

## **4. EXISTING SOLID WASTE MANAGEMENT SYSTEM**

A description of the various programs and facilities constituting the existing solid waste management system within the service area is presented in this chapter. These public and private sector systems and facilities represent the existing (2003) or baseline conditions for evaluating the area's solid waste management needs.

This description begins with a description of the methodology used to collect data on the existing solid waste management system within the service area follows. Existing waste collection, transfer and disposal programs and facilities are then described, including local litter control programs. The chapter concludes with a description of local waste reduction and reuse efforts.

### **4.1 DATA COLLECTION METHODOLOGY**

No central databases or mandatory reporting requirements for solid waste generation exist within the CVWMA service area. Therefore, all the solid waste data used for this plan are generated from the limited available information and from the information published by the EPA in *Municipal Solid Waste in the United States: 2000 Facts and Figures* in conjunction with population data and projections for the PDCs.

Solid waste quantities were calculated based on locality populations and the EPA year 2000 figure of 4.51 pounds per day per person generated municipal solid waste<sup>1</sup>.

### **4.2 WASTE COLLECTION AND RECYCLING SYSTEMS**

Nearly 50 percent of the service area's generated residential waste is collected through various municipal programs. Voluntary citizen drop-offs, primarily at transfer stations/convenience centers and public landfills, account for approximately 15 percent of this total. Private haulers collect nearly all commercial and industrial waste, and the remainder of the residential waste.

A description of existing waste collection services is presented in the following subsections. Chart 2 depicts the waste and recycling processes that are described in the subsections. In addition, information on local litter control programs and area source reduction/reuse and recycling programs are provided at the conclusion of the description of existing waste collection services. Table 1 lists the waste collection options available within each locality in the Central Virginia Waste Management Authority service area.

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<sup>1</sup> *Municipal Solid Waste in the United States: 2000 Facts and Figures*, Office of Solid Waste and Emergency Response U. S. Environmental Protection Agency, June 2002

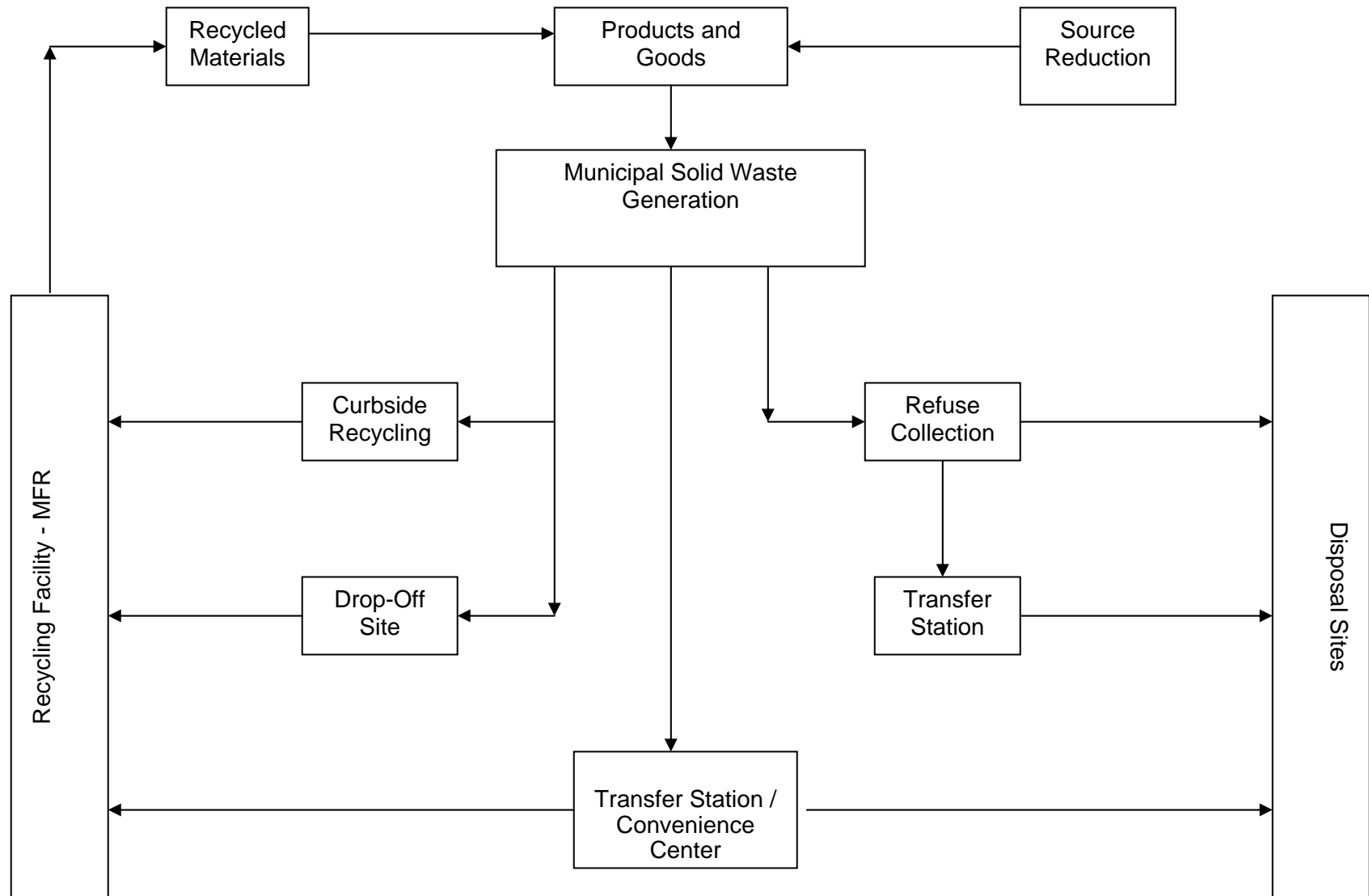
**Table 1**

**Waste Collection Services Within CVWMA Service Area**

<b>Jurisdiction</b>	<b>Public Collection</b>	<b>Private Collection Through Public Contract</b>	<b>Private Contract</b>	<b>Convenience Center / Transfer Station</b>	<b>Leaf &amp; Bulky Item Collection</b>
Ashland		X			X
Charles City			X	X	
Chesterfield	X		X	X	
Goochland			X	X	
Hanover			X	X	
Henrico	X		X	X	X
New Kent			X	X	
Powhatan			X	X	
Richmond	X		X	X	X
Colonial Hts.		X		X	
Hopewell		X		X	X
Petersburg	X	X			X
Prince George			X	X	

Chart 2

CENTRAL VIRGINIA WASTE MANAGEMENT AUTHORITY SOLID WASTE MANAGEMENT PROCESS



## **4.2.1 Waste Collection Services**

### **4.2.1.1 Richmond Planning Subarea**

Henrico County provides a fee-based subscription collection service to approximately one-third of the 80,000 single-family residential units in the County. Private waste collection contractors collect residential solid waste in areas not served by the County. In 2004, there are at least ten private collectors of solid waste that operate in Henrico County. Commercial waste collection is provided by means of private collectors throughout the County. The County also provides bulky waste and leaf collection to its residents.

Within the County of Goochland, private waste collection companies provide curbside residential waste collection. The limited number of private waste collectors in the County take the trash to landfills outside the County, including but not limited to, Henrico County's Springfield Road Landfill. Commercial waste collection service is provided through individual contracts with private haulers.

Several small private firms provide curbside residential waste collection service for residents of the County of Powhatan. The waste is disposed of at landfills outside of the County. Private haulers also collect construction and demolition waste within the County.

Private collection companies in the County of Hanover provide all curbside residential waste collection services to individual subscribers as well as commercial waste collection services through contracts managed by the commercial establishment. The CVWMA or the County manages government collections. The five primary private collection companies that serve the County take the trash collected to privately owned and operated sanitary landfills outside the County or to the County transfer station.

Within Hanover County, the Town of Ashland is contracting through the CVWMA with Allied Waste to collect residential waste from approximately 1,465 households on a weekly basis. Commercial waste is collected under private contract between businesses and private waste collection firms.

Chesterfield County operated a limited (approximately 5,000 homes) bi-weekly Pay-As-You-Throw (PAYT) residential solid waste collection program. Residents purchase trash tags. One tag is attached to each 32-gallon trashcan or bag set out for collection. Approximately 3,200 tons of refuse was collected in FY 2003. This refuse is taken to the Shoosmith Bros. Landfill in Chesterfield County. This program was discontinued in July 2008 except for tax-relief citizens. The County also provides bulky waste collection, vacuum leaf collection and bagged yard collection services. Residents purchase yard waste tags and attach one tag to each bag of yard waste that is set out. The County provides weekly collection for bagged yard waste. For bulky waste (e.g. furniture, appliances, brush) collection services, the County charges a fee per load and requires residents to call to schedule the service. Between November and March the County offers curbside vacuum leaf collection services for a fee per visit. Residents are also required to call and schedule this service. This leaf collection program was discontinued in 2007. Most County residents utilize one of the approximately 25 county licensed private waste haulers for curbside solid waste collection services or they take their residential solid waste to one of the two County convenience centers. Most of the private waste haulers provide collection services on a

weekly basis. Some also provide bagged yard waste and bulky waste collection services. Businesses and industry use private waste collection companies for their waste disposal.

Currently, several solid waste collection and transportation firms are permitted to operate in New Kent County. These collectors are considered “minor” collectors, operating two or fewer vehicles in the county. “Minor” collectors serve county businesses. There is also a number of private companies collecting and disposing of construction and demolition waste within the County.

The City of Richmond services over 60,000 homes and 2,000 businesses with 95-gallon “supercan” service. Private contractors also service “supercans” at apartment buildings. Larger commercial establishments utilize private contractor provided front-end containers for their waste collection and disposal, as does the City for most of its facilities. The City hauls and permits residents to haul brush/yard waste in unlimited amounts to the City’s East Richmond Road site. This material is ground into mulch and used in parks and given to residents.

#### **4.2.1.2 Crater Planning Subarea**

Prince George County residents must contract individually with private firms for waste collection services if they elect not to take their residential waste to the County convenience center site. The County of Prince George has very few private contractors collecting curbside residential waste. The contractors currently serve only the heavily populated areas such as subdivisions. All County owned and school system facilities contract waste collection services with private haulers selected through an annual bid process.

The City of Colonial Heights is contracting through the CVWMA to collect residential waste from approximately 6,575 households on a weekly basis. Commercial waste is collected under private contract between businesses and private waste collection firms.

The City of Hopewell is contracting through the CVWMA to collect residential waste from approximately 8,150 households on a weekly basis. Commercial waste is collected under private contract between businesses and private waste collection firms.

The City of Petersburg is contracting through the CVWMA to collect residential waste from approximately 11,500 households on a weekly basis. Commercial waste is collected under private contract between businesses and private waste collection firms. The City provides collection services to approximately 500 households and businesses in the downtown area.

#### **4.2.2 Litter Control Programs in CVWMA Service Area**

The Commonwealth of Virginia levies three taxes to support litter prevention and recycling program activities in Virginia. The three taxes are comprised of a malt beverage tax, a soft drink tax and a retail establishment fixed fee of \$10 or \$25. These funds are collectively referred to as the “litter taxes.”

Each locality in Virginia is eligible for an annual grant funded by these taxes and administered by the Virginia Litter Control and Recycling Fund Advisory Board through the Department of Environmental Quality. Localities use these grants to fund salaries, administration, educational materials, travel, equipment and other expenses related to litter prevention and recycling

programs.

Since the inception of the State grant program in 1978, cities and counties in the CVWMA service area have formed citizen committees to guide litter prevention and recycling education efforts. Often full or part-time coordinators manage these programs. Litter prevention programs provide student and community education regarding proper solid waste management practices and recycling. The programs also coordinate some litter cleanup and recycling activities.

Programs may follow the guidelines of Keep America Beautiful, Inc. The Cities of Hopewell, Petersburg, and Richmond are affiliates of Keep America Beautiful. Program coordinators may also be active in the Virginia Council for Litter Prevention and Recycling, which organizes statewide educational efforts.

The local department of public works or cooperative extension office sponsors many programs, which provide office and administrative assistance to the program.

The following is a summary of current litter control efforts in the CVWMA Service Area.

- Charles City: Activities coordinated by the Clean Community Commission through the Department of Development.
- Chesterfield: Activities coordinated by Keep Chesterfield Clean through the Chesterfield Cooperative Extension Office.
- Goochland: Activities coordinated by the Solid Waste Environmental Education Project through the Goochland Cooperative Extension Office.
- Hanover: Activities coordinated through the Department of Public Works.
- Henrico: Activities coordinated by Keep Henrico Beautiful through the Department of Public Works.
- Hopewell: Hopewell activities are coordinated through the Clean City Commission under the auspices of the Director of Development.
- New Kent: Activities coordinated through the Department of Planning.
- Petersburg: Activities coordinated through the Department of Planning and Community Development.
- Powhatan: Activities coordinated by the Anti-Litter Council.
- Prince George: Activities coordinated through the Department of Public Works.
- Richmond: Activities coordinated by the Clean City Commission through the Department of Public Works.

#### **4.2.3 Landfill and Transfer Station Facilities**

It is estimated that in 2002, 140,000 tons of municipal solid waste were disposed of in public

landfills. The remaining landfilled residential and commercial waste was disposed of in private facilities.

There are 11 permitted landfills currently being utilized within the Central Virginia Waste Management Authority region. Five of the landfills are classified as sanitary landfills, of which two are publicly owned and operated, one is publicly owned and privately operated and two are privately owned and operated. Five of the Region's landfills are Construction, Demolition and Debris (C/D/D) landfills: all are privately owned and operated. A new privately owned and operated C/D/D landfill is currently (2006) being proposed for the Skinquarter area in Western Chesterfield County (see section 6.9). Additionally, five (5) sanitary landfills outside the CVWMA region are utilized by contractors hired to haul and dispose of MSW collected at convenience centers within the region.

Table 2 provides a summary of the type, location, and reserve capacity of the major public and private sanitary and C/D/D landfills currently being utilized to dispose of waste generated within the Region. Map 3 shows the location of these facilities. Reserve capacity figures listed in Table 2 reflect DEQ reported information for the CY 2002. These capacity figures could increase as some of these landfills have submitted Part A Applications for expansion subsequent to the publication of the source report and others may do so in the future.

This section concludes with brief descriptions of the major regional landfills being utilized that are within the CVWMA's Service Area or in jurisdictions in close proximity to the CVWMA's Service Area. Appendix D contains a complete listing of active and closed solid waste facilities, including landfills, within the Service Area.

#### **4.2.3.1 Private Sanitary and C/D/D Landfill Facilities**

##### **4.2.3.1.1 Richmond Planning Subarea**

One of the area's largest sanitary landfills is located in Charles City County. The **Waste Management of Virginia, Charles City Landfill** is a Sub-Title D landfill owned by the County and operated and maintained by Waste Management under a 40-year lease contract with Charles City County. This facility, located approximately 20 miles southeast of the City of Richmond was opened for operation in May 1990 and is located on a property of approximately 600 acres of which 289 acres (DEQ Permit Number 531) are for disposal. The facility is permitted in ten phases.

The landfill's regular operating hours are 7:00 am to 4:00 pm Monday through Friday and from 8:00 am to 11:00 am on Saturday. The landfill is closed on Sundays and observes New Years Day, Memorial Day, July 4<sup>th</sup>, Labor Day, Thanksgiving Day and Christmas Day as holidays.

The landfill has a 40+ year planned gross capacity based on the current daily volume of 2,000 tons being received with a peak daily acceptable tonnage of 5,000 tons.

In addition to the waste generated within Charles City County, waste is brought to the facility from the City of Richmond's transfer stations and from areas outside the Region and the Commonwealth. The facility provides disposal for MSW, Construction and Demolition Debris as well as pre-approved, manifested contaminated soils, ashes, WWTP and industrial sludges, approved and profiled by the Waste Management Environmental Manager. The facility does not

accept the following wastes: whole tires, asbestos containing debris, batteries, electronic component debris, radioactive waste, hazardous waste, waste containing free liquids, drummed wastes or any other unapproved waste.

**Shoosmith Brothers Sanitary Landfill** is located at 11800 Lewis Road Chester, Virginia. This is south of Route 10, approximately 1,500 feet WSW of the intersection of Route 10 and Lewis Road in Chesterfield County. Although the sanitary landfill is the only active facility operated by the company, an inactive asbestos landfill is located adjacent to the facility.

The landfill may remain open 24 hours per day seven days per week but normal hours of operation are 6:00 am to 6:00 pm Monday through Friday and 6:00 am to 12:00 pm on Saturday. Holidays normally observed include New Years Day, Thanksgiving Day and Christmas Day.

The landfill operates under DEQ Permit Number 587 (originally #211) on 506 permitted property acres. The permitted disposal acreage is 374 and currently used acreage is 164 acres.

The designed capacity is approximately 75.8 million cubic yards with an average daily tonnage of 3,562 tons and a peak daily tonnage of 5,350 tons. The Shoosmith Sanitary Landfill services Chesterfield County, the Greater Richmond Metropolitan Area, other jurisdictions located within the Commonwealth of Virginia and selected geographic locations outside the state as allowed by permit number 587. Shoosmith Brothers, Inc. currently has contractual agreements through CVWMA with Chesterfield County to accept some of its waste, and with the County of Hanover to accept all of their residential solid waste.

The facility accepts the following types of waste: agricultural waste, ash and air pollution control residues classified as non hazardous, commercial waste, compost, construction waste, debris, demolition waste, MSW, sludge, institutional waste except anatomical waste or infectious waste, reclaimed soil classified as non-hazardous, scrap metal and white goods, sludge, tires (which are subsequently split, cut or shredded), non-regulated hazardous wastes by specific approval only small animal carcasses and occasional large animal carcasses.

In 2010 the landfill is added a MRF that will handle up to 1,000 tons per day of MSW and recyclables. At the MRF materials such as cardboard, metals and wood will be recovered from incoming loads for recycling. Materials not recovered from incoming loads at the MRF will be transferred to the landfill for disposal.

The **Allied Waste Systems of Virginia (Allied Waste) Old Dominion Landfill** is located in eastern Henrico County at 2001 Charles City Road. The landfill is located east of the City of Richmond approximately 2.5 miles west of the Richmond International Airport. Access to the landfill can be gained from Charles City Road approximately 1.5 miles west of the intersection of Charles City Road and Laburnum Avenue.

The Old Dominion Landfill is a sanitary landfill primarily serving the Metro-Richmond area and Central Virginia. Under the terms of the Host Agreement with Henrico County, no MSW can be accepted from outside a 150-mile radius. The landfill accepts waste material collected from Allied Waste's waste collection operations and from other area private collectors.

The landfill's regular operating hours are 6:30 a.m. to 5:00 p.m. Monday through Friday and from 7:00 a.m. to 12:00 p.m. on Saturday. The landfill is closed on Sundays and on New Years

Day, Thanksgiving Day and Christmas Day.

The Old Dominion Landfill operates under VDEQ Permit No. 553, originally issued in 1992. As of August 2005, the property currently owned by Allied Waste totals 268 acres, of which 74.8 acres have been permitted for waste disposal. The currently permitted waste disposal (as of August 2005) occurs in eight cells designated Phase 1 through 8.

Allied Waste has negotiated with Henrico County for purchase of land east of the existing landfill. The additional parcel is 168.42+/- acres, and includes the closed Henrico County Landfill No. 3 (HCL3) and undeveloped land east of HCL3. Allied Waste plans to develop 125.5+/- acres of this land in two phases, (i) Phase I which involves waste placement over the existing closed Henrico County Landfill No. 3 (HCL3), and (ii) Phase II which involves the use of the undeveloped land to the east of HCL3.

<b>Parcel</b>	<b>Acres</b>	<b>Acres Permitted or Proposed for Waste Disposal</b>	<b>Disposal Volume (million CY)</b>	<b>Site Life (years)**</b>
Existing Site	268	74.8		
Expansion Parcel	168.42+/-	Phase I - 45.0+/--(Piggyback on to HCL3)*	11.6	7.0
		Phase II - 80.5 +/-	27.4	16.8
<b>TOTAL ACRES</b>	<b>436.42+/-</b>	<b>200.3+/-</b>	<b>39</b>	<b>23.8</b>

\*The proposed piggyback expansion will occupy land from both the existing site and the expansion parcel.

\*\*Based on a yearly average of 1,317,992 tons/year (daily average = 1,317,992/52/6 = 4,224.33 (4,225) tons/day) and an in-place waste and cover soil density of 0.81 tons/cubic yard (65lbs/cubic ft).

The planned net additional capacity of the facility expansion has been calculated based on conceptual information at approximately 39,000,000 cubic yards that includes the capacity gained in the existing site due to the final cover side slopes change from 4H:1V to 3H:1V. The average waste stream is limited by the Host Agreement to 1,346 tons/week of MSW from Henrico County and 24,000 tons per week from other sources for a total of 25,346 tons per week. The anticipated daily average and maximum waste disposal limits over the expected site life of the facility will be limited to 4,225 tons per day and 6,000 tons per day respectively.

The Allied Waste Old Dominion Landfill provides disposal for MSW, construction waste, demolition waste and debris waste. Pending landfill expansion, it is estimated that the landfill will continue to serve the needs of the County, Metro-Richmond, and Central Virginia for an additional approximately 23.8 years.

The Qualla Road debris landfill is located in Chesterfield County, is no longer accepting C/D/D and is closing.

The **S.B. Cox Taylor Road Landfill** is a construction/demolition/debris (C/D/D) landfill, owned and operated by S.B. Cox, Inc. The facility is located on State Route 646 (Taylor Road)

approximately 0.7 miles north of the intersection of State Route 602 (River Road) and State Route 646 in western Chesterfield County, Virginia. Access to the site is via State Route 646.

The landfill operates during daylight hours Monday through Saturday. The landfill is closed on Sundays and on New Years Day, July 4<sup>th</sup>, Thanksgiving Day and Christmas Day.

The landfill operates under Virginia Department of Environmental Quality (DEQ) Permit Number 270, which was originally issued on July 6, 1979. The facility property totals approximately 256 acres of which a total of 21.2 acres are currently permitted for disposal. The active disposal area (14.5 acres) is permitted in three contiguous areas/phases; Areas C, D, and E. Remaining life of the existing permitted area is estimated to be four years.

S.B. Cox, Inc. is in the process of amending the current solid waste management facility permit to expand the C/D/D disposal limits and operation onto adjacent land located south of the existing facility. The proposed expansion, as well the existing facility, is situated on a 256-acre parcel owned by S.B. Cox, Inc. The proposed expansion will increase the disposal limits and disposal volume to approximately 137 acres and 20 million cubic yards, respectively. It is anticipated that development of the expansion area will be sequential, i.e., each cell will be developed to the fullest extent possible prior to moving disposal activities to a subsequent cell. The proposed expansion will provide approximately 70 years of disposal capacity.

The constructed airspace of the facility in year 2024 (excluding Areas C, D and E) is 2.09 million cubic yards. The current estimated average daily acceptance rate is equivalent to 190 tons per day. Waste acceptance rate at this facility is not expected to change significantly as a result of the expansion. However the waste acceptance rate is estimated to increase approximately two percent annually due to population growth and increasing construction demands. The average daily acceptance rate after 20 years will be approximately 280 tons per day. The peak daily acceptance rate after 20 years is estimated to be 390 tons per day.

This facility primarily serves the disposal needs of the local area by providing for the disposal of land clearing materials (stumps, brush, branches, logs), waste building materials from construction, remodeling, or demolition projects (brick, block, concrete, plaster, wood, wallboard, pavement, pallets, cardboard, non-friable asbestos containing materials, etc.). Occasionally waste materials resulting from the manufacture of building products are accepted. No hazardous wastes will be accepted at this landfill.

In Henrico County, the two C/D/D landfill facilities are the S.B. Cox Darbytown Road landfill and Simon's Debris Landfill (also located on Darbytown Road). Subsequent to original publication of this Plan both landfills (which are located next to each other on Darbytown Road) have been sold and are now operated as The East End Landfill (TEEL)

The **Simons Hauling Darbytown Road CDD Landfill**, formerly owned and operated by Simons Hauling Company, Inc., (now operated as **The East End Landfill**) is a non-captive construction/demolition/debris (CDD) landfill located in eastern Henrico County, Virginia, at 1820 Darbytown Road. This site is approximately 1.7 miles northwest of Laburnum Avenue, and approximately 1,000 feet north of Oakland Road, on the east side of Darbytown Road. Access to the site is by private road off Darbytown Road.

The landfill's regular hours of operation shall be from 7:00 a.m. to 6:00 p.m. when Daylight

Savings Time is in effect and from 7:00 a.m. to 5:00 p.m. at all other times.

The landfill operates under Virginia Department of Environmental Quality (DEQ) Permit Number 524, which was issued by the State Health Department for Landfill Operations on July 26, 1988. The total permitted landfill property is 52.9 acres of which, 29.9 acres are for disposal (current facility = 10.0 acres; proposed facility = 19.9 acres). The facility currently contains three solid waste management units (Cells I, IIA, IIB). The proposed expansion (permit amendment - 2005) includes Cells III through VI.

The proposed expansion has an anticipated life expectancy of approximately 15 years. The increase in capacity to be realized by the proposed expansion, assuming the maximum build-out of the facility, will be about 1.6 million cubic yards, which is 6.3 years at its maximum rate of waste acceptance and 15 years, at its current rate of waste acceptance. The average waste stream will be limited to 227 tons per day and the peak daily waste stream over the 15-year lifespan of the facility will be 900 tons of CDD waste per day.

The East End Landfill CDD Landfill is a privately owned and operated facility. The facility serves the County of Henrico and surrounding localities. Wastes to be deposited in the landfill are, and will be, restricted to construction debris, demolition debris, and land-clearing debris. The expansion of this facility will allow TEEL, to continue to dispose of construction debris, demolition debris, and land-clearing debris in their landfill facility for nearly two more decades.

The Darbytown Road Landfill is a CDD Landfill, formerly owned and operated by Cox's **Darbytown Road Landfill, Inc.** (now operated as part of **The East End Landfill**). The facility is located in eastern Henrico County, approximately 1.7 miles northwest of Laburnum Avenue, or approximately 0.2 miles northeast of the intersection of Darbytown Road and Bickerstaff Road on the eastern side of Darbytown Road. Access to the site is via Darbytown Road.

The landfill operates during daylight hours Monday through Saturday. The landfill is closed on Sundays and on New Years Day, July 4<sup>th</sup>, Thanksgiving Day and Christmas Day.

The landfill operates under DEQ Permit Number 188 which was issued on July 3, 1975. That area is designated as Cell 1, and is approximately 13 acres in size. The permit was amended on June 20, 1989 by Permit Number 525 which superseded Permit Number 188. The purpose of the amendment was to incorporate an expansion area designated as Cell 2 which is approximately 8 acres in size. The facility property totals approximately 34 acres of which a total of 21 acres are permitted for disposal.

Remaining life is estimated to be three years. The remaining capacity of the landfill is approximately 190,000 cubic yard or the equivalent of 95,000 tons. The current estimated average daily acceptance rate is 105 tons per day. The peak daily acceptance rate is estimated to be 170 tons per day.

The facility primarily serves the disposal needs of the City of Richmond and the surrounding counties by providing for the disposal of: construction wastes including but not limited to lumber, wire, sheetrock, broken brick, shingles, glass, pipes, concrete, paving materials and

plastics if the metal or plastics are part of the materials of construction or empty containers for such materials; demolition waste as defined as solid waste which is produced by the destruction of structures and their foundations; debris waste as defined as solid waste resulting from land clearing operations including but not limited to stumps, wood, brush, leaves, soil and road spoils; and non-friable asbestos containing material. Occasionally waste materials resulting from the manufacture of building products are accepted. The East End Landfill does not accept municipal solid wastes, hazardous wastes, friable asbestos, any free liquids, compressed gases or semi-liquids.

Hanover County's one private debris landfill is the Ashcake C/D/D Landfill facility. The facility accepts waste material such as construction and demolition waste, wood, brush, inert and clean fill, as well as concrete and brick that it grinds. All wood including brush and stumps is also ground.

The 623 Landfill is a C/D/D landfill located at 1961 Ashland Road, Rockville in eastern Goochland County just North of I-64. The landfill operates under SWP 506. The average acceptance rate is 4,000 tons per day with a daily maximum rate of 5,500 tons per day. The landfill accepts construction, demolition and land clearing debris. It does not accept hazardous waste, MSW, regulated medical waste, sludge, liquid waste or friable asbestos. The permitted operating hours for the facility are 7:00 am to 5:30 pm Monday through Friday and 7:00 am to 3:30 pm on Saturday. With the expansion in 2011 to add a CDD cell the estimated landfill life is 14.3 years. Additionally the landfill is adding a MRF (early 2011) that will handle up to 1,000 tons per day of CDD, MSW and recyclables. At the MRF materials such as cardboard, metals and wood will be recovered from incoming loads for recycling. Materials not recovered from incoming loads at the MRF will be transferred to an appropriately permitted disposal facility.

No active sanitary or C/D/D landfill facilities are located within the City of Richmond.

**Table 2**

**Active Sanitary and C/D/D Landfills Currently Utilized by CVWMA Localities**

<b>Landfill Name</b>	<b>Landfill Type</b>	<b>Public/Private</b>	<b>Jurisdiction</b>	<b>Capacity</b>
623 C/D/D Landfill <sup>7</sup>	C/D/D	Private	Goochland	30,500,000 cu yds
Ashcake C/D/D Landfill	C/D/D	Private	Hanover	1,125,827 tons
Qualla Road Demo Landfill <sup>2</sup>	C/D/D	Private	Chesterfield	96,670 tons
The East End Landfill	C/D/D	Private	Henrico	2,598,000 cu yds
Taylor Road Landfill <sup>1</sup>	C/D/D	Private	Chesterfield	12,000,000 tons
Skinquarter Land, LLC Landfill <sup>4</sup>	C/D/D	Private	Chesterfield	4,600,000 tons
Tri-Cities Regional Landfill <sup>6</sup>	Sanitary	Private	Petersburg	4,000,000 cu yds
Shoosmith Sanitary Landfill <sup>5</sup>	Sanitary	Private	Chesterfield	75,800,000 cu yds
Springfield Road Sanitary Landfill <sup>3</sup>	Sanitary	Public	Henrico	550,000 tons
Charles City Landfill <sup>5</sup>	Sanitary	Private	Charles City	24,000,000 tons
Old Dominion Sanitary Landfill <sup>3</sup>	Sanitary	Private	Henrico	17,000,000 tons
King & Queen Sanitary Landfill <sup>5</sup>	Sanitary	Private	King & Queen	31,500,000 tons
Atlantic Waste Disposal Sanitary Landfill <sup>5</sup>	Sanitary	Private	Sussex	66,000,000 tons
Maplewood Recycling & Waste Facility <sup>5</sup>	Sanitary	Private	Amelia	33,600,000 tons
King George County Landfill	Sanitary	Public	King George	18,500,000 tons
Middle Peninsula Sanitary Landfill	Sanitary	Private	Gloucester	23,500,000 tons

Source of Capacity Figures: Commonwealth of Virginia Department of Environmental Quality *Solid Waste Managed in Virginia During Calendar Year 2002* Report, June 2003

<sup>1</sup> Capacity Figures revised August 2005 Amendment 1

<sup>2</sup> Qualla Road Landfill is no longer accepting C/D/D and is closing.

<sup>3</sup> Capacity Figure revised May 2006 Amendment 2

<sup>4</sup> Added 2006, Amendment 3

<sup>5</sup> Capacity Figure revised September 2006, Amendment 3

<sup>6</sup> Capacity Increase, Name Change April 2010, Amendment 5

<sup>7</sup> **Capacity Increase, March 2011, Amendment 6**

#### **4.2.3.1.2 Crater Planning Subarea**

There are no active private sanitary or debris landfills located within the Crater Planning Subarea.

#### **4.2.3.2 Public Sanitary and C/D/D Landfill Facilities**

##### **4.2.3.2.1 Richmond Planning Subarea**

The Goochland County Landfill, which was owned and operated by the County, closed in July 1992. Thus, there are currently no active public landfills in the County of Goochland.

The County of Powhatan does not have any active public or private sanitary landfills.

With the closing in 2002 of the 35-acre Hanover County Sanitary Landfill, located on Route 820, south of the County Courthouse, there are no active sanitary public landfills in Hanover County. Hanover County is operating a yard waste facility and a transfer station adjacent to the County's closed 301 sanitary landfill.

Chesterfield County's Northern Area Landfill, located off Genito Road, is no longer an active landfill. There are currently no active public landfills in Chesterfield County.

The **Henrico County Sanitary Landfill #1 (Springfield Road Landfill)** is a sanitary landfill owned and managed by the County of Henrico. It is located near the intersection of Nuckols Road and I-295 at 10600 Fords Country Lane in the western portion of Henrico County.

The landfill operates Monday through Friday from 7:30 a.m. to 3:30 p.m. The landfill is closed July 4<sup>th</sup>, Thanksgiving Day, Christmas and New Years Day. The Public use area at this site is open 7 days per week from 7:30 a.m. to 7:00 p.m. for Henrico citizens to drop off recyclables and to dispose of trash for a fee.

The landfill operates under Virginia Department of Environmental Quality (DEQ) Permit Number 545 which was originally issued December 18, 1992. The permitted property acreage is 195 acres, the permitted disposal acreage is 103 acres and the acreage currently being utilized is approximately 95 acres. The current cells being utilized are Phases 2 and 3.

The total capacity for the Springfield Road Landfill for solid waste is 3,514,000 tons. As of September 1, 2005 the remaining gross capacity of the landfill is approximately 1,100,000 cubic yards of waste. The current average daily waste acceptance rate is 350 tons per day and the peak daily tonnage rate is 1,500 tons per day.

This facility serves the County of Henrico and accepts both municipal solid waste and construction/demolition/debris waste from citizens of Henrico County and from private haulers from other CVWMA localities. It is projected that the Henrico County Springfield landfill will close in 2014.

Henrico County Sanitary Landfill #3 is located on the south side of Charles City Road in eastern Henrico County. Prior to the closing of this facility in January of 1991, only 35 acres of the site had been used, leaving 80 acres of unused disposal capacity. The site was closed because the County that the costs to be incurred in bringing the facility up to new permitting standards would be prohibitively high. The County has negotiated the sale of this property to Allied Waste who has submitted (August 2005) a Part A Application to the VDEQ to combine this parcel with the Allied Waste Old Dominion Landfill and open additional disposal area. See section 4.2.3.1.1 Richmond Planning Subarea for a description of the Allied Waste Old Dominion Landfill to include this planned expansion.

#### **4.2.3.2.2 Crater Planning Subarea**

The landfill (Permit #228) formerly owned and operated by the City of Petersburg was sold in 2009 to The CFS Group Disposal and Recycling Services, LLC (CFS) and is now operated by **Tri-Citys Regional Disposal and Recycling Services**. The facility, located at 390 Industrial Drive, Petersburg consists of approximately 69 acres, of which approximately 21 acres comprise the active waste disposal area in the western portion of the site.

The facility operates during daylight hours Monday through Friday from 6:00 am to 6:00 pm and on Saturdays from 6:00 am to 2:00 pm. The facility is closed to the public on Sundays and on New Years Day, Memorial Day, July 4<sup>th</sup>, Labor Day, Thanksgiving Day and Christmas Day.

The Part B Permit Modification Application approved by the DEQ in March 2011 increased the capacity of existing Cells D and E through the use of mechanically stabilized walls (MSE walls). The permit amendment increased the capacity to approximately 485,096 cubic yards. The expected life of cells D and E with the expansion is 1.24 years. Option 2 proposed a higher than 5' berm along the interface of Cells C and D which resulted in a capacity of 536,500 cubic yards and an estimated life of 1.38 years. Additionally it is the intent of CFS to expand the entire site through a series of MSE walls and embankment and submit additional permit amendments in the future. The entire expansion process will include the installation of a Subtitle D liner and leachate collection system prior to placement of waste in this additional area. CFS also intends to construct a material recovery facility (MRF) on the site.

Currently the site is permitted for an average daily waste intake of 500 tons per day with a maximum of 750 tons per day. The permit modification for Cells D and E in 2011 for waste intake rate would increase the maximum daily waste intake to 1,000 tons per day.

The expanded facility will optimize waste disposal and recycling services in the Tri-Cities Area (Colonial Heights, Hopewell and Petersburg) and the surrounding jurisdictions (Prince George County, Dinwiddie County...). It is estimated that the facility will began initiating landfill expansion (once the permit is approved by the DEQ) in 2011. Once all proposed facilities are completed incoming wastes will be processed in a manner to segregate and recycle as much material as economically feasible with the remainder being disposed of in the landfill. The host agreement allows the facility to accept waste generated within Virginia and the metropolitan Washington DC area. The facility will accept only non-hazardous waste.

The additional expansion beyond cells D and E will result in approximately 4 million cubic yards of additional disposal capacity for the site and an estimated life of 20 years with on-going

transfer station operations. It is anticipated that the maximum daily waste intake for the final expansion will be 1,000 tons per day for the landfill and 1,000 tons per day for the Material Recovery Facility.

#### **4.2.3.3 Regional Landfills Adjacent to the CVWMA Service Area**

Three major sanitary landfills in jurisdictions adjacent to the CVWMA service area are currently being utilized as recipients of waste from the CVWMA area. The landfills are located in King and Queen, Amelia and Sussex Counties. These facilities can be seen on Map 4.

King and Queen County: **The King and Queen Sanitary Landfill** operated by Allied Waste Services (Allied Waste Systems of VA) is located at 4443 Iris Road approximately 3 miles east of the intersection of Route 614 and Route 14 in Little Plymouth, Virginia.

The site operates under DEQ Permit Number 554 contains a total of 420 acres. The waste management facility is comprised of 373 acres, of which 269 acres encompass the limits of waste disposal.

In accordance with the agreement with King and Queen County the landfill operating hours are the greater of daylight hours or 7:00 am to 7:00 pm Monday through Saturday.

The landfill receives approximately 1,200 tons of waste per day and has a 4,000-ton per day maximum acceptance limit of in state and out of state waste. The landfill, which began accepting material in October 1993 and has a capacity estimated to be 62.1 million cubic yards over a design life estimate to be 66.4 years. The phasing scenario includes the development of five phases comprising nine cells.

The facility accepts MSW, industrial waste, commercial waste, special waste, sludge, contaminated soil, asbestos waste, ash, off-spec material and liquid waste requiring solidification prior to disposal.

Amelia County: The **Waste Management of Virginia Amelia Landfill (Maplewood)** is a Sub-Title D landfill located on an 804-acre site in the western portion of Amelia County in Jetersville, Virginia. The facility is located approximately 35 miles southwest of the City of Richmond near US Route 360.

The landfill's regular hours of operation are 7:00 am to 4:00 pm Monday through Friday and from 7:00 am to 11:00 am on Saturday. It is closed on Sundays and the following holidays: New Years Day, Memorial Day, July 4<sup>th</sup>, Labor Day, Thanksgiving Day and Christmas Day.

The Landfill under DEQ Permit Number 540 with approximately 404 acres permitted for disposal. The facility is permitted in 34 phases. The landfill has a +/- 80 year planned gross capacity based on current average daily volume of 1,400 tons with a peak daily acceptable tonnage of 5,000 tons

The facility provides disposal for both in state and out of state wastes including: MSW, Construction and Demolition Debris, and asbestos, as well as pre-approved manifested contaminated soils, ashes, WWTP and industrial sludges and treated medical waste approved and profiled by the Waste Management Environmental Engineer. The facility does not accept the

following materials: whole tires, batteries, electronic component debris, radioactive waste, hazardous waste, waste containing free liquids, drummed waste or any other unapproved waste.

Sussex County. The **Atlantic Waste Disposal Sanitary Landfill** facility is a Waste Management Sub-Title D landfill located in Sussex County (Waverly) approximately 45 miles southeast of the City of Richmond. The facility is located on Route 602, just off US Route 460.

The hours of operation for the Atlantic Waste Disposal Landfill are opening at 4:00 am on Monday and operating 24 hours per day through Saturday, closing on Saturday at 3:00 pm. It is closed on Sundays and the following holidays: New Years Day, Memorial Day, July 4<sup>th</sup>, Labor Day, Thanksgiving Day and Christmas Day.

The Landfill operates under DEQ Permit Number 562 and Sussex County Permit Number 94-21. The facility property includes approximately 1,315 acres of which 373 acres are permitted for disposal.

The Landfill's current daily volume is 10,000 tons per day with a maximum daily volume limit of 15,000 tons. The landfill has approximately 33 years of life remaining based on accepting 3 million tons per year.

The facility provides disposal for both in state and out of state wastes including: MSW, Construction and Demolition Debris, as well as pre-approved manifested contaminated soils, ashes, WWTP and industrial sludges and treated medical waste approved and profiled by the Waste Management Environmental Engineer. The facility does not accept the following materials: whole tires, asbestos containing material, batteries, electronic component debris, radioactive waste, hazardous waste, waste containing free liquids, drummed waste or any other unapproved waste.

Two additional sanitary landfills outside the CVWMA Region that are also occasional recipients of MSW from the area are the Middle Peninsula Sanitary Landfill in Gloucester and the King George County Sanitary Landfill in King George County.

#### **4.2.3.4 Transfer Stations and Convenience Centers**

##### **4.2.3.4.1 Richmond Planning Subarea**

Goochland County operates a convenience center located at the site of the Goochland County Landfill that was closed in 1992. This facility utilizes mechanical compacting equipment. Waste Management operates the convenience center. Waste Management also provides transportation and disposal of the waste under contract through 2013. County residents brought nearly 7,000 tons of MSW to the convenience center in FY 2003.

Powhatan County waste is processed through a publicly owned convenience center operated by Waste Management located off Route 626 in the western portion of Powhatan. This facility utilizes mechanical compacting equipment. The facility only accepts residential waste. Waste Management provides transportation and disposal of waste under contract through 2013 with Powhatan County. County residents brought nearly 7,750 tons of MSW to the convenience center in FY 2003.

Henrico County citizens may take their waste to convenience centers located at the closed Charles City Road Landfill and at the Springfield Road landfill.

In order to meet future solid waste needs of Henrico County and in anticipation of the closing of the Springfield Road Landfill a Transfer Station will be constructed adjacent to the Public Use Area near the entrance to the landfill property. This facility will have a design capacity of 500 tons per day. Hours of operation for commercial activity will be 7:30 am to 3:00 pm Monday through Saturday. Residential waste or County collected waste may be accepted seven days per week from 7:30 am to 7:00 pm. The facility will receive Municipal Solid Waste as defined by the Virginia Solid Waste Regulations. The planning, permitting and design aspects of this project will begin mid-year 2011.

A waste transfer station is located within the County of Hanover at the site of the closed sanitary landfill off Route 301. This facility, operated by the County, accepts MSW and C/D/D material. This facility has a permitted capacity of 300 ton per day. A large portion of the C/D/D generated in Hanover County is hauled directly by private companies to the Ashcake C/D/D landfill and to other C/D/D disposal facilities located in other jurisdictions. Additionally, Hanover County currently owns and operates six (6) convenience centers throughout the county for citizens (800,000 visits in 2003) who have elected not to contract with a private trash collector for curbside trash services. Most of these sites utilize mechanical compacting equipment. The trash collected at these sites is currently disposed of at the Shoosmith Bros. Sanitary Landfill in Chesterfield County. During the calendar year 2002, more than 29,000 tons of MSW was collected at the convenience center sites in Hanover County and a total of 36,000 tons was transferred. Additionally, the County is currently operating a yard waste facility at the former 301 landfill site. This facility also processes brush into mulch.

Chesterfield County operates two convenience centers. There is a minimum charge for disposing of waste at these centers. There may be additional charges depending upon the quantity and type of waste brought for disposal. During FY 2003, there were approximately 350,000 visits to the convenience centers. Over 30,800 tons of municipal solid waste was collected at the two convenience centers in FY 2003.

New Kent County provides four (4) refuse convenience centers, for New Kent County residents only, to take their MSW. During FY 2003 nearly 7,600 tons of MSW was collected at the four convenience centers. Waste Management is contracted through the CVWMA to maintain the four convenience centers and transport and dispose of the collected MSW. Compacting equipment is utilized at all four of the convenience centers. There is no fee charge by the County to citizens for taking their solid waste to the convenience centers. The County does not accept commercial construction or demolition debris at the convenience centers but individuals may bring small amounts of construction debris and yard waste to the Route 618 site.

County of Charles City residents may take their waste materials to the Waste Management Charles City County Landfill. Waste Management operates three convenience centers for residents

City of Richmond residents may take their waste materials to the City owned and private contractor operated transfer station on Hopkins Road or to the City owned East Richmond Road Convenience Center. Commercial accounts are allowed to haul to the Hopkins Road Transfer

Station for a fee. The waste from the transfer station is disposed of at either the Waste Management operated Charles City County Landfill or the Atlantic Waste Disposal Facility in Waverly. In an emergency the waste may be diverted to Amelia or Gloucester landfills.

#### **4.2.3.4.2 Crater Planning Subarea**

Citizens of Prince George County currently have one convenience center where they can dispose of their trash. County citizens pay a fee to enter the site regardless of the amount of trash they wish to dispose of. Additional fees are assessed for the disposal of tires and white goods. No commercial or industrial facilities may use this site. Currently the County operates the site and Waste Management is contracted to haul the trash away and disposes of it at the Atlantic Waste Disposal Landfill in Sussex. Current annual tonnage of waste through this facility is nearly 7,000 tons. No mechanical compaction equipment is utilized at this facility.

The City of Hopewell operates a convenience center where residents, for a fee, may take refuse for disposal. Yard waste is accepted from residents at no charge.

Residents of the City of Petersburg may use the City owned and operated landfill for the disposal of non-commercial waste at no charge.

Table 3 lists all the transfer stations / convenience centers currently in operation in the region.

#### **4.2.4 Publicly Sponsored Recycling Programs**

The Region faces many challenges in working toward a system that follows the waste management hierarchy. The Region, as have other Virginia localities and areas, have experienced a shift in the waste handling model that was established in the early 1990's when grassroots recycling efforts became part of local and State government solid waste management planning. Discounted landfill disposal fees and excess capacity at landfills in Virginia provide a disincentive for solid waste collectors to recycle. Vertical solid waste corporate structures maximize their cash flow by retaining as much of the waste captured as possible through a continuum of services from collection and transport through disposal.

This section provides a description of the various public recycling programs. Detailed information on the specific amounts and types of materials recycled in the CVWMA service area is presented in the next chapter.

**Table 3**  
**Transfer Stations / Convenience Centers in CVWMA Region**

<b>SITE</b>	<b>Location</b>
Northern Area Convenience Center	Chesterfield County – Warbro Rd.
Southern Area Convenience Center	Chesterfield County – Landfill Rd
Goochland Convenience Center	Goochland County – Old landfill
Goochland Convenience Center West	Goochland County – Hadensville Fife Rd
Powhatan Convenience Center	Powhatan County – Mitchell Rd.
Courthouse Convenience Center	Hanover County – Courtland Farm Rd
Beaverdam Convenience Center	Hanover County – Beaverdam Rd
Doswell Convenience Center	Hanover County – Doswell Rd
Elmont Convenience Center	Hanover County – Lewiston Rd
Mechanicsville Convenience Center	Hanover County – Verdi Lane
Montpelier Convenience Center	Hanover County – Clazemont Rd
Hanover County Transfer Station	Courtland Farm Rd
Charles City Rd Public Use Area	Henrico County
Springfield Rd Public Use Area	Henrico County
Rt. 612 Convenience Center	County of New Kent
Rt. 618 Convenience Center	County of New Kent
Rt. 634 Convenience Center	County of New Kent
Rt. 647 Convenience Center	County of New Kent
Prince George Convenience Station	Prince George County – Rt. 649
Richmond Southside Transfer Station	City of Richmond – Hopkins Rd
East Richmond Convenience Center	City of Richmond – E. Richmond Rd
Colonial Heights Convenience Center	Colonial Heights - Dimmock Parkway
Hopewell Convenience Center	City of Hopewell – Station Street
Mount Zion Convenience Center	Charles City County
Mumford Convenience Center	Charles City County
District 1 Convenience Center	Charles City County - Landfill

#### **4.2.4.1 Curbside and Drop-Off Program Origins**

The Central Virginia Waste Management Authority, following the recommendations presented in the Richmond/Tri-Cities Area Regional Recycling Plan implemented a pilot curbside recycling program based on the Plan's recommendations in April 1991.

CVWMA Pilot Curbside Recycling Program. In April 1991, the CVWMA began implementing a regional pilot curbside recycling program for approximately 19,700 households within the service area. Residents placed used aluminum, steel, and bi-metal cans, number one (PET) and number two (HDPE) plastics, glass containers and newspapers in Authority-provided bins and set these out for collection of the materials. Aluminum foil was added in the fall of 1991 to both the curbside and the new CVWMA drop-off site programs. The localities involved in the program include the Cities of Richmond and Colonial Heights, the Counties of Chesterfield, Goochland, Hanover, and Henrico, and the Town of Ashland. By August 1991, 20,629 households were participating. Program expansion for approximately 35,000 additional

households was approved for fiscal year 1992, in the City of Richmond, and in Chesterfield, Goochland, Hanover, and Henrico Counties. By October 1991, the program had expanded to serve a total of 56,670 households within the service area.

The CVWMA contracted for a two-year period (plus one year renewal option), with the Recycle America division of Waste Management Incorporated to provide the necessary collection and material processing and marketing services. The success of the program led to it becoming a permanent part of the regional recycling landscape. The Recycle America division of Waste Management Incorporated continued to provide the necessary collection and material processing and marketing services until Tidewater Fibre Corporation replaced them in 1999 through a procurement.

The intent of the curbside recycling program is to increase participation in residential recycling by making it more convenient for households. The program is designed to allow for service expansion within participating jurisdictions or to currently non-participating jurisdictions.

The local governments participating in the program subsidized the initial service charge to the CVWMA of \$19.00 per household per year. The revenues the vendor received through the marketing of the collected materials offset a portion of the total service cost. The vendor kept all revenues derived through the program.

Currently, approximately 230,000 households in the CVWMA Region have curbside recycling services available to them. This makes the CVWMA curbside program the largest curbside program in the Commonwealth of Virginia. Residents no longer need to separate recyclables in the current single stream program that accepts aluminum cans and steel cans, PET containers, HDPE containers, glass bottles and jars, newspaper, mixed paper and old corrugated cardboard (OCC).

CVWMA Drop-Off and Mobile Recycling Network. In November 1991, the CVWMA, through a contract with Chambers Development Corp., implemented a program with 24 permanent multi-material drop-off sites in Goochland (1), Henrico (10), and Chesterfield Counties (6), the City of Petersburg (1) and Hanover County (6). Powhatan County then expressed interest in participating. In addition, a mobile truck recycling program served the City of Hopewell five days per week. In 1993, the City of Hopewell determined it was more effective and more economical to locate the drop-off bins at permanent sites. By early 1992, Henrico County and the City of Richmond added sites. The drop-off center program collects the same materials as the curbside effort.

The CVWMA region drop-off program currently has 48 sites throughout the region. The locations of these sites can be seen on Map 5. The sites accept a variety of products that may include newspaper, mixed paper, OCC, HDPE and PET plastic containers, aluminum cans, glass bottles and jars, and steel cans.

#### **4.2.4.2 Special Waste Collections**

Special wastes are those that require special handling. The collection of these wastes in the Region is handled through private contractors (Table 4) either directly with the locality or through contracts with the CVWMA. These materials include:

- Recovered refrigerant (CFC/HCFC)

- Waste motor oil
- Oil filters
- Antifreeze
- Scrap tires
- Lead-acid batteries
- Paints and solvents
- Used propane tanks
- Scrap metals to include white goods

**Table 4**  
**Current Contracted CVWMA Special Waste Processors**

<b>Recyclable Material</b>	<b>Processor</b>	<b>Location</b>
CFC/HCFC	Tri-City Appliance	Petersburg, VA
Waste Motor Oil	Hydrocarbon Recovery Service (dba FCC Environmental)	Goochland, VA
Oil Filters	Hydrocarbon Recovery Service (dba FCC Environmental)	Goochland, VA
Antifreeze	Hydrocarbon Recovery Service (dba FCC Environmental)	Goochland, VA
Scrap Tires	Virginia Recycling Corporation	Providence Forge, VA
Lead-Acid Batteries	Battery Barn of VA	Petersburg, VA
Paints and Solvents	Safety-Kleen Corporation	Chester, VA
Propane Tanks	Massey, Wood and West, Inc.	Richmond, VA
Scrap Metals & White Goods	SimsMetal Corporation	Richmond, VA

*Recovered Refrigerant:* Refrigerant (CFC and HCFCs) is removed from refrigerant containing units (e.g. refrigerators, freezers, air conditioners, dehumidifiers) that are taken by the public to designated drop-off sites within the region. The refrigerant recovery equipment and operator are certified as required under the Air Reconditioning and Refrigeration Institute (ARI) 740-1993 Standard per 40 CFR Part 82, Subpart F by ARI or by Underwriters Laboratories (UL). The recovered refrigerant is recycled for reuse and the appliances are handled as scrap metal.

*Used Motor Oil:* Area citizens and businesses can take their used motor oil to designated drop-off sites where they pour the used oil into storage tanks or drums. A contractor collects and processes the used oil. Many businesses in the region such as auto repair facilities that generate used oil also collect and recycle it with a private contractor of their choosing.

The waste must be transported in accordance with Department of Transportation (DOT) regulations 49 CFR Parts 100-185. The waste oil transporter must have an EPA identification number and must placard the product in accordance with DOT regulations.

*Antifreeze:* Drums or tanks are provided at designated drop-off sites within the Region for citizens to dump their used antifreeze. A private contractor collects the used antifreeze on an as-needed basis, removes the contaminants to include water and recycles and remarkets the

resulting product as antifreeze. Used antifreeze is not specifically identified as a hazardous waste in Virginia nor is it a RCRA listed hazardous waste. The antifreeze, however, must be transported in accordance with DOT regulations 49 CFR Parts 100-185.

*Waste Tires:* Area residents and businesses may deliver used tires of all types to designated drop-off sites within the Region where, for a small fee that varies by locality, they may dispose of them. The tires are collected and recycled by private contractors.

*Lead-Acid Batteries:* Lead-Acid batteries of all sizes are collected from citizens at specified drop-off sites within the Region. A private contractor who packages and ships the batteries to smelters where they are recycled collects the batteries. Recycled lead from the batteries is supplied to manufacturers and used in all segments of the lead industry. The recycled plastic is provided for reuse to plastic compounders and fabricators for use in new battery cases and other consumer products. The acid from the recycled batteries is used to produce sodium sulfate for use in the pulp and paper industry, and also as a stabilizer in common laundry detergents.

*Scrap Metals (White Goods):* Metals including white goods are collected from residents at some drop-off sites, transfer stations, and landfills. The metals are then taken to local recyclers who then process the metals and market the resulting bale or shred to the appropriate ferrous and non-ferrous markets.

*Used Oil Filters:* Citizens take used oil filters to drop-off sites throughout the Region and deposit them in 30-gallon containers. When the containers are full, they are picked-up and replaced with empty containers by a private contractor. The oil filters are then shipped to a processor where the remaining oil is recovered and recycled and the filters are processed as scrap steel.

*Propane Tanks:* A change in the National Fire Protection Association standard requiring overfill protection devices on propane tanks took effect as of April 1, 2002, resulting in many of the tanks becoming obsolete. They could no longer be legally refilled. Localities in the CVWMA region responded to this situation and kept these obsolete tanks out of the landfills by entering into a contract through the CVWMA with Massey, Wood and West, Inc., to collect and recycle the propane tanks. Citizens are now able to recycle propane tanks by taking them to designated drop-off sites in the participating local jurisdictions. This program was initiated July 1, 2002, and 1,307 propane tanks were recycled during the first year. Propane tanks collected as part of this program include the standard 20-pound tanks, as well as smaller propane tanks. Some of the recycled tanks are retrofitted with the required overfill protection devices and put back into service as usable propane tanks. The remainder are cut up and recycled for the metal content.

#### **4.2.4.3 Public/Private Partnerships**

##### Solid Waste and Recycling Contracts:

The CVWMA provides 13 member localities with solid waste and recycling programs, which benefit both urban and rural communities. The CVWMA administers these programs through public procurement with private contractors such as waste haulers, recyclers and farmers.

The CVWMA's ability to negotiate and administer contracts with the private sector on behalf of the thirteen member localities relieves the localities of the time and effort of the procurement

process and administering solid waste and recycling programs.

### Regional Cooperation

Regional cooperation is necessary for the success of CVWMA programs. The CVWMA is committed to providing quality regional programs for member localities to choose from that are accessible, convenient, and cost-effective.

#### **4.2.4.4 Public Education**

Providing cost-effective recycling that meets the state's mandated goals is a fundamental goal of the CVWMA. The CVWMA staff works with local program managers, state agencies, and community organizations to help coordinate effective education of the public. Some examples of current CVWMA educational programs are noted in the following sections. These programs may change to suit the changing needs of the Region.

CVWMA's newsletter, *The Regional Waste Line*, is published twice yearly to provide program updates to elected officials, program managers, media contacts, and school officials.

*Waste Reduction News*, an email newsletter published monthly by CVWMA, includes pertinent information relating to waste reduction and recycling and is sent to civic groups, homeowner associations, and interested citizens. Past articles have featured household hazardous wastes, community clean-ups, environmental celebrations, and program changes.

A variety of CVWMA publications are produced to inform the public of specific programs. Brochures featuring the Curbside Recycling, Drop-Off Recycling, and Safe Garage Programs include program guidelines, accepted materials, and locations.

To educate our youngest citizens, the CVWMA has special children's publications that are available to groups such as schools and scout troops in a variety of quantities. CVWMA has also produced a short video illustrating recycling for elementary children in Central Virginia. The video depicts the entire cycle from collection to processing to purchase, using concepts compatible with the Virginia Standards of Learning. The video is available for loan to citizens within the CVWMA service area.

The CVWMA website ([www.cvwma.com](http://www.cvwma.com)) includes information about the Authority's purpose, history, staff and programs. Timely information is added to the site each month to keep the public knowledgeable and interested in CVWMA services. A general email address, [info@cvwma.com](mailto:info@cvwma.com), encourages further inquiry to meet specific needs. A growing resource to the community, visits to the CVWMA website continue to increase over previous years and this trend is expected to continue. In addition, some local governments maintain their own websites that provide waste disposal and recycling information to their residents.

CVWMA continues to be an active supporter of Earth Day festivities in the Region and has recently begun to coordinate awareness for America Recycles Day, as well. Participating in community events such as these present unique opportunities to reach a wide range of people in a short period of time.

The CVWMA partners with local and regional media, which enables the Authority to utilize public funds to provide information and education to a large audience in the Region. Through these efforts, the CVWMA continues to provide the public with timely information about local sites and information for recycling opportunities, program changes, and improvements.

Knowledgeable customer service representatives are available to assist citizens with questions about recycling. The CVWMA Recycling Hotline, (804) 340-0900, is staffed Monday through Friday between the hours of 7:30 am and 5:00 pm.

#### **4.2.4.5 Richmond Planning Subarea Recycling Programs**

Goochland County provides drop-off containers for the collection of newspaper, mixed paper, HDPE and PET plastic containers, aluminum containers, steel cans, and glass bottles and jars at the County transfer station. Additionally, citizens can take white goods, used oil, antifreeze, used oil filters, yard waste, and tires to the convenience center to be recycled. Approximately 1,000 households in the eastern portion of the County have curbside recycling services available to them. There are also some private recycling activities, such as drop-off newspaper bins, occurring within the County.

Henrico County has recycling drop-off sites located at the two County public use areas and thirteen fire stations. The County collects newspapers, comix (aluminum, glass, steel and PET and HDPE plastic containers), white goods, yard waste, used motor oil, tires, and lead acid batteries. The materials are delivered to local recycling and processing markets. During the Christmas holiday season, the County also sponsors a Christmas tree recycling program. In addition to the CVWMA drop-off program, the County has newspaper-recycling boxes contracted with Southeast Paper at several locations within the County. Yard waste and leaves are collected and recycled for free within the County. Leaves are collected by County vehicles and taken to the landfill for grinding. Phone books are collected from County facilities for recycling each January.

The County of Hanover provides for the collection of newspaper, mixed paper, OCC, HDPE and PET plastic containers, aluminum containers and glass bottles and jars at the six convenience centers. Additionally, citizens can take batteries, scrap metal, white goods, used oil, antifreeze, paints, yard waste (including Christmas trees), and tires to the convenience centers for recycling. The County sponsors private hauler curbside collection of paper. Yard waste is processed and recycled by the County at the County yard waste composting facility adjacent to the closed 301 landfill and at the convenience centers. Office paper is collected from a number of County office buildings and processed by the Community Service Board. The Community Service Board processes most of the paper collected for the County. Some schools and private locations have newspaper and aluminum can drop-offs.

Chesterfield County citizens may drop-off batteries, tires, cardboard, cans, glass aluminum, mixed paper, newspapers, brush and yard waste, scrap metal, appliances and paints and other household hazardous waste for recycling at the two convenience centers. Additionally, the County provides a mixed paper recycling program for various County office buildings and many County schools. The paper is collected weekly by County personnel and currently delivered to

Weyerhaeuser Paper Company. During FY2003, this program collected 17 tons of mixed paper. Many schools also collect old newsprint and aluminum cans through a contract that provides for drop-off recycling containers at the schools.

New Kent County citizens can recycle white goods and metals at the main Route 618 convenience centers. Additionally, newspaper, cardboard, plastic (HDPE and PET) containers, glass bottles and jars, steel and aluminum containers, used motor oil, oil filters and antifreeze can be recycled at all four New Kent convenience centers.

Residents of Charles City County can drop-off materials including plastic containers, paper, aluminum containers, glass bottles and jars, used oil, antifreeze, and metals for recycling at the County's three convenience centers. Additionally, a household hazardous waste collection event is held annually for County residents.

#### **4.2.4.6 Crater Planning Subarea Recycling Programs**

Residents of Prince George County can bring their recyclables to the County convenience center where drop-off bins are available for newspaper, mixed paper, HDPE and PET plastic containers, aluminum containers and glass bottles and jars. White goods, tires, yard waste, used oil, and antifreeze can also be taken to the convenience center for recycling.

City of Petersburg residents have four drop-off sites available to them where they can take their newspaper, mixed paper, HDPE and PET plastic containers, aluminum containers, and glass bottles and jars for recycling. Appliances, tires, wood waste, leaves, and Christmas tree recycling programs are also available to City residents.

In addition to the weekly curbside recycling program, City of Colonial Heights residents have three drop-off sites available to them. Newspaper, mixed paper, HDPE and PET plastic containers, aluminum containers, and glass bottles and jars can be recycled at these sites.

Four drop-off recycling containers are located within the City of Hopewell for residents to recycle bottles, cans, newspaper, mixed paper and HDPE and PET plastic containers.

Table 5 summarizes the materials that may be recycled and/or diverted from the waste stream in each of the localities within the Region.

#### **4.2.5 Privately Sponsored Recycling Programs**

Various commercial recycling collection activities are carried out by the private sector within the CVWMA service area. As new programs are constantly being developed and implemented and older programs expanded and modified, for the most up-to-date information, the reader is advised to contact the private operators directly or the CVWMA staff.

Commercial recycling programs within the Region exist for newsprint and other paper products, aluminum and other metals, tires, propane tanks, used oil, antifreeze, and batteries. Several buy-back centers pay individuals and groups for recyclables; others accept donations of these materials.

Some private waste haulers provide limited curbside recycling collection service to their customers in addition to curbside refuse collection.

Approximately 75 permanent private and public recycling drop-off centers operate in the service area, not including the majority of used motor oil drop-off points. In addition, some churches, civic groups, and schools conduct periodic recycling campaigns.

One program of note is the Ukrop's Supermarket and Goodwill Industries Program, accepting donations of newspaper, glass, aluminum, clothing, and household items at seven grocery store locations in the region.

Office paper recycling programs are prevalent within the service area. At least 14 vendors in the Region buy back or collect computer or other office paper, or corrugated cardboard. Several of these vendors will provide training and customized programs. The CVWMA, in cooperation with the Recycle Richmond Committee and the Environmental Committee, Metropolitan Richmond Chamber of Commerce, has published a booklet to assist companies in developing office-recycling programs.

Examples of private efforts in recycling are the following: B C Wood in Hanover County generates wood chips for fuel, particleboard and hardboard from both pre- and post-consumer wood. Coastal Supply Co. in Hanover generates mulch from wood chips. Virginia Wood Processing, Inc. generates mulch and boiler fuel from wood chips. Among other wood products they also grind used pallets.

#### **4.2.6 Waste Reduction and Reuse Activities**

Source reduction includes all activities and programs that result in waste minimization, i.e., generation of reduced quantities of waste materials. Reuse is a reduction strategy in which a product, after its initial use, is reused for the same or a new purpose without undergoing significant reprocessing.

Waste reduction programs in the service area include the Ukrops Supermarkets, Inc.'s program to reuse kraft paper grocery bags and sell alternative canvas bags for reuse, and the Puritan Cleaners program to reuse and recycle metal clothes hangers, and reuse its cleaning solvent.

In Hanover County, Bakery Feeds utilizes 100 – 200 tons per day of pre-consumer waste as a feed supplement. Additionally, all Hanover County convenience centers and the transfer station have reuse areas.

Traditional reuse activities in the service area include the resale of used items through thrift shops, yard/garage sales, and "flea markets," and the reuse of items donated through charities.

Currently, no comprehensive data are available on quantities or tonnages of materials reused within the service area. Standardized methods for quantifying source reduction and reuse activities are not available.

Education and promotion activities are essential to accomplish a significant level of waste reduction within the service area. Currently, several of the litter control and recycling committees in the service area are distributing through the schools and municipal offices literature that promotes source reduction, reuse, and recycling.

A new privately owned and operated **composting facility** is currently (2007) being proposed for a site located at 13101 North Enon Church Road in Eastern Chesterfield County.

The proposed **composting facility** will be owned and operated by **Environmental Solutions Incorporated**. The facility will be located in **The Sustainability Park™** industrial complex at 13101 North Enon Church Road in Chester, Virginia. This complex was formerly owned and operated by Brown and Williamson Tobacco. The site of the proposed facility is in a major industrial corridor of the County of Chesterfield and the proposed operation is consistent with the approved zoning ordinances. The proposed composting bed will be located within the 143-acre site slightly and utilize approximately 5 acres, more than a quarter of a mile from the western property fence line.

The site is zoned I3 and a composting facility is an acceptable use for this zoning classification.

The compost operation will be conducted six days per week during the daylight shift. Up to ten trucks per day will be transporting the tobacco sludge to the site sludge storage pads once the supply of tobacco sludge currently remaining on-site from the Brown and Williamson (R.J. Reynolds) operation is depleted. One to three trucks per week will deliver wood chips to the facility.

The primary purpose of the proposed operations at the facility will be to generate a compost product from dewatered organic sludge mixed with wood chips. The proposed facility will employ the windrow method and initially process no more than 700 dry tons per quarter. It is anticipated that the proposed facility will begin operation in 2007 once the permit is approved by the Department of Environmental Quality (DEQ). In the future, the facility may expand production beyond the initial 700 dry tons per quarter level subject to DEQ approval.

The compost feedstock will be dewatered tobacco sludge that has been removed from wastewater treatment, mixed with wood chips. The sludge is produced from the treatment of process water (industrial wastewater) that was collected from the reconstituted tobacco manufacturing processes. This is considered a Category I feedstock, “pre-consumer, plant or plant-derived materials’.

The composting process will be accomplished using the windrow method. Onsite personnel will form windrows 18 feet wide, 6 feet high and 300 to 400 feet long. The rows will be in a clay-lined bed. No more than fifteen windrows are anticipated to be constructed on the site. The process for composting in windrows will result in the compost feedstock being maintained at 55 degrees Celsius or higher for a minimum of 15 days or longer and being turned a minimum of five times during this period.

The finished compost product will be used as a soil material. The compost material will be screened on site and either bagged as a garden or landscape material, or delivered in bulk to a garden or landscape site.

The proposed facility is consistent with the philosophy of the CVSWMP in that it will utilize two materials as feedstock, tobacco sludge and wood chips that might otherwise be landfilled and will create a useful product, a garden or landscape material.

During 2011 VCU plans to develop a composting facility at 1050 Oliver Hill Road in the City of Richmond to divert up to 60 tons per year of food waste and between 80 and 100 tons per year of vegetative debris and wood chips from the solid waste stream.

**Table 5  
Materials Recycled by Locality**

Locality	Mixed Paper	ONP	PET/HDPE	Glass *1	Aluminum Containers	Steel Cans	Tires *1	Used Oil *1	Oil Filters *1	Antifreeze	Paints	White Goods	Propane Tanks	Batteries
Charles City Co	X	X	X	X	X	X		X		X				
Chesterfield Co	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Goochland Co	X	X	X	X	X	X	X	X	X	X	X	X	X	
Hanover Co	X	X	X	X	X	X	X	X		X	X	X	X	X
Henrico Co	X	X	X	X	X	X	X	X	X	X	X	X	X	X
New Kent Co	X	X	X	X	X	X	X	X	X	X	X	X	X	
Powhatan Co	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Town of Ashland	X	X	X	X	X	X								
City of Richmond	X	X	X	X	X	X	X	X	X	X	X	X	X	X
City of Colonial Heights	X	X	X	X	X	X		X	X		X	X	X	X
City of Petersburg	X	X	X	X	X	X	X					X		
City of Hopewell	X	X	X	X	X	X	X					X	X	
Prince George Co	X	X	X	X	X	X	X	X		X		X	X	X

1. These materials are diverted from the waste stream for other applications such as waste to energy (used oil and tires), landfill cover (tires, glass) or road paving (glass)