

## Memorandum

**TO:** Thomas Jefferson Planning District Commission  
**From:** TJPDC Staff  
**Date:** October 6, 2016  
**RE:** 5-Year Update of the Regional Solid Waste Plan

**Purpose:** Provide background on the 5-year regional Solid Waste management plan update.

**Background:** The Thomas Jefferson Solid Waste Planning Unit (TJSWPU) includes the Counties of Albemarle, Fluvanna and Green, the City of Charlottesville, and the Towns of Stanardsville, and Scottsville. Under Virginia's solid waste regulations (9VAC20-130-120), the TJSWPU is responsible for maintaining the regional solid waste management plans. Under Virginia solid waste regulations these plans are reviewed updated every 5-years. The 2016 plan update ensures that the region remains in compliance with Virginia solid waste management regulations.

**Discussion:** The 2016 plan provides information about the current solid waste landscape and makes forecasts on waste generation and disposal through 2035. The plan finds that there is adequate transfer station and materials recovery facility capacity to meet the current and future disposal needs of the SWPU. Most solid waste in the region is now handled by the private sector haulers and transfer stations. Greene operates its own transfer station, while Albemarle and Charlottesville provide transfer station and recycling convenience center services through the Rivanna Solid Waste Authority. Fluvanna operates a convenience center that provided recycling and trash disposal services to residents.

The 2016 plan update was guided by the Regional solid waste committee, which includes staff from local governments and the Planning District Commission. Outreach to the private sector was done as part of the planning process

### Key Findings:

- There is adequate permitted capacity at area transfer stations to meet 2035 projected capacity requirements.
- No active landfills in the SWPU means that all waste is handled by transfer stations, convenience centers, or materials recovery facilities. Waste is transported outside of the region for disposal and recycling
- Of the waste that's generated 65% is landfilled and 35% is recycled
- Regional per capita waste generation weight is higher than the national average 1.3 tons versus around 0.9 tons for the state and national average

**Actions:** Staff are requesting that Commissioners review the and approved the 2016 Solid Waste Management Plan update. Copies of the draft plan are available at <http://www.tjpd.org/media/TJPDC-SWMP-2016-update-4-5.pdf> Commissioners who have questions about the solid waste plan, please contact TJPDC staff at [whudson@tjpd.org](mailto:whudson@tjpd.org) or (434)422-4825.



*Serving local governments by providing regional vision,  
collaborative leadership and professional service to develop effective solutions.*

**RESOLUTION FOR ADOPTING THE TJSWPU SOLID WASTE  
MANAGEMENT PLAN OCTOBER 2016 REVISION**

**WHEREAS**, the Thomas Jefferson Planning District Commission (the Commission) provides regional solid waste planning activities for the jurisdictions of Albemarle, Charlottesville, Fluvanna, and Greene through the Thomas Jefferson Solid Waste Planning Unit (TJSWPU).

**WHEREAS**, The SWPU conducts regional solid waste planning and recycling rate reporting on behalf of the SWPU members.

**WHEREAS**, every five years the SWPU must submit to the Department of Environmental Quality an updated regional solid waste management plan.

**WHEREAS**, PDC staff worked with localities to review and update the 2011 solid waste plan.

**WHEREAS**, the 2016 plan finds adequate solid waste infrastructure and disposal capacity to meet the regions solid waste needs through 2035 and that the regional recycling rate of 35% is in excess of the state mandated rate of 25%.

**WHEREAS**, it is in the best interests of the Thomas Jefferson Planning District Commission, Albemarle County, Greene County, Fluvanna County, and the City of Charlottesville to approve the 2016 plan update and forward it to the Department of Environmental Quality for approval.

**NOW, THEREFORE, BE IT RESOLVED** that the Thomas Jefferson Planning District Commission adopts the 2016 5-year update to the Regional Solid Waste Management Plan:

ADOPTED this 6<sup>st</sup> day of October, 2016 by the Thomas Jefferson Planning District Commission being duly assembled.

ATTESTED:

\_\_\_\_\_  
Charles P. Boyles, II  
Executive Director

\_\_\_\_\_  
Andrea Wilkinson  
Commission Chair

\_\_\_\_\_  
Date



# Solid Waste Management Plan

## October 2016 Revision

**A Product of the Thomas Jefferson Planning District Commission**

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## Executive Summary

This document is an update to the Thomas Jefferson Solid Waste Management Plan. It includes a description of existing and projected solid waste needs and facilities, as well as a plan for management of the solid waste generated by residential, industrial and commercial activities of the Thomas Jefferson Solid Waste Planning Unit (TJSWPU). This document serves as the regional plan for the TJSWPU, which is made up of the Counties of Albemarle, Greene, and Fluvanna, the City of Charlottesville, and the towns of Scottsville and Stanardsville. The plan meets the solid waste planning requirements of 9VAC20-130-120 for each locality participating in the planning unit by describing existing and proposed solid waste management systems that support the hierarchy of source reduction, reuse, recycling, resource recovery, incineration, and landfilling, as set forth in 9VAC20-130-30.

The committee of public sector representatives met regularly over the course of a year to amend this plan both to satisfy the Virginia Department of Environmental Quality requirements, and to serve as a basis for strategic planning for solid waste in the longer term. The group reviewed data and trends on waste generation, recycling, reuse, and disposal, comparing it with data available about solid waste management systems capacity to determine future needs. While some elements of the plan will require additional study, the group recommends the following basic strategies which were developed during the 2008 plan process:

1. **Regional approach:** *Regional efforts will yield better results than localized solutions, especially with high costs and capital needs for operations. Cooperative contracting, collection, disposal and recycling operations can provide budget and resource savings, and allow the region to join markets at a competitive level with larger cities.*
2. **Increased recovery:** *Recovery of a larger percent of valuable material, such as recyclables and organic matter, leads to a better balance sheet and longer disposal facility lifetimes.*
3. **Reduce total waste:** *Source reduction, reuse, and recycling decrease the need for landfilling, which is generally not considered a desirable option. In order to limit the negative impacts our communities have on others, the total volume of waste disposed of should be kept to a minimum.*
4. **Increased outreach:** *Increased recovery and reduced total waste can only be achieved by an aware citizenry, institutions, and business community.*

## Summary of Findings

The 2016 update of the plan finds that the region is in compliance with section 9 VAC 20-130 of the Virginia Solid Waste Planning and Recycling Regulations. The Solid Waste Planning Unit, which includes the jurisdictions of Albemarle, Charlottesville, Fluvanna and Greene, have adequate disposal capacity to meet the regions solid waste and recycling needs through the year 2035. Under current conditions solid waste generated in the region passes through one of four transfer stations or a materials recovery facility before waste ends up in landfill (65% landfilled) or is shipped to recyclers (35% Recycled) for further treatment. Currently there is a combined permitted transfer station/MFR capacity of approximately 3,000 tons per day with a daily intake of 311 tons per day. The daily intake is forecasted to grow to 405 tons per day by the year 2035. While the region has maintained a recycling rate in excess of the 25% State mandated minimum and in excess of the 30% goal identified in the 2011 plan update. The region continues to have a per capita waste generation rate that's higher than the national average, in most years the per capita waste generation rate was 1.3 tons per household in 2015 whereas state and national per capita rates are closer to 0.9 tons per household.

## **Adoption & Amendment History**

The Solid Waste Management Plan was adopted by the Thomas Jefferson Planning District Commission (TJPDC) on June 29, 2004. Further planning work was required beyond 2004 because the planning unit did not achieve the required 25% recycling rate. The plan was considered final by the DEQ in 2006 when the planning unit reached the required recycling rate. A progress log on the 2006 plan can be found in the Appendices. The required five-year update of the plan was adopted by the TJPDC on October 6, 2011 with a subsequent update and adoption by the TJPDC on October 6, 2016.

# 1 Introduction and Background

In 1990, the Virginia Department of Waste Management published regulations for the development of Solid Waste Management Plans. The regulations established minimum solid waste management standards and planning requirements applicable to all cities, counties, towns, or designated regions in the Commonwealth of Virginia.

The first regional solid waste plan undertaken by the Thomas Jefferson Planning District Commission (TJPDC) was adopted in 1983 in response to the Virginia Solid and Hazardous Waste Management Act of 1979. Another plan was developed and adopted by all member governments in 1989. The TJPDC adopted its first plan required under the new regulations in 1991. Amendments to Virginia's solid waste regulations required that the region submit a new plan in 2004 (the TJSWPU's was considered finalized by the DEQ in 2006), and update the plan every five years. At the time of the original plan, the Thomas Jefferson Planning District, Virginia Planning District 10, was designated as the "region" for purposes of solid waste management planning.

The Thomas Jefferson Solid Waste Planning Unit (TJSWPU) now includes the Counties of Albemarle, Fluvanna, and Greene, the City of Charlottesville, and the Towns of Stanardsville and Scottsville. The region has the same boundaries as the Thomas Jefferson Planning District (Planning District 10) with the exclusion of Louisa and Nelson Counties, and the Towns of Louisa and Mineral. The City of Charlottesville and Albemarle County created the Rivanna Solid Waste Authority (RSWA) for waste management, operation and reporting. The University of Virginia (UVA) is also located within the SWPU. RSWA and UVA maintain representation on the TJSWPU's committee to contribute to planning activities for the unit. Both contributed to the content of this plan. Louisa County and its towns have their own solid waste management plan. Nelson County is taking part in the Region 2000 solid waste management plan.

This plan is designed to meet state planning requirements and to assist member governments with planning and decision making for solid waste management issues over the next 20 years. It includes a summary of the findings and recommendations of a steering committee composed of local staff and members of the public appointed by localities, and private sector individuals. In 2006, members of the committee recommended strategies to implement the goals and objectives related to solid waste management found in the 1998 Sustainability Accords, a document endorsed by all TJPDC localities that has served as a guide for long-term viability of economic, environmental, and social resources and institutions in the region. Many of the strategies in the 2016 update carry over from the 2006 and 2011 plan and 2011 as ongoing activities. The dispositions of strategies from the 2006 and 2011 plan are included in a progress report found in the Appendices. New strategies developed by the committee respond to other recent planning initiatives involving solid waste management, and accomplishments and changes since 2011 that provide new opportunities to accomplish plan goals.

Feedback was incorporated into the updated plan through a review process that included the solid waste committee, locality planning staff and administrators, TJPDC Commissioners, other local elected officials, and the public. Economic, environmental, social, transportation and feasibility concerns were taken into account in developing the recommendations in the plan. Short- and long-term goals are included, as well as specific projects and timelines for implementation.

## 2 Profile of the Solid Waste Planning Unit

### 2.1 Population and Growth Projections

The Thomas Jefferson Planning District is located roughly in the geographic center of the Commonwealth. The Counties of Albemarle, Fluvanna, and Greene, the City of Charlottesville and the incorporated towns of Scottsville and Stanardsville make up the Solid Waste Planning Unit. The City of Charlottesville and the urban portions of Albemarle County, including the University of Virginia, constitute the economic, educational and cultural hub of the region.

As the following population figures show, the region has grown by approximately 17% from 2000 to 2010. Each locality has shown steady growth which is largely forecasted to continue at a relatively steady rate till the year 2035.

**TABLE 1. POPULATION HISTORY AND PROJECTIONS**

Locality	2000	2010	2020	2030	2035
Charlottesville	40,099	43,475	44,125	45,036	47,898
Albemarle	84,186	98,970	110,725	123,779	144,000
Fluvanna	20,047	25,691	32,654	41,008	34,699
Greene	15,244	18,403	22,002	25,950	23,638
SWPU	159,576	186,539	209,505	235,773	250,172

Source: US Census (1990 - 2010); Weldon Cooper Center 2020 & 2030; 2035 based off Weldon Cooper Center 2030 and 2040 projections.

**TABLE 2. NUMBER OF HOUSEHOLDS**

Locality	2000	2010	2010-2014	% Change from 2010
Charlottesville	16,851	17,290	17,604	4%
Albemarle	31,876	38,157	38,537	21%
Fluvanna	7,387	9,449	9,787	32%
Greene	5,574	6,780	6,965	25%
Solid Waste Unit	63,688	72,174	72,893	14%

Source: US Census 2010; American Community Survey 2010-2014.

## 2.2 Development Patterns and Geographic Conditions

Census data and local comprehensive planning information show the major population centers and growth areas. The City of Charlottesville and the surrounding urban ring in Albemarle County are home to roughly half the population of the SWPU. Fluvanna and Greene grew at a faster than average rate from 2000 – 2010 compared to other Virginia counties. The Route 29 corridor and the I-64/250 corridor are the major residential, commercial, and industrial areas outside of the city and small towns. Most localities have policies in effect to persuade growth around existing centers and reduce the potential for sprawling development over time.

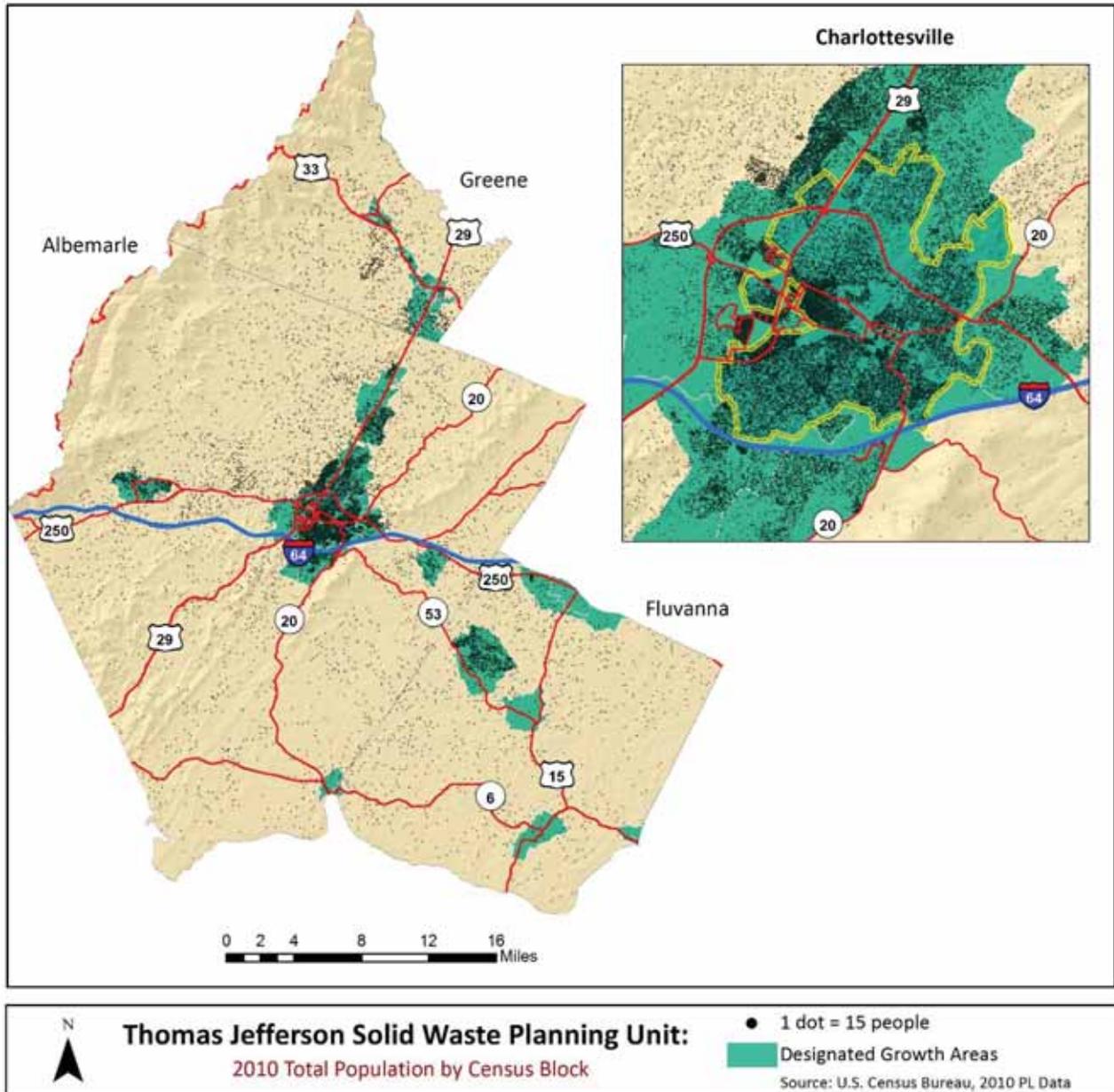


FIGURE 1. POPULATION DENSITY IN THE SWPU

### **ALBEMARLE**

Albemarle County has defined development areas around the City of Charlottesville and north of the City along the Route 29 corridor, in the area of Crozet to the west of Charlottesville, and along Route 250 to the east of Charlottesville. The western side of the County is bounded by the Blue Ridge Mountains and Shenandoah National Park. Outside the development areas, the remainder of the County is rolling Piedmont landscape dotted with a mix of residential, agricultural and minor commercial uses. Residential growth has occurred both inside and outside of the development areas, but in recent years the balance has tipped to the development areas. The major commercial corridors are Route 29, particularly north of Charlottesville, and Route 250 east. The Town of Scottsville is located in the southeastern corner of Albemarle on the James River. A small portion of the town is in Fluvanna County.

### **CHARLOTTESVILLE**

The City of Charlottesville is essentially “built-out” at this point and most development activity is infill and redevelopment. Infill and redevelopment have started to occur. The City is entirely surrounded by the County of Albemarle and can expand no further. Much of the City is residential, with major commercial areas located in the Main Street area (Business Route 250 and the downtown pedestrian mall) and along Route 29. The University of Virginia is the major employer in the City and straddles the City/County’s western border. The City features a rolling landscape and is bounded by the Rivanna River and Moore’s Creek on its east and south sides, respectively.

### **FLUVANNA**

Fluvanna County experienced a high rate of population growth through the 1990s and maintained higher than average growth rates through the following decade. Most of this growth has been centered on the Lake Monticello development in the western portion of the County, to the northwest of the county seat of Palmyra. This has brought minor amounts of commercial development to serve the residents; however, Fluvanna residents still largely commute to Charlottesville and Albemarle County for employment, goods and services. Fluvanna County terrain is relatively flat compared to the counties to the west, and becomes increasingly gentle as one moves east. The Rivanna River bisects the County running northwest to southeast, and the James River forms its southern boundary.

### **GREENE**

Greene County has also experienced rapid growth, primarily in the southeast along the Route 29 corridor. The rapid residential growth in this area is primarily made up of commuters to Albemarle County and Charlottesville. Increasing employment opportunities coupled with rising housing costs in Albemarle have made Greene County an increasingly attractive option for potential homeowners. Some commercial development has occurred along the Route 29 corridor as well, but County residents still travel to Albemarle for many goods and services. Greene County is bounded on the west by the Blue Ridge Mountains and Shenandoah National Park. Similar to Albemarle, the terrain of Greene County falls away into foothills eastward from the Blue Ridge Mountains. The Town of Stanardsville serves as the County Seat and is a hub for residential development.

## **2.3 Economic Growth and Development**

The overall economic growth for the region in the 1990s and early 2000s was very healthy, with various indicators showing positive trends. Despite the 2008 nationwide recession, each locality, and the region maintain lower unemployment rates than those of the state and nation. Median income also grew steadily in each jurisdiction and unemployment rates have reached below recession levels.

TABLE 3. UNEMPLOYMENT RATE

Locality	1994	2000	2010	2015
Charlottesville	3.3%	2.6%	6.0%	3.7%
Albemarle	2.4%	1.7%	5.0%	3.9%
Fluvanna	3.8%	1.9%	5.3%	3.7%
Greene	3.9%	1.9%	5.3%	3.7%
Solid Waste Unit	3.4%	2.0%	5.4%	3.8%
Virginia	4.9%	2.2%	6.9%	4.4%
National	6.1%	3.7%	9.3%	5.3%

Source: Virginia Employment Commission & Bureau of Labor Statistics Local Area Unemployment Statistics

TABLE 4. MEDIAN HOUSEHOLD INCOME, IN DOLLARS

Locality	2000	2010	2014	% Change from 2000
Charlottesville	\$32,903	\$42,240	\$47,218	44%
Albemarle	\$53,263	\$64,847	\$67,958	28%
Fluvanna	\$46,630	\$68,223	\$64,641	39%
Greene	\$46,882	\$54,307	\$63,739	36%
Solid Waste Unit	\$44,920	\$57,404	\$60,889	36%

Source: US Census American Community Survey

Reflecting national trends, the greatest increases in jobs in the SWPU have been in the service, retail, wholesale, and government sectors, while farm and manufacturing jobs have been on the decline. Major employers in the area include the University of Virginia, Martha Jefferson Hospital, State Farm, GE Fanuc, Dominion Virginia Power, Lexis Publishing, Crutchfield Corporation, FIC Staff Services, Piedmont Virginia Community College, Klockner-Pentaplast, and the Virginia Department of Corrections.

## 2.4 Transportation Conditions

Transportation within the SWPU revolves around Interstate 64 on the east-west axis and Route 29 on the primary north-south axis. Other major transportation corridors include Route 15 through Fluvanna County, which travels roughly north-south, and Route 6, which passes through southern Fluvanna County and into northern Nelson County to the west. Route 33 cuts through Greene County on an east-west axis. Corridors other than Route 29 and Interstate 64 do not have the capacity for heavier volumes of traffic. Narrow roads and hilly conditions characterize rural areas that are traversed by county owned, state maintained secondary routes. The secondary system is more challenging for larger trucks to travel and occasional snow in winter can cause transportation delays of several days at times. Rail service runs both north-south and east-west through the region, including through Charlottesville and many small towns.

## 2.5 Markets for the Reuse and Recycling of Materials

Reuse of household materials is common in the area, and markets include used clothing, sporting goods, and pawn shops, yard sales, rummage sales, the Habitat Shop, and other building supply recovery operations. Reuse of inert fill is generally accomplished locally. Non-profits accept donations of old cars, appliances, equipment, eyeglasses, and other useful items. Online options include Freecycle and Craigslist, which are online message boards where items to be given away can be posted and claimed.

Most materials destined to be recycled are shipped out of the region, since there are few local processors or markets. For example, many recyclable products are sold to brokers like Cycle Systems. Construction and demolition debris (CDD) and paper products are exceptions, however. The Van der Linde Recycling facility recycles local CDD at a rate exceeding 90%, and Weyerhaeuser recycles a portion of the regions waste paper. National markets affect pricing at the local level, and some materials, like green glass, have been steadily losing national markets, and therefore value. The RS Processing fees for separation of aluminum from steel affect the profitability of recycling metals. Gerdau and other scrap dealers accept metals to be recycled. Waste oil and antifreeze are collected for recycling by contractors that service the region.

Organic wastes are readily consumed by a number of public and private mulching operations. Public operations include Charlottesville's leaf collection and Christmas tree programs offered by Charlottesville and Albemarle. Panorama Farms in Albemarle County accepts organic material from the City of Charlottesville curbside leaf collection program. Post-consumer food waste composting is provided by Black Bear Composting, a relative newcomer in the region which has been operating its commercial scale compost facility in Crimora, VA since 2011.

### 3 Current & Historical Solid Waste Management Systems

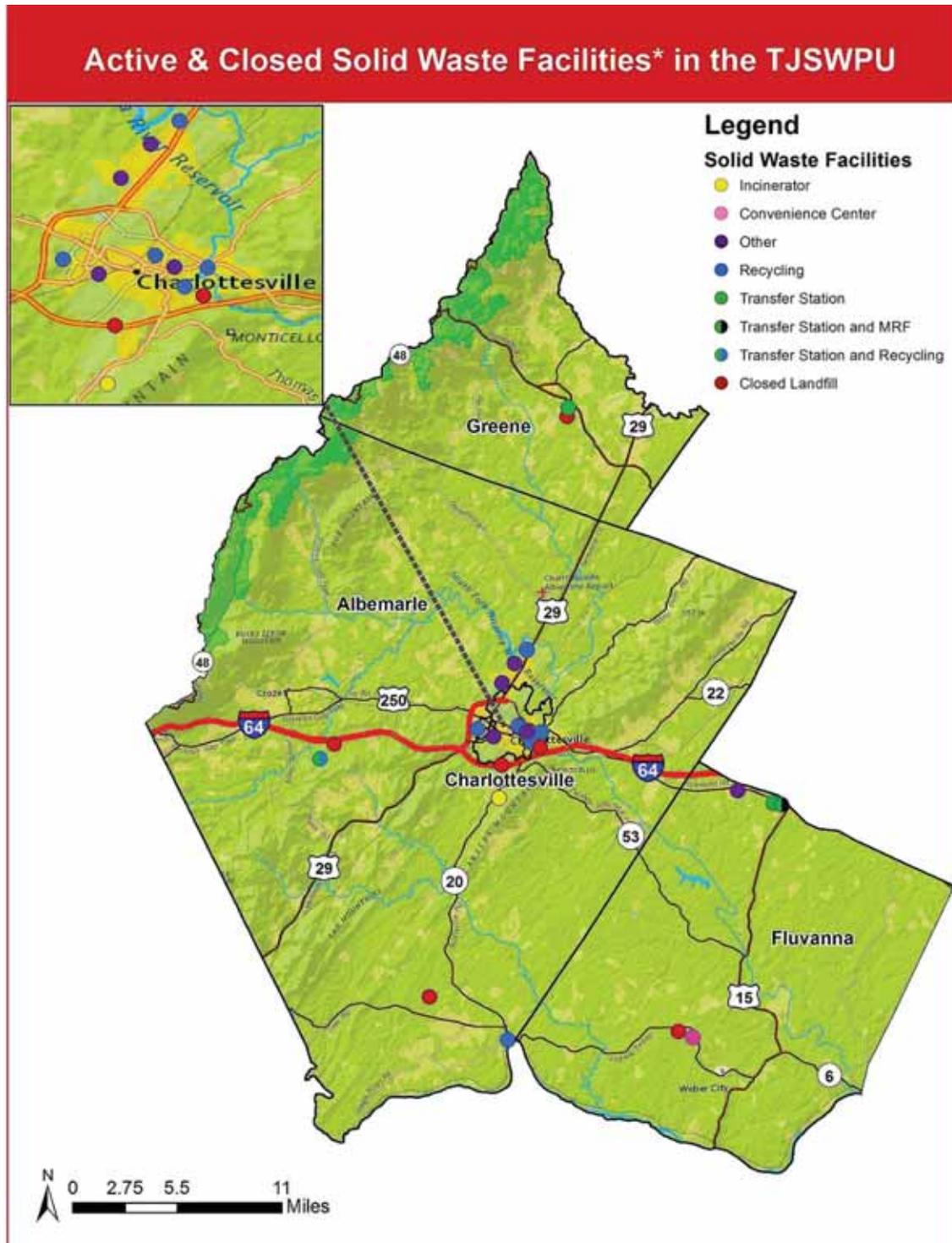


FIGURE 2. SOLID WASTE MANAGEMENT FACILITIES: ACTIVE AND CLOSED

The following table details the existing and closed waste management facilities in each locality. The table identifies those that have been permitted through the Virginia Department of Environmental Quality and does not provide a complete inventory of closed landfill sites that were either used

informally or were not permitted. The closed facilities identified on this table are those for which the locality or authority is responsible for any necessary remediation.

TABLE 5. EXISTING SOLID WASTE MANAGEMENT FACILITIES IN THE TJSWPU: ACTIVE & CLOSED BY LOCALITY

Locality	Facility name	Type	Status	Permit Year
RSWA	Ivy Material Utilization Ctr.	Transfer Station	Active	1997
	Ivy Sanitary Landfill	Sanitary Landfill	Closed	1997
	RSWA Compost Facility	MSW Composting Facility	Closed (2001)	1998
Albemarle	Keene Sanitary Landfill	Sanitary Landfill	Closed	1974
Charlottesville	Eldercare Gardens	Regulated Medical Waste (RMW) Incineration	Permitted by Right (PBR) prior to 1994	
	HCMF Heritage Hall	RMW Storage Only	PBR prior to 1994	
	Martha Jefferson Hospital	RMW Incineration	PBR prior to 1994	
	University of Virginia	RMW Incineration	Closed	
	Virginia Ambulatory Surgery Center	RMW Storage only	Active	1998
	Old 5 <sup>th</sup> Street Landfill	Unlined landfill	Closed	1960's
	Fluvanna	Republic Services Transfer Station	Materials Recovery Facility	Active
Fluvanna Correctional Unit#5		RMW Steam Sterilization	PBR prior to 1994	
Fluvanna County Sanitary Landfill		Sanitary Landfill	Closed	1974
Fluvanna County Sanitary Landfill		Sanitary Landfill	Closed	1983
Zion Crossroads Recycling Center (MSW MRF) & Van der Linde Recycling (CDD MRF)		MSW and CDD Materials Recovery Facility	Active	CDD: 2007 MSW: 2009
Greene	Greene County MRF & Co - Compost	Materials Recovery Facility	Closed	1994
	Greene County Transfer Station	Transfer Station	Active	1994
	Greene County Sanitary Landfill	Sanitary Landfill	Closed	1974
	Greene County Sanitary Landfill	Sanitary Landfill	Closed	1978

Source: Virginia Department of Environmental Quality and local governments

### 3.1 Current Waste Generation Rates

The following table provides a breakdown of waste generated by type, as reported to the DEQ in 2015.

TABLE 6. TJPDC 2015 CURRENT WASTE GENERATION RATES (IN TONS)

Waste Type	Region	Charlottesville Albemarle <sup>^</sup>	Fluvanna	Greene
<b>Municipal Solid Waste Disposed</b>	<b>159,765</b>	<b>135,302</b>	<b>5,099</b>	<b>19,365</b>
Household	158,794	135,302	5,099	18,394
Commercial	971			971
<b>Primary Recyclable Materials</b>	<b>86,983</b>	<b>69,736</b>	<b>3,255</b>	<b>13,993</b>
Paper/Cardboard	42,005	32,941	25	9,039
Metal	12,472	10,441	121	1,911
Plastic	1,522	260	0	1,263
Glass	304	254	0	50
Comingled/Single Stream	19,743	16,710	1,728	1,306
Yard Waste (Composted/mulched)	3,243	3,160	0	83
Waste Wood (Chipped/mulched)	1,524	324	1,200	0
Textiles	671	374	120	177
Tires	270	209	42	18
Used Oil	533	505	7	20
Used Oil Filters	15	15	0	0
Used Antifreeze	54	38	1	15
Batteries	140	131	0	9
Electronics	270	248	9	13
Inoperative Motor Vehicles	0	0	0	0
Fats/Bone/Greases	523	501	0	23
White Goods (Appliances)	38	38	0	0
Water Treatment Sludge (dry tons)	2,853	2,853	0	0
Composted Food Waste	801	734	0	67
<b>Solid Waste Reuse</b>	<b>31</b>	<b>31</b>		
UVA MERCI	16	16		
UVA Move Out/ Office Surplus	14	14		
<b>Total Waste Generated</b>	<b>246,749</b>	<b>205,038</b>	<b>8,353</b>	<b>33,358</b>
<b>Base Percent</b>	<b>35%</b>	<b>34%</b>	<b>39%</b>	<b>42%</b>
Adjusted Percent (5% bonus for reuse)*	40%			
Population	197,078	151,490	25,970	19,618
Per Capita Waste Generation	1.3	1.4	0.3	1.7

Source: Local facility operators; Weldon Cooper Center

\*Adjusted recycling rates incorporate credits for reuse and source reduction.

<sup>^</sup> Charlottesville and Albemarle are reported as one unit. In previous reports this was reported as the RSWA area. In the past the RSWA provided the majority of solid waste services for Charlottesville and Albemarle. Currently, it provides services in a more limited capacity.

## 3.2 Existing & Planned Solid Waste Management Programs

### Thomas Jefferson Solid Waste Planning Unit

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The Thomas Jefferson Planning District Commission (TJPDC) acts as the central clearinghouse for solid waste planning and reporting on behalf of the local governments that make up the TJSWPU. TJPDC is the designated central archive for receiving and recording information on solid waste generation, recycling, facilities, and to calculate and submit the annual regional recycling rate report to the DEQ. The TJPDC is also responsible for implementation of plan strategies. The TJPDC maintains a recycling website for the TJSWPU to serve as a centralized resource for citizens of the planning unit and participates in public education/outreach events to engage citizens. The TJPDC has also developed environmentally preferable procurement guidelines which are available online at <http://www.tjpd.org/environment/solid-waste-planning/>.

Localities in the planning region use similar strategies to promote proper waste disposal, waste reduction, reuse, and recycling, with more densely populated localities offering additional services. In general, localities in the planning unit encourage citizens to reduce, reuse, and recycle by charging for MSW disposal, while providing recycling options free of charge. On-going litter control is provided by a combined effort of law enforcement, trash cans in public spaces, the Virginia Department of Transportation's Adopt-a-Highway program, and by annual river clean-up events organized by the Rivanna Conservation Alliance and others.

Additionally, a number of recycling services are available to the region's residents from local retailers. Businesses such as Best Buy, Crutchfield, Home Depot, Carpet Plus, Target, and Goodwill Industries provide recycling for a number of special wastes on an on-going basis. As mentioned previously, the region is also home to the Van der Linde Zion Crossroads Recycling Center, a Materials Recovery Facility that separates recyclables from the MSW stream it receives. A number of private haulers from around the region use this facility.

A recent planning initiative of partners in the region called the Local Climate Action Planning Process (LCAPP) also makes recommendations for responsible solid waste management. The City of Charlottesville, Albemarle County, and UVa undertook an 18-month planning and public engagement process between 2009 and 2011 to address the role of energy and climate resiliency issues for their communities. Out of this process, governing bodies of the City, County and UVa will consider several recommendations on how to reduce the impact of materials utilization on climate change. The recommendations directly related to solid waste reduction are included as strategies in this Plan.

The following sections provide a comprehensive description of systems and programs administered in the TJSWPU that support and promote the solid waste hierarchy set forth in 9VAC20-130-30.

### City of Charlottesville

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#### *COLLECTION AND TRANSPORTATION*

Weekly residential curbside collection includes source separated recycling and a separate collection for household trash. Both services are provided through contracts with private companies. Designated commercial corridors receive daily trash and recycling (newsprint, mixed paper, glass, metals, plastics, cardboard) pick-up. The program is a "pay as you throw" program, where trash stickers and decals are purchased by customers, and recycling is free. Curbside customers may choose to use private haulers who also collect from commercial and multifamily dumpsters. Private companies also service multi-unit residential buildings and commercial/retail businesses. Individuals can also drive to the Ivy Materials Utilization Center (MUC), McIntire Recycling Center, or Zion Crossroads Van der Linde Materials

Recovery Facility. Paint collection is also now available at the Ivy MUC. Each resident may request bulky item pick-ups for appliances, large branches, and other over-sized items for \$35 for the first appointment \$50 for the second appointment and \$100 for all subsequent appointments within a 12-month period. Construction and demolition debris must be transported privately. Additionally, BigBelly collection units are provided at every bus stop in the City. These units are solar powered compactors and send capacity updates once the volume collected reaches a "full" level to improve collection efficiency and prevent overflowing units.

#### ***STORAGE, TREATMENT AND DISPOSAL***

All of the City's MSW goes to the Zion Crossroads Van der Linde Materials Recovery Facility where recyclables are pulled from the waste stream and shipped to recycling markets. MSW that is not separated for recycling is taken to a permitted landfill in Amelia County for final disposal. All source separated recyclables are taken to the County Waste Materials Recovery Facility in Chester, VA where it is processed and shipped to recycling markets. Christmas trees are ground into mulch, which is available free to citizens at Darden Towe Park. Leaves and yard waste are ground into mulch by a private composter. Leaf collection from the City rights-of-way and residential curbside pickup are taken to Panorama Farms where they are composted.

#### ***WASTE REDUCTION AND REUSE***

The City partially funds waste reduction and reuse initiatives administered by the Rivanna Solid Waste Authority (described below) The City encourages citizens to reduce waste by charging for trash removal by the bag, while recycling pick up is free. Leaves are picked up in the fall in a special free program, and Christmas trees are also picked up free curbside citywide. Trash cans help reduce litter in the City, and recycling cans are collocated with trashcans on the pedestrian mall downtown. Composting is promoted by the City through providing drop-off services for organics at the City Market and McIntire Recycling Center. How-to guides and other composting resources are also available on the City website to help encourage composting at home. To improve awareness and access to green initiatives the City offers an interactive [City Green map](#) resource that details locations of sustainability efforts and links to recycling resources. Additionally, the City promotes proper disposal of household hazardous waste and electronics recycling on its website.

## **Albemarle County**

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#### ***COLLECTION AND TRANSPORTATION***

Businesses, industries, and individuals are responsible for making their own waste collection and recycling arrangements, with curbside collection contracts available throughout the county. Self-delivery to the Ivy MUC, the McIntire Recycling Center, Van der Linde, or the two county newspaper/glossy paper bins (located in the parking lots of Roses at Pantops and the Community Center in Scottsville) are the only options for those in the rural areas and available to all others. The McIntire Recycling Center (described below) accepts a variety of recyclable materials. The Ivy MUC accepts MSW and limited reuse and recycling at the convenience center portion of the facility.

#### ***STORAGE, TREATMENT AND DISPOSAL***

Private haulers deliver waste to one of several transfer stations in the region. The majority of waste is handled through the Van der Linde Zion Crossroads Recycling Center, Republic Services Transfer station and the RSWA's Ivy Materials Utilization Center (MUC). Sludge from the Rivanna Water and Sewer Authority is hauled to McGill Environmental where it is composted and sold.

### ***WASTE REDUCTION AND REUSE***

The County partially funds waste reduction and reuse initiatives administered by the Rivanna Solid Waste Authority (described below). Additionally, two departments of the local government administer Environmental Management Systems programs that include source reduction and recycling components. The County offers mixed-paper recycling for its local government staff. The County also maintains a [Green Resource Map](#) on the County web site as a resource for residents.

### ***FUTURE ACTIVITIES***

In the spring of 2016 the Albemarle County Board of Supervisors established the Solid Waste Alternatives Advisory Committee. The committee is charged with reviewing the County's solid waste policies and practices. The Committee will initially focus its efforts on waste reduction, materials reuse, recycling, composting and determining the County's future involvement with the RSWA at the Ivy Materials Utilization Center and Transfer Station. At the time of the 2016 Regional Solid Waste Plan update the committee has not made any recommendations. Any future recommendations will be included in updates to the Regional Solid Waste Management Plan.

## **Rivanna Solid Waste Authority (RSWA)**

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RSWA was established jointly by the City of Charlottesville and Albemarle County to administer solid waste services to the citizens of each.

### ***COLLECTION AND TRANSPORTATION***

RSWA offers no collection services. RSWA contracts with private haulers to transport wastes accumulated at the Ivy MUC and the McIntire Recycling Center to a variety of final destinations.

### ***STORAGE, TREATMENT AND DISPOSAL***

The Ivy MUC operates a waste transfer station, vegetative (stumps, brush, etc.) waste mulching operation, collection centers for white goods, pallets, tires, and the Encore Shop for collection of reusable items. The citizens' convenience center, just outside the scales for the transfer station, includes easy drop-offs for trash in bags or receptacles, and recyclable materials, including cardboard, newspaper, waste motor oils and paint. The Ivy MUC is open weekdays from 7:30 a.m. to 4:00 p.m. and Saturdays from 8:30 a.m. to 4:00 p.m. Waste collected at the MUC that is not separated at the convenience center for recycling is sent to Amelia County for disposal in a permitted landfill.

The RSWA transfer station accepts municipal solid waste from private citizens and private haulers servicing Albemarle County and the surrounding area. Fees for Albemarle County Residents are \$66/ton, with a \$6 minimum, plus a service fee for each visit to the scales of \$1. Other area residents are charged a \$10 fee on each transaction. The same tonnage rates apply. Small pick-up trucks, 8-foot bed or equivalent, with CDD are also accepted for the same tipping fee. Larger loads of CDD will be directed to the other facilities in the area. Clean fill, stumps, and brush are accepted at the MUC as well. RSWA also provides confidential document destruction. Vegetative debris and wooden pallets are ground into chips/mulch for resale.

RSWA also operates the McIntire Recycling Center located on McIntire road in Charlottesville. It is open for use by City and Albemarle County residents. The Center is open five days per week Wednesday through Saturday, closing at 5:20 p.m. each day with varying opening times. The center accepts boxboard, file stock, corrugated cardboard, newspapers, glossy paper, phone books, glass, #1 and #2 plastics in separate bins as well as #3 - #7 in comingled bins, and metal and aluminum cans. RSWA contracts with Weyerhaeuser for the paper goods collected. Glass, metals and plastics are sold to the various buyers based on market conditions.

***WASTE REDUCTION AND REUSE***

The Encore Shop, part of the Ivy MUC, provides a protected area where people can leave reusable items and pick up items for re-use. Mulch from the grinding of stumps and brush is sold there as well. Household hazardous waste and amnesty days (furniture, mattresses, appliances, and tires) are held at the Ivy MUC during advertised special events. A book exchange is offered at the McIntire Recycling Center. Regular disposal is also available for household paint, motor oil and antifreeze.

## Fluvanna County

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***COLLECTION AND TRANSPORTATION***

Individuals, businesses and industries are generally responsible for waste hauling and recycling activities via either contract with a private firm or self-delivery to the convenience center located in Fork Union. The convenience center is open to the public Tuesday from 9:00am to 4:00pm, Thursday from 11:00am to 7:00pm, and Saturday - 8:00am to 5:00pm. It accepts newspaper, cardboard, telephone books, aluminum cans, plastic bottles, glass and used motor oil free of charge, and MSW at \$57/ton, with an \$8 minimum. Tires and appliances are also accepted at a charge. The convenience center is closed to any commercial waste. The Van der Linde Zion Crossroads Recycling Center accepts construction and demolition debris and MSW. At Lake Monticello, a private hauler collects MSW; curbside recycling is included for plastics, glass, metal and newspaper. County residents can also self-haul recyclable materials to the Van der Linde Zion Crossroads Recycling Center, which provides a convenience center type drop-off area at no charge.

***STORAGE, TREATMENT AND DISPOSAL***

The Republic Services private transfer station is located on 250 at Zion Crossroads. Fluvanna County contracts with Republic to transfer convenience center waste to this facility where recyclables are sent to a variety of markets, and MSW is hauled to the Amelia County landfill for disposal. This facility is not open to cash customers. The Zion Crossroads Recycling Center operates as a materials recovery facility, hauling processed materials to secondary market recyclers and unacceptable materials to the Amelia County landfill. RSWA has a contract with Fluvanna to bring its wood grinding operation to Fluvanna on an as-needed basis.

***WASTE REDUCTION AND REUSE***

Fluvanna encourages citizens to recycle by offering recycling collection at the convenience center for free, while charging for MSW collection. The County also oversees a low maintenance reuse facility consisting of a covered lot where citizens can leave reusable items that others are free to pick up, free of charge. Additionally, the County has considered establishing an EMS, but the initiative was put on hiatus because of budget concerns.

## Greene County

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***COLLECTION AND TRANSPORTATION***

Individuals, businesses, and industries are generally responsible for waste hauling and recycling activities via either contract with a private firm or self-delivery. County residents may use the transfer station and recycling center located off Route 33 at 358 Mays Road, southeast of Stanardsville. The facility is open Monday through Saturday from 8 am to 4 pm. Recyclables collected include plastic, glass, paper (newsprint, magazines, and phone books), metals and corrugated cardboard. White goods, appliances, tires, furniture, and construction and demolition debris are also accepted. The transfer station accepts MSW from county residents, private haulers, and commercial sources.

In addition to MSW and recyclables generated within the County, the transfer station accepts residential and commercial MSW that originates in neighboring localities. The relatively lower tipping fee charged

at this transfer station makes it an attractive option for haulers and individuals in the vicinity. This additional business is welcomed by the County because the additional revenue from tipping fees covers the entire cost of operating the transfer station. Because MSW originating from outside the County is not accounted for as such, the entire tonnage received at the transfer station is used in calculating Greene County's annual recycling rate. This results in an artificially low rate for recycling taking place in the County.

#### ***STORAGE, TREATMENT AND DISPOSAL***

Recyclables accumulated at the transfer center are shipped to a variety of markets. The transfer station operator contracts with private haulers to transport accumulated MSW to the Amelia County landfill.

#### ***WASTE REDUCTION AND REUSE***

A volunteer-run waste exchange program makes clothing and other re-usable items available to the public at no charge. A retailer periodically takes a truck to the County containing off-merchandise for people to take items free of charge. Trash cans help reduce litter in the Town of Stanardsville, and a major volunteer county-wide road cleanup is held every spring.

## **University of Virginia (UVA)**

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#### ***COLLECTION AND TRANSPORTATION***

Facilities Management is responsible for all solid waste activities. A private company is under contract for collection and shipping of MSW. Recyclables are collected in bins and other systems in dorms and office areas, brought to a central collection point by the UVA Recycling employees, and picked up by a private firm.

#### ***STORAGE, TREATMENT AND DISPOSAL***

A portion of the MSW is transported to the Zion Crossroads Recycling Center for additional sorting and possible reclamation and the remainder taken to the Greene County Transfer Station. The Zion Crossroads Recycling Center sends any waste that is not recoverable for recycling to a permitted landfill in Amelia County. Hazardous and medical wastes are handled through the Office of Environmental Health and Safety, and are either sent to a hazardous waste facility or sterilized (deemed "Special Waste") and hauled directly to a special waste cell at a regulated landfill. UVA participated in an electronics recycling pilot program with RSWA in 2003 and 2006 and again with Crutchfield and a local nonprofit in 2009. Additionally, inkjet/laser cartridges are collected by in house staff, and then collected by a local small business for recycling/refurbishment. Cell phones batteries and small electronics are sent to recyclers.

#### ***WASTE REDUCTION AND REUSE***

UVA administers several waste reduction and reuse initiatives that serve the campus community. They include:

- Chuck It For Charity: The collection of gently used items students donate to local nonprofits to help those less advantaged.
- MERCI: A program started and run by operating room nurses and volunteers to redeploy equipment back into the hospital and / or send to clinics, animal shelters, and 3<sup>rd</sup> world countries for use.
- Composting of food scraps is used extensively in commercial kitchens and dining halls. Many events are also moving toward "zero-waste." The food scraps are processed by Black Bear Composting in Crimora, VA.
- Coal ash is collected and used as beneficial fill or sent to make cement / cinder blocks.

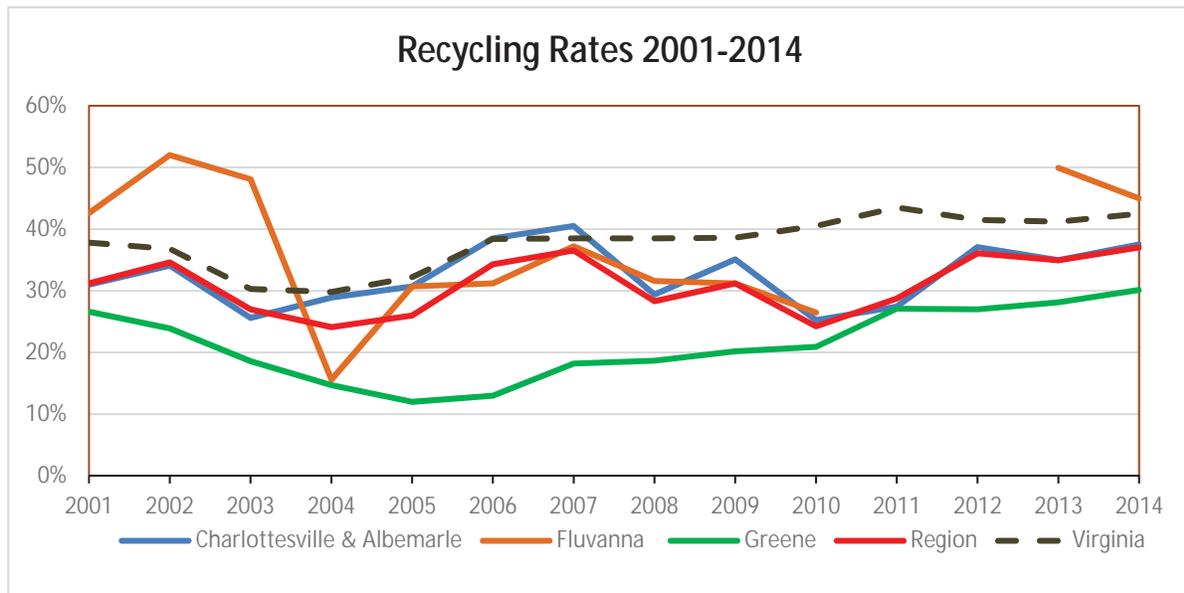
- UVA participated in the EPA sponsored "Game Day Challenge Recyclemania" in an effort to show spectators of large sporting events (e.g. home football games, etc.) what is produced in the way of disposables by patrons. This is a national competition between colleges and universities.
- All new construction and major renovation projects are committed to achieving LEED certification. CD&D is collected from even the smallest of projects and sent to a CD&D MRF and have received reports exceeding 90% reclamation/recycling rates.



FIGURE 3. REUSE FACILITY IN FLUVANNA COUNTY (LEFT) & ZION CROSSROADS RECYCLING CENTER (RIGHT)

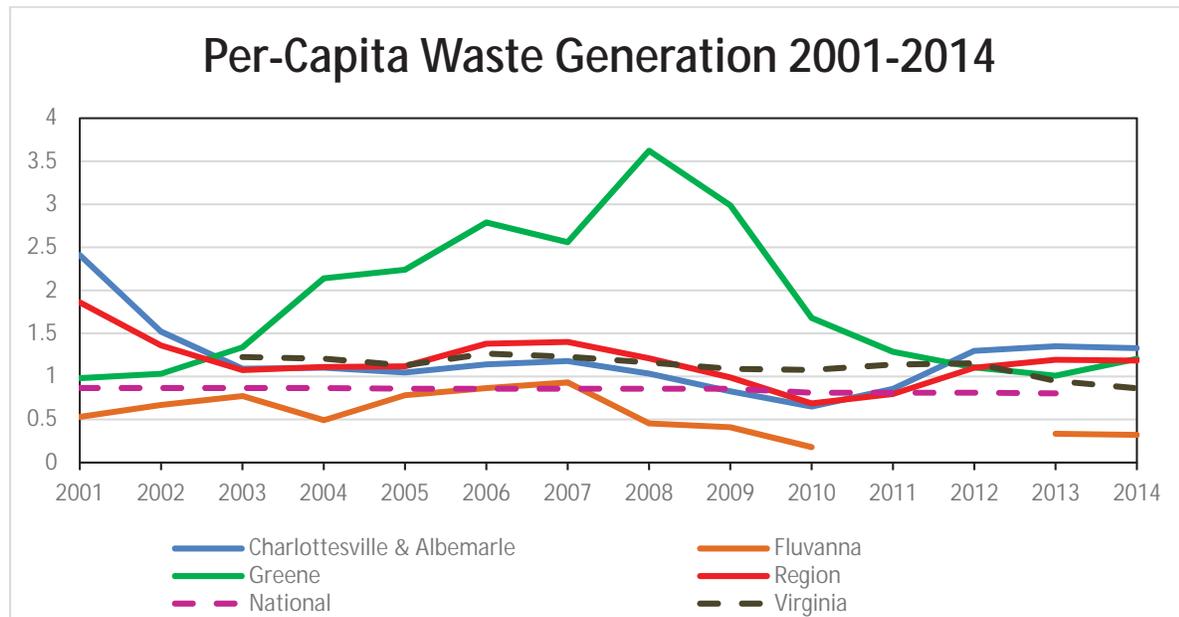
### 3.3 Historical Waste Generation

Historical waste generation rates are useful for tracking progress and can be used to predict future needs. The following figures and tables illustrate waste management data available from 2001 to 2014. Despite RSWA and Greene County spikes in 2001 and 2008, respectively, the per capita waste generation has not changed significantly since the inception of data collection. Likewise, there has not been significant change in the regional recycling rate since 1993. Figures 4 and 5 show trends in the recycling rate and per capita waste generation in the region over time.



Note: Fluvanna did not report data in 2011 or 2012  
 source: Virginia DEQ, TJSWPU recycling rate reports

FIGURE 4. RECYCLING RATE TRENDS



Note: Fluvanna did not report data in 2011 or 2012  
 source: Virginia DEQ, EPA & TJSWPU recycling rate reports

FIGURE 5. PER CAPITA WASTE GENERATION TRENDS

## 2001 Waste Generation by Type

The following figures are based on reports submitted by localities to DEQ in 2002.

TABLE 7. TJPDC 2001 WASTE GENERATION RATES (IN TONS)

	RSWA*^	Fluvanna	Greene	Region
<b>Municipal Solid Waste</b>	<b>114,370</b>	<b>6,612</b>	<b>11,353</b>	<b>132,335</b>
Household			6,244	
Commercial			5,109	
Institutional				
<b>Primary Recyclable Materials (PRM)</b>	<b>31,125</b>	<b>4,890</b>	<b>3,437</b>	<b>39,452</b>
Paper		414	1,540	
Metal		358	475	
Plastic		207	1,250	
Glass		0	60	
Waste Wood (chipped / mulched)		3,910	75	
Textiles		0	17	
Yard Waste (composted / mulched)		0	20	
Commingled/Other		0	0	
<b>Secondary Recyclable Materials (SRM)</b>	<b>*</b>	<b>18</b>	<b>691</b>	<b>--</b>
Used Oil & Antifreeze		17	57	
Batteries		1	3	
Waste Tires		0	21	
Electronics		0	0	
Abandoned automobiles removed		0	600	
Sludge (composted)		0	0	
Tree Stumps >6"		0	0	
Other		0	0	
<b>Recycling Rate</b>	<b>31.0%</b>	<b>42.6%</b>	<b>26.6%</b>	<b>31.2%</b>
<b>SRM Reuse</b>	<b>*</b>	<b>0</b>	<b>0</b>	<b>--</b>
Construction Waste		0	0	
Demolition Waste		0	0	
Debris Waste		0	0	
Ash		0	0	
Other		0	0	
<b>Other wastes</b>		<b>0</b>	<b>0</b>	<b>--</b>
Hazardous		0	0	
Agricultural		0	0	
Mining		0	0	
Regulated. Medical		0	0	
Spill residue		0	0	
Other	94,270(CDD)	0	0	94,270
<b>Total Waste</b>	<b>302,565</b>	<b>11,520</b>	<b>15,481</b>	<b>329,566</b>
2001 Population	125,600	21,400	15,800	177,200
Per capita	2.41	0.538	0.980	1.86

Source: Local facility operators; DEQ; Weldon Cooper Center

\*The Rivanna Solid Waste Authority reports the recycling numbers for Albemarle County, the City of Charlottesville, and Town of Scottsville as a combined number.

^RSWA did not separate SRM recycling from SRM reuse in their report. The combined tonnage was 62,800.

## 2002 Waste Generation by Type

The following figures are based on reports submitted by localities to DEQ in 2003.

TABLE 8. TJPDC 2002 WASTE GENERATION RATES (IN TONS)

	RSWA*	Fluvanna	Greene	Region
<b>Municipal Solid Waste</b>	<b>126,915</b>	<b>7,213</b>	<b>12,738</b>	<b>146,866</b>
Household		3,606	7,643	
Commercial		2,885	5,095	
Institutional		721		
<b>Primary Recyclable Materials (PRM)</b>	<b>48,484</b>	<b>7,805</b>	<b>3,357</b>	<b>59,646</b>
Paper	4,914	515	1,583	
Metal	41,799	203	60	
Plastic	131	224	1,166	
Glass	1,062	181	108	
Waste Wood (chipped or mulched)	50	6678	410	
Textiles	60	5.2	20	
Yard Waste (composted or mulched)	0	0	10	
Commingled/Other	468	0	0	
<b>Secondary Recyclable Materials (SRM)</b>	<b>4,754</b>	<b>17</b>	<b>633</b>	<b>5,404</b>
Used Oil & Antifreeze	500	12	51	
Batteries	100	4.7	7	
Waste Tires	177	0	75	
Electronics	0	0.62	0	
Abandoned automobiles removed	700	0	500	
Sludge (composted)	3,043	0	0	
Tree Stumps >6"	0	0	0	
Other	234	0	0	
<b>SRM Reuse</b>	<b>12,566</b>	<b>0</b>	<b>0</b>	<b>12,566</b>
Construction Waste	0	0	0	
Demolition Waste	7,918	0	0	
Debris Waste	4,648	0	0	
Ash	0	0	0	
Other	0	0	0	
<b>Recycling Rate</b>	<b>34.1%</b>	<b>52.0%</b>	<b>23.9%</b>	<b>34.6%</b>
<b>Other wastes</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Hazardous	0	0	0	
Agricultural	0	0	0	
Mining	0	0	0	
Regulated. Medical	0	0	0	
Spill residue	0	0	0	
Other	0	0	0	
<b>Total Waste</b>	<b>192,719</b>	<b>15,035</b>	<b>16,728</b>	<b>224,482</b>
2002 Population	126,400	22,500	16,200	165,100
Per capita	1.52	0.668	1.03	1.36

Source: Local facility operators; DEQ; Weldon Cooper Center

\*The Rivanna Solid Waste Authority reports the recycling numbers for Albemarle County, the City of Charlottesville, and Town of Scottsville as a combined number.

## 2003 Waste Generation by Type

The following figures are based on reports submitted by localities to DEQ in 2004.

TABLE 9. TJPDC 2003 WASTE GENERATION RATES (IN TONS)

	RSWA*	Fluvanna	Greene	Region
<b>Municipal Solid Waste (MSW)</b>	<b>104,160</b>	<b>9,525</b>	<b>18,085</b>	<b>131,770</b>
Household	104,160	4762	9,585	
Commercial		3810	8,500	
Institutional		952		
<b>Primary Recyclable Materials (PRM)</b>	<b>28,334</b>	<b>1,774</b>	<b>3,602</b>	<b>33,710</b>
Paper	8,210	565	1,710	
Metal	9,139	314	75	
Plastic	130	244	1,050	
Glass	1,168	134	90	
Waste Wood (chipped or mulched)	770	0	620	
Textiles	25	5.7	35	
Yard Waste (composted or mulched)	8,576	512	22	
Commingled/Other	316	0	0	
<b>Secondary Recyclable Materials (SRM)</b>	<b>6,762</b>	<b>7,069</b>	<b>522</b>	<b>14,353</b>
Used Oil & Antifreeze	1,168	20	56	
Batteries	13	4.9	6	
Waste Tires	209	31	60	
Electronics	28	2.2	0	
Abandoned automobiles removed	1,100	0	400	
Sludge (composted)	3,048	0	0	
Tree Stumps >6"	10	0	0	
Other	1,186	7,011	0	
<b>SRM Reuse</b>	<b>718</b>	<b>0</b>	<b>0</b>	<b>718</b>
Construction Waste	0	0	0	
Demolition Waste	0	0	0	
Debris Waste	0	0	0	
Ash	0	0	0	
Other	718	0	0	
<b>Recycling Rate</b>	<b>25.6%</b>	<b>48.1%</b>	<b>18.6%</b>	<b>27.0%</b>
<b>Other wastes</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Hazardous	0	0	0	
Agricultural	0	0	0	
Mining	0	0	0	
Regulated. Medical	0	0	0	
Spill residue	0	0	0	
Other	0	0	0	
<b>Total Waste</b>	<b>139,974</b>	<b>18,368</b>	<b>22,209</b>	<b>180,551</b>
Population	127,900	23,800	16,600	168,300
Per capita	1.09	.772	1.337	1.073
Expected waste	72,391	13,471	9,396	95,258

Source: Local facility operators; DEQ; Weldon Cooper Center

\*The Rivanna Solid Waste Authority reports the recycling numbers for Albemarle County, the City of Charlottesville, and Town of Scottsville as a combined number.

## 2004 Waste Generation by Type

The following figures are based on reports submitted by localities to DEQ in 2005.

TABLE 10. TJPDC 2004 WASTE GENERATION RATES (IN TONS)

	RSWA*	Fluvanna	Greene	Region
<b>Municipal Solid Waste (MSW)</b>	<b>101,502</b>	<b>9,972</b>	<b>30,495</b>	<b>141,969</b>
Household	101,502	5,534	18,297	
Commercial		4,427	12,198	
Institutional		11		
<b>Primary Recyclable Materials (PRM)</b>	<b>33,793</b>	<b>1,794</b>	<b>4,145</b>	<b>39,732</b>
Paper	11,289	408	2,200	
Metal	10,025	235	425	
Plastic	168	329	75	
Glass	1,324	585	110	
Waste Wood (chipped or mulched)	1,840	2	1,220	
Textiles	13	8	65	
Yard Waste (composted or mulched)	9,058	228	50	
Commingled/Other	76	0	0	
<b>Secondary Recyclable Materials (SRM)</b>	<b>7,525</b>	<b>45</b>	<b>1,117</b>	<b>8,687</b>
Used Oil, Oil Filters & Antifreeze	1,349	30	78	
Batteries	210	7	9	
Waste Tires	208	5	105	
Electronics	4	3	0	
Abandoned automobiles removed	800	0	925	
Sludge (composted)	3,820	0	0	
Tree Stumps >6"	0	0	0	
Other	1,134	0	0	
<b>SRM Reuse</b>	<b>23</b>	<b>3</b>	<b>0</b>	<b>26</b>
Construction Waste	0	0	0	
Demolition Waste	0	3	0	
Debris Waste	0	0	0	
Ash	0	0	0	
Other	23	0	0	
<b>Recycling Rate</b>	<b>28.9%</b>	<b>15.6%</b>	<b>14.7%</b>	<b>25.5%</b>
<b>Other wastes</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Hazardous	0	0	0	
Agricultural	0	0	0	
Mining	0	0	0	
Regulated. Medical	0	0	0	
Spill residue	0	0	0	
Other	0	0	0	
<b>Total Waste</b>	<b>142,843</b>	<b>11,814</b>	<b>35,757</b>	<b>190,414</b>
Population	129,600	24,300	16,700	170,600
Per capita	1.10	0.49	2.14	1.12
Expected waste	73,354	13,754	9,452	96,560

Source: Local facility operators; DEQ; Weldon Cooper Center

\*The Rivanna Solid Waste Authority reports the recycling numbers for Albemarle County, the City of Charlottesville, and Town of Scottsville as a combined number.

## 2005 Waste Generation by Type

The following figures are based on reports submitted by localities to DEQ in 2006.

TABLE 11. TJPDC 2005 WASTE GENERATION RATES (IN TONS)

	RSWA*	Fluvanna	Greene	Region
<b>Municipal Solid Waste (MSW)</b>	<b>93,891</b>	<b>13,162</b>	<b>32,923</b>	<b>139,976</b>
Household	93,891	3,052	19,753	116,696
Commercial	0	10,063	13,170	23,233
Institutional	0	47	0	47
<b>Primary Recyclable Materials</b>	<b>34,487</b>	<b>5,798</b>	<b>3,418</b>	<b>43,703</b>
Paper	14,558	467.5	1,516	16,542
Metal	12,032	32.1	415	12,479
Plastic	236	13.8	75	325
Glass	871	282.6	96	1,250
Commingled	865	751.9	0	1,617
Yard Waste (composted or mulched)	5,906	0.0	66	5,972
Waste wood (chipped or mulched)	0	4,250.0	1,200	5,450
Textiles	19	0.0	50	69
<b>Secondary Recyclable Materials</b>	<b>7,169</b>	<b>34</b>	<b>1,066</b>	<b>8,269</b>
Waste Tires	219	7.1	85	311
Used Oil	690	17.5	72	779
Used Oil Filters	18	0.0	0	18
Used Antifreeze	73	0.6	2	76
Abandoned automobiles removed	1,450		900	2,350
Batteries	210	8.5	7	226
Sludge (composted)	3,893		0	3,893
Electronics	0		0	0
Tree Stumps (>6" diameter)	10		0	10
Other	606		0	606
SUBTOTAL	7,169	34	1,066	8,269
<b>Secondary Recyclable Materials Reused</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Construction Waste	0	0	0	0
Demolition Waste	0	0	0	0
Debris Waste	0	0	0	0
Ash	0	0	0	0
Other	0	0	0	0
<b>Recycling Rate</b>	<b>30.7%</b>	<b>30.7%</b>	<b>12.0%</b>	<b>26.0%<sup>^</sup></b>
<b>Total Waste</b>	<b>93,891</b>	<b>13,162</b>	<b>32,923</b>	<b>139,976</b>
Population	129,600	24,300	16,700	170,600
Per Capita (tons/year)	0.72	0.54	1.97	0.82
Expected waste	110,455	20,710	14,233	145,398

Source: Local facility operators; DEQ; Weldon Cooper Center

\*The Rivanna Solid Waste Authority reports the recycling numbers for Albemarle County, the City of Charlottesville, and Town of Scottsville as a combined number.

<sup>^</sup> Nelson County data was included in the 2005 regional recycling rate. This is the rate that was reported to the DEQ and is thus recorded here.

## 2006 Waste Generation by Type

The following figures are based on reports submitted by localities to DEQ in 2007.

TABLE 12. TJPDC 2006 WASTE GENERATION RATES (IN TONS)

	RSWA*	Fluvanna	Greene	Region
<b>Municipal Solid Waste Disposed</b>	<b>94,339</b>	<b>14,735</b>	<b>40,096</b>	<b>149,170</b>
Household	94,339	3,684	24,026	122,049
Commercial	0	10,896	16,070	26,966
Institutional	0	155	0	155
<b>Primary Recyclable Materials</b>	<b>43,868</b>	<b>6,662</b>	<b>5,833</b>	<b>56,363</b>
Paper	21,091	316.5	3,584	24,991
Metal	13,350	8.4	643	14,001
Plastic	619	28.9	30	678
Glass	760	531.1	45	1,336
Commingled	1,716	777.1	0	2,493
Yard Waste (composted or mulched)	5,225	0.0	516	5,741
Waste wood (chipped or mulched)	987	4,999.7	920	6,907
Textiles	120	0.0	95	215
<b>Secondary Recyclable Materials</b>	<b>14,054</b>	<b>30</b>	<b>3,261</b>	<b>17,345</b>
Waste Tires	250	5.5	91	346
Used Oil	1,192	12.6	83	1,288
Used Oil Filters	254	0.0	0	254
Used Antifreeze	63	0.8	3	67
Abandoned automobiles removed	0		3,080	3,080
Batteries	210	10.8	4	225
Sludge (composted)	11,158		0	11,158
Electronics	114		0	114
Tree Stumps (>6" diameter)	83		0	83
Other	730		0	730
<b>Secondary Recyclable Materials Reused</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Construction Waste	0	0	0	0
Demolition Waste	0	0	0	0
Debris Waste	0	0	0	0
Ash	0	0	0	0
Other	0	0	0	0
<b>Base Recycling Rate</b>	<b>38.0%</b>	<b>31.2%</b>	<b>18.5%</b>	<b>32.8%</b>
<b>Adjusted Recycling Rate</b>				<b>35.2%</b>
<b>Total Waste</b>	<b>152,261</b>	<b>21,426</b>	<b>49,190</b>	<b>222,877</b>
Population	133,596	24,783	17,638	176,017
Per Capita	1.14	0.86	2.79	1.27
Expected Waste (Based on EPA .84 tons avg. per capita)	112,154	20,805	14,807	147,766

Source: Local facility operators; DEQ; Weldon Cooper Center

\*The Rivanna Solid Waste Authority reports the recycling numbers for Albemarle County, the City of Charlottesville, and Town of Scottsville as a combined number.

^Nelson County data was included in the 2006 regional recycling rate calculations. This is the rate that was reported to the DEQ and is thus recorded here.

## 2007 Waste Generation by Type

The following figures are based on reports submitted by localities to DEQ in 2008.

TABLE 13. TJPDC 2007 WASTE GENERATION RATES (IN TONS)

	RSWA*	Fluvanna	Greene	Region
<b>Municipal Solid Waste Disposed</b>	<b>94,129</b>	<b>14,745</b>	<b>37,746</b>	<b>146,620</b>
Household	94,129	3,686	20,760	118,575
Commercial	0	10,971	16,986	27,957
Institutional	0	88	0	88
<b>Primary Recyclable Materials</b>	<b>63,429</b>	<b>8,739</b>	<b>8,383</b>	<b>80,551</b>
Paper	9,541	324.6	4,437	14,303
Metal	35,290	107.9	1,993	37,391
Plastic	237	27.2	32	296
Glass	854	718.5	76	1,648
Commingled	2,297	809.8	0	3,107
Yard Waste (composted or mulched)	6,565	0.0	531	7,096
Waste wood (chipped or mulched)	258	6,713.7	990	7,962
Textiles	396	0.0	106	502
Tires	176	7.5	108	292
Used Oil	441	21.7	98	561
Used Oil Filters	0	0.0	0	0
Used Antifreeze	100	0.4	2	102
Batteries	10	7.2	10	27
Electronics	253	0.0	0	253
Inoperative Motor Vehicles	0	0.0	0	0
Other - cooking oil and grease	813	0.0	0	813
Other - sludge compost	6,198	0.0	0	6,198
<b>Solid Waste Reused</b>	<b>718</b>	<b>0</b>	<b>0</b>	<b>718</b>
Crushed Concrete	0	0	0	0
Clothing, etc.	0	0	0	0
Flooring, Joists & Other Wood	0	0	0	0
UVA Equipment Auction Waste	10	0	0	10
Encore Shop Ivy	3	0	0	3
UVA Move-Out	60	0	0	60
Housing Material	585	0	0	585
Freecycle	60	0	0	60
<b>Base Recycling Rate</b>	<b>40.3%</b>	<b>37.2%</b>	<b>18.2%</b>	<b>34.1%<sup>^</sup></b>
<b>Adjusted Recycling Rate**</b>				<b>36.5%</b>
<b>Total Waste Generated</b>	<b>158,276</b>	<b>23,483</b>	<b>46,129</b>	<b>227,888</b>
Population	134,395.0	25,253	18,017	177,665
Per capita	1.18	0.93	2.56	1.28
Expected Waste	113,315	21,292	15,191	149,798

Source: Local facility operators; DEQ; Weldon Cooper Center

\*The Rivanna Solid Waste Authority reports the recycling numbers for Albemarle County, the City of Charlottesville, and Town of Scottsville as a combined number.

## 2008 Waste Generation by Type

The following figures are based on reports submitted by localities to DEQ in 2009.

TABLE 14. TJPDC 2008 WASTE GENERATION RATES (IN TONS)

	RSWA*	Fluvanna	Greene	Region
<b>Municipal Solid Waste Disposed</b>	<b>99,219</b>	<b>7,915</b>	<b>52,915</b>	<b>160,049</b>
Household	99,219	7,915	27,516	134,650
Commercial			25,399	25,399
Institutional				0
<b>Primary Recyclable Materials</b>	<b>36,004</b>	<b>3,656</b>	<b>12,151</b>	<b>51,811</b>
Paper	8,164	175.5	5,641	13,980
Metal	4,818	23.8	3,840	8,682
Plastic	405	13.2	64	482
Glass	1,123		84	1,207
Commingled	3,184	894.9	0	4,079
Yard Waste (composted or mulched)	5,512		601	6,113
Waste wood (chipped or mulched)	902	2,500.0	1,620	5,022
Textiles	1,015		110	1,125
Tires	181	0.2	120	301
Used Oil	716	44.3	55	815
Used Oil Filters	12	0.9	0	13
Used Antifreeze	51	3.3	4	58
Batteries	6		12	18
Electronics	525		0	525
Inoperative Motor Vehicles	0		0	0
Other - fat, bone, grease	745		0	745
Other - sludge compost	8,645		0	8,645
<b>Solid Waste Reused</b>	<b>377</b>	<b>0</b>	<b>0</b>	<b>377</b>
Building material	345			345
Reclaimed MSW (Encore Shop)	6			6
UVA Move-Out	26			26
<b>Non-MSW Recycled</b>	<b>4,947</b>			<b>4,947</b>
Ash	4,947			4,947
<b>Base Recycling Rate</b>	<b>26.6%</b>	<b>31.6%</b>	<b>18.7%</b>	<b>24.5%</b>
<b>Adjusted Recycling Rate**</b>				<b>28.3%</b>
<b>Total Waste Generated</b>	<b>140,546.6</b>	<b>11,571.4</b>	<b>65,066.0</b>	<b>217,183.9</b>
Population	136,112	25,544	17,964	179,620.
Per capita	1.0	0.5	3.6	1.2
Expected waste (Based on EPA .82 tons avg. per capita)	111,782	20,978	14,752	147,512

Source: Local facility operator; Weldon Cooper Center

\*The Rivanna Solid Waste Authority reports the recycling numbers for Albemarle County, the City of Charlottesville, and Town of Scottsville as a combined number.

\*\*Adjusted recycling rates incorporate credits for reuse and source reduction.

## 2009 Waste Generation by Type

The following figures are based on reports submitted by localities to DEQ in 2010.

TABLE 15. TJPDC 2009 WASTE GENERATION RATES (IN TONS)

	RSWA*	Fluvanna	Greene	Region
<b>Municipal Solid Waste Disposed</b>	<b>74,002</b>	<b>7,241</b>	<b>43,909</b>	<b>125,152</b>
Household	66,534	7,241	26,345	100,120
Commercial			17,564	17,564
Institutional	7,468			7,468
Other (non-industrial)				0
<b>Primary Recyclable Materials</b>	<b>30,096</b>	<b>3,289</b>	<b>11,134</b>	<b>44,519</b>
Paper	9,555	75	5,712	15,342
Metal	1,144	63	3,991	5,198
Plastic	397		71	468
Glass	985		90	1,075
Commingled	3,650	1,837		5,487
Yard Waste (composted or mulched)	2,700		620	3,320
Waste wood (chipped or mulched)	1,088	1,300	359	2,747
Textiles	292		102	394
Tires	172	3	110	285
Used Oil	1,055	11	70	1,136
Used Oil Filters	23			23
Used Antifreeze	65	1	3	69
Batteries	6		6	12
Electronics	88			88
Inoperative Motor Vehicles				0
Other - fat, bone, grease	449			449
Other - composed sludge	8,426			8,426
<b>Solid Waste Reused</b>	<b>947</b>	<b>0</b>	<b>0</b>	<b>947</b>
Building material (Habitat Store)	915			915
UVA Move-Out	32			32
<b>Non-MSW Recycled</b>	<b>8,933</b>	<b>0</b>	<b>0</b>	<b>8,933</b>
MERCI	29			
Ash	8,904			8,904
<b>Base Recycling Rate</b>	<b>28.9%</b>	<b>31.2%</b>	<b>20.2%</b>	<b>26.2%</b>
<b>Adjusted Recycling Rate</b>				<b>31.2%</b>
<b>Total Waste Generated</b>	<b>113,979</b>	<b>10,530</b>	<b>55,043</b>	<b>179,552</b>
Population	137,676	25,732	18,421	181,829
Per capita	0.83	0.41	2.99	0.99
Expected Waste (Based on EPA .79 tons avg. per capita)	109,046	20,381	14,590	144,018

Source: Local facility operator; Weldon Cooper Center

\*The Rivanna Solid Waste Authority reports the recycling numbers for Albemarle County, the City of Charlottesville, and Town of Scottsville as a combined number.

\*\*Adjusted recycling rates incorporate credits for reuse and source reduction.

## 2010 Waste Generation by Type

The following figures are based on reports submitted by localities to DEQ in 2011.

TABLE 16. TJPDC 2010 WASTE GENERATION RATES (IN TONS)

	Charlottesville/Albemarle	Fluvanna	Greene	TOTAL
<b>Municipal Solid Waste Disposed</b>	<b>69,200</b>	<b>3,372</b>	<b>24,431</b>	<b>97,003</b>
Household	69,198	3,372	16,346	88,916
Commercial	2		8,085	8,087
Institutional				
Other (non-industrial)				
<b>Primary Recyclable Materials</b>	<b>23,362</b>	<b>1,214</b>	<b>6,463</b>	<b>31,039</b>
Paper	5,415	62	3,160	8,637
Metal	601	39	2,382	3,021
Plastic	354		65	419
Glass	635		45	680
Commingled	6,874	1,100		7,974
Yard Waste (composted or mulched)	3,513		340	3,853
Waste wood (chipped or mulched)	671		110	781
Textiles	455		163	618
Tires	351	1	105	457
Used Oil	1,350	10	63	1,423
Used Oil Filters	39			39
Used Antifreeze	71		1	72
Batteries	36	2	2	40
Electronics	170		27	197
Inoperative Motor Vehicles				0
Other - fat, bone, grease	397			397
Other - composed sludge	2,413			2,413
Other- Auction Waste	17			17
<b>Solid Waste Reused</b>	<b>1,427</b>			<b>1,427</b>
Reclaimed MSW (Encore Shop)	10			10
Building material (Habitat Store)	1,400			1,400
UVA Move-Out	17			17
<b>Non-MSW Recycled</b>	<b>10,535</b>	<b>0</b>	<b>0</b>	<b>10,535</b>
MERCI	29			29
UVA Ash	10,506			10,506
<b>Base Recycling Rate</b>	<b>25%</b>	<b>26%</b>	<b>21%</b>	<b>24%</b>
DEQ Approved Rate (With Credits)				29%
Total Waste Generated	92,562	4,586	30,894	128,042
Population	142,445	25,691	18,403	186,539
Per capita	0.65	0.18	1.68	0.69
Expected Waste	112,532	20,296	14,538	147,366

Source: Local facility operator; Weldon Cooper Center

Charlottesville and Albemarle are reported as 1 unit. In previous reports this was referred to as the RSWA area. In previous years RSWA provided the majority of solid waste services for Charlottesville and Albemarle. Currently, the provide services in a more limited capacity

## 2011 Waste Generation by Type

The following figures are based on reports submitted by localities to DEQ in 2012.

TABLE 17. TJPDC 2011 WASTE GENERATION RATES (IN TONS)

	Charlottesville/ Albemarle	Fluvanna	Greene	TOTAL
<b>Municipal Solid Waste Disposed</b>	<b>119,605</b>	<b>0</b>	<b>15,206</b>	<b>134,811</b>
Household	119,605		11,391	130,996
Commercial			3,815	3,815
Institutional				
Other (non-industrial)				
<b>Primary Recyclable Materials</b>	<b>70,455</b>	<b>0</b>	<b>5,623</b>	<b>76,078</b>
Paper	10,797	No Data Provided by County	3,200	13,997
Metal	27,055		1,740	28,795
Plastic	293		60	353
Glass	516		80	596
Commingled	22,131		0	22,131
Yard Waste (composted or mulched)	2,899		380	3,279
Waste wood (chipped or mulched)	822		58	880
Textiles	490		16	506
Tires	234		81	315
Used Oil	1,320		0	1,320
Used Oil Filters	30		0	30
Used Antifreeze	227		1	228
Batteries	169		0	169
Electronics	269		7	276
Inoperative Motor Vehicles	0		0	0
Other - fat, bone, grease	436		0	436
Other - composed sludge	2,766		0	2,766
<b>Solid Waste Reused</b>	<b>9</b>			<b>9</b>
UVA Move Out	9			9
<b>Non-MSW Recycled</b>	<b>5,884</b>			<b>5,884</b>
MERCI				
UVA Ash				
<b>Base Recycling Rate</b>	<b>37%</b>		<b>27%</b>	<b>36%</b>
<b>DEQ Approved Rate (With Credits)</b>				<b>38%</b>
<b>Total Waste Generated</b>	<b>190,060</b>	<b>0</b>	<b>20,829</b>	<b>210,889</b>
Population	146,648	26,033	18,856	191,537
Per capita	1.30	0.00	1.10	1.10
Expected Waste	115,852	20,566	14,896	151,314

Source: Local facility operator; Weldon Cooper Center

Charlottesville and Albemarle are reported as 1 unit. In previous reports this was referred to as the RSWA area. In previous years RSWA provided the majority of solid waste services for Charlottesville and Albemarle. Currently, they provide services in a more limited capacity.

\*No data reported by Fluvanna County. Fluvanna Waste captured in total waste reported by haulers and transfer stations.

## 2012 Waste Generation by Type

The following figures are based on reports submitted by localities to DEQ in 2013.

TABLE 18. TJPDC 2012 WASTE GENERATION RATES (IN TONS)

	Charlottesville/Albemarle	Fluvanna*	Greene	REGION	
<b>Municipal Solid Waste Disposed</b>	<b>119,605</b>	<b>0</b>	<b>15,206</b>	<b>134,811</b>	
Household	119,605		11,391	130,996	
Commercial			3,815	3,815	
Institutional					
Other (non-industrial)					
<b>Primary Recyclable Materials</b>	<b>70,455</b>	<b>0</b>	<b>5,623</b>	<b>76,078</b>	
Paper	10,797	No Data Provided by County	3,200	13,997	
Metal	27,055		1,740	28,795	
Plastic	293		60	353	
Glass	516		80	596	
Commingled	22,131		0	22,131	
Yard Waste (composted or mulched)	2,899		380	3,279	
Waste wood (chipped or mulched)	822		58	880	
Textiles	490		16	506	
Tires	234		81	315	
Used Oil	1,320		0	1,320	
Used Oil Filters	30		0	30	
Used Antifreeze	227		1	228	
Batteries	169		0	169	
Electronics	269		7	276	
Inoperative Motor Vehicles	0		0	0	
Other - fat, bone, grease	436		0	436	
Other - composed sludge	2,766		0	2,766	
Solid Waste Reused	9				9
<b>UVA Move Out</b>	<b>9</b>			<b>9</b>	
<b>Non-MSW Recycled</b>	<b>5,884</b>			<b>5,884</b>	
<b>MERCI</b>					
<b>UVA Ash</b>					
Base <b>Recycling Rate</b>	37%		27%	36%	
DEQ Approved <b>Rate (With Credits)</b>				38%	
<b>Total Waste Generated</b>	190,060	0	20,829	210,889	
Population	146,648	26,033	18,856	191,537	
Per capita	1.30	0.00	1.10	1.10	
Expected Waste	115,852	20,566	14,896	151,314	

Source: Local facility operator; Weldon Cooper Center

Charlottesville and Albemarle are reported as 1 unit. In previous reports this was referred to as the RSWA area. In previous years RSWA provided the majority of solid waste services for Charlottesville and Albemarle. Currently, they provide services in a more limited capacity.

\*No data reported by Fluvanna County. Fluvanna Waste captured in total waste reported by haulers and facilities.

## 2013 Waste Generation by Type

The following figures are based on reports submitted by localities to DEQ in 2014.

TABLE 19. TJPDC 2013 WASTE GENERATION RATES (IN TONS)

	Charlottesville/ Albemarle	Fluvanna	Greene	REGION
<b>Municipal Solid Waste Disposed</b>	<b>131,216</b>	<b>4,343</b>	<b>13,993</b>	<b>149,552</b>
Household	131,216	4,343	12,989	148,548
Commercial			1,004	1,004
Institutional				
Other (non-industrial)				
<b>Primary Recyclable Materials</b>	<b>70,516</b>	<b>4,331</b>	<b>5,479</b>	<b>80,325</b>
Paper	11,602	371	3,318	15,292
Metal	16,944	4	1,500	18,449
Plastic	581	0	56	636
Glass	821	0	45	866
Commingled	25,490	1,258	0	26,748
Yard Waste (composted or mulched)	6,210	0	398	6,608
Waste wood (chipped or mulched)	3,046	2,600	50	5,696
Textiles	496	52	14	562
Tires	274	1	18	294
Used Oil	634	27	19	681
Used Oil Filters	30	0	3	33
Used Antifreeze	60	5	12	77
Batteries	169	0	13	182
Electronics	282	12	4	298
Inoperative Motor Vehicles	0	0	0	0
Other - fat, bone, grease	401	0	0	401
Other - composed sludge	2,776	0	0	2,776
Other- Composted Food Waste	699	0	29	728
<b>Solid Waste Reused</b>	<b>0</b>			<b>1</b>
APC Books				1
<b>Non-MSW Recycled</b>	<b>0</b>			<b>64,928</b>
VDL C&D Recycling				60,471
UVA Ash, UVA MERCI				4,457
<b>Base Recycling Rate</b>	<b>35%</b>	<b>50%</b>	<b>28%</b>	<b>35%</b>
<b>DEQ Approved Rate (With Credits)</b>				<b>40%</b>
<b>Total Waste Generated</b>	<b>201,732</b>	<b>8,674</b>	<b>19,472</b>	<b>229,877</b>
Population	149,354	26,019	19,320	192,693
Per capita	1.35	0.33	1.01	1.19
Expected Waste	117,990	20,555	15,263	152,227

Source: Local facility operator; Weldon Cooper Center

Charlottesville and Albemarle are reported as 1 unit. In previous reports this was referred to as the RSWA area. In previous years RSWA provided the majority of solid waste services for Charlottesville and Albemarle. Currently, they provide services in a more limited capacity.

## 2014 Waste Generation by Type

The following figures are based on reports submitted by localities to DEQ in 2015.

TABLE 20. TJPDC 2014 WASTE GENERATION RATES (IN TONS)

	Charlottesville /Albemarle	Fluvanna	Greene	REGION
<b>Municipal Solid Waste Disposed</b>	<b>125,798</b>	<b>4,594</b>	<b>16,519</b>	<b>146,911</b>
Household	125,798	4,594	15,549	145,940
Commercial			971	27
Institutional				
Other (non-industrial)				
<b>Primary Recyclable Materials</b>	<b>75,533</b>	<b>3,755</b>	<b>7,125</b>	<b>86,413</b>
Paper	10,472	29	3,393	13,895
Metal	10,612	36	2,000	12,648
Plastic	275	0	1,416	1,691
Glass	408	0	94	502
Commingled	46,059	1,070	0	47,129
Yard Waste (composted or mulched)	2,186	0	0	2,186
Waste wood (chipped or mulched)	79	2,400	162	2,641
Textiles	416	144	10	570
Tires	240	31	12	284
Used Oil	456	30	21	506
Used Oil Filters	12	1	0	13
Used Antifreeze	24	3	1	28
Batteries	205	0	15	221
Electronics	226	12	0	238
Inoperative Motor Vehicles	0	0	0	0
Other - fat, bone, grease	406	0	0	406
Other - composed sludge	2,898	0	0	2,898
Other- Composted Food Waste	559	0	0	559
<b>Solid Waste Reused</b>	<b>58</b>			<b>58</b>
UVA MERCI	37			37
UVA Move Out	21			21
<b>Non-MSW Recycled</b>	<b>72,995</b>			<b>72,995</b>
VDL C&D Recycling	68,098			68,098
UVA Ash	4,897			4,897
<b>Base Recycling Rate</b>	<b>38%</b>	<b>45%</b>	<b>30%</b>	<b>37%</b>
<b>DEQ Approved Rate (With Credits)</b>				<b>42%</b>
<b>Total Waste Generated</b>	<b>201,331</b>	<b>8,349</b>	<b>23,644</b>	<b>233,324</b>
Population	151,490	25,970	19,618	197,078
Per capita	1.3	0.3	1.2	1.2
Expected Waste	119,677	20,516	15,498	155,692

Source: Local facility operator; Weldon Cooper Center

Charlottesville and Albemarle are reported as 1 unit. In previous reports this was referred to as the RSWA area. In previous years RSWA provided the majority of solid waste services for Charlottesville and Albemarle. Currently, they provide services in a more limited capacity.

## 4.0 Future Solid Waste Management System

### 4.1 Estimates of Future Needs

#### 2035 PROJECTED WASTE GENERATION BY TYPE

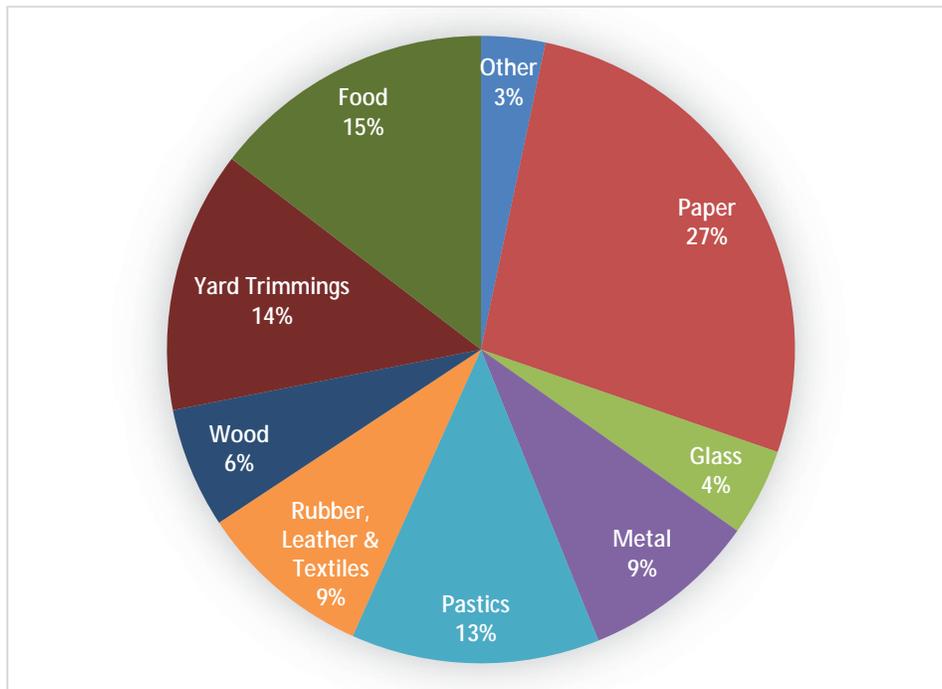
Estimates in Table 21 are based on reported 2010-2014 totals averaged and multiplied by the projected population growth rate of approximately 30% between 2015 and 2035. Adjusted 2035 populations, as described in Table 1, were used to estimate future needs.

TABLE 21. TJPDC 2035 ESTIMATED FUTURE WASTE GENERATION RATES (IN TONS)

	Charlottesville Albemarle	Fluvanna	Greene	REGION
<b>Municipal Solid Waste Disposed</b>	<b>140,409.5</b>	<b>5,427.2</b>	<b>21,347.1</b>	<b>165,956.6</b>
Household	140,409.0	5,427.2	16,682.3	160,939.9
Commercial	0.5	0.0	4,664.8	4,770.6
Institutional	0.0	0.0	0.0	0.0
Other (non-industrial)	0.0	0.0	0.0	0.0
<b>Primary Recyclable Materials</b>	<b>71,770.0</b>	<b>4,100.6</b>	<b>7,599.0</b>	<b>82,802.6</b>
Paper	12,623.3	204.1	4,121.2	17,120.0
Metal	16,615.8	34.4	2,337.5	19,076.6
Plastic	443.8	0.0	404.3	876.6
Glass	736.9	0.0	87.3	827.6
Commingled	28,764.0	1,511.8	0.0	29,531.7
Yard Waste (composted or mulched)	4,557.1	0.0	350.1	4,913.4
Waste wood (chipped or mulched)	1,401.9	2,204.6	92.2	2,799.2
Textiles	637.8	86.3	54.1	744.2
Tires	370.8	14.9	75.4	459.1
Used Oil	1,332.1	29.3	48.3	1,395.5
Used Oil Filters	36.9	0.7	0.7	37.9
Used Antifreeze	159.7	3.4	3.9	165.2
Batteries	163.7	0.8	7.7	171.7
Electronics	318.7	10.4	9.2	333.4
Inoperative Motor Vehicles	0.0	0.0	0.0	0.0
Other - fat, bone, grease	429.7	0.0	0.0	546.2
Other - composed sludge	2,843.7	0.0	0.0	3,464.3
Other- Auction Waste	334.0	0.0	7.1	340.1
<b>Solid Waste Reused</b>		<b>0.0</b>	<b>0.0</b>	<b>693.1</b>
<b>Non-MSW Recycled</b>		<b>0.0</b>	<b>0.0</b>	<b>40,263.7</b>
MERCI		0.0	0.0	33,555.6
UVA Ash		0.0	0.0	8,047.2
<b>Base Recycling Rate</b>		<b>54%</b>	<b>32%</b>	<b>42%</b>
<b>Total Waste Generated</b>	<b>212,179.5</b>	<b>9,527.8</b>	<b>28,946.2</b>	<b>248,759.2</b>
Population	192,640	34,250	23,105	249,950
Per capita	1.10	0.28	1.25	1.0
Expected Waste	152,185.60	27,057.50	18,252.95	197,461

Source: Local facility operators; US Census, Weldon Cooper Center

Growth will impact solid waste generation in the region. Since predominantly residential growth is expected, MSW associated with residential development, as well as commercial and institutional growth that serve residential growth is expected to grow congruently. Figure 6 shows the components of MSW as fractions of the entire waste stream. Recommendations in this plan seek to make solid waste management in the region more efficient and sustainable by exploring avenues of cost avoidance and revenue that support the diversion of materials from the MSW stream.



**FIGURE 6. THE ESTIMATED COMPONENT PARTS OF THE NATIONAL MSW STREAM**

Source: Environmental Protection Agency 2013

With future land development, vegetative waste from land clearing and residential landscape maintenance will increase, adding to annual vegetative waste generation. Land clearing debris may be burned on-site with a permit issued by the Department of Environmental Quality (DEQ). There are also composting and mulching operations in the region to handle this waste stream. Construction and demolition debris (CDD) will also increase as a result of land development. As previously mentioned, the Van der Linde Zion Crossroads Recycling Center recycles CDD at a rate close to 90%, which reduces this waste stream very effectively.

Electronics are a major part of the information industry in the region, and a higher than normal amount of this waste is expected, particularly in the urban and university area. This unique waste stream has been difficult and expensive to divert from the landfill, and tight budget conditions have reduced the availability of publicly funded recycling options for electronics, batteries, and other special wastes. However, inexpensive and free options are now being offered by some retailers to individuals for recycling of computers, electronics, batteries, compact fluorescent lights, and cell phones. Recommendations in this plan seek to make the public aware of these options.

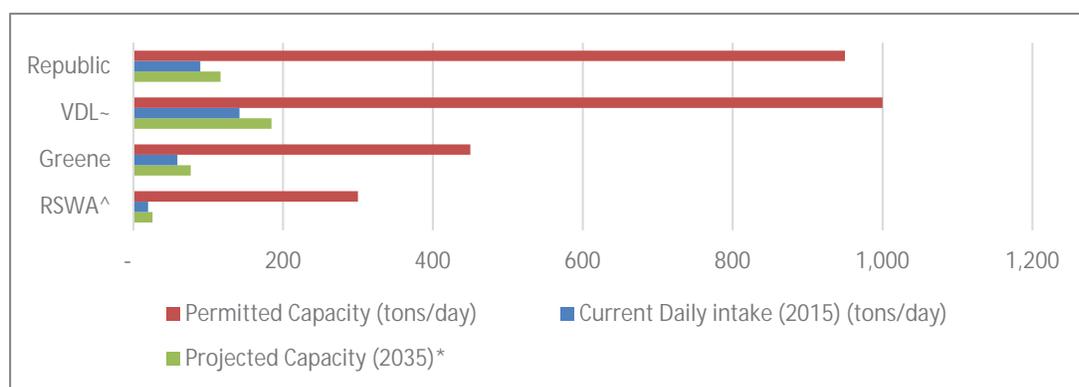
## 4.2 System Capacity for the 20-Year Planning Period

TABLE 22. SOLID WASTE MANAGEMENT SYSTEM CAPACITY

Facility Name	Permitted Capacity (tons/day)	Current Daily intake (2015) (tons/day)	Current Annual intake (2015)	Net Annual Tons (2015)	% of Daily Permitted Capacity used (2015)	Projected Capacity (Tons) (2035)*	Projected Percent Capacity used (2035)
RSWA Ivy MCU^	300	20	7,327	120	7%	26	9%
Greene County MRF	450	59	21,633	356	13%	77	17%
Zion Crossroads Recycling Ctr~	1,000	142	51,877	853	14%	185	18%
Republic Services Fluvanna County	950	90	32,759	539	9%	117	12%

Source: Weldon Cooper Center & Facility Operators

The Fluvanna County Convenience Center is not a permitted facility, and its capacity is constrained only by physical space at the facility. Fluvanna County estimates that between 3 and 4 tons of waste is handled at the convenience center daily. The Republic Services Transfer Station and the Zion Crossroads Recycling Center also receive waste from the TJSWPU. However, waste received from this planning unit constitutes only a fraction of the waste handled by these facilities. Thus, it is not possible to calculate the capacity of those facilities based on waste received from this region. Table 22 describes information available about the capacity and TJSWPU waste handled by these facilities.



**NOTES**

^ includes IVY and Recycling Center

~ TJSWPU area derived waste only. SWPU waste estimated to be 53% of the total (97,318 tons in 2015)

\*2035 rates based on the average regional population growth rate of 30%.

FIGURE 7. CURRENT PERMITTED AND PROJECTED CAPACITIES OF AREA FACILITIES

Source: Weldon Cooper Center & Facility Operators

## Long-Term Disposal Capacity

The Amelia County landfill currently receives most of the region's solid waste from transfer stations. According to the DEQ, in December of 2010, the Amelia County landfill had 31 of its 43 million cubic yards of design capacity available for future solid waste disposal. The landfill's annual maximum permitted intake is 1,156,000 tons. Over the next 20 years, the landfill could receive a maximum of 23,120,000 tons from all sources (roughly 15,606,000 cubic yards, if assuming one ton = 0.675 cubic yards<sup>1</sup>). By taking the difference of today's capacity and the maximum volume the landfill can receive over the next 20 years, at 2030, the landfill will have a minimum of 15,394,000 cubic yards of capacity remaining. Based on 2030 projections of MSW generation, and assuming no change in TJSWPU solid waste programs, the Amelia County landfill will be receiving 164,095 tons (~110,764 cubic yards) annually from the TJSWPU in 2030. This constitutes 9.6% of the landfills annual permitted capacity.

The Amelia County landfill has sufficient capacity over the 20-year horizon of this Plan to accommodate solid waste from the TJSWPU. Additional capacity may be secured from the BFI Henrico County landfill, based on a letter from BFI dated December 3, 2004, included in the Appendices.



TOP ROW: PUBLIC ELECTRONICS RECYCLING AT BEST BUY IN CHARLOTTESVILLE (LEFT) & MCINTIRE RECYCLING CENTER (RIGHT)  
 BOTTOM ROW: ITEMS ON DISPLAY IN THE ENCORE SHOP AT THE IVY MUC (LEFT) & STUDENT VOLUNTEERS AT UVA (RIGHT)

**FIGURE 7. RECYCLING AND REUSE FACILITIES IN SWPU (A SUBSET)**

<sup>1</sup> Bell, Pamela and Melvin Burke (2005) "Waste Management in Maine: The West Old Town Landfill." University of Maine Orono, Orono, Maine.

## 4.3 Strategic Plan & 20 Year Timeline

### Introduction and Guiding Principles

The following 1 goal, and 5 objectives, and strategies address the waste management hierarchy of Source Reduction and Reuse, Recycling, Resource Recovery and Incineration, and Landfilling as defined by the Virginia DEQ. The 1998 Sustainability Accords, endorsed by the Thomas Jefferson Planning District Commission and its member localities: Albemarle, Charlottesville, Fluvanna, Greene, Louisa, and Nelson, address waste management with one broad goal and five measurable objectives. They are the guiding principles for this Plan.

**Goal:** The wasteful use of resources and the creation of non-recyclable waste by-products are reduced and, wherever possible, eliminated.

**Objective 1:** Increase recycling of usable materials.

**Objective 2:** Minimize the use and unsafe disposal of hazardous material.

**Objective 3:** Promote a sense of individual responsibility for limiting waste.

**Objective 4:** Increase individual and cooperative efforts to reduce waste.

**Objective 5:** Increase the understanding and practice of the six-step approach to waste reduction: rethink, reduce, reuse, buy recyclables, recycle, and material exchange.

### Sustainability Accords

Retain the natural habitat

Ensure water quality and quantity are sufficient to support people and ecosystems

Optimize the use and re-use of developed land and promote clustering

Promote appropriate scale for land uses

Retain farm and forest land

Develop attractive and economical transportation alternatives

Conserve energy

Provide educational and employment opportunities

Increase individual participation in neighborhoods and communities

Strive for a size and distribute the human population in ways that preserve vital resources

### Integrated Waste Management Framework & Implementation Plan

Each of the following 6 goals and objectives support the Sustainability Accords and strengthen them with a more in depth examination of how they may be achieved. The goals, objectives, and strategies in this plan were developed by the Solid Waste Committee, which is composed of representatives from each locality. Committee membership is listed in the Appendices. This update to the 2006 Solid Waste Management Plan is consistent with contemporary solid waste issues, and the local political and economic climate. The update also includes a tracking mechanism to document progress toward meeting each goal. The appendices contain the 2006 20-Year Implementation Plan and progress report. Documentation of completed strategies can be found there. Table 23 shows the goals, objectives, and strategies that the TJSWPU will implement pursuant to the solid waste management hierarchy contained in 9VAC20-130-30. A 20-year implementation timeline is also included.

TABLE 23. TJSWPU STRATEGIC PLAN

	Responsible Party	Timeline					Status*			
		2017	2018	2019-2020	2020-2025	2025-2035	Ongoing: All	Ongoing: 1+	Progress made	To Do
<b>Planning</b>										
<b>Goal</b>										
Maintain an efficient and effective solid waste management system.										
<b>Objective 1</b>										
Develop efficient, coordinated, and fiscally sound solid waste management contracts.										
<b>Strategies</b>										
Use Request for Proposals when soliciting contracts, as opposed to Invitations to Bid.	Localities							★		
Include cooperative procurement language in contracts that would allow the other members of the SWPU to use the contract services under the same cost, terms, and conditions.	Localities, RSWA, UVA	●	●	●	●	●		★		
Encourage public-private partnerships for waste management when cost efficiencies can be achieved.	TJPDC, RSWA, Localities								★	
Maintain a regional centralized archive at the TJPDC for reporting to DEQ and cataloging all locality waste management contracts.	TJPDC, RSWA, Localities						★			
<b>Objective 2</b>										
Prepare for future system capacity needs.										
<b>Strategy</b>										
Review waste streams, markets, programs, and system capacity regularly.	TJPDC, RSWA, Localities	●	●	●	●	●	★			
<b>Objective 3</b>										
Realize economies of scale through regional collection, disposal, and recycling opportunities.										
<b>Strategies</b>										
Identify and reduce barriers to regional coordination of contracts.	TJPDC, Localities								★	
Coordinate contracts for special waste collection.	TJPDC, RSWA, Localities	●	●	●	●	●		★		
Jointly sponsor convenience centers for communities straddling jurisdictional lines, or for adjacent communities in separate jurisdictions.	Localities									★

\* Status Definitions:

Ongoing - the need is met but requires upkeep; "All" and "1+" refer to localities in the SWPU

Progress made - some work has been done to address the need, but more is needed

To Do - the need is unmet

	Responsible Party	Timeline					Status*			
		2017	2018	2019-2020	2020-2025	2025-2035	Ongoing: All	Ongoing: 1+	Progress made	To Do
<b>Source Reduction and Reuse</b>										
<b>Goal</b>										
To reduce the quantity of waste generated through source reduction, reuse, and other waste reduction techniques.										
<b>Objective 1</b>										
Support and expand reuse infrastructure and culture in the region.										
<b>Strategies</b>										
Expand the reuse of building materials.	HOME, Habitat for Humanity, Localities	●	●	●	●	●	★			
Promote online tools, such as Freecycle, Terracycle, and Craigslist that facilitate the reuse of materials before they enter the solid waste stream.	TJPDC, RSWA, Localities	●	●	●	●	●			★	
Educate public on the importance of, and services available for source reduction, reuse, and recycling through a variety of media: website, brochures, fair display, social media, etc.	TJPDC, Localities	●	●	●	●	●			★	
Promote home composting through workshops and educational materials.	VCE, TJPDC, Civic groups	●	●	●	●	●			★	
Reach out to the private sector on waste reduction issues and environmentally preferable purchasing.	TJPDC	●	●	●	●	●			★	
Establish Environmental Management Systems or source reduction initiatives in localities where they do not currently exist in the region.	Localities, TJPDC		●	●					★	
<b>Objective 2</b>										
Consider how reuse may contribute to the local economy.										
<b>Strategy</b>										
Assess opportunities to facilitate industrial symbiosis between existing public and private facilities, or through recruitment of industries that can use waste generated in the region as raw material for production.	Localities, TJPED, TJPDC, private sector		●	●	●	●				★

	Responsible Party	Timeline					Status*			
		2017	2018	2019-2020	2020-2025	2025-2035	Ongoing: All	Ongoing: 1+	Progress made	To Do
<b>Recycling</b>										
<b>Goal 1</b>										
Continually improve recycling rate to meet the state mandated rate and maintain a regional rate that is competitive with the national rate.										
<b>Objective 1</b>										
Achieve a minimum 25% recycling rate in each participating locality, while aiming for a minimum of 30% as a region.										
<b>Strategies</b>										
Maintain a map of all recycling facilities in the region. Identify services offered by each; make available to public.	TJPDC	●	●	●	●	●	Done			
Ensure local government comprehensive plans and ordinances consider issues related to siting of recycling facilities.	TJPDC, Localities	●	●	●					★	
Promote electronics recycling opportunities available to the community.	TJPDC, Localities	●	●	●	●	●			★	
Develop recycling programs in those schools where they do not currently exist.	TJPDC, Localities, Schools	●	●	●						★
Improve existing recycling facilities and locate new facilities, as need and opportunities arise. Expansion should include options for reuse.	TJPDC, RSWA, Localities	●	●	●	●	●		★		
<b>Objective 2</b>										
Divert organic waste from the landfill.										
<b>Strategies</b>										
Continue to support and promote annual Christmas Tree and leaf collection programs.	Participating localities, TJPDC	●	●	●	●	●		★		
Establish a commercial-scale composter to serve region.	TJPDC, Localities, private sector	●					Done			
Encourage the use of commercial composting by schools, institutions, and the private sector	Localities, TJPDC	●	●	●	●	●				★
<b>Goal 2</b>										
Stimulate demand for recyclable materials.										
<b>Objective</b>										
Use local government purchasing power to increase demand for products manufactured with post-consumer recycled material.										
<b>Strategies</b>										
Abide by environmentally preferable purchasing (EPP) guidelines whenever possible.	Localities	●	●	●	●	●	★			
Expand EPP guidance.	TJPDC	●	●							★
Adopt EPP policies.				●						★



## 4.4 Meeting 25% Recycling Rate

Participating localities and the region shall attain or exceed a minimum recycling rate of 25% of the total municipal solid waste generated annually in accordance with Virginia regulations (see Appendix for method of rate calculation). This rate will be met through the continuation of existing programs, and the implementation of the above strategies. Keys to meeting the regional rate include:

- ❑ Providing convenient drop off locations for citizens
- ❑ Public/private partnerships
- ❑ Business, school, and industry participation
- ❑ Regional contract cooperation
- ❑ Increased waste reduction, recycling, and reuse education and outreach
- ❑ Increased recycling of electronics and other nonconventional waste
- ❑ Commercial and home composting/mulching and yard waste management
- ❑ Increased or improved monitoring of sites where recyclables are collected
- ❑ Improved data collection and tracking of waste



FIGURE 8. GLASS RECYCLING IN FLUVANNA COUNTY (LEFT) & RECYCLING EVENT HELD IN 2009 (RIGHT)

## 4.5 Future Treatment Options

Current treatment activities expected to continue include composting sludge, mulching vegetative wastes, and grinding wooden pallets. Other future treatment options include volume reduction actions, such as tire splitting and trash compaction.

The Zion Crossroads Recycling continues to expand its recycling operation to recover higher volumes of recyclable materials, and expand the types of materials recycled through investment and further development of MRF new technology. This may include separation of some wastes to be utilized at a waste to energy facility if favorable contract terms can be negotiated between facilities.

New state regulations have also cleared the way for further utilization of organic waste. Now, post-consumer food waste can be composted at permitted facilities, clearing the way for major reductions in the MSW stream. As Figure 6 depicts, food waste constitutes 15 % of MSW. Black Bear Composting has been providing food waste composting services to institutions and the public since launching their operations in 2010.

Public/private partnerships are also expected to continue increasing in the future, as solid waste management has proven to be a profitable enterprise for entrepreneurs. Localities recognize the value of services provided by retailers such as Best Buy, Whole Foods, and Goodwill Industries, who offer recycling services to the public within the planning unit.

Albemarle County has established a Solid Waste Alternatives Advisory Committee whose focus is reviewing solid waste policies in Albemarle and making recommendations to the Board of Supervisors on solid waste activities and policy. This committee will be looking into ways that Albemarle can expand recycling options for residents and businesses.

## 4.6 Public Outreach Programs

Outreach programs in most localities generally include descriptions of waste management services available to residents on the website, in annual county services brochures, postings at the courthouse and county office buildings, and in ads and articles for special events (waste amnesty days, Christmas tree collection, etc.) in local newspapers. In the Charlottesville-Albemarle area, outreach also includes locality specific websites, public forums, flyers at the recycling centers and inserts in utility bills. General public service announcements on radio and television also help educate the public. Adopt-a-Street programs and highway signs promote litter control. The TJPDC also maintains a recycling resources of the solid waste planning unit, and displays solid waste reduction/reuse/recycling information and resources at fairs and other public events. The TJPDC also posts recycling and disposal related information on its Facebook page and in its monthly electronic newsletter.

Public participation in solid waste management and planning occurs at advertised meetings of public bodies that discuss and act on the issues. RSWA has a Citizens Advisory Committee, which meets regularly to discuss budgetary, operational, and environmental issues, and makes recommendations to the Board of Directors. Albemarle County has formed a solid waste committee to look at long-term disposal needs and options in the County. Charlottesville has the Charlottesville a Green City program which focuses on sustainability issues including solid waste. "Keep the County Clean" programs in Fluvanna and Greene promote recycling and waste reduction as well as periodic clean-up days. The TJSWPU staffs an advisory committee to maintain and implement the Solid Waste Management Plan. Citizen members of this committee provide vital input and feedback in development and implementation of the Plan. The TJSWPU also holds legally required public hearings for 5-year updates to the plan and if any major changes are made to the plan.

## 4.7 Funding Arrangements & Options

### EXISTING FUNDING ARRANGEMENTS

Each locality determines the ratio of general revenue funds and tipping fees used to fund solid waste management activities. Each locality has tipping fees for disposal at transfer stations or convenience centers. General revenue funds are often used to cover costs of additional facilities, including reuse facilities, and recycling centers. A portion of the cost of recycling is covered by revenue from sales of recyclable materials. Individual localities are also responsible for long-term liabilities, landfill closure, and post-closure costs, which must be built into locality budgets.

Transfer stations in the region operate with a tipping fee that covers much of the cost of collecting, transporting, disposing of wastes, and making up the cost of recycling programs at times when recycling revenue fails to cover the cost of administration. General fund tax revenue is often used to cover costs above those that are covered by tipping fee revenue. In the City of Charlottesville, trash stickers must be purchased to participate in curbside pickup. RSWA sells trash stickers that citizens must use for self-delivery of MSW to the Ivy MUC. The income from trash stickers is used to help pay for operations and administration.

Recyclables are generally collected for free, and the locality may or may not break even on collection and distribution after receiving market value for the materials. Some materials are dealt with at little or no cost to the community, while the markets are less favorable for others. However, market fluctuation is common for all recyclable material. This is also true of re-use items. The Encore Shop at the Ivy MUC sells items for reuse at a low cost to help recover the time and resources needed to store and sell them.

Grants are another source of funding, and are often used for special waste events such as household hazardous waste and bulky waste amnesty days. State funds assist in tire cleanup and recycling.

Closed landfills in Albemarle, Fluvanna, and Greene Counties have closure plans and local funds allocated for proper closure and maintenance that comply with DEQ regulations. Funding options include setting aside a portion of tipping fees and allocation of tax revenue.

#### **FUTURE FACILITY DEVELOPMENT**

Currently, transfer stations operate within permitted capacity, and none are under significant pressure of reaching capacity by 2035, as described in Table 22. The region has increasingly relied on private sector facilities to receive MSW and recyclables from private haulers, citizens, and locality contractors. As demand for recycled materials increases, private sector operations are expected to increase, further reducing expansion pressure on public facilities. If new facilities are needed, it is expected that localities will continue to use a mix of tipping fees and general funds to support them. Until the time that future recycling markets yield sufficient revenue to fully support recycling operations, local funds will subsidize these programs.

## **4.8 Solid Waste Systems Evaluation**

#### **PROGRAMS**

Localities with permitted solid waste facilities and joint locality authorities prepare Solid Waste Information and Assessment reports and submit copies to the Department of Environmental Quality (DEQ) and TJPDC by March 31 of each year. Localities will also submit recycling rate reports to the PDC prior to the April 30 deadline for submission of a regional recycling rate report to DEQ, which the PDC will prepare and submit. The regional recycling rate is the figure used for the solid waste planning unit (all localities in the designated planning region), and is binding for the purposes of the recycling rate mandate and solid waste plans. As provided in §10.1-1411 of the Code of Virginia as amended in 2006, the mandatory recycling rate for the region is 25%. Should the mandatory recycling rate not be met, the PDC will prepare a Recycling Action Plan for the region.

The PDC staffs a committee of local designees, which meets quarterly, to review solid waste data collected to include in the above referenced reports, and compare it to growth trends, plan goals, and other relevant issues to monitor compliance with this plan and applicable codes, policies, and regulations. Committee members will report progress back to their elected officials annually.

## COLLECTION

Two solid waste collection systems are available in the region: curbside collection by private haulers, and collection at the transfer stations and convenience centers from individuals who drop it off. Procedures for evaluating transfer stations include tracking the weight of material processed over time at each station in order to gauge usage by residents and to plan for additional permitted capacity, as needed. The data used for these evaluations is collected to draft annual Solid Waste Information and Assessment reports, and is therefore available to be reviewed annually.

The City of Charlottesville's curbside collection is provided by contract with the City and thus is available to all residents. Collection operations are evaluated over the course of the contract term, and new contracts reflect changes made as a result of the analysis. In evaluating efficiency, the County of Albemarle has concluded that a joint contract with the City may be desirable in urban areas of the County. Residents in the City and counties are free to use the private hauler of their choosing, or deliver their own solid waste to transfer stations individually.

## 5 Summary & Conclusion

The TJSWPU is committed to serving the citizens of the planning region with fiscally sound solid waste management systems that ensures sanitary conditions in our communities, proper disposal of waste, and seeks to further reduce the region's solid waste footprint on the environment. In this pursuit, the region will implement the strategies in this plan to build upon the consistent success in exceeding the mandated 25% recycling rate, and to support the goals of the Sustainability Accords. Implementation will continue to focus on regional cooperation, cost efficiency, and targeting easily recyclable or particularly environmentally damaging wastes. Another cornerstone strategy of the plan is to provide outreach, education, and resources to citizens and business to promote greater utilization of waste reduction, reuse, and recycling services available in the region. The Solid Waste Committee will continue to track progress on plan implementation and ensure that solid waste needs of the region are met.

## Glossary

**Agricultural Waste:** solid waste produced from farming operations, or related commercial preparation of farm products for marketing.

**Commingled:** refers to the collection of recyclable materials in a manner so that the producer does not have to separate the materials by type; this is done after collection.

**Commercial Waste:** solid waste generated by establishments engaged in business operations other than manufacturing or construction. This category includes, but is not limited to, stores, markets, offices buildings, restaurants, and shopping centers.

**Compost:** a stabilized organic product produced by the controlled aerobic decomposition of organic material so that the product can be handled, stored and applied to the land. Compost can be utilized in a number of different applications, allowing for the beneficial reuse of organic wastes.

**Construction and Demolition Debris (CDD):** solid waste produced during construction, remodeling, repair or destruction of pavements, houses, commercial buildings, and other structures. CDD includes, but is not limited to, lumber, wire, sheetrock, broken brick, shingles, glass, pipes, concrete, paving materials, and metals and plastics if they are part of the construction material or empty containers for such materials. Paints, coatings, solvents, asbestos-containing material, any liquid, compressed gases, or semisolids and garbage are not CDD.

**Debris Waste:** waste resulting from land clearing operations, including, but not limited to, stumps, wood, brush, leaves, soils and road spoils.

**Domestic (or Household/Residential) Waste:** any waste material, including garbage, trash and refuse from households, such as single and multiple residences, hotels, and motels.

**Disposal:** discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste or hazardous waste into or on any land or water so that such solid waste or any constituent of it may enter the environment or be emitted into the air or discharged into any waters.

**Hazardous Waste:** is defined by the Virginia Hazardous Waste Management Regulation, 9VAC20-60-12 et seq.

**Incineration:** controlled combustion of solid waste for disposal.

**Industrial Waste:** any solid waste generated by manufacturing or industrial processes that is not a regulated hazardous waste, including waste from the following manufacturing processes: electric power generation; fertilizer/agriculture chemicals; food and related by-products; inorganic chemicals' iron and steel manufacturing; nonferrous metals/foundries; organic chemicals; plastics and resins; pulp and paper manufacturing; rubber; stone, glass, clay and concrete products; textile manufacturing; transportation equipment; and water treatment. Industrial waste does not include mining waste or oil or gas waste.

**Inert Waste:** solid waste that is physically, chemically, and biologically stable, including dirt, concrete, and rock, which are not regulated. Metal, construction debris, stumps, logs, and scrap lumber are regulated as of 1994 and must be disposed in a single-lined cell.

**Integrated Solid Waste Management:** the practice of managing solid waste using several complementary components, including source reduction, reuse, recycling, resource recovery, and incineration.

**Landfill:** an area of land where solid waste is buried.

**Leachate:** the liquid resulting from precipitation percolating through landfills and containing soluble or suspended degradation products of waste.

**Litter:** all non-biodegradable material discarded illegally on public or private land.

**Materials Recovery Facility (MRF):** a solid waste facility for the collection, processing and recovery of material such as metals from solid waste or for the production of fuel from solid waste.

**Monitoring Well:** a well point below the ground surface at a landfill site used for obtaining periodic water samples from groundwater for analysis.

**Mulch:** woody waste consisting of stumps, trees, limbs, branches, bark, leaves and other clean wood waste that has undergone size reduction by grinding, shredding, or chipping.

**Municipal Solid Waste (MSW):** waste that is normally composed of residential, commercial and institutional solid waste and residues derived from the combustion of these wastes.

**Non-Regulated Landfill:** a landfill accepting certain inert materials not regulated by the state, including rubble, concrete, broken bricks, and bricks and blocks.

**Principal Recycled Material (PRM):** paper, metal (except automobile bodies), plastic, glass, yard waste, wood, and textiles. This does not include large diameter tree stumps.

**Recycling:** the process of separating a given waste material from the waste stream and processing it so that it may be used again as a raw material for a product, which may or may not be similar to the original product. Recycling does not include processes that only involve size reduction.

**Resource Recovery:** the creation of usable energy from solid waste through the burning of solid waste to produce steam or electricity or other fuels.

**Re-use:** the practice of repeating use of a material rather than disposing of or recycling it.

**Sanitary Landfill:** an engineered land burial facility for the disposal of solid waste which is so located, designed, constructed and operated to contain and isolate the solid waste so that it does not pose a substantial present or potential hazard to human health or the environment.

**Septage/Sludge:** Any solid, semisolid, or liquid waste with similar characteristics and effects generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, air pollution control facility, or any other waste producing facility.

**Solid Waste:** any garbage, refuse, sludge, or other discarded material, including solid, liquid, semisolid, or contained gaseous material, resulting from industrial, commercial, mining and agricultural operations, and from community activities, but not including (i) solid or dissolved material in domestic sewage, (ii) solid or dissolved material in irrigation return flows or in industrial discharges which are sources subject to permit from the State Water Control Board, or (iii) source, special nuclear, or byproduct material as defined by the Federal Atomic Energy Act of 1954, as amended.

**Solid Waste Management:** Systematic administration of activities which provide for the collection, source reduction, storage, transportation, transfer, processing, treatment, and disposal of solid waste or resource recovery.

**Source Reduction:** reducing the amount of waste generated by an activity at the point of creation. This may occur through the design, manufacture, and sale of products and packaging with minimal volume and toxicity and longer lifetimes.

**Source Separation:** the segregation of various materials from the waste stream at the point of generation for recycling. For example, household glass and newsprint collection apart from trash.

**Supplemental Recyclable Material (SRM):** waste tires, used oil, used oil filters, used antifreeze, automobile bodies, construction waste, demolition waste, debris waste, batteries, ash, sludge or large diameter tree stumps.

**Tipping Fee:** a fee levied in the disposal of solid waste, generally at a landfill. The fee is usually on a per-ton basis, but can be on other units of measure, such as per-truck.

**Transfer Station:** any solid waste storage or collection facility at which solid waste is transferred from collection vehicles to haulage vehicles for transportation to a central solid waste management facility for disposal, incineration, or resource recovery.

**Treatment:** Process designed to change the physical, chemical, or biological nature or composition of any waste to render it more stable, safer for transport, or more amenable to use, reuse, reclamation, or recovery.

**Vegetative Waste:** decomposable materials generated by yard and lawn care or land-clearing activities and including, but not limited to, leaves, grass trimmings, and woody wastes such shrub and tree prunings, bark, limbs, roots, and stumps.

**White Goods:** stoves, refrigerators, water heaters, and other large appliances.

**Yard Waste:** decomposable waste materials generated by yard and lawn care and including leaves, grass trimmings, brush, wood chips, and shrub and tree trimmings. Yard waste shall not include roots or stumps that exceed six inches in diameter.

Terms not defined above have the meanings assigned to them by RCRA, EPA and/or DEQ.

# Appendices

## 2016 Thomas Jefferson Solid Waste Planning Unit Committee & Commissioners

	SOLID WASTE COMMITTEE	COMMISSIONERS
FLUVANNA COUNTY	Wayne Stephens <i>Director of Public Works</i>	Tony O'Brien Keith Smith
GREENE COUNTY	Allen Morris <i>Solid Waste Manager</i>	Andrea Wilkinson Dale Herring
CITY OF CHARLOTTESVILLE	Kristel Riddervold <i>Environmental Sustainability Manager</i> Lance Stewart <i>Public Service Manager</i> Jonathan Dean <i>Business Analyst</i>	Bob Fenwick Genevieve Keller
ALBEMARLE COUNTY	Michael Freitas <i>Chief of Public Works</i>  Greg Harper <i>Chief of Environmental Services</i>	Rick Randolph Brad Sheffield
UNIVERSITY OF VIRGINIA	Sonny Beale <i>Recycling Programs Director</i> Jesse Warren <i>Sustainability Program Manager</i>	
THOMAS JEFFERSON PLANNING DISTRICT COMMISSION	Chip Boyles <i>Executive Director</i>  Wood Hudson <i>Senior Planner</i>	

## Locality Recycling Rate Calculations

Example: 2015 Recycling Rate Report Calculation

Each year, the regional recycling rate is calculated using regional totals for Primary Recyclable Materials (PRMs), Municipal Solid Waste (MSW) Disposed, and credits from the categories described in Step 2, below. A 2% credit is given for source reduction programs (SRP), of which the TJSWPU has several. Credit may account for a maximum of 5 percentage points above the region's base recycling rate.

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

86,984	86,984	159,766	35%
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Step 2: CREDITS calculation:

- a. Total Recycling Residue 0 tons
- b. Total Solid Waste Reused 31 tons
- c. Total Non-MSW Recycled 71,429 tons

CREDITS 71,460 tons

Adjusted

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

86,984	+	71,460	/	86,984	+	71,460	+	159,776	=	50%
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Step 4:  Source Reduction Program (SRP) Credit does not apply; or

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

	+2%	=		%
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Step 5: Final Recycling Rate\* for Solid Waste Planning Unit = 40 %

\* 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.

## 2006 20-Year Implementation Plan Progress Log

### Status Code

T = Not Done/To Do  
C = Complete

O = Ongoing  
P = In Progress

D = Discarded due to  
Irrelevance or  
Infeasibility

Implementation Plan Year	Responsible Parties	Status
<b>Year 1</b>		
Study the feasibility of coordinating contracts for special waste collection and make recommendations to local governments.	TJPDC, RSWA, Localities	O
Study means of expanding the reuse of building materials.	TJPDC's HOME Consortium, Localities	T
Identify methods to increase the reuse of collected solid waste material.	TJPDC, RSWA, Localities	T
Determine how best to encourage private-sector mulch manufacturing operations.	RSWA, TJPDC	P
Monitor daily tonnages received at the region's transfer stations and compare against existing capacity. Monitoring conducted on an ongoing basis.	TJPDC, RSWA, Localities	O
Establish TJPDC as regional centralized archive for reporting to DEQ and create format for annual review of waste stream, market, and programs.	TJPDC, RSWA, Localities	O
Support Freecycle, an online community reuse program, as a way to increase reuse without increasing storage capacity for items to be reused.	Community members, Civic Groups	P
Establish regular electronics recycling opportunities.	RSWA, UVA, Private Sector	P
Develop and distribute brochure to inform area residents of recycling program details.	TJPDC, Localities	C
Develop unified recycling information website.	TJPDC, Localities	C
Develop recycling display that can be used at fairs.	TJPDC	C
Establish one documented public entity Environmental Management System including source reduction and reuse strategies.	Localities	C
<b>Year 2</b>		
Improve economies of scale by finding ways to set the parameters for future contracts.	TJPDC	T
Develop educational materials that specifically identify ways to purchase goods that support source reduction and reuse.	TJPDC, RSWA, Localities, Civic Groups	C
Complete development of methods to expand existing recycling facilities and determine the location of new facilities in order to achieve or exceed a 25% recycling rate.	TJPDC, RSWA, Localities	P
Study the feasibility of using a portable wood chipper to be rotated among all the region's landfills and transfer stations.	TJPDC, Localities, RSWA	C, D

Implementation Plan Year	Responsible Parties	Status
Explore the possibility of providing adequate landfill disposal for waste collected at transfer stations within the region.	TJPDC, Localities, RSWA	D
Promote home composting through workshops and educational materials.	VCE, TJPDC, Civic Groups	O
Review local codes to determine possible impediments to implementation of plan goals.	TJPDC, Localities	D
Develop radio public service announcements about recycling.	TJPDC, RSWA, Localities	T
Explore means of print advertising, including newspapers and phone books.	TJPDC	T
<b>Year 3-5</b>		
Define the source reduction and reuse criteria best suited for large-scale procurement contracts.	TJPDC, Locality Procurement Officers	T
Provide information on the source reduction and reuse criteria best suited for large-scale procurement contracts to public and private procurement officials.	TJPDC	T
Coordinate the timing and parameters of all solid waste management contracts in the region.	TJPDC, RSWA, Localities	T
Study the possibility of establishing manufacturing facilities within the region that will reuse the region's recyclable materials.	Localities, Economic Development Orgs., & Private Sector	T
Assuming it has been found cost effective, identify possible location(s) for siting a materials recovery facility (MRF) with an emphasis on locations(s) that already have solid waste management facilities.	TJPDC, RSWA, Localities	C
Study potential markets for recyclables collected regionally and/or through a MRF, based on estimates of tonnages collected at the MRF.	TJPDC, RSWA	D
Site convenience centers in designated growth areas as shown in local comprehensive plans.	RSWA, Localities	T
Study the feasibility of rail service as an option to trucks for the hauling of solid waste from transfer stations to disposal facilities.	TJPDC, RSWA	C, D
Establish speakers' bureau for recycling topics.	TJPDC, Civic Groups	D
Develop recycling and composting programs in those schools where they do not currently exist.	TJPDC, Localities, Schools	T
Explore ways to increase interest in recycling among local businesses.	TJPDC, Localities, Civic Groups	P
Establish five documented public entity Environmental Management Systems including source reduction and reuse strategies.	Localities	C

Year 10		
Establish a MRF within the region, if proven cost-effective.	RSWA, Localities, Private	C
Study emerging technologies designed for reduction, disposal and resource recovery.	TJPDC, RSWA	O

Year 20		
New facilities for solid waste disposal and recycling proposed in this plan are in place and fully operational.	TJPDC, RSWA, Localities	P
Regional recycling rates exceed 25% annually.	TJPDC, RSWA, Localities	O
Per capita tonnages reduced through source reduction and reuse.	TJPDC, RSWA, Localities	O

## Letter from BFI



BFI Waste Systems of Virginia, Inc.  
2001 Charles City Road  
Richmond, Virginia 23231



December 3, 2004

Mr. Harrison B. Rue  
Executive Director  
District 10 – Thomas Jefferson  
300 E Main Street, 1<sup>st</sup> Floor  
P.O. Box 1505  
Charlottesville, VA 22902

Dear Mr. Rue:

BFI Waste Systems of Virginia, Inc. (BFI) plans to construct and operate an expansion of the Old Dominion Landfill located at 2001 Charles City Road, Henrico County, Virginia. Pursuant to Virginia Code 1408.1.B.6, BFI is required to contact the localities in the Commonwealth to notify them that they may reserve disposal capacity in this landfill up to the requirements specified in the applicable approved solid waste management plan. BFI respectfully requests that you forward this letter to all solid waste entities or authorities for the counties, cities, and towns within your district.

To the locality, BFI is offering you the opportunity to reserve disposal capacity in the proposed landfill expansion up to the requirements specified in your approved solid waste management plan. If the locality signs the acceptance agreement, then BFI agrees to guarantee the Old Dominion Landfill will reserve the requested disposal capacity for *the locality* upon the acceptable negotiation and execution of a disposal contract between both parties. BFI and *the locality* must sign a contract that stipulates the conditions of the agreement. By signing the denial statement, *the locality* agrees that it does not wish to reserve disposal capacity. If the acceptance agreement is not returned within 60 days from the date of this letter, it will be assumed that *the locality* has refused the offer to reserve disposal capacity.

***Please return the attached document to Resource International, Ltd., P.O. Box 6160, Ashland, VA 23005, Attn: Anthony Creech***

Sincerely,

BFI Waste Systems of Virginia, Inc.  
2001 Charles City Road  
Richmond, Virginia 23231