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# EXECUTIVE SUMMARY

The following solid waste management plan prepared for the Cumberland Plateau Regional Waste Management Authority (Authority) is submitted in accordance with 9 VAC 20-130-40 et seq. The region under the umbrella of the Authority is composed of Buchanan County and the incorporated town of Grundy, Dickenson County and the incorporated towns of Clinchco, Clintwood and Haysi, and Russell County and the incorporated towns of Cleveland, Honaker, and Lebanon. The region was formed in 1991 under the original solid waste management plan prepared by the Cumberland Plateau Planning District Commission in conjunction with Thompson and Litton for the Counties of Buchanan, Dickenson, and Russell. The first plan was dated July 1, 1991. The documentation forming the region is included in Appendix 1.

Since 1991, the region has moved from landfill operations within each County to transfer operations with disposal outside of the region. In addition, since 1991, a regional authority has been established. This Authority has the oversight of the plan and control of the transfer operations. The Authority is responsible for the following activities:

* Financing of the transfer stations. The Authority took out $3,000,000 in bonds in 1993 to cover the estimated cost of the construction of the three stations. These bonds were refinanced in 2001 leaving the Authority with a $2,356,400 debt. Final payment on this initial bond was completed on December 1, 2008. In 2009, the Authority reviewed the conditions of all three facilities and decided to secure a bond for $1.3 million for rehabilitating the facilities. In 2010 all work was completed for extending the life of the facilities for fifteen additional years. Final payment on the 2009 Bond was completed in November 2015.
* Oversight of and provision of funding to the Counties for the operations of the transfer stations. The localities can chose to provide manpower or to privatize the manpower for day to day operations. Only Russell County has privatized their operations.
* Collecting revenues from the Counties for use of the transfer stations.
* Permit compliance.
* Negotiating and holding the contract on hauling from the transfer stations to the landfill. Currently Advanced Disposal/Eco Safe Landfill holds the contract for hauling. CEI is sub-contracted by Advanced Disposal for hauling services.
* Negotiating and holding the contract on disposal. The Authority currently holds the contract with Advanced Disposal/Eco Safe Lanfill for disposal at the Blountville, TN landfill located in Sullivan County Tennessee.
* Negotiating and holding the contract for periodic household hazardous waste collection programs.
* The Authority has been actively involved in the promotion of recycling efforts in the region. In 1995, the Authority encouraged the establishment of County operated recycling drops off centers. Buchanan, Dickenson and Russell County embraced the program which still operates today.

The counties and some towns are responsible for some or all of the following activities:

* Collection services
* Recycling activities
* Litter control activities including clean-up of open dumps and enforcement of litter laws
* Public education
* Post closure activities at all closed landfills as required by DEQ.
* Both Buchanan and Dickenson Counties completed their PCC termination at the Hoot Owl Landfill Permit #218 and the Dickenson County Landfill Permit #261. Russell County has completed a partial PPC termination on Russell County Landfills Permits #258 and #515. Russell County is currently seeking out alternatives to treat their Leachate rather than pump and haul via a permit modification.

No treatment of any waste as defined in Section 1.6 occurs within the region.

In addition to the daily record keeping, the Region documents its solid waste activities in several ways:

* Annual reports to the Cumberland Plateau Regional Waste Management Authority prepared by the Executive Director of the Authority
* Annual reports to the Board of Supervisors of the member Counties based on information provided by the Authority
* Periodic updates to the Authority and Boards by the Executive Director
* Annual submittal by March 31 of each year of the Waste Information and Assessment Report (Form 50-25) to DEQ
* Annual submittal by April 30 of each year of the Recycling Rate Report (Form 50-30) to DEQ
* Annual submittal usually by December of each year of the update to the financial assurance forms to DEQ

All these reports, updates and DEQ submittals as well as all background and permitting information relative to the transfer stations are kept in the central archive (files) of the Cumberland Plateau Regional Waste Management Authority located at 135 Highland Drive-Suite C, Lebanon, Virginia, 24266. Information on the landfills is kept at the Counties. The Director of DEQ or other DEQ representatives receive copies of appropriate information relative to the Region’s solid waste management program through the following sources:

* Direct submittal to DEQ of Forms 50-25 and 50-30 on an annual basis
* Permit applications
* Permit amendment applications
* Updates to the solid waste management plan
* General correspondence which may be required from time to time

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

#### TABLE 1

**KEY ELEMENTS**

**EXISTING SOLID WASTE PROGRAM**

| **ELEMENT** | **DESCRIPTION** |
| --- | --- |
| Collection | * Buchanan County – Residential and commercial door-to-door collection.   + Town of Grundy – Residential and commercial door-to-door collection. * Dickenson County – Residential and commercial door-to-door collection.   + Town of Clintwood – Residential and commercial door-to-door collection. * Russell County – 11 solid waste drop off sites   + Town of Cleveland - Residential and commercial door-to-door collection.   + Town of Honaker - Residential and commercial door-to-door collection.   + Town of Lebanon – Residential and commercial door-to-door collection. |
| Transfer Cost (2021) | * Buchanan County Transfer Station   + PBR # 106   + Opened March 1996   + 5,000 square feet   + Scales – (2) B Tek 10’x70’   + Cost $924,146.08   + Managed by the Authority and staff by the County   + Tonnage transferred 2021 – 24,167 tons * Dickenson County Transfer Station   + PBR #049   + Opened December 1993   + 5,000 square feet   + Scales – (2) B Tek 10’x70’   + Cost - $527,476.10   + Managed by the Authority and staffed by the County   + Tonnage transferred 2021 – 13,870 tons * Russell County Transfer Station   + PBR #001   + Opened April 1994   + 7,500 square feet   + Scales – (1) B Tek and (1) Meter Toledo 10’x70’   + Cost - $730,779.60   + Managed by the Authority and staffed by a private contractor   + Tonnage transferred 2021 – 20,165 tons * Hauling contract with Waste Management and subcontracted with CEI Trucking, Inc. The contract expires on October 26, 2023. * Permits are held by Authority who owns the buildings and equipment and holds ownership of the properties in Buchanan and Dickenson. The Authority has a 25 year lease on the property at Russell County. * As of December 1, 2015, the Authority does not have any outstanding debt. Bond debt was paid off on December 1, 2015. * As permit holder, the Authority is responsible for permit compliance. * As owner of the buildings, the Authority is responsible for all maintenance/repairs and equipment replacement. |
| Disposal | * Contract with Advanced Disposal/Eco Safe, Inc. now Waste Managment It expires on October 26, 2023. * Location: Sullivan County Tennessee approximately 10 miles south of Bristol * TDEC Permit #SNL 820-000-0282 Ext., Class 1 * Total acreage of site – 655 acres * Total acreage available for permitting – 255 acres * Life remaining – 78 years at 675 tons per day (2094). |
| Recycling | * DEQ Recycling Form for region – Recycling rate 2020 = 16.2% * Buchanan County – Currently Buchanan County offers a drop off site located in the town of Grundy for paper, plastic and cardboard. White goods collected and recycled. Tires collected.   + Town of Grundy – No formal program but county operates drop off site in town limits. * Dickenson County – Dickenson County had offered drop off location in Clintwood and Haysi. Have one scrap metal dealer in County who recycles white goods, aluminum, scrap metal, and abandoned autos. Tires are collected.   + Town of Clintwood – no formal program but county operates drop off site in town limits. * Russell County – 7-8 drop off sites; plastic, newspaper, cardboard, aluminum and oil are collected. White goods and scrap metal recycled at transfer station.   + Town of Lebanon – No formal program. * Since original submittal of this plan on 06/25/04, the Authority has hired a full time recycling coordinator to work to improve the programs in the Region. |
| Treatment | * The region does not treat any waste per the definition in Section 1.6. |

During preparation of the plan, the following goals and objectives were developed for the program. See Section 8.0 for a more detailed description of the activities.

**Collection - Goals and Objectives:**

* Towns and Counties will continue to handle their own collection.
* Town of Lebanon may consider servicing citizens in immediately adjacent areas of Russell County with door-to-door service if practical.

**Transfer**

* Current hauling contract expires on October 26, 2023. Authority has been instructed to continue in **i**ts oversight role and will begin competitive bid process in early 2023.
* Repair work or rehab work was completed in 2010, e.g. floor repairs, door repairs, lighting, new scales, new scale house, etc. Authority preformed oversight during the repairs. Following completion of the repairs, the Authority agreed to create a line item in its budget for long term maintenance and repairs.

**Disposal - Goals and Objectives:**

* Current disposal contract expires on October 26, 2023. Authority has been instructed to continue in its oversight role and will begin competitive bid process in early 2023.
* The Advanced Disposal/Eco Safe waste disposal facility in Sullivan County, Tennessee has a life expectancy estimated to the year 2094. Thus, prior to the end of the planning period, the Authority will need to consider alternative disposal locations unless this facility is expanded.

Recycling - Goals and Objectives:

* Authority has hired a regional recycling coordinator in 2004 to work with the Counties, Towns and the commercial sector. Coordinator is responsible for pursuing markets, assisting with the establishment of collection programs, developing educational programs, and expanding the overall interest in recycling in the region.
* Authority to consider assisting directly with the recycling programs but coordinator will need to research markets and develop a specific plan for the Authority to act on.
* Authority has established a periodic electronic waste collection program.
* Authority has established a periodic household hazardous waste collection program.
* The Authority will continue to encourage its localities to increase programs offered and public participation in annual environmental events.
* The Authority will continue to encourage the localities to increase the percentage of residents that are educated about proper disposal and recycling practices within the region.
* Secure additional competitive state grants to fund additional environmental education programs.
* Continue to expand and increase programs in the schools and community.

Litter Prevention and Control

* The regional coordinator has been tasked with involvement in regional coordination of litter prevention and enforcement.
* The Authority through the coordinator will seek out alternative funding sources for litter prevention and clean up.
* The Authority through the coordinator will encourage the organization of grassroots environmental groups to assist in litter prevention and litter control activities. An example is the already established Keep Southwest Virginia Beautiful.
* The Counties will continue to map illegal dump sites and will coordinate clean up as funding is available.
* The Counties will continue to support existing Adopt a Highway and Adopt a Stream campaigns.
* The Counties will continue to provide periodic cleanup days throughout the year to encourage the collection of bulk items.
* The Counties will continue to provide and improve enforcement activities relative to illegal dumping and littering.

Treatment

* The Region does not have any plans to incorporate treatment into their solid waste program.

# INTRODUCTION

## 1.1 Legislation

The following solid waste management plan has been prepared in accordance with the Virginia Waste Management Board’s, Regulations for Solid Waste Management Planning, Amendment 1, 9 VAC 20-130-40 et seq., effective date August 1, 2001.

## 1.2 Authority (9 VAC 20-130-40)

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.

## 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)

1. 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;
2. Establish procedures and rules for designation of regional boundaries for solid waste management plans;
3. Establish state, local government, or regional responsibility for meeting and maintaining the minimum recycling rates of 25%;
4. Establish the requirement to withhold permits for failure to comply with the regulations;
5. Provide a method to request reasonable variance or exemptions from the regulations;
6. Provide for reporting and assessment of solid waste management in the Commonwealth.

## 1.4 Planning Area

The region under the umbrella of the Authority included in this solid waste management plan is composed of Buchanan County and the incorporated town of Grundy, Dickenson County and the incorporated towns of Clinchco, Clintwood and Haysi, and Russell County and the incorporated towns of Cleveland, Honaker and Lebanon. See Figure 1 for a vicinity map indicating the location of the region within Virginia and Figure 2 for Region Map. The region was originally formed in 1991.

## 1.5 Planning Period

The planning period for this solid waste management plan is 20 years from 2022 – 2052.

## 1.6 Critical Definitions (9 VAC 20-130-40)

It is important that the reader of this solid waste management plan have a clear understanding of the terms used throughout the report. The following selected definitions are taken directly from the regulations:

Construction, demolition and debris waste (CDD) – Construction and demolition waste means solid waste which is produced or generated during construction, remodeling, repair or destruction of pavements, houses, commercial buildings, or other structures. Construction wastes include, but are not limited to lumber, wire, sheetrock, broken brick, shingles, glass, pipes, concrete, paving materials, and metal and plastics if the metal or plastics are a part of the materials of construction or empty containers for such materials. Paints, coatings, solvents, asbestos, any liquid, compressed gases or semi-liquids and garbage are not construction wastes. Debris waste means wastes resulting from land clearing operations.

Household hazardous waste (HHW) – means any waste material derived from households (including single and multiple residences, hotels and motels, bunk houses, ranger stations, crew quarters, campgrounds, picnic grounds and day-use recreation areas which, except for the fact that it is derived from a household, would otherwise be classified as a hazardous waste in accordance with 9 VAC 20-60.

Integrated Waste Management Plan – means a governmental plan that considers all elements of waste management during generation, collection, transportation, treatment, storage, disposal, and litter control and selects the appropriate methods of providing necessary control and services for effective and efficient management of all wastes. An “integrated waste management plan” must provide for source reduction, reuse, and recycling within the jurisdiction and the proper funding and management of waste management programs.

Principle recyclable materials – means paper, metal (except automobile bodies), plastic, glass, yard waste, wood, and textiles. It does not include large diameter tree stumps.

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

Reuse – means the process of 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.

Source reduction – means 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.

Supplemental recyclable material – means waste tires, used oil, used oil filters, used antifreeze, automobile bodies, construction waste, demolition waste, debris waste, batteries, ash, sludge, or large diameter tree stumps, or material as may be authorized by the director.

Treatment – means any method, technique, or process, including but not limited to incineration, designed to change the physical, chemical or biological character or composition of any waste to render it more stable, safer for transport, or more amenable to use, reuse, reclamation or recovery. Per email from D. Gwinner, DEQ, treatment includes tire shredding but not mulching.

Used or Reused material - means a material which is either:

1. Employed as an ingredient (including use as an intermediate) in a process to make a product, excepting those materials possessing distinct components that are recovered as separate end products; or
2. Employed in a particular function or application as an effective substitute for a commercial product or natural resource.

# 2.0 BACKGROUND INFORMATION

To provide background to the discussions contained in this solid waste management plan, a discussion of the status of solid waste management nationally and an overview of the key points of the Region’s original Solid Waste Management Plan dated July 1, 1991 are being provided in this Section.

## 2.1 Status of solid waste management nationally

The following information is taken from “Municipal Solid Waste in the United States: 2001 Facts and Figures Executive Summary,” produced by the Office of Solid Waste and Emergency Response, United States Environmental Protection Agency (EPA), EPA530-S-03-011, dated October 2003. This report provides data on the national municipal solid waste stream for 1960 through 2001.

It should be noted that as used by the EPA, the term municipal solid waste (MSW) consists of “everyday” items such as product packaging, grass clippings, furniture, clothing, food scraps, newspapers, appliances, and batteries. It does not include materials that may also be landfilled but are not generally considered MSW, such as construction and demolition debris, sludge, and non-hazardous industrial wastes. Virginia’s definition is similar defining MSW as waste that is normally composed of residential (household), commercial (businesses other than manufacturing or construction) and institutional solid waste. However, record keeping of localities may not segregate the waste materials in a similar way. Thus, when comparing the information in this section with the data in the solid waste plan, care must be given to the term MSW.

### 2.1.1 Waste generation

According to the EPA July 2021 report, the United States generated approximately 88.1 million tons of MSW in 1960 and approximately 292.4 million tons in 2018. At the same time the United States population increased from 180.0 million persons in 1960 to 316.12 million persons in 2013 or a 158% increase over the 41-year planning period. Clearly, the increase in tonnage is not just a factor of population but is also impacted by other factors including the commercial sector. The following table summarizes the waste generation for 1960 – 2018 on a pounds per person per day basis:

#### TABLE 2

**USA WASTE GENERATION (MSW)**

**1960 – 2015**

**POUNDS PER PERSON PER DAY**

**AS REPORTED BY EPA JUNE 2015**

| YEAR | **POUNDS PER PERSON PER DAY** |
| --- | --- |
| 1960 | 2.7 |
| 1970 | 3.2 |
| 1980 | 3.7 |
| 1990 | 4.5 |
| 1995 | 4.5 |
| 1999 | 4.6 |
| 2010 | 4.44 |
| 2013 | 4.4 |
| 2014 | 4.4 |
| 2017 | 4.5 |
| 2018 | 4.9 |

The report noted that residential waste is estimated to be 55% - 65% of the total MSW generated, and that commercial waste (including institutional wastes, some industrial sites where packaging is generated and businesses) constitutes between 35% and 45% of the total MSW generated.

### 2.1.2 What is in the waste?

In evaluating waste generation, the report examined the composition of the waste materials as discarded before recycling and the amount of the material recovered through recycling programs. The following table summarizes the findings from this report:

**TABLE 3**

**USA WASTE COMPOSITION**

#### BY MATERIAL TYPE

**AS SUMMARIZED IN EPA REPORT**

**2018 DATA**

|  |  |  |
| --- | --- | --- |
| **MATERIAL** | **% OF TOTAL WASTE STREAM** | **RECOVERY AS A PERCENT OF GENERATION** |
| Paper | 23.05 | 66.54 |
| Glass | 4.19 | 4.43 |
| Metals | 8.76 | 12.62 |
| Plastics | 12.20 | 4.47 |
| Rubber, leather, & textiles | 8.96 | 6.05 |
| Wood | 6.19 | 4.49 |
| Yard trimmings | 12.11 | 52.35 |
| Food scraps | 21.59 | 47.65 |
| Other | 2.95 | 1.40 |

Based on this information a significant portion of the yard waste, paper and metal wastes are being recovered while there remains limited recovery of plastics, wood, and food scraps.



### 2.1.3 Disposal

The report tracks the ultimate handling of the wastes generated and indicates that 12% of the waste generated is combusted, 32.1% of the waste is recovered and that 50% of the waste is landfilled.

### 2.1.4 Recycling

According to the report, the United States recycled approximately 5.6 million tons of materials in 1960 and approximately 94 million tons in 2018. This represents a 900% increase in recycling over the period. In addition, composting of yard trimmings, food scraps, and other MSW organic material has increased from negligible reported quantities in 1960 to 17.7 million tons in 2018. This does not include back yard composting projects. Thus, in 1960, the recycling rate as calculated as recyclables over total MSW was 6.4%, and in 2018 is 32.1%. The following table summarizes the recycling and composting rates for 1960 – 2018 on a pounds per person per day (PPPD) basis:

#### TABLE 5

**USA RECYCLING AND COMPOSTING RATES**

**1960 – 2018**

**AS REPORTED BY EPA**

| YEAR | **RECYCLING**  **(PPPD)** | **COMPOSTING**  **(PPPD)** | **TOTAL**  **(PPPD)** |
| --- | --- | --- | --- |
| 1960 | .2 | Neg. | .2 |
| 1970 | .2 | Neg. | .2 |
| 1980 | .4 | Neg. | .4 |
| 1990 | .6 | .1 | .7 |
| 2000 | 1.0 | .3 | 1.3 |
| 2005 | 1.1 | .4 | 1.5 |
| 2010 | 1.1 | .4 | 1.5 |
| 2014 | 1.1 | .4 | 1.5 |
| 2018 | 1.16 | .42 | 1.58 |

### 2.1.5 Waste reduction and reuse

The following information is taken from the EPA document, “National Overview: Facts and Figures on Materials, Waste and Recycling” 2018 Fact Sheet, republished July 14, 2021 as cited above. When EPA established its waste management hierarchy in 1989, it emphasized the importance of reducing the amount of waste created, reusing whenever possible, and then recycling what is left. When municipal solid waste is reduced and reused, this is called “source reduction”, meaning that the material never enters the waste stream. Instead it is managed at the source of generation. Source reduction includes the design, manufacture, purchase or use of materials, such as products and packaging, to reduce their amount or toxicity before they enter the MSW waste stream. Examples of source reduction activities are:

* Designing products or packaging to reduce the quantity or the toxicity of the materials used, or to make them easier to reuse.
* Reusing existing products or packaging; for example, refillable bottles, reusable pallets, and reconditioned barrels and drums.
* Lengthening the lives of products so less material is thrown away over time.
* Using packaging that reduces the amount of damage or spoilage of a product.
* Managing non-product organic wastes through onsite composting or other alternative disposal techniques.

According to the EPA, the United States prevented more than 55 million tons of MSW from entering the waste stream using 1990 as the baseline year. The EPA believes that reducing the amount of yard trimmings is particularly important in reducing the MSW in landfills across the United States. The following table taken from the EPA indicates the source reduction by major material categories:

#### TABLE 6

**USA SOURCE REDUCTION BY MAJOR CATEGORY**

**2014**

**AS REPORTED BY EPA**

| **MATERIAL** | **TONNAGE (million tons)** | **% OF TOTAL REDUCTION** |
| --- | --- | --- |
| Durable goods  (e.g. appliances, furniture) | 5.4 | 9.8% |
| Nondurable goods  (e.g. newspapers, clothing) | 9.3 | 16.8% |
| Containers and packaging  (e.g. bottles, boxes) | 15.5 | 28.1% |
| Other MSW  (e.g. yard trimmings, food scraps) | 25.0 | 45.3% |
| Total Source Reduction  (1990 baseline year) | 55.1 | 100.0% |

Source reduction avoided an increase in the waste stream from 1999 to 2000 of nearly 25 percent. According to EPA, between 2 and 5% of the waste stream is potentially reusable and reflecting the interest in reuse is the establishment of over 6,000 reuse centers throughout the country ranging from specialized programs for building materials, to salvage facilities at landfills, to local/national programs such as Goodwill and Salvation Army.

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

The original solid waste management plan for the Cumberland Plateau Region was prepared by the Cumberland Plateau Planning District Commission in conjunction with Thomson and Litton and was dated July 1, 1991. The following sections provide highlights from the original plan.

### 2.2.1 Waste generation projections

The following table summarizes the estimated waste tonnages in 1991, the projections during the original planning period and provides the actual 2003 tonnage data. In 1991, scales did not exist at the landfills so tonnages were estimated from temporary weighing programs. When the transfer stations were constructed, scales were installed and the 2003 data represents actual reported values. The original plan stressed that without accurate scale information the projections could vary considerably.

#### TABLE 7

**TONNAGE PROJECTIONS FROM ORIGINAL SWMP**

| **COUNTY** | **1991 TONNAGE ESTIMATED FOR PLAN**  **(Tons per year)** | PROJECTED  MINIMUM TONNAGE (Tons per year) | **PROJECTED**  **MAXIMUM TONNAGE**  **(Tons per year)** | **TONNAGE DATA 2003 SCALE RECORDS** |
| --- | --- | --- | --- | --- |
| Buchanan | 31,200 | 28,600 | 47,190 | 20,472 |
| Dickenson | 15,600 | 15,730 | 28,600 | 10,607 |
| Russell | 35,880 | 14,300 | 28,600 | 22,945 |
| TOTAL | 82,680 | 58,630 | 104,390 | 54,024 |

Projected minimum and maximum tonnage taken from Page 18 of the original Solid Waste Management Plan. Values in the Plan were reported as tons per day based on a 5.5 day, week.

The tonnage as recorded for 2016 is significantly lower than that estimated in the original plan. While the Counties may have realized a slight decrease in tonnage due to the declining population, the reduction most likely indicates an over estimation of the tonnage during preparation of the original study.

### 2.2.2 System components

The solid waste management system consisted of the following components in 1991:

#### TABLE 8

**1991 SOLID WASTE SYSTEM COMPONENTS**

| **COMPONENT** | **DESCRIPTION** |
| --- | --- |
| Buchanan County | **Collection:** The County provided door-to-door service to approximately 7,200 residences and 700 business pick-up points excluding the Town of Grundy. The Town had its own sanitation service and offered door-to-door collection to its residences. |
|  | **Disposal:** The County landfill, Permit 218, was placed into operation in 1974 and had an estimated closure date of June 1992. The landfill consisted of approximately 28 acres, which would require closure under the 1988 regulations. Tires were collected and shredded prior to placement in the landfill. No scales existed at the landfill. No tipping fees were charged. The landfill was operated on a 6-day work week. |
|  | **Recycling:** White goods only. |
|  | **Estimated cost of system:**   * $122.70 per ton for collection and disposal * $63.57/year per person |
| Dickenson County | **Collection:** The County contracted the collection of solid waste to M.T.D., Inc., a locally owned and operated private company. The contract included collection of waste at County-owned, 6-yard green boxes and waste hauling to the County owned and operated landfill. In 1991, approximately 44 green box sites existed. Commercial businesses had to contract directly with the private contractor for collection. The contractor also collected white goods, scrap metal, tires and debris. The Town of Clintwood owned and operated its own sanitation department servicing businesses and residences within the town limits. Town residences were paying $4.25 per month for service. The Town did not pay a tipping fee at the landfill. Haysi and Clinchco were served by the County green boxes. |
|  | **Disposal:** Disposal of all waste collected was at the Dickenson County landfill Permit 261, permit date November 14, 1978. The landfill is located on a previously developed surface mine bench. The property on which the landfill was situated was leased in 1991 from Clinchfield Coal Company by the Board of Supervisors. As of 1991, the landfill consisted of two asbestos waste disposal sites, a sanitary fill area, a debris disposal area and a tire disposal area. Approximately 11.2 acres had been used for fill activities and of that approximately 8.3 acres would require closure under the new solid waste regulations. The landfill had an estimated life expectancy to early 1994. No tipping fees were charged at the landfill. The landfill was operated on a 5-day work week. |
|  | **Debris and yard waste:** These materials were burned on site at the landfill. |
|  | **Recycling:** Only scrap metal and white goods were recycled. |
|  | **Estimated cost of system:**   * $69.91 per ton for collection and disposal * $56.32 per person per year |
| Russell County | **Collections:** The County had an annual lease with Harold Beasley Disposal Service to provide service to 15 drop-off centers. The Towns of Cleveland, Honaker and Lebanon operated their own sanitation services and provided door-to-door collection to residents and businesses. |
|  | **Disposal:** Disposal of waste collected in the County was at the County landfill, Permit 515. The landfill had been in operation since July 20, 1988 and in 1991 approximately 12 acres were active. The landfill is equipped with a single synthetic liner system, leachate collection system, leachate storage facilities and groundwater monitoring system. The landfill was expected to be full by July 1992. A potential 2-acre expansion area existed with an estimated life of 10 – 15 years. The County was considering the expansion option seriously. No tipping fees were charged at the landfill. The landfill was operated on a 6-day work week. |
|  | **Recycling:** Scrap metal, tires and white goods |
|  | **Estimated cost of system:**   * $61.16 per ton for collection and disposal * $17.98 per person per year |

\* Costs for collection and disposal include the Town and Counties collection costs.

### 2.2.3 Goals of Original Plan

Under the original plan, the following goals were identified:

#### TABLE 9

**SUMMARY OF GOALS AND ACTION ITEMS**

| **ORIGINAL GOAL** | **ACTION ITEM** |
| --- | --- |
| To address solid waste management from a regional standpoint, thereby enhancing project economics and the environment and public health. | ARC Planning Grant late 1991 funded planning services of Thompson & Litton, Inc. Regional solution means reduced tipping fees, minimizing impact on citizens and business. |
| To view solid waste as a resource, not simply “trash” which should be buried and forgotten | Private sector to investigate markets for recyclables |
| To minimize reliance on landfilling as a sole or principal means of solid waste management. | Recycling to become part of management plan |
| To provide an opportunity for the creation of jobs in the planning area upon implementation of the solid waste management system. | Contracts require that local qualified personnel be hired as truck drivers, fuel and parts for trucks be purchased in the CPPDC. |
| To meet the recycling mandates as set forth by the DWM in the most feasible and practical manner. | In addendum 7/2/93, CPRWMA to initiate RFP to solicit services of private waste management firms for recycling |
| To address the short term and long term needs of the planning area with respect to solid waste management. |  |
| To provide an update to DWM with respect to ongoing and future work necessary to implement a regional solid waste system | Completed as part of the addendum to the Waste Management Plan dated August 2, 1993. |
| To file a petition to the DWM for the establishment of a regional boundary between the counties of Buchanan, Dickenson, and Russell. | Spring of 1992, SCC issued a charter to the Authority, thereby deeming it to have been lawfully and properly created. |
| To develop the most cost-effective and environmentally sound solid waste management system for the planning area. | All counties have signed User Agreements with the CPRWMA |

### 2.2.4 Long Term Vision for Integrated Waste Management System

The three Counties under the original plan envisioned a regional system overseen by a solid waste authority. The long-term vision included the following activities:

#### TABLE 10

**PROPOSED ACTIVITIES LONG TERM VISION**

| **ACTIVITY** | **DESCRIPTION** |
| --- | --- |
| Collection | Each county and town in the planning area would collect solid waste and deliver the materials to a transfer station for haulage to the regional facility. Russell and Dickenson Counties were to evaluate their collection systems relative to “flow control.” |
| Transfer Stations | The Authority would operate three solid waste transfer stations (one in each county) for the delivery of solid waste to the regional facility. These transfer stations would be centrally located to best facilitate delivery of waste to the regional facility. |
| Central Processing Facility | Solid waste would be delivered to a central processing facility for recycling purposes. It was envisioned that the system would separate such materials as ferrous metals, glass, non-ferrous materials, and plastics. Such a system was considered feasible only from a regional perspective. |
| Further Waste Reduction | Two further waste reduction techniques were being evaluated while the original 1991 plan was being prepared. The first was composting and the second was waste to energy. The evaluation had not been completed. |
| Landfilling | Residual materials from the central processing facility, which could not be composted or combusted, and possible ash from the waste-to-energy facility would be landfilled in a modern, state-of-the-art landfill. It was estimated that if all the facilities were constructed as outlined above, the landfill would only need to handle approximately 10% of the waste materials delivered to the landfill. |

### 2.2.5 Short-term (interim) vision for Integrated Waste Management System

The three Counties under the original plan envisioned a regional system overseen by a solid waste authority. The short-term (interim) vision included the following activities:

#### TABLE 11

**PROPOSED ACTIVITIES SHORT TERM VISION**

| **ACTIVITY** | **DESCRIPTION** |
| --- | --- |
| Collection | The existing collection system currently in place in each of the counties would remain in place. |
| Landfilling | Landfills would continue in each of the counties until completion of the regional system. Vertical or lateral expansions may have been needed for Buchanan and Dickenson Counties or interim disposal alternatives within the region explored. |

### 2.2.6 Twenty-year milestones

The following twenty-year milestones were set in the original plan:

#### TABLE 12

**TWENTY-YEAR MILESTONES**

| **Item** | **Timetable** | **Current Status** |
| --- | --- | --- |
| **1. Transfer Stations (Developmental)** | | |
| Finalize Waste Management, Inc agreement | August/September 1993 | In 2023, an agreement will be renogaited or a new contract awarded. |
| Rehabilitation – Dickenson Co. | Opened December 1993 | Completed 2010 |
| Rehabilitation – Russell Co. | Opened April 1994 | Completed 2010 |
| Rehabilitation – Buchanan Co. | Opened March 1996 | Completed 2010 |
| Commence Operations (Full Scale) | April 1994 | See above. |
| **2. Transfer Stations (operational)** | | |
| Procure Equipment | Ongoing/As needed | Three new loaders were leased in Jan 2022 |
| Hire Staff | September 1993-March 1994 | Authority provides funding to Counties for operation |
| Develop Operational Procedures | September – November 1993 | Review each Fall. |
| Negotiate Service Agreements for member counties. | Spring of each year. Completed in March 2022 | Yearly. |
|  |  |  |
| **3. Recycling Program** | | |
| Evaluate existing system performance | September – November 1993 | Using money received from an ARC grant, the Authority contracted with TH&P Environmental Engineering to complete a report on recycling in the region. The report was dated 1996 and made recommendations for drop off collection. |
| Evaluate Alternatives | November 1993-February 1994 | See above. |
| Develop RFP | February – April 1994 | No activity |
| Evaluate proposals | April – June 1994 | No activity |
| Consider Privatization | June – August 1994 | No activity |
| Implementation | August 1994- January 1995 | The Authority started to implement the recommendations of the recycling study by purchasing collection boxes. However, only Russell County availed themselves of the program and still continues to run it today. The other Counties did not have funding available to proceed with recycling. |
| Hire a Regional Coordinator | Spring 2004 | Completed Project. |
| **4. Future Landfilling Alternatives** | | |
| Evaluate potential CPRWMA landfill in Planning Area | Spring 2022 | . |
| Decision on CPRWMA landfill | Spring 2023 | Complete in 2023 |
|  |  |  |
| **5. Solid Waste Management Plan Amendments** | | |
| Amend plan per DEQ regulations | September 1998  September 2003  September 2008  September 2013  March 2016  May 2022  May 2027 | Plan being updated in 2022 per Amendment 1 of the regulations. |
|  |  |  |
| **6. Future recycling program (Re-evaluation of item #3)** | |  |
| Evaluate recycling program | July 2017 | No activity |
| Develop additional alternatives | Aug-September 2017 | No activity |
| Develop RFP | September 2017 | No activity |
| Evaluation of proposals | September–November 2017 | No activity |
| Award contract for recycling | As needed. | No activity |
|  |  |  |
| **7. Repeat Step #4** | 5 year increments up to 2022 | No activity |
|  |  |  |
| **8. Repeat Step #6** | 5 year increments up to 2027 | No activity |

As the current plan will indicate, consideration of a regional central processing facility and/or a landfill have been dropped from further consideration and limited recycling activities have been implemented in the region due to the expense.

# 3.0 DEMOGRAPHIC DATA

## 3.1 Buchanan County, Virginia

### 

### 3.1.1 Location

Buchanan County, Virginia is located in the southwestern portion Virginia along the border of Kentucky, which lies to the west. The county shares a border with West Virginia to the northeast. This 508 square mile community is bounded by Dickenson County to the southwest, Russell to the south and Tazewell to the east.

Roanoke is approximately 200 miles east and Richmond, the state capital, is 389 miles east.

### 3.1.2 Population

Grundy, the county seat, functions as the trade center for Buchanan County and for portions of neighboring counties in Kentucky and West Virginia. According to the 2014 Census Bureau American Community Survey Estimates, the town had a total population of 1,063. Vansant, a few miles to the south of Grundy, is the other population center with a total population of 433.







The entire coal-producing region of southwest Virginia has seen significant population decline since the mid-1980’s due to dramatic job loss in the coal industry. The weak economy forced workers to move to find jobs elsewhere. Another factor in the decline is the loss of young adults leaving the area for education or employment. Isolation, poor transportation routes and limited commercial variety make it difficult to attract new residents and new industry.

Population projections from the Virginia Employment Commission show population decreases for Buchanan County through 2020 of about -3.00% a year. For the next twenty years (2030-2040) the county is projected to gain population at rates of approximately 0.14%.

In the county, the population is spread out with 19.5% under the age of 19, 5.5% from 20 to 24, 24.5% from 25 to 44, 31.0% from 45 to 64, and 19.4% who are 65 years of age or older. The median age is 45.3 years.



Table 15

Population by Age - Buchanan County







According to the US Census American Community Survey of 2020, there were 20,355 people, 11,556 households, and 8,569 families residing in the county, which calculates to a population density of 47.9 persons/mi². There are 11,556 housing units at an average density of 22.9 units/mi².

The racial makeup of the county is 95.3% White, 3.4% Black or African American, and 2.2% from other races. There were 8,569 households, with the average household consisting of 2.44 persons and the average family size being 2.44 persons.

The median income for a household in the county is $31,956. The per capita income for the county is $19,496 with 23.7% of the persons living below the poverty line.

Table 16



Table 17

|  |  |  |
| --- | --- | --- |
| **HOUSEHOLD INCOME AND BENEFITS IN THE PAST 12 MONTHS (IN 2020 INFLATION-ADJUSTED DOLLARS)** | | |
| Income | Buchanan County | % of Households |
| Group | Households |
| Less than $10,000 | 1,139 | 12.10% |
| $10,000 to $14,999 | 957 | 10.20% |
| $15,000 to $24,999 | 1,897 | 20.20% |
| $25,000 to $34,999 | 1,190 | 12.70% |
| $35,000 to $49,999 | 1,165 | 12.40% |
| $50,000 to $74,999 | 1,328 | 14.10% |
| $75,000 to $99,999 | 916 | 9.70% |
| $100,000 to $149,999 | 630 | 6.70% |
| $150,000 to $199,999 | 112 | 1.20% |
| $200,000 or more | 72 | 0.80% |
| Total | 9,406 | 100.00% |
|  |  |  |
| Median Household Income Dollars | 31,956 |  |
| Per Capita Income Dollars | 19,496 |  |
| Poverty all families | 23.7% |  |
| Poverty all people | unknown |  |
| Source: Unites States Bureau American Community Survey Estimates | |  |

### 3.1.3 Geographic conditions

The surface of the entire county is rugged and mountainous. Flat lands are rare and valley slopes are steep so that the entire area is covered with ridges, valleys and streams. Some of the ridges in the southern section of the county are sufficiently wide for roads and a few houses.

The maximum relief of the county is 2,890 feet, the lowest point being on Levisa Fork at the Kentucky boundary, where the elevation is 845 feet, and the highest on Big A Mountain, where the elevation is 3,735 feet. Sandy Ridge, the divide that forms the county boundary on the southeast, is the natural barrier that separates the county from other parts of Virginia. Another main divide that forms the boundary between Buchanan County and McDowell County, West Virginia is called State Line Ridge.

All the drainage of the county is tributary to Big Sandy River through its three main branches Russell Fork, Levisa Fork, and Tug Fork.  Although most streams and creeks contain some water all year round, none has a very large flow. The topography of Buchanan County limits development somewhat to the low laying areas along streams and rivers.

Buchanan County lies in the Cumberland Plateau Physiographic Province where formations are mostly sandstone and shale with mineable coal deposits. The Province, for the most part, contains weather-resistant sandstone, which accounts for the steep V-shaped mountains.

### 3.1.4 Climate

Buchanan County lies in the warm temperate region. Latitude, mountainous topography, and prevailing winds exert considerable influence upon the climate.

The area receives an average annual rainfall of 40.95 inches and an average snowfall of 23 inches. The average maximum temperature is 72 degrees, and the average minimum temperature is 36 degrees for the Cumberland Plateau region. Buchanan County’s average July temperature is 76 degrees and for January the average temperature is 36 degrees.

Thunderstorms and cloudbursts, normally occurring in the summer months, produce heavy rainfall over sections of the county and runoff is significant. Prevailing winds are westerly at an average velocity of 8 miles an hour but can reach high speeds during storms.

### 3.1.5 Transportation

**A. Highways**

There is no Interstate running through the County but U.S. Route 460 runs through its center from Richlands (Tazewell County) to the state line in common with Pike County, Kentucky. Route 460 is a major collector road providing direct access to Grundy, Keen Mountain, Vansant, and other communities. Route 83 runs east through the center of the county from Haysi (Dickenson County) to McDowell County, West Virginia. Route 460 and Route 83 converge at Grundy.

Virginia Primary Route 80 provides access to the southwest and northwest corners of the county. It enters Buchanan County from Honaker in Russell County, enters Davenport, and exits Buchanan County to Haysi in Dickenson County.

**B. Air**

The nearest airport is the Mercer County Airport, located 42.3 miles to the north in West Virginia and is served by U.S. Airways. Raleigh County Memorial Airport is 57.2 miles away and is also served by U.S. Airways. The Tri-Cities Regional Airport lies 62.4 miles to the southeast in the Bristol/Johnson City, Tennessee area. It is served by five of the major airlines or their regional partners.

General aviation services can be found at Grundy Municipal Airport or at the Tazewell County Airport.

C. Rail

Norfolk Southern provides freight rail service to Buchanan County.

**D. Water**

The nearest ports are located in Richmond (389 miles) and Norfolk (480 miles).

### 3.1.6 Infrastructure

**A. Electricity**

American Electric Power provides power to the County.

**B. Natural Gas**

Virginia Natural Gas provides natural gas to the County.

**C. Water**

Buchanan County Public Service Authority oversees the water supply in the County.

**D. Sewage**

Buchanan County Public Service Authority oversees the sewage treatment in the County.

### 3.1.7 Economic Growth

Buchanan County’s unemployment rate hit a high in 1994 at 18.3%. Since that high, the rate has been falling each year. In early 2004, the unemployment rate was between five and six percent. Between 2002 and 2004, the number of individuals in the labor force and the number of unemployed declined by approximately the same amount. This could indicate that “discouraged workers” have stopped looking for work and have permanently left the work force. The high rates of individuals below the poverty level and on Medicaid also indicate that many are no longer looking for work.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Table 18 | | | | | |
| Buchanan County Unemployment Rates 2000 - 2014 | | | | | |
|  |  | |  |  |  |
| Year | Labor Force | | Employed | Unemployed | Annual Unemployment Rate |
| 2000 | 8,738 | | 8,223 | 515 | 5.90% |
| 2001 | 8,881 | | 8,344 | 837 | 6.00% |
| 2002 | 8,983 | | 8,344 | 639 | 7.10% |
| 2003 | 8,838 | | 8,220 | 618 | 7.00% |
| 2004 | 8,317 | | 7,834 | 483 | 5.80% |
| 2005 | 8,401 | | 7,947 | 454 | 5.40% |
| 2006 | 8,419 | | 7,997 | 422 | 5.00% |
| 2007 | 8,657 | | 8,235 | 422 | 4.90% |
| 2008 | 8,950 | | 8,502 | 448 | 5.00% |
| 2009 | 9,236 | | 8,448 | 788 | 8.50% |
| 2010 | 8,326 | | 7,497 | 829 | 10.00% |
| 2011 | 8,474 | | 7,755 | 719 | 8.50% |
| 2012 | 8,598 | | 7,819 | 779 | 9.10% |
| 2013 | 8,174 | | 7,286 | 888 | 10.90% |
| 2014 | 7,874 | | 7,058 | 816 | 10.40% |
| Source: Virginia Employment Commission | | | | |  |

Buchanan County sees fewer of its workers leaving the county to work elsewhere than does its neighbor, Dickenson County. According to the 2014 Census estimates, the worker retention rate was 50.6%, with 4,168 individuals, (out of a workforce of 8,235) traveling to surrounding counties to work. The median travel time to work was 33.4 minutes in the year 2014.

|  |  |  |  |
| --- | --- | --- | --- |
| Table 19  Commuting Patterns | | |  |
|  |  |  |  |
| People who live and work in the area |  | 3,060 |  |
| In-Commuters |  | 4,767 |  |
| Out-Commuters |  | 4,168 |  |
| Net In-Commuters (In-Commuters minus Out-Commuters) |  | 599 |  |
| Source: U.S. Census Bureau,On The Map Application and LEHD Origin-Destination Employment Statistics, 2012 | | | |



The poverty rate in Buchanan County is 24% versus 11.5% in Virginia. The per capita income for the county is only 18,357 versus 33,958 for Virginia. The proportion of county residents over the age of 25 without a high school diploma is much higher than in Virginia.



Mining jobs are still a significant sector of the employment in Buchanan County. Education services jobs make up the largest segment of jobs with health care and social services right behind mining and education services. Taxable sales for Buchanan County have been steadily increasing since 2000 when sales totaled $115,923,478. By 2014, sales were up to $147,726,232.

The whole Cumberland Plateau Region is focused on the development of tourism as one way to strength the economy and create jobs. Industrial development is very limited in Buchanan County due to its isolation and the lack of large plots of fairly flat land. Information technology and health care are two areas that could see growth in the county



.

|  |  |
| --- | --- |
| Table 23 | |
| Taxable Sales | |
| 2000-2014 | |
| Year | Buchanan |
| 2000 | $115,923,478 |
| 2001 | $114,597,950 |
| 2002 | $114,720,922 |
| 2003 | $112,152,118 |
| 2004 | $116,924,712 |
| 2005 | $107,211,477 |
| 2006 | $123,290,187 |
| 2007 | $127,687,900 |
| 2008 | $139,948,887 |
| 2009 | $127,560,716 |
| 2010 | $125,345,514 |
| 2011 | $142,304,553 |
| 2012 | $156,984,874 |
| 2013 | $148,802,737 |
| 2014 | $147,726,232 |
| Source: Virginia Department of Taxation | |

### 3.1.8 Land Use

**A. Residential:**

In the coalfields of Virginia, 70% of the land is above a 20 percent slope and 90% is above a 12 percent slope. Much of the county is unsuitable for residential development. Most of the population density in Buchanan County is centered in the northwest-central area where both Grundy and Vansant are located. Of the 11,508 housing units in the county, 18% are vacant. The vacancy rate is 31% for housing in Grundy.

Since the population of the county is expected to continue to decline, there are no future growth areas for subdivision development. Provision of public services would need to be considered a priority before concentrated growth could be expected in new areas of the county.

**B. Commercial:**

Independent shopping establishments offering a variety of retail goods and services are located throughout the county. The county has one shopping center with 12 retail outlets. Grundy is the county seat and the commercial area as well with approximately 30 retail establishments. This town was flooded out three times in the 20th century and the town center is being relocated from the banks of the Levisa Fork River to a site on higher ground.

Future commercial development in the county will depend on an increase in the population, an increase in jobs or an increase in tourism.

In 2004, the Virginia Coalfield Economic Development Authority approved a $3 million loan to the Buchanan County Industrial Development Authority (IDA) for the construction of the University of Appalachia School of Pharmacy in Grundy. The University of Appalachia is projected to have an economic impact of approximately $20 million per year and to create 138 new jobs in Buchanan County. The Appalachian School of Law is also located in Grundy.

**C. Industrial:**

There are a limited number of developed industrial parks in Buchanan County. This is partly due to the lack of large parcels of suitable land for development and the lack of good transportation routes. The decision was made to develop an informational park and service sector jobs as a way to diversify the economy of Buchanan County.

In 2003, the Virginia Coalfield Economic Development Authority granted $1,040,000 to the Buchanan County Industrial Development Authority (IDA) to equip the Virginia Employment Commission's (VEC's) new customer contact center at the Buchanan Information Park. The board also approved up to a $2,090,000 loan to the Buchanan County IDA for construction of a 30,000 sq. ft. addition to the Buchanan Information Park facility.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| SITE SPECIFICATIONS - INDUSTRIAL SITES –BUCHANAN COUNTY | | | | | |
| **SITE NAME** | LOCATION | **MILES TO NEAREST INTERSTATE** | **MILES TO NEAREST 4-LANE HWY** | SQUARE FOOTAGE | **TOTAL ACREAGE** |
| Buchanan Informational Park | State Route 83 | I-77 - 70 mi | Rt. 460 - 8 mi | 38,013 | 4.75 acres |

There is a unique opportunity for significant economic development in the coalfield counties with the plan to build the Coalfields Expressway along the region's ridge tops. Preliminary construction plans indicate that as many as 500 acres of new developable land will be created by the Expressway. With 500 acres of new developable land, the three counties could realize as many as 4,000 to 6,000 new jobs from the successful marketing of these new sites. With a standard accepted multiplier of 1.7 for indirect jobs, a total of 6,800 to 10,200 new jobs are foreseeable for the coal counties of Southwest Virginia.

When construction begins, it is estimated that 1,400 construction jobs will boost the local regional economy over the expected 10-year lifespan of the road's construction. Local income will also be generated by the purchase of supplies, materials, and equipment from local businesses. In the long-term, tourism will increase as destinations that are now remote become accessible. For example, currently the Breaks receives over 400,000 visitors a year, but the TVA estimates that when the Coalfields Expressway is in place, attendance could increase to 1 million visitors per year.

The hope is that local colleges and institutions will see their profiles and enrollment figures rise as more and more people consider higher education a viable alternative. Additionally, technology and industrial parks will finally be able to recruit to their full potential and existing businesses will be able to fan out and offer their goods and services to more and more customers.

**D. Agricultural:**

The amount of land used for farming is decreasing in Buchanan County. Land in farms decreased 27% from 8,627 acres in1992 to 6,303 acres in 1997, while the average size of farms increased from 85 acres (1992) to 90 acres (1997). The number of full time farms decreased 58% during the same period from 36 farms in 1992 to 15 farms in 1997.

Crops such as burley tobacco and hay account for nearly 60% of the market value of agricultural products sold. Beef cattle and livestock sales make up the remaining 40% of the market.

**E. Open Space/Recreation:**

Nearly all of Buchanan County is covered in trees. Over 90 percent of the county is covered by hardwood forest growth and about 1% is evergreen forest.

### 3.1.9 Community Facilities/Activities:

Buchanan County General Hospital, located in Grundy, is a 134-bed hospital that serves the county.

Public schools in the county include 2 elementary, 4 combined, and 4 high schools. Several schools are located in Grundy including Mountain Mission School, a private K-12 school. The town is also home to the Appalachian School of Law and the planned University of Appalachia School of Pharmacy.

The Jefferson National Forest and the Breaks Interstate Park in neighboring Dickenson County offer extensive outdoor recreation activities.

Sources:

U.S. Bureau of the Census, 2000 and 2014 Census, 1990 Census, Economic Census, Census of Agriculture

Virginia Economic Development Partners

Cumberland Plateau Planning District Commission

Virginia Employment Commission

## Dickenson County

### 3.2.1 Location

Dickenson County, Virginia is located in Southwestern Virginia on the border of Kentucky. Dickenson lies in the coal-bearing hills of the Appalachian Plateau. Though rich in natural resources with abundant coal, natural gas, timber and mineral assets, the economy of the region is transitioning from natural resources to technology.

Dickenson is bounded by Wise County to the southwest, Buchanan County to the northeast and Russell County to the southeast. Roanoke is approximately 184 miles east and Richmond, the state capital, is 255 miles east.

### Population

Dickenson County, like the other counties in the Cumberland Plateau Planning District, has seen alternating periods of population growth and decline related to a series of coal-related “booms and busts”. But since the 1990’s, the region has seen a steady decline in population. Dickenson County declined -3.00% from 2000-2010 and continues to decline although the rate has slowed.







The Virginia Employment Commission projects that Dickenson County will continue to see population decreases through 2040 but at rates considerably less than the 3.0% the county saw over the past decade (2000-2010). Between 2020 and 2030 the decline is projected to level off so that the population remains rather constant at 15,375.

The population centers of the county are the towns of Clinchco (pop. 365), Clintwood (1,448), and Haysi (408). During the last decade (2000-2010), the population of Clintwood lost -8.7% remained constant while Haysi gained 167.7% of its small population. Haysi's population increase was due mainly to the town being annexed.



According to the 2020 Census Bureau Estimates, there were 14,124 people, 7,563 households, and 5,778 families residing in Dickenson County. This calculates to a population density 48.1/mi². There are 7,563 housing units in the county.

In the county, the population is spread out with 22.38% under the age of 19, 5.65% from 20 to 24, 12.83% from 25 to 44, 14.73% from 45 to 64, and 8.477% who are 65 years of age or older. The median age is 43.5 years.

The racial makeup of the county is 98.2.% White, .5% Black or African American, and 0.6% from other races. There were 9,406 households, with the average household consisting of 2.4 persons and the average family size being 2.47 persons.



The median income for a household in the county is $29,932. The per capita income for the county is $24,978 with 19.3% of the population living below the poverty line.



### 3.2.3 Geographic conditions

Encompassing a land area of 335 square miles, the County lies in the Appalachian Plateau with Pine (Cumberland) Mountain running along its Kentucky border. The southern slopes of the mountain are long and comparatively gentle, but the northern slopes area very steep and descend a vertical distance of nearly 2,000 feet. Elevations in general vary from 1,200 feet above sea level to 3,137 feet on the northwest border. The mountainous surface of the County is characterized by many small streams separated by sharply rising ridges, steep slopes, and narrow valleys. The principal streams are the Russell Fork, Pound, Cranesnest, and McClure Rivers.

All the rivers gather and flow out of the County through a remarkable chasm ripped through the northern end of Pine Mountain known as "The Breaks." In 1954, through a joint action of the legislatures of Virginia and Kentucky, the Breaks Interstate Park was created.

The topography of Dickenson County limits development somewhat to the low laying areas along streams and rivers. Although some plateaus are suitable for development, access to these sites is a limiting factor.

Dickenson County lies in the Cumberland Plateau Physiographic Province where formations are mostly sandstone and shale with mineable coal deposits. The Province, for the most part, contains weather-resistant sandstone, which accounts for the steep V-shaped mountains.

### 3.2.4 Climate

Dickenson County lies in the warm temperate region. Latitude, mountainous topography, and prevailing winds exert considerable influence upon the climate.

The area receives approximately 47 inches of precipitation annually with snowfall averaging about 18 inches a year. The average maximum temperature is 72 degrees, and the average minimum temperature is 36 degrees.

Thunderstorms and cloudbursts, normally occurring in the summer months, produce heavy rainfall over sections of the county and runoff is significant. Prevailing winds are westerly at an average velocity of 8 miles an hour but can reach high speeds during storms.

### 

### 3.2.5 Transportation

**A. Highways**

There is no Interstate highway running through the County but there are four Virginia Primary Routes serving the area. VA 63/83 runs north/south bisecting the county and serves the towns or Nora, McClure, Clinchco, Haysi and Clintwood. VA 80 enters from the east and continues along this boundary in a north/south direction serving the communities of Birchleaf and Haysi and all the way up to the Breaks Interstate Park. VA 83 enters the county from the west and bisects the county as it runs east to west. It intersects with U.S. Route 460 in Vansant in Buchanan County. VA 72 runs north/south joining VA 83 at George’s Fork. All four VA routes intersect with U.S. Routes providing access to eastern Tennessee, eastern Kentucky, West Virginia and eastern Virginia.

**B. Air**

The nearest airport is the Tri-Cities Regional Airport located 45.6 miles to the southeast in the Bristol/Johnson City, Tennessee area. It is served by five of the major airlines or their regional partners. Mercer County Airport is located 59.7 miles to the north in West Virginia and is served by U.S. Airways.

General aviation services can be found at Grundy Municipal Airport in Buchanan County.

C. Rail

Freight rail service is available in the county from CSX Transportation and Norfolk Southern.

D. Water

The nearest ports are located in Richmond (370 miles) and Norfolk (439 miles).

### 3.2.6 Infrastructure / Utilities & Services

A. Electricity

American Electric Power provides power to Dickenson County.

B. Natural Gas

Equitable Resources Exploration provides gas to the County.

**C. Water**

Water is handled by the following entities:

* Dickenson County Public Service Authority
* Town of Clintwood

**D. Sewage**

Sewage is handled by the following entities:

* Dickenson County Public Service Authority
* Town of Clintwood

### 

### 3.2.7 Economic Growth

Throughout the 20th century, the economy of Dickenson County and the entire Cumberland Plateau Planning District has been primarily dependent on coal. With almost 35 percent of the local economy and 40 percent of wages dependent on the coal industry, the economy has been tied to the trends in the price and demand for coal. Job losses have been staggering and the manufacturing and wholesale/retail trade have not been able to absorb these losses. Unemployment rates in the coal region of Virginia generally run the highest of anywhere in the state. The weak economy has been the main cause of the population decline.

Industrial development outside the area of mining has been slow. Access to markets has been a major hindrance to development. The last twenty years have seen a dramatic change in the mining industry. Coal mining in the region is still strong, however, the increased mechanization of the industry has resulted in fewer job opportunities for residents. Dickenson County has led the Commonwealth with its high unemployment rate for the last few years.







About half of the workforce is traveling out of the county to work each day and commuting an average of 35.8 minutes. Unemployment rates are still running very high in 2014. Mining employment paid well and workers have not been able to replace their lost jobs with comparable salaries. Even new industries are having a hard time as Travelocity announced plans (2004) to close its 3-year old operation in Dickenson County.







The population of Dickenson County is less prosperous than the population of Virginia. The poverty rate is more than two and a half times higher than the average for the state. The per capita income of residents of Dickenson County is only 53% of the per capita income of Virginians. The proportion of county residents over the age of 25 without a high school diploma is significantly higher than in Virginia.







Mining jobs are still a significant sector of the employment in Dickenson County. Mining jobs make up the largest segment of jobs with Education Services and Health Care and Social Services close behind. Taxable Sales for Dickenson County have been increasing most years over the past decade.



What is the outlook for transforming the economy of the counties in “coal country”? One strategy to attract new jobs has been the construction of shell buildings by the Cumberland Plateau Planning District Commission (PDC). Eight buildings have been constructed since 1987 and four have been sold, providing about 450 jobs to regional residents. Only one of these buildings, the Happy Valley Industrial Park is located in Dickenson County. It is a 40,000 sq ft. shell building and is being marketed through the PDC.

The more recent economic development strategy is to provide the region with an advanced communications infrastructure that can offer a competitive advantage in attracting and retaining industry. It also serves to educate and train or retrain the workforce, as the county attempts to transition to a technology based economy.

The Dickenson County Wireless Integrated Network “DCWIN” will provide wireless service to enhance local government services to citizens and enhance small business’ ability to compete in world markets, while additionally improving high-speed data transmission and high-speed Internet services to its citizenry. It is expected that DCWIN will serve as a catalyst to improve infrastructure within Dickenson County and the utilization of DCWIN will enhance economic development throughout the entire coalfield region. Dickenson County looks to the future and joining the technology corridor within the Commonwealth of Virginia.

The development of regional tourism is still an area of focus for improving the economy. The Breaks Recreation Area is recognized as having potential for further development. In addition, Health care provision could bring with it good paying jobs.

Dickenson County will have a section of the proposed Coalfield Expressway, currently under discussion. This route will be a wider, more direct route through the mountainous counties in Southwest Virginia into West Virginia, connecting with U.S. Route 460 and I-77.

### 3.2.8 Land Use

**A. Residential**

Due to the population decline and housing vacancy rate (about 12%), new housing starts are not expected to be significant in the near future. The county reported approximately 20-25 building permit requests a year from 1998-2002. Future growth in the form of subdivisions is not currently being planned. Sewer/water projects will be dependent on Community Development Block Grant or Appalachian Regional Commission funding.

**B. Commercial**

Most of the commercial activity is concentrated in and around Clintwood and Haysi. Clintwood has developed several sites, including their historical theater and the Ralph Stanley Museum, as a way to promote itself as a tourist destination. Festivals help bring tourist in during the summer and fall.

**C. Industrial**

Industrial Park development has been promoted by the Planning District Commission as one way to diversify the regional economy. In Dickenson County progress has been slow with most developed sites remaining vacant. Transportation routes and isolation are two big obstacles to future industrial growth. The planned expressway may change these conditions but the construction schedule remains unclear.

#### Dickenson County Industrial Parks

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **SITE SPECIFICATIONS - INDUSTRIAL PARKS – DICKENSON COUNTY** | | | | | |
| **Site Name** | **Location** | **Miles to Nearest Interstate** | **Miles to Nearest 4-lane Highway** | **Square Footage** | **Total Acreage** |
| Dickenson Shell Building | State Route 707 | I-81 - 60 mi | Rt.23 - 8 mi | 40,000 | 11.95 acres |
| Haysi Manufacturing facility | Route 80 West | I-77 - 75 mi | Rt.460 - 20 mi | 31,250 | 13.48 acres |
| Furniture World Building | T-1001 | I-81 - 60 mi | Rt.23 - 10 mi | 13,500 | 0.2 acres |

Source: Virginia Economic Development Partners

**D. Agricultural**

Farmers in Dickenson County primarily raise beef cattle, and grow hay and burley tobacco. In 1997, the Census of Agriculture reported a total of just over 100 full time farms in the county. Most land in the county is unsuitable for growing crops.

**E. Open Space/Recreation**

About 93% of the county is forested, mainly covered with deciduous trees with a small amount of evergreen forest cover mixed in.

Breaks Interstate Park is located on the Virginia-Kentucky border with most of the 4,500 acres falling within Dickenson County. The park has numerous recreational facilities including a lodge, dining hall, amphitheater, camping and hiking.

The John W. Flannagan Dam and Reservoir is located five miles from Haysi on the Pound River, a tributary of the Russell Fork River. The 7,507-acre facility is operated by the U.S. Corp of Engineers and includes a 1,143-acre lake. Future activities are to include white-water rafting and kayaking.

### 3.2.9 Community Facilities/Activities

Dickenson County maintains 2 elementary schools, 3 combined schools and 3 high schools. Vocational training can be found at all the high schools plus the Dickenson County Career Center.

The Dickenson County Medical Center, located in Clintwood, is a 50-bed acute care center.

County cultural activities include the Ralph Stanley Music Festival in Clintwood, held in May. A new Ralph Stanley museum will also be located in Clintwood.

Sources:

U.S. Bureau of the Census, 2000 Census, 1990 Census, Economic Census, Census of Agriculture

Virginia Economic Development Partners

Cumberland Plateau Planning District Commission

Virginia Employment Commission

## 3.3 Russell County

### 3.3.1 Location

Russell County, Virginia is located in the southwestern portion Virginia and is one of four counties in the Cumberland Plateau Planning District. The county shares a border with Dickenson County to the northwest and Buchanan County to the north. Tazewell County lies to the northeast, Washington County to the south and Scott County to the southwest.

Western Russell County rests on a high, open, relatively level plateau amid a circle of mountains. The high mountain pastures of Clinch River Valley are legendary. Clinch Mountain forms the southern border of the county and the northern section stretches into the coal-bearing hills of the Cumberland Plateau.

Russell County is 35 miles north of Bristol, 150 miles west of Roanoke and 290 miles west of Richmond. This 475 square mile community lies midway between the isolated coal producing counties of Virginia and the dynamic Tri-Cities metropolitan area of Bristol-Kingsport-Johnson City.

### 3.3.2 Population

There are several small towns in Russell County including Cleveland (pop. 296), Honaker (pop. 1626), and Lebanon (pop. 3,399), which serves as the seat of local government. The county lost population during the 1980’s but was the only county in the planning district to gain population during the 1990’s. Its location next to Washington County and its proximity to I-81 and the Tri-Cities area makes it the least isolated of the planning district’s member counties.







Russell County seems to have dodged the significant population decreases observed in the rest of the coal-producing region of southwest Virginia. The local economy is not as dependent on coal as in Dickenson and Buchanan Counties and residents have more jobs opportunities available within commuting distance in the Tri-Cities area.



Population projections from the Virginia Employment Commission show that Russell County will continue to see population growth through 2020 of about 0.53% a year. For the twenty years thereafter (2030-2040), the county is projected to see continued growth but at rates of approximately 0.81% annually.



According to the United States Census Bureau American Community Survey Estimates of 2020, there were 25,781 people, 13,536 households residing in the county. That calculates to a population density of 61/mi².

The racial makeup of the county is 97.6% White, 1.1% Black or African American, and 2.7% from other races. The average household consists of 2.46 persons.

In the county, the population spread is not far from the Virginia average. The 2014 United States Census Bureau Estimates shows that 5.2% of the population is under 5 years old, 10.69 % is under the age of 19, and 8.37% of the population is 65 years of age or older. The median age is 43.6 years.



The median income for a household in the county is $39,758, and the median income for a family is $21,605. The per capita income for the county is $21,605 with 16.2% of the population living below the poverty line. These figures are slightly higher than the averages in the rest of the planning district.



### 3.3.3 Geographic conditions

The entire Russell coalfield is characterized by steep, mountainous topography. It lies in the southeastern edge of the physiographic province known as the Allegheny Plateau.

The highest point of the county is Big A Mountain (3,735 feet) on Sandy Ridge, which forms the divide between the Clinch River drainage on the southeast and the Big Sandy drainage on the northwest. The lowest point in the area is on the Clinch River at Boody (1,481 feet).

Russell County has fewer topographic constraints than Dickenson or Buchanan Counties but areas around Clinch, Garden and Big A Mountain have limited economic development potential.

The entire Russell coalfield drains into the Clinch River. The principal tributaries are Mill Creek, Swords Creek, Lewis Creek, Hart and Musick Forks of Dumps Creek and Lick Creek in the western part of the county. There are numerous springs in the coalfield, many of which are located on the outcrops of fields and fed by water percolating along the joints of the coal.

All the drainage of the county is tributary to Big Sandy River through its three main branches: Russell Fork, Levisa Fork, and Tug Fork. Although most streams and creeks contain some water all year round, none has a very large flow. The topography of Buchanan County limits development somewhat to the low laying areas along streams and rivers.

Russell County straddles two distinct physiographic regions. The Valley and Ridge Province extends from east to west through the southern portion. This province is underlain by sedimentary rock strata that has been folded, tilted, and deformed. The chief rock types are limestone, shales, dolomites, and sandstone.

Cumberland Plateau Physiographic Province covers the northern portions of the county that lie north of the Cumberland escarpment. The region is underlain by sandstones, conglomerate sandstones, and shales, with numerous coal beds at varying elevations. The soil of the plateau is very thin so that much of the precipitation in this region penetrates into the ground to shallow depths. The dense vegetation prevents heavy eroding in high precipitation events.

### 3.3.4 Climate

Russell County lies in the warm temperate region. Latitude, mountainous topography, and prevailing winds exert considerable influence upon the climate.

The area receives an average annual rainfall of 43.1 inches and an average snowfall of 21 inches. The average maximum temperature is 72 degrees, and the average minimum temperature is 36 degrees for the Cumberland Plateau region. Russell County’s average July temperature is 74 degrees and for January the average temperature is 35 degrees.

Thunderstorms and cloudbursts, normally occurring in the summer months, produce heavy rainfall over sections of the county and runoff is significant. Prevailing winds are westerly at an average velocity of 8 miles an hour but can reach high speeds during storms.

### 3.3.5 Transportation

**A. Highways**

Russell County is served by two U.S. Routes: U.S. Alternate Route 58 runs along the western and southern corners of the county from the common boundary line of Wise and Russell Counties to its junction with U.S. Route 19, which enters Russell from Washington County. U. S. Route 19 runs east/west along the southern portion of the county to the Tazewell/Russell County line.

Virginia Primary Routes 63, 65, and 71 serve the western portion of the county. Primary Routes 67 and 80 serve the eastern portion of Russell County.

**B. Air**

The Tri-Cities Regional Airport lies 45 miles to the southeast in the Bristol/Johnson City, Tennessee area. It is served by five of the major airline or their regional partners. Mercer County Airport lies about 54 miles north and west in West Virginia.

General aviation services can be found at Grundy Municipal Airport or at the Tazewell County Airport.

**C. Rail**

Norfolk Southern and CSX Transportation provide freight rail service to Russell County.

**D. Water**

The nearest ports are located in Richmond (290 miles) and Norfolk (360 miles).

### 3.3.5 Infrastructure / Utilities & Services

**A. Electricity**

American Electric Power and Old Dominion Power Company provide power to the County.

**B. Natural Gas**

Virginia Natural Gas provides gas to the County.

**C. Water**

Water is provided by the following entities:

* Russell County Water and Sewer Authority
* Three Creek Apparel Waterworks

Town of Honaker

Town of Lebanon

Town of St. Paul

**D. Sewage**

Sewage is handled by the following entities:

* Town of Honaker
* Town of Lebanon
* Town of St. Paul

### 

### 3.3.6 Economic Growth

Russell County’s unemployment rate hit a high in 2009 at 10.52% due to the recession of 2008. The recession was a major worldwide economic downturn that began in 2008 and continued into 2010 and beyond. Since that high, the rate has remained around 8% for the past four or five years.







According to the 2014 Census, the worker retention rate was 60%, with 58.5% of the work force traveling out of the county to work. The median travel time to work was 31.2 minutes in the year 2014. Those traveling out the county are mostly commuting southeast to Abingdon, Bristol and beyond. Russell County also sees a significant in-migration of workers with about 36.6% of its workforce residing in surrounding counties.







While the poverty rate in Russell County is significantly higher than the Virginia rate, the county appears to be in better economic health than the other counties in the Cumberland Plateau district. Proportionately fewer residents of Russell County are in the work force and a much smaller percentage has graduated from high school than Virginians in general.



Mining/Agricultural jobs are not as significant a sector of employment in Russell County (4.13%) as in Dickenson and Buchanan Counties. Health care & Social Services jobs make up the largest segment of jobs. The economy of Russell County seems to be more diversified than its neighboring counties with the manufacturing sector significantly higher. Wholesale and retail trade also employs a significant portion of the county’s residents.

Taxable sales for the county went up dramatically between 2001 and 2002 with a 20% increase. Between 2001 and 2002, sales continued to increase as they jumped another 5.5%.

|  |  |
| --- | --- |
| Table 44 | |
| Taxable Sales | |
| 2000-2014 | |
| Year | Russell |
| 2000 | $107,862,419 |
| 2001 | $101,878,423 |
| 2002 | $122,525,574 |
| 2003 | $129,188,820 |
| 2004 | $138,753,368 |
| 2005 | $132,085,662 |
| 2006 | $149,040,720 |
| 2007 | $156,657,814 |
| 2008 | $161,030,985 |
| 2009 | $157,889,960 |
| 2010 | $158,276,136 |
| 2011 | $159,840,501 |
| 2012 | $160,139,687 |
| 2013 | $153,199,811 |
| 2014 | $159,893,054 |
| Source: Virginia Department of Taxation | |







### 3.3.7 Land Use

**A. Residential**

Russell County has more buildable land than the counties to its west and north. The areas around the Clinch River and on the high plateaus have fairly flat lands. New construction of single-family homes is occurring in the town of Lebanon. The Cumberland Plateau Planning District Commission reports that Russell County, especially around Lebanon, is expected to grow because new jobs are being created in the area’s industrial parks. Housing vacancy rates in Lebanon and Castlewood in the year 2000 were only 8.3% while that of Cleveland was 28.3%. It is anticipated that new subdivisions will be built in Lebanon and public services may need to be extended to new areas to provide public sewer and water. Building permits for the county have averaged about 70 per year over the last five years (1998-2002).

**B. Commercial**

Numerous shopping opportunities are available in Russell County, including four shopping centers and 345 retail and service-related businesses. The town of Lebanon serves as the commercial center for the county with over 150 retail establishments located in its downtown area. Additional shopping centers and malls in the Bristol metropolitan area are easily accessible for county residents.

Future commercial development in the county may occur in the Lebanon area in response to future population growth or tourism.

**C. Industrial**

The Cumberland Plateau PDC has constructed eight shell buildings throughout the region since 1987. Five have been sold, including two in the Russell County Industrial Park located in Lebanon. Teleflex Corporation, Inc. and Lear Corporation are both currently operating in these shell buildings. Grundy, Honaker and Clintwood are sites of three other PDC constructed shell buildings that are currently being marketed. Other sites with space available are listed in the following table:

**RUSSELL COUNTY INDUSTRIAL BUILDINGS**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **SITE SPECIFICATIONS - INDUSTRIAL BUILDINGS – RUSSELL COUNTY** | | | | | |
| **Site Name** | **Location** | **Miles to nearest Interstate** | **Miles to nearest 4-lane Highway** | **Square Footage** | **Total Acreage** |
| Russell County Authority Building | Route 1, Box 570 | I-81 - 36 mi | U.S. Rt. 58 - 6 mi | 29,302 | 0 acres |
| Custom Vents Building 1 | U.S. Route 19 North | I-81 - 15 mi | U.S. Rt.19 - N/A | 18,752 | 2.74 acres |
| Custom Vents Building 2 | U.S. Route 19 North | I-81 - 15 mi | U.S. Rt.19 - N/A | 9,056 | 2.74 acres |
| Three Creek Apparel Building | Rt. 683, Nicklesville | I-81 - 28 mi | U.S. Rt. 19 Bypass - 0.5 mi | 23,700 | 5.0 acres |
| Leonard Properties Building | 890 E. Main St. | I-81 - 20 mi | U.S. Rt. 58 - 7 mi | 172,000 | 12.6 acres |
| Honaker Shell Building | Railroad Ave, Honaker | I-81 - 35 mi | U.S. Rt.19 - 5 mi | 12,000 | 1.7 acres |

Source: Virginia Economic Development Partners

The proposed new Coalfields Expressway will run to the north of the county but may benefit the county by allowing residents to travel north and west more conveniently. This may open up job opportunities for county residents and make markets in the north and central parts of the United States more accessible to Russell County industry. When the expressway construction begins, it is estimated that 1,400 construction jobs will boost the local regional economy over the expected 10-year lifespan of the road's construction. Local income will also be generated by the purchase of supplies, materials, and equipment from local businesses.

**D. Agricultural**

Russell County's rolling landscape and high elevations make this area prime pasture, hay and burley tobacco country. It is also a good corn-growing area. Ample rains, productive soils and cool nights help grasses to thrive here. Because of this, Russell County farmers primarily raise beef cattle that graze off pastureland during the growing season and eat hay and corn at other times.

Many of those same farmers also raise burley tobacco. Russell County produced more than 3.12 million pounds of burley tobacco, according to the 1997 census. Russell is also home to smattering of other agricultural enterprises, including nursery stock operations, apple orchards as well as sheep, dairy, chicken and hog farms.

The amount of land used for farming declined slightly between 1992 and 1997 in Russell County decreasing 5%. Over the same period the average size of farms increased slightly from 146 acres (1992) to 149 acres (1997). The number of full time farms decreased 11% from 495 farms in 1992 to 442 farms in 1997. At that time, crops accounted for nearly 31% of the market value of agricultural products sold. Beef cattle and livestock sales made up the remaining 69% of the market.

**E. Open Space/Recreation**

Although most (approximately 70%) of Russell County is covered in trees, about 30% is cleared land or natural meadows. The non-forested land can be found along Routes 58 and 19 and around the population centers of Lebanon, Castlewood and Honaker. Over 90 percent of the county is covered by hardwood forest growth and about 1% is evergreen forest.

### 3.3.8 Community Facilities/Activities:

Russell County Medical Center, a 78-bed facility, offers comprehensive services.

Clinch Mountain Wildlife Area, located in the eastern part of the county, offers outdoor recreation activities. Canoe launch sites have been built on the Clinch River. The Jefferson National Forest and the Breaks Interstate Park in neighboring Dickenson County also offer extensive outdoor activities.

Public schools in the county include 9 elementary and 3 high schools. Vocational training is offered at the high schools as well as the Russell County Career and Vocational Center.

Sources:

U.S. Bureau of the Census, 2000 Census, 1990 Census, Economic Census, Census of Agriculture

Virginia Economic Development Partners

Cumberland Plateau Planning District Commission

Virginia Employment Commission

## 3.4 Population Summary

The following table summarizes the population by year for the three Counties.



|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Table 46 | | | | | | | |
| Population Summary | | | | | | | |
| 1990-2040 | | | | | | | |
|  |  |  |  |  |  |  |  |
|  |  | Buchanan | | Dickenson | | Russell | |
| Census | Year | Population | % Annual Change | Population | % Annual Change | Population | % Annual Change |
| Census | 1990 | 31,333 |  | 17,620 |  | 28,667 |  |
| Estimate | 1991 | 31,400 | 0.21% | 17,600 | -0.11% | 28,800 | 0.46% |
| 1992 | 31,200 | -0.64% | 17,700 | 0.57% | 28,900 | 0.35% |
| 1993 | 30,700 | -1.60% | 17,600 | -0.56% | 29,300 | 1.38% |
| 1994 | 30,300 | -1.30% | 17,500 | -0.57% | 29,400 | 0.34% |
| 1995 | 29,700 | -1.98% | 17,400 | -57.00% | 29,300 | -0.34% |
| 1996 | 28,900 | -2.69% | 17,000 | -2.30% | 29,300 | 0.00% |
| 1997 | 28,400 | -1.73% | 16,900 | -0.59% | 29,300 | 0.00% |
| 1998 | 27,900 | -1.76% | 16,700 | -1.18% | 29,200 | -0.34% |
| 1999 | 27,500 | -1.43% | 16,600 | -0.60% | 29,200 | 0.00% |
| Census | 2000 | 26,978 | -1.90% | 16,395 | -1.23% | 30,308 | 3.80% |
| Estimate | 2001 | 26,319 | -2.44% | 16,240 | -0.94% | 29,060 | -4.11% |
| 2002 | 25,945 | -1.42% | 16,134 | -0.65% | 28,825 | -0.80% |
| 2003 | 25,407 | -2.07% | 16,080 | -0.33% | 28,857 | 0.11% |
| 2004 | 24,950 | -1.80% | 16,079 | 0.00% | 28,648 | -0.72% |
| 2005 | 24,452 | -2.00% | 16,175 | 0.59% | 28,596 | -0.18% |
| 2006 | 23,992 | -1.88% | 16,024 | -0.93% | 28,725 | 0.45% |
| 2007 | 23,526 | -1.94% | 16,033 | 0.56% | 29,029 | 1.05% |
| 2008 | 23,090 | -1.85% | 16,176 | 0.89% | 29,006 | -0.07% |
| 2009 | 22,860 | -0.99% | 16,087 | -0.55% | 29,250 | 0.84% |
| Census | 2010 | 24,028 | 5.10% | 15,903 | -1.14% | 28,897 | -1.20% |
| Estimate | 2011 | 24,006 | -0.09% | 15,762 | -0.88% | 29,014 | -0.40% |
| 2012 | 23,990 | -0.07% | 15,747 | -0.09% | 28,890 | -0.42% |
| 2013 | 23,867 | -0.50% | 15,660 | -0.55% | 28,311 | -2.00% |
| 2014 | 23,754 | -0.47% | 15,741 | -0.51% | 28,636 | 1.14% |
| Estimate | 2015 | 22,983 | -3.24% | 15,339 | -2.55% | 28,008 | -2.19% |
| 2016 | 22,473 | -2.21% | 14,996 | -2.23% | 27,697 | -1.11% |
| 2020 | 23,383 | 4.00% | 15,600 | 4.23% | 29,051 | 4.88% |
| 2030 | 23,263 | -50.00% | 15,375 | -1.44% | 29,296 | 0.84% |
|  | 2040 | 23,296 | 0.14% | 15,193 | -1.18% | 29,534 | 0.81% |
| Source: US Census Bureau & US Census Bureau American Community Survey Estimates | | | | | | |  |

# 4.0 WASTE GENERATION AND COMPOSITION

Waste tonnages are tracked at the individual transfer stations in the Counties. Annually the Authority completes the reporting to the DEQ for the facilities.

## 4.1 Existing Conditions (2021)

The Region at the three transfer stations tracks their waste in accordance with the categories outlined on DEQ Form 50-25 which includes the following:

Municipal Solid Waste

Construction/Demolition/Debris

Industrial Waste

Regulated Medical Waste

Vegetative/Yard Waste

Incinerator Ash

Sludge

Tires

White Goods

Friable Asbestos

Petroleum Contaminated Soil

In addition, the Region also expands their tracking at the transfer stations and includes the following categories:

Household Waste

Commercial Waste

Industrial Waste

Construction Debris

Mine Waste

Yard Waste

Flood Debris

Roofing Materials

Shingles

Sawdust

Wood Chips

Pallets

Sludge

Other

The more specific data is then combined into the categories identified in the DEQ 50-25 form.

The Counties also 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 Antifreeze

Abandoned Automobiles Removed

Batteries

The Region does not receive any agricultural waste nor does it accept stumps or large land clearing debris at the transfer stations. Septage is not accepted at the transfer stations and is not tracked by the Region under the solid waste programs. Hence data is not available. Spill residues, if meeting the allowable limits of the regulations, would be recorded as “Other” on Form 50-25.

The following section discusses existing conditions in terms of Form 50-25 data.

Appendix 2 contains the DEQ Forms 50-25 for the three transfer stations for 2020. Based on this information, the Region received 58,202.97 tons of waste materials at the transfer stations in the following categories (all values represent tons):

#### TABLE 47

**DEQ FORM 50-25 SUMMARY**

**2020**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Waste Type** | **BUCHANAN COUNTY** | **DICKENSON COUNTY** | **RUSSELL COUNTY** | **TOTAL** | **% OF TOTAL WASTE** |
| Municipal Solid Waste | **13,129.81** | **7,629.72** | **15,577.10** | **36,336.63** | **78.2%** |
| Construction/Demolition/Debris | **848.01** | **459.07** | **987.19** | **2,294.27** | **2.83%** |
| Industrial/Commercial Waste | **2,748.78** | **1,784.64** | **1,789.43** | **6,322.85** | **8.77%** |
| Vegetative/Yard Waste | **801.33** | **0** | **0** | **801.33** | **.1%** |
| Sludge\* | **0** | **0** | **0** | **0** | **0%** |
| Tires | **428.55** | **230.40** | **219.19** | **878.14** | **.5%** |
| White Goods | **6.45** | **0** | **17.40** | **23.85** | **.1%** |
| Other Waste | **4,440.20** | **2,621.96** | **115.67** | **7,177.83** | **9.5%** |
| **TOTAL** | **24,167.12** | **13,870.23** | **20,165.62** | **58,202.97** | **100.0%** |
| **% of Total Regional Waste** | **39.1%** | **23.1%** | **37.8%** | **100.0%** |  |

The table also indicates that Russell County receives the largest percentage of the regions waste (39.1%) and Dickenson County the smallest percentage (23.1%).

The aforementioned table evaluates the tonnage delivered as percent of the waste stream for each County as well as the total. Buchanan receives the most industrial/commercial waste, followed by Dickenson County, and Russell County the most municipal solid waste and Construction debris.



## Historical Waste Generation (2015-- 2021)

### 4.2.1 Total Tonnage Recorded at Transfer Stations

Tables 48 through 50 summarize the data collected at the transfer stations from 2015 through 2021 for Buchanan and Dickenson Counties and for 2015 – 2021 for Russell County. The categories are not identical to those indicated on the DEQ 50-25 forms but are expanded and represent the data as collected across the scales at the transfer stations. These tables also indicate the percent annual change in various categories of waste and indicate a positive increase in household and commercial tonnage especially over the past several years even though the population has been declining. They also indicate that Buchanan County receives a significant percentage (50.79%) of mine waste, and Dickenson County’s waste is primarily household as collected by the County with limited amounts of other waste types.

**TABLE 48**

**TRANSFER STATION REPORTING DATA**

**BUCHANAN COUNTY**

**2015 – 2021**

| **Waste Type** | **2015** | **2016** | **2018** | **2019** | **2020** | **2021** | **AVERAGE** | **% of TOTAL** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Household Waste | 12,742.38 | 13,283.72 | 13,061.62 | 12,382.87 | 13,270.52 | 13,129.81 | 12,978.48 | 67.07% |
| Commercial Waste | 1,050.25 | 1,038.93 | 1,154.25 | 1,306.25 | 2,298.28 | 2,748.78 | 1,599.47 | 8.27% |
| Construction Debris | 304.80 | 213.18 | 1,003.03 | 847.59 | 578.54 | 848.01 | 632.52 | 3.27% |
| Mine Waste | 1,816.77 | 1,161.02 | 4,260.57 | 5,114.56 | 3,943.85 | 4,371.13 | 3,444.65 | 17.8% |
| White Goods | .77 | 1.17 | 13.09 | 27.20 | 43.04 | 6.45 | 15.28 | .08% |
| Tires | 137.51 | 86.99 | 122.42 | 189.18 | 185.41 | 428.55 | 191.67 | .99% |
|  |  |  |  |  |  |  |  |  |
| Yard Waste | 27.09 | 25.54 | 118.83 | 304.73 | 59.00 | 122.61 | 109.63 | .57% |
| Flood Debris | 238.47 | 156.96 | 323.60 | 97.36 | 221.67 | 678.72 | 286.13 | 1.48% |
| Shingles | 22.83 | 41.56 | 25.84 | 34.28 | 0 | 0 | 20.75 | .11% |
| Recyclable |  |  |  |  |  |  |  | 0.0% |
| Animal Carcass | 9.74 | 15.26 | 17.27 | 9.31 | 7.62 | 5.98 | 10.86 | .06% |
|  |  |  |  |  |  |  |  |  |
| Trash Clean-up | 75.48 | 77.93 | 53.98 | 24.82 | 73.69 | 63.09 | 61.49 | .32% |
| **TOTAL** | **16,426.09** | **16,102.26** | **20,154.50** | **20,338.13** | **20,681.62** | **24,167.12** | **19,350.93** | 100.0% |
| % change total waste stream |  | -10.2% | 1.25% | 1.0% | 1.01% | 1.16% |  |  |
| % change  Household only |  | 1.04% | -0.98% | -.94% | 1.07% | -.98% |  |  |
| % change  Commercial only |  | -.9% | 1.11% | 1.13% | 1.75% | 1.19% |  |  |
| % change mine waste only |  | -.63% | 3.66% | 1.2% | -.77% | 1.10% |  |  |

**TABLE 49**

**TRANSFER STATION REPORTING DATA**

**DICKENSON COUNTY**

**2015 – 2021**

| **Waste Type** | **2015** | **2016** | **2018** | **2019** | **2020** | **2021** | **AVERAGE** | **% OF TOTAL** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Household Waste | 7,330.37 | 7,158.32 | 7,213.92 | 7,374.17 | 7,636.72 | 7,629.72 | 7,390.53 | 65.1% |
| Commercial Waste | 944.11 | 470.09 | 1,384.05 | 1,518.67 | 1,944.91 | 1,784.64 | 1,341.07 | 11.81% |
| Construction Debris | 160.16 | 72.37 | 185.80 | 256.69 | 698.96 | 459.07 | 305.34 | 2.69% |
| Mine Waste | 1,391.15 | 923.79 | 2,182.54 | 2,755.34 | 2,689.72 | 2,604.71 | 2,091.20 | 18.42% |
| Tires | 120.40 | 123.94 | 81.29 | 116.61 | 142.04 | 230.40 | 135.78 | 1.2% |
| Yard Waste | .65 | 3.03 | .0 | .25 | 0 | 0 | .65 | .01% |
| Flood Debris | 3.49 | 0 | 0 | 0 | 0 | 0 | .58 | .01% |
| Carcass | 12.90 | 9.08 | 13.64 | 11.88 | 1.79 | .47 | 8.29 | .07% |
| Roofing Material | 82.84 | 43.82 | 68.84 | 80.74 | 7.61 | 0 | 47.30 | .42% |
| Sludge | 0 |  |  |  |  |  |  | 0% |
| Dump Cleanups | 3.57 | 6.09 | 67.04 | 24.72 | 72.65 | 16.78 | 31.80 | .42% |
|  |  |  |  |  |  |  |  |  |
| **TOTAL** | **10,049.64** | **8,810.53** | **11,197.12** | **12,139.07** | **13,194.40** | **13,870.23** | **8,752.71** | **100.0%** |
| % change total waste stream |  | -.87% | 1.27% | 1.08% | 1.08% | 1.05% |  |  |
| % change Household only |  | -.97% | 1.0% | 1.02% | 1.03% | .99% |  |  |
| % change mine waste only |  | -.66% | 2.36% | 1.  1.26% | .97% | -.96% |  |  |

**TABLE 50**

**TRANSFER STATION REPORTING DATA**

**RUSSELL COUNTY**

**2015-2021**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Waste Type** | **2015** | **2016** | **2018** | **2019** | **2020** | **2021** | **AVERAGE** | **% OF TOTAL** |
| Household Waste | 13,891.17 | 13,357.33 | 13,652.27 | 13,727.26 | 16,549.32 | 15,577.10 | 14,459.07 | 80.95% |
| Commercial Waste | 1,862.35 | 1,434.54 | 1,683.73 | 1,631.74 | 1,617.47 | 1,451.06 | 1,613.48 | 4.77% |
| Construction Debris | 683.71 | 581.23 | 928.56 | 880.58 | 1,051.71 | 987.19 | 852.16 | .05% |
| Mine Waste |  |  |  |  |  |  |  | . |
| White Goods and Metal | 43.26 | 53.99 | 37.15 | 109.45 | 52.74 | 17.40 | 52.33 | .29% |
| Tires | 111.60 | 136.98 | 195.91 | 208.34 | 252.62 | 219.19 | 187.44 | 1.05% |
| Industrial Waste | 107.57 | 169.05 | 374.33 | 409.14 | 446.66 | 338.37 | 307.52 | 1.72% |
| Recycle |  |  | 3.63 | 40.27 | 37.03 | .80 | 13.62 | .08% |
| Yard Waste | 170.05 | 238.37 | 677.79 | 523.13 | 129.62 | 0 | 289.82 | 1.62% |
| Illegal Dump Cleanup | 95.61 | 78.13 | 59.68 | 45.97 | 48.53 | 70.51 | 66.40 | .37% |
|  |  |  |  |  |  |  |  |  |
| Roofing Material |  |  |  |  |  |  | 0 | 0% |
| Carcass | 20.83 | 8.19 | 13.52 | 13.58 | 15.09 | 44.36 | 19.26 | .11% |
| **TOTAL** | **16,986.15** | **16,060.86** | **17,626.57** | **17,589.46** | **20,200.79** | **20,165.62** | **17,861.10** | **100.0%** |
| % change total waste stream |  | -0.94% | 1.09% | -0.99% | 1.14% | -0.99% |  |  |
| % change Household + commercial only |  | -0.93 | 1.03% | 1.0% | 1.18% | -0.93% |  |  |



The following table summarizes the regional totals for 2015 – 2021 and indicates the percent annual change:

**TABLE 51**

**TRANSFER STATION REPORTING DATA**

**REGIONAL SUMMARY**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **YEAR** | **BUCHANAN COUNTY** | **DICKENSON COUNTY** | **RUSSELL COUNTY** | **TOTAL REGIONAL TONNAGE** | **% ANNUAL CHANGE** |
| 2015 | 16,426.09 | 10,049.64 | 16,986.15 | 43,461.88 |  |
| 2016 | 16,102.26 | 8,810.53 | 16,060.86 | 40,973.65 | -.94% |
| 2018 | 20,154.50 | 11,197.12 | 17,626.57 | 48,978.19 | 1.19% |
| 2019 | 20,338.13 | 12,139.07 | 17,589.46 | 50,066.66 | 1.02% |
| 2020 | 20,681.62 | 13,194.40 | 20,200.79 | 54,076.81 | .92% |
| 2021 | 24,167.12 | 13,870.23 | 20,165.62 | 58,202.97 | 1.07% |

### 4.2.2 Pounds per person per day

The population data from Section 3.1 can be coupled with the tonnage data reported above to consider the waste stream as average pounds per person per day. The following tables summarize the data for the total tonnage received at the transfer stations and regionally:

**TABLE 52**

**EVALUATION OF WASTE TONNAGE**

**AS POUNDS PER PERSON PER DAY**

**BUCHANAN COUNTY**

|  |  |  |  |
| --- | --- | --- | --- |
| **YEAR** | POPULATION | **TOTAL TONNAGE RECEIVED** | **POUNDS PER PERSON PER DAY** |
| 2015 | 23,486 | 16,426.09 | 3.88 |
| 2016 | 23,158 | 16,102.26 | 3.86 |
| 2018 | 22,138 | 20,154.50 | 5.05 |
| 2019 | 21,788 | 20,338.13 | 5.18 |
| 2020 | 20,355 | 20,681.62 | 5.64 |
| 2021 | 20,274 | 24,167.12 | 6.62 |
| Average |  | **19,644.95** |  |

**TABLE 53**

**EVALUATION OF WASTE TONNAGE**

**AS POUNDS PER PERSON PER DAY**

**DICKENSON COUNTY**

|  |  |  |  |
| --- | --- | --- | --- |
| **YEAR** | POPULATION | **TOTAL TONNAGE RECEIVED** | **POUNDS PER PERSON PER DAY** |
| 2015 | 15,463 | 10,049.64 | 3.61 |
| 2016 | 15,304 | 8,810.53 | 3.2 |
| 2018 | 14,960 | 11,197.12 | 4.2 |
| 2019 | 14,756 | 12,139.07 | 4.8 |
| 2020 | 14,124 | 13,194.40 | 5.2 |
| 2021 | 13,902 | 13,870.23 | 5.5 |
| Average |  | **11,543.49** |  |

**TABLE 54**

**EVALUATION OF WASTE TONNAGE**

**AS POUNDS PER PERSON PER DAY**

**RUSSELL COUNTY**

|  |  |  |  |
| --- | --- | --- | --- |
| **YEAR** | POPULATION | **TOTAL TONNAGE RECEIVED** | **POUNDS PER PERSON PER DAY** |
| 2015 | 28,245 | 16,986.15 | 3.34 |
| 2016 | 27,973 | 16,060.86 | 3.2 |
| 2018 | 27,408 | 17,626.57 | 3.6 |
| 2019 | 27,141 | 17,589.46 | 3.6 |
| 2020 | 25,781 | 20,200.79 | 4.4 |
| 2021 | 26,168 | 20,165.62 | 4.3 |
| Average |  | **18,104.90** |  |

**TABLE 55**

**EVALUATION OF WASTE TONNAGE**

**AS POUNDS PER PERSON PER DAY**

**REGIONAL TOTAL**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **YEAR** | POPULATION | **TOTAL TONNAGE RECEIVED** | **POUNDS PER PERSON PER DAY** | **% ANNUAL CHANGE** |
| 2015 | 67,194 | 43,461.88 | 3.6 |  |
| 2016 | 66,435 | 40,973.65 | 3.4 | .94% |
| 2018 | 64,506 | 48,978.19 | 4.2 | 1.2% |
| 2019 | 63,685 | 50,066.66 | 4.4 | 1.02% |
| 2020 | 60,260 | 54,076.81 | 5.0 | 1.08% |
| 2021 | 60,344 | 58,202.97 | 5.4 | 1.07% |
| Average | **63,737** | **49,293.36** |  |  |

To put these values in perspective, the national average for MSW generation as reported by the EPA for the year 2001 was 4.4 pounds per person per day, which is up from 2.7 pounds per person per day in 1960. MSW as defined by the EPA does not include CDD waste, sludge or industrial wastes which is included in the values listed above. Thus the Counties and the region are all averaged at or below the national value indicating a limited amount of commercial or industrial waste relative to the municipal solid waste component.

## 4.3 Projected Waste Generation Rates Relative to Disposal Needs

It is important to consider the various ways in which the waste generation within the region may change to anticipate future needs relative to collection, disposal and recycling. As described in Section 3.0, the region is not expected to grow and is in fact projected to have a decrease in population ranging from –0.04% in the later years of the planning period to a maximum decrease of –0.4% during the earlier years of the planning period.

There is no one methodology for evaluating future waste generation rates as the rates can be impacted by many different factors including population changes, recycling participation and markets, the commercial or industrial sector, natural disasters etc. For rural areas, changes in the waste will track closely with the population trends. For urban or developing areas, changes in the waste are more difficult to predict. Certainly the population factor is one aspect, however the commercial waste must also be considered. The following section will consider various factors that could impact waste generation in region and will propose a final growth factor to be used in the study.

### 4.3.1 Population Growth Rate

As Section 2.1 discussed, the region has been losing population and population is projected to decrease at a rate of 0.4% per year from 2003 – 2010, at a rate of 0.2% from 2011 - 2020, and finally at a rate of 0.04% from 2021 – 2024. The estimated population for the region for 2004 is 71,619 and the estimated population for 2024 is 68,780. Because of the decline in population, the residential waste tonnage would be expected to decrease proportionately. To be conservative in this report, the residential waste tonnage will be estimated based on the national average rate of change as discussed under Section 4.3.3 below.

### 4.3.2 Commercial and industrial growth

The region is not anticipating significant growth in the commercial sector, over the planning period although efforts are being made to encourage economic development. Review of tables 56 through 58 indicates that the commercial tonnage is relatively flat over the period from 2010 to 2015. Commercial waste makes up a small component of the Buchanan and Dickenson County collections and, as would be expected, makes up a larger percentage of the Russell County waste stream. Quantifying growth in this sector is difficult as it can be unpredictable. For this report no distinction between the residential and commercial waste will be made, and so the national average rate of change will be used as discussed below.

### 4.3.3 Annual change in MSW (residential/commercial) tonnages

The following table summarizes the data taken from the transfer station records for household and commercial waste delivered to the three transfer stations and provides a total for the region. The percent annual change was then calculated with this data.

**TABLE 56**

**HOUSEHOLD AND COMMERCIAL WASTE**

**RECEIVED AT THE TRANSFER STATIONS**

| **Waste Type** | **2010** | **2011** | **2012** | **2013** | **2014** | **2015** |
| --- | --- | --- | --- | --- | --- | --- |
| **Buchanan County** |  |  |  |  |  |  |
| Household Waste | 399 | 311 | 832 | 777 | 687 | 371 |
| Commercial Waste | 292 | 212 | 193 | 283 | 287 | 149 |
| Govt. Household Waste | 12,938 | 11,577 | 12,914 | 13,902 | 14,364 | 15,308 |
| Govt. Commercial Waste | 609 | 533 | 522 | 568 | 555 | 518 |
| **SUBTOTAL** | **14,238** | **12,633** | **14,461** | **15,530** | **15,893** | **16,346** |
| % Annual Change |  | **-11.3%** | **14.5%** | **7.4%** | **2.3%** | **2.9%** |
| **Dickenson County** |  |  |  |  |  |  |
| Household Waste | 280 | 363 | 394 | 617 | 729 | 550 |
| Commercial Waste | 49 | 47 | 24 | 56 | 29 | 23 |
| Govt. Household Waste | 7,381 | 7,134 | 7,461 | 7,669 | 7,929 | 8,289 |
| Govt. Commercial Waste | 0 | 2 | 0 | 1 | 0 | 0 |
| **SUBTOTAL** | **7,710** | **7,546** | **7,879** | **8,343** | **8,687** | **8,862** |
| % Annual Change |  | **-2.1%** | **4.4%** | **5.9%** | **4.1%** | **2.0%** |
| **Russell County** |  |  |  |  |  |  |
| Household Waste |  | 14,579 | 21,394 | 17,272 | 17,588 | 18,504 |
| Commercial Waste |  | 2,928 | 0 | 3,018 | 3,077 | 3,475 |
| **SUBTOTAL** |  | **17,507** | **21,394** | **20,290** | **20,665** | **21,979** |
| % Annual Change |  |  | **22.2%** | **-5.2%** | **1.8%** | **6.4%** |
| **Region** |  |  |  |  |  |  |
| Buchanan County |  | 12,633 | 14,461 | 15,530 | 15,893 | 16,346 |
| Dickenson County |  | 7,546 | 7,879 | 8,343 | 8,687 | 8,862 |
| Russell County |  | 17,507 | 21,394 | 20,290 | 20,665 | 21,979 |
| **SUBTOTAL** |  | **37,686** | **43,734** | **44,163** | **45,245** | **47,187** |
| % Annual Change |  |  | **16.0%** | **1.0%** | **2.5%** | **4.3%** |

Of interest is that the total residential and commercial tonnage for the region has been growing over the last three years. From 2010 to 2015 there was a 1.0% increase, from 2001 to 2002, a 2.5% increase and from 2002 to 2003 a 4.3% increase. All three Counties experienced a steady increase in tonnage during this three year period. However, it is not expected that this trend would continue given the projections for the declining population and the difficult economic environment of the region. Thus the national average will be used for this report as described in the paragraph below.

Nationally from 1990 to 2001 the MSW waste stream grew at a rate of 1.0% per year. MSW includes residential, commercial and institutional waste. For this region, a 1.0% growth in the MSW sector will be assumed with no growth assumed for the other waste categories.

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

Another way to consider the annual change in solid waste is to couple the population with the total tonnage delivered to the transfer stations as determined in the calculation for pounds per person per day. Table 52 in Section 4.2.2 contains this information and indicates regionally a change from 2010 to 2012 of a 5.3% increase and from 2013 to 2015, a 2.5% decrease.

The total tonnage includes all waste delivered to the transfer stations regardless of its handling. Total tonnage includes construction waste, industrial waste, white goods and other waste materials. The following table evaluates the regional population and regional tonnage for the commercial and residential sectors:



### 4.3.5 Projected tonnages

As stated at the beginning of this section, there is no single methodology to use to predict the future changes in the region’s waste stream. The region is facing a decline in population and is currently experiencing economically challenging times in most areas. Thus, as discussed above, the national average of 1.0% per year was used for projecting the residential and commercial tonnages while all other tonnages were assumed to remain constant.

Tables 57 through 60 provide the tonnage projections for the individual Counties and the region by year.

#### TABLE 57

**ESTIMATED WASTE TONNAGE 2010-2040**

**BUCHANAN COUNTY**

Estimated rate of change 2010-2040 1.0%

Estimated rate of change for other waste materials 0%/year

Population growth factor variable/year

| **YEAR** | **COMMERCIAL AND RESIDENTIAL TONNAGE** | **OTHER TONNAGE RECEIVED AT TRANSFER STATION** | **TOTAL TONNAGE ESTIMATED TO BE DELIVERED TO TRANSFER STATION** | **TONS PER DAY** | **POPULATION** | **POUNDS PER PERSON PER DAY** |
| --- | --- | --- | --- | --- | --- | --- |
| **2010** | **17,525** | **4,126** | **21,651** | **83** | **24,028** | **4.5** |
| 2011 | 17,700 | 4,126 | 21,826 | 84 | 23,888 | 5.0 |
| 2012 | 17,877 | 4,126 | 22,003 | 85 | 23,837 | 5.1 |
| 2013 | 18,056 | 4,126 | 22,182 | 85 | 23,555 | 5.2 |
| 2014 | 18,237 | 4,126 | 22,363 | 86 | 23,106 | 5.3 |
| **2015** | **18,419** | **4,126** | **22,545** | **87** | **23,800** | **5.2** |
| 2016 | 18,603 | 4,126 | 22,729 | 87 | 23,680 | 5.3 |
| 2017 | 18,789 | 4,126 | 22,915 | 88 | 23,560 | 5.3 |
| 2018 | 18,977 | 4,126 | 23,103 | 89 | 23,440 | 5.4 |
| 2019 | 19,167 | 4,126 | 23,293 | 90 | 23,320 | 5.5 |
| **2020** | **19,359** | **4,126** | **23,485** | **90** | **23,200** | **5.5** |
| 2021 | 19,552 | 4,126 | 23,678 | 91 | 23,090 | 5.6 |
| 2022 | 19,748 | 4,126 | 23,874 | 92 | 22,980 | 5.7 |
| 2023 | 19,945 | 4,126 | 24,071 | 93 | 22,870 | 5.8 |
| 2024 | 20,145 | 4,126 | 24,271 | 93 | 22,760 | 5.8 |
| 2030 | 20,073 | 4,126 | 24,199 | 93 | 23,263 | 5.7 |
| 2040 | 20,107 | 4,126 | 24,233 | 93 | 23,296 | 5.7 |

#### TABLE 58

**ESTIMATED WASTE TONNAGE 2010-2040**

**DICKENSON COUNTY**

Estimated rate of change 2010-2040 1.0%

Estimated rate of change for other waste materials 0%/year

Population growth factor variable/year

| **YEAR** | **COMMERCIAL AND RESIDENTIAL TONNAGE** | **OTHER TONNAGE RECEIVED AT TRANSFER STATION** | **TOTAL TONNAGE ESTIMATED TO BE DELIVERED TO TRANSFER STATION** | **TONS PER DAY** | **POPULATION** | **POUNDS PER PERSON PER DAY** |
| --- | --- | --- | --- | --- | --- | --- |
| **2010** | **9,501** | **1,744** | **11,245** | **43** | **15,903** | **3.9** |
| 2011 | 9,596 | 1,744 | 11,340 | 44 | 15,675 | 4.0 |
| 2012 | 9,692 | 1,744 | 11,436 | 44 | 15,668 | 4.0 |
| 2013 | 9,789 | 1,744 | 11,533 | 44 | 15,449 | 4.1 |
| 2014 | 9,887 | 1,744 | 11,631 | 45 | 15,308 | 4.2 |
| **2015** | **9,986** | **1,744** | **11,730** | **45** | **15,100** | **4.3** |
| 2016 | 10,086 | 1,744 | 11,830 | 45 | 15,020 | 4.3 |
| 2017 | 10,187 | 1,744 | 11,931 | 46 | 14,940 | 4.4 |
| 2018 | 10,289 | 1,744 | 12,033 | 46 | 14,860 | 4.4 |
| 2019 | 10,391 | 1,744 | 12,135 | 47 | 14,780 | 4.5 |
| **2020** | **10,495** | **1,744** | **12,239** | **47** | **14,700** | **4.6** |
| 2021 | 10,600 | 1,744 | 12,344 | 47 | 14,700 | 4.6 |
| 2022 | 10,706 | 1,744 | 12,450 | 48 | 14,700 | 4.6 |
| 2023 | 10,813 | 1,744 | 12,557 | 48 | 14,700 | 4.7 |
| 2024 | 10,921 | 1,744 | 12,665 | 49 | 14,700 | 4.7 |
| 2030 | 11,158 | 1,744 | 12,902 | 50 | 15,375 | 4.6 |
| 2040 | 11,010 | 1,744 | 12,754 | 49 | 15,193 | 4.6 |

#### TABLE 59

**ESTIMATED WASTE TONNAGE 2010-2040**

**RUSSELL COUNTY**

Estimated rate of change 2010-2040 1.0%

Estimated rate of change for other waste materials 0%/year

Population growth factor variable/year

| **YEAR** | **COMMERCIAL AND RESIDENTIAL TONNAGE** | **OTHER TONNAGE RECEIVED AT TRANSFER STATION** | **TOTAL TONNAGE ESTIMATED TO BE DELIVERED TO TRANSFER STATION** | **TONS PER DAY** | **POPULATION** | **POUNDS PER PERSON PER DAY** |
| --- | --- | --- | --- | --- | --- | --- |
| **2010** | **23,564** | **2,233** | **25,797** | **99** | **28,897** | **4.9** |
| 2011 | 23,800 | 2,233 | 26,033 | 100 | 29,657 | 4.8 |
| 2012 | 24,038 | 2,233 | 26,271 | 101 | 28,426 | 5.1 |
| 2013 | 24,278 | 2,233 | 26,511 | 102 | 28,274 | 5.1 |
| 2014 | 24,521 | 2,233 | 26,754 | 103 | 28,023 | 5.3 |
| **2015** | **24,766** | **2,233** | **26,999** | **104** | **30,600** | **4.8** |
| 2016 | 25,014 | 2,233 | 27,247 | 105 | 30,680 | 4.9 |
| 2017 | 25,264 | 2,233 | 27,497 | 106 | 30,760 | 4.9 |
| 2018 | 25,517 | 2,233 | 27,750 | 107 | 30,840 | 4.9 |
| 2019 | 25,772 | 2,233 | 28,005 | 108 | 30,920 | 5.0 |
| **2020** | **26,030** | **2,233** | **28,263** | **109** | **31,000** | **5.0** |
| 2021 | 26,290 | 2,233 | 28,523 | 110 | 31,080 | 5.0 |
| 2022 | 26,553 | 2,233 | 28,786 | 111 | 31,160 | 5.1 |
| 2023 | 26,819 | 2,233 | 29,052 | 112 | 31,240 | 5.1 |
| 2024 | 27,087 | 2,233 | 29,320 | 113 | 31,320 | 5.1 |
| 2030 | 24,716 | 2,233 | 26,949 | 104 | 29,296 | 5.0 |
| 2040 | 24,717 | 2,233 | 26,950 | 104 | 29,534 | 5.0 |

#### TABLE 60

**ESTIMATED WASTE TONNAGE 2010-2036**

**REGION**

Estimated rate of change 2010-2036 -1.3%

Estimated rate of change for other waste materials 0%/year

Population growth factor variable/year

| **YEAR** |  | **TOTAL TONNAGE ESTIMATED TO BE DELIVERED TO TRANSFER STATIONS** | **TONS PER DAY** | **POPULATION** |  | **POUNDS PER PERSON PER DAY** |
| --- | --- | --- | --- | --- | --- | --- |
| **2010** |  | **53,997** | **207** | **68,828** |  | **6.0** |
| 2011 |  | 56,754 | 218 | 68,252 |  | 6.3 |
| 2012 |  | **59,150** | 227 | 67,676 |  | 6.7 |
| 2013 |  | 53,767 | 206 | 67,100 |  | 6.1 |
| 2014 |  | 48,416 | 186 | 66,437 |  | 5.5 |
| **2015** |  | **43,461** | **167** | **67,194** |  | **4.9** |
| 2016 |  | 40,307 | 155 | 67,404 |  | 4.6 |
| 2017 |  | 42,191 | 162 | 67,614 |  | 4.8 |
| 2018 |  | 48,494 | 186 | 67,824 |  | 5.5 |
| 2019 |  | 53,924 | 207 | 68,000 |  | 6.1 |
| **2020** |  | **55,721** | **214** | **68,036** |  | **6.3** |
| 2021 |  | 53,052 | 204 | 68,016 |  | 6.0 |
| 2022 |  | **53,920** | 207 | 67,996 |  | 6.1 |
| 2023 |  | 53,904 | 207 | 67,976 |  | 6.1 |
| 2024 |  | 53,889 | 207 | 67,956 |  | 6.1 |
| 2030 |  | 52,991 | 203 | 67,938 |  | 6.0 |
| **2036** |  | **54,682** | **210** | **68,956** |  | **6.1** |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

## 4.4 Waste Composition

The region does not receive significant quantities of unusual or special wastes or industrial wastes. Therefore its composition would be assumed to be similar to the national estimates discussed in Section 2.1.2. The following tables summarize the expected waste compositions by material type and by product type utilizing the percentages developed by EPA from the 2001 data for the region only:

TABLE 61

REGIONAL WASTE COMPOSITION

#### BY MATERIAL TYPE

**AS SUMMARIZED IN EPA REPORT - 2014 DATA**

|  |  |  |
| --- | --- | --- |
| **MATERIAL** | **% OF TOTAL WASTE STREAM (MSW)** | **PROJECTED TONNAGE**  **HOUSEHOLD AND COMMERCIAL WASTE ONLY**  **2015\*** |
| Paper | 35.7 | 16,846 |
| Glass | 5.5 | 2,595 |
| Metals | 7.9 | 3,728 |
| Plastics | 11.1 | 5,238 |
| Rubber, leather, & textiles | 7.1 | 3,350 |
| Wood | 5.7 | 2,690 |
| Yard trimmings | 12.2 | 5,757 |
| Food scraps | 11.4 | 5,379 |
| Other | 3.4 | 1,604 |
| TOTAL | 100.0 | 47,187 |

\*Tonnage from Table 45 for region of 47,187.

#### 

#### TABLE 62

**REGIONAL WASTE COMPOSITION**

**BY PRODUCT TYPE**

|  |  |  |
| --- | --- | --- |
| **MATERIAL** | **% OF TOTAL WASTE STREAM (MSW)** | **PROJECTED TONNAGE**  **HOUSEHOLD AND COMMERCIAL WASTE ONLY**  **2015\*** |
| Durable goods | 16.4 | 7,739 |
| Nondurable goods | 26.4 | 12,457 |
| Containers and packaging | 32.0 | 15,100 |
| Food scraps | 11.4 | 5,379 |
| Yard trimmings | 12.2 | 5,757 |
| Other wastes | 1.6 | 755 |
| TOTAL | 100.0 | 47,187 |

\*Tonnage from Table 45.

# 5.0 EXISTING SOLID WASTE MANAGEMENT SYSTEM

The following section describes the major components of the region’s current solid waste management system in existence in 2003.

## 5.1 Collection

### 5.1.1 Overview

The following table summarizes the information relative to collection as provided by the various localities:

#### TABLE 63

**SUMMARY OF INFORMATION ON COLLECTIONS**

| LOCALITY | **DESCRIPTION** |
| --- | --- |
| Buchanan County | **Equipment:** 13 trucks  **Personnel:**  23 collection workers; 1 full time litter control coordinator, 1 full time litter control coordinator,  **Collection:** Door to door from 9,485 residential and 1,383 business curbside customers.  **Residential:** one time per week  **Commercial:** one time per week, fixed or by request; 4cy or 6cy containers.  Other collections:   * Large items collected monthly by request * White good collection is performed by a local recycling business; refrigerant removal by private contractor; materials hauled away by private contractor twice per year * Tires are accepted at the transfer station. The CPRWMA provides a tire shredder.   Fees:   * Households - $3.00 per month split equally between electric and telephone bill each electric meter and each telephone line. * Commercial - $6.00 per cubic yard (based on size of box) * Tires - $76.00 per ton; shredded onsite. * Fees do not meet the operations expenses. Operations supplemented from County’s general fund.   **Annual budget (FY 2021):** $3,261,066 |
| Grundy | **Equipment:** 2 trucks, 1 brush shredder  **Personnel:** 3 employees  **Collection:** Door to door from 216 residential and commercial customers.  **Residential:** 1 time per week  **Commercial:** 1-5 times per week  Other collections:   * Bulky item pickup monthly by request of residential or commercial customers. * Leaves, brush, and Christmas trees collected by request. Town shreds and sells for mulch   Fees:   * Residential - $8.00 per month charged on utility bill * Commercial – based on number of collections. Current billing range from $48 - $240 per month. * Fees covers cost of operations. No additional funding is needed to supplement the system.   **Annual budget (FY 2021):** $118.500 |
| Dickenson County | **Equipment: 5** rear load packer trucks  **Personnel:** 17 employees;  **Collection:** Door to door from 5,778 residential and 891 commercial customers; 3 green box sites with one 6cy box per site on roads where packer trucks cannot service homes.  **Residential:** 1 time per week  **Commercial:** 1-2 times per week  Other collections:   * Temporary collection sites are established for Christmas tree collection. Trees are hauled to the lake for the Army Corp of Engineers to use as fish attractors. * Tires - $76.00 per ton; CPRWMA provides a Tire Shredder.   Fees:   * Residential - $60 per ton at transfer station and Free crub side collection. * Commercial - $60 per ton at transfer station. * Tires -- $76.00 per ton * Operations subsidized from general fund.   **Annual budget (FY 2021):** $1,582,630 |
| Clintwood | **Equipment:** 2 trucks – 1 regular sized rear loader, 1 smaller truck.  **Personnel:** 4 employees  **Collection:** Door to door.  **Residential:** 1 time per week  **Commercial:** Collection frequency variable depending on agreement with town.  Other collections:   * Bulky items, leaves, and brush are picked up on request. Pickup usually on Friday. No additional charge. * Tires are transported by the Town to the transfer station.   **Fees:** Residental is $7 per month and Commercial is $10. 4 cy, 6 cy, 8 cy range is from $32.00-$300 per month.  **Annual budget (FY 2021):** $79,653 |
| Haysi | No solid waste collection operations |
| Clinchco | No solid waste collection operations |
| Russell County | **Equipment:** System is county managed and staffed 2 roll off trucks service the sites.  **Personnel:** 6 FTE and 20 PTE personnel to staff the sites  **Collection:** 11 convienent sites around County serviced by County staff. Most of the sites have 1-3 boxes or compactors and use 40 – 50 cy open top roll-off boxes. The County owns the sites. County provides staff. The sites are staffed 40 hours per week.  **Residential:** 10 Convienent Centers Drop off.  **Commercial:** Town of Lebanon and Private Company’s.  Other collections:   * Brush or leaf collection is a drop off at Transfer Station. * White goods can be taken to the transfer station. Once collected, the material is managed by the County.   **Tires** - $83.50 per ton; CPRWMA provides a Tire Shredder.  **Fees:** $60.00 per ton for commercial and construction.  **Annual budget (FY 2021):** $671,000 |
| Lebanon | **Equipment:** 2 rear load packer trucks and 2 roll-off trucks  **Personnel:** 4 employees plus public works director. 1 driver for the roll-off truck; 3 person crew for the packer truck.  **Collection:** Door to door from 1,794 residential and commercial customers. Private collection is not allowed within City limits.  **Residential:** 1 time per week  **Commercial:** 1 time per week (minimum), can request greater frequency for collection; Town provides containers.  Other collections:   * Bulky item collection: By request each Friday * Leaves and grass: By request as needed.   **Fees:**   * Residential - $7.20 per month on utility bill * Commercial –   + Curbside - $14.20 per week.   + 6 cy box - $25 per load   + 8 cy box - $25 per load   + 40 cy box - $100 per load   + Compactor - $150.00 per load   **Annual budget (FY 2021):** $285,499. |
| Cleveland | **Equipment:** 1 rear loader packer truck  **Personnel:** 3  **Collection:** Door-to-door  **Residential:** Weekly  **Commercial:** Weekly  Other collections:   * Bulky item collection: Once per year in May.   Leaves and grass: None.  **Fees:**   * Residential: – $12/month * Commercial: – $18/month   **Annual budget (FY 2021):** $10,940 |
| Honaker | **Equipment:** 1 rear loader packer truck  **Personnel:** 3  **Collection:** Door-to-door  **Residential:** 1/week  Commercial: 1/week  Other collections:   * Bulky item collection: By request as needed * Leaves and grass: None   **Fees:**   * Residential – $15.00/month * Commercial – $20-200 per/month   **Annual budget (FY 2021):** $95,500 |

### 5.1.2 Russell County Collection sites

Russell County is the only one of the localities which uses drop off collection sites for handling garbage collection. There are 11 sites. The following table summarizes the tonnage collected from each site for the years 2018 – 2021:

#### TABLE 64

**RUSSELL COUNTY COLLECTION SITES**

**TONNAGE**

**2018 – 2021**

| **Site** | **2018** | **2019** | **2020** | **2021** | **Total** | **AVERAGE** |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Lebanon | 1,401.98 | 1,391.73 | 1,846.16 | 1,651.35 | *6,291.22* | 1,572.80 |  |
| Radio | 707.64 | 793.38 | 915.23 | 854.20 | *3,270.45* | 817.61 |  |
| Blackford | 544.19 | 596.54 | 680.27 | 581.57 | *4,450.80* | 1,112.70 |  |
| Belfast | 1,037.02 | 1,052.89 | 1,143.19 | 1,013.09 | *2,132.97* | 533.24 |  |
| Cleveland | 584.54 | 608.02 | 716.34 | 454.57 | *3,590.87* | 897.71 |  |
| Drill | 1,204.51 | 1,201.34 | 1,575.47 | 1,234.16 | *4,246.19* | 1,061.54 |  |
| Dog Town | 815.40 | 847.65 | 1,006.58 | 921.24 | *2,402.57* | 600.64 |  |
| Finney | 360 | 364.48 | 390.51 | 415.24 | *2,363.47* | 590.86 |  |
| Hamlin | 878.43 | 888.37 | 1,481 | 1,203 | *5,215.48* | 1,303.87 |  |
| Mocassin | 521.90 | 538.92 | 550.52 | 521.63 | *1,530.23* | 382.55 |  |
| Swords Creek | 1,021.92 | 981.56 | 1,136.05 | 1,175.71 | *4,315.24* | 1,078.81 |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
| **TOTAL** | 9,077.53 | 9,264.88 | 11,441.32 | 10,025.76 | 39,809.49 | 17,086.67 |  |



Figure 2 illustrates the location of these sites.

## Transfer Operations

### 5.2.1 Summary of transfer station information

The following table summarizes the information on the transfer operations. Most of the waste generated within the three County region is delivered to one of the transfer stations. Some waste may be taken directly to one of the private landfills, but this waste is not tracked. As noted below, the Authority owns the buildings, holds the permits, is in charge of operations and maintenance and holds the contracts with the hauling company and the disposal facility.

**TABLE 65**

**SUMMARY OF INFORMATION ON TRANSFER STATIONS**

| LOCATION | **DESCRIPTION** |
| --- | --- |
| Buchanan County | * PBR # 106 * Opened March 1996 * 5,000 square feet * Scales – BTek 10’x70’ * Orginial Cost $609,000 * Operated by the County * Tonnage transferred 2021 – 22,403.13 tons |
| Dickenson County | * PBR #049 * Opened December 1993 * 5,000 square feet * Scales – BTek 10’x70’ * Orginal Cost - $640,689 * Operated by the County * Tonnage transferred 2021 – 12,725.79 tons |
| Russell County | * PBR #001 * Opened April 1994 * 7,500 square feet * Scales – BTek 10’x70’ * Orginal Cost - $625,000 * Operated by a private contractor * Tonnage transferred 2021 – 18,705.98 tons |
| General Information | * Hauling contract with Advanced Disposal, Inc. The contract expires on October 26, 2023. * Permits are held by Authority who owns the buildings, equipment and property and holds long-term leases with VDOT in Dickenson and Russell Counties on the properties. * As of January 1, 2022, the Authority has no outstanding bond debt. * As permit holder, the Authority is responsible for permit compliance. * As owner of the buildings, the Authority is responsible for all maintenance and repairs. |

### 5.2.2 Contractual Relationships

The following table summarizes the contractual relationships between the Authority, Contractor and Counties:

#### TABLE 66

**CONTRACTUAL RELATIONSHIPS**

| CONTRACT NAME | PARTIES | PURPOSE |
| --- | --- | --- |
| Solid Waste Disposal Agreement | Advanced Disposal Inc. | Establishes contract for disposal at Advanced Disposal Landfill and sets fees for disposal. Current contract expires October 26, 2023. |
| Solid Waste Transportation Agreement | Authority and Advanced Disposal, Inc. | Establishes contract for transportation and sets fees for hauling. Current contract expires October 26, 2023. |
| User Agreement for Solid Waste Disposal | Authority and each county individually | Establishes contract for use of transfer stations, obligations of users, tipping fees, etc. Contract renewed annually. |
| Manpower Service Agreement | Authority and each county individually | Establishes contract for County operation of transfer stations for Authority. Contract renewed annually. |
| Administrative contract | Cumberland Plateau RWMA | Contract renewed annually. |

### 5.2.3 Tipping Charges and Fees at transfer station

Each County holds a user agreement with the Authority and the Authority only has three customers, the three Counties. The Authority sets the tipping charges as follows (taken from the agreement with Russell County): *“The tipping fee shall be calculated by determining the total of (a) the disposal fee charged by any landfill operator with whom the Authority may contract for the ultimate disposal of any Solid Waste delivered under the contract; (b) the transportation*

*costs incurred in the transport of the waste from the transfer station to the landfill; (c) the amount of principal premium, if any, and interest or any other amounts due, or to become due, with respect to any indebtedness of the Authority or required to avoid a default with respect to such indebtedness, and (d) all expenses of the Authority relating to the operation and maintenance of the disposal system, including any reserves. This amount is divided by the tonnage projected to be received to derive the cost per ton to be charge for use of the disposal system.”*

The current tipping charges established by the Authority may be summarized as follows:

#### TABLE 67

**SUMMARY OF AUTHORITY’S TIPPING CHARGES**

| **LOCALITY** | **FEE** | **COMMENT** |
| --- | --- | --- |
| Buchanan County | $38.24/ton | + Monthly charge of $13,886 |
| Dickenson County | $38.03/ton | + Monthly charge of $13,886 |
| Russell County | $36.24/ton | + Monthly charge of $13,886 |

\*Monthly charge covers operations and debt service.

Each County is invoiced on a monthly basis by the Authority for the tonnage delivered to the transfer station. Each County can then chose to charge transfer station users.

The following table summarizes the current tipping fees established by the Counties as of January 2022 at the three transfer stations:

#### TABLE 68

**SUMMARY OF TIPPING FEES AT TRANSFER STATIONS**

| **LOCALITY/WASTE TYPE** | **FEE** | **COMMENTS** |
| --- | --- | --- |
| BUCHANAN COUNTY |  |  |
| Household waste | $35/ton | Household billed $7.00 per month on utility bill. |
| Commercial waste | $60/ton |  |
| Tires | $76/ton |  |
| **DICKENSON COUNTY** |  |  |
| Household waste | $60/ton |  |
| Commercial Waste | $60/ton |  |
| Construction demolition debris | $60/ton |  |
| Tires | $76/ton |  |
| Sludge | $40/ton |  |
| **RUSSELL COUNTY** |  |  |
| Household waste | No charge |  |
| Commercial waste | $60/ton |  |
| Industrial waste | $60/ton |  |
| Shingles | $60/ton |  |
| Tires | $83.50/ton |  |

Contract fees as negotiated by the Authority with the hauling and disposal company may be summarized as follows. The contracts expire on October 26, 2023:

#### TABLE 69

#### SUMMARY OF AUTHORITY AGREEMENTS

| **CONTRACT** | **NEGOTIATED FEE** | **COMMENTS** |
| --- | --- | --- |
| **TRANSPORTATION AGREEMENT** |  |  |
| Buchanan County | $17.18/ton | CPI for agreement shall not exceed 3% and will not be considered until 12/03. |
| Dickenson County | $17.17/ton | Same as above |
| Russell County | $15.08/ton | Same as above |
| **DISPOSAL AGREEMENT** |  |  |
| Disposal price | $16.07/ton | 3% CPI each year (not to exceed $17.74 in 2018). |
| State fee | $ 0.10/ton |  |
| Total disposal price | $16.07/ton |  |

Under the disposal agreement, the current federal, state and local fees/taxes of $0.95/ton shall not exceed a total of $3.00/ton. Should fees/taxes exceed $3.00/ton, the Authority reserved the right to renegotiate the fee schedule.

### 5.2.4 Materials permitted for acceptance at transfer stations

In accordance with the Virginia Solid Waste Management Regulations, the following materials may be accepted at the transfer stations subject to permit specific limitations:

a. Agricultural waste

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

c. Commercial waste

d. Compost

e. Construction waste

f. Debris

g. Demolition waste

h. Discarded material

i. Garbage

j. Household waste

k. Industrial waste meeting all criteria contained in DEQ Regulations

l. Inert waste

m. Institutional waste except anatomical waste from health care facilities or infectious waste as specified in Waste Management Board's Infectious Wastes Regulations.

n. Municipal solid waste

o. Putrescible waste. Occasional animal carcasses may be disposed of within a sanitary landfill. Large number of animal carcasses shall be placed in a separate area within the disposal unit and provided with a cover of compacted soil or other suitable material.

p. Refuse

q. Residential waste

r. Rubbish

s. Scrap metal

t. Sludge

u. Trash

v. White goods

w. Non‑regulated hazardous wastes by specific approval only

x. Specific wastes as approved by the Director

### 5.2.5 Materials not accepted at the transfer stations

The following wastes **are prohibited** at the transfer stations:

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

a. Free liquids

b. Regulated hazardous wastes

c. Solid wastes, residues, or soils containing more than 1.0 ppb (parts per billion) of Dioxins

d. Solid wastes, residues, or soils containing more than 50.0 ppm (parts per million) of PCB's

e. Unstabilized sewage sludge or sludges that have not been dewatered

f. Pesticide containers that have not been triple rinsed and crushed

g. Drums that are not empty, properly cleaned, and opened

h. Waste oil that has not been adequately adsorbed in the course of a site cleanup

1. Contaminated soil unless approved by the Director

## 5.3 Disposal

### 5.3.1 Landfill

Currently the Cumberland Plateau Regional Waste Management Authority is under contract with Advanced Disposal, Inc. for disposal at the Advanced Disposal Landfil located in Sullivan County Tennessee. The landfill is located approximately 5 miles south of Bristol. Distances from the transfer stations to the landfill range from 120 miles one way for Buchanan County, to 95 miles one way for Dickenson County, to 68 miles one way for Russell County.

The following list summarizes information on the landfill:

* Permitted by Tennessee Department of Environment and Conservation (TDEC)
* Permit number SNL 820-000-0282 Ext. Class 1
* Subtitle D liner and cap system
* Total acreage – 655 acres
* Disposal acreage – 255 acres (not all permitted at this time)
* Remaining life expectancy – 78 years @ 675 tpd from 1/1/12. Estimated closure date 2094.

### 5.3.2 Previously operated landfills

Appendix 3 includes a table summarizing the status of previously operated landfills in the region and location maps for the most recently closed landfills. The information was provided by the Southwest Regional Office of the Department of Environmental Quality. All landfills owned and operated by the Counties have been closed.

One industrial landfill is open in the Russell County. It is operated by American Electric Power (AEP) and is the disposal site for coal combustion by-products produced by the Clinch River Power Plant. Information on this facility is summarized in the following table and was obtained from AEP:

**TABLE 70**

**AEP INDUSTRIAL LANDFILL**

| **ITEM** | **DESCRIPTION** |
| --- | --- |
| Permit Number | 223 |
| Date Permitted | 1974 |
| Materials placed in landfill | Coal combustion by-products: flyash, bottom ash; limited amounts of special waste by permit (contaminated soil, filter media from waste treatment plant, boiler refractory, etc. |
| Liner system | Subbase of insitu soil, layer of select fill, flexible membrane liner (FML), covered with double sided geocomposite material, leachate collection zone, covered by aggregate drainage layer, buttresses in specified bench areas. |
| Cap system | Flyash infiltration layer on top of waste, 40 mil FML, covered by layer of topsoil and vegetation. |
| Leachate collection and handling | Two leachate collection ponds. Discharges are pumped back to the plant for disposal through the waste water treatment system. |
| Environmental monitoring programs | Daily, monthly, quarterly and annual inspections; groundwater monitoring wells sampled semi-annually. |

Information on remaining life, closure date or annual tonnage was not available.

5.3.2.A *Previously operated landfills continued. Please see Possum Hollow Landfill attachment.*

### 5.3.3 Household hazardous waste collection

Periodically the Authority assists Counties with the collection of household hazardous waste. In the future, the Counties have expressed interest in developing a comprehensive household hazardous waste program that would be run at specific times of the year. The Counties would like to pay for this program out of their general fund instead of raising tipping fees at the transfer stations to cover the expenses.

### 5.3.4 Central Archive

Records of all closed and active solid waste disposal sites within the region are maintained at the offices of the County Administrators within the Region. The Authority did not take over management of the landfills when it became the regional coordinator for disposal services for the Region. The Counties retain responsibility for all closure and post closure activities at the landfills and for documenting and addressing any open dumps. The Authority however maintains information on the transfer stations and recycling. The addresses for these archives are listed below:

Cumberland Plateau Regional Waste Management Authority

135 Highland Drive, Suite C

Lebanon, Virginia 24266

276-883-5403

Buchanan County

PO Box 950

Main Street, 4th Floor

Grundy, VA 24614

276-935-6501

Dickenson County

PO Box 1098

Mainstreet Courthouse

Clintwood, VA 24228

276-926-1676

Russell County

137 Highland Drive, Suite A

Lebanon, VA 24266

276-889-8000

The files kept in these locations constitute the central archive and operating record for all permitted landfills within the Counties. New landfills, closure and post closure care documentation is kept at the Counties. Transfer station and recycling information is kept at the Authority. All correspondence to and all correspondence from DEQ is kept in the files of the appropriate entity.

In addition, the Solid Waste Management Plan prepared by the Authority for the Region will serve as a central archive and summary of solid waste collection, disposal, recycling and treatment activities within the Region. The plan will be revised as appropriate as activities change and the revised plan will be submitted to DEQ for review and approval.

## 5.4 Recycling

Recycling programs in the region are implemented on an individual basis by locality. The data is reported regionally. A recycling Action Plan (RAP) has been submitted to VA DEQ and approved.

### 5.4.1 Description of programs

The following table summarizes the existing programs within each County.

**TABLE 71**

**SUMMARY OF RECYCLING PROGRAMS IN THE REGION**

| **LOCALITY** | **DESCRIPTION** |
| --- | --- |
| Buchanan County | * Limited recycling program in County. * White goods are collected at the transfer station and recycled * There is one private collection site at the Anchorage Shopping Center. Information on this center was not available. * There is a private scrap yard in the County which accepts batteries, aluminum, and scrap metal. The company pays for the materials they accept. Detailed information on this facility was not available. * The Town of Grundy collects and mulches their brush. * Some tracking of commercial and industrial recycling. |
| Dickenson County | * Limited recycling program in County. * Private contractor recycles aluminum, scrap metal, white goods, and abandoned vehicles. * Some tracking of commercial and industrial recycling. |
| Russell County | * 7-8 drop off sites are located throughout the County. * The drop off program is privatized. * The program accepts plastics, newspaper, cardboard, and aluminum. * The materials are transported to a recycler in Kingsport, TN. * Sites are staffed and contamination is limited. * Used oil is collected at the transfer station and is pumped and hauled away by Necessary Oil. * Scrap metal is collected at the transfer station. * Aggressively tracks commercial and industrial recycling. |
| Authority | * Hired a recycling coordinator 08/01/04. |

### 5.4.2 Recycling rates

The following table provides information on the recycling rates for the Counties for 2017 and 2021. Appendix 4 contains the DEQ reporting form for 2021 for the region.

TABLE 72

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **MATERIAL** | **BUCHANAN COUNTY** | | **DICKENSON COUNTY** | | **RUSSELL COUNTY** | | **TOTAL** | |
|  | **2017** | **2021** | **2017** | **2021** | **2017** | **2021** | **2017** | **2021** |
| **Total Principle RM** |  |  |  |  |  |  |  |  |
| Paper | 645 | 53 | 502 | 56.2 | 800 | 560.13 | 1,947 | 669.33 |
| Metal | 5,821 | 3,407.12 | 3,474 | 4,423.60 | 5,110 | 6,262.72 | 14,405 | 14,093.44 |
| Plastic | 40 | 6.8 | 20 | 1.5 | 35 | 10 | 95 | 18.30 |
| Glass | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Commingled | 0 | 370.50 | 0 | 0 | 0 | 0 | 0 | 370.50 |
| Yard Waste (composted or mulched) | 0 | 0 | 192 | 0 | 1 | 0 | 193 | 0 |
| Waste Wood (chipped or mulched) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Textiles | 23 | 0 | 76 | 72.50 | 0 | 0 | 99 | 72.50 |
| **SUBTOTAL** | **6,52956** | **3,837.42** | **4,264** | **4,553.80** | **5,946** | **6,832.85** | **16,546** | **15,267.63** |
| **Total Supplemental RM** |  |  |  |  |  |  | - |  |
| Waste Tires | 321 | 155.63 | 116 | 40 | 335 | 50 | 772 | 245.63 |
| Used Oil | 110 | 185.74 | 46 | 236 | 10 | 121.04 | 166 | 542.78 |
| Used Oil Filters | 10 | 0 | 0 | 80 | 8 | 4 | 18 | 84 |
| Used Antifreeze | 106 | 14.80 | 7 | 7.60 | 28 | 3 | 141 | 25.40 |
| Auto Bodies | 10 | 0 | 15 | 0 | 10 | 0 | 35 | 0 |
| Batteries | 198 | 107.46 | 83 | 240.27 | 49 | 180 | 330 | 527.73 |
| Sludge (composted) | 0 | 0 | 0 | 0 | 0 | 0 | - | 0 |
| Other (E-Waste) | 41 | 25 | 3 | 54 | 4 | 80.19 | 48 | 159.19 |
| Ash | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **SUBTOTAL** | **796** | **488.63** | **270** | **657.87** | **444** | **438.23** | **1,510** | **1,584.73** |
| **Total PRM and SRM** | **9,786.955** | **4,326.05** | **4,534** | **5,211.67** | **6,390** | **7,271.08** | **18,056** | **16,852.36** |
| **Recycling rate as reported to DEQ - Reported as region only** | | | |  |  |  |  | **21.2%** |

### 

### 5.4.3 Composition of materials recycled

The following table summarizes the recycling tonnage for 2021 for the region by percent of total products.

TABLE 73

#### RECYCLING DATA BY % MATERIAL

(ADJUSTED BY DEQ)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **MATERIAL** | **TOTAL REGIONAL TONNAGE** | | | |
|  | **2021** | **% TOTAL** |  |  |
| **Total Principle RM** |  |  |  |  |
| Paper | 669.33 | 5% |  |  |
| Metal | 14,093.44 | 85.0% |  |  |
| Plastic | 18.3 | .29% |  |  |
| Glass | 0 | 0.00% |  |  |
| Commingled | 393.50 | 1.6% |  |  |
| Yard Waste (composted or mulched) | 0 | 0% |  |  |
| Waste Wood (chipped or mulched) | 0 | 0% |  |  |
| Textiles | 72.50 | .45% |  |  |
|  |  |  |  |  |
| Waste Tires | 245.63 | 2% |  |  |
| Used Oil | 542.78 | 2.2% |  |  |
| Used Oil Filters | 84 | .46% |  |  |
| Used Antifreeze | 25.40 | .065% |  |  |
| Auto Bodies | 0 | 0% |  |  |
| Batteries | 527.73 | 2% |  |  |
| Sludge (composted) | 0 |  |  |  |
| Electronics | 159.19 | 1% |  |  |
|  |  |  |  |  |
| **TOTAL** | **16,852.36** | **100%** |  |  |
|  |  |  |  |  |

### 5.4.4 Volunteer Programs

There is some voluntary recycling within the region. In particular, Keep Buchanan County Beautiful is active in educational and promotional programs for recycling and litter control. The litter control personnel in both Russell County and Dickenson County also assist with volunteer programs as interest is expressed by volunteer organizations.

### 5.4.5 Recycling Markets

Appendix 5 includes a list of recycling markets that would be available to the region. Only scrap metal is marketed directly by the Counties. All other recycling is privatized.

### 5.4.6 Projected recycling rates

The region’s overall rate of recycling rose from 15% in 2004 and peaked in 2013 at 33.1% and moderated down to 21% in 2021. As we see a decline in both population and solid waste tonnages the Authory reported a recycling rate of 21% in 2021. Not only are markets unstable as a result of Covid 19, citizens are recycling less. The following table projects the recycling rate over the planning period if nothing changes in the recycling program and the waste tonnages increase as discussed in Section 4.3. The table also indicates the amount of additional recyclable material which must be captured to meet the 15% mandate. Programs were developed in 2004 are still in place to help improve the recycling rates and educational programs, however, citizens are recycling less in our opinion based on the failing regional economy.



## 5.5 Public Education

Public education relative to recycling in the region is handled primarily through either volunteer organizations or the litter control departments of each County. The litter control departments try to visit public schools at least once a year and to have a representative on the Keep Southwest Virginia Beautiful-works diligently to promote such programs as recycling, litter control, beautification and water quality. Buchanan and Dickenson County hosts a county-wide clean up program each spring. Adopt a Highway, Adopt a Stream and Adopt a School programs are active in the region. Appendix 6 contains information on public education in the region.

## 5.6 Public/Private Partnership

The region seeks to support all activities relative to reuse, reduction and recycling. Russell County’s recycling program is privatized with local company-Tri County Recycling, LLC. The Authority holds private contracts with the waste haulers and the private landfill. Each County handles their own contracts for scrap metal recycling.

# 6.0 BUDGET

The following table summarizes the operating budgets and revenues for the localities of the region for FY 2021:

**TABLE 74A**

**SUMMARY OF OPERATION BUDGETS AND REVENUES**

**FY 2021**

| **LOCALITY** | **COLLECTIONS (Information provided by Counties)** | **RECYCLING** | **TRANSFER AND DISPOSAL (Estimated from table below)** | **POST CLOSURE CARE LANDFILLS (Estimated)** | **TOTAL** | **ESTIMATED REVENUES (Provided by Counties)** | **DEFICIT FROM GENERAL FUND** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Buchanan County** | $ 3,261,066 | $ - | $898,621 | $0 | $ 4,159,687 | $887,207.28 | $(3,272,479.72) |
| **Dickenson County** | $ 1,582,630 | $ - | $592,273 | $0 | $ 2,174,903 | $216,759.20 | $ (1,958,143.80) |
| **Russell County** | $ 671,000 | $ 0 | $933,002 | $20,000 | $ 1,629,002 | $178,525.52 | $ (1,450,476.48) |
| **TOTAL-County only** | $ 5,514,696 | $ 0 | $ 2,423,896 | $ 20,000 | $ 7,963,592 | $ 1,282,492 | $ (6,681,100) |

As can be seen from this table, approximately 90 to 95% of the operating expenses of the region are addressed through the general funds of the local governments.

The following table evaluates the operating costs for FY 2021 as costs per ton delivered to the transfer station and as cost per person:



# 7.0 WASTE MANAGEMENT HEIRARACHY

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

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

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

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

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

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

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

## 7.1 Source reduction

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

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

The most effective source reduction activity that can occur at the local level is public education.

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

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

* Yard waste mulching programs
* White good recycling
* Environmental education programs for citizens relative to the need for source reduction

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

* Expansion of yard waste mulching programs
* Enhanced educational programs for the commercial and industrial sector

## 7.2 Reuse

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

As with source reduction, private citizens can make an effort to reuse or encourage reuse of many items that would normally be discarded to the landfill. However, the focus of the program would be better aimed at the commercial sector including the region’s businesses and industries. The region does not currently focus its educational programs on the commercial sector and does not currently collect specific information on reuse by the commercial sector.

Currently there are multiple reuse centers available to the public in the region including the following:

**TABLE 75**

**SUMMARY OF REFUSE FACILTIES IN REGION**

| **LOCALITY** | **NAME OF STORE** | **MATERIALS ACCEPTED** |
| --- | --- | --- |
| Dickenson County | Tri County Recycling,LLC  Lebanon, VA | Metal, Cars, Batteries, Oil, and EWaste |
|  | Outreach Community Center  Clinchco, VA | Clothing, appliances, and housewares |
|  | Potters Recycling, LLC.  Clintwood, VA | Metal, Cars, Batteries and EWaste. |
| Buchanan County | Tri County Recycling  Lebanon, VA | Metal, Cars, Batteries, Oil, and EWaste |
|  | Helping Hand  Whitewood, VA | Clothing |
|  | Gift of Love  Oakwood, VA | Clothing |
| Russell County | Tri County Recycling, LLC.  Lebanon and Honaker, VA | Metal, Cars, Batteries, Oil, and EWaste |
|  |  |  |

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

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

## 7.3 Recycling

Recycling is the process of separating a given waste material from the waste stream and processing it so that it may be used again as a raw material for a product, which may or may not be similar to the original product. Section 5.4 outlined the recycling activities in the region.

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

* Authority as of August 1, 2004 hired a regional recycling coordinator to work with the Counties, Towns and the commercial sector. Coordinator is responsible for pursuing markets, assisting with the establishment of collection programs, developing educational programs, and expanding the overall interest in recycling in the region.
* Authority to consider assisting directly with the recycling programs but coordinator will need to research markets and develop a specific plan for the Authority to act on.
* Authority to consider establishment of a periodic electronic waste collection program.
* Authority to consider establishment of a periodic household hazardous waste collection program.
* The Authority will continue to encourage its localities to increase programs offered and public participation in annual environmental events.
* The Authority will continue to encourage the localities to increase the percentage of residents that are educated about proper disposal and recycling practices within the region.
* In 2021 a Regional Recycling Group has been established with the 9 counties in SWVA.
* Secure additional competitive state grants to fund additional environmental education programs.

## 7.4 Resource recovery and incineration

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

At this time, the region does not generate enough waste to make resource recovery or incineration feasible.

## 7.5 Landfilling

Landfilling at an out of region facility is the primary disposal mechanism for the region. Sections 5.2 and 5.3 outlined the region’s transfer and disposal activities in detail.

# 

# 8.0 GOALS AND OBJECTIVES OF PROGRAM

The following section outlines the goals and objectives for the region’s solid waste management program. Some of the program activities will remain under the supervision of the local governments. Other program activities will remain or become regional as described below. The Authority oversees all regional activities.

## 8.1 Collections

Collection will remain in the hands of the local governments as indicated below.

**TABLE 76**

**COLLECTION SYSTEM**

**GOALS AND ACTION ITEMS**

| **ITEM NUMBER** | **GOAL** | ACTION ITEM | **SCHEDULE** | **ESTIMATED COST**  **(2015 dollars)** |
| --- | --- | --- | --- | --- |
| C-1 | Continue to provide cost effective collection systems for the citizens of the region. | Buchanan County to continue with its door to door pick up program. Towns to continue with their existing programs | No change proposed | Not applicable. |
|  |  | Dickenson County to continue with its door to door pick up program. Towns to continue with their existing programs. | No change proposed | Not applicable |
|  | Reduce the number of drop off sites and convert to Super Sites. | Russell County to continue with its drop off collection sites. Towns to continue with their existing programs. | Fall of 2021 to Fall of 2023 | Not applicable` |
| C-2 | Evaluate the potential for privatizing the collection system of the region | Authority to evaluate privatization through inquiries of the private haulers. May develop a request for proposals if preliminary discussions indicate a potential savings in the collection programs. | Completed  2018 | No specific budget proposed at this time. |
| C-3 | Increase door to door service to citizens in more densely populated areas. | The Town of Lebanon may consider ways to provide service to Russell County residents who live outside Town limits in a reasonably densely populated area-Subdivisions. | 2023-2024 | No specific budget proposed at this time. |

## 8.2 Transfer

During the planning period, the Counties will continue to transfer their waste to a disposal facility outside of the region and the Authority will continue to oversee the hauling contracts, to provide funding for the transfer operations and to provide maintenance as needed. Towards the end of the planning period, the transfer stations will be 30 years old. In 2010, the Authority secured a Bond for 1.2 million to rehab all three facilities. If replacement is required, the Authority in conjunction with the Counties may seek new, more central locations. As noted in previous sections, the waste stream is not anticipated to increase significantly over the planning period and hence the facilities should continue to be appropriately sized for the anticipated waste stream.

**TABLE 77**

**TRANSFER STATION SYSTEM**

**GOALS AND ACTION ITEMS**

| **ITEM NUMBER** | **GOAL** | **ACTION ITEM** | **SCHEDULE** | **ESTIMATED COST**  **(2015 dollars)** |
| --- | --- | --- | --- | --- |
| T-1 | Continue to provide for adequate hauling from the transfer stations at a cost competitive price. | The Authority will continue to oversee the hauling contracts and to provide funding for the operations of the transfer stations. The current contract with Advanced Disposal, Inc. expires in October 26, 2023 at which time the Authority will have either renegotiated the contract or selected a new contractor. | July 2023 | No cost associated with this action. |
| T-2 | Provide for the care and maintenance of the transfer facilities. | The Authority will continue to oversee the repair and maintenance of the facilities. Maintenance items already identified include floor slab repair and door repair. | As soon as funding becomes available and the need becomes significant. |  |
| T-3 | Provide accurate weigh scales at the facilities. | Depending on maintenance and care of scales, scales at the three facilities may need to be replaced or significantly overhauled towards the end of the planning period. | Annually consider condition of scales. If deterioration is noted, replace or repair as necessary. | Cost to replace scales assuming that foundation is still intact estimated at $40,000-80,000 per scale. |
| T-4 | Consider providing additional recycling activities at facilities. | The Authority may consider developing or expanding recycling programs at the transfer stations. Their efforts will be a function of the interest of the localities of the region. | No schedule established for this effort. Will depend on interest of localities. | No cost established for this effort at this time. |
|  |  |  |  |  |

## 8.3 Disposal

Disposal will continue through 2023 at the Advanced Disposal Inc. landfill located in Sullivan County Tennessee. Prior to the end of 2023, the Authority will initiate contract renewal. Throughout the planning period, the Authority will need to evaluate the remaining disposal capacity in which ever facility they are contracted with and to consider alternatives as necessary.

**TABLE 78**

**DISPOSAL SYSTEM**

**GOALS AND ACTION ITEMS**

| **ITEM NUMBER** | **GOAL** | **ACTION ITEM** | **SCHEDULE** | **ESTIMATED COST**  **(2015 dollars)** |
| --- | --- | --- | --- | --- |
| D-1 | Provide consistent disposal facilities for the Region. | The current contract held by the Authority with Advanced Disposal expires on October 26, 2023. Prior to expiration, the Authority will begin contract negotiations to assure continued and consistent disposal. | July 2018 | There is no cost associated with renewal. |
| D-2 | Assure that sufficient disposal capacity is available for the region at an economical cost. | Annually the Authority will evaluate the remaining disposal capacity at the landfill currently in use and, should it be found that sufficient long term capacity does not exist, seek alternative disposal facilities. | Annually | There is no cost associated with this action. |
|  |  | The Authority will assure the region that any contracts written with the disposal facility will allow termination for lack of capacity. | Evaluate during contract negotiations. | There is no cost associated with this action. |
| D-3 | Assure that post closure is effectively handled at the previously operated landfills within the region. | Each locality will continue to handle the post closure care of their landfills. The Authority may in the future, consider regionalization of the environmental monitoring at the facilities if interest is expressed by the localities. | No specific schedule. | No cost associated with this action. |

## 8.4 Recycling

As indicated above the recycling rate for the region, minumally meets the mandated 15% as set by the DEQ. To improve the recycling opportunities and to encourage commercial and industrial recycling, the region established a recycling coordinator position within the Authority as indicated below. As of August 1, 2004, the Authority hired a full time recycling coordinator. This individual is be tasked with evaluating markets, providing proposals to the local governments for the development or expansion of recycling programs, and for educating the public and commercial sector in the importance of recycling.

**TABLE 79**

**RECYCLING SYSTEM**

**GOALS AND ACTION ITEMS**

| **ITEM NUMBER** | **GOAL** | **ACTION ITEM** | **SCHEDULE** | **ESTIMATED COSTS**  **(2015 dollars)** |
| --- | --- | --- | --- | --- |
| R-1 | Provide professional oversight of the recycling program | The Authority is considering the establishment of a recycling coordinator position if funding is forth coming from the region. This individual will be tasked with the development of programs and public education. | Coordinator hired 08/01/04. | Funding for position is divided by the 3local governments. |
| R-2 | Expand the existing recycling programs. | The recycling coordinator will evaluate the existing programs to seek ways to expand or improve the programs in a cost effective manner. | Ongoing. | As funding and interest indicate. |
| R-3 | Develop program for electronic waste recycling. | The Authority will consider pursuing E-Waste recycling with or without the funding of a recycling coordinator position. Will probably be established as a once per year program with citizens charged to deliver their E-waste. | Ongoing all three counties have a drop off location for EWaste. | No cost established for this program. Dependent on funding by local governments. |
| R-4 | Develop an annual collection program for household hazardous waste. | The Authority will consider the best way to annually provide for the collection of household hazardous waste as delivered by the citizens to the transfer stations. | Spring of each year the 3 counties provides a HHW event. | No cost established for this program at this time. Funding will probably be sought from the individual localities outside of tipping fees. |
|  |  |  |  |  |

## 8.5 Litter Prevention and Control

The region has a commitment to seek ways to improve the litter prevention and control programs in the region and to reduce the amount of litter and illegal dumps in the Counties.

**TABLE 80**

**LITTER PREVENTION AND CONTROL**

**GOALS AND ACTION ITEMS**

| **ITEM NUMBER** | **GOAL** | **ACTION ITEM** | **SCHEDULE** | **ESTIMATED COSTS**  **(2022 dollars)** |
| --- | --- | --- | --- | --- |
| L-1 | Provide oversight of regional litter prevention and control programs. | The Authority is considering the establishment of a recycling coordinator position if funding is forth coming from the region. In addition to the recycling programs, this individual will be tasked with the coordination of regional litter prevention and control programs. | As funding is available. | Funding for position to come directly from local governments or to be subsidized from litter control grants from state to local governments in region. |
| L-2 | Assist local governments with education programs. | Recycling/litter control coordinator will work directly with governments to assist with the development of educational programs. | As funding is available. | No specific project planned at this time. |
| L-3 | Encourage the organization of grassroots environmental organizations who will assist with litter prevention and control. | Recycling/litter control coordinator will work with citizens to develop the organizations. | As funding is available. | No specific project planned at this time. |
| L-4 | Seek out alternative funding sources for litter prevention and control. | Recycling/litter control coordinator will work with the Authority to seek funding. | As funding is available. | No specific project planned at this time. |
| L-5 | Continue to support and expand the Adopt a Highway, Assign a Highway and Adopt a Stream programs active in the region | Recycling/litter control coordinator will work with the citizens to promote these programs and will assist in the organization of additional programs. | As funding is available. | No specific project planned at this time. |
| L-6 | Minimize illegal dumping | The Counties will continue to provide bulk collection days to discourage illegal dumping. | As funding is available. | No specific project planned at this time. |
| L-7 | Encourage cleanup of illegal dumps. | The Counties will continue to map illegal dumps and to seek additional funding for clean up as well as to improve enforcement actions. | As funding is available. | No specific project planned at this time. |

# 9.0 IMPLEMENTATION SCHEDULE

The implementation schedule for the region’s integrated waste management program has been summarized under separate sections above.

# 10.0 FUNDING AND FINANCING

The following tables summarize the estimated expenditures for the Authority over the planning period. It does not include collections or recycling which would fall to the individual local governments at this time. Funding for the Authority’s program will come from tipping fees and monthly charges billed to the Counties. Funding for the collections and recycling will come from user fees included with utility bills, commercial fees, and/or the general fund of the local government. Program development must be sensitive to the economic environment of the region which is difficult at this time. Local governments do not have the funds available to them to embark on many new programs. Should the tax base improve or the commercial/industrial sectors grow, then the local governments will have a greater ability to embrace new programs.

**TABLE 81**

**PROJECTED MISCELLANEOUS EXPENDITURES**

**BY AUTHORITY**

**(Equipment, building repairs etc.)**

**2004 – 2024**

Inflation rate 2.00%

| **YEAR** | **RUBBER TIRE LOADER**  **(Buchanan County)** | **RUBBER TIRE LOADER**  **(Dickenson County)** | **RUBBER TIRE LOADER**  **(Russell County)** | **FLOOR REPAIRS (Stagger after 2008)** | **NEW SCALE HOUSES** | **SCALE REPLACEMENT** | **TOTAL** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Replacement costs (2004) | $150,000 | $150,000 | $150,000 | $100,000 | $20,000 | $40,000 |  |
| Replacement period | 7 Years | 7 years | 7 years | 15 years | Upgrade one time in 2009 | 20 years |  |
| Current age of equipment | 1 year | Needs replacement soon | 2 years | 1993, 1994 and 1996 | 1993, 1994, and 1996 | 1993, 1994, and 1996 |  |
| 2004 |  |  |  |  |  |  | $0 |
| 2005 |  | $153,000 |  |  |  |  | $153,000 |
| 2006 |  |  |  |  |  |  | $0 |
| 2007 |  |  |  |  |  |  | $0 |
| 2008 |  |  | $162,365 | $108,243 |  |  | $162,365 |
| 2009 | $165,612 |  |  | $110,408 | $66,245 |  | $165,612 |
| 2010 |  |  |  |  |  |  | $0 |
| 2011 |  |  |  | $114,869 |  |  | $0 |
| 2012 |  | $175,749 |  |  |  |  | $175,749 |
| 2013 |  |  |  |  |  | $47,804 | $0 |
| 2014 |  |  |  |  |  | $48,760 | $0 |
| 2015 |  |  | $186,506 |  |  |  | $186,506 |
| 2016 | $190,236 |  |  |  |  | $50,730 | $190,236 |
| 2017 |  |  |  |  |  |  | $0 |
| 2018 |  |  |  |  |  |  | $0 |
| 2019 |  | $201,880 |  |  |  |  | $201,880 |
| 2020 |  |  |  |  |  |  | $0 |
| 2021 |  |  |  |  |  |  | $0 |
| 2022 |  |  | $214,237 |  |  |  | $214,237 |
| 2023 | $218,522 |  |  | $145,681 |  |  | $218,522 |
| 2024 |  |  |  | $148,595 |  |  | $0 |

**TABLE 82**

**PROJECTED EXPENDITURES FOR AUTHORITY**

**TRANSFER AND DISPOSAL**

**2004 – 2024**

| **YEAR** | **TRANSFER STATION OPERATIONS** | **DEBT SERVICE** | **MISCELLANEOUS EXPENDITURES** | **HAULING** | **DISPOSAL** | **TOTAL** | **TONNAGE** | **COST PER TON** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Description** | 3 transfer stations at $75,000 per year | From schedule provided by Authority | See Table 71. Includes new loaders, floor repairs, new scales and scale house | 2003 Estimated | 2003 Estimated |  |  |  |
| 2004 | $225,000 | $434,089 | $0 | $509,000 | $1,134,000 | $2,302,089 | 55,762 | $41.28 |
| **2005** | **$229,500** | **$431,011** | **$153,000** | **$519,180** | **$1,156,680** | **$2,489,371** | **56,238** | **$44.26** |
| 2006 | $234,090 | $436,331 | $0 | $529,564 | $1,179,814 | $2,379,798 | 56,720 | $41.96 |
| 2007 | $238,772 | $429,629 | $0 | $540,155 | $1,203,410 | $2,411,966 | 57,206 | $42.16 |
| 2008 | $243,547 | $426,617 | $162,365 | $550,958 | $1,227,478 | $2,610,965 | 57,697 | $45.25 |
| 2009 | $248,418 |  | $165,612 | $561,977 | $1,252,028 | $2,228,035 | 58,193 | $38.29 |
| **2010** | **$253,387** |  | **$0** | **$573,217** | **$1,277,068** | **$2,103,671** | **58,694** | **$35.84** |
| 2011 | $258,454 |  | $0 | $584,681 | $1,302,610 | $2,145,745 | 59,200 | $36.25 |
| 2012 | $263,623 |  | $175,749 | $596,375 | $1,328,662 | $2,364,409 | 59,711 | $39.60 |
| 2013 | $268,896 |  | $0 | $608,302 | $1,355,235 | $2,232,433 | 60,227 | $37.07 |
| 2014 | $274,274 |  | $0 | $620,468 | $1,382,340 | $2,277,082 | 60,748 | $37.48 |
| **2015** | **$279,759** |  | **$186,506** | **$632,878** | **$1,409,986** | **$2,509,129** | **61,274** | **$40.95** |
| 2016 | $285,354 |  | $190,236 | $645,535 | $1,438,186 | $2,559,312 | 61,806 | $41.41 |
| 2017 | $291,061 |  | $0 | $658,446 | $1,466,950 | $2,416,457 | 62,343 | $38.76 |
| 2018 | $296,883 |  | $0 | $671,615 | $1,496,289 | $2,464,786 | 62,886 | $39.19 |
| 2019 | $302,820 |  | $201,880 | $685,047 | $1,526,215 | $2,715,962 | 63,433 | $42.82 |
| **2020** | **$308,877** |  | **$0** | **$698,748** | **$1,556,739** | **$2,564,364** | **63,987** | **$40.08** |
| 2021 | $315,054 |  | $0 | $712,723 | $1,587,874 | $2,615,651 | 64,546 | $40.52 |
| 2022 | $321,355 |  | $214,237 | $726,977 | $1,619,631 | $2,882,201 | 65,110 | $44.27 |
| 2023 | $327,783 |  | $218,522 | $741,517 | $1,652,024 | $2,939,845 | 65,680 | $44.76 |
| 2024 | $334,338 |  | $0 | $756,347 | $1,685,064 | $2,775,750 | 66,256 | $41.89 |

# 11.0 PUBLIC PARTICIPATION

In the preparation of this plan, the Authority held several meetings with its members and members of the various local governments included in the region. In addition, the Authority met with numerous local groups to gage the needs of the member counties.

The Authority passes a resolution adopting the plan on June 16, 2022. A copy of this resolution and other resolutions are included in Appendix 10.

# 12.0 RECORD KEEPING

In addition to the daily record keeping, the Region documents its solid waste activities in several ways:

* Annual reports to the Cumberland Plateau Regional Waste Management Authority prepared by the Executive Director of the Authority
* Annual reports to the Board of Supervisors of the member Counties based on information provided by the Authority
* Periodic updates to the Authority and Boards by the Executive Director
* Annual submittal by March 31 of each year of the Waste Information and Assessment Report (Form 50-25) to DEQ
* Annual submittal by April 30 of each year of the Recycling Rate Report (Form 50-30) to DEQ
* Annual submittal usually by December of each year of the update to the financial assurance forms to DEQ

All these reports, updates and DEQ submittals as well as all background and permitting information are kept in the central archive (files) of the Cumberland Plateau Regional Waste Management Authority located at 950 Clydesway Road, Lebanon, Virginia, 24266. The Director of DEQ or other DEQ representatives receive copies of appropriate information relative to the Region’s solid waste management program through the following sources:

* Direct submittal to DEQ of Forms 50-25 and 50-30 on an annual basis
* Permit applications
* Permit amendment applications
* Updates to the solid waste management plan
* General correspondence which may be required from time to time

***Appendix 1***

***Regional Documentation***

***Appendix 2***

***DEQ Forms 50-25***

***Appendix 3***

***Summary of Previously Permitted Landfills***

***and Location Maps***

***Appendix 4***

***DEQ Recycling Reporting Form***

***Appendix 5***

***Recycling Markets***

***Appendix 6***

***Sampling of Public Education Materials***

***Appendix 7***

***Questionnaire and Responses***

***Appendix 8***

***Authority Meetings:***

***Agendas and Minutes***

***Appendix 9***

***Resolutions***

***Appendix 10***

***Resolutions***

***Appendix 11***

***Copy of Advertisement for Recycling Coordinator***