

# Solid Waste Management Plan

## Region 2000 Solid Waste Planning Authority



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## **EXECUTIVE SUMMARY**

Under 9 VAC 20-130 et seq. all Cities, Counties and incorporated Towns in the Commonwealth of Virginia are to participate in solid waste management planning either independently or as a region through the preparation of a Solid Waste Management Plan (SWMP or the Plan). The Virginia Department of Environmental Quality (VDEQ) is tasked with overseeing this regulation and with approving regions. In 2010, VDEQ approved the Region 2000 Solid Waste Planning Region (Region), which at that time consisted of the Cities of Bedford and Lynchburg, Counties of Appomattox, Campbell and Nelson, and incorporated Towns of Altavista and Brookneal (Campbell County) and Appomattox (Appomattox County). The original SWMP was approved by VDEQ on April 29 2010.

Regions are required to maintain their plan in accordance with 9VAC20-130-173, which states:

### **9VAC20-130-173. Maintenance of Solid Waste Management Plans.**

- A. *Solid waste management planning units are required to maintain current solid waste management plans containing a 20-year planning window.*
- B. *On or before each five-year anniversary of the department's plan approval date, the planning unit shall submit a letter to the department, by mail or electronic mail, certifying that the following plan elements listed in 9VAC20-130-120 C have been maintained and updated:*
  - 1. *Waste generation estimates are current (9VAC20-130-120 C 3);*
  - 2. *The schedule increments have been met (9VAC20-130-120 C 5); and*
  - 3. *A projected 20-year waste management capacity remains available or projects otherwise are on schedule to meet the planning unit's solid waste needs (9VAC20-130-120 C 9).*
- C. *The letter of certification submitted in accordance with subsection B of this section shall be used in the department's assessment of whether any plan amendments are necessary and to ensure compliance with 9VAC20-130-110 E.*
- D. *If revisions to the plan are needed, solid waste management planning units shall amend the plan as described in 9VAC20-130-175*

In 2015, the Region prepared and submitted the five-year update letter and at the same time submitted a major amendment to the Plan to VDEQ on May 26, 2015. Major amendments are identified under 9VAC20-130-175, which states as follows:

### **9VAC20-130-175. Amendments to Plans.**

#### **B. Major amendments.**

- 1. *Major amendments shall include:*
  - a. *Any addition, deletion, or cessation of operation of any solid waste disposal facility;*
  - b. *Any increase in landfill capacity;*
  - c. *Any change that moves toward implementation of a waste management strategy that is lower in the waste management hierarchy;*

- d. *Action plans, including an action plan to address a planning unit's recycling rate that has fallen below the statutory minimum; or*
- e. *Any change to membership in the approved area. Director approval of changes to planning unit boundaries, as described in 9VAC20-130-100, shall occur prior to submission of solid waste plan amendments to revise plan membership.*

The major amendment in 2015 was initiated to address the increase in landfill capacity at the Livestock Road Regional Landfill (Permit 610) due to a lateral expansion, and to address the withdrawal of the City of Bedford (now Town of Bedford) from the Region. The major amendment was approved by VDEQ on August 24, 2015.

In 2020, the Region must file information in support of the requirements of 9 VAC 20-130-173 relative to maintenance of the Plan. The following updated Plan has been prepared to address these requirements. The document restructures the Plan to make it more efficient for the Region to update the Plan in the future. Thus, some of the information originally embedded within the text has been moved to appendices.

On January 2, 2020, a minor amendment to the 2015 Plan was submitted to VDEQ to address a proposed transfer station to be operated by a private waste management company to be located in Concord, Virginia located in Appomattox County. This minor amendment is incorporated into the body of this Plan.

Each member jurisdiction continues to be responsible for waste collection and recycling within their jurisdiction as well as the post closure care of previously operated landfills. The Authority provides all reporting in accordance with 9VAC20-130-165 for the planning unit. Each member also supports the financial assurance obligation of the Authority through their local government guarantees as allowed under 9VAC20-70-230.

The Region exceeds the minimum recycling goal of 25%.

The following update does not represent an amendment to the Plan, just an update to the information as required and some minor reformatting. The Regional members have provided information in support of this update.

The section numbers in the body of this document are directly related to the section numbers in the original 2010 SWMP.

The structure of the Plan is as follows:

### **Section 1.0 Introduction**

Section 1.0 provides a brief overview of the relevant Virginia Waste Management Board Solid Waste Management Planning Regulations.

### **Section 2.0 Background Information**

Section 2.0 presents information on the status of solid waste management within the United States and the Region.



### **Section 3.0 Region 2000 Demographic Data**

Section 3.0 provides a detailed breakout of population, housing, income and other relevant demographic data for the five communities that comprise Region 2000 solid waste planning unit. Information is included on climate, transportation and economic development issues.

### **Section 4.0 Solid Waste Generation and Composition Rates**

Section 4.0 contains information on the existing and future solid waste stream for the Region. The section presents information on the regional solid waste generation quantities and disposal for a 20-year period. Existing landfill capacity is analyzed in light of the projections. The discussion of regional waste generation and composition issues includes sections on the projected tonnage amounts, disposal capacity and cell development of the two regional landfills, special wastes and waste stream composition.

### **Section 5.0 Existing Solid Waste Management System**

Section 5.0 describes the major components of the current solid waste management systems for the four primary participating members. Included in this section is an overview of acceptable materials at the regional landfill, and the Regional recycling rates based on the submitted DEQ Forms 50-30.

### **Section 6.0 Budget**

Section 6.0 provides the Services Authority's FY 2020 operating budget

### **Section 7.0 Hierarchy**

Section 7.0 contains a discussion of the waste management hierarchy as it relates to regional solid waste management practices. The hierarchy includes source reduction, reuse, recycling, resource recovery and incineration and landfilling. A discussion on the Region's 2017 strategic planning effort is provided.

### **Section 8.0 Goals and Objectives**

Section 8.0 analyzes the various goals and objectives of the regional solid waste management program. These goals include collection and disposal, recycling, public awareness policies and litter control programs.

### **Section 9.0 Implementation Schedule**

Section 9.0 summarizes the various goals and objectives of the regional solid waste management program over the 20-year planning period.

### **Section 10.0 Resolutions**

Section 10.0 references previous resolutions. Since this plan is an update and not a major amendment, formal resolutions were not required.

### **Section 11.0 Funding and Financing**

Section 11.0 provides an overview of the funding mechanisms and financing methods that the Services Authority will implement to ensure the financial integrity of the Services Authority.

### **Section 12.0 Public Participation**

Section 12.0 provides information on when and where the Authority and the individual communities will address opportunities for public participation of the regional solid waste management plan.

### **Section 13.0 Record Keeping**

Section 13.0 identifies a central archive authorized to receive and record information on disposal and landfill activities in the area.

## **1.0 INTRODUCTION**

### **1.1 Legislation**

The following solid waste management plan has been prepared in accordance with the Virginia Waste Management Board's Regulations for Solid Waste Management Planning and Recycling, 9 VAC 20-130-10 et seq., latest version.

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

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

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

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

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

8. Provide for reporting and assessment of solid waste management in the Commonwealth.

1.4 Background and Planning Area

The Region 2000 Services Authority (Authority) was formed officially on December 28, 2007 (State Corporation Commission approval) and entered into a Use Agreement with its members on January 31, 2008. Members of the Authority included the Cities of Bedford and Lynchburg and the Counties of Appomattox, Campbell and Nelson. The first amendment to the Member Use Agreement was signed on June 20, 2008, and the second amendment to the Member Use Agreement signed on \_\_\_\_\_. Copies of the Members Use Agreement(s) are included in **APPENDIX J-2**.

The first amendment to the Member Use Agreement outlined the following recitations of relevance to future solid waste planning:

***R-1*** *The Member Jurisdictions have created the Authority by adopting concurrent resolutions containing Articles of Incorporation.*

***R-2*** *Lynchburg and Campbell each independently own and operate a solid waste disposal landfill, one located in each jurisdiction.*

***R-3*** *Nelson does not own or operate a currently active solid waste disposal landfill. Bedford and Appomattox currently own and operate landfills which will not be owned by the Authority.*

***R-4*** *After extensive study and analysis, the Member Jurisdictions have determined that it would be more economical and efficient to form a regional authority to own and operate the separate landfills identified in R-2 in a single, coordinated manner and to otherwise provide for solid waste disposal on a regional basis as provided for in this Agreement.*

***R-5*** *The Member Jurisdictions and the Authority have negotiated terms on which Lynchburg and Campbell will convey title to the Lynchburg Facility and the Campbell Facility (each as defined herein), respectively, to the Authority, and also transfer to the Authority all improvements thereto, equipment, permits, and other documentation that is related to ownership and operation of the Campbell Facility and the Lynchburg Facility, and terms by which the Authority will operate the Facilities (as defined herein) for the benefit of the Member Jurisdictions."*

The term of this agreement under Section 2.1 of the Member Use Agreement is identified as follows:

*"This Agreement shall become effective upon its execution by authorized officers of all Member Jurisdictions and the Authority, subject to the terms and conditions contained herein, and shall be effective for a term of fifty (50) years, commencing on the date hereof, unless further extended pursuant to the provisions of the Act, provided that this Agreement shall in any event continue until adequate closure and post-closure obligations and responsibilities with respect to the Facilities have been met, and provided further that as long as any Bonds or other debt of the Authority remains outstanding, this Agreement cannot be terminated."*

On October 4, 2007, the Authority petitioned VDEQ for designation as a solid waste planning unit. On June 17, 2008, the petition was approved. This petition did not include Appomattox County. On June 9, 2009, the Authority petitioned VDEQ to amend the boundary of the solid waste planning unit to include Appomattox. On June 15, 2009, this petition was approved. (See **APPENDIX J-3** for approval letters.)

On July 23, 2013, the Authority and its members reached an agreement to allow the City of Bedford (aka Town of Bedford) to withdraw from the Authority. On July 11, 2014, the State Corporation Commission approved the withdrawal. On May 26, 2015, the VDEQ was notified of this withdrawal through the submittal of a major amendment to the Plan. On August 24, 2015, the major amendment was approved and the revised boundary for the Region accepted. (See **APPENDIX J-3** for documentation)

At the time of formation, the members of the Authority had completed extensive analyses of their solid waste programs and determined and agreed that the Authority (as outlined in the Member Use Agreement), would purchase the remaining assets in the City of Lynchburg (Concord Turnpike – Permit 558) and Campbell County (Livestock Road – now Permit 610) landfills. Operations would first focus on use of the Concord Turnpike Landfill and then on the Livestock Road Landfill.

To date the Authority has completed the following activities with regard to these actions:

- Operated the Concord Turnpike Landfill from July 1, 2008 to July 12, 2014 (date of final receipt of outside waste.)
- Completed an interim cover for the Livestock Road Landfill. (November 2008)
- Constructed Cells 6/7 – Phase III at Livestock Road Landfill (CTO issued by VDEQ on April 5, 2012)
- Initiated operations at the Livestock Road Landfill beginning on July 9, 2012.
- Completed closure of the Concord Turnpike Landfill. VDEQ final certification of closure dated August 15, 2017.
- Completed permit modification at the Livestock Road Landfill for lateral expansion. (Permit issued on October 26, 2015)
- Constructed Phase IV of the Livestock Road Landfill. CTO issued by VDEQ on April 17, 2017.
- Began operation in Phase IV of the Livestock Road Landfill on August 22, 2017.
- Complete a partial closure of Phase III at the Livestock Road Landfill in 2019. Final certification of closure pending.
- Completed a strategic plan in 2016 - 2017 to evaluate options after capacity reached in Livestock Road Landfill. (estimated to be 2030<sub>±</sub>)

A chronology of events by the Authority is provided in **APPENDIX B**. This will be updated routinely as key activities are initiated or completed or milestones met.

## 1.5 Recycling

The *Virginia Solid Waste Planning and Recycling Regulations*, 9VAC20-130-125 (Recycling Requirements), states as follows:

Each solid waste planning unit shall maintain a minimum recycling rate for municipal solid waste generated within the solid waste planning unit pursuant to the following schedule:

- *Except as provided in subdivision 2 of this subsection, each solid waste planning unit shall maintain a minimum 25% recycling rate; or*
- *Each solid waste planning unit shall maintain a minimum 15% recycling rate if it has (i) a population density rate of less than 100 persons per square mile according to the most recent United States Census or (ii) a not seasonally adjusted civilian unemployment rate for the immediately preceding calendar year that is at least 50% greater than the state average as reported by the Virginia Employment Commission for such year*

The most current census is the 2010 census. That census indicated that the existing Region (exclusive of the Town of Bedford) had a population of 160,403 with a reported size of 1,366 square miles and thus a density of 117 persons per square mile. The Region must therefore meet the 25% recycling goal. Because the Region has a population of greater than 100,000 people it must report annually.

#### 1.6 Planning Area

With approval of the 2015 major amendment which recognized the withdrawal of the City of Bedford from the Region, the Region is composed of the City of Lynchburg, the Counties of Appomattox, Campbell and Nelson, and the incorporated Towns of Altavista and Brookneal (Campbell County) and Appomattox (Appomattox County). See **APPENDIX A** for figures illustrating the planning area.

#### 1.7 Planning Period

The planning period for this solid waste management plan is 20 years from 2020 through 2040. Projections of the amount of solid waste generated, and the remaining capacity for the regional disposal facilities will be provided and discussed in Section 4.0.

#### 1.8 Critical Definitions

This solid waste plan may use words to describe certain aspects of solid waste management.

Definitions relating to solid waste management are included in the *Virginia Solid Waste Management Regulations* 9VAC20-81-10 and can be found at the link below.

<https://law.lis.virginia.gov/admincode/title9/agency20/chapter81/section10/>

Definitions relating to solid waste management planning are included in the *Virginia Solid Waste Planning and Recycling Regulations*, 9VAC20-130-10 and can be found at the link below:

<https://law.lis.virginia.gov/admincode/title9/agency20/chapter130/section10/>

Individual members may also have ordinances that apply to solid waste.

## 2.0 BACKGROUND INFORMATION

To provide background to the discussions contained in this solid waste management plan, reference is made to solid waste management nationally and the Region 2000's goals and objectives are provided in this Section.

### 2.1 Status of Solid Waste Management Nationally

**APPENDIX J-4** contains the latest published information from the United States Environmental Protection Agency with regard to solid waste management in the United States and should be consulted as interest dictates. The document is entitled: *"Advancing Sustainable Materials Management: 2017 Fact Sheet,"* dated November 2019. Based on the latest EPA report, average per capita waste generation is 4.5 pounds per person per day although this does not include construction/demolition or debris wastes. This value can be used for waste projections and comparisons. Nationally, approximately 50% of the municipal solid waste is landfilled and the remainder recycled, composted or incinerated. The report also provides historical information on generation, disposal and recycling in the United States.

### 2.2 Highlights from 2015 Solid Waste Management Plan

The 2015 Solid Waste Management Plan had three functions:

- As a major amendment to recognize the withdrawal of the City of Bedford from the Region;
- As a major amendment to address the increase in landfill capacity for the Livestock Road Landfill; and
- To serve as the 5-year update to the 2010 Plan, which extended the planning period from 2015 to 2035 and provided population and waste tonnage projections for this period. In addition, the goals and action items were updated to recognize the changing landfill operations (as planned) and construction in support of closures and cell development.

Besides addressing the major amendment items and providing required update information, there were no other noteworthy activities identified under the 2015 Plan.

### 3.0 REGION 2000 DEMOGRAPHIC DATA

#### 3.1 Location

The four participating communities that comprise Region 2000 are located in South Central Virginia and include the Counties of Appomattox, Campbell and Nelson and the City of Lynchburg. The total land mass of the four communities is approximately 1,366 square miles. The highest population densities exist in and around the City of Lynchburg located geographically in the center of the four communities. **FIGURE 1** in **APPENDIX A** displays the individual communities in relation to each other and the state as a whole.

#### 3.2 Demographics

##### 3.2.1 Population

The University of Virginia's Weldon Cooper Center for Public Service (the Center) provides population and other demographic information for both the Commonwealth of Virginia and its counties and cities. The Center also provides estimates for future populations.

**TABLE 1**  
**SUMMARY OF POPULATION PROJECTIONS**

YEAR	LYNCHBURG	CAMPBELL COUNTY	APPOMATTOX COUNTY	NELSON COUNTY	REGIONAL TOTAL
2010	75,568	54,842	14,973	15,020	160,403
2020	82,791	55,665	15,866	14,828	169,150
2030	90,526	57,325	16,742	14,850	179,443
2040	96,956	58,240	17,391	14,688	187,275

Population by percent of total was calculated as follows for 2020 and 2040:

**TABLE 2**  
**SUMMARY OF POPULATION PROJECTIONS AS PERCENTAGE OF TOTAL**

LOCALITY	2020	2040
Lynchburg	48.9%	51.8%
Campbell County	32.9%	31.1%
Appomattox County	9.5%	9.3%
Nelson County	8.7%	7.8%

**APPENDIX C** includes a summary table projecting population by year and indicating the overall regional change. From 2020 to 2040 the population is anticipated to grow by approximately 10.7%.



### 3.2.2 Additional Relevant Demographic Data

The Virginia Employment Commission puts out a wealth of demographic information in their Community Profiles including more details on population, economics including employers and education. **APPENDIX J-5** includes the Community Profiles for the four localities.

In addition, the comprehensive plans for each of the localities include a wealth of information on each of the localities and future land use and growth.

## 3.3 Geographic Conditions

### 3.3.1 Appomattox County

Appomattox County is located in south central Virginia, bordered by Amherst, Nelson, Buckingham, Prince Edward, Campbell and Charlotte Counties. It has a pre-dominantly rural population. The Town of Appomattox and the Town of Pamplin are the most densely populated areas. The 345.21 square mile County has topography ranging from flat land and rolling hills in the southern and eastern portions to mountains located in the western and northern portion. The 2010 Census Population for Appomattox County was 14,973.

### 3.3.2 Town of Pamplin

The Town of Pamplin is located in the Counties of Appomattox and Prince Edward. According to the United States Census Bureau, the Town has a total area of 0.3 square miles, all land. The 2010 Census Population of the Town of Pamplin was 219.

### 3.3.3 Town of Appomattox

The Town of Appomattox is located in Appomattox County. According to the United States Census Bureau, the Town has a total area of 2.2 square miles. The Town was named for the Appomattox River and is best known as the site of Confederate General Robert E. Lee's surrender to Union General Ulysses S. Grant on April 9, 1865, signaling the end of the American Civil War. The 2010 Census Population of the Town of Appomattox was 1,733.

### 3.3.4 Campbell County

Campbell County is located in the south-central Piedmont Region of the Commonwealth of Virginia and is approximately 504 square miles in size. The County is bordered to the north by the City of Lynchburg, the James River and Amherst County; to the west by Bedford County; to the south by Pittsylvania County and Halifax County; and, to the east by Appomattox and Charlotte Counties. The 2010 Census Population for Campbell County was 54,842.

### 3.3.5 Town of Altavista

The Town of Altavista is located in the southwestern portion of Campbell County, and borders Pittsylvania County to the south. Primary travel throughout the Town is provided by Route 29. The town was incorporated in 1912, and originally encompassed 1.87 square miles. To adequately plan for future growth, the Town annexed an additional 3.13 square miles of Campbell County in 1977. Thus, to date the Town is approximately 5.0 square miles in size. The 2010 Census Population of the Town of Altavista was 3,450 persons.

### 3.3.6 Town of Brookneal

The Town of Brookneal is located in the southeastern portion of Campbell County, and borders Halifax County. Primary travel throughout the Town is provided by Route 501. The Town is approximately 3.62 square miles in size and had a 2010 Census Population of 1,112 persons.

### 3.3.7 Nelson County

Nelson County is bounded on the northwest by the Blue Ridge Mountains and the Blue Ridge Parkway. The George Washington National Forest takes up much of the northwestern part of the county. The County is mountainous, although it begins to flatten as it stretches toward the James River along the southeast border. Commercial development in Nelson County centers on the tourist areas near Wintergreen and Afton and near Lovingston along Route 29. The 2010 Census Population for Nelson County was 15,020. The County has a total area of 471 square miles.

### 3.3.8 City of Lynchburg

Lynchburg is a city of 50 square miles located near the geographic center of Virginia, bordered by the eastern edge of the Blue Ridge Mountains. The City is situated on the James River and is surrounded by the Counties of Campbell (south and east), Bedford (west) and Amherst (north and east). It is located approximately 180 miles southwest of the nation's capital, Washington, D.C., 54 miles east of Roanoke and 114 miles west of Richmond. The 2010 Census Population for the City of Lynchburg was 75,568.

## 3.4 Climate

The citizens of Region 2000 enjoy a mild temperate climate as evidenced by an average temperature of 75 degrees Fahrenheit in July and 34 degrees Fahrenheit in January. Rainfall averages approximately 40 inches annually, and snowfall averages approximately 21 inches per year.

## 3.5 Transportation

Region 2000 is ideally located to major East Coast and Midwest markets - just 200 miles west of the Port of Hampton Roads. Areas such as New York, Philadelphia, Pittsburgh, Charlotte, Atlanta and Detroit are within a single day's drive.

### 3.5.1 Highways

The Region is bisected by US 29 (North/South) and US 460 (East/West); both are divided four-lane highways. US 501 is another major North/South thoroughfare that travels through the center of Lynchburg and Campbell County. The Region is within 45 minutes of Interstate 81, the major North/South corridor in the state, and within 60 minutes of Interstates 64, the major East/West corridor in the state. Table 3-3 displays the distance (in miles) to various major population centers.

**TABLE 3**  
**DISTANCE TO SELECTED CITIES**

<b>CITY NAME</b>	<b>DIRECTION FROM REGION 2000 EPICENTER</b>	<b>DISTANCE (miles)</b>
Atlanta	Southwest	470
Baltimore	Northeast	214
Charlotte	South	203
Chicago	Northwest	697
Greensboro	South	110
New York	Northeast	415
Pittsburgh	Northwest	323
Raleigh-Durham	Southeast	137
Richmond	East	114
Roanoke	West	54
Washington, DC	Northeast	180

### 3.5.2 Air

The major airport serving the Region 2000 communities is the Lynchburg Regional Airport, which is located between U.S. 29 and U.S. 460, approximately 5.7 miles to the south of downtown Lynchburg. The Regional carriers offer multiple daily arrivals and departures throughout the day.

The next closest airport is the Roanoke Regional Airport, located 43.5 miles west of Lynchburg on U.S. 460, which is serviced by multiple commercial and commuter airlines.

Air freight can be handled directly from Lynchburg Regional Airport by charter or commercial services. Five freight forwarding companies serve the area daily. Two private airports serve Lynchburg in addition to Lynchburg Regional Airport.

### 3.5.3 Railways

Reliable rail transportation services for the Region are provided by CSX Transportation, Norfolk Southern Railway Company and Amtrak.

## 3.6 Economic Growth

According to the Central Virginia Planning District Commission, the Region is a prosperous community with the infrastructure, resources and economic vitality needed to sustain business and industry. The economic strength of the Region lies in its broad base of employers. These include numerous manufacturers (plastics, wireless communications equipment, materials handling equipment, etc.), two large nuclear firms, major insurance firms, a sizeable medical complex and five colleges and universities. Over 20 percent of the workforce continues to be employed in the technology-based manufacturing sector.

The Community Profiles in **APPENDIX J-5** identify key employers in each of the Regional members, employment by sector as well as additional information on commuting, education and other information that could inform solid waste management in the Region. The table below provides information on the major employment sector and employer for each locality from the VEC profiles:

**TABLE 4**  
**MAJOR EMPLOYMENT SECTOR AND EMPLOYER**

<b>LOCALITY</b>	<b>Major Employment Sector</b>	<b>Major Employer</b>
Lynchburg	Healthcare and social assistance	Centra Health
Campbell County	Manufacturing	Babcock and Wilcox
Appomattox County	Government	Schools
Nelson County	Government	Schools

Commuting patterns are also of interest and can inform solid waste management. The following table compiles information from the VEC Community profiles:

**TABLE 5**  
**COMMUTING PATTERNS**

<b>LOCALITY</b>	<b>People living and working in area</b>	<b>In-Bound commuters</b>	<b>Out-Bound commuters</b>	<b>Top place commuting to</b>	<b>Top place commuting from</b>
Lynchburg	13,806	34,857	13,669	Bedford Co. 2,017	Campbell Co. 8,000
Campbell County	5,863	11,643	17,551	Lynchburg 8,000	Lynchburg 1,910
Appomattox County	1,225	1,496	6,185	Lynchburg 1,762	Campbell Co. 206
Nelson County	1,769	2,086	4,755	Albemarle Co. 1,195	Albemarle Co. 357

Economic growth can impact the tonnage of solid waste delivered to the regional landfill and so changes in growth, population or employment is followed closely by the Region 2000 Services Authority through communications with its parent organization the Central Virginia Planning District Commission. Collection and recycling by commercial entities is handled by the private sector.

## 4.0 WASTE GENERATION AND COMPOSITION

### 4.1 Introduction

Currently, Region 2000 Services Authority consists of the following members:

- Appomattox County
- Campbell County
- City of Lynchburg
- Nelson County

The Authority represents the Region 2000 Solid Waste Planning Region and maintains all records for the Region.

Under the member use agreement for the Authority, initially all the waste from the members was directed to the Concord Turnpike – Permit 588 landfill (formerly the Lynchburg Landfill). When that reached capacity in 2014, all waste was transferred to the Livestock Road Landfill – Permit 610 (formerly the Campbell County landfill). Section 1.4 included a discussion on various activities with a more detailed chronology provided in **APPENDIX B**. At this time, the Concord Turnpike Landfill has been closed and all member waste is directed to the Livestock Road Landfill.

The following information is based on information collected by the Authority for the Region. The Authority is required to submit a SWIA reporting form annual to the DEQ summarizing tonnage received, methods of handling and waste by categories. In addition, the Authority reports to its members annually the waste received by the Authority from generators within each member jurisdiction (e.g. total tonnage from a member jurisdiction). This information is used for allocation of financial assurance responsibilities for the Authority's facilities and is based on total tonnage placed.

This section provides historical information on tonnage in the Region and projections of tonnage over the planning period.

The original waste projections in the 2010 SWMP assumed an annual tonnage growth rate of 0.25 percent. This has been maintained in this evaluation.

### 4.2 Historical Tonnage Amounts

The following table summarizes tonnage information for the Region for landfill operations from 2008 through 2019. The information is taken from the annual reports published by DEQ based on the SWIA reporting information:

**TABLE 6**  
**LANDFILLED TONNAGE**  
**SUMMARY OF DEQ ANNUAL REPORTS**

<b>Year</b>	<b>Permit 610</b>	<b>Permit 558</b>	<b>TOTAL</b>	<b>TPD-6</b>
2008	28,673	207,459	236,132	757
2009	0	220,478	220,478	707
2010	0	257,973	257,973	827
2011	0	214,950	214,950	689
2012	145,093	111,364	256,457	822
2013	204,048	3,581	207,629	665
2014	196,597	4,680	201,277	645
2015	205,357	0	205,357	658
2016	197,672	0	197,672	634
2017	187,550	0	187,550	601
2018	197,641	0	197,641	633
2019	193,111	0	193,111	619
<b>AVG</b>	<b>2015 - 2019</b>		<b>196,266</b>	<b>629</b>

Landfilled tonnage has been trending downwards and may continue to do so with the advent of new commercial haulers in the area. However, the member jurisdictions are bound by agreement to deliver their waste collected either by themselves or by a contract hauler to the Region 2000 facility. Commercial waste hauled by the private sector is not bound by the same agreement and can move out of the Region.

The SWIA reports also catalogue waste received at the facility by material type. **TABLE D-1** provided in **APPENDIX D** provides a summary of the SWIA information for 2014 through 2018. Landfilled tonnage is characterized as follows:

**TABLE 7**  
**PERCENT BY CATEGORY – MATERIAL TYPE LANDFILLED**  
**AVERAGE 2014 – 2018**

<b>MATERIAL TYPE</b>	<b>% OF TOTAL LANDFILLED</b>
Municipal solid waste	77.3%
Construction Demolition Debris	6.8%
Industrial Waste	6.9%

<b>MATERIAL TYPE</b>	<b>% OF TOTAL LANDFILLED</b>
Vegetative Waste	Minor
Incinerator Ash	Minor
Sludge	8.6%
Tires	0.0%
White goods	0.0%
Petroleum contaminated soil	Minor
Other	Minor

As indicated, the Authority also tracks tonnage by locality for each landfill facility. The table below illustrates the tonnage and percent obligation by the member jurisdictions in the Concord Turnpike Landfill after closure:

**TABLE 8**  
**CONCORD TURNPIKE LANDFILL (Permit 588)**  
**AT CLOSURE**  
**TONNAGE PLACED AND PERCENT OBLIGATION BY LOCALITY**

<b>TIME PERIOD</b>	<b>LYNCHBURG</b>	<b>CAMPBEL L CO</b>	<b>NELSON CO</b>	<b>TOWN OF BEDFORD</b>	<b>APPOMATTOX CO</b>	<b>TOTAL</b>
1993 - 2007	2,394,328					2,394,328
1/2008 - 6/2008	105,810					105,810
7/1/2008 - 6/30/2009	172,604	31,742	9,766	3,290	7,478	224,879
7/1/2009 - 6/30/2010	180,206	34,565	10,193	3,221	7,270	235,455
7/1/2010 - 6/30/2011	162,752	34,716	9,632	5,571	7,504	220,175
7/1/2011 - 6/30/2012	177,758	32,814	8,041	4,239	6,260	229,113
7/1/12 - 6/30/13	10,232	695	0.04	18	87	11,032
7/1/13 - 6/30/14	6,886	1	0	0	0	6,887
<b>TOTAL</b>	<b>3,210,575</b>	<b>134,534</b>	<b>37,632</b>	<b>16,339</b>	<b>28,600</b>	<b>3,427,679</b>
<b>% OF TOTAL PLACED</b>	<b>93.70%</b>	<b>3.90%</b>	<b>1.10%</b>	<b>0.50%</b>	<b>0.80%</b>	<b>100.00%</b>

The table below illustrates the tonnage and percent obligation by the member jurisdictions in the Livestock Road Landfill as of the end of FY 2019:



**TABLE 9**  
**LIVESTOCK ROAD LANDFILL (PERMIT 610)**  
**THROUGH FY 2019**  
**TONNAGE PLACED AND PERCENT OBLIGATION BY LOCALITY**

TIME PERIOD	LYNCHBURG	CAMPBELL CO	NELSON CO	TOWN OF BEDFORD	APPOMATTOX CO	TOTAL
1995 - 2008		643,505				643,505
1/1/2009 - 6/30/2012	0	0	0	0	0	0
7/1/11 - 6/30/12	4,674	3,128	1,014	114	834	9,764
7/1/12 - 6/30/13	192,056	37,317	8,840	3,378	5,884	247,474
7/1/13 - 6/30/14	150,894	36,431	9,759	1	5,847	202,932
7/1/14 - 6/30/15	158,364	37,300	9,461	6	5,554	210,685
7/1/15 - 6/30/16	144,446	41,622	9,832	15	7,569	203,485
7/1/16 - 6/30/17	137,817	37,533	10,152	6	5,663	191,171
7/1/17 - 6/30/18	145,917	30,146	10,107	0	6,136	192,306
7/1/18 - 6/30/19	152,604	26,636	10,387	7	6,278	195,912
<b>TOTAL</b>	<b>1,086,772</b>	<b>893,618</b>	<b>69,552</b>	<b>3,527</b>	<b>43,765</b>	<b>2,097,234</b>
<b>% OF TOTAL PLACED</b>	<b>51.80%</b>	<b>42.60%</b>	<b>3.30%</b>	<b>0.20%</b>	<b>2.10%</b>	<b>100.00%</b>

#### 4.3 Projected Tonnage Amounts (2020–2040)

The following section forecasts tonnage amounts for the planning period (2020 – 2040). **APPENDIX E** includes the following tables:

- Table E-1: Tonnage projections by Member Jurisdiction (Uses average tonnage from 2014 through 2019 for 2020, percentages by jurisdiction for same period, and growth rate of 1.0025 as was used in the 2010 report.
- Table E-2: Per Capita Generation and Projections (based on Table C-1 information for population and Table D-2 for tonnage).
- Table E-3: Comparison of tonnage projections and per capita generation between 2014 SWMP and 2020 estimates. (In 2014, the average per capita generation was calculated to be 7.4 pounds per person per day; in 2020, the average per capita generation was calculated to be 6.4 pounds per person per day.).

The table below summarizes waste generation projections for the planning period:

**TABLE 9**  
**REGION 2000**  
**WASTE PROJECTIONS and COMPARISON WITH 2014 PLAN**  
**2020 - 2040**

<b>PLAN</b>	<b>2020</b>	<b>2030</b>	<b>2035</b>	<b>2040</b>
2014	230,389	236,214	239,182	NA
2020	199,415	204,457	207,025	209,626

In the 2020 plan, the tonnage is estimated to increase 5.1% over the planning period.

#### 4.4 Theoretical Waste Generation Projections by Category

**APPENDIX F** contains the following tables relative to waste generation projections by waste category:

- Table F-1: Waste generation projections by SWIA categories (2020 – 2040) (based on total tonnage projections)
- Table F-2: Waste generation projections by generator type (2020 – 2040) (based on reported per capita generation)

#### 4.5 Remaining Landfill Capacity and Site Life

##### 4.5.1 Concord Turnpike Landfill (Permit 588)

The Concord Turnpike is now closed. Certification of closure is dated August 15, 2017. The facility has entered into its 30-year post closure care period.

##### 4.5.2 Campbell County Landfill (Permit 285)

Campbell County owns the Permit 285 landfill, which is in post closure care and groundwater remediation.

##### 4.5.3 Livestock Road Landfill (Permit 610)

The Livestock Road landfill is located at the old Campbell County landfill and operated by the Region 2000 Services Authority. Section 1.4 and **APPENDIX B** include significant information on activities at this landfill. Section 5.0 provides further detail and **APPENDIX J-6** includes the facility permit and site plan. Livestock Road Landfill has one phase left to construct.

In 2019, the Region reported 10.5 years remaining in the facility. The estimated life of this facility is into CY 2031 depending on operations, tonnage and waste materials.

#### 4.5.4 Appomattox County Landfill and Other Operations

Appomattox County began landfilling on the Permit 86 site on February 12, 1973. The site is approximately 240 acres in size and is located on State Route 632, east of the Town of Appomattox. The landfill consists of eight cells (Cells A - I), and an expansion area that includes Cells J and K. Cells A - I covered approximately 26 acres that have been closed and capped. This area of the landfill is entering into a 30-year post closure period.

The landfill permit was amended on March 31, 2011 to incorporate the lateral expansion for Cells J and K. The expansion area encompasses approximately 23 acres and provides 1.3M cubic yards of capacity as listed in the permit. At the time of permitting, the facility was estimated to have a life expectancy of 41 years considering Appomattox County tonnage only. The expansion Cells J and K have not been developed. This capacity is not regional capacity. The County could choose to develop this landfill on its own in the future as long as the permit is still available and in accordance with any restrictions under the Member Use Agreement with Region 2000.

Within the landfill property are three other operations that will remain in operation although the landfill is closed. The first operation is the Emanuel Tire Material Recovery Facility, proposed PBR 547, which processes tires to shred for use as an engineered product. This facility is privately owned and operated and receives tires from multiple locations and businesses from throughout Virginia, including the Region 2000 area. The permit by rule allows for the receipt of tires at an average rate of 150 tons per day and a maximum of 250 tons per day.

The second operation is the Appomattox County recycling facility, which is located within the County's original baling facility permitted as PBR No. 163 with DEQ. The original baling facility was used to bale municipal solid waste prior to placement in the landfill. With the closure of the landfill and the use of the regional landfills, the baling operation for waste is no longer necessary. The permit by rule for the baling facility has been rescinded. The County has retrofitted this operation and it is now being used to process recyclables including mixed paper, cardboard, and plastics.

The third operation which is being maintained within the landfill property is that of the wood waste grinding operation. Within the landfill property, the County will continue to stockpile wood waste, yard waste and brush generated within Appomattox County and to have it ground periodically for mulch.

#### 4.5.5 County Waste Appomattox Transfer Station

On January 2, 2020, a minor amendment to the Region's Solid Waste Management Plan was submitted to DEQ to incorporate a proposed County Waste of Southwest Virginia, LLC, Transfer Station to be located in Appomattox County, near the town of Concord. A copy of this minor amendment is included in **APPENDIX J-3**. County Waste of Southwest Virginia, LLC, received the conditional use permit for the facility from Appomattox County on February 19, 2019 and entered into a Host Agreement with the County on October 21, 2019. The facility will include a 12,800-square foot transfer station and a citizen convenience center as well as ancillary operations as approved by the County. The facility is being designed to handle 400 tons per day. The service area is defined as a 60-mile radius of Lynchburg, Virginia. Waste from the transfer station will be hauled to a permitted solid waste disposal facility.

#### 4.5.6 Life of Regionally Operated Landfills

The Region only operates one landfill at this time, the Permit 610, Livestock Road Landfill. In the 2019 SWIA report, the facility reported a remaining permitted capacity of 2,688,104 cubic yards.

#### 4.6 Additional Materials and Special Wastes

The Region 2000 landfill tracks its waste by SWIA category:

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

Only those facilities that treat, store or dispose of solid waste must complete Form 50-25 due to DEQ by March 31 of each year (9VAC 20-130-165.A). The members track the following materials under their recycling programs. These materials are listed under 9 VAC 20-130-150.3 as special wastes:

- Waste Tires
- Used Oil
- Used Oil Filters
- Used Anti-Freeze
- Abandoned Automobiles Removed
- Batteries

Septage is not accepted at the landfill and is not tracked by the localities under the solid waste programs. Spill residues, if meeting the allowable limits of the regulations, would be recorded as "Other" on Form 50-25. Information in Section 5.0 and Tables in **APPENDIX D** provide additional information.

#### 4.6.1 Waste Generated Outside of the Commonwealth

Virginia Waste Management Board's regulations for Solid Waste Management Planning 9 VAC 20-130-165 stipulate that the regional solid waste management plan identify and estimate the amount of waste generated outside of the Commonwealth and the jurisdictions where such waste originated. No waste from outside the Commonwealth is being disposed of in the Livestock Road – Permit 610 Landfill.

#### 4.7 Waste Stream Composition

In form DEQ 50-25, DEQ identifies 11 waste categories for tracking in addition to a category for other types of materials. See Section 4.2 above for discussion on waste stream composition. In addition, **APPENDIX F** includes the following tables relative to waste stream composition:

- Table F-1: Waste generation projections by SWIA categories (2020 – 2040) (based on total tonnage projections)
- Table F-2: Waste generation projections by generator type (2020 – 2040) (based on reported per capita generation)

## 5.0 EXISTING SOLID WASTE MANAGEMENT SYSTEM

Section 5.1 describes the major components of the Region's current solid waste management system based on discussions with the communities). Section 5.2 details the tons recycled in 2007 by material type and the individual communities recycling rates.

### 5.1 Existing System Components – Member Localities

Each member locality was asked to complete a questionnaire addressing their current solid waste management systems including the following categories:

- Original disposal site
- Current disposal site
- Collection of residential waste
- Collection of commercial waste
- Residential recycling
- Commercial recycling
- Yard Waste
- Bulky items – not white goods
- Bulky items – white goods

The results from the questionnaires were summarized into a table for each member locality. These summaries can be found in **APPENDIX J-1**.

### 5.2 Existing System Components – Regional Facilities

The Region 2000 Services Authority has responsibility for the following facilities and activities:

- Concord Turnpike – Permit 588 Landfill – Post closure care including monitoring and maintenance.
- Livestock Road – Permit 610 Landfill including the following infrastructure or operations (See **APPENDIX J-6** for the landfill permit and site plan:
  - Office and security gate
  - Scales and scale house
  - Internal drop off convenience center for small commercial or residential users to keep off the working face of the landfill
  - Operating landfill – Phase IV currently operating; Phase V to be constructed in next 5 years.
  - Maintenance Shop

- Active gas extraction system
  - Odor management system
  - Leachate holding tank and pump station/forcemain – leachate pumped into the CCUSA sewer system
  - Extensive road system
  - Litter control activities
  - Partial closure – maintenance
  - Environmental monitoring including groundwater, gas, and stormwater
- Reporting – the Region 2000 Services Authority files the following reports as required by regulations or member use agreement:
    - DEQ - SWIA form 50-25 – annually by March 31
    - DEQ - Recycling form \_\_\_\_ - annually by April 30
    - DEQ – Annual Groundwater monitoring reports
    - DEQ – Quarterly gas monitoring reports
    - DEQ – VPDES stormwater management reports
    - DEQ/ACOE – Wetland preservation reporting
    - DEQ – Financial assurance
    - DEQ – Operations manual certification
    - DEQ – SWMP – 5-year updates
    - Authority – agenda packages for bi-monthly meetings
    - Authority – annual budget
    - Authority – financial assurance
    - Authority – annual audit

#### 5.2.1 Materials Permitted for Acceptance at the Regional Landfill

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

- Agricultural waste
- Ashes and air pollution control residues that are not classified as hazardous waste. Incinerator and air pollution control residues should be incorporated into the working face and covered at such intervals as necessary to prevent them from becoming airborne
- Commercial waste

- Compost
- Construction waste
- Debris
- Demolition waste
- Discarded material
- Garbage
- Household waste
- Industrial waste meeting all criteria contained in the VSWM regulations
- Inert waste
- Institutional waste except anatomical waste from health care facilities or infectious waste as specified in Waste Management Board's Infectious Wastes Regulations (VR 672-40-01)
- Municipal solid waste
- Putrescible waste. Occasional animal carcasses may be disposed of within a sanitary landfill. Large number of animal carcasses shall be placed in a separate area within the disposal unit and provided with a cover of compacted soil or other suitable material
- Refuse
- Residential waste
- Rubbish
- Scrap metal
- Sludge. Water treatment plant sludge containing no free liquid and stabilized, digested or heat-treated wastewater treatment plant sludge containing no free liquid may be placed on the working face along with municipal solid wastes and covered with soil or municipal solid wastes. The quantities accepted should be determined by operational conditions encountered at the working face
- Trash
- White goods, provided that white goods are free of chlorofluorocarbons and PCBs prior to placement on the working face
- Non-regulated hazardous wastes and treated wastes rendered non-hazardous by specific approval only
- Specific wastes as approved by the DEQ
- Waste oil that has been adequately absorbed in the source of a site cleanup.
- Vegetative waste
- Yard waste

#### 5.2.2 Materials not Accepted at the Regional landfill

The following wastes are considered to be unauthorized wastes and **are prohibited** at the Regional Landfill under the Virginia Solid Waste Management Regulations;



- Free liquids
- Bulk or non-containerized liquid waste, unless:
  - The waste is household waste; or
  - The waste is leachate or gas condensate derived from that landfill and the facility is designed with a composite liner and leachate collection system.
  - Containers holding liquid waste, unless:
    - The container is a small container similar in size to that normally found in household waste;
    - The container is designed to hold liquids for use other than storage; or
    - The waste is household waste.
- Regulated hazardous wastes
- Solid wastes, residues or soils containing more than 1.0 ppb (parts per billion) of Dioxins
- Solid wastes, residues or soils containing more than 50.0 ppm (parts per million) of PCB's except as allowed under the provisions of 9 VAC 20-80-650
- Un-stabilized sewage sludge as defined by the Virginia Department of Health or sludges that have not been dewatered
- Pesticide containers that have not been triple rinsed and crushed
- Drums that are not empty, properly cleaned and opened
- Contaminated soil unless approved by the DEQ in accordance with the requirements of 9 VAC 20-81-660.
- Additional wastes not accepted by the landfills:
  - Friable Asbestos – defined as any waste material containing more than 1.0 percent asbestos as determined using the polarized light microscopy methods specified in 40 CFR Part 763, Appendix E, Subpart E, Section 1, that when dry, is capable of being crumbled, pulverized or reduced to powder by hand pressure.
  - Hazardous Waste - defined as a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical or infectious characteristics may:
    - cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness;
    - pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed;
    - have at least one of four characteristics: ignitability, corrosivity, reactivity and toxicity; or

- Hazardous wastes are regulated under the Virginia Department of Environmental Quality Hazardous Waste Management Regulations (9 VAC 20-60).

### 5.3 Regional Recycling Rates

The Virginia Waste Management Board's 2001 August 1, 2001 regulations for solid waste management planning (9VAC 20-130-40 and 9VAC 20-130-120) state that state, local government or a region must meet and maintain a minimum recycling rate of 25 percent.

However, in 2006 the Code of Virginia was amended to provide for a two-tiered recycling mandate for the Commonwealth's solid waste planning units (SWPU). All SWPUs are still required to meet the minimum recycling rate of 25 percent unless the population density is less than 100 persons per square mile, or if their civilian unemployment rate is 50 percent above the statewide average. If one or both of these criteria are met, a minimum recycling rate of 15 percent is mandated.

Region 2000 does not fall under these criteria. The population density for the four communities that comprise Region 2000 is approximately 114 persons per square mile.

The following table summarizes the reported recycling rates for 2012 through 2019:

**TABLE 10**  
**SUMMARY OF REGIONAL RECYCLING RATES**

<b>YEAR</b>	<b>RECYCLING RATE</b>
2012	31.3%
2013	38.9%
2014	41.5%
2015	40.1%
2016	35.7%
2017	40.1%
2018	38.0%
2019	

Table G-1 in **APPENDIX G** provides a summary by year of recyclable materials and the calculations. This appendix also includes the latest recycling report. As review of this table will indicate, the primary principal recycled material is paper followed by metal. The Region polls its member jurisdictions and major commercial entities for recycling information.

## **6.0 BUDGET**

Annually, Region 2000 develops budget capturing operations, capital improvements (e.g. cell construction, equipment) and reserve funds (closure and post closure care). Development of the budget is through multiple iterations of the development of a long range proforma for the Authority. This proforma is prepared by an independent outside consultant.

The budget is used to develop tipping fees which include a member use rate and a market rate. The latest budget is included in **APPENDIX H**. The budget is reviewed closely at every Authority meeting for conformance with the estimates.

Annually, the Authority reviews the financial assurance estimates for the two landfills, and provides each member with an estimate of their obligation. The Authority meets its financial assurance obligations through local government guarantees. Each member posts their financial assurance and once approved, the DEQ approves financial assurance for the Authority.

Annually, the Authority has an independent audit conducted.

## 7.0 HIERARCHY

### 7.1 Waste Management Hierarchy

Region 2000 and its member localities continue to examine various alternatives for the management of solid waste in Central Virginia. The Virginia Waste Management Board Regulations for Solid Waste Management Planning, Amendment 1, 9 VAC 20-130-10 et seq., requires the Plan to develop comprehensive and integrated solid waste management plans that consider, at a minimum, all components of the following hierarchy:

- Source Reduction;
- Reuse;
- Recycling;
- Resource recovery (Waste-to-Energy);
- Incineration; and
- Landfilling.

Elements higher in the hierarchy are more desirable, and tend to reduce the need for lower, less desirable, elements of the hierarchy. Therefore, when developing a solid waste management plan, preference should be given to those elements higher in the hierarchy.

The localities in the Region have developed and implemented an integrated solid waste management strategy. The Region will rely mainly on landfilling to meet their solid waste disposal needs and will continue to do so. Recycling and landfilling will play the major roles in the Region's integrated solid waste management plan with source reduction and reuse having smaller roles in the plan. Resource recovery and incineration are not currently considered viable options for the Region; however, each was initially considered and will be discussed in this section. The Region plans to continue and expand its programs to meet the future solid waste needs of the community.

In 2016, the Authority estimated that the Permit 610 Landfill would reach capacity by 2030. Given the complexity of regional solid waste planning and time frames associated with implementation, the Authority's Board determined that a strategic planning process should be initiated in FY 2017 to evaluate future disposal options with the goal of identifying the most effective option to be implemented in the future. The process included the identification of options and benefits criteria, fatal flaw analysis and development of cost and benefit information. At the same time, the work included development of a planning tool ("evaluation model") that compares the value of different solid waste management options relative to goals established collaboratively between the public, the Authority, and the working committee. The process began in August 2016 and was completed in May 2017.

The strategic planning process was extensive and included working groups from all member jurisdictions and included a focus group made up of residents or each member jurisdiction who were included in the review process. Multiple public meetings and presentations were made on this plan. **APPENDIX J-7** includes a number of these presentations for reference to specific determinations.

Key findings for the disposal options and recycling enhancements made in 2017 may be summarized as follows.

1. Expanding the existing Livestock Road Landfill is the most financially feasible option at \$30.71 per ton since the Authority already owns the land (adjacent to the current landfill) necessary for the expansion, and has previously constructed the basic infrastructure (e.g. office, scales, maintenance facility, leachate handling facilities), which reduce the capital expenses associated with this option. It should be noted that this analysis is based on a much smaller landfill footprint (compared to the special use permit application from 2014) with increased buffer areas between the active landfill and the neighboring properties.
2. The cost of the transfer station option is approximately twice the cost of the landfill option (approximately \$62 per ton for a transfer station versus approximately \$31 per ton for the landfill option), which is a function of hauling.
3. Waste to energy (WTE) is not financially feasible for the Authority given the high up-front capital and ongoing operating costs (approximately \$100 - \$135 per ton).
4. Mixed waste processing (MWP) has high up-front capital costs and ongoing operating costs. The estimated cost of \$47 - \$62 per ton is higher than the landfill option and about the same as the transfer station. However, it also introduces additional operating risks based on the fluctuation of commodity prices and risk of acceptance of recyclables, particularly fiber, recovered from the MWP facility that could be contaminated.
5. A stand-alone MRF may be financially viable, if additional private tonnage can be sourced and when commodity markets are strong. However, the Authority would have to assume the risk of fluctuating commodity markets. Utilizing a transfer station to haul recyclables to a regional MRF or utilizing a local recycling facility may be financially comparable to a stand-alone Authority MRF based on current commodity markets, without as much additional risk.
6. Utilizing a local recycling facility with the landfill option results in slightly higher per ton costs, on a weighted average basis, when compared to a landfill-only option (less than \$1 increase per ton). This analysis excludes additional collection costs for the member communities.
7. Incorporating recycling, whether local or regional, with a transfer station will slightly reduce the costs of the transfer station option. Burns & McDonnell estimated approximately a \$3 per ton cost reduction on a weighted average basis. This would reduce the transfer station cost from approximately \$62 per ton to approximately \$59 per ton. This analysis excludes additional collection costs for the member communities.

**APPENDIX J-7** includes the executive summary from the final report.

The Region continues to consider its options for the future which are dependent on the cooperation and collaboration of the member jurisdictions.

## 7.2 Source Reduction

Source reduction of the waste stream involves the alteration of a service, process, design or input material used for production and/or consumption of a good thus lessening the generation of the waste by-product.

The Virginia Solid Waste Planning Regulations (VR 672-50-01) define source reduction as *"any action that reduces or eliminates the generation of waste at the source, usually within a process. Source reduction measures include process modifications, feedstock substitutions, improvements in feedstock purity, improvements in housekeeping and management practices, increases in the efficiency of machinery and recycling within a process."*

Frequently, source reduction results in beneficial energy savings, and ideally, it decreases the generated quantity of both solid and hazardous waste. Source reduction can also be brought about through our free market system. The impact of consumer preferences for certain products or packaging can impact industries to change established procedures and also motivate local governments to impose restrictions on businesses.

Source reduction has commonly been thought of as industrial waste minimization, but due to the solid waste crisis has been incorporated in all areas from business to household. The reduction of business waste often comes with systems automation; i.e., use of fax machines, computers, e-mail, networking, and duplex copy machines, etc.

The reduction of the residential waste stream requires that citizens achieve greater awareness of disposal costs and the effect solid waste has on the environment. Public information offers educational benefits that help residents become aware of their throw-away mentality and its effect on costs and harm on the environment.

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

To increase citizen awareness of source reduction activities that can be implemented on an individual basis, the Region will consider the implementation of a public information program designed to increase source reduction activity as time and funding permits. The program, if implemented, will primarily consist of information on source reduction activities. The DEQ can be used as a resource for obtaining appropriate literature on source reduction activities and assistance in developing the program.

It should be noted that source reduction activities will remain under the control of each individual locality. Therefore, it is not anticipated that the Authority will develop source reduction strategies over the 20-year life of the plan.

### 7.3 Reuse

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

As with source reduction, private citizens can make an effort to reuse or encourage reuse of many items that would normally be discarded to the landfill. However, the focus of the program would be better aimed at the commercial sector including the Region businesses and industries.

The following activities are proposed under the 20-year life of plan relative to reuse, as interest and funding are available:

- Continue to educate the public relative to the need for reuse
- Gather data from existing reuse programs such as Goodwill or the Salvation Army
- Expansion of education to commercial sector to address reuse

### 7.4 Recycling

Recycling is defined by the Virginia regulations as *"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."*

Region 2000 and its member communities are operating a number of recycling programs, including curbside and convenience center drop of programs, yard waste composting, white goods collection, used clothing reuse and household hazardous waste collection programs. Data from these programs are provided to the Region for the annual report.

Regionalization has the potential to have a significant positive impact on recycling and waste diversion in the Region 2000 area by allowing more cost-effective implementation and operation of recyclable material collection and processing infrastructure. The existing recycling infrastructure within Region 2000 is limited, incurs costs that are difficult to justify to rate payers and does not have a significant impact on total waste disposed. Individual jurisdictions do not typically generate enough recyclable material to justify investment in collection and processing equipment required to aggregate and process quantities of material sufficient to take advantage of today's high market values.

With that said, the 2017 strategic plan considered a regional recycling system and concluded that at this time it was not cost effective. See **APPENDIX J-7** for additional information.

#### 7.4.1 Member Programs

Member programs are summarized in the tables included in **APPENDIX J-7**

#### 7.4.2 Household Hazardous Waste

The Region 2000 Services Authority conducts periodic (typically quarterly) household hazardous waste and electronic waste collection events. This service is free for residents of Appomattox, Campbell and Nelson Counties and the City of Lynchburg and also includes Amherst County and the Towns of Altavista and Brookneal. The event is held at the Concord Turnpike Convenience Center. The events and information on acceptable and non-acceptable materials is published on the Authority's website and advertised by its members individually.

#### 7.4.3 Maintaining a 25% Recycling Rate

Region 2000 must meet a 25% recycling rate. Section 5.3 provided a summary of their reported rates from 2012 through 2019. At no time has the Region failed to meet the goal.

The Authority plans on maintaining an overall recycling rate of 25 percent by:

- Continuing individual community recycling and diversion programs;
- Surveying residents and businesses on how to improve recycling programs;
- Presentation to schools and other community functions;
- Helping businesses start or advance recycling programs; and
- Continuing the local litter prevention commission.

#### 7.5 Resource Recovery (WTE) and Incineration

A resource recovery system, or a waste-to-energy system, is defined by Virginia's solid waste regulations as a solid waste management system that "provides for the collection, separation, recycling and recovery of energy or solid wastes, including disposal of non-recoverable waste residues." Incineration is defined as the controlled combustion of solid waste for disposal. It is different from resource recovery in that no usable product is generated from the combustion of the waste. The sole purpose of incineration is to burn the waste to reduce the quantity to be managed or disposed.

The two major types of resource recovery facilities are (1) the refuse derived fuel (RDF) facility and (2) the mass burn facility. RDF systems utilize a separation process that divides material that is combustible from material that is non-combustible. The non-combustible material may be collected and sold as a recyclable or reusable product. The combustible material is processed into pellets or fluff (RDF) and sold or used by the manufacturer as a fuel for combustion. Revenue results from the sale of both the noncombustible material, as well as the RDF itself.

Mass burn facilities do not utilize a separation process. All municipal solid waste is directly fed into the incinerator, which burns the waste at a high temperature. The resulting heat may be used to generate



steam or electricity. It should be noted the mass burn of municipal solid waste results in the production of both air emissions and ash. The air emissions are regulated by state and federal agencies. The ash must be landfilled as a waste. This being the case, the locality must still plan for the disposal of a waste product, although the amount of waste to be disposed will be greatly decreased.

In the 2017, strategic plan (See **APPENDIX J-7** for more information) a feasibility study for the Region to utilize waste-to-energy as their primary disposal mechanism was considered. The conclusion was that such a facility would not be cost effective. The analysis accounted for all costs and revenues that such a facility would incur.

## 7.6 Landfilling

The three Counties and the City of Lynchburg that comprise Region 2000 will rely on landfilling to meet the near-term disposal needs of its citizens. The existing Livestock Road Landfill has an estimated 10.5 years (per 2019 SWIA report) of capacity left and an estimated closure date of 2031. In the 2017 strategic plan landfilling was evaluated and found to be the most cost-effective disposal option and to have the best cost to benefit ratio at this time, if the existing landfill can be expanded. Expansion of the existing landfill would require a special use permit from Campbell County which has not found granting such a permit a favorable outcome at this time.

Thus, the Region must continue with its strategic planning process to assure adequate capacity over the 20-year planning period. Of interest to the current discussion is the presence of County Waste of Southwest Virginia, LLC who is permitting a transfer station in Appomattox County and the potential construction of a new greenfield landfill in Cumberland County. The presence of County Waste and the potential for the new landfill will play into future planning efforts.

## 7.7 Continued Strategic Planning Efforts

Region 2000 will continue to consider its options over the next 5 years to determine the direction it will take in the future as the landfill reaches capacity.

## 7.8 Storage and Treatment

Based on the definition included in the Solid Waste Management Regulations, the City does not currently treat or store municipal solid waste. It is not anticipated that this will develop over the next 20-year life of the plan.

## 7.9 Public/Private Partnerships

The Authority seeks to support all activities relative to reuse, reduction and recycling. However, at this time, it does not have any contracted partnerships with the private sector. It is not anticipated that the Authority will initiate any new contracted partnerships with the private section over the 20-year life of the plan.

## 8.0 GOALS AND OBJECTIVES OF PROGRAM

The establishment of the Region has enhanced opportunities for other regional solid waste functions such as solid waste management planning, achievement of recycling goals, collection and disposal of household hazardous waste and more efficient collection and convenience center operations.

The following section outlines the goals and objectives for the Region over the planning period.

The members of the Services Authority have developed and adopted this Plan for the following reasons:

- Cost savings to local governments and customers from consolidating landfill operations.
- Provision of the efficient and economical disposal of the solid waste.
- Provision of a reliable and long-term source of disposal for the four communities.
- Protection of the health, safety and welfare of their citizens by providing and planning for their present and future solid waste disposal needs.
- Promotion of recycling activities and make a substantial effort to comply with State mandated recycling rate of 25 percent.
- Development of a future integrated approach for the handling and disposal of solid waste.
- Effective and efficient use of limited natural resources.
- Protection of the environment from the mismanagement of solid waste.
- Compliance with State Regulations 9 VAC 20-130-10 et seq.
- Efficient landfill operations due to increased economies of scale.

Sections 8.1 through 8.5 provide milestones for plan implementation for collection, disposal, recycling, public awareness and litter control over the 20-year life of the plan. Tables summarizing details on the goals, action items and milestones are included in **APPENDIX I**. These are similar to those provided in the 2015 major amendment.

### 8.1 Collections

Collection will remain with the member jurisdictions. The Region will seek ways to better coordinate with its members. **APPENDIX I** provides goals, action items, schedule and costs.

### 8.2 Disposal

Disposal consists of the operation of the one Regional landfill – Permit 610. This facility has as an estimated 10.5 years of capacity remaining (per 2019 SWIA). **APPENDIX I** provides goals, action items, schedule and costs.

### 8.3 Recycling

Regional recycling efforts are discussed in Section 7.4. **APPENDIX I** provides goals, action items, schedule and costs.

## 8.4 Public Awareness

Region 2000 will strive to increase the public's perception of waste management and recycling goals throughout the Region. **APPENDIX I** lists three such goals that will be further developed and monitored by the Regional Recycling Program Manager over the 20-year life of the plan.

## 8.5 Litter Control

The four communities that comprise Region 2000 will continue to support existing litter control and collection programs. While these litter control programs are expected to continue, it is not anticipated that they will be expanded over the 20-year life of the plan. An overview of the existing litter control programs for the four communities and the Region as a whole is provided in this section. Note that part of the responsibilities of the Region is to oversee any litter control or remediation programs.

### 8.5.1 Appomattox County

Appomattox County employs two full time personnel to clean and maintain the citizen convenient centers on a daily basis. The County also responds to any citizen complaint regarding overflowing dumpsters littering the surrounding area. There is an Adopt-a-Highway program that is financed by individual entities within the County. In addition, the Virginia Department of Transportation has inmates from Campbell County pick up litter along the roads of Appomattox County. The County also mandates that all county trucks cover their loads/beds to reduce the amount of debris exiting the trucks while transporting.

### 8.5.2 Campbell County

Campbell County retains a Litter and Environmental Commission, which speak at Ruritan Clubs and other civic groups about solid waste disposal and recycling issues. In addition, County personnel speak to students at local schools twice a year to educate them on the importance of proper solid waste disposal and recycling. New programs and changes in existing programs are advertised and announced in local and regional newspapers, as well as often announced through radio and television.

The Town of Altavista also has a new government information channel that announces the times and dates of household waste and recycling collections, as well as what materials are collected for recycling.

### 8.5.3 Nelson County

The County employs a part-time recycling coordinator as a means of enhancing and improving this program. Trash cans help reduce litter in Lovingston, a major volunteer road cleanup is held every spring, and a major James River cleanup is held in the fall. The County is exploring a wood chipping operation at the transfer station to reduce the quantity of wood disposal.

Outreach programs in most localities generally include descriptions of waste management services available to residents on the website, in the annual county services brochure, postings at the courthouse and County Office building, and in ads and articles for special events (waste amnesty days, Christmas tree collection, etc.) in local newspapers. In the RSWA service area, outreach also includes website, public

forums, flyers at the recycling center, radio advertisements, and inserts in local newspapers. General public service announcements on radio and television also help educate the public. Adopt-a-Street programs and highway signs promote litter control.

Public participation in solid waste management and planning occurs at advertised meetings of public bodies that discuss and act on the issues. In addition, Nelson County has a "Keep Nelson Beautiful" program that promotes recycling and waste reduction as well as periodic clean-up days.

#### 8.5.4 City of Lynchburg

The City has an extensive litter control program. This program includes coordinating the clean-up of litter with approximately 70 volunteer groups within the City. The City conducts a "March on Litter" campaign where City residents organize on the second Saturday of March to collect litter. In 2006, 150 participants collected eight tons of trash and litter. In addition, the City currently has an environmental education program for providing information to the public. The program has been designed to focus on basic environmental awareness issues, recycling, litter control and pollution prevention education. The goal of the program is to educate the community through special promotional programs and organized community environmental events. This program will continue to be expanded as interest and funding allow.

#### 8.5.5 Region 2000

As shown in **APPENDIX I**, Region 2000 will continue to promote their existing litter control and prevention programs and expand as resources and interests allow.

## **9.0 IMPLEMENTATION SCHEDULE**

The implementation schedule for the Region's waste management program has been summarized in the Tables provided in **APPENDIX I** reflecting Sections 8.1 through 8.5 above. The majority of the planned expenditures over the 20-year planning period will be associated with:

- The replacement of existing equipment;
- Strategic planning;
- The closure and maintenance of the landfills; and
- Post closure care.

Implementation will remain a function of interest, markets and funding which may fluctuate over the 20-year planning period.

## **10.0 RESOLUTIONS**

### 10.1 Previous Approvals

**APPENDIX J-3** (Previous SWMP Documentation) and **APPENDIX B** (Region 2000 Chronology) include previous approvals and Board actions relative to this plan.

### 10.2 Current Plan Approval

The current plan is an update and does not represent a major amendment. Hence, formal resolutions and action is not required. The Authority was provided with the plan for review and comment and it was approved at their            meeting.

## **11.0 FUNDING AND FINANCING**

This section provides an overview of the funding mechanisms and financing methods that the Services Authority will implement to ensure the financial integrity of the Authority.

### **11.1 Funding Mechanism**

The Authority will be funded through tipping fees from the member communities and commercial customers. The projected per ton tipping fees are developed based on the projected quantity of material that will be landfilled during the fiscal year. The Authority has the expectation that it will recover all of its expenses through its tipping fees. However, to the extent that there is a revenue shortfall, the Member Use Agreement for the Authority does include provisions that require each member jurisdictions to pay for its Pro Rata Share of the deficit. Each such Member Jurisdiction shall have a "moral obligation" to appropriate its Pro Rata Share of such Annual Deficit.

### **11.2 Financing**

The Authority will have a need to issue debt to fund various capital expenses, including the next (and final) Phase V landfill cell. They have historically issued debt and have a high rating with lending institutions. The annual independent audit reviews debt proceeds and usage.

## **12.0 PUBLIC PARTICIPATION**

### **12.1 Public Meetings**

The Authority meetings are open to the public and the public is provided time for comment.

### **12.2 Public Outreach**

Over the previous 5-year period, there has been significant public outreach through the strategic planning process. Presentation materials are provided in **APPENDIX J-7** and the chronology in **APPENDIX B** provides time frames.

In addition, the Authority maintains a website with meeting agendas, key reports and other information of interest to the public.



### 13.0 RECORD KEEPING

The Authority is responsible for the following reporting:

- DEQ - SWIA form 50-25 – annually by March 31
- DEQ - Recycling form 50-30 - annually by April 30
- DEQ – Annual Groundwater monitoring reports
- DEQ – Quarterly gas monitoring reports
- DEQ – VPDES stormwater management reports
- DEQ/ACOE – Wetland preservation reporting
- DEQ – Financial assurance
- DEQ – Operations manual certification
- DEQ – SWMP – 5-year updates
- DEQ – Permitting and compliance
- Authority – agenda packages for bi-monthly meetings
- Authority – annual budget
- Authority – financial assurance
- Authority – annual audit

These reports, updates, and DEQ submittals as well as the background information are kept in the central archive (files) of the regional solid waste program located at the Livestock Road Landfill offices at 361 Livestock Road, Rustburg, VA 24588. The Director of DEQ receives copies of the appropriate information through the following sources:

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

#### 13.1 Documentation of all Known Solid Waste Disposal Sites

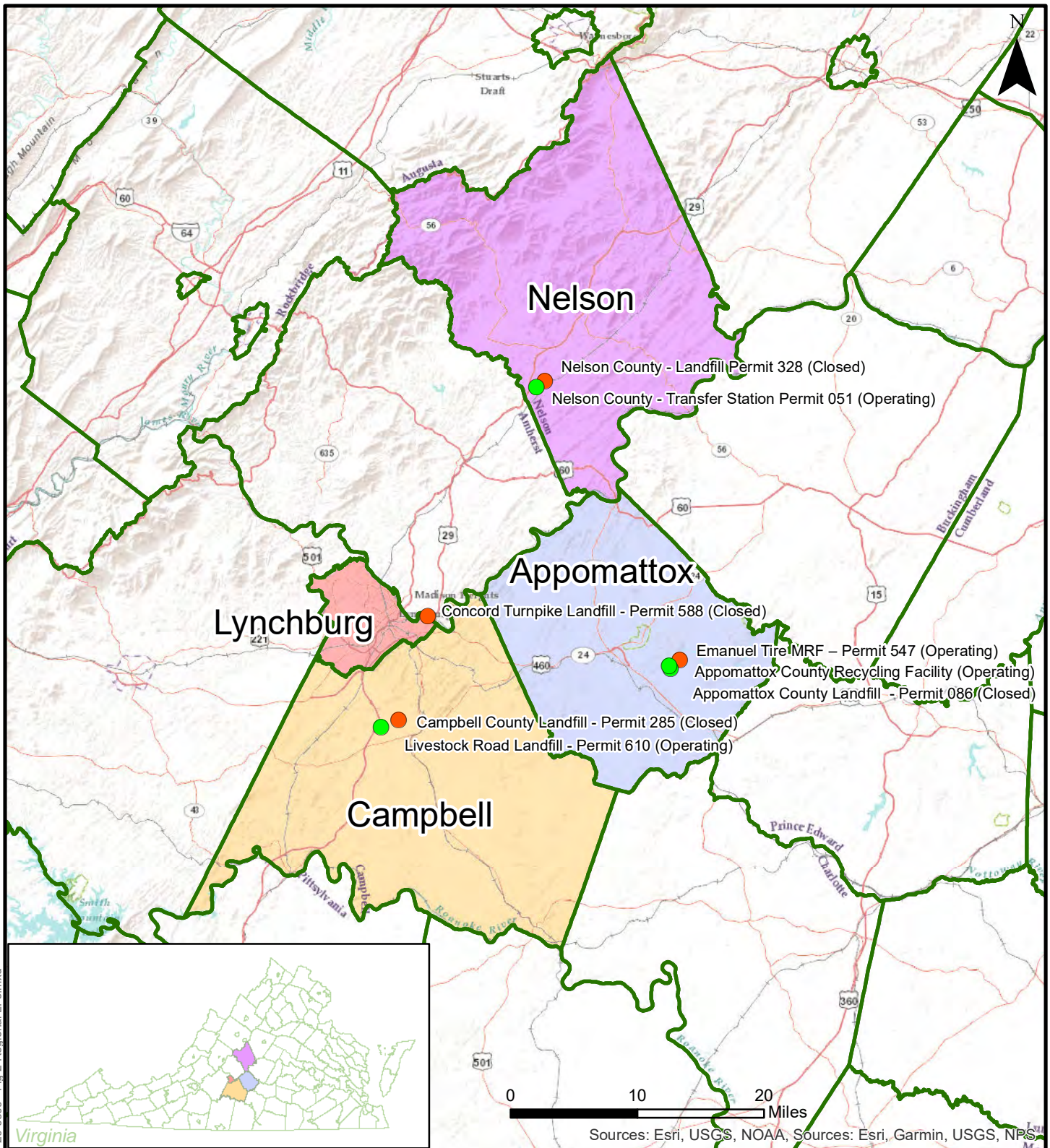
Appendix J-8 includes a listing of all known solid waste disposal sites. Figure 2 in **APPENDIX A** indicates primary solid waste facilities in the Region.

## **APPENDIX A**

### **FIGURES**







**Solid Waste Facilities  
Region 2000 Planning Region  
2020 Update**

SCALE to fit

PLAN NO. B09107-130



**Draper Aden Associates**

Engineering • Surveying • Environmental Services

2206 South Main Street  
Blacksburg, VA 24060  
540-552-0444 Fax: 540-552-0291

Richmond, VA  
Charlottesville, VA  
Hampton Roads, VA

Raleigh, NC  
Fayetteville, NC  
Northern Virginia  
Virginia Beach, VA

DESIGNED MF  
DRAWN MF  
CHECKED LK  
DATE 03-09-20

**FIGURE**

**2**

**APPENDIX B**  
**CHRONOLOGY**

# **REGION 2000 PLANNING REGION CHRONOLOGY OF ACTIVITIES REGION 2000 SERVICES AUTHORITY**

## **MEMBERSHIP AND REGIONAL DESIGNATIONS**

- December 28, 2007 – Region 2000 Services Authority established.
- January 31, 2008 – Use Agreement becomes effective
- June 20, 2008 – First amendment to member use agreement effective
- \_\_\_\_\_ - Second amendment to member use agreement effective
- October 4, 2007 – Authority petitions VDEQ for designation as solid waste planning unit.
- June 17, 2008 – VDEQ approves petition.
- June 9, 2009 – Authority petitions VDEQ for boundary amendment
- June 15, 2009 – VDEQ approves petition
- April 29, 2010 – VDEQ approves Regional Solid Waste Management Plan
- July 23, 2013 – Authority and members reach agreement to allow City of Bedford/Town of Bedford to withdraw from Authority.
- July 11, 2014 – SCC approves withdrawal of Bedford from Authority
- May 26, 2015 – Authority notifies VDEQ of boundary modification
- August 24, 2015 – VDEQ approves boundary modification through approval of SWMP major amendment
- August 24, 2015 – VDEQ approves 5-year update and major amendment to solid waste management plan

## **FACILITY OPERATIONS, PERMITTING AND CONSTRUCTION**

- July 1, 2008 to July 12, 2014 - Concord Turnpike Landfill – Operations at landfill; Livestock Road Landfill “mothballed.”
- 2009 - 2010 - Livestock Road Landfill - Completed an interim cover
- April 5, 2012 – Livestock Road Landfill - CTO issued by VDEQ for construction of Cells 6/7 – Phase III; Counts and Dobyns contractor.

## **REGION 2000 PLANNING REGION CHRONOLOGY OF ACTIVITIES REGION 2000 SERVICES AUTHORITY**

- August 15, 2017 – Concord Turnpike Landfill - Final Certification of Closure issued by VDEQ. Thirty-year post closure period began on March 21, 2017. Counts and Dobyns contractor.
- July 9, 2012 – Livestock Road Landfill – Operations initiated at landfill
- October 26, 2015 – Livestock Road Landfill - VDEQ approves permit modification for lateral expansion.
- April 17, 2017 – Livestock Road Landfill - VDEQ issues CTO for Phase IV; Sargent Corporation contractor.
- August 22, 2017 – Livestock Road Landfill - Began operation in Phase IV
- October 15, 2019 – Livestock Road Landfill – Phase III – Partial Closure – Substantial completion issued; Counts and Dobyns contractor.

### **STRATEGIC PLANNING – SINCE 2015 SWMP**

- 2016 to 2017 - Authority initiates major strategic planning effort to consider alternatives once existing capacity of Livestock Road Landfill is reached.
- September 14, 2016 – Information meeting held.
- September 28, 2016 – Focus group meeting held
- January 25, 2017 – Board presentation of Tasks 1 and 2 – Ranking system and alternative determination
- February 2017 – Tasks 3 and 4 initiated (Benefits analysis)
- May 10, 2017 – Focus group meeting to review findings of Tasks 3 and 4
- May 24, 2017 – Authority Board presentation of Tasks 3 and 4 – Benefits analysis.

**APPENDIX C**  
**POPULATION DATA**



**TABLE C-1****REGION 2000 SERVICES AUTHORITY****POPULATION PROJECTIONS****2010 THROUGH 2040**

Population data for 2010 is census data

2019 Weldon Cooper Estimate

Projections for 2020, 2030 and 2040 taken from Weldon Cooper website.

YEAR	LYNCHBURG	CAMPBELL COUNTY	APPOMATTOX COUNTY	NELSON COUNTY	REGIONAL TOTAL	ESTIMATED ANNUAL REGIONAL CHANGE
2010	75,568	54,842	14,973	15,020	160,403	
2011	76,090	54,906	15,058	14,997	161,050	0.40%
2012	76,611	54,970	15,142	14,975	161,697	0.40%
2013	77,133	55,033	15,227	14,952	162,345	0.40%
2014	77,654	55,097	15,311	14,930	162,992	0.40%
2015	78,176	55,161	15,396	14,907	163,639	0.40%
2016	78,697	55,225	15,480	14,884	164,286	0.39%
2017	79,219	55,289	15,565	14,862	164,933	0.39%
2018	79,740	55,352	15,649	14,839	165,581	0.39%
2019*	80,783	55,480	15,818	14,794	166,875	0.78%
2020*	82,791	55,665	15,866	14,828	169,150	1.34%
2021	83,565	55,831	15,954	14,830	170,179	0.60%
2022	84,338	55,997	16,041	14,832	171,209	0.60%
2023	85,112	56,163	16,129	14,835	172,238	0.60%
2024	85,885	56,329	16,216	14,837	173,267	0.59%
2025	86,659	56,495	16,304	14,839	174,297	0.59%
2026	87,432	56,661	16,392	14,841	175,326	0.59%
2027	88,206	56,827	16,479	14,843	176,355	0.58%
2028	88,979	56,993	16,567	14,846	177,384	0.58%
2029	89,753	57,159	16,654	14,848	178,414	0.58%
2030*	90,526	57,325	16,742	14,850	179,443	0.57%
2031	91,169	57,417	16,807	14,834	180,226	0.43%
2032	91,812	57,508	16,872	14,818	181,009	0.43%
2033	92,455	57,600	16,937	14,801	181,793	0.43%
2034	93,098	57,691	17,002	14,785	182,576	0.43%
2035	93,741	57,783	17,067	14,769	183,359	0.43%
2036	94,384	57,874	17,131	14,753	184,142	0.43%
2037	95,027	57,966	17,196	14,737	184,925	0.42%
2038	95,670	58,057	17,261	14,720	185,709	0.42%
2039	96,313	58,149	17,326	14,704	186,492	0.42%
2040*	96,956	58,240	17,391	14,688	187,275	0.42%
Planning period - Growth rate (%)	17.1%	4.6%	9.6%	-0.9%	10.7%	

## **APPENDIX D**

### **HISTORIC TONNAGE AND 2019 SWIA FORM**

**TABLE D-1**  
**REGION 2000 SERVICES AUTHORITY**  
**TONNAGE BY CATAGORIES REPORTED - SWIA FORMS**  
**2014 THROUGH 2019**

LRLF	LANDFILLED										
Permit 610	MSW	CDD	INDUSTRIAL WASTE	VEGETATIVE - YARD WASTE	INCINERATOR ASH	SLUDGE	TIRES	WHITE GOODS	PETROLEUM CONTAMINATED SOIL	OTHER	TOTAL
2014	140,153	10,952	24,839	83	0	20,420	0	0	0	151	196,597
2015	158,021	8,708	20,349	83	0	18,196	0	0	0	0	205,357
2016	159,062	16,349	8,417	254	0	13,590	0	0	0	0	197,672
2017	151,594	11,061	8,355	34	0	16,505	0	0	0	0	187,550
2018	153,742	17,999	9,576	117	0	16,208	0	0	0	0	197,641
2019	151,093	15,220	9,887	0	449	16,333	0	0	129	0	
AVG	152,278	13,381	13,570	95	75	16,875	0	0	22	25	196,963
% TOTAL	77.3%	6.8%	6.9%	0.0%	0.0%	8.6%	0.0%	0.0%	0.0%	0.0%	100.0%
LRLF	RECYCLED (OFF-SITE)										
Permit 610	MSW	CDD	INDUSTRIAL WASTE	VEGETATIVE - YARD WASTE	INCINERATOR ASH	SLUDGE	TIRES	WHITE GOODS	PETROLEUM CONTAMINATED SOIL	OTHER	TOTAL
2014	0	0	0	0	0	0	49	12	0	0	61
2015	0	0	0	796	0	0	12	7	0	0	815
2016	0	0	0	276	0	0	26	11	0	0	313
2017	0	0	0	0	0	0	38	10	0	0	48
2018	0	0	0	0	0	0	60	17	0	0	77
2019	0	0	0	1,109	0	0	16	12	0	0	1,137
AVG	0	0	0	363	0	0	33	12	0	0	408
% TOTAL	0.0%	0.0%	0.0%	89.0%	0.0%	0.0%	8.2%	2.8%	0.0%	0.0%	100.0%
LRLF	OTHER										
Permit 610	MSW	CDD	INDUSTRIAL WASTE	VEGETATIVE - YARD WASTE	INCINERATOR ASH	SLUDGE	TIRES	WHITE GOODS	PETROLEUM CONTAMINATED SOIL	OTHER	TOTAL
2014	0	0	6,799	0	0	0	0	0	0	6,917	13,716
2015	0	0	3,294	0	0	0	0	0	0	8,270	11,563
2016	0	0	0	0	0	0	0	0	0	10,034	10,034
2017	0	0	879	0	0	0	0	0	0	6,411	7,291
2018	0	0	0	0	0	0	0	0	0	7,769	7,769
2019	0	0	0	0	0	0	0	0	0	7,816	7,816
AVG	0	0	1,829	0	0	0	0	0	0	7,869	9,698
% TOTAL	0.0%	0.0%	18.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	81.1%	100.0%

**APPENDIX E**  
**PROJECTED TONNAGES**

<b>TABLE E-1</b>							
<b>REGION 2000 SERVICES AUTHORITY</b>							
<b>TONNAGE PROJECTIONS - SWMP estimates only</b>							
<b>2020 THROUGH 2040</b>							
FY 2014 through FY 2019 is actual data as reported by Region 2000 Services Authority							
Growth factor	1.0025	(From previous RW Beck planning)					
<b>FISCAL YEAR</b>	<b>LYNCHBURG</b>	<b>CAMPBELL COUNTY</b>	<b>APPOMATTOX COUNTY</b>	<b>NELSON COUNTY</b>	<b>CITY OF BEDFORD</b>	<b>REGIONAL TOTAL</b>	<b>ESTIMATED ANNUAL REGIONAL CHANGE</b>
<b>TONNAGES FROM 2014 - 2019 FROM FINANCIAL ASSURANCE INFORMATION</b>							
2014	150,894	36,431	5,847	9,759	1	202,932	
2015	158,364	37,300	5,554	9,461	6	210,685	
2016	144,446	41,622	7,569	9,832	15	203,485	
2017	137,817	37,533	5,663	10,152	6	191,171	
2018	145,917	30,146	6,136	10,107	0	192,306	
2019	152,604	26,636	6,278	10,387	7	195,912	
AVERAGE	148,340	34,945	6,175	9,950	6	199,415	
<b>% tonnage by locality</b>	<b>74.4%</b>	<b>17.5%</b>	<b>3.1%</b>	<b>5.0%</b>	<b>0.0%</b>		
<b>Average annual tonnage from 2014 - 2019 (see above); used for FY 2020</b>						<b>199,415</b>	
2020	148,340	34,945	6,175	9,950	6	199,415	1.76%
2021	148,711	35,032	6,190	9,975	6	199,914	0.25%
2022	149,083	35,120	6,205	9,999	6	200,413	0.25%
2023	149,456	35,207	6,221	10,024	6	200,914	0.25%
2024	149,829	35,295	6,237	10,050	6	201,417	0.25%
2025	150,204	35,384	6,252	10,075	6	201,920	0.25%
2026	150,579	35,472	6,268	10,100	6	202,425	0.25%
2027	150,956	35,561	6,283	10,125	6	202,931	0.25%
2028	151,333	35,650	6,299	10,150	6	203,438	0.25%
2029	151,712	35,739	6,315	10,176	6	203,947	0.25%
2030	152,091	35,828	6,331	10,201	6	204,457	0.25%
2031	152,471	35,918	6,346	10,227	6	204,968	0.25%
2032	152,852	36,008	6,362	10,252	6	205,480	0.25%
2033	153,234	36,098	6,378	10,278	6	205,994	0.25%
2034	153,618	36,188	6,394	10,304	6	206,509	0.25%
2035	154,002	36,278	6,410	10,329	6	207,025	0.25%
2036	154,387	36,369	6,426	10,355	6	207,543	0.25%
2037	154,773	36,460	6,442	10,381	6	208,062	0.25%
2038	155,159	36,551	6,458	10,407	6	208,582	0.25%
2039	155,547	36,642	6,475	10,433	6	209,103	0.25%
2040	155,936	36,734	6,491	10,459	6	209,626	0.25%

**TABLE E-2**  
**REGION 2000 SERVICES AUTHORITY**  
**PER CAPITA WASTE GENERATION**  
**2014 THROUGH 2040**

FY 2014 through FY 2019 is actual data as reported by  
Region 2000 Services Authority

Population projections from Table xx

Tonnage projections from Table xx

<b>FISCAL YEAR</b>	<b>REGIONAL TONNAGE</b>	<b>POPULATION</b>	<b>LBS/PERSON/D AY</b>
2014	202,932	162,992	6.82
2015	210,685	163,639	7.05
2016	203,485	164,286	6.79
2017	191,171	164,933	6.35
2018	192,306	165,581	6.36
2019	195,912	166,875	6.43
2020	199,415	169,150	6.46
2021	199,914	170,179	6.44
2022	200,413	171,209	6.41
2023	200,914	172,238	6.39
2024	201,417	173,267	6.37
2025	201,920	174,297	6.35
2026	202,425	175,326	6.33
2027	202,931	176,355	6.31
2028	203,438	177,384	6.28
2029	203,947	178,414	6.26
2030	204,457	179,443	6.24
2031	204,968	180,226	6.23
2032	205,480	181,009	6.22
2033	205,994	181,793	6.21
2034	206,509	182,576	6.20
2035	207,025	183,359	6.19
2036	207,543	184,142	6.18
2037	208,062	184,925	6.16
2038	208,582	185,709	6.15
2039	209,103	186,492	6.14
2040	209,626	187,275	6.13

**TABLE E-3****REGION 2000 SERVICES AUTHORITY****TONNAGE PROJECTIONS COMPARISON****2020 PROJECTIONS AND 2014 PROJECTIONS**

	2020 PROJECTION			2014 PROJECTION			
FISCAL YEAR	REGIONAL TONS	POPULATION	LBS/PERSON/DAY	REGIONAL TONS	POPULATION	LBS/PERSON/DAY	% CHANGE
2014	202,932	162,992	6.8	209,818	164,106	7.0	-3%
2015	210,685	163,639	7.1	227,531	164,919	7.6	-7%
2016	203,485	164,286	6.8	228,100	165,732	7.5	-11%
2017	191,171	164,933	6.4	228,670	166,545	7.5	-18%
2018	192,306	165,581	6.4	229,242	167,358	7.5	-18%
2019	195,912	166,875	6.4	229,815	168,171	7.5	-16%
2020	199,415	169,150	6.5	230,389	168,987	7.5	-16%
2021	199,914	170,179	6.4	230,965	169,677	7.5	-16%
2022	200,413	171,209	6.4	231,543	170,367	7.4	-16%
2023	200,914	172,238	6.4	232,122	171,057	7.4	-16%
2024	201,417	173,267	6.4	232,702	171,747	7.4	-17%
2025	201,920	174,297	6.3	233,284	172,437	7.4	-17%
2026	202,425	175,326	6.3	233,867	173,127	7.4	-17%
2027	202,931	176,355	6.3	234,452	173,817	7.4	-17%
2028	203,438	177,384	6.3	235,038	174,507	7.4	-17%
2029	203,947	178,414	6.3	235,625	175,197	7.4	-18%
2030	204,457	179,443	6.2	236,214	175,894	7.4	-18%
2031	204,968	180,226	6.2	236,805	176,518	7.4	-18%
2032	205,480	181,009	6.2	237,397	177,142	7.3	-18%
2033	205,994	181,793	6.2	237,990	177,766	7.3	-18%
2034	206,509	182,576	6.2	238,585	178,390	7.3	-18%
2035	207,025	183,359	6.2	239,182	179,014	7.3	-18%
2036	207,543	184,142	6.2				
2037	208,062	184,925	6.2				
2038	208,582	185,709	6.2				
2039	209,103	186,492	6.1				
2040	209,626	187,275	6.1				

**APPENDIX F**

**THEORETICAL GENERATION BY CATEGORY**



**TABLE F-1**  
**REGION 2000 SERVICES AUTHORITY**  
**WASTE TONNAGE PROJECTIONS**  
**BY MATERIAL TYPE AS REPORTED AT LANDFILL**  
**% MATERIAL TYPE AVERAGE OF SWIA REPORTING 2014 - 2019**

FISCAL YEAR	REGIONAL TONNAGE	MSW	CDD	INDUSTRIAL WASTE	SLUDGE
<b>Material %</b>		77.3%	6.8%	6.9%	9.6%
2020	199,415	154,148	13,560	13,760	19,144
2021	199,914	154,533	13,594	13,794	19,192
2022	200,413	154,920	13,628	13,829	19,240
2023	200,914	155,307	13,662	13,863	19,288
2024	201,417	155,695	13,696	13,898	19,336
2025	201,920	156,084	13,731	13,932	19,384
2026	202,425	156,475	13,765	13,967	19,433
2027	202,931	156,866	13,799	14,002	19,481
2028	203,438	157,258	13,834	14,037	19,530
2029	203,947	157,651	13,868	14,072	19,579
2030	204,457	158,045	13,903	14,108	19,628
2031	204,968	158,440	13,938	14,143	19,677
2032	205,480	158,836	13,973	14,178	19,726
2033	205,994	159,234	14,008	14,214	19,775
2034	206,509	159,632	14,043	14,249	19,825
2035	207,025	160,031	14,078	14,285	19,874
2036	207,543	160,431	14,113	14,320	19,924
2037	208,062	160,832	14,148	14,356	19,974
2038	208,582	161,234	14,184	14,392	20,024
2039	209,103	161,637	14,219	14,428	20,074
2040	209,626	162,041	14,255	14,464	20,124

<b>TABLE F-2</b>							
<b>WASTE GENERATION PROJECTIONS BY CATEGORY</b>							
<b>REGIONAL - Combined City of Lynchburg, Appomattox County, Campbell County, Nelson County</b>							
<b>SOLID WASTE MANAGEMENT PLAN</b>							
			2010	2015	2020	2030	2040
Population Projections (from SWMP)			160,404	164,919	169,150	179,443	187,275
Registered Vehicles - estimated	162,200						
	<b>2010</b>	<b>2010</b>					
<b>WASTE CATEGORY (1)(2)</b>	<b>Estimated Tonnage</b>	<b>Pounds/person /day</b>	<b>2010 tons</b>	<b>2015 tons</b>	<b>2020 tons</b>	<b>2030 tons</b>	<b>2040 tons</b>
MSW - Residential (65% of per capita generation)	93,969	3.21	93,969	96,614	99,092	105,122	109,710
MSW - Commercial (35% of per capita generation)	50,351	1.72	50,351	51,768	53,096	56,327	58,786
Vegetative yard waste	675	0.02	675	694	712	755	788
Industrial	32,767	1.12	32,767	33,689	34,554	36,656	38,256
Sludge	21,011	0.72	21,011	21,602	22,157	23,505	24,531
Subtotal	198,772	6.79	198,772	204,367	209,611	222,366	232,071
<b>SPECIAL WASTES (3)</b>							
Regulated medical waste (RMW)		0.02	498	512	525	557	581
Household Hazardous waste (HHW)		0.02	615	632	648	688	718
CDD as estimated by EPA		2.80	81,966	84,274	86,436	91,695	95,698
Construction waste	51% of CDD	1.42	41,569	42,739	43,835	46,503	48,532
Demolition waste	47% CDD	1.32	38,524	39,609	40,625	43,097	44,978
Landclearing debris	1.7% of CDD	0.05	1,393	1,433	1,469	1,559	1,627
Stumps	0.3% of CDD	0.09	2,705	2,781	2,852	3,026	3,158
Motor vehicle tires	1 tire per year per person @ 20 pounds per tire	0.05	1,604	1,649	1,692	1,794	1,873
Waste Oil	3.56 gallons per vehicle per year @ 7.4 lb/gallon	0.07	2,136	2,197	2,253	2,390	2,494
Antifreeze	1.8 gallons per vehicle every 4 years @ 8.4 lb/gallon	0.01	307	315	323	343	358
Batteries	0.04 lb/per/day	0.04	1,171	1,204	1,235	1,310	1,367
White goods	0.07 lb/per/day	0.07	2,049	2,107	2,161	2,292	2,392
Subtotal		3.09	90,346	92,889	95,272	101,070	105,481
<b>TOTAL</b>		<b>9.88</b>	<b>289,119</b>	<b>297,257</b>	<b>304,883</b>	<b>323,435</b>	<b>337,552</b>
<b>NOTES</b>							
1. Waste tonnage for MSW and yard waste taken from EPA, report entitled, Municipal Solid Waste Generation, Recycling and Disposal in the United States Facts and Figures 2003. Note: MSW was estimated to be 4.5 pounds per person per day which would include 12% yard trimmings.							
Thus, MSW taken at 4 pounds per person per day and yard trimmings at 0.5 pounds per person per day.							
Residential determined using EPA estimate that residential waste is approximately 55-65% of the MSW wastestream.							
Commercial determined using EPA estimate that commercial waste is approximately 35-45% of the MSW wastestream.							
However, values above calculated from 2013 SWIA MSW divided by 65% and 35%.							
2. Waste tonnage for vegetative waste, industrial waste and sludge are based on 2013 SWIA form. (All assigned to Lynchburg.)							
3. Special wastes per capita values taken from a number of sources as follows:							
RMW - Virginia average total tons/population for 1999 - 2002							
HHW - From www.cdphe.state.co.us/hm/hhw/hhw/asp							
CDD - From EPA, Franklin & Associates, "Characterization of Building Related Construction and Demolition Debris in the United States, June 1998.							
From Florida Center for Solid and Hazardous Waste Management, "Generation and Composition of Construction and Demolition Debris in Florida,"							
Report #03-08, February 27, 2003							
Tires - VA DEQ Tire program							
Waste Oil - American Petroleum Institute, Study model.							
Antifreeze - VA Used Oil program estimate.							
Batteries - EPA, Characterization of Municipal Solid Waste in the United States, 2000 Update.							
White Goods - EPA, Characterization of Municipal Solid Waste in the United States, 2000 Update.							

## **APPENDIX G**

### **RECYCLING**

**TABLE G-1**  
**REGION 2000 SERVICES AUTHORITY**  
**RECYCLING RATE REPORT DATA**  
**2012 THROUGH 2018**

WASTE CATAGORIES							
	2012	2013	2014	2015	2016	2017	2018
Household	78,644	76,240	76,291	80,968	78,311	75,191	75,000
Commercial	151,869	111,230	106,736	113,112	121,250	116,594	122,671
Institutional	5,276	3,306	3,274	3,015	3,634	3,515	0
Other	0	0	0	0	0	0	0
<b>Total:</b>	<b>235,789</b>	<b>190,776</b>	<b>186,301</b>	<b>197,095</b>	<b>203,195</b>	<b>195,300</b>	<b>197,671</b>
PRMs							
Paper	52,497	42,029	83,311	83,871	72,710	20,715	115,723
Metal	23,522	55,167	33,030	10,331	10,910	6,240	2,649
Plastic	873	655	583	703	716	88,598	464
Glass	37	27	3	0	0	0	0
Commingled	2,326	2,762	1,167	670	944	537	1,062
Yard Waste	5,644	3,756	643	388	322	3,425	502
Waste Wood	3,923	2,569	3,851	4,066	3,195	84	420
Textiles	68	71	337	59	133	4	49
Tires	873	568	598	548	415	372	0
Used Oil	412	413	91	827	29	0	46
Used Oil Filters	4	1	1	6	1	0	0
Used Antifreeze	10	5	7	1	0	0	0
Batteries	482	305	284	269	219	36	186
Electronics	58	84	121	154	64	36	23
Inoperative Motor Vehicles	0	0	0	0	0	0	0
Other cooking oil	291	51	17	69	64	0	0
Other	0	0	55	176	194	0	0
<b>Total:</b>	<b>91,020</b>	<b>108,463</b>	<b>124,099</b>	<b>102,138</b>	<b>89,916</b>	<b>120,047</b>	<b>121,124</b>
RECYCLING RATE							
Base Recycling Rate	27.9%	36.2%	40.0%	34.1%	30.7%	38.1%	38.0%
Adjusted RR # 1	31.3%	38.9%	41.5%	40.1%	36.4%	38.1%	38.0%
Adjusted RR # 2	31.3%	38.9%	41.5%	40.1%	38.4%	40.1%	38.0%
(Max of 5%) Credits:	31.3%	38.9%	41.5%	40.1%	35.7%	43.1%	43.0%
<b>Final RR:</b>	<b>31.3%</b>	<b>38.9%</b>	<b>41.5%</b>	<b>40.1%</b>	<b>35.7%</b>	<b>40.1%</b>	<b>38.0%</b>

Population					160,403	160,403	160,403
SWPU Population Density					54	54	118
Mandated Recycling Rate					15%	15%	25%
Reporting Frequency					YEARLY	YEARLY	YEARLY

## **APPENDIX H**

### **BUDGET**

**APPENDIX I**  
**GOALS AND ACTION ITEMS**

## Appendix I (see Section 8.1 Collections)

The following table provides the goals and objectives for the Region's support of the Regional members' collection programs. Costs for implementation of any of the programs or activities outlined below are evaluated during the budget preparation for each fiscal year. Collections will remain an individual responsibility of each Regional member. Thus, each Regional member will have additional internal goals and objectives for their collection programs as interest and funding is available.

**Table I-1 Regional Collection Goals and Action Items**

<b>Item No.</b>	<b>Goal</b>	<b>Action Item</b>	<b>Anticipated Schedule</b>	<b>Estimated costs (2020)</b>
C-1	The City of Lynchburg, and the Counties of Appomattox, Campbell and Nelson (and incorporated towns) will send tonnage collected by their systems to the Regional disposal facility.	Member use agreement binds the members to use of the Regional disposal facility. However, private sector waste may move outside the Region. Consider flow control. (No specific interest expressed by Regional members at this time.)	Potential future discussion as solid waste systems in surrounding Counties change and County Waste/GFL build a larger presence in overall regional area.	No specific costs
C-2	Provision of cost-effective collection system in Region.	Consider consolidation of member collection system operations. (No specific interest expressed by Regional members at this time.)	Potential future discussion as solid waste systems in surrounding Counties change and County Waste/GFL build a larger presence in overall regional area	No specific costs
C-3	Coordinate recycling efforts through the Region to enhance recycling programs.	Consider enhanced recycling collection systems. Determine if Region can provide assistance with expansion or improvements to the individual systems. (No specific interest expressed by Regional members at this time.)	Potential future discussion as solid waste systems in surrounding Counties change and County Waste/GFL build a larger presence in overall regional area	No specific costs.
C-4	Communication with Regional members as	Include discussion at quarterly Authority	On-going	No specific costs.

<b>Item No.</b>	<b>Goal</b>	<b>Action Item</b>	<b>Anticipated Schedule</b>	<b>Estimated costs (2020)</b>
	options are evaluated to determine impact on collection systems	meetings, other working group sessions.		



## Appendix I-2 (see Section 8.2 Disposal)

The following table provides the goals and objectives for the Region's disposal program. Costs for implementation of any of the programs or activities outlined below are evaluated during the budget preparation for each fiscal year.

**Table I-2 Regional Disposal System Goals and Action Items**

Item No.	Goal	Action Item	Anticipated Schedule	Estimated costs (2020)
D-1	Maintain post closure care of Concord Turnpike Landfill (Permit 558) in environmentally sound manner.	Complete post closure care.	Post closure care began on March 21, 2017 and will run for a period of 30 years unless modified by VDEQ.	Reference financial assurance on file with VDEQ as updated annually.
D-2	Initiate operations at Livestock Road Landfill (Permit 610) for regional disposal.	Completed	Operations at the Livestock Road landfill were initiated on 7/9/12.	On-going operational budget. See Section 6.0.
D-3	Complete and implement lateral expansion to Permit 610 (expanding original footprint between previously permitted phases)	Permit modification completed; construction of Phases IV and V	Permit modification for lateral expansion to original permit approved on 10/26/15; Phase IV constructed and waste disposal initiated on 8/22/17. Phase IV construction in next 5 years.	On-going budget. See Section 6.0.
D-4	Continue to improve odor management system at Permit 610	Expand gas collection system and odor management system as needed.	On-going	Evaluated annually when fiscal year budget developed.
D-5	Implement beneficial use of landfill gas (gas to energy system)	Evaluate use of private developer through appropriate procurement venues	On-going – will be implemented when interest and funding are available and/or appropriate developer procured.	Evaluated annually when fiscal year budget developed.
D-6	Complete closure and maintain post closure care of Permit 610 landfill in environmentally sound manner.	Implement closure and post closure care in accordance with regulations.	Determined by rate of fill of Permit 610 landfill and expansion.	Reference financial assurance on file with VDEQ as updated annually.

Item No.	Goal	Action Item	Anticipated Schedule	Estimated costs (2020)
D-7	Expand Permit 610 to the south on to adjacent property	Obtain approval by Campbell County	On-going discussions. Will need decision by 2024 or sooner to allow time for implementing permitting or considering alternate options.	Included in annual budget.
D-8	Permit and construct additional capacity to the south on adjacent property	If approval obtained from Campbell County, initiate permitting, bidding, and construction	Permitting will require 4 years; bidding and construction 2 years. Time frame dependent on Campbell County.	Dependent acreage to be permitted and constructed. Funding requirements will be evaluated annually.
D-9	Evaluate other options	Major strategic plan completed in 2017. Plan reconsidered annually.	If alternate option is needed, planning needs to be finalized by 2025. Actual schedule dependent on capacity utilization of Permit 610.	Funding requirements will be evaluated annually.

### **Appendix I-3 (see Section 8.3 Recycling)**

The following table provides the goals and objectives for the Region's recycling program. Costs for implementation of any of the programs or activities outlined below are evaluated during the budget preparation for each fiscal year. Each Regional member may have additional internal goals and objectives for their recycling programs as interest and funding is available.

**Table I-3 Regional Recycling System Goals and Action Items**

<b>Item No.</b>	<b>Goal</b>	<b>Action Item</b>	<b>Anticipated Schedule</b>	<b>Estimated costs (2020)</b>
R-1	Increase recycling at convenience centers.	Regional coordination of promotion of recycling.	On-going	TBD
R-2	Increase diversion of household hazardous waste (HHW).	Regional coordination of HHW collection events.	On-going	TBD
R-3	Maintain or exceed 25% regional recycling rate.	Continue sponsoring education programs in the classroom, utilize special events to promote recycling, provide educational materials to households and businesses, improve website.	On-going	TBD
R-4	Increase diversion of electronic waste.	Continue collection events within Region.	On-going	TBD
R-5	Increase diversion of green waste and recyclable materials.	Investigate additional markets for materials.	On-going	TBD
R-6	Increase diversion of ground brush (mulch) from disposal.	Investigate additional markets for mulch.	On-going	TBD

## **Appendix I (see Section 8.4 Public Awareness)**

The Region will work to increase the public's perception of waste management and recycling goals throughout the Region. An example of their efforts was the level of public outreach initiated during the major strategic planning effort in 2016/2017 which included an informative website, information meeting, focus groups, surveys.

The following table provides the goals and objectives for the Region's public awareness program. Costs for implementation of any of the programs or activities outlined below are evaluated during the budget preparation for each fiscal year. Each Regional member may have additional internal goals and objectives for their own individual public awareness programs as interest and funding is available.

**Table I-4 Regional Public Awareness Goals and Action Items**

<b>Item No.</b>	<b>Goal</b>	<b>Action Item</b>	<b>Anticipated Schedule</b>	<b>Estimated costs (2020)</b>
PA-1	Maintain Region 2000 Services Authority website	Review frequently and post important information on the site relative to the Authority's and Region's solid waste and recycling activities.	On-going	On-going operational budget
PA-2	Increase public outreach	Develop information and educational materials and make available to the public and private sector	On-going	On-going operational budget
PA-3	Increase public outreach	Assist members with educational programs that focus on sustainability and proper waste disposal and recycling	On-going	On-going operational budget
PA-4	Increase public outreach	Work with various media outlets to promote dissemination of information relative to sustainability and proper waste disposal and recycling.	On-going	On-going operational budget

## **APPENDIX J-1**

### **MEMBER SYSTEM TABLES**

**EXISTING SOLID WASTE SYSTEM (2020 UPDATE)**  
**APPOMATTOX COUNTY**  
**MAJOR PLAN COMPONENTS**

<b>Original Disposal Site - Now closed - Permit 086</b>	
•	Landfill Name: Appomattox County Sanitary Landfill
•	Year Established: February 12, 1973
•	Unit Status: Cells A-G closed and under post closure care. Groundwater monitoring terminated
•	Unit Status: Cell I (final cell) capped in October 2009 and certified as closed. Entered into post closure care for 30 years.
•	Unit Status: Cells J-K permitted by DEQ and development put on hold; Not part of Region 2000 capacity. Capacity available to County if needed in future.
•	Other Solid Waste Operations: The following operations are being maintained at the closed landfill site: wood waste, yard waste and brush collection and grinding; scrap metal collection and recycling; Emanuel Tire- tire processing under PBR 547; recycling center.
<b>Current Disposal Site</b>	
•	County directs waste to the Region 2000 Services Authority Landfill at Livestock Road, Rustburg VA
<b>Private Transfer Station and Convenience Center</b>	
•	Location: Facility to be sited near Concord, Virginia on Route 460; facility undergoing design and permitting at this time.
•	Owner: Owner will be County Waste of Southwest Virginia, LLC or parent company.
•	Operations: Facility will accept MSW, CDD, and other acceptable materials for transport to a permitted landfill. Landfill may vary with operations. No restriction on location of generation.
<b>Residential Solid Waste</b>	
•	County collection - Citizens self haul to 7 convenience centers; County contracts hauling from convenience centers to the Regional landfill. Some citizens contract directly for private collection.
•	Town of Pamplin - residential collection by private hauler, curbside 1/week; citizens can self haul to convenience centers
•	Town of Appomattox - residential collection by private company; curbside 1/week; citizens can self haul to convenience centers
<b>Commercial Solid Waste</b>	
•	Businesses and industries: Self haul to Regional landfill or contract with private hauler
<b>Residential Recycling</b>	
•	Program Description: Drop off at convenience centers
•	Materials Collected: Cardboard, Mixed paper, scrap metal, plastic, wood waste, electronics, aluminum, grocery bags and textiles.
•	Processing Facility: County processes cardboard, mixed paper and plastics at recycling facility; scrap metal is stockpiled at the landfill site and then collected by private company; wood waste is stockpiled and ground; electronics are stockpiled then sent to a private company. Textiles are collected by a private company at each of the convenience sites
<b>Commercial Recycling</b>	
•	Program Description: County has placed boxes for cardboard collection at 10 + businesses in the County. Businesses can also use the drop off facilities at the convenience centers or bring recyclable materials to the recycling facility. In addition, many businesses contract directly for recycling.
•	Materials Collected: Cardboard, mixed paper, plastics, metals, wood and wastes
<b>Yard Waste</b>	
•	Program Description: Material collected at closed landfill for chipping. Given to residents for free.
•	Materials Collected: Leaves, grass clippings, brush and tree trimmings
<b>Bulky Items (Not white goods)</b>	
•	Program Description: Material dropped off at convenience centers then hauled to Regional Landfill;
•	Processing Facility: Not processed but sent to Regional Landfill. In the future, the County may establish a reuse site to collect useful materials for the public to use.
•	Materials Collected: Furniture, demolition materials etc.
<b>Bulky Items (white goods)</b>	
•	Program Description : Materials dropped off at convenience centers then hauled by County to closed landfill to scrap metal pile;
•	Processing Facility: Stockpiled then collected by private company for recycling
•	Materials Collected: White goods (Stoves, washers, dryers, freezers, refrigerators)

**EXISTING SOLID WASTE SYSTEM (2020 UPDATE)**  
**CAMPBELL COUNTY**  
**MAJOR PLAN COMPONENTS**

<b>Original Disposal Site - Now closed</b>	
•	Landfill Name: Campbell County Sanitary Landfill - Permit 285
•	Year Established : October 26, 1979
•	Current status: Facility is closed and undergoing corrective action for groundwater problems. In Post Closure Care. County handles all activities relative to these programs.
•	Sold remainder of permitted landfill to Region 2000 Services Authority in FY 2009. This section of the landfill was repermited as Permit 610 with the Authority as owner and operator.
<b>Current Disposal Site</b>	
•	County directs waste to the Region 2000 Services Authority Landfill at Livestock Road, Rustburg VA
<b>Residential Solid Waste</b>	
•	Collection: In County - Private Haulers or self-haul to one of nine convenience centers. In Towns of Altavista & Brookneal - Curbside; Waste directed to Region 2000 landfill.
•	Collection Frequency: Within County- Citizens with private collection - as contracted or residents may drop off at one of nine convenience centers. Towns of Altavista & Brookneal- Once per week.
•	Drop-off Centers: County residents may utilize one of nine convenience centers operated by County.
<b>Commercial Solid Waste</b>	
•	Collection: Private Haulers for customers within Campbell County. Town of Brookneal and Town of Altavista provide limited collection. Waste directed to Region 2000 landfill.
<b>Residential Recycling</b>	
•	Program Description: Drop-off at convenience centers (4 sites) or private haulers will collect.
•	Materials Collected: newspaper and newspaper inserts, paper products, metal, bi-metal, aluminum, wood waste, waste tires, used oil, batteries and electronics
<b>Commercial Recycling</b>	
•	Program Description: Drop-off to convenience centers and some private haulers will collect.
•	Who Collects: Self hauled or private collection.
<b>Yard Waste</b>	
•	Program Description: County Residents- Drop-off and chipped at County convenience center at Livestock Road.
•	Town of Altavista- collected curbside and brought to County collection site. Town of Brookneal- Collected curbside and kept with Town.
•	Processing Facility: County processes at convenience center at Livestock Road. Materials chipped on site and collected by private company for off-site use.
•	Materials Collected: Leaves and grass clippings, trees, and brush trimmings.
<b>Bulky Items</b>	
•	Program Description: County- Drop-off only at convenience center at Livestock Road. Town of Altavista- curbside. Town of Brookneal - curbside
•	Processing Facility: Dropped off at Livestock Road Convenience Center.
•	Materials Collected: Tires and white goods recycling and scrap metal recycling. Freon removed.

**EXISTING SOLID WASTE SYSTEM (2020 UPDATE)**  
**CITY OF LYNCHBURG**  
**MAJOR PLAN COMPONENTS**

<b>Original Disposal Site - Unlined and lined facilities</b>	
• Name :	City of Lynchburg Waste Management Landfill - Permit 558
• Year Established:	1994; closure and in post closure care.
• City of Lynchburg landfill divided into two sections. Previously closed unlined landfill and lined landfill. All under same permit. In 2008, the lined landfill was sold to Region 2000 Services Authority and used as regional facility until 2012. Landfill has reached capacity and is closed. Currently in 30 year post closure period.	
<b>Residential Solid Waste</b>	
• Who collects:	City curbside, self-haul and private sector; 32 and 64 gallon containers used. In addition, special blue bags can be used for additional waste. Waste directed to Region 2000 Services Authority landfill in Rustburg VA.
• Collection Frequency:	once per week
• Drop-Off Center:	One at the closed landfill on Concord Turnpike.
<b>Commercial Solid Waste</b>	
• Who collects:	City and private haulers. Waste directed to Region 2000 Services Authority landfill in Rustburg, VA.
• Type of Service Provided:	City and Private. City collects small businesses that choose to utilize city curbside collection program. Refuse placed in city-issued 32 or 64 gallon containers. Private haulers provide additional services.
<b>Residential Recycling</b>	
• Program Description :	6 drop-off centers run by City. City contracts hauling. Also private curbside collection available.
• Materials Collected:	newspaper, mixed paper, OCC, plastics (#1 through #7; no Styrofoam or plastic bags), aluminum and steel cans
• Processing Facility:	City sends recyclables to private processor.
<b>Commercial Recycling</b>	
• Program Description:	Privatized. City does not sponsor a commercial recycling program. Businesses arrange for their recycling directly.
<b>Yard Waste</b>	
• Program Description:	curbside collection by City and drop-off by citizens at convenience center at closed landfill.
• Processing Facility:	mulched.
• Materials Collected:	brush, tree limbs, loose leaves.
<b>Bulky Items</b>	
• Program Description:	curbside and drop-off at convenience center at closed landfill.
• Processing Facility:	Collected materials hauled to private facility.
• Materials Collected:	Household appliances, tires without rims, furniture, and mattresses. Remodeling and demolition debris must be delivered to landfill.



**EXISTING SOLID WASTE SYSTEM (2020 UPDATE)**  
**NELSON COUNTY**  
**MAJOR PLAN COMPONENTS**

<b>Disposal and Transfer</b>	
•	Nelson County landfill closed; post closure care has been terminated.
•	Transfer Station: Nelson County Transfer Station - PBR 051
•	Year Established: 1994
•	Materials Accepted: Household waste, C&D & commercial waste, recycling
•	County has waste transported to Region 2000 Services Authority Landfill at Livestock Road, Rustburg, VA.
<b>Residential Solid Waste</b>	
•	Collection: Private haulers & self-delivery to transfer station and convenience centers.
•	Convenience Centers: County operates 4 staffed convenience centers, and 3 unstaffed collection centers.
<b>Commercial Solid Waste</b>	
•	Collection: Private haulers or self-delivery to transfer station.
<b>Residential Recycling</b>	
•	Program Description: Self-haul to convenience centers (6 centers) or transfer station.
•	Materials Collected: Mixed paper, cardboard, plastics and metals food cans.
•	Processing Facility: Hauled to private facility for processing.
<b>Commercial Recycling</b>	
•	Program Description: Private Haulers & self-haul to transfer station or processing facility. Not a County program.
<b>Yard Waste</b>	
•	Program Description: Self drop-off and commercial haul
•	Processing Facility: Transfer Station and one private stump-grinding facility
•	Materials Collected: Grass, leaves and limbs at Transfer Station; stumps and tree trunks at private facility.
<b>Bulky Items</b>	
•	Program Description: Drop-off at transfer station or convenience centers.
•	Materials Collected: White goods, furniture, mowers, etc. Materials are either recycled or disposed of in the transfer station for hauling to the regional landfill.