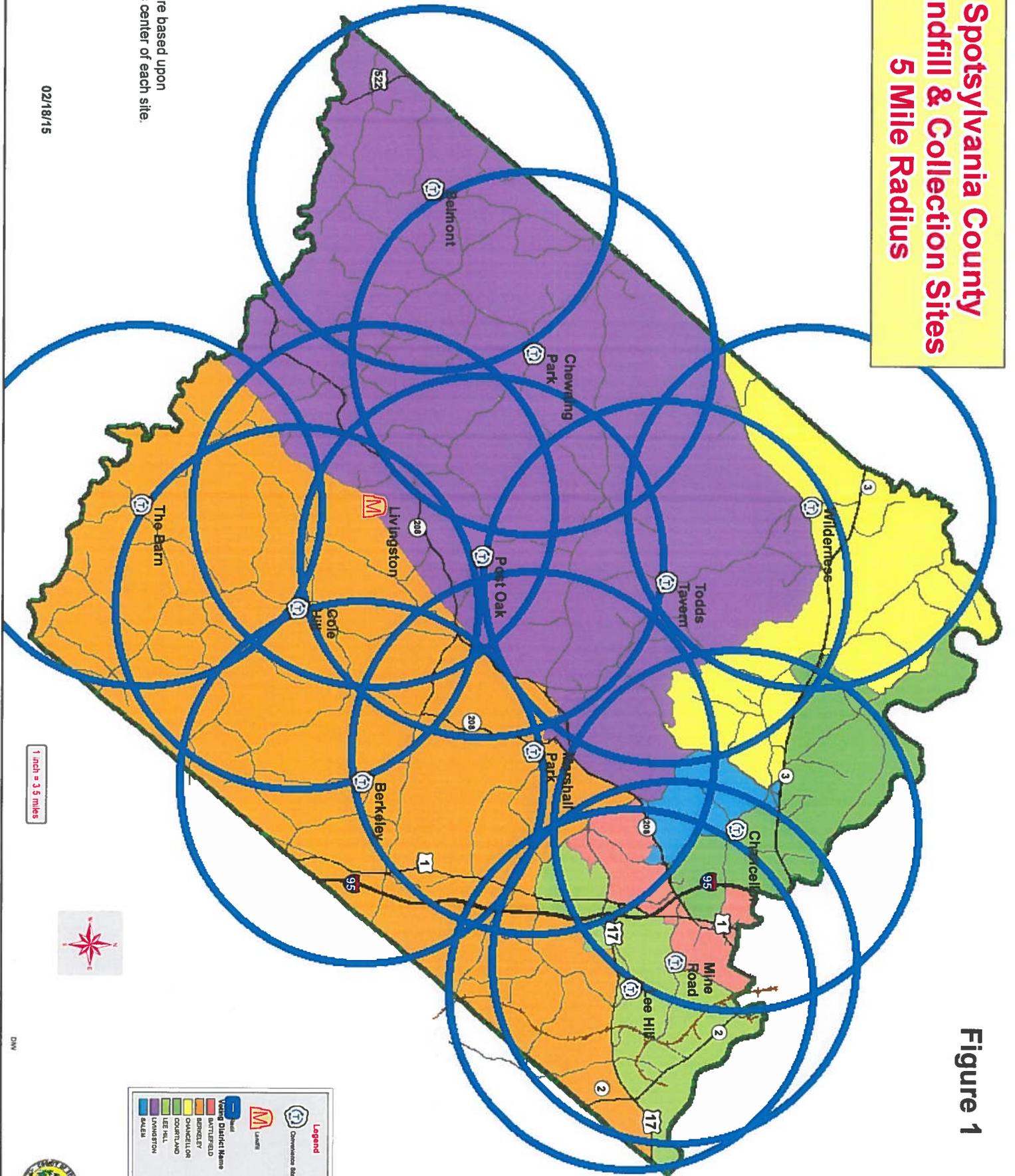
Complete a separate form for each jurisdiction.  
See the instructions for completing Form DEQ 50-25. A separate form is provided for the optional Statement of Economic Benefits.

## *Appendix 2*

---

### *Supporting Maps and Landfill Layout*

# Spotsylvania County Landfill & Collection Sites 5 Mile Radius



**Legend**

- Collection Site
- Landfill
- Voting District Name
- WILDERESE
- CHANCELL
- MINE ROAD
- LEE HILL
- BERKELEY
- POST OAK
- THE BARN

Note:  
1. All radii are based upon geographic center of each site.

02/18/15



1 inch = 3.5 miles



Figure 1

*Appendix 3*  
*Land Use Plan*

---

## **Chapter 2**

# **LAND USE**

## INTRODUCTION

The purpose of the Land Use chapter is to encourage the appropriate use of land, water, and other resources within the County, consistent with the interests of the citizens of Spotsylvania County. The Land Use chapter is a guide for future land use decisions within the County following these general objectives:

- Plan for the orderly development of the County
- Promote a diverse and vibrant economic base
- Maximize the use of existing infrastructure and public facilities to ensure the most efficient operation of facilities and the provision of services
- Accommodate projected residential growth in a manner that is fiscally responsible
- Strive for safe and affordable housing for people of all ages
- Ensure land use policies recognize and accommodate anticipated population increases
- Encourage a community service sector and a commercial base that meets the needs of the citizens and businesses in Spotsylvania County

The element describes land use categories and policies that provide a framework to guide physical development and land use changes in the County. The Future Land Use Map (MAP 1) depicts future land development patterns that are intended promote, preserve, and protect the health, safety, and general welfare of the citizens. The Map is not intended to be parcel specific, but rather provides a flexible guide for the County's desired future development patterns.

Land use designations on the Future Land Use Map do not change a parcel's zoning classification, nor do they impact continuation of existing legal land uses or other uses permitted by existing zoning. Indeed, new development that is in accordance with the Future Land Use Map should ensure appropriate siting and transitions to existing development that may differ from the identified land use on the Map in order to minimize negative impacts on existing development. Additionally, it should be noted that different densities and intensities of development are appropriate within each of the land use categories. Each application should be evaluated within the context of its surrounding existing and proposed development, as well as the timing of the infrastructure necessary to support the development.

Land use decisions should be consistent with the Future Land Use Map. The Future Land Use Map may be amended pursuant to the Code of Virginia §15.2-2.2229.

### **Primary Development Boundary**

A major aim of any Comprehensive Planning process is ensuring that the provision of community facilities and public services is phased with demand. One of the most effective tools for directing the timing and location of new development is the establishment of a Primary Development Boundary to define the area within which public water and sewer utilities will be provided. The Primary Development Boundary is shown on the Future Land Use Map. Land within the boundary is intended to develop with higher residential densities and more intensive non-residential uses than outside of the boundary. By maintaining a Primary Development Boundary, the County encourages the most efficient use of the land while preserving the rural character

and agricultural viability of those portions of the County outside the boundary. This boundary is not permanent and may be adjusted when conditions warrant through the amendment process, in accordance with the policies outlined below.

**Primary Development Boundary Policies:**

1. Rezoning outside of the Primary Development Boundary desiring to connect to public sewer and water should submit a Comprehensive Plan amendment.
  - a. Exceptions include instances pursuant to Spotsylvania County Utility Ordinance (Spotsylvania County Code Section 22-282) and upon satisfaction of the Director of Utilities that a development will not require a County maintained sewer pump station.
2. The ability to extend service pursuant to the above mentioned Utility Ordinance is not sufficient justification to support a rezoning of the property served or of any land through which the utility lines may extend.
3. Expansions may be approved where the County has determined the change is consistent with the Comprehensive Plan.

**Land Use Categories**

Land use categories are described in this section along with policies associated with each land use. The land use categories as shown on the Future Land Use Map depict the long range recommendations for the general development of Spotsylvania County as is required by the Code of Virginia §15.2-2.2223.

**Land Use Policies Applicable to All Land Uses:**

1. Rezoning proposals should demonstrate a proportionate share contribution towards the provision of public facilities to serve the development.
2. Dark sky lighting is encouraged.
3. Wherever possible, existing trees and tree buffers should be preserved rather than replacing mature vegetation with new plantings.
4. Provide Fort A.P. Hill an opportunity to comment on rezoning proposals within the Fort A.P. Hill Approach Fan (Map in Appendix A). Rezonings that include residential development within the Approach Fan should include proffered commitments to noise attenuation, real estate disclosures, and/or other measures recommended by Fort A.P. Hill to minimize the potential that residential development within the zone will negatively impact Fort A.P. Hill's mission.
5. Encourage consideration of disabled and elderly citizens in the design and implementation of both new development and redevelopment.
6. The provision of fiber optic cable and other technological infrastructure should be encouraged throughout the Primary Development Boundary, and to the extent feasible, the County as a whole.
7. Redevelopment and investment in existing developed areas should be encouraged provided that the development does not adversely impact adjoining properties.

### **Agricultural and Forestal Land Use Category**

The agricultural and forestal land use area represents active agricultural land within the County. The agricultural land is used for both crops and livestock purposes, as well as forestry operations and agribusiness. Prime agricultural and forestry lands should be preserved and protected from development pressures through enrollment in Agricultural/Forestal Districts or other programs with similar goals. The County supports a "right to farm" policy which limits the circumstances in which farming practices and operations can be considered nuisances to surrounding development.

#### Agricultural and Forestal Land Use Policies:

1. Foster the preservation of agricultural and forestal land for its intrinsic economic benefits.
2. Discourage rezonings or special use permits for land uses incompatible with adjacent agricultural, silvicultural, or forestal operations or that would have an adverse effect on the continued viability of these uses.
3. If residential development is considered within the Agricultural Land Use, it should utilize clustering provisions and preserve at least 50% of the parent parcel as open space. Particular care should be paid to the viewsheds along rural roads and buffering to active agricultural lands.
4. The County should encourage the development of tourist related services. These uses should be compatible with the existing development and may include bed and breakfast type inns, farmers' markets, and resorts.
5. Agribusiness in any form should be encouraged so long as it preserves the rural character of this portion of the County.
6. Road improvements should take into account the movement of agricultural machinery.

### **Residential Land Use Categories**

There are three distinct residential land use categories. The categories differ by types and densities of residential development. The densities that are provided are simply guides. The appropriate density for each proposal needs to be evaluated in the context of the surrounding community, including the availability or provision of needed infrastructure.

*Rural Residential* – This category encompasses most of the area outside the Primary Development Boundary. In general, rural residential development has a density of one unit per two acres and greater, including large lot residential, cluster development, farms, and forestland. These properties are served by private wells and septic systems. The preservation of land through conservation easements or preservation methods defined by the County Code may also be appropriate within this land use.

While the primary goal of the Future Land Use Element in the rural portion of the County is the preservation of farms, forestland, and open space, rural residents also need convenient commercial services. Therefore, neighborhood commercial rezonings should be considered in the rural areas provided that the applicant can demonstrate a need for the commercial node and provided that adequate infrastructure is in place or can be added by the applicant to accommodate the use. A need can be demonstrated by the lack of similar facilities in the area and/or by population served, or underserved, in the same service area. If public water and sewer are not available, the applicant must demonstrate adequate well and septic capacity. Similarly, transportation elements, such as adequate site distance, signage, and road

improvements, must be provided by the applicant to assure safe and convenient access. Site design and architectural elevations should be considered to ensure that the design and appearance of the commercial use is compatible with the architecture and character of the area.

*Low Density Residential*– This category is reserved for single family attached and detached residences typical in a suburban area. The overall density can be as high as four units per acre, but lower densities are also appropriate. This land use is appropriate within the Primary Development Boundary.

*High Density Residential* – This urban scale residential category typically includes single family attached and multifamily housing at densities greater than four units per acre, but clustered single family detached units could also be appropriate within this land use. Typical uses may include duplexes, villas, cluster housing, town homes, residential condominiums, and apartments. Public water and sewer must be available for this type of development to occur, and, therefore, this land use is appropriate within the Primary Development Boundary.

Residential Land Use Policies:

1. Residential subdivisions within the Primary Development Boundary should preserve at least 30% of the developable area as open space, with the quality of the open space taking primacy over the area provided.
2. Residential subdivisions should provide interparcel connections to adjoining undeveloped properties and connect to developments at existing interparcel access points, where possible, to help improve the connectivity of the transportation network.
3. Residential uses within the Primary Development Boundary should provide inter- and intra-development pedestrian paths to link adjoining subdivisions and form a cohesive residential area.
4. Residential infill development should maintain the neighborhood character established by the existing subdivisions.
5. Residential development outside of the Primary Development Boundary should utilize clustering provisions and preserve at least 50% of the developable area as open space. Particular care should be paid to preserving the character of the viewsheds along rural roads and buffering to existing agricultural properties.
6. The signage for neighborhood commercial ventures in the rural portions of the County should not exceed six feet in height to preserve the rural viewsheds and character of the area.
7. The County should encourage the development of agribusiness and tourist related services within the Rural Residential areas. These uses should be compatible with the existing development and include bed and breakfast type inns, farmers' markets, campgrounds and resorts.
8. Individual driveways onto the primary rural roads should be discouraged and consolidated wherever possible.
9. Promote the provision of a diverse housing mix by encouraging a range of housing sizes and types that meet the needs of citizens at all income levels throughout all stages of life.
10. Promote the construction of market rate affordable housing units rather than units that are subsidized for the initial sale to ensure that housing remains affordable over time.

### **Mixed Land Use Category**

Mixed Land Use communities should serve as a place for Spotsylvania residents to live, work, shop, and play by providing for a variety of land uses in a compact, walkable community with a more dense development pattern. The Mixed Land Use category encompasses a variety of uses, including traditional neighborhoods; higher density residential; non-traditional residential (garage apartments as well as residential units situated over commercial uses); commercial uses (retail and office); light industrial; educational facilities; recreation facilities, and compatible public and other civic facilities. The intensity of the development within the mixed-use category will vary depending upon location, surrounding uses and the availability of mass transit. Larger scale mixed use developments may be proposed under this category or developers may propose smaller projects that that are or will be integrated into a larger mixed use area. This should be accomplished by utilizing the principles described throughout this category description, with particular attention paid to the massing, street layout, building location on the lot, general aesthetic of the development, parking design and location, and pedestrian accessibility.

Alternative modes of transportation are desired within mixed use areas to encourage pedestrian access and discourage automobile reliance. Tracts of land should be developed to provide continuity among the various land uses and to create a compact and walkable living environment and workplace. Transitional uses are required to protect lower intensity and density uses from more intense/dense development. Building heights should be stepped down adjacent to lower intensity and density uses. Road, street, and pedestrian corridors should be established in a grid pattern and connect wherever possible to adjoining developments. Mixed use developments will often include both on and off street parking, sidewalks, bike lanes, benches, pedestrian scale lighting, tree lined streets that soften the hardscape and provide shade for pedestrians, fountains and other civic embellishments that create identity, a sense of community, and uniqueness.

### **Mixed Land Use Policies:**

1. Mixed land use developments should display characteristics that provide a unique sense of place (examples could include: design guidelines, architectural features, or common color palette, among others).
2. Appropriate transitions in scale of building and/or buffering should be provided from mixed land use developments to adjoining existing developments.
3. Vehicular and pedestrian connections should be made to adjoining developments at appropriate locations, including at existing interparcel access points.
4. A grid pattern of connected streets should be encouraged. Cul-de-sacs should be discouraged and only employed in rare instances.
5. Public open space and pedestrian accommodations should be integrated throughout the development.
6. These developments should be designed so that multiple vehicle trips can be combined into one stop by providing several destinations within easy walking distance. This can be encouraged by closely monitoring the provision of parking and ensuring that there is not an excess supply that encourages additional auto trips. Drive-throughs should be limited and carefully designed to ensure integration into the character of the development.
7. Mixed land use development at Lake Anna should provide local shopping and professional services as well as tourist related uses such as hotels, inns and restaurants.
8. Parking should be located to the rear and sides of buildings with the building facades clearly visible from the street.

9. Promote the provision of a diverse housing mix by encouraging a range of housing sizes and types that meet the needs of citizens throughout all stages of life and income levels.
10. Promote the construction of market rate affordable housing units.
11. Quality open spaces should be integrated into developments and may include passive and active areas, pavilions, walking paths, gardens, forested areas, and lakes, among other features.

#### **Commercial Land Use Category**

The commercial land use area consists of a variety of retail and office uses, examples of which include, but are not limited to: medical facilities, shopping centers, restaurants, automobile service and sales facilities, and similar uses. The majority of the existing commercial developments within the County are located along Jefferson Davis Highway (U.S. Route 1), Plank Road (U.S. Route 3), and Southpoint Parkway.

#### **Commercial Land Use Policies:**

1. Street patterns for new development should follow an interconnected network to reduce congestion and provide routing alternatives for local traffic.
2. New development should provide interparcel connections to adjoining properties, where appropriate, and should connect to existing interparcel access points.
3. Sidewalks and paths between commercial and office buildings and through parking lots should be provided to ensure safe pedestrian routes and, when possible, connect to FRED bus routes.
4. The County should encourage development patterns that redirect traffic patterns to alleviate congestion. Direct access to existing roads by individual uses or lots should be discouraged.
5. Development should proceed sequentially along and back from the major thoroughfares. Development should not isolate an existing land use or undeveloped parcel.
6. Encourage the retention and expansion of existing business operations, as well as the attraction of new businesses and investment.
7. Encourage non-retail commercial operations.

#### **Employment Center Land Use Category**

The employment center land use area is envisioned to be the primary location for new office and industrial development within the County, with the focus on larger scale office complexes, industrial users, and business parks. The Route 1 corridor south of Massaponax to the Thornburg interchange, known as the Jackson Gateway, is envisioned to be an economic driver for the County in the future. High end office parks and campus settings with class A office space is desired here as outlined within the Jackson Gateway Plan developed by the Department of Economic Development and Tourism.

In the interests of maintaining a balanced economic base, industrial development within the County is also desired. Both light and heavy industrial uses are appropriate and should be encouraged within the Employment Center category with the careful consideration of their location and transition to adjoining properties. Light industrial uses are usually more consumer-oriented than business-oriented and are manufacturing activities that use moderate amounts of partially processed materials to produce items of relatively high value per unit. Examples include, but are not limited to, the manufacturing of: clothes, shoes, furniture, consumer

electronics and home appliances. Processing, assembly or disassembly operations could also fall into this category. Typically these uses cause little pollution. Heavy industrial uses tend to be larger in scale and often can have pollution impacts (noise, smell, etc.) on the surrounding area. While these impacts should be minimized, there is the recognition that not all negative effects can be completely mitigated. The location of these users within industrial parks, both new and existing, should be encouraged to help ensure appropriate transitions that minimize any pollution impacts on neighboring properties. Examples of heavy industrial uses include, but are not limited to: mining operations; refineries, power plants; and the fabrication and assembly of large items.

Some limited commercial development is also appropriate within the designated Employment Center areas. The commercial development is intended to be secondary to these uses, playing a supportive role the office and industrial development. The County's commercial centers with 'big box' retailers, identified on the Future Land Use Map as the red 'Commercial' category, are intended to be in the eastern Route 3 and Massaponax areas

Employment Center Land Use Policies:

1. Enhance and promote the existing industrial parks and mitigate conflicts with nearby residential areas.
2. Street patterns for new development should follow an interconnected network to reduce congestion and provide routing alternatives for local traffic.
3. Truck dependent businesses should be located where they have access to major thoroughfare and do not have to rely on local roads.
4. New development should provide interparcel connections to adjoining properties where appropriate.
5. Sidewalks and paths between commercial and office buildings and through parking lots should be provided to ensure safe pedestrian routes and, when possible, connect to bus routes.
6. Encourage development patterns that redirect traffic patterns to alleviate congestion.
  - a. Direct access to existing roads by individual uses or lots should be discouraged
  - b. Discourage strip commercial and 'big box' development and promote office and industrial centers in a campus like setting that are linked by pedestrian/bicycle paths, where appropriate, and access roads.
7. Commercial development should only be encouraged to support existing office and industrial development.
8. Development should proceed sequentially along and back from the major thoroughfares.
9. Promote the following components of campus style office development over traditional strip commercial development:
  - a. Minimal entrances and conflict points
  - b. Landscaped median strip with few stoplights and crossovers allowing for free flowing traffic
  - c. Berms, landscaping and trails or sidewalks along major transportation routes
  - d. Pedestrian networks along internal roadways and between complexes
  - e. Maximized interparcel connections
  - f. Mixed uses provide on-site services
  - g. Minimize the visibility of parking lots from the major transportation routes

10. Encourage job creation that provides sufficient income for employees to be able to afford housing within the County.
11. Encourage the retention and expansion of existing business operations as well as the attraction of new businesses and investment.
12. Encourage a balance of uses within the Employment Center category to include light industry, heavy industry and office uses.
13. Distribution centers should be located in areas in close geographic proximity to the interstate with the necessary transportation infrastructure so as to minimize adverse impacts on the County's transportation network.

#### **Open Space Land Use Category**

The open space land use category includes park and recreation facilities owned and operated by the County for passive recreation, State and Federal Government parks, as well those areas deemed worthy of preservation and conservation, such as buffers along major roadways to preserve the rural character in the proximity of the County's historic resources. Common open spaces in private developments are also included as they serve as a passive recreation location. Active recreation opportunities would likely be located either in the Commercial/Mixed Use (privately run) or Institutional (County run) Land Use Categories.

#### **Open Space Land Use Policies**

1. Viewsheds from County roads should be preserved.
2. Development in these areas should be generally discouraged, however, if it is to occur, it should occur in such a way to best blend into the existing landscape.

#### **Institutional Land Use Category**

The institutional land use category includes County facilities, private and public schools, active recreation parks, and large public service uses such as hospitals. This category focuses on existing land uses and does not reflect any aspirational locations of various public facilities.

# Spotsylvania County Future Land Use

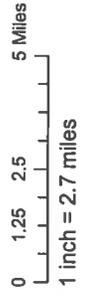


## Legend

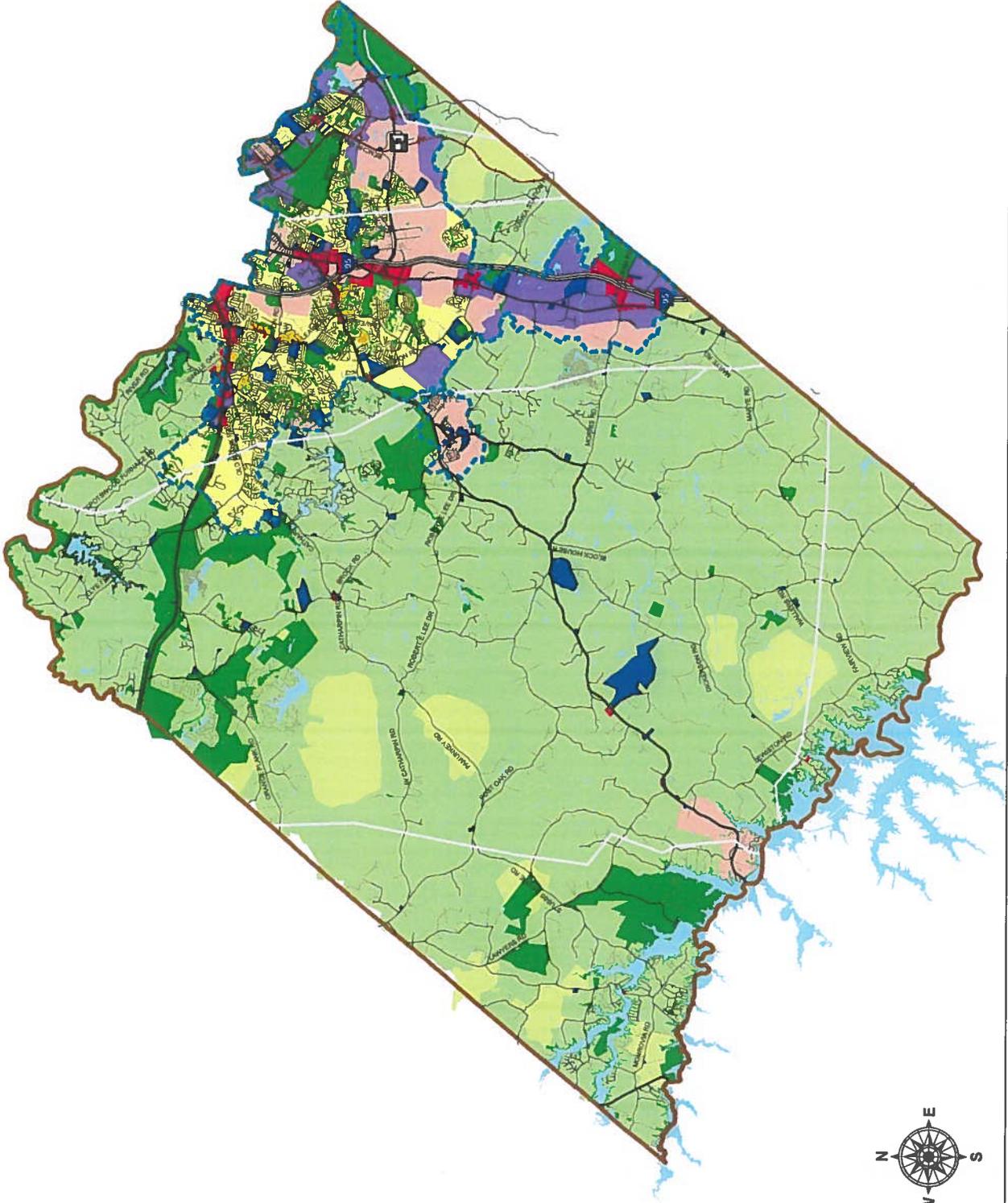
- Primary Development Boundary
- Water

## Land Use Designations

- Open Space
- Institutional
- Commercial Land Use
- Employment Centers
- Mixed Land Use
- High Density Residential Land Use
- Low Density Residential Land Use
- Rural Residential Land Use
- Agricultural and Forestal Land Use



Map Approved: November 14, 2013



*Appendix 4*  
*Recycling Markets*

---

# SPOTSYLVANIA COUNTY RECYCLING MARKETS

<u>COMMODITY</u>	<u>Company/Contact</u>	<u>PHONE/ FAX</u>	<u>AGREEMENT TYPE</u>	<u>RENEWAL DATE</u>
Aluminum	<b>Wise Services</b> Attn: Jesse Wise 745 North Commerce St. Culpeper, VA	<b>540-825-0996</b>	Service Agreement	n/a
Aluminum	<b>Sims Metal</b> Leave message on dispatchers voice mail Richmond, Va	<b>800-815-0631</b>		
Antifreeze	<b>FCC Environmental</b> Contact: Matt Nunnally 2353 Laner Road Rockville, VA 23146	<b>888-749-8344</b> FAX: 804-749-8450	<b>Linwood Ext: 207</b>	Annual
BATTERIES	<b>Battery Barn</b> Eric Finch Petersburg, Va	<b>800-648-1668</b> 804-862-3425 cell 804-721-8266		Service Agreement
BATTERIES	<b>G &amp; C Battery</b> Glen A. Crum Lorton, VA	703-550-2229 cell 703-898-0989		
Cardboard	<b>International Paper</b> Kathy/Claudia P.O. Box 38058 200 Orleans Street Richmond, VA 23231	<b>804-232-2386</b> Ext. 218/207 Fax 804-231-1231		
Cardboard	<b>Four Season Recycling</b> Contact: Wanda McGee PO Box 928 Goochland, Va. 23063	<b>804-339-4964</b> fax: 804-556-5220		
Glass	<b>CRA</b> Collan Petersen 9698 Old U.S. Highway 52 Lexington, NC 27295	<b>919-834-1335</b> 919-422-0949 FAX: 919-829-1396	Service Agreement	n/a
HHW	<b>ECFLO, Virginia</b> Fernando Cruz 2750 Patterson Street	<b>Office 336-855-7925</b> Cell 336-587-4634 Fax 336-855-4137	PO# 71105DB1 Contract	Spring 2009 No Funds for a Spring Event

# SPOTSYLVANIA COUNTY RECYCLING MARKETS

Greensboro, NC 27407

<b>HHW</b>	<b>Clean Harbors</b> Scott Estes 3527 Whiskey Bottom Rd. Laurel, MD. 20724	<b>301-939-6000</b> fax: 301-939-6066	State Contract Other Localities ie: Fairfax Co.	
<b>Magazines</b>	<b>Southeast Paper Recycling</b> same as newsprint	<b>540-373-7388</b>	Contract	(Renewable)
<b>Newsprint</b>	<b>Southeast Paper Recycling</b> Mark Allen/Flo Taylor 1350 North Myers Street Richmond, VA 23230	<b>373-7388</b> 804-359-6606 FAX: 804-358-2814 Local: 373-7388, x1	Contract	(Renewable)
<b>Oil/Oil Filters</b>	<b>US Filter</b> Linwood Barnes 2353 Laner Road Rockville, VA 23146	800-673-8521 <b>888-749-8344</b> FAX: 804-749-8450 Tony Jackson	Linwood <b>ext 207</b>  891-1995	Annual

# SPOTSYLVANIA COUNTY RECYCLING MARKETS

<b>Phonebooks</b>	<b>Greenstone Industries, Inc.</b> Kay Rogers P.O. Box 38 13142 Airpark Drive Elkwood, VA 22718	<b>800-488-5565</b> 540-825-8250 FAX: 540-829-6218 Corp: 301-564-5900	Per Shipment	n/a
<b>Plastic PET # 1</b>	<b>Mohawk Industries</b> Mary Busby Dale Eichberg Dalton, GA 30722	706-428-8439 706-857-6481, ext. 174 Corp: 706-857-6478 FAX:	Per Shipment cell 706-260-1533	n/a
<b>Plastic PET # 1</b>	<b>Clear Path Recycling</b> Ken Prevette	877-387-3788 336-349-5300 cell 336-520-1250		n/a
<b>Plastic HDPE #2</b>	<b>Graham Recycling</b> Jennifer P.O. Box 2618 York, PA 17405-2618	<b>717-849-8651</b> FAX: 717-845-4448	Per Shipment	n/a
<b>Plastic HDPE#2</b>	<b>Blue Ridge Plastics</b> Alan Logan North Carolina	330-699-2313 cell 330-696-9520	Per Shipment	n/a
<b>Propane Tanks</b>	<b>Massey, Wood, and West</b> Mindy Richmond, Va	<b>804-355-1721</b>	Service Agreement	n/a
<b>Scrap Metal</b>	<b>SimsMetal America</b> Attn: Stuart M. Cohn* 3220 Deepwater Terminal Rd Richmond, VA 23234-1838	<b>804-291-3200</b> *804-291-3213 Cell: 804-347-4600 FAX: 804-291-3271	Contract	(Renewable)
<b>Textbooks</b>	<b>Diversified Recycling</b> Attn: Lee Ann Page P.O. Box 129 Auburn, AL 36831-0129	800-624-8612 FAX: 334-821-4999	Per Shipment	

# SPOTSYLVANIA COUNTY RECYCLING MARKETS

**Tires**

**All Season Tire**  
Paul Houck  
Gary/Amy

540-932-7633  
Cell540-836-9829

**Tires**

**VA Recycling**  
P.O. Box 359  
Providence Forge, VA 23140-0359

**804-966-5159**  
cell 804-240-7705

Service  
Agreement

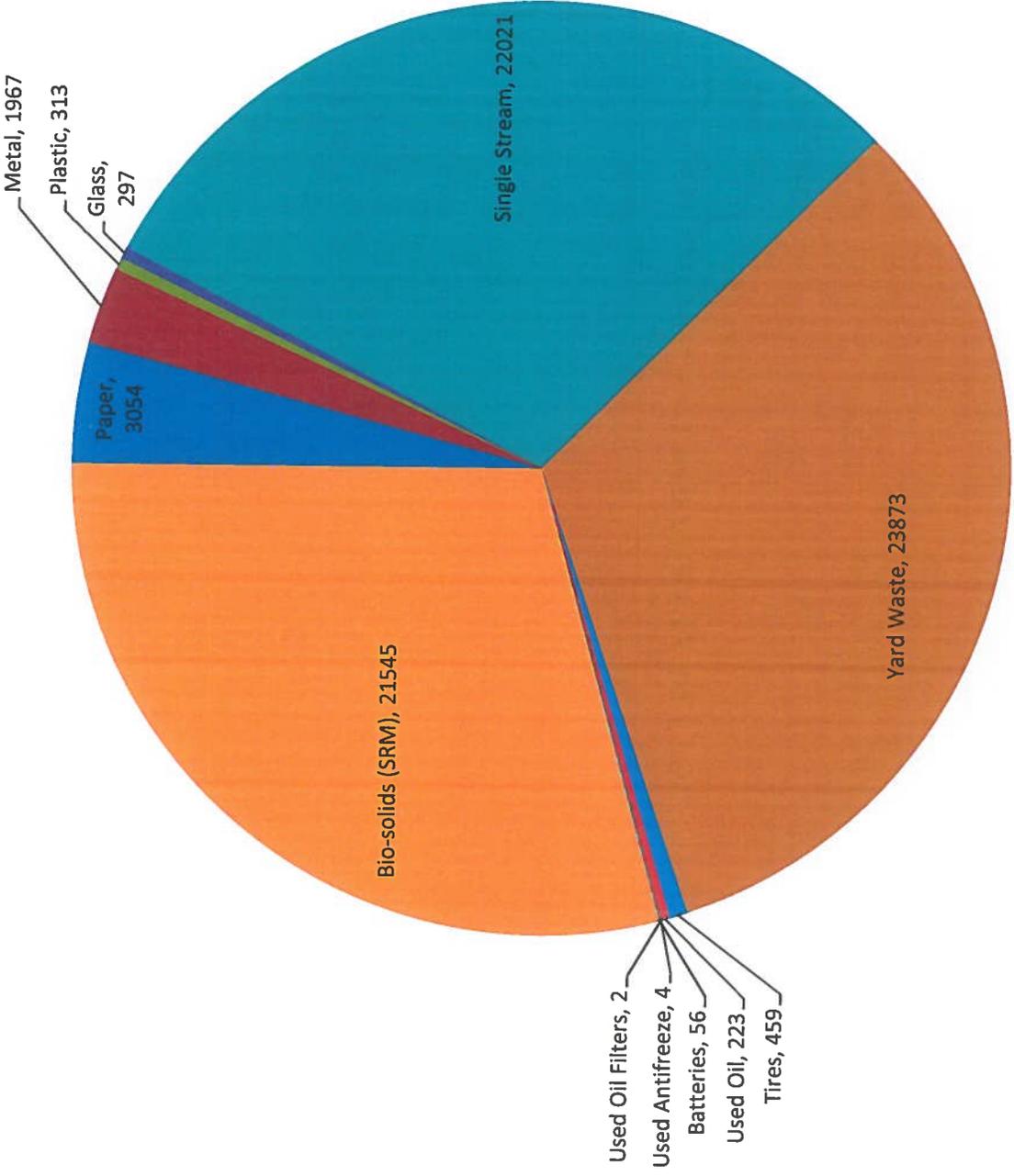
## *Appendix 5*

---

*Principle and Supplemental Recycling Materials*

*2013*

# 2013 PRM and SRM Recycle Tonnage



*Appendix 6*

---

*DEQ 2013 Recycling Reporting Form*



Commonwealth of Virginia
Locality Recycling Rate Report
For Calendar Year 2013

Contact Information

Reporting Solid Waste Planning Unit: Spotsylvania County

Person Completing This Form: Clara M. Mills

Title: Environmental Coordinator

Address: 5917 Harrison Road Fredericksburg VA 22407
Street/P.O. Box City State Zip

Phone #: (540) 507-7729 Fax #: (540) 583-9832

Email Address:

Member Governments (The local governments identified in your regional solid waste management plan and whose data is included in this report):

Spotsylvania County, VA

Due to the complexity and difficulty in obtaining data, this report reflects the best efforts of the solid waste planning unit to represent its recycling efforts for CY 2013. 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.
Benjamin Jardey
Authorized Signature Director, Solid Waste 4/15/14
Date

Return completed form by April 30, 2014 to: Virginia DEQ, Attn: Recycling Rates, P.O. Box 1105, Richmond, VA 23218.

**Locality Recycling Rate Report**

**For Calendar Year 2013**

**PART A: Recycling Rate Calculation** - Using the formulae provided below and the information reported on Pages 3, 4 and 5 to calculate your recycling rates.

**Step 1:  $[(PRMs) / (PRMs + MSW Disposed)] \times 100 = \text{Base Recycling Rate } \%$**

$$\boxed{52,569} / \boxed{52,569} + \boxed{89,471} \times 100 = \boxed{37} \%$$

**Step 2: CREDITS calculation**

a. Total Recycling Residue	$\frac{X}{X}$ tons
b. Total Solid Waste Reused	$\frac{X}{X}$ tons
c. Total Non-MSW Recycled	<u>21,545 tons</u>
<b>CREDITS</b>	<u>21,545 tons</u>

**Step 3:  $[(PRMs + CREDITS) / (PRMs + CREDITS + MSW Disposed)] \times 100 = \text{Adjusted Recycling Rate \#1}^*$**

$$\boxed{52,569} + \boxed{21,545} / \boxed{52,569} + \boxed{21,545} + \boxed{89,471} \times 100 = \boxed{45} \%$$

**Step 4:  Source Reduction Credit does not apply; or**

**Adjusted Recycling Rate #1 + 2% SRP Credit = Adjusted Recycling Rate #2\***

$$\boxed{\phantom{00}} \% + 2\% = \boxed{\phantom{00}} \%$$

**Step 5: Final Recycling Rate\* for Solid Waste Planning Unit =  $\boxed{42} \%$**

**\* Total credits resulting from Steps 3 and 4 may not exceed 5 percentage points above the Base Recycling Rate achieved by the Solid Waste Planning Unit.**

**Locality Recycling Rate Report**  
**PART B: DATA**

**For Calendar Year 2013**

**Part I: Principal Recyclable Materials (PRMs):** Report only PRM material generated within the reporting SWPU and recycled, NOT imported PRMs for recycling.

<u>PRM TYPE</u>	<u>RECYCLED AMOUNT (TONS)</u>
Paper	3,027
Metal	1,951
Plastic	313
Glass	297
Commingled (also known as Single Stream)	22,021
Yard Waste (composted or mulched)	23,873
Waste wood (chipped or mulched)	X
Textiles	X
Tires	459
Used Oil	223
Used Oil Filters	2
Used Antifreeze	4
Batteries	56
Electronics	X
Inoperative Motor Vehicles (see guidance)	X
Other (specify: <u>Cardboard</u> )	327
Other (specify: <u>Aluminum</u> )	16
<b>TOTAL PRMs</b>	<b>52,569 (PRMs)</b>
	<b>(Enter Total on Page 2, Step 1)</b>

**Part II: Credits by Category (see Credits Worksheet, Page 5)**

**A. Recycling Residue** – “Recycling residue” means the (i) nonmetallic substances, including but not limited to plastic, rubber, and insulation, which remain after a shredder has separated for purposes of recycling the ferrous and nonferrous metal from a motor vehicle, appliance, or other discarded metallic item and (ii) organic waste remaining after removal of metals, glass, plastics and paper which are to be recycled as part of a resource recovery process for municipal solid waste resulting in the production of a refuse derived fuel. (§ 10.1-1400 of the *Code of Virginia*) (use only SWPU generation)

<u>MATERIAL DESCRIPTION</u>	<u>FACILITY/OPERATION</u>	<u>TONS OF MATERIAL</u>
_____ from _____	_____	_____
_____ from _____	_____	_____
_____ from _____	_____	_____
<b>TOTAL RECYCLING RESIDUE</b>		_____
		<b>(Enter Total on Page 2, Step 2 a)</b>

**Locality Recycling Rate Report**

**For Calendar Year 2013**

**B. Solid Waste Re-Used**

<u>MATERIAL DESCRIPTION</u>	<u>REUSE METHOD</u>	<u>TONS OF MATERIAL</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
<b>TOTAL SOLID WASTE REUSED</b>		_____

**(Enter Total on Page 2, Step 2 b)**

**C. Non-Municipal Solid Waste (MSW) Recycled**

<u>MATERIAL DESCRIPTION</u>	<u>RECYCLING METHOD</u>	<u>TONS OF MATERIAL</u>
Wastewater	Composting	21,545
Residuals	_____	_____
_____	_____	_____
_____	_____	_____
<b>TOTAL NON-MSW RECYCLED</b>		21,545

**(Enter Total on Page 2, Step 2 c)**

**D: A credit of two (2) percentage points may be added to the Adjusted Recycling Rate #1 if the Solid Waste Planning Unit has implemented a Source Reduction Program (SRP). Examples of SRPs include Grasscycling, Home Composting, Clothing Reuse, Office Paper Reduction (duplexing), Multi-Use Pallets, or Paper Towel Reduction. The SRP must be included in the Solid Waste Management Plan on file with the Department:**

SRP description: \_\_\_\_\_

SRP description: \_\_\_\_\_

SRP description: \_\_\_\_\_

**(Certify on Page 2, Step 4)**

- Exclusions:** For the purposes of this report, the following materials are not considered solid wastes, and should not be included in any of the data categories utilized in calculating the recycling rate.
1. Biosolids – industrial sludge, animal manures; or, sewage sludge (unless composted)
  2. Automobiles – unless part of the Inoperable Vehicle Program (DMV)
  3. Leachate
  4. Soils – contaminated soils, soil material from road maintenance
  5. Household hazardous waste
  6. Hazardous waste
  7. Medical waste
  8. Rocks or stone

**Locality Recycling Rate Report****For Calendar Year 2013**

<b><u>MSW TYPE</u></b>	<b><u>TOTAL AMOUNT DISPOSED (TONS)</u></b>
Household	<u>30,629</u>
Commercial	<u>57,263</u>
Institutional	<u>1,579</u>
Other (DO NOT INCLUDE INDUSTRIAL WASTES)	<u>                    </u>
<b>TOTAL MSW DISPOSED</b>	<u>89,471</u> <b>(Enter Total on Page 2, Step 1 and Step 3)</b>

***\*\*MSW DISPOSED for the purpose of this report means delivered to a permitted sanitary landfill, transfer station, or waste incinerator for disposal.***

**Locality Recycling Rate Report**

**For Calendar Year 2012**

**Credits Worksheet**

**I. Reuse of any Solid Waste**

✓ ____	Material description	Tons
____	PRM	_____
____	PRM	_____
____	PRM	_____
____	Industrial	_____
____	Construction	_____
____	Demolition	_____
____	Debris	_____
____	Other	_____
____	Other	_____
____	Other	_____
	<b>TOTAL TONS</b>	_____

(enter data on Page 4, Solid Waste ReUsed)

**II. Recycling of any Non-Municipal Solid Waste**

✓ ____	Material description	Tons
____	Industrial	_____
____	Construction	_____
____	Demolition	_____
____	Debris	_____
✓ ____	<u>Wastewater Residuals</u>	<u>21,545</u>
____	Other	_____
____	Other	_____
	<b>TOTAL TONS</b>	<u>21,545</u>

(enter data on Page 4, Non-MSW Recycled)

**III. Inoperable Vehicles Removed and Demolished – include number of vehicles that the localities received reimbursement from DMV under §46.2-1207 of the Code of Virginia.**

# of vehicles removed/reimbursement received \_\_\_\_\_  
Average tonnage per vehicle X 1 Ton each

**Total Tons** \_\_\_\_\_ (enter data on Page 3, PRMs, Inoperative Motor Vehicle Program)

**NOTE:** Check “Exclusions” on Page 4 to avoid listing of those materials on this worksheet and/or in the data fields of this report.

## Locality Recycling Rate Report

For Calendar Year 2012

### Part C: Recycling Rate Report Instructions

Amended Regulations for the Development of Solid Waste Management Plans (9 VAC 20-130-10 et seq.) require that Solid Waste Planning Units (SWPUs) in the Commonwealth develop complete, revised solid waste management plans. Section 9 VAC 20-130-120 B & C of the Regulations requires that a minimum recycling rate of the total municipal solid waste generated annually in each solid waste planning unit be maintained. It also requires that the plan describe how this rate shall be met or exceeded and requires that the calculation methodology be included in the plan. Section 9 VAC 20-130-165 D establishes that every solid waste management planning unit with populations over 100,000 shall submit to the department by April 30 of each year, the data and calculations required in 9 VAC 20-130-120 B & C for the preceding calendar year. SWPUs with populations of 100,000 or less are only required to report every 4 years (CY years 2016 and forward).

**NOTE: ONLY RECYCLING RATE REPORTS FROM AN APPROVED SOLID WASTE PLANNING UNIT (SWPU) WILL BE ACCEPTED FOR PROCESSING. JURISDICTIONS WITHIN A SWPU MUST SUBMIT THEIR RECYCLING DATA TO THE SWPU FOR INCORPORATION INTO THE ANNUAL REPORT.**

It is requested that all amounts included on the form be listed in tons (2,000 pounds), rounded to the nearest whole ton. If actual weights are not known, volumes can be converted to weight estimates. To assist you with these estimates, a standardized volume-to-weight conversion table is attached.

**Contact Information Section:** Please provide information on the Reporting SWPU and information on the individual completing this form. Under Member Governments, please list the local governments identified in the applicable solid waste management plan.

**Calculated Recycling Rate Section:** Using the formulae provided, calculate your recycling rates for the reporting period from information identified in the Recycling Rate Calculations Section.

**Signature Block Section:** Please provide an authorized signature prior to submitting the completed form. Authorized signatories include Executive Officer, Administrator, or other legally designated representative of the SWPU reporting entity.

**Recycling Rate Calculations Section:** Please provide the requested information:

**Part I: Principal Recyclable Material (PRM) -** Report the amount in tons of each PRM collected for recycling in the named jurisdiction(s) during the reporting period. PRMs include paper, metal, plastic, container glass, commingled, yard waste, waste wood, textiles, tires, used oil, used oil filters, used antifreeze, batteries, electronics, and other materials approved by the Director taken from the Municipal Solid Waste (MSW) generation. A one ton credit may also be entered for each inoperable motor vehicle for which a locality receives reimbursement from the Virginia Department of Motor Vehicles under §46.2-1207 of the *Code of Virginia*. The total weight in TONS of all PRMs collected for recycling is represented as PRMs in the Recycling Rate Calculation.

**Part II: Credits -** Report the amount in TONS of each material for which recycling credit is authorized in §10.1-1411.C of the *Code of Virginia*: (i) one ton for each ton of recycling residue generated in Virginia and deposited in a landfill permitted under §10.1-1408.1 of the *Code of Virginia*; (ii) one ton for each ton of any solid waste material that is reused; and, (iii) one ton for each ton of any non-municipal solid waste that is recycled. The total weight in TONS of all material for which credits are authorized is represented as CREDITS in the Recycling Rate Calculation. A credit of two percentage points of the minimum recycling rate mandated for the Solid Waste Planning Unit (SWPU) may be taken for a source reduction program that is implemented and identified in its Solid Waste Management Plan. Total credits may not exceed five percentage points above the Base Recycling Rate achieved by the SWPU.

**Part III: Total Municipal Solid Waste (MSW) Disposed:** Report the total amount in TONS of MSW that was disposed of by the Solid Waste Planning Unit (SWPU) during the reporting period for each of the source categories (Household, Commercial, Institutional, and Other). For the purpose of this report, "disposed," means delivery to a permitted sanitary landfill or waste incinerator for disposal, and excludes industrial wastes. Industrial waste and by-products should not be included in the MSW or Recycling calculation. The total weight in tons of MSW disposed is represented as MSW Disposed in the Recycling Rate Calculation.

**Locality Recycling Rate Report Volume to Weight Conversion Table**

<b>Material</b>	<b>Volume</b>	<b>Weight in Pounds</b>
<b>Metal</b>		
Aluminum Cans, Whole	One cubic yard	50-74
Aluminum Cans, Flattened	One cubic yard	250
Aluminum Cans	One full grocery bag	1.5
Ferrous Cans, Whole	One cubic yard	150
Ferrous Cans, Flattened	One cubic yard	850
Automobile Bodies	One vehicle	2,000
<b>Paper</b>		
Newsprint, Loose	One cubic yard	360-800
Newsprint, Compacted	One cubic yard	720-1,000
Newsprint	12" stack	35
Corrugated Cardboard, Loose	One cubic yard	75-100
Corrugated Cardboard, Baled	One cubic yard	1,000-2,000
<b>Plastic</b>		
PETE, Whole, Loose	One cubic yard	30-40
PETE, Whole, Loose	Gaylord	40-53
PETE, Whole, Baled	30" x 62"	500
Film, Baled	30" x 42" x 48"	1,100
Film, Baled	Semi-Load	44,000
Film, Loose	Standard grocery bag	15
HDPE (Dairy Only), Whole, Loose	One cubic yard	24
HDPE (Dairy Only), Baled	32" x 60"	400-500
HDPE (Mixed), Baled	32" x 60"	900
Mixed PET & Dairy, Whole, Loose	One cubic yard	32
Mixed PET, Dairy & Other Rigid (Whole, Loose)	One cubic yard	38
Mixed Rigid, No Film	One cubic yard	49
<b>Glass</b>		
Glass, Whole Bottles	One cubic yard	600-1,000
Glass, Semi-Crushed	One cubic yard	1,000-1,800
Glass, Crushed (Mechanically)	One cubic yard	800-2,700
Glass, Whole Bottles	One full grocery bag	16
Glass, Uncrushed to Manually Broken	55 gallon drum	125-500
<b>Arboreal</b>		
Leaves, Uncompacted	One cubic yard	200-250
Leaves, Compacted	One cubic yard	300-450
Leaves, Vacuumed	One cubic yard	350
Wood Chips	One cubic yard	500
Grass Clippings	One cubic yard	400-1,500
<b>Other</b>		
Battery (Heavy Equipment)	One	60
Battery (Auto)	One	35.9
Used Motor Oil	One gallon	7.4
Used Oil Filters (Uncrushed)	55 gallon drum	66 Lbs./Used Oil + 110 Lbs./Ferrous Metal
Used Oil Filters (Crushed)	55 gallon drum	16.5 Lbs./Used Oil + 368 Lbs./Ferrous Metal
Tire - Passenger Car	One	20
Tire - Truck, Light	One	35
Tire - Semi	One	105
Antifreeze	One gallon	8.42
Food Waste, Solid & Liquid Fats	55 gallon drum	412
Electronics: CRT/CPU/LapTop/TV	Each (avg wt from NCER)	38/26/8/49 respectively
<b>This Table For General Guidance Only.</b>		

*Appendix 7*

---

*2013 Non-residential Waste Reporting Form*

*County of Spotsylvania*  
*Founded 1721*



*Service, Integrity, Pride*

**2014 Annual Disposal and Recycling Hauler Audit**

Dear Mr. Falwell:

Section 19-9 of the Spotsylvania County Code requires all companies that offer solid waste or recycling services within Spotsylvania County, Virginia to report their solid waste activities for the previous calendar year. Failure to comply with this ordinance may result in assessment of civil penalties. You will find enclosed the forms for Calendar Year 2014. Please complete the enclosed forms and submit them to my office by March 1<sup>st</sup>, 2015.

Include in this report only recyclable materials and refuse collected within Spotsylvania County. All information reported should be based on actual weight tickets; however, estimates may be used providing that standard conversions are used and calculations provided. Do not include any waste produced or generated from construction, remodeling, or repairs of the following: pavement, houses, commercial buildings, and other structures.

Complete pages 3 and 4 of this report, sign, date, and mail or fax to the following address no later than March 1<sup>st</sup>, 2015.

2014 Annual Disposal and Recycling Hauler Audit

Attn: Clara M. Mills

5917 Harrison Road

Fredericksburg, VA 22407

Fax: 540-582-9832

Should you have any questions regarding these reports please contact me, at (540) 507-7729 or email [cmills@spotsylvania.va.us](mailto:cmills@spotsylvania.va.us)

Sincerely,

Clara M. Mills  
Environmental Coordinator

## **Instructions**

Include in this report only recyclable materials and refuse collected within Spotsylvania County. All information reported should be based on actual weight tickets; however, estimates may be used providing that standard conversions are used and calculations provided.

Do not include any waste produced or generated from construction, remodeling, or repairs of the following: pavement, houses, commercial buildings, and other structures. If your business only provides these services please indicated "Construction Debris Only" under the business type, sign and return to the address listed.

All information should be based on actual weights (1 ton= 2,000 pounds). If weights are estimated, use the attached conversion table and attached any notes showing how the estimate was developed.

## **SPOTSYLVANIA COUNTY DISPOSAL AND RECYCLING HAULERS AUDIT SOLID WASTE MANAGEMENT PROFILE 2014 (Page 3)**

This information is being requested under Section 19-9 of the Spotsylvania County Code that requires businesses within Spotsylvania County, Virginia to report their solid waste management activities for the previous calendar year.

**Company/Business Name:** \_\_\_\_\_

**Contact Name:** \_\_\_\_\_ **E-Mail:** \_\_\_\_\_

**Address:** \_\_\_\_\_

**Phone Number:** \_\_\_\_\_ **Fax Number:** \_\_\_\_\_

**Type of Business:** (circle one)

- |                        |   |
|------------------------|---|
| 1) Refuse Hauler       | 3) Recycling Collector                              |
| 2) Recycling Processor | 4) Construction Debris Only (report not applicable) |

**Recycling Mechanism (Please answer the following questions):**

- 1) Y / N Recyclables are hauled to a recycling facility by your company

If "yes" please provide the following information:

**Name of Recycling Facility:** \_\_\_\_\_

**Address of Recycling Facility:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Complete Page 4 to identify recycled items with associated tonnages.**

**Disposal Mechanism (Please answer the following questions):**

- 1) Y / N Solid Wastes are hauled to a disposal facility by your company

If "yes" please provide the following information:

**Name of Disposal Facility:** \_\_\_\_\_

**DEQ Permit Number (If Known):** \_\_\_\_\_

**Tipping Fee Paid (Requested to provide, but NOT required):** \_\_\_\_\_

**Total Tonnage Disposed  
(Spotsylvania County Only):** \_\_\_\_\_

Note: Include any calculations for waste estimates.

I certify that all information is accurately documented to the best of my knowledge:

Name: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

This information is being requested under Section 19-9 of the Spotsylvania County Code that requires businesses within Spotsylvania County, Virginia to report their solid waste management activities for the previous calendar year.

Please Reference Attachment 1 for Standard Conversion Rates

Recyclable Material (report in tons)	Tons of Material Recycled	Delivered by your Company (Y/N)	Collected by a Recycling Service (Y/N)	Name of Recycling Vendor
(See information below for guidance)		<i>Specify Vendor in Column E</i>	<i>Specify Vendor in Column E</i>	
Paper				
Metal				
Plastic				
Glass				
Commingled (Mixed/Single Stream)				
Yard Waste (Composted/Mulched)				
Debris Waste				
Construction and Demolition Waste				
Electronics				
Tires				
Oils (Fleet Vehicles Only)				
Antifreeze (Fleet Vehicles Only)				
Cloth/Textiles				
Batteries (All)				
Grease (Restaurant, Food)				
Pallets				
Food Waste				
Other				
Other				
<b>TOTAL TONNAGE COLLECTED</b>				
<i>2000 lbs=1 ton, 1 gal oil = 8 lbs</i>				
<i>1 gal antifreeze = 9 lbs</i>				

**Paper** includes recyclable white and mixed units such as cardboard, catalogs, junk mail, magazines, newspapers, paperboard, etc.

**Metal** includes aluminum, ferrous and non-ferrous metals, lead, scrap metal, steel etc. Do not include abandoned automobiles

**Plastic** includes bags, bottles, films, packaging/straps, shrink wrap, etc...

**Glass** includes bottles and containers.

**Yard Waste** includes composted or mulched waste only

**Debris Waste** includes brush, leaves, stumps, wood, etc. (land clearing material commercially "harvested" or processed not applicable)

**Construction and Demolition Waste** such as brick, concrete, glass, lumber, metal, paving material, pipes, sheetrock, wire, etc...

**Electronics** include cell phones, computers, monitors, stereo equipment, televisions, VCRs, etc...

**Oil and Antifreeze** only includes that which is recycled from a business vehicle fleet. Includes motor oil, hydraulic oils, etc.

**Cloth/Textiles** include carpet, curtains, drapes, fabric, shoes, towels, etc...

**Batteries** such as alkaline, lead-acid, lithium, nickel cadmium (rechargeable), silver oxide (watches/hearing aids), etc...

**Other materials** may include recyclables such as ink/toner cartridges, pallets, restaurant grease, etc...

This information is being requested under Section 19-9 of the Spotsylvania County Code that requires businesses within Spotsylvania County, Virginia to report their solid waste management activities for the previous calendar year.

## *Appendix 8*

---

### *Notice of Public Meeting and Results of Public Participation*

County of Spotsylvania  
Founded 1721

Board of Supervisors

HENRY "HAP" CONROE, JR.  
ROBERT L. HAGAN  
GARY A. JACKSON  
EMMITT B. MARSHALL  
VINCE ONORATO  
THOMAS C. WADDY, JR.  
CHRIS YAKABOUSHI



General Services

C. DOUGLAS BARNES, DIRECTOR  
P.O. Box 116  
SPOTSYLVANIA, VIRGINIA 22553

dbarnes@spotsylvania.va.us  
PHONE: (540) 582-7055 x239  
FAX: (540) 582-6304

Service, Integrity, Pride

June 15, 2004

Lynn Croy  
Draper Aden Associates  
2206 South Main St.  
Blacksburg, VA 24060

Re: Solid Waste Management Plan

Dear Lynn

Spotsylvania County held a public meeting to allow an opportunity for the public to comment on the "Solid Waste Management Plan". The meeting was held on May 20, 2004, at 7:00 p.m., in the C. Melvin Snow Library, Meeting Room 2 located at the Marshall Center at 8800 Courthouse Road. I opened the public hearing at 7:00 p.m. with no one from the public in attendance and closed the hearing at 7:30 p.m. Therefore, no oral comments or written comments received from the public.

Enclosed you will find a copy of the following:

- Notice of Public Meeting for Solid Waste Management Plan
- Signed Resolution from the June 8, 2004 Board of Supervisors Meeting

Please feel free to contact Pat Minor at 540-582-7055 x237, email pminor@spotsylvania.va.us if you have any questions.

Sincerely,

C. Douglas Barnes  
Director of General Services

Spotsylvania County  
Notice of Public Meeting  
Solid Waste Management Plan

Pursuant to the requirements of 9 VAC 20-130-110 B of the Virginia Solid Waste Management Regulations, Spotsylvania County will hold a public meeting to discuss the proposed update to the County's Solid Waste Management Plan. The plan by regulation must address collection, disposal and recycling for a 20-year period, through 2024.

The purpose of the public meeting is to acquaint the public with the proposed plan. The meeting will allow the public an opportunity to comment on the plan and to provide suggestions relative to the County's integrated waste management system. Suggestions and comments will then be evaluated by the County and incorporated into the final plan if found to be in the best interest of the County.

The public meeting will be held on May 20, 2004 at 7:00 p.m. in the C. Melvin Snow Library, Meeting Room 2 (located at the Marshall Center, 8800 Courthouse Road). Comments on the Solid Waste Management Plan will be accepted until 4:30 PM on May 31, 2004. All comments are to be in writing to the Director of General Services, Spotsylvania County, P.O. Box 116, 8800 Courthouse Road, Spotsylvania, VA 22553-0116. Copies of the Solid Waste Management Plan can be reviewed at the Spotsylvania County Administration Office and General Services Office. For more information, call (540) 582-7055, ext. 237.

*Appendix 9*

---

*Resolution*

Board of Supervisors  
HENRY "HAL" CORRIERS, III  
ROBERT E. HAGAN  
GARY JACKSON  
EMMITT MARSHALL  
MIKE ORIOLETO  
THOMAS C. WADLEY, JR.  
CHRIS YAKABOWSKI



*Veritas, Integritas, Pride*

County Administrator  
J. Randall Wheeler  
Executive Deputy County Administrator  
C. DOUGLAS BARNES  
Interim Deputy County Administrator  
TERESA L. FLEMING-STON  
P.O. BOX 99  
SPOTSYLVANIA, VIRGINIA 22513  
Phone: (540) 582-7010  
Fax: (540) 582-9308

At a meeting of the Spotsylvania County Board of Supervisors held on June 8, 2004, on a motion by Mr. Jackson, seconded by Mr. Marshall and passed unanimously, the Board adopted the following resolution:

RESOLUTION NO. 2004-60

**To Adopt Spotsylvania County's Solid Waste Management Plan**

WHEREAS, pursuant to Section 2 VAC 20-130-100.B of the Virginia Solid Waste Management Plan an updated Solid Waste Management Plan, addressing solid waste collection, disposal and recycling for the period of 2004 to 2024, shall be provided to the Virginia Waste Management Board; and

WHEREAS, a public meeting was held on May 10, 2004, to receive comments from the public on the Spotsylvania County's updated Solid Waste Management Plan;

NOW, THEREFORE, BE IT RESOLVED that the Board of Supervisors of Spotsylvania County, Virginia does hereby adopt the 2004-2024 Solid Waste Management Plan for submission to the Department of Environmental Quality Agency.

(SEAL)

A COPY HERE

*Sheila Clark*  
Sheila Clark  
Deputy Clerk