

**City of Harrisonburg
Solid Waste Management Plan
Major Amendment No. 1
(9 VAC 20-130-10 et seq)**



**Prepared For:
City of Harrisonburg
and
Virginia Department of Environmental Quality
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EXECUTIVE SUMMARY

A solid waste management plan is a document prepared in accordance with State regulation 9 VAC 20-130-10 et seq. which must address solid waste planning in an approved Planning Unit or Region. The City of Harrisonburg is an approved Planning Unit. The plan sets forth solid waste management goals and objectives for a 20-year period, and describes the planning and regulatory concepts to be employed by the adopting locality to meet those goals and objectives. The plan per the regulations must consider and address the components of the following hierarchy:

- Source reduction
- Reuse
- Recycling
- Resource Recovery (waste to energy)
- Incineration
- Landfilling

The plan must be adopted by the locality and will be used as a guide for future policy decisions concerning solid waste management. Per 9VAC20-130-173, solid waste planning units are required to maintain current solid waste management plans containing a 20-year planning window. On or before each five-year anniversary of the department's approval date, the planning unit shall submit a letter to the department certifying that certain plan elements have been maintained and updated, specifically:

- Waste generation estimates are current;
- Schedule increments have been met; and
- A projected 20-year waste management capacity remains available or projects otherwise are on schedule to meet the planning unit's solid waste needs.

Failure to maintain a plan or meet certain regulatory goals, may impact future permitting of solid waste management facilities in the Planning Unit.

Per 9VAC20-130-175, plans may be amended as either major or minor amendments.

Major amendments include the following:

- a. Any addition, deletion, or cessation of operation of any solid waste disposal facility;
- b. Any increase in landfill capacity;
- c. Any change that moves toward implementation of a waste management strategy that is lower in the waste management hierarchy;
- d. Action plans, including an action plan to address a planning unit's recycling rate that has fallen below the statutory minimum; or
- e. Any change to membership in the approved area.

This plan is considered a major amendment based on Item c above because the City of Harrisonburg moved from utilization of an MRF to handle its waste and recycling (Van der Linde Recycling operations in Zion Crossroads) back to landfilling at the Rockingham County Landfill. (e.g. moving from the MRF back to landfilling constitutes a change that is lower in the waste management hierarchy.)

Minor amendments include the following:

- a. Any addition, deletion, or cessation of operation of any facility that is not a solid waste disposal facility;
- b. Any change that moves toward implementation of a waste management strategy that is higher in the waste management hierarchy; or
- c. Any non-substantive administrative change such as a change in name.

The plan also incorporates several minor amendments relative to Item a including closure of a transfer station, decommissioning of the resource recovery facility, permitting of a transfer station and modification of a transfer station into a citizen recycling drop off facility.

Appendix 9 includes letters submitted by the City of Harrisonburg in support of these amendments.

Goals and Objectives

The City of Harrisonburg has developed and adopted this solid waste management plan for the following reasons:

1. To protect the health, safety, and welfare of the citizens of Harrisonburg by providing and planning for their present and future solid waste disposal needs.
2. To provide for the efficient and economical disposal of the City's solid waste.
3. To maintain recycling activities in the City of Harrisonburg to comply with current State mandated recycling rates of 25 percent.
4. To continue to develop an integrated approach for the handling and disposal of solid waste to minimize the amount of solid waste disposed of in the Rockingham County landfill to preserve valuable and limited landfill space.
5. To effectively and efficiently use limited natural resources.
6. To protect the environment from the mismanagement of solid waste.
7. To comply with State Regulations (9 VAC 20-130-10).
8. To develop and improve education and training in environmental programs for schools and general public.

This plan supports Objective 11.7 of the 2018 City of Harrisonburg Comprehensive Plan (See Chapter 16 – Compiled List of Goal, Objective and Strategy Statements) which was established to “promote and implement strategies to reduce waste.” Under this objective the following strategies were outlined:

- Strategy 11.7.1
To explore opportunities to expand public and private recycling, composting, and other innovations for waste management.
- Strategy 11.7.2
To encourage nonprofits, student organizations, faith-based organizations, and other to divert food goods from trash for resale or distribution to stressed populations.
- Strategy 11.7.3
To create a public awareness campaign about food waste and educational programs to prevent food waste, including composting tutorials.
- Strategy 11.7.4
To promote and provide incentives for water conserving fixtures and appliances.
- Strategy 11.7.5
To decrease the use of plastic bags and other single use items and to promote the use of biodegradable and reusable items.
- Strategy 11.7.6
To involve residents and businesses in the conservation of resources to assist in maintaining cost-effective public service delivery.
- Strategy 11.7.7
To develop a waste wood and woody debris utilization program that recovers wood from fallen and removed trees, and in partnership with interested agencies and organizations prevent the disposal of valuable wood resources into landfills.

Plan Adoption

The original solid waste plan was adopted by the City of Harrisonburg on July 23, 1991. The plan was updated and approved on October 24, 2006 and the 5-year update was approved on July 13, 2012. This current amendment to the plan will be approved in accordance with the regulations.

Summary of Proposed Specific Actions (2019)

Under this amendment to the plan the following proposed actions are recommended:

1. Continue to support and increase participation by citizens and privately sponsored recycling programs.
2. Continue to analyze information on waste generated in the City to gain a better understanding of the waste stream. This will allow better decisions to be made on how to spend limited funds to meet both local and State goals and objectives.
3. Consider the adoption of source reduction, reuse, and recycling reporting legislation.

4. Consider the adoption of legislation requiring businesses and residences to sort specified materials in their solid waste and make them available for collection to increase recycling and reduce environmental impact on landfills.
5. Expand public education programs on composting, e-recycling, and hazardous waste disposal procedures.
6. Maintain and monitor the closed City landfill (Permit 059) in accordance with State regulations.
7. Continue to direct waste to a permitted disposal facility (currently the Rockingham County Landfill – SWP 062).
8. Promote reuse, reduce and recycling of solid waste to reduce landfill needs.
9. Document all known solid waste disposal facilities within Harrisonburg. The Department of Sanitation will act as the archiving agency.

Recordkeeping

The City documents their solid waste activities in several ways as follows:

- Day-to-day records of waste received.
- Annual reports to the City Council indicating how the goals and objectives of the program have been met.
- Periodic updates presented to the City Council as requested.
- Annual submittal by March 31 of each year the SWIA form for appropriate permitted facilities (Form 50-25) to DEQ.
- Annual submittal by April 30 of each year the Recycling Rate Report (Form 50-30) to DEQ.
- Annual submittal to DEQ, usually by December of each year, of the update for financial assurance.

These reports, updates, and DEQ submittals as well as the background information are kept and will continue to be kept in the central archive (files) of the solid waste program located at the public works department.

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

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

Summary

Harrisonburg has a comprehensive and integrated waste management operation. Through past planning and efforts Harrisonburg finds itself prepared to meet its solid waste needs for the City.

Harrisonburg has instituted programs and legislation to aid in the collection of statistical information about its solid waste stream. (e.g. Ordinance Section 6-2-73) With this information, Harrisonburg is able to determine the level of recycling occurring.

Reporting legislation has allowed Harrisonburg to accurately determine the level of recycling activity occurring and determine how best to direct its efforts and limited funds to meet State mandated recycling levels.

Some additional categorization of the waste stream will aid Harrisonburg in determining household waste and principal recyclable materials quantities which are used in determining recycling rates.

Goals and action items for the program are outlined in Section 8.0.

1.0 INTRODUCTION

The City of Harrisonburg has been approved as a Planning Unit by the Virginia Department of Environmental Quality (VDEQ). As an approved Planning Unit, the City must maintain a current solid waste management plan in accordance with the Virginia Solid Waste Planning and Recycling Regulations, 9VAC20-130 et seq.

The plan must be adopted by the locality and will be used as a guide for future policy decisions concerning solid waste management. Per 9VAC20-130-173, solid waste planning units are required to maintain current solid waste management plans containing a 20-year planning window. On or before each five-year anniversary of the department's approval date, the planning unit shall submit a letter to the department certifying that certain plan elements have been maintained and updated, specifically:

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- c. Any change that moves toward implementation of a waste management strategy that is lower in the waste management hierarchy;
- d. Action plans, including an action plan to address a planning unit's recycling rate that has fallen below the statutory minimum; or
- e. Any change to membership in the approved area.

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Minor amendments include the following:

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The plan also incorporates several minor amendments relative to Item a including closure of a transfer station, decommissioning of the resource recovery facility, permitting of a transfer station and modification of a transfer station into a citizen recycling drop off facility.

APPENDIX 9 includes letters submitted by the City of Harrisonburg in support of these amendments.

The original plan prepared under the Regulations was approved by VDEQ on October 24, 2006. The DEQ approved the City's 5-year update on July 13, 2012. The City submitted the 2017 5-year update on July 11, 2017 with comments received from DEQ on February 27, 2018. Response from the City to DEQ came on March 3, 2018 indicating that an amendment to the Plan would be prepared given changes in the City's solid waste management system. This current amendment is an outgrowth of these communications.

This plan will replace the previous submittal and is considered a major amendment as outlined above.

This solid waste management plan has been prepared for and adopted by the City of Harrisonburg in accordance with regulatory requirements (9VAC20-130-175. Documentation adopting the plan as required by the regulations can be found in the **Appendix 10**. This appendix also includes previous adoption information as requested by DEQ.

1.1 Legislation

This solid waste management plan has been prepared in accordance with the Virginia Waste Management Board's, Regulations for Solid Waste Management Planning, 9 VAC 20-130-10 et seq., effective November 28, 2007, as modified by the Virginia Waste Management Board from time to time.

1.2 Authority (9 VAC 20-130-20)

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

1.3 Purpose (9 VAC 20-130-40)

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

1. Establish minimum requirements for solid waste management planning and recycling for protection of the public health, public safety, the environment, and natural resources throughout the Commonwealth; 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, regional or area served by the plan responsible for meeting and maintaining the minimum recycling rates;
4. Establish the requirement in compliance with the Virginia Waste Management Act, §§ 10.1-1411 and 10.1-1408.1 D 1 (vi) of the Code of Virginia, for withholding issuance of permits for solid waste management facility; and
5. Provide for reasonable variance and exemptions.

1.4 Policy (9 VAC 20-130-30)

It is the policy of the Virginia Waste Management Board to require each region designated pursuant to 9VAC20-130-92 through 9VAC20-130-100, 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; and
6. Landfilling.

1.5 Recycling

1.5.1 Recycling goals

9VAC20-130-125 (Recycling Requirements) states as follows:

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

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

The most current census is the 2010 census that indicated that the City had a population of 48,914. The City has a reported size of 17.4 square miles and thus 2,811 persons per square mile. *It must therefore meet the 25% recycling goal.*

1.5.2 Reporting requirements

9VAC20-130-165 (Recycling Data Reporting) states as follows:

A. Each solid waste planning unit or locality with a population of greater than 100,000 persons according to the most recent United States census shall prepare and submit a recycling survey report to the department by April 30 of each year.

B. Each solid waste planning unit or locality with a population of 100,000 or less according to the most recent United States census shall prepare and submit a recycling survey report to the department once every four years. These recycling survey reports shall include only information for the most recent single year. The first reports submitted pursuant to this subsection shall be submitted by April 30, 2013, for the reporting year ending December 31, 2012. Thereafter, recycling survey reports shall be submitted by April 30 of every fourth year (i.e., 2017, 2021, 2025, and so on).

Because the City has a population of less than 100,000 people, as of CY 2012 *it must only report recycling information to VDEQ every four years_although it is required to keep accurate statistics on recycling annually.*

1.5.3 Minimum Recycling Rate (Planning Requirements)

9VAC20-130-120.B states as follows:

B. A minimum recycling rate as specified in § 10.1-1411 of the Code of Virginia for total municipal solid waste generated annually in each solid waste planning unit shall be met and maintained.

1. *The plan shall describe how the minimum recycling rate shall be met or exceeded. The director may approve the solid waste management plans of units that do not currently meet the minimum recycling rate only if all other requirements of this chapter have been met and the solid waste planning unit demonstrates its commitment to implementing a strong and detailed action plan for recycling to meet the required rate.*

2. When a solid waste planning unit's annual recycling rate falls below the minimum rate, it shall constitute evidence of a significant deviation from the plan. The plan may be subject to revocation by the department under 9VAC20-130-110 E unless the solid waste planning unit submits a recycling action plan acceptable to the department per subsection I of this section.

Based on this regulatory requirement, the City of Harrisonburg understands that it should evaluate its recycling annually to determine if it is meeting its minimum requirements. Failure to meet these requirements will require the preparation and submittal of a Recycling Action Plan. (See Section 1.5.4 below.)

The City's recycling rate is a combination of specific City recycling activities, commercial recycling and recycling at the schools (City and higher education). The City works to monitor recycling information not directly under its control but there is no mandatory reporting requirement imposed on the commercial or institutional sectors.

At the preparation of this revised SWMP in 2020, it is unclear what the future of local recycling programs will be, given the pandemic and impact on local budgets, foreign recycling markets and state wide processing.

1.5.4 Recycling Action Plan

9VAC20-130-120.I outlines the requirements for action plans as follows:

I. A planning unit that does not meet the requirements of these regulations shall submit an action plan, by mail or electronic mail, for approval by the department. Such action plans shall include:

- 1. A description of the deficiency that requires the development of the action plan.*
- 2. A time schedule to resolve the deficiency associated with the planning unit's failure to meet the requirements of the approved solid waste management plan.*
- 3. A reporting requirement to the department of a minimum of once every six months, including activities or updates documenting how the action plan requirements are being met.*
- 4. Plans and all subsequent reports and submittals shall be reviewed by the department within 30 days of receipt by the department.*
- 5. All the department's requests for further information or responses shall be provided within 30 days of receipt at the planning unit. The department may grant reasonable extensions to these deadlines on a case-by-case basis.*

Should the City of Harrisonburg fail to meet its goal, it will file the appropriate documentation with DEQ and initiate reporting activities as specified above. Items that could be considered in the plan could include:

- Enlisting support and help from the “Environmental Performance Standards Advisory Committee;”
- Evaluation of current markets and potential expansion;
- Regionalization of recycling markets;
- More stringent requirements for commercial reporting;
- Promotion program for increased downtown recycling opportunities; or
- Collaboration with JMU and other schools in the region.

1.6 Planning Area

The planning area is the City of Harrisonburg. See **Appendix 1** for a vicinity map.

1.7 Planning Period

The planning period for this solid waste management plan is 20 years from 2019 – 2039.

1.8 Definitions

Definitions relating to solid waste collection and disposal are contained in the Title 6 – Chapter 2 – Article A, Section 6-2-2 of the City’s Code of Ordinances.

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

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

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

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

1.9 Figures

The following figures are provided in **Appendix 1**:

- Figure 1 – General Location Map
- Figure 2 – Area Map
- Figure 3 – City Trash Collection Map by day of service
- Figure 4 – City Mobile Recycle Locations
- Figure 5 – Land Use Guide from 2018 Comprehensive Plan

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 City's 2015 Solid Waste Management Plan are being provided in this Section.

2.1 Status of Solid Waste Management Nationally

Appendix 12 contains the latest published information from the United States Environmental Protection Agency with regard to solid waste management in the United States and should be consulted as interest dictates. The document is entitled: "Advancing Sustainable Materials Management: 2015 Fact Sheet," dated July 2018. It contains interesting statistics on solid waste management nationally, the characteristics of waste streams and most importantly identifies an average municipal solid waste (MSW) generation rate on a pound per person per day basis. This information is used for consideration of future waste generation in the City.

2.2 Highlights from 2015 Solid Waste Management Plan

The City submitted an update to their solid waste plan in June 2015 (submitted to Steve Coe and Jeng Hwa Lyang). A summary of proposed specific actions by the City is provided below as stated in the City's revised 2015 plan developed by the Public Works Department:

1. Continue and increase participation in City and privately sponsored recycling programs.
2. Categorize incoming waste in more detail to gain a better understanding of the waste stream. This will allow better decisions to be made on how to spend limited funds to meet both local and State goals and objectives.
3. Implement source reduction, reuse, and recycling programs.
4. Implement legislation requiring businesses and residences operated for profit to sort specified materials in their solid waste and make them available for collection to increase recycling (i.e. hazardous waste, compostable items, etc.).
5. Implement legislation giving preference to the purchase of paper made from recycled materials by the City.
6. Continue public education programs.
7. Monitor the City's closed landfill (SWP 059) in accordance with State regulations for post closure care.
8. Maintain agreement with approved MSW Recycling/Disposal facilities
9. Document all known solid waste disposal facilities within Harrisonburg. The Department of Public Works – Sanitation Division will act as the archiving agency.

This work is on-going with the Public Works Department tasked with annually reporting progress to City Council during budget planning activities.

2.3 Historical Chronology of Solid Waste Events in City

See **Appendix 2**. This will be updated as new activities are implemented.

3.0 DEMOGRAPHIC DATA

3.1 Location

The City of Harrisonburg is located near the center of Rockingham County in the valley of Virginia. Harrisonburg has a total area of 17.4 square miles. See figures in **Appendix 1**.

3.2 Population

Population and other demographic information is provided in the “Virginia Community Profile for the City of Harrisonburg” published by the Virginia Employment Commission. Key pages of this document can be found in **Appendix 13**. This document, in addition to detailed demographic population data includes such important information as:

- Population by age - illustrating the impact of James Madison University
- Commuting patterns - a significant portion of the work force commutes into the City
- 50 Largest Employers - James Madison University is the largest employer in the City
- Employment by industry - government, accommodation/food services, and retail are the key employment sectors, again illustrating the impact of James Madison University

This information can help inform solid waste programs and identify potential collaborative efforts.

Information from Weldon Cooper was also considered and used for projections.

The City’s Comprehensive Plan adopted November 13, 2018 contains detailed discussion on population. Below is an excerpt from this plan which helps inform solid waste planning efforts:

“Population projections are often included in planning reports to help guide future plans for public services and facilities. There are many different ways to project future population, and have degrees of uncertainty. Variables such as economic growth rates, birth and migration rates, and the enrollment growth rates of JMU and EMU are subject to change from year to year and will greatly affect the accuracy of population projections.”

“It is also important to realize that the rate and distribution of future population growth in the City can be affected in a significant way by land use policies of the City and surrounding jurisdictions. Population projections should be considered merely as a snapshot of how much the City might grow based on past growth trends. As such, they can allow the City to examine whether or not the continuation of past trends is desirable and how current land use policies might be altered to affect these trends and to move the City toward its preferred future.”

“Harrisonburg’s population figures include students from both universities in the City. The student population plays a significant role in the City as many of our services, infrastructure needs, business needs, and recreation and other necessities are impacted by that demographic.”

"Data included in Chapter 4 of the plan was developed "by using the estimated growth rate that the Weldon Cooper Center for Public Service used in their last projection for the City, which included roughly 20 percent growth during the 10 year period between 2010 to 2020, 14 percent growth between the ten year period from 2020 to 2030, and about 11 percent growth between the ten year period from 2030 to 2040."

The comprehensive plan information quoted above provides an excellent analysis of growth in the City over the solid waste planning period. It indicates that the City will continue to grow subject to land use planning and economics. The statement above indicates that population growth is considered to "help guide future plans for public services..." which directly relates to solid waste planning as population growth can lead to increases in waste generation and the subsequent need for enhancements to its waste collection and recycling systems. Waste generation projections are provided in Section 4.0.

Appendix 3 includes a table for population projections over the planning period utilizing the information taken from the Weldon Cooper center data base. The following table summarizes the population projections over the planning period:

**TABLE 1
CITY OF HARRISONBURG
POPULATION PROJECTIONS**

YEAR	POPULATION	% CHANGE
2010 (Census)	48,914	
2020 (Est)	58,687	20.0%
2030 (Est)	67,154	14.4%
2040 (Est)	74,512	11.0%

From 2020 to 2040, the City's population is estimated to grow approximately 27%.

Annually, the City evaluates the impact of population growth and housing on waste collection services to allow adequate time to make adjustments as may be needed in the budget.

3.3 Geographic Conditions

3.3.1 Geographic Setting

The City of Harrisonburg is located in the center of Rockingham County in the Shenandoah Valley with the Blue Ridge Mountains to the east and the Appalachian Mountains to the west.

3.3.2 Physiography

The bedrock in Harrisonburg consists mainly of sedimentary shale, limestone, and dolomite. Four formations underlie Harrisonburg; Martinsburg Shale which is chiefly shale and silty shale with greenish sandstone commonly at top; Edinburg formation which is dark graptolite bearing shale, dense black limestone, and nodular weathering limestone; New Market and Lincolnshire limestone which is dense

light gray limestone and dark, medium coarse, cherty limestone; and Beekmantown formation, which is thick-bedded, grey, medium-grained dolomite and some blue limestone; much chert.

3.3.3 Climate

Harrisonburg has a mean annual temperature of 53.2 degrees F. The winter average temperature is 34 degrees F, the summer average temperature is 72 degrees F. The annual average precipitation is 34.1 inches including average annual snowfall of 27.9 inches. The average frost depth is approximately 24 inches.

3.4 Transportation

See the City's Comprehensive Plan dated 11/13/18, Chapter 12 which provides information on the City's transportation networks.

Two major transportation arteries intersect in Harrisonburg, Interstate 81 and U.S. Highway 33. These transportation links give Harrisonburg access to other large metropolitan areas of the State. Interstate 81 runs north and south through Virginia and connects with Interstate 64 near Staunton. State Route 33 runs east and west.

One active rail line runs through Harrisonburg, the Norfolk Southern Railway. The railway gives Harrisonburg an alternative to trucking for access to national markets.

Their stated goal and first objection are:

Goal 13. To develop and maintain a safe and convenient transportation system serving all modes of travel, including driving, walking, biking, and taking public transportation.

- *Objective 13.1: To improve the ability of people and goods to move efficiently and safely throughout the City, while considering existing and future needs of people and planned land uses.*

The City's robust transportation network informs collection, recycling and disposal activities relative for solid waste management.

3.5 Utilities and Services

See the City's Comprehensive Plan dated 11/13/18, Chapter 13 which provides information on the City's utilities and services.

The City provides water, wastewater treatment, solid waste management and stormwater management services to its citizens. Electricity is provided by the Harrisonburg Electric Commission, natural gas by Columbia Gas of Virginia, and telecommunications/broadband by a number of providers including Verizon, Shentel and Comcast.

The City's stated goals are to:

- *Objective 14.1: To continue to provide an adequate supply of high quality, environmentally sound public water service.*
- *Objective 14.2: To continue to provide dependable, environmentally sound sanitary sewer service.*
- *Objective 14.3: To improve stormwater and local water quality by reducing sediment, phosphorus, nitrogen, and bacteria loading into Blacks Run and its tributaries.*
- *Objective 14.4: To promote and implement strategies to reduce waste.*
- *Objective 14.5: To support the development and expansion of multifaceted energy services, prioritizing renewable sources, and corresponding infrastructure that are reliable, cost-effective, properly maintained, and responsive to customer needs.*
- *Objective 14.6: To support the development and maintenance of broadband and telecommunications services that are accessible to all residents and businesses to support education, health, economic development, and public safety.*
- *Objective 14.7: To continue planning for the expansion and upgrade of utilities during the planning, maintenance, and construction of new infrastructure projects.*

3.6 Economic Growth

The City's Comprehensive Plan dated 11/13/18, Chapter 14, provides thorough and excellent information on economic growth for the City but does not provide projections on future growth as this would be purely speculative. The introduction states the following:

"A strong economy is essential to the social, cultural, and financial vitality of the City of Harrisonburg. Public and private initiatives help create employment opportunities. Economic development involves public sector collaboration with private entities to promote and improve local economies. Successful economic development requires cooperation among government, businesses, educational institutions, nonprofits, and civic organizations. The promotion of business and industrial investment along with jobs retention and creation supports the City's tax base, increases property values, provides work opportunities for people, helps reduce poverty, and moves the City toward economic stability and self-sufficiency. This chapter focuses on Harrisonburg's economic health and the efforts to maintain and enhance it through economic development and tourism promotion."

The chapter identifies the following City assets relative to economic growth:

- *Harrisonburg is centrally located on the East Coast and has easy access to major transportation routes; Interstate 81 runs through Harrisonburg and is a major transportation route providing one-day access to two-thirds of the U.S. population. Additionally, regional and international airports, including Shenandoah Valley Regional Airport, Dulles International Airport, Charlottesville Airport, Richmond Airport, and Roanoke Airport are within 150 miles.*
- *The Harrisonburg area serves as the major retail and service center in the Shenandoah Valley. The Harrisonburg retail market attracts shoppers from 20+ miles away (including West Virginia) with an estimated market population of 222,000 served.*

- *There are many cultural and recreational opportunities within and surrounding Harrisonburg, including but not limited to: local universities, which sponsor lectures, concerts, art exhibits, and athletic events; Downtown Harrisonburg which serves as a destination for dining, shopping and a variety of annual events; and Shenandoah National Park, George Washington National Forest; and Massanutten Four-Season Resort are less than 25 miles from Harrisonburg.*
- *Harrisonburg is home to James Madison University, (JMU) a public coeducational research university; Eastern Mennonite University (EMU), a private liberal arts university; and American National University, a postsecondary education institution. Other higher education and training providers in the area that serve Harrisonburg residents include Blue Ridge Community College, Bridgewater College, Mary Baldwin University, and the Woodrow Wilson Workforce and Rehabilitation Center. There are opportunities for the City and community organizations to partner with colleges and universities with respect to student internships, special projects, and technical assistance on governmental and environmental issues.*
- *Harrisonburg has a diverse economic base, which has helped insulate it from major hits during times when certain industry sectors have experienced downturns.*

Other conclusions from this chapter include the following which have some bearing on solid waste management:

- As the City's inventory of undeveloped land diminishes, the probability increases for new, larger manufacturing and industrial development activity to locate within Rockingham County or elsewhere in the region. However, since nearly 75% of all new investment and job creation is generated by expansions of existing businesses, Harrisonburg continues to place strong emphasis on keeping its industrial partners happy and armed with the resources they need to continue to grow and thrive.
- The plan lists 27 major employers/industries within the City.
- The City has identified Retail Revitalization Zones.
- The City has identified a Downtown Technology Zone.
- The City developed the Harrisonburg Technology Park.
- There are approximately 2,200 small businesses (fewer than 100 employees) in the City.
- Tourism overall is an important contributor to the local economy.

Clearly, the City has opportunities for increased recycling through the active economic growth in the City and challenges with providing solid waste management services as may be needed. Although, much of the commercial and industrial waste collection is privatized, the growth will also impact residential growth and the City's collection and recycling services.

Hence the emphasis in the comprehensive plan on the importance of providing services and facilities to meet its residential, commercial and industrial sectors to encourage growth. The goal of the City (Goal 16 in the plan) is to: *"To maintain economic leadership in the Shenandoah Valley by offering opportunities for all people, businesses, and industries that enhances the City's ability to expand its economic base and provide good employment for all people."* The City identifies six objectives for meeting this goal.

Relative to enhancement of tourism, the City's stated goal (Goal 17 in the plan) is to: *"To build a distinct presence in the regional tourism marketplace to increase tourism in Harrisonburg."* The City identifies one major objective for meeting this goal.

As indicated above economic growth will directly impact solid waste planning. Key objectives from Goals 16 and 17 that could impact solid waste management include the following:

- *Objective 16.1: To increase the number of higher-paying jobs available in Harrisonburg.*
- *Objective 16.2: To attract new businesses and assist existing businesses to expand locally.*
- *Objective 16.3: To create a well-prepared and successful workforce by providing educational programs for workforce development, training, apprenticeship, and retraining to meet demands of business and industry.*
- *Objective 17.1: To build a distinct presence in the regional tourism marketplace to increase tourism in Harrisonburg.*

Obviously, the City will need to assess impacts of growth on collections, recycling and disposal during the planning period as it occurs. This assessment is done during planning sessions with City Council and during the annual budget preparation. In addition, Rockingham County who operates the primary disposal facility must also be aware of growth in its Region as will the City to assure adequate capacity.

3.7 Land Use

See the City's Comprehensive Plan dated 11/13/18, Chapter 6, which provides information on land use both existing and future projections.

Harrisonburg has a densely developed central core which is surrounded by less developed rural land. Development is generally occurring radially around the densely developed core with the density of development decreasing with distance from the core area.

Harrisonburg has residential, institutional, commercial and light industrial land uses. James Madison University and Eastern Mennonite College are both located in Harrisonburg.

Information in the Comprehensive Plan indicates that 22.8% of the land in the City is identified as vacant, 16.3% as residential – single family detached, 9.6% as residential single family attached/multifamily, 16.8% as commercial/industrial, 9.1% as schools/colleges/universities with the remainder in public facilities, transportation, recreation or other uses. This mix of land use informs programs for waste collection and recycling.

Key objections that could impact solid waste management include the following:

- *Objective 4.1: To create positive images of the City through landscaping and design improvements at the City's gateways, along major travel corridors, in residential neighborhoods, and in commercial and industrial areas.*
- *Objective 4.2: To encourage areas with a mix of uses (residential and nonresidential) and areas with different housing types and lot sizes in locations identified in the Land Use Guide.*

- *Objective 4.3: To adapt to new trends and demands while ensuring that new development and redevelopment of residential, commercial, and industrial properties will be compatible with adjacent existing uses and with planned land uses of surrounding parcels.*
- *Objective 4.4: To provide off-street parking to adequately meet demand and provide access to key destinations, businesses, and services, without creating oversupply that increases costs for development, and impacts the community character, natural environment, and economic vitality.*

The City will assess impacts of changes in land use patterns on collections, recycling and disposal as needed.

3.8 Environmental Stewardship and Sustainability

The Solid Waste Planning and Recycling Regulations do not specifically require that environmental stewardship and sustainability be addressed. However, it has been included here because the City believes it is important and the City’s Comprehensive Plan dated 11/13/18, Chapter 10, provides specific information on its goals and objectives for Environmental Stewardship and Sustainability.

The City has placed significant emphasis on environmental stewardship and sustainability in conjunction with their planning efforts recognizing that land use development can be accomplished while *“protecting and enhancing valued natural environments”*. In July 2016, City Council created the Environmental Performance Standards Advisory Committee (EPSAC). The purpose of the EPSAC is to provide guidance and recommendations to City Council in the establishment of environmental performance standards for public development and redevelopment projects, and to encourage the private sector to meet these standards as well.

Solid waste management planning including enhanced recycling is directly related to environmental stewardship and sustainability as considered below relative to the goals and objectives of the City.

Chapter 10 addresses objectives **specifically related to** solid waste management as follows:

- ***Objective 11.7: To promote and implement strategies to reduce waste.***
 - ***Strategy 11.7.1*** *To explore opportunities to expand public and private recycling, composting, and other innovations for waste management.*
 - ***Strategy 11.7.2*** *To encourage nonprofits, student organizations, faith-based organizations, and others to divert food goods from trash for resale or distribution to stressed populations.*
 - ***Strategy 11.7.3*** *To create a public awareness campaign about food waste and educational programs to prevent food waste, including composting tutorials.*
 - ***Strategy 11.7.4*** *To promote and provide incentives for water conserving fixtures and appliances.*
 - ***Strategy 11.7.5*** *To decrease the use of plastic bags and other single use items to and promote the use of biodegradable and reusable items.*

- **Strategy 11.7.6** *To involve residents and businesses in the conservation of resources to assist in maintaining cost-effective public service delivery.*
- **Strategy 11.7.7** *To develop a waste wood and woody debris utilization program that recovers wood from fallen and removed trees, and in partnership with interested agencies and organizations prevent the disposal of valuable wood resources into landfills.*

Based on this information, the City has a commitment to reduce, reuse and recycle, which can include diversion, composting and education and will use Chapter 10 as guidance when evaluating programs and resources.

4.0 WASTE GENERATION AND COMPOSITION

The City of Harrisonburg as of 2018, is directing all tonnage collected by the City to the Rockingham County Sanitary Landfill (SWP 062), located at 2400 Grassy Creek Road, approximately 0.4 miles south of the intersection of State Route 710 and State Route 711 in Rockingham County, Virginia. The City does not have a flow control ordinance so waste collected by the private sector is most likely delivered to the same landfill but could seek other alternate disposal sites. The City utilizes the Rockingham County Sanitary Landfill as a commercial user. There is no cooperative agreement between the City and County for use of the landfill.

9VAC20-130-120. E. of the Planning Requirements states the following: *“A methodology shall be utilized to monitor the amount of solid waste of each type produced within the area of the solid waste management plan and to record the annual production by solid waste types at a centralized archive and a copy shall be sent to the department.”* The City of Harrisonburg relies on data provided by the Rockingham County Landfill (Permit 062) relative to monitoring the amount of solid waste by category (See discussion in Section 4.1 below). It does not have a specific City mechanism for monitoring tonnage generated in the City by category - it would be an impossible task. Thus, it is assumed that a significant amount of all waste generated in the City is disposed of in the Rockingham County landfill and recorded in their system. The landfill does differentiate the origin of waste from County and from City to the best of its ability. Annually, the landfill submits a SWIA Form 50-25 form to the DEQ outlining tonnage by category included in the DEQ form.

If the City had an operational transfer station (which it does not at the time of the development of this plan), then it would also collect data on tonnage by waste category. The City does not have a flow control ordinance requiring usage of the Rockingham County Landfill so waste could be directed by the private sector to other facilities. The City has never been requested to provide an annual report to the department on their tonnage and assumes the landfill SWIA report is sufficient.

4.1 Current and Historical Waste Generation (2012 through 2019)

Table 4-A in **Appendix 4** provides information on the historical waste generation in the City taken from City and County records. The Resource Recovery Facility was in operation during 2012, 2013, and 2014 and the table indicates this in the columns identified as “Incinerated.” Beginning in 2015 and through 2017, the City utilized Van der Linde Recycling and directed MSW to their facility for recycling and disposal. Thus, 2018 is the first year with data that will mirror the City’s operations going forward.

At the landfill, the County records the following categories of waste as delivered:

- Municipal solid waste
- Commercial refuse
- Dirt/rock
- Non-chargeable
- Concrete
- Construction Demolition Debris
- Industrial waste

- Vegetative/yard waste
- Unsorted rubbish
- Sludge

They identify tonnage delivered as coming from either City or County sources.

Table 4A **only** provides tonnages identified for the City of Harrisonburg. From 2012 to 2019, the tonnage identified for the City has ranged from a low of 25,496 tons to a high of 38,090 tons. In 2019, the City's tonnage was reported by the County as 35,323 tons representing 23.7% of the waste delivered to the Rockingham County Sanitary Landfill (SWP 062).

The following table provides a breakout of the **City's** tonnage as reported by the County. Note that percentages in Table 4A represent the percent of the total tonnage delivered in that category to the landfill. In contrast the percentages below represent percent of tonnage in category to total **City** tonnage:

**TABLE 2
CITY OF HARRISONBURG TONNAGE
DELIVERED TO ROCKINGHAM COUNTY LANDFILL
REPORTED BY LANDFILL
2019**

CATEGORY	TONNAGE	% OF CITY TOTAL TONNAGE
Municipal solid waste (MSW)	11,583.75	32.8
Commercial refuse	18,218.15	51.6
Dirt/rock	Included in Concrete	0.0
Non-chargeable	419.35	1.2
Concrete/dirt/rock	64.11	0.2
Construction Demolition Debris (CDD)	3,953.67	11.2
Industrial waste	126.29	0.3
Vegetative/yard waste	464.68	1.3
Unsorted rubbish	58.77	0.2
Sludge	434.04	1.2
TOTAL	35,322.81	100.0%

Commercial refuse (collected by the private sector) represents over half of the City tonnage delivered to the landfill indicating a robust private sector collection system. Most if not all of the CDD materials would also be delivered by the private sector.

Tables 4-B, 4-C and 4-D in **Appendix 4** provide monthly information for 2017, 2018 and 2019 for County and City tonnage *as recorded at the landfill*. As noted above, in 2017 the City was still sending its waste to Van der Linde Recycling (VDL). VDL was sold and the material recovery facility closed, so as of 2018 all waste collected by the City is now directed to the Rockingham County landfill. The City does not have a flow control ordinance so waste collected by the private sector is most likely delivered to the same landfill but could seek other alternate disposal sites.

Table 4-D indicates that:

- **Total Tonnage** - Tonnage from City sources represented approximately 23.7% of the total tonnage landfilled.
- **MSW** – Tonnage identified from City sources represents 24.4% of this category.
- **Commercial refuse** – Tonnage identified from City sources represents 30.7% of this category.
- **CDD** – Tonnage identified from City sources represents 15.5% of this category.
- **Industrial waste** – Tonnage identified from City sources represents 1.4% of this category.

In summary, the City provides limited tonnage to the landfill, primarily from the commercial sector.

DEQ SWIA data for 2019, indicates that the landfill has remaining capacity of 4,327,624 tons (DEQ calculation) and a remaining life of 43 years (reported). In 2019, the landfill received 145,958 tons for a calculated life of 30 years.

The facility has sufficient capacity to support the City of Harrisonburg’s needs through the planning period and beyond.

4.2 Projected Waste Generation Rates Relative to Disposal Needs

One of the accepted methods of projecting waste generation is to consider waste generation on a per capita basis and relating this to population growth. In their literature, EPA publishes a national value for per capita generation. In 2015, their report indicated a per capita generation rate of 4.5 pounds per person per day.

To compare this with actual data for the City, data for 2012 through 2018 for population and for tonnage as delivered from City sources to the Rockingham County Landfill (data recorded at the landfill scales) was compiled. The follow table summarizes this information based on information provided in **Appendix 5, Table 5A:**

**TABLE 3
CITY OF HARRISONBURG
CALCULATED PER CAPITA GENERATION RATE
2012 - 2019**

YEAR	POPULATION	CITY TONNAGE	PER CAPITA GENERATION RATE
2012	50,868	38,090	4.1
2013	51,845	35,593	3.8
2014	52,822	37,824	3.9
2015	53,799	39,415	4.0
2016 (VDL)	54,776	25,496	2.6

YEAR	POPULATION	CITY TONNAGE	PER CAPITA GENERATION RATE
2017 (VDL)	55,753	19,926	2.0
2018	56,730	30,030	3.7
2019	57,707	35,323	3.4

Tonnage for the years 2016 and 2017 is incomplete as the City was sending tonnage collected by their operations to Van der linde Recycling and, thus tonnage reported at the landfill greatly reduced. It appears that the EPA value is higher than realized in actuality but conservative for planning purposes so was used as discussed below.

Assuming that waste generation can be generally correlated with population growth and based on the average per capita projections published by the US EPA of 4.5 pounds per person per day, Table 5-A in **Appendix 5** was developed projecting waste generation through 2040. The following table summarizes the waste projections over the planning period (units for the per capita generation rate are pounds per person per day):

**TABLE 4
CITY OF HARRISONBURG
ESTIMATED TONNAGE INCREASES
2020 - 2030 - 2040
(From Table 5A)**

YEAR	PER CAPITA GENERATION RATE	TONNAGE	% CHANGE
2020	4.5 (EPA)	48,197	
2030	4.5 (EPA)	55,150	14.4%
2040	4.5 (EPA)	61,200	11.0%

From 2020 to 2040, the City's waste generation is estimated to grow approximately 27.0% although the additional tonnage (13,003 between 2020 and 2040) just represents an additional 36 tons a day.

Annually, the City and County review tonnage records to evaluate future needs.

4.3 Waste Composition

The Rockingham County sanitary landfill tracks the City's waste by various categories. Using landfill data from Table 2 and Table 4 above, Table 5-B in **Appendix 5** was developed projecting the **City's** waste generation by various categories through 2040. The following table summarizes the data:

TABLE 5
CITY OF HARRISONBURG
ESTIMATED TONNAGE INCREASES BY LANDFILL WASTE CATEGORIES
2020 - 2030 - 2040
(From Table 5B)

CATEGORY	% TOTAL CITY WASTE	2020	2030	2040
MSW	28.2%	13,570	15,528	17,232
Commercial refuse	57.0%	27,465	31,427	34,875
Concrete	0.0%	15	17	19
Non-chargeable	1.1%	549	628	697
CDD	10.3%	4,956	5,671	6,294
Industrial Waste	0.9%	423	484	537
Vegetative Waste	2.1%	995	1,138	1,263
Unsorted Rubbish	0.2%	75	86	95
Sludge	0.3%	148	170	188
TOTAL		48,197	55,150	61,200

Periodically, the City will compare actual data as reported at the landfill with projections to evaluate if certain sectors are growing faster than others (e.g. has a new industry been established which changes the industrial waste tonnage; has recycling decreases CDD waste etc.)

5.0 EXISTING SOLID WASTE MANAGEMENT SYSTEM

The following section describes the major components of the City's current solid waste management system. There are no new planned facilities envisioned for the City's solid waste management system over the planning period. The system consists primarily of collection systems for waste and recycling, with disposal and process provided by third-parties.

5.1 Collection

The City of Harrisonburg provides curbside collection to residential units and to the Downtown Central Business District.

Collection schedules for customers are developed and published by the City. Harrisonburg does not have the equipment to handle dumpsters which limits the businesses it can serve. The City currently provides collection for approximately 8,100 households and 500 small businesses.

Twelve City employees use a six-truck fleet to collect solid waste within the City. The City also provides bulk and yard waste pick up bi-weekly for its collection customers. Multifamily dwellings currently utilizing private haulers for MSW. Businesses, industry, and multifamily dwelling units have the option to utilize private haulers for solid waste collection. Private haulers bring their waste to an approved disposal site.

The City does not collect or accept large amounts of construction debris. Construction debris from large projects is collected by private haulers and disposed of in facilities located outside of the City limits.

A figure illustrating the collection routes is included in **Appendix 1**.

The City provides periodic household hazardous waste events.

Compostable materials can be dropped off at the Harrisonburg Farmers Market on Saturdays or at a permanent location near City Hall.

5.2 Disposal

VDEQ records indicate that the City has two cells at the City's SWP 059 sanitary landfill that were closed prior to the 1988 regulations. The City continued to operate the SWP 059 landfill until 1994 under the new Virginia Solid Waste Management Regulations (9VAC20-81). It ceased accepting waste in 1994 and completed closure with VDEQ approval noted as 1999 in their records. After the landfill was closed, the City began using the Resource Recovery Facility and the Rockingham County landfill (SWP 062) under an agreement between the two entities dated June 29, 1994.

In December 2017, the City received DEQ approval for Permit by Rule 628 for a transfer station at Beery Road for transport of its waste to a material recovery facility (Van der Linde Recycling) but this operation

was closed in 2018. The City has modified the transfer facility into a recycling convenience center. The City now uses the Rockingham County Sanitary Landfill (SWP 062).

Commercial tonnage, debris wastes, and other waste materials continued to be directed to the Rockingham County Sanitary Landfill (SWP 062), during the period that the City was transferring their waste to Van der Linde Recycling. Waste will continue to be directed to this landfill although there is no flow control in place that would mandate usage of this facility.

The Rockingham County Sanitary Landfill (SWP 062) has undergone a major expansion and has a permitted life of 34 years based on an acceptance rate of 600 tons per day. **Appendix 6** includes the landfill permit.

There is no formal agreement between the City and County for use of the landfill. The City is a customer of the landfill and pays the tipping fees as established by the County.

DEQ SWIA data for 2019, indicates that the landfill has remaining capacity of 4,327,624 tons (DEQ calculation) and a remaining life of 43 years (reported). In 2019, the landfill received 145,958 tons for a calculated life of 30 years. The facility has sufficient capacity to support the City of Harrisonburg's needs through the planning period and beyond.

5.3 Transfer Station

The City of Harrisonburg has had two permit by rules for their solid waste program for transfer stations. The first was for use of the Resource Recovery Facility as a transfer station under PBR 513. This facility was officially closed in June 2018 and the permit rescinded. The City of Harrisonburg also permitted and constructed a transfer station (PBR 628) in 2017 and used this facility while transporting waste to the Van der Linde material recovery facility. A minor amendment for this facility has been prepared and submitted to DEQ. A copy of the minor amendment with permit documents attached is included in **Appendix 9**. As Van der Linde Recycling has closed, the PBR 628 facility has now been converted to a recycling convenience center.

If needed, PBR 628 could be reactivated. It was permitted for 120 tons per day. The SWMP would be updated at that time as needed. The facility has a minimum life of 25 years. Actual life is much longer depending on usage and maintenance.

5.4 Closed, Inactive and Active Solid Waste Sites

Appendix 11 includes a complete list from the DEQ data base of closed, inactive and active solid waste sites in the Region. The only City-operated landfill within the City of Harrisonburg is the Permit 059 sanitary landfill that is closed and in the post closure care period.

5.5 Recycling

Harrisonburg began a comprehensive curbside recycling program for the residents of the City of October 1990, and a program for the businesses, industries, and institutions of the City in February 1991. The City

operated its own material recover facility processing source separated materials. From 2015 to early 2018, the City instituted an “All in One” curbside collection program where MSW and recycling were co-mingled, collected, and transferred to a processing facility to maximize recycling. However, this facility ceased operation in February 2018.

The City of Harrisonburg has a mandated recycling rate of 25%. Because its population is below 100,000 it is only required to report every 4 years after CY 2012 but is required to meet the goal annually. The table below summarizes the recycling rates for the City from 2006 through 2018:

**TABLE 6
CITY OF HARRISONBURG
SUMMARY OF RECYCLING RATES
2006 - 2018**

YEAR	RECYCLING RATE (%)	TONS REPORTED (*)
2006	25.4%	30,303
2007	30.5%	20,085
2008	28.3%	20,432
2009	25.9%	19,558
2010	28.1%	21,361
2011	31.1%	25,284
2012	32.3%	16,145
2013	NR	NR
2014	NR	NR
2015	39.2%	17,799
2016	49.2%	28,134
2017	33.8%	14,024
2018	27.0%	12,000

(*) Tons reported includes PRM/SRM/Credits

Based on the information in the table, the City is consistently meeting their mandatory recycling rate of 25%.

The City has had to adjust its recycling program after the loss of its contract with Van der Linde Recycling when that company was sold and the new owner determined that continued recycling activities was not in its best interest. Having once operated a material recovery facility which was closed upon signing of the contract with Van der Linde Recycling, the City has adjusted its recycling and modified the Beery Road transfer station into a recycling convenience center and developed a mobile drop off program which includes six sites each of which is assigned a specific day.

Materials that are currently accepted include the following which must be sorted into the specific bins at the drop off locations:

- Plastics: #1, #2 and plastic bags. Plastics #3 - #7 are not accepted.
- Aluminum beverage cans and tin cans
- Glass
- Office paper (shredded or white)
- Newspaper, magazines, junk mail
- Cardboard
- Bulk – at convenience center only including furniture, mattress, box springs, electronics
- Yard debris – at convenience center only including tree/brush/shrub trimmings and bagged leaves
- Bagged grass clippings – at convenience center only
- Scrap metal – at convenience center only (i.e. appliance with freon removed, washer , dryer, bed frame, barbecue grill)

Materials not accepted include the following:

- Prescription medication
- Household hazardous waste
- Automotive parts
- Construction Debris
- Compost

The City works directly with various private vendors for acceptance of the recycled materials.

Of interest to the program, included in **Appendix 7** is a memorandum provided to City Council on April 9, 2019 relative to the state of recycling in the City and the current challenges and uncertainties facing recycling at this time.

Harrisonburg has adopted an ordinance requiring non-residential solid waste generators and companies to submit annual reports quantifying the quantity of waste generated, recycled or managed. This includes solid waste source reduction as well as reuse activities. A copy of the form is included in this appendix.

Harrisonburg encourages City residents to use the recycling containers as a means of disposal for dry cell batteries. This helps in reducing the amount of household hazardous waste going into the landfill.

Appendix 7 also includes the following documents: provides additional information on the City's current recycling program. Included in this appendix are the following:

- Copy of the annual reporting form for businesses

5.6 Treatment and Storage

"Treatment" (9VAC20-81-10) means, for the purpose of this chapter, 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, recovery, or disposal. Based on this definition, the City does not currently treat municipal solid waste, nor is treatment planned for the future.

"Storage" (9VAC20-81-10) means the holding of waste, at the end of which the waste is treated, disposed, or stored elsewhere. Based on this definition, the City does not store solid waste anywhere in their system.

5.7 Public Education

One of the primary goals for the City of Harrisonburg Solid Waste Management Program is to provide a comprehensive educational program. If individuals can be educated to the cost of collecting and disposing of solid waste and its impact on the individual, they will often become receptive to the positive aspects of waste reduction. When combined with the accurate and realistic environmental education efforts, many individuals and businesses are willing to try to alter their existing waste generating habits.

The 3 R's (source reduction, reuse and recycling) are undoubtedly the most cost-effective way of managing solid waste. Source reduction is the most important aspect of the 3 R's, because it totally eliminates the need for disposal. The City encourages the implementation of the 3 R's through a vigorous education program using mailings, public service announcements, school/civic programs, and by example. An emphasis is placed on both environmental responsibility and waste reduction.

Specifically, the City established the "Environmental Performance Standards Advisory Committee," whose purpose is to provide guidance and recommendations to City Council in the establishment of environmental performance standards for public development and redevelopment projects and to encourage the private sector to do the same. The committee consists for 7 to 17 members with one City Council representative serving as an ex-officio member. City Council appoints the members. Per the by-laws the committee's responsibilities include the following:

1. Engage in matters pertaining to the development of Environmental Performance Standards with particular focus on financially feasible and measurable public sector standards that comply with state and federal requirements.
2. Monitor the formulation and implementation of the standards, and its progress with respect to those standards.
3. Conduct periodic assessments of priorities and needs.
4. Participate in the development of public outreach and education efforts.
5. Provide recommendations to and advise City Council accordingly.

The very presence of this committee assures a significant amount of public education and outreach. On January 14, 2020 City Council adopted Phase 1 of the Environmental Action Plan (EAP). The plan, which is a guide for the community to implement sustainability visions and principles, was presented to the public at an open house on June 5, 2019. Approximately 50 members of the public attended to learn more about the process and the plan. Comments were solicited in writing from June 5 through June 26

and then reviewed by city staff and EPSAC members and the EAP was revised. Over 40 community members and community groups submitted written comments.

Of specific importance to the solid waste management plan, is that the Phase 1 EAP contains Focus Area 5 - Waste Reduction and Recycling. Focus Area 5 (Included in **Appendix 14**) addresses the following goals:

- Goal 1 - Support and promote the reduction of refuse in landfills
- Goal 2 - Encourage and promote zero waste and the reuse of usable items
- Goal 3 - Support and promote recycling
- Goal 4 - Support and promote healthy and safe solid waste disposal

Under each goal is a set of strategies outlining possible approaches and tasks that represent possible actionable items. As indicated in the EAP, strategies and tasks may be implemented by city departments, Harrisonburg City Public Schools, Harrisonburg Electric Commission, private businesses, community organizations, or individuals.

Adoption of the EAP does not immediately establish new regulations, policies, or budgets to implement the plan. As previously stated, the EAP is a guide for city leaders, staff, and community members to implement sustainability visions and principles. As the City considers implementation of strategies and tasks, cost-benefit analyses will be conducted as part of decision-making. Additionally, implementation of any specific strategy or task is dependent on City Council's approval and appropriation of funding.

Phase 2 will involve inventorying (gathering data and studying) municipal and community activities to develop baselines to be later used for measuring progress towards achieving goals. For example, Goal 1 includes a strategy to complete municipal and community-wide greenhouse gas emissions inventories. The inventories will provide a snapshot in time of greenhouse gas emissions coming from different sources.

During Phase 3, the City will consider baseline data gathered and all learned information, establish targets with statements that define a percentage reduction or increase by a specific year. For example, during Phase 2, for Goal 3 of Focus Area 2 – Maintain and Increase a Healthy Tree Canopy, the City might choose to inventory tree canopy cover using available aerial photography and planimetric surveys from 2015. The baseline could be represented as either the total acreage of tree canopy cover in the City or a percentage of the City covered by tree canopy. Then during Phase 3, a target might be developed to state "Maintain an overall tree canopy of at least 40 percent by the year 2030."

It is likely that Phase 2 and Phase 3 will occur at the same time as different baselines and targets may take longer than others to determine. Additional updates to the EAP, particularly with goals and strategy statements may also occur at this time. The updated EAP will be presented to City Council for consideration to adopt

Meeting agendas and minutes for the committee are posted on the City's website as is the EAP. Thus, significant education and outreach will be before City Council as interest dictates.

The City also encourages individuals and private organizations to take an active part in the 3 R's. Financial incentives, public recognition, or prizes for goals reached are often used. As community awareness has developed, ever increasing numbers of individuals and businesses are participating in these efforts. As an example, Climate Action Alliance of the Valley is dedicated to climate change concerns at all levels and has a robust education program that addresses recycling and solid waste management as well as other climate action issues.

5.8 Public/Private Partnership

The City seeks to support all activities relative to reuse, reduction and recycling. However, at this time, it does not have any contracted partnerships with the private sector.

5.9 Solid Waste Evaluation

The City continuously evaluates their system for improvements. While assessment of programs is on-going, the formal evaluation process of the various solid waste programs is initiated during the budget planning process. This requires the following actions:

- Assessment of existing programs for the current fiscal year specifically focusing on equipment (replacement, repair or purchase), personnel needs and operations such as recycling markets.
- Review of tonnage information provided by the disposal facility and recyclers for the calendar year as needed for reporting.
- Assessment of existing programs considering the next fiscal year and any changes in growth patterns, tonnages, or markets, Council interest and/or opportunities.
- Develop budget for Council consideration
- Presentation of budget to Council with justifications and with subsequent adjustments.

An example of this process and outcomes are provided below for the FY 2021 budgeting process:

The FY21 Sanitation Enterprise Fund budget is 0.7% lower than the FY20 budget.

- ❖ ***The Solid Waste Collection (Budget Code 922041)*** has increased by 4.6% from FY20 levels and the increase can be attributed a request to begin using Rubicon Global for waste and recycling route tracking. This product will allow our Solid Waste division to prepare routes, deploy vehicles to those routes, begin to track tonnages associated with routes, and then optimize the routes to increase efficiency. In addition to route optimization, the product will provide us a digital means of violation tagging, which will decrease the need for follow up tagging and enforcement.
- ❖ ***The Solid Waste Management Budget (Budget Code 962042)*** has increased by 4.5% from FY20 levels and the increase is attributed to the City beginning to provide dumpster

service to all HCPS facilities. Currently, all HCPS facilities utilize trash rooms, where their staff place the waste, in bags, in the rooms and Sanitation staff must physically place each bag in the truck. At the larger schools our staff remove up to 180 bags of waste per day at each location. The new dumpster service contract will be managed by Public Works and the additional cost of this service will be passed through to HCPS via their utility bill. We have discussed this with HCPS and they have agreed to this change in service and fee.

- ❖ **The City Closed Landfill (Budget Code 932042)** has decreased 8.0% from FY20 levels and the decrease can be attributed to a reduction in the Landfill Monitoring and DEQ Coordination professional services line.
- ❖ **The Sanitation Capital Outlay (Budget Code 972043)** has decreased by 60.1% from FY20 levels. This request includes the purchase of two (2) crew vehicles (390 and 315). A letter from Central Garage is included with this budget proposal.
- ❖ **The Sanitation Capital Projects (Budget Code 910142)** has no requests this FY.
- ❖ **Bond & Debt Service (Budget Code 982042)** has no changes from FY20 levels.
- ❖ **Sanitation Revenue (Fund 2014)** has no changes from FY20 levels.

This is an iterative process and the outcome is dependent on Council approval and funding.

As another example of the evaluation and assessment process, the memo in **Appendix 7** relative to future recycling should be consulted as it illustrates a typical product from an assessment outside of the budgeting process as delivered to City Council for consideration.

5.10 Central Archive

The City maintains records of all solid waste activities at:

City of Harrisonburg
Department of Public Works
320 Mosby Road
Harrisonburg, VA 22801

These files constitute the operating record of all the permitted City-owned facilities. Correspondence to and from DEQ is maintained in these files.

The Central Archive will receive and record information on the amount of solid waste produced in the area including data collected by the City and provided by the County and/or commercial entities.

In addition, the City has developed the Solid Waste Management Plan to serve as a summary of solid waste disposal activities within the City. The plan will be revised when significant changes occur in these

activities and the plan once revised will be submitted to the Director of DEQ or other appropriate persons as designated by DEQ for review and approval.

6.0 BUDGET

The City operates its solid waste program as an enterprise fund which is funded primarily by user fees. The General Fund is not used for any expenditures.

Annually the Public Works Department assesses the Sanitation Enterprise Fund and makes recommendations to City Council for changes in fee structures or services. As indicated the City does not have any operational disposal or transfer station facilities and does not plan any new facilities in the future. Thus, their focus is on collections and recycling. As an enterprise fund, they must plan strategically for future expenditures and/or the need to take on debt to fund capital expenditures.

USER FEES

Below are the user fees as of May, 2020 as posted on the City's website:

Residential \$25.00/month fee

5 units per week

10 units yard debris, collected once every two weeks

5 units bulk collection, collected once every two week

Unlimited recycling

(\$15.00 is applied to the solid waste management fee)

Commercial

1 Unit/Day or 5 Units/Week \$32.40

2 Units/Day or 10 Units/Week \$53.80

3 Units/Day or 15 Units/Week \$75.20

4 Units/Day or 20 Units/Week \$96.60

5 Units/Day or 25 Units/Week \$119.00

6 Units/Day or 30 Units/Week \$140.40

7 Units/Day or 35 Units/Week \$160.80

8 Units/Day or 40 Units/Week \$182.20

9 Units/Day or 45 Units/Week \$205.60

10 Units/Day or 50 Units/Week \$229.00

15 Units/Day or 75 Units/Week \$260.00

(\$15.00 is applied to the Solid Waste Management Fee)

These fees are subject to change with the next change anticipated for January 2021.

Solid Waste Management Fee

The City of Harrisonburg is required by the Commonwealth of Virginia to recycle at least 25% of total solid waste it receives annually. Specifically, the Solid Waste Management fee helps subsidize the cost for the recycling program, including but not limited to handling and processing of the total solid waste generated, in order to achieve state and federal mandates. The recycling program has been and will continue to be subsidized with funds from all customers regardless of whether they choose to recycle or not. However, we do encourage all residents and businesses to recycle.

FY 2021 REVENUES

The FY 2021 budget indicates a projected revenue of \$5,178,085 from the following sources:

**TABLE 7
CITY OF HARRISONBURG
SANITATION BUDGET - REVENUES
FY 2021**

CATEGORY	FY 2021 BUDGET	% TOTAL SANITATION BUDGET
Fund Balance	\$983,085	19.0%
Investment Revenue	\$45,000	0.9%
Charges for Services	\$4,150,000	80.1%
TOTAL	\$5,178,085	100.0%

FY 2021 EXPENDITURES

Expenditures are divided into six categories including the following:

**TABLE 8
CITY OF HARRISONBURG
SANITATION BUDGET - EXPENDITURES
FY 2021**

CATEGORY	FY 2021 BUDGET	% TOTAL SANITATION BUDGET
Solid Waste Collection	\$1,314,688	25.4%
Landfill	\$227,873	4.4%
Miscellaneous	\$34,300	0.7%
Solid Waste Management	\$1,236,856	23.9%
Capital Outlay	\$779,800	15.1%
Debt Service	\$1,584,568	30.6%
TOTAL	\$5,178,085	100.0%

The Sanitation Fund budget increased \$728,710 (16.4%) from the FY 2020 original budget. This is mainly due to the purchase of city-wide residential trash bins and various equipment related to this capital outlay program. No rate increases were proposed. Funding is provided by \$1.3 million in fund balance use and \$4.15 million in refuse/solid waste fees. Capital outlay includes \$700,000 for the purchase of residential trash bins and various related equipment. No capital project funding is proposed.

City Council must approve all budgets and expenditures that exceed the budget.

7.0 WASTE MANAGEMENT HIERARACHY

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 sections provide the information as available as required by the regulations.

7.1 Source Reduction

Source reduction is any action that can reduce or eliminate the generation of a waste product at the source. Absence of any waste material as part of the waste stream is the goal. This could involve a new manufacturing process or design which eliminates waste trimmings or waste products normally expected in the production process; several City industries are reviewing their processes to reduce solid waste volumes and the resulting landfill user fees. Source reduction also involves thoughtful consumer purchasing of products in recyclable containers (aluminum, glass, appropriately coded plastics—currently 1 and 2, unwaxed and non-laminated paperboard and corrugated cardboard) and products in the least amount of packaging possible (e.g., buying a deodorant stick without a box enveloped in plastic and buying in bulk such as a 16 ounce container of baking soda instead of four 4 ounce containers). Consumer purchasing habits can change the way a product is packaged by exerting financial pressures through preferential purchasing of more environmentally sound products.

Every citizen and business in the City is capable of participating in source reduction. In addition to increasing efficiency and reducing waste in product manufacturing, businesses can reduce the production of office waste generation through the revision of paper trails, the use of duplex copiers (that print on both sides of a page) and the use of fewer "throw-away" office supplies. Consolidation of departments whose responsibilities overlap, or improved inventory control, often results in reduced waste generation.

Always using both sides of any sheet of paper can have a dramatic impact on the volume of waste paper produced by any home or business.

Significant source reduction can also be accomplished through the use of reusables instead of disposables: washable plates, cups, and utensils (instead of throw-away plastic or paper); rechargeable batteries (which quickly pay for themselves); cloth rags or sponges and cloth napkins and a lunch kit or canvas bags (instead of paper products); and non-disposable flashlights, lighters and razors.

Very simple actions often accumulate to have positive effects on source reduction. Keeping vehicles well-tuned and in good operating condition not only extends their life (and premature entry into the waste stream) but increases fuel efficiency and reduces air pollution. Donating unwanted books, records and tapes to a library or clothing and furniture to a charity often keeps them out of the waste stream for many more years. The use of cloth shopping bags keeps numerous disposable bags out of the landfill.

The reduction of hazardous waste products in the waste stream is important because their presence can affect the operation of resource recovery, incineration or landfilling facilities. Whenever possible, nonhazardous materials should be substituted for hazardous materials. Requiring that printing jobs be done with soy-based ink is an excellent example. It not only reduces waste toxicity, but supports a renewable agricultural industry rather than a limited volume non-renewable resource (the petroleum used in most inks). This information should be shared with area businesses so that they are encouraged to follow these examples.

The discussion of source reduction thus far has involved ways of clearly and directly reducing the waste stream (e.g., buying a product using less packaging). And, although the connection seems slightly less tangible, any practice which reduces the use of energy and natural resources also reduces or eliminates the generation of waste products. Any use of natural resources (in power plants, machinery, automobiles, or product production) results in waste generation; parts wear out, waste oil results, and many forms of pollution may be created (water, air, and soil pollution). Certainly, much of this waste is handled as part of the solid or liquid waste stream (parts, oil, cleanups of hazardous spills on soil and in water). Waste not in a solid form (e.g., air pollution) also negatively affects environmental conditions and quality of life and should; therefore, be reduced. Thus, practices which save energy (e.g., reducing the use of automobiles by carpooling, walking, biking, developing and encouraging the use of public transportation; saving electricity by insulating homes and businesses, using energy-efficient appliances and lighting; and using less water by washing only large loads, installing water-saving devices in toilets, or low volume showerheads and faucets) should be an integral part of any source reduction efforts.

Another practice which reduces waste and saves energy is purchasing and using recycled products. Making a product from recycled resources uses less energy than making a product from raw materials. Using recycled products also plays an integral part in successful recycling by developing markets and "closing the loop." Overall, encouraging the elimination of waste by reducing the use of energy and natural resources will help foster the positive attitude toward conservation necessary for effective action in waste reduction.

There are no specific City programs in place for source reduction. Programs that promote source reduction include the pay as you throw program under consideration and the user fee structure. The City considers source reduction to be a personal or business decision and not a sponsored program by the

City. However, it should be noted that in the Phase 1 Environmental Action Plan, Goal 1 is stated as follows: "Support and Promote the Reduction of Refuse in Landfills," and Goal 2 is stated as follows: "Encourage and Promote Zero Waste and the Reuse of Usable Items," indicating that the City is engaging in conversations on what source reduction is and how it can be promoted. (See **Appendix 14** for the EAP)

7.2 Reuse

Reuse is a waste reduction strategy where a product is used for the same or new purpose without undergoing a physical change. Used clothing or goods to an outlet for distribution to others (Salvation Army, consignment stores) is a form of reuse. Reuse is hard to quantify because the "waste" materials are reused and solid waste is not generated.

Reuse of an item is often more economical than recycling it, because less processing is required. The retreading of large truck tires is a prime example. Today retread radial truck tires last as long as the original tread, often at a fraction of the price. Power train components of vehicles, such as motors and transmissions, can often be rebuilt more effectively in aging fleet vehicles than if they were replaced. Products can be purchased in reusable containers that are made of materials that can be recycled if they break or wear out. Old newspapers can be used for garden mulch or be shredded for livestock bedding.

There are many examples of everyday practices that involve reuse; using the backside of an already used piece of paper for another purpose and saving used paper for scratch pad purposes; reusing glass bottles and jars and plastic containers for storage; selling unwanted household items at a yard sale instead of discarding them; eating leftovers instead of discarding them; reusing canvas bags when shopping; taking one's own reusable cup or mug to school, work, or fast food restaurants; reusing cloth rags, sponges or cloth napkins instead of disposables.

The City does not have specific reuse programs although the City does post on their website a section entitled "Alternatives for Unwanted Items," to promote reuse and there are a number of private entities accepting materials for reuse and repurposing. However, it should be noted that in the Phase 1 Environmental Action Plan, Goal 2 is stated as follows: "Encourage and Promote Zero Waste and the Reuse of Usable Items," indicating that the City is engaging in conversations on what reuse is and how it can be promoted. (See **Appendix 14** for the EAP)

7.3 Recycling

Recycling provides the opportunity to reclaim valuable resources and to minimize the amount of waste placed in landfills. Recycling diverts materials (such as metal, glass, plastic and paper) from final waste disposal back into the consumer market and contributes to considerable energy savings in the manufacturing of new products made from recycled feedstock. Recycling may also help defray potential cost escalation for solid waste collection and disposal. Recycling is totally market dependent, and it is very important that sustainable markets for both the material and end products be developed. The acquisition of new products made from recycled materials is critical to the development of such markets. Removal of an item from the waste stream, such as newsprint, is not recycling, if that material is warehoused due to lack of demand. It is only by "closing the loop" of recyclable collection, remanufacture and consumer purchase of products made from recycled materials with high post-consumer content

(since only the post-consumer material content has an impact on landfill volumes) that sustainable markets can be developed.

The City’s current program is described in Section 5.5. Goals and action items for future activities are included in Section 8.3. Also, the Phase 1 Environmental Action Plan (See **Appendix 14**), completed by the City’s Environmental Performance Standards Advisory Committee as adopted by the City on January 14, 2020, addresses recycling under multiple goals and strategies with Goal 3 specifically addressing support and promotion of recycling indicating that the City is actively engaged in conversations on recycling.

7.3.1. Private or Non-Profit Sector Programs

The City’s website includes a section on alternatives for unwanted items which is quite extensive. Below is the list currently on the website as of July, 2020. It is obviously an ever-changing list.

Unwanted Items List	
Aluminum Cans	
Dave's Recycling	(540) 434-0836
Recycle Management	(540) 908-3902
Rockingham Scrap Metals	(540) 434-3403
Appliances - Scrap	
Recycle Management	(540) 908-3902
Appliances - Usable	
Salvation Army	(540) 434-4854
Goodwill	(540) 434-6050
Batteries - Automobile	
Advance Auto Parts	(540) 434-3681
Battery Express	(540) 434-5155
Recycle Management	(540) 908-3902
Rockingham Scrap	(540) 434-3403
Batteries - Other	
Batteries Plus Bulbs	(540) 705-0642
Batteries (Rechargeable) and Cell Phones	
Find a list of recycling locations at rbrc.org [1]	
Books	
Massanutten Regional Library	(540) 434-4475
Booksavers of Virginia	(540) 432-3366
Cardboard	

Dave's Recycling	(540) 434-0836
Clothing	
Gift and Thrift	(540) 433-8844
Mercy House Thrift Store	(540) 433-3272
Salvation Army	(540) 434-4854
Goodwill	(540) 434-6050
Children's Clothing	
Once Upon a Child	(540) 438-5607
Compost	
<u>Black Bear Composting</u> [2]	(888) 666-4172
Mission Mulch	(703) 608-7693
Electronic Recycling	
Goodwill	(540) 434-6050
Recycle Management	(540) 908-3902
<u>Staples</u> [3]	(540) 432-0124
<u>Xerox</u> [4]	(540) 662-0265
Harrisonburg Convenience Center	(540) 434-5928
<u>Best Buy</u> [5]	(540) 723-6179
<u>AirCycle</u> [6]	(800) 909-9709
Food	
Blue Ridge Area Food Bank	(540) 248-3663
Salvation Army	(540) 434-4854
Hope Distributed	(540) 578-3510
Our Community Place	(540) 442-7727
Furniture and Household Items	
Goodwill Industries	(540) 723-6864
Union Rescue Mission	(540) 667-8460
<u>TerraCycle</u> [7]	(800) 909-9709
Household Hazardous Waste	
Paint, pesticides, chemicals, used oil, automobile fluids, etc.	(540) 434-5928
Call the Harrisonburg Public Works Department for the next scheduled Household Hazardous Waste drop-off day.	
Medication Disposal	
Harrisonburg Public Safety Building	(540) 434-4436
Metal Scrap	
Recycle Management	(540) 908-3902

Rockingham Scrap	(540) 434-3403
Paint	
Rockingham County Landfill (dried latex paint)	(540) 564-3159
Harrisonburg Convenience Center (dried latex paint)	(540) 434-5928
Household Hazardous Waste biannual Collection – (oil-based paint)	(540) 434-5928
Pallets and Skids	
Dave's Recycling	(540) 434-0836
Paper	
Dave's Recycling	(540) 434-0836
Valley Paper	(540) 662-0265
Plastic Bags / Plastic Bottles	
Food Lion, Kroger, Martin's, Safeway, Wal-Mart (plastic bags)	
Dave's Recycling (#1 and #2 plastic)	(540) 434-0836
Valley Paper (plastic bags and film)	(540) 667-8010
Yard Waste – Brush Only	
Rockingham County Landfill	(540) 564-3159
Harrisonburg Convenience Center	(540) 434-5928
Yard Waste – Brush/Yard Debris/Firewood	
Mission Mulch	(703) 608-7693
Yard Waste - Grass / Leaves Only	
Harrisonburg Convenience Center	(540) 434-5928

As review will indicate, this website captures a significant number of private and non-profit programs that can address reuse and recycling.

7.3.2 Market Development

Having once operated a material recovery facility, the City is familiar with the need to continually assess markets and market development. With the recycling program they are currently utilizing, the City has been able to establish local partnerships with recycling vendors for the disposal of the collected materials. They work with Dave’s Recycling, Valley Paper, and Recycle Management, and because of these local vendors the City is able to dispose of this material at little to no cost. In addition, the City is able to provide a local business with clean recyclable materials for their operations. The City has also partnered with Gift and Thrift for the ability to have our citizens place gently used items in the supplied donation box instead of placing those items in the waste stream.

Even with the “post-Van der Linde Recycling,” Solid Waste and Recycling program there are still many challenges and uncertainties that the City is facing. The main challenge is the continued impact of the China policy and the continuing ripple effects that their vendors are experiencing. As a result, the City

had to stop accepting #3-#7 plastics at their RCC and mobile unit, as Sonoco Recycling would no longer accept these materials. The Public Works Department worked with Rockingham County and James Madison University in searching for a vendor that would accept this material, however all of the vendors spoken to had also stopped their acceptance of #3-#7 plastics similar to Sonoco.

The City continues to assess markets and hopes to expand their operations as the current markets recover. Actions include:

- Continued discussions with Rockingham County and James Madison University (as well as other institutions) to assess markets and programs.
- Continued evaluation of commercial and industrial recycling through the annual reporting provided by these entities as to their markets, potential need for recyclable materials and possible collaborative efforts,
- Tapping into the knowledge of Environmental Performance Standards Advisory Committee to collaboratively assess potential markets and partnerships.
- Possible requests for proposals or bids for recycling.

Developing a sustainable market demand for recycled materials is critical to both reducing the cost of the resulting products and making recycling work. With this in mind, the City seeks to purchase products manufactured from recycled materials. It is important that government set a positive example for the private sector and do its part in "closing the loop".

7.4 Resource Recovery and Composting

"Resource recovery system" means a solid waste management system that provides for collection, separation, recycling, and recovery of energy or solid wastes, including disposal of nonrecoverable waste residues. Resource recovery, for purposes of this document, refers to direct recovery through composting or the production of refuse derived fuel (RDF).

7.4.1. Total Waste Stream Composting

Total waste stream composting typically begins with the collection of the unsorted waste stream. This material is then sorted manually and mechanically to remove recyclables and nonorganic materials. Compostable materials are then uniformly ground and placed in composting chambers or windrow piles. After the waste has been repeatedly moistened, mixed and decomposed by bacterial action it is dried, stockpiled and/or packaged for general use. All non-recyclable, nonorganic portions of the waste stream must still be landfilled.

Total waste stream composting has advantages in that it produces a usable product by way of a natural process. But it is generally best suited to large communities where organic industrial waste (such as those from paper mills or food processing plants) makes up a heavy portion of the waste stream. In order for compost to be acceptable to the traditional markets or nurseries, parks, farms and home gardens, it must be free of materials such as metal, plastic, rubber and glass. The process needed to reach this goal is

typically both labor and equipment intensive. As a result, capital investments and operational cost are relatively high. Additionally, markets for the final compost are usually seasonal. One of the most serious potential problems of total waste stream composting is the possibility of unacceptable levels of toxic compounds or heavy metals in the end product.

The City does not have a total waste stream composting system and does not plan one for the future.

7.4.2. Yard Waste Composting and/or mulching

Composting yard waste is far less complicated than total waste stream composting. It is particularly well suited to urban communities where special collection services for yard waste only (such as leaves, grass clippings, plant trimmings and garden waste) are already in place. Such fairly homogeneous plant materials can be much more easily processed.

The City collect yard debris/leaves twice a month. It does not have a composting program however for this material, nor does it plan to develop one.

7.4.3. Refuse Derived Fuel Production

Refuse-derived fuel (RDF)" means a type of municipal solid waste produced by processing municipal solid waste through shredding and size classification. This includes all classes of refuse-derived fuel including low-density fluff refuse-derived fuel through densified refuse-derived fuel and pelletized refuse-derived fuel.

Refuse-derived fuel (RDF) is produced when solid waste is converted to a semi-homogeneous fuel that can be "co-fired" in conventional boilers with other fuels or as a primary fuel in a "dedicated" boiler. Unprocessed municipal solid waste is a poor fuel when compared to oil, coal or gas. In the production of RDF, recyclables and noncombustible materials are removed and respectively recycled and landfilled. The remaining waste (approximately 50-75%) can then be processed to dramatically improve its BTU value.

RDF is then produced in one of three grades by shredding, drying, re-shredding and air classification. The grade of RDF is a function of the amount of processing. "Fluff" RDF is a dry type with particle sizes usually less than four inches in any dimension. "Densified" RDF is produced by compressing a mixture of fluff and a binding agent to produce pellets or cubes up to two inches in any dimension. "Wet" RDF is produced by a pulping process similar to that used in the paper industry. The final product is dried to a particular moisture content before it is used as fuel.

Production of RDF is both energy and technologically intensive. RDF plants have a history of operational problems and are often perceived as being unreliable. The burning of RDF is most efficient in boilers which have been specially designed and dedicated to burning this fuel. But problems exist in that RDF is more corrosive than other fuels and tends to produce more ash and furnace slag.

The availability of a long-term, readily accessible energy market dictates the feasibility of a RDF facility. A stable industrial market, or an incinerator, readily accessible to the processing facility is mandatory. There is no incinerator in the region nor is one planned that could utilize RDF. Hence, the City does not have and is not planning to construct an RDF facility.

7.5 Incineration

"Incineration" means the controlled combustion of solid waste for disposal. The City operated a waste to energy (waste to steam) facility until 2014/2015. The facility was decommissioned in 2016. It produced steam for James Madison University. However, this contract ended and the facility was decommissioned. The City does not plan to reconsider an incineration/waste to energy facility in the future.

7.6 Treatment

Based on the definition included in the Solid Waste Management Regulations, the City does not currently treat municipal solid waste.

7.7 Landfilling

The City does not operate a landfill but directs its waste to the Rockingham County Sanitary Landfill (SWP 062) where it is a customer paying fees set by the County.

The City is maintaining its closed landfill (SWP 059) through its post closure period.

7.8 Litter Control

The City supports litter control within the City through their Litter Prevention and Control Ordinance.

Most of the litter control programs in the City come under the oversight of the Public Works Department. Programs include the following:

- **Adopt-a-Street Program:** This program is coordinated by the Transportation Division with the Public Works Department providing trash bags, safety vests, and bag collection at the end of the event. Neighborhood groups, businesses, service organizations, Scouts and residents participate in the program. The City posts the signs. Collection frequency is four times per year.
- **Central Business District Crew:** The Street Division maintains a two-person crew in the Central Business District from 8:00 a.m. – 5:00 p.m. five days per week to keep litter off the sidewalks, streets and alleys.
- **City Mowing Operations:** All mowing operations are tasked with collecting the litter and trash before mowing can begin. This is coordinated by the Transportation Division.
- **Street Sweeping:** The Transportation Division coordinates all street sweeping.
- **Stormwater Management Plan:** Provides for the education of the public relative to litter and water quality. All stormwater catch basins are labeled with a request to protect waterways from pollution. The City's stormwater maintenance program monitors all drop inlets/catch

basins throughout the City and cleans them on a schedule. A flush truck is utilized for maintenance.

- City of Harrisonburg Sponsors Blacks Run Cleanup Day one time per year. This event collects as much trash and debris as it does litter.
- Other: The City also works with neighborhood groups for additional trash/litter cleanup.

8.0 GOALS AND ACTION ITEMS OF SOLID WASTE PROGRAM

The following section provides information on the goals and action items for the City's solid waste management program. The City operates an integrated solid waste management system and will continue to improve on the program as interest is expressed by the City Council, as markets open up for recycling and as funding is made available. A schedule of implementation is also included but because the City's program is mature, most of the action items are on-going and considered with interest and budget from City Council. A majority of the items so noted do not have specific tasks or projects identified at this time but represent on-going activities already incorporated into the program.

During the annual budget preparation cycle these goals and action items are assessed to determine if funding will be required.

The greatest challenge to the City at this time is meeting its recycling goal. It understands that if it fails to meet this goal, it will need to submit a recycling action plan to DEQ for review and approval and will need to initiate reporting.

8.1 Collections

The following goals and action items have been established for this program:

**TABLE 9
COLLECTION GOALS AND ACTION ITEMS
SOLID WASTE PROGRAM**

Item Number	Goal	Action Item	Schedule
C-1	Continue to improve system	Assess system annually.	On-going
C-2	Evaluate the collection of waste from the commercial sector.	Implement services as interest and funding becomes available.	On-going

8.2 Disposal

The following goals and action items have been established for the program:

**TABLE 10
DISPOSAL GOALS AND ACTION ITEMS
SOLID WASTE PROGRAM**

Item Number	Goal	Action Item	Schedule
D-1	Assure adequate disposal capacity for all residents and businesses in City over the 20-year planning period.	Continue relationship with Rockingham County to maintain disposal capacity. Assess other options as may be needed.	On-going
D-2	Continue to encourage reduction in waste stream	Promote reuse and recycling in the City as well as composting as interest and funding are available.	On-going
D-3	Comply with all post closure requirements at Permit 059 landfill – DEQ approved closure in 1998. Landfill has 30-year post closure period.	Continue environmental monitoring, compliance and maintenance as required by Post Closure Care plan. Assess program as reports come due to DEQ and annually for future requirements.	On-going
D-4	Terminate post closure care at Permit 059 landfill	Landfill has at a minimum a 30-year post closure care period or until 2028. However, regulations under certain circumstances can allow for earlier termination or require an extended post closure care period.	Assess annually.

8.3 Recycling

The following goals and action items have been established for the program:

**TABLE 11
RECYCLING GOALS AND ACTION ITEMS
SOLID WASTE PROGRAM**

Item Number	Goal	Action Item	Schedule
R-1	Improve and expand educational program.	<ul style="list-style-type: none"> Establish formal and consistent education programs in schools Establish a formal and consistent education program with the business community to assure proper data collection and to encourage additional recycling. 	On-going
R-2	Expand recycling in business and	<ul style="list-style-type: none"> Consider the adoption of legislation requiring businesses and 	As interest and need dictates.

	residential communities	residences to sort specified materials.	
R-3	Promotion of recycled products	<ul style="list-style-type: none"> Encourage the purchase of paper made from recycled materials. 	On-going
R-4	Aggressively seek new markets	<ul style="list-style-type: none"> City will continue to assess all recycling markets and to obtain best contracts available. Maintain discussions with private sector. 	On-going
R-5	Expand recycling efforts	A. Increase capacity at the City's convenience center and mobile collection centers as necessary to handle the additional materials.	As need arises and City Council approves funding.
		B. Promote cardboard and white paper recycling programs for businesses that do not have their own recycling programs. Encourage private collection of this material.	On going
		C. City will continue to evaluate curbside recycling and commercial collection of recyclables	On-going as interest and funding dictates
R-6	Increase recycling revenues	Continuously evaluate recycling markets to determine if better opportunities exist.	On going
R-7	Increase participation rates in recycling programs	Sponsor education programs in the classroom and during special events to promote recycling. Support privately sponsored recycling programs.	On going
R-8	Increase commercial sector participation in annual reporting.	Sponsor educational opportunities to encourage the commercial sector to track and report their recycling and disposal tonnages.	On going

8.4 Treatment

Based on the definition included in the Solid Waste Management Regulations, the City does not currently treat municipal solid waste, nor is treatment planned for the future. There are no goals or action items.

8.5 Litter Control

The City works diligently to control litter through education and assistance with privately-based periodic cleanups. They will continue to promote their existing programs and to expand as resources and interest allow.

**TABLE 12
LITTER CONTROL GOALS AND ACTION ITEMS
SOLID WASTE PROGRAM**

Item Number	Goal	Action Item	Schedule
LC-1	Educate public relative to litter control.	Continue to support existing educational program.	On-going
LC-2	Reduce litter in County	Continue to support road cleanups by Adopt-A-Street and Adopt-A-Spot, community volunteers and VDOT. Expand as resources are available.	On-going
LC-3	Minimize illegal dumping.	Continue to patrol City. Provide comprehensive collection services.	On-going

9.0 IMPLEMENTATION SCHEDULE

The implementation schedule for the City's integrated waste management program has been summarized under the Goal and Action Item tables in Section 8.0.

There is no single critical path item that is required to be implemented at this time and thus, no specific milestones identified. The program is mature and on-going, and analyzed annually during the budget process and schedules set if needed at that time.

The Rockingham County Sanitary Landfill has sufficient capacity to address the City's disposal needs through the planning period. The City and County will be in discussions on future disposal as needed.

Funding of new initiatives or facilities must be carefully and strategically planned as the program operates as an enterprise fund. Either reserve funds must be built for new initiatives or debt considered. Funding will impact scheduling.

10.0 PUBLIC PARTICIPATION (WILL BE PROVIDED ONCE DEQ APPROVES PLAN)

The City of Harrisonburg advertised for a public hearing on this amendment plan in _____ on _____ and _____ and for a public meeting to be held on _____. No attendees were present at the _____ meeting and no comments, written or otherwise, were received by the City. See Appendix 10 for copies of the advertisement, handout made available to the public, and certification of results.

A copy of the plan could be reviewed at the City Public Works Department and _____

On _____, the City Council adopted the plan via resolution. Copies of the resolutions are included in **Appendix 10**.

The City did not use a citizen advisory committee to prepare the plan. It relied on its staff and engineering consultant to develop the plan that was presented to the City Council and the public during an advertised public meeting. No other specific public participation activities were conducted for the plan. However, the plan will become the cornerstone of future public education activities.

Previous approval documents are also included in **Appendix 10**.

11.0 RECORD KEEPING

The City documents their solid waste activities in several ways as follows:

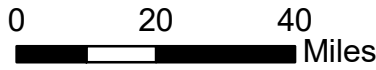
- Day-to-day records of waste received.
- Annual reports to the City Council indicating how the goals and objectives of the program have been met.
- Periodic updates presented to the City Council as requested.
- Annual submittal by March 31 of each year the SWIA form for appropriate permitted facilities (Form 50-25) to DEQ.
- Annual submittal by April 30 of each year the Recycling Rate Report (Form 50-30) to DEQ.
- Annual submittal to DEQ, usually by December of each year, of the update for financial assurance.

These reports, updates, and DEQ submittals as well as the background information are kept and will continue to be kept in the central archive (files) of the solid waste program located at the public works department

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

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

APPENDIX 1
FIGURES



Location Map

City of Harrisonburg
Solid Waste Management Plan

SCALE: 1" = 2000'
PROJECT: 6154-285



Draper Aden Associates

Engineering • Surveying • Environmental Services

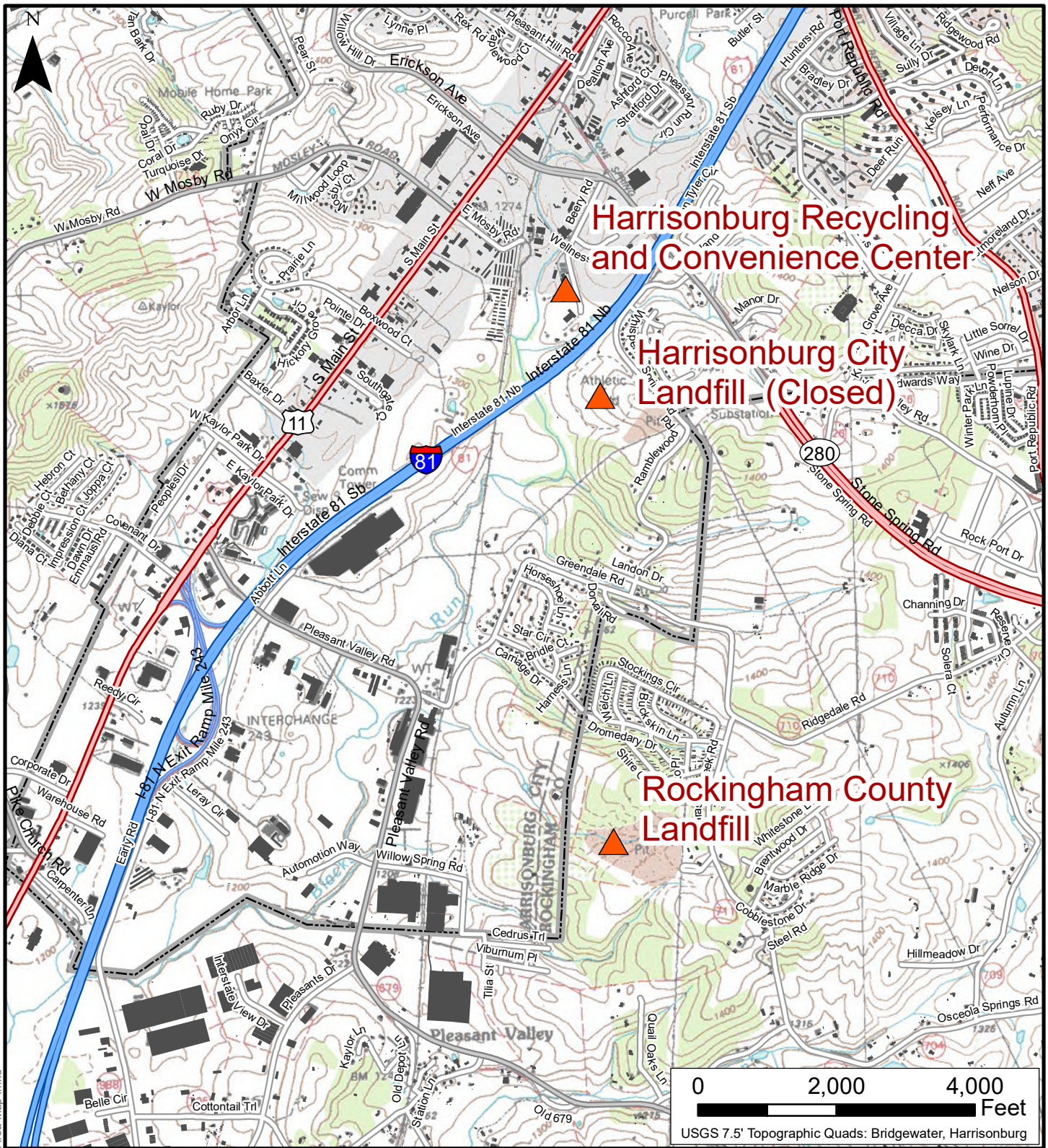
2206 South Main Street
Blacksburg, VA 24060
540-552-0444 Fax: 540-552-0291

Richmond, VA
Charlottesville, VA
Hampton Roads, VA

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

DESIGNED: LPK
DRAWN: SMF
CHECKED: LPK
DATE: 6-9-19

FIGURE
1



Area Map

City of Harrisonburg
Solid Waste Management Plan

SCALE: 1" = 2000'

PROJECT: 6154-285



Draper Aden Associates

Engineering • Surveying • Environmental Services

2206 South Main Street
Blacksburg, VA 24060

540-552-0444 Fax: 540-552-0291

Richmond, VA
Charlottesville, VA
Hampton Roads, VA

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

DESIGNED: LPK
DRAWN: SMF
CHECKED: LPK
DATE: 6-9-19

FIGURE

2



Address

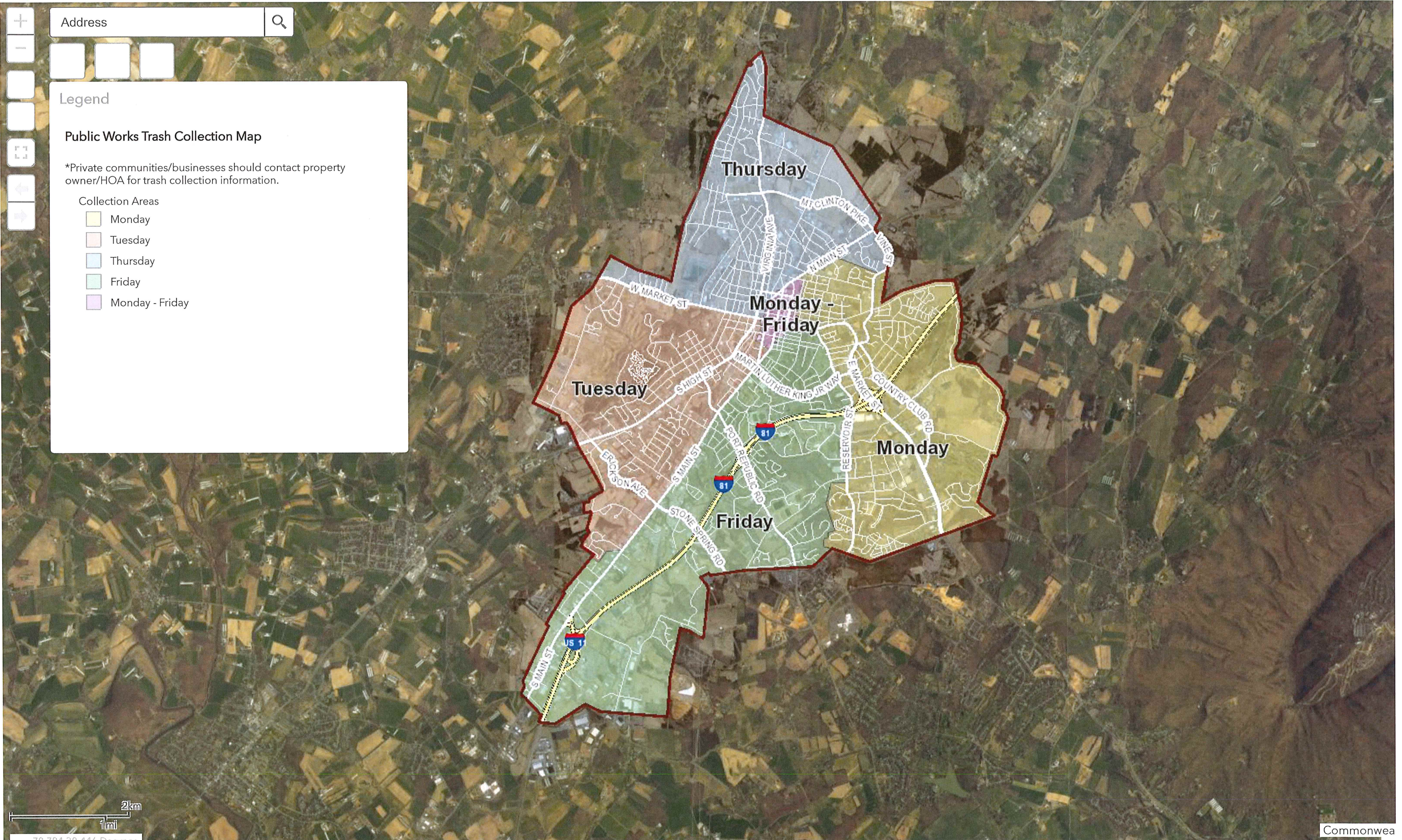
Legend

Public Works Trash Collection Map

*Private communities/businesses should contact property owner/HOA for trash collection information.

Collection Areas

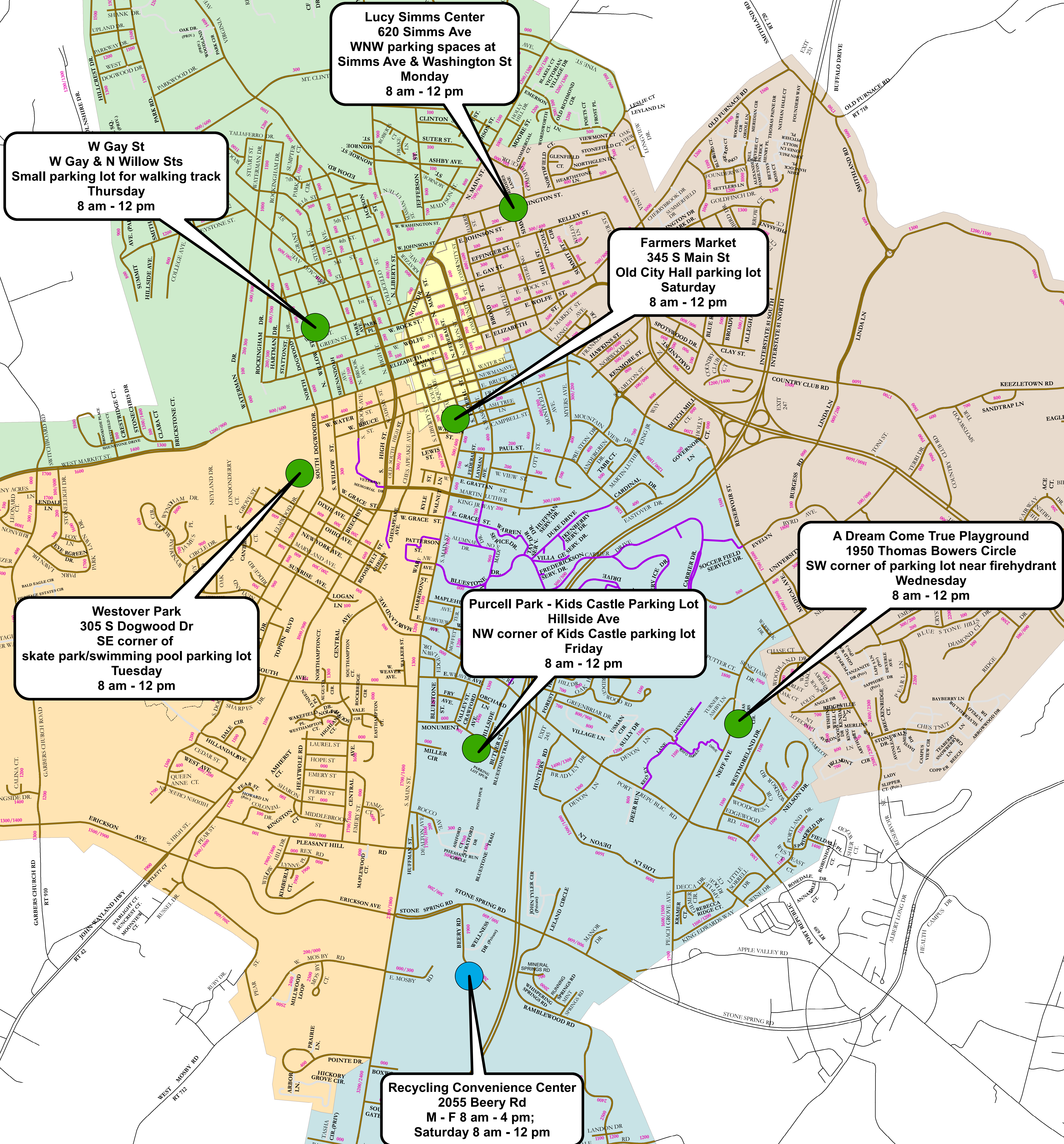
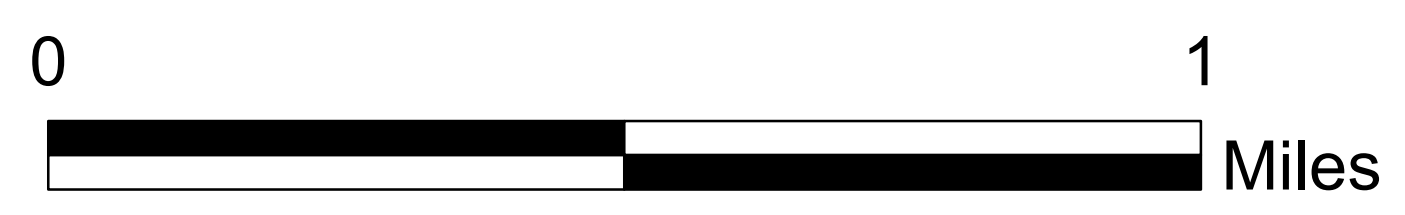
- Monday
- Tuesday
- Thursday
- Friday
- Monday - Friday



Mobile Recycle Locations City of Harrisonburg

City of Harrisonburg, VA
A Shared Vision for the Future

April 2019



LEGEND

- Public Streets
- Private Streets
- Walking Trail
- Streets Maintained by JMU
- CENTRAL BUSINESS DISTRICT

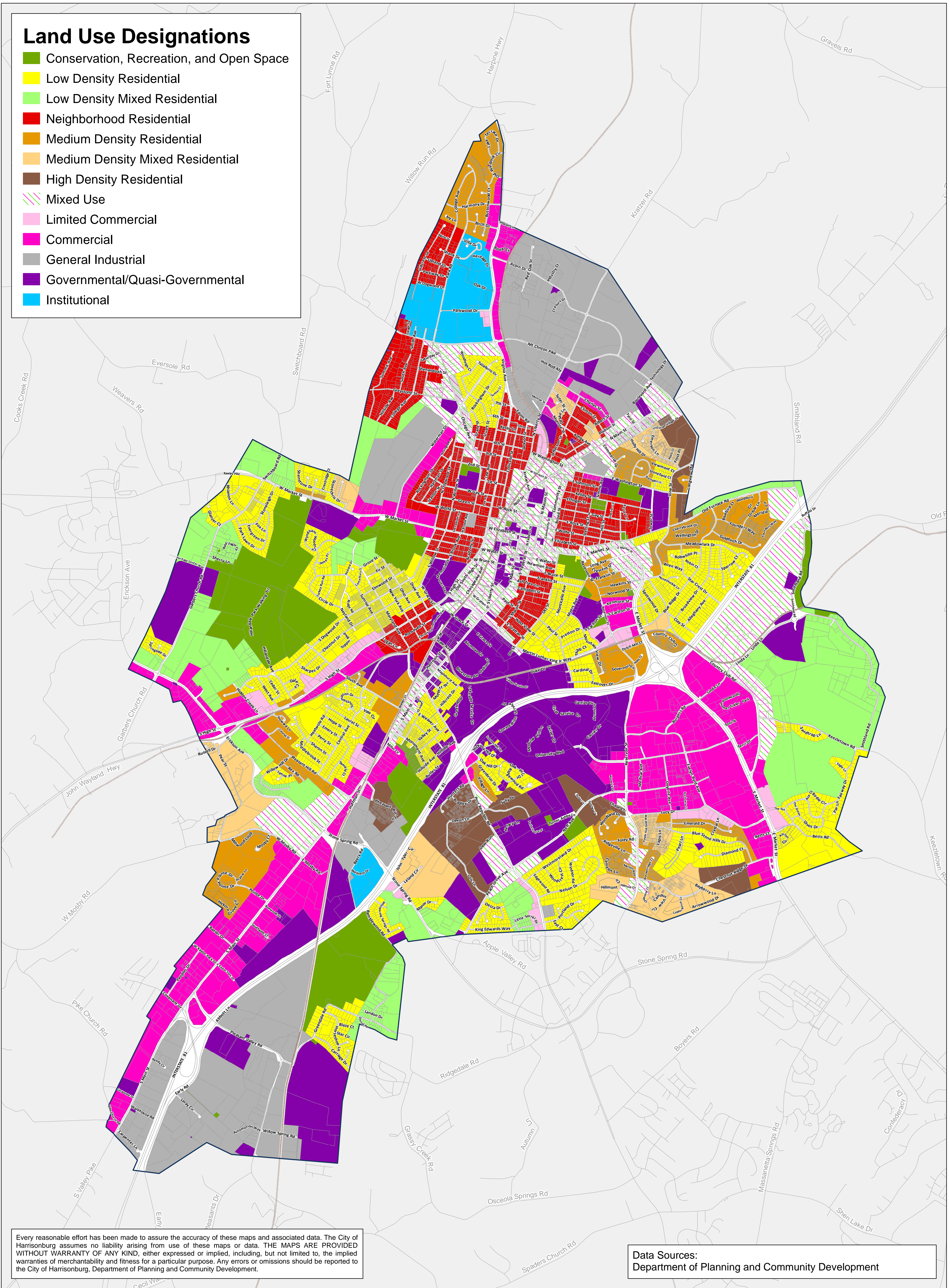
GARBAGE PICKUP AREAS

Area Name

- MONDAY - Bulk/Yard Debris pickup 1st and 3rd Wednesdays
- TUESDAY - Bulk/Yard Debris pickup 2nd and 4th Wednesdays
- THURSDAY - Bulk/Yard Debris pickup 1st and 3rd Wednesdays
- FRIDAY - Bulk/Yard Debris pickup 2nd and 4th Wednesdays

Land Use Designations

- Conservation, Recreation, and Open Space
- Low Density Residential
- Low Density Mixed Residential
- Neighborhood Residential
- Medium Density Residential
- Medium Density Mixed Residential
- High Density Residential
- Mixed Use
- Limited Commercial
- Commercial
- General Industrial
- Governmental/Quasi-Governmental
- Institutional



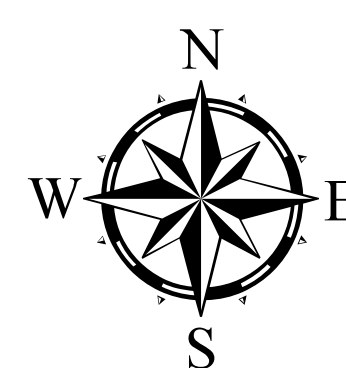
Every reasonable effort has been made to assure the accuracy of these maps and associated data. The City of Harrisonburg assumes no liability arising from use of these maps or data. THE MAPS ARE PROVIDED WITHOUT WARRANTY OF ANY KIND, either expressed or implied, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. Any errors or omissions should be reported to the City of Harrisonburg, Department of Planning and Community Development.

Data Sources:
Department of Planning and Community Development

Land Use Guide

Comprehensive Plan

Adopted: November 13, 2018



0 0.275 0.55 1.1 Miles

YOUR CITY. YOUR PLAN.



APPENDIX 2
CHRONOLOGY OF SOLID WASTE ACTIVITIES

APPENDIX 2
CITY OF HARRISONBURG
HISTORICAL CHRONOLOGY OF SOLID WASTE ACTIVITIES

PRE - 1990

- Oldest portion of landfilled (eastern fill area) ceased accepting waste in the 1950's and was capped with a soil cover
- Western section of landfill began operations in 1950's
- **May 1972** - Permit 059 issued for landfill
- **1980s** - Disposal area under ball fields ceased accepting waste in the 1980's and capped with a soil cover

1990 THROUGH 1999

- **April 1991** - Submitted Part A application for new landfill.
- **June 1991** - Received Part A approval.
- **July 1, 1991** - Submitted Solid Waste Management Plan for review by the Department of Environmental Quality.
- **October 1991** - Submitted Part B application for new landfill. Submitted variance request allowing for the operation of the existing landfill until new landfill is permitted.
- **December 31, 1991** - Achieved 10 percent annual recycling rate for household wastes and principal recyclable materials.
- **July 1992** - Received approval of Solid Waste Management Plan by Department of Environmental Quality.
- **October 1992** - Received Part B approval.
- **July 1, 1993** - Department of Sanitation documented all known solid waste disposal sites in plan area.
- **December 31, 1993** - Achieved 15 percent annual recycling rate for household wastes and principal recyclable material.
- **June 29, 1994** - Agreement between Rockingham County and City of Harrisonburg signed. County would take waste at landfill including ash; City would continue to operate the Resource Recovery Facility.
- **June 30, 1994** - City stops accepting refuse at landfill.
- **December 31, 1995** - Achieved 25 percent annual recycling rate for household wastes and principal recyclable materials.
- **July 1, 1997** - Submit updated solid waste management plan.
- **December 10, 1997** - DAA closure investigation report
- **December 31, 1997** - Maintained 25% annual recycling rate for household wastes and principal recyclable materials. Maintained cooperation and

agreement with Rockingham County, James Madison University and Harrisonburg Electric Commission.

- **1998** – DEQ approved closure of middle disposal area of landfill capped with soil cover
- **December 31, 1999** - Maintained 25% annual recycling rate for household wastes and principal recyclable materials.

2000 THROUGH 2010

- **December 31, 2001** - Maintained 25% annual recycling rate for household wastes and principal recyclable materials.
- **July 1, 2002** - Submitted updated solid waste management plan.
- **February 2004** - Expansion of resource recovery facility
- **July 1, 2007** - Submitted updated solid waste management plan.

2011 THROUGH PRESENT

- **July 1, 2012** - Updated solid waste management plan.
- **July 2014** – City decided to cease operations at the resource recovery facility.
- **October 2014** – Work completed recapping landfill area under ball fields with geomembrane cap and replacing upper two fields
- **February 18, 2015** - Submitted updated solid waste management plan
- **June 2015** – VDEQ approval for City to operate as transfer station from resource recovery facility under PBR513
- **August 3, 2015** – DAA issues its final report on transfer station siting with a conceptual comparison of sites.
- **August 2015** – City contracted with van der Linde Recycling (VDL); citizens instructed to comingle MSW and recyclables.
- **October 2016** – Phase 1 decommission work completed for Resource Recovery Facility PBR 513
- **May 2017** – DEQ approved Phase 1 closure decommissioning of Resource Recovery Facility.
- **December 2017** – DEQ approved Permit-by-Rule 628 for Beery Road Transfer Station.
- **January 2018** – China ban on USA recyclables
- **February 2018** – City notified by VDL that it had been sold and new owner would not continue material recovery operations. City stopped hauling waste to VDL.
- **March 2018** – City notified DEQ that waste will be hauled to Rockingham County Landfill
- **April 2018** – City opens Recycling Convenience Drop-off Center

- **April 2018** – Phase 2 decommission work completed for RRF Transfer Station PBR513
- **June 2018** – DEQ approved Final Closure of RRF Transfer Station PBR513
- **July 2018** – DEQ approved City request to revoke PBR513
- **October 2018** – City begins operation of Mobile Recycling Unit

APPENDIX 3
POPULATION PROJECTIONS

TABLE 3-A
CITY OF HARRISONBURG
POPULATION PROJECTIONS
2020 - 2040
From Weldon Cooper projections

YEAR	POPULATION
2010 (Census)	48,914
2011	49,891
2012	50,868
2013	51,845
2014	52,822
2015	53,799
2016	54,776
2017	55,753
2018	56,730
2019	57,707
2020 (Est.)	58,687
2021	59,534
2022	60,381
2023	61,228
2024	62,075
2025	62,922
2026	63,769
2027	64,616
2028	65,463
2029	66,310
2030 (Est.)	67,154
2031	67,891
2032	68,628
2033	69,365
2034	70,102
2035	70,839
2036	71,576
2037	72,313
2038	73,050
2039	73,787
2040 (Est.)	74,521

APPENDIX 4
HISTORIC TONNAGE RECORDS

TABLE 4A

**CITY OF HARRISONBURG TONNAGES
SOLID WASTE MANAGEMENT PLAN
HISTORICAL TONNAGES BY CATEGORY**

Landfilled data from Rockingham County Landfill records - CITY TONNAGE ONLY; Incineration and MRF data from City records.

Year	LANDFILLED												INCINERATED			MRF	TOTALS	
	Municipal Solid Waste (residential refuse, large wood, non-chargeable on brush form, cars through gate)	Commercial Refuse	Dirt/Rock	Non-chargeable on report	Concrete	Construction/Demolition/ Debris	Industrial Waste	Vegetative/ Yard Waste (commercial brush, reroute brush, xmas trees)	Unsorted Rubbish	Steam Plant Ash	Sludge	City Totals Landfilled	Commercial Municipal Solid Waste to RRF	County Containers City Packers	Locality Totals Incinerated	Van der linde	Total City	Total City and County
2012	3,768	9,685	85	509	0	3,214	2,160	333	33	0	0	19,787	9,592	8,711	18,303	NA	38,090	132,069
%	13.9%	38.5%	18.2%	52.4%		22.3%	14.8%	8.6%	5.8%	0.0%	0.0%	19.3%	73.3%	53.6%	62.4%		28.8%	
2013	4,532	12,459	13	399	0	3,932	2,275	217	50	0	0	23,876	3,691	8,026	11,717	NA	35,593	130,003
%	15.9%	41.8%	13.3%	40.4%		23.1%	14.0%	10.4%	14.5%	0.0%	0.0%	22.0%	60.5%	53.0%	55.2%		27.4%	
2014	2,308	16,194	1	4,929	0	5,663	2,409	244	35	0	0	31,786	4,809	3,358	6,039	NA	37,824	134,878
%	7.2%	41.0%	0.5%	67.5%		30.2%	15.9%	15.5%	4.9%	0.0%	0.0%	26.4%	60.0%	53.2%			28.0%	
2015	6,916	19,898	147	408	0	5,519	2,357	480	219	0	12	35,955	0	0	0	3,460	39,415	123,814
%	20.3%	43.6%	10.2%	24.2%		26.3%	17.1%	27.7%	40.0%	0.0%	0.0%	29.8%	0.0%	0.0%	0.0%		31.8%	
2016	2,732	7,249	48	510	0	4,224	48	1,002	126	0	22	15,961	0	0	0	9,535	25,496	147,290
%	9.1%	14.5%	0.3%	42.7%		18.3%	0.3%	27.6%	19.7%	0.0%	2.9%	11.6%	0.0%	0.0%	0.0%		17.3%	
2017	2,352.75	11,847.56	0	635.68	16.38	4,311.54	160.20	513.78	75.19	0	13.91	19,926.99	0	0	0	10,123	30,050	127,147
%	7.3%	22.8%	0.00%	46.9%	3.4%	17.9%	1.2%	24.1%	12.0%	0	2.0%	15.7%	0	0	0		23.6%	
2018	10,708.34	21,672.07	0	432.65	11.87	3,910.69	333.80	785.41	59.32	0	116.60	38,030.75	0	0	0	0	38,031	138,894
%	23.9%	41.3%	0.00%	79.8%	5.0%	15.6%	3.0%	26.2%	9.6%	0	14.4%	27.4%	0	0	0	0	27.4%	
2019	11,583.75	18,218.15	0	419.35	64.11	3,953.67	126.29	464.68	58.77	0	434.04	35,322.81	0	0	0	0	35,323	149,045
%	24.4%	30.7%	0.00%	92.4%	3.3%	15.5%	1.4%	15.8%	7.8%	0	31.8%		0	0	0	0	23.7%	

**TABLE 4B
ROCKINGHAM COUNTY LANDFILL RECORDS
2017 SUMMARY BY MONTH
CITY AND COUNTY WASTE (City tonnage in green)**

DATE	Municipal Solid Waste (residential refuse)	Commerical Refuse (including agri and cows)	Non-chargeable on report	Concrete	Construction/Demolition/ Wood Debris	Industrial (include flyash) Waste	Vegetative/ Yard Waste (commercial brush, reroute brush, xmas trees	Unsorted Rubbish	Sludge	Locality Totals	Monthly Tonnage Total Landfilled
17-Jan	2159.790	3554.570	40.840	X	1432.920	1340.490	61.270	48.430	52.090	8690.400	
city	161.970	641.220	42.350	X	200.220		8.680	2.430	7.110	1063.980	9754.380
17-Feb	1873.640	3296.680	27.730	X	1505.140	933.580	153.080	89.480	61.250	7940.580	
city	134.880	510.820	68.450	X	187.760		48.210	1.530		951.650	8892.230
17-Mar	2063.250	3605.350	30.420	X	1635.950	1180.150	92.850	37.850	50.470	8696.290	
city	118.390	559.280	46.100	X	401.200	2.140	143.760	5.440	6.800	1283.110	9979.400
17-Apr	2424.140	3441.830	225.600	X	1512.780	862.600	71.130	46.200	110.810	8695.090	
city	234.320	513.120	57.060	X	209.890		22.380	2.230		1039.000	9734.090
17-May	2817.590	4855.750	57.380	8.690	1891.060	1189.560	209.500	43.920	62.430	11135.880	
city	249.950	982.410	50.230		358.110		56.940	3.940		1701.580	12837.460
17-Jun	2852.290	3761.560	57.000	232.100	1884.390	998.930	162.660	59.620	49.310	10057.860	
city	250.170	651.200	50.270		312.240		27.870	1.470		1293.220	11351.080
17-Jul	2784.530	3590.940	48.130	51.700	1625.940	696.460	200.240	45.610	37.170	9080.720	
city	171.770	616.750	61.770		270.930	1.770	54.740	40.900		1218.630	10299.350
17-Aug	2954.180	3766.410	93.390	52.860	1960.820	840.570	225.280	38.970	48.410	9980.890	
city	217.280	890.320	59.990	3.820	618.920	0.630	24.050	0.670		1815.680	11796.570
17-Sep	2654.370	2614.600	34.950	18.230	1508.680	838.430	81.200	36.880	45.800	7833.140	
city	221.030	1680.090	51.410		671.540	40.540	39.200	3.760		2707.570	10540.710
17-Oct	2521.850	2598.360	25.590	81.240	2248.910	1289.190	94.210	35.390	52.300	8947.040	
city	196.280	1828.140	61.760		418.870	72.320	44.260	4.950		2626.580	11573.620
17-Nov	2534.890	2532.410	42.350	17.280	1307.740	1581.270	112.020	40.770	44.640	8213.370	
city	216.270	1592.280	36.010		297.090	20.630	27.400	6.950		2196.630	10410.000
17-Dec	2376.210	2436.140	35.930		1322.410	1529.370	155.450	29.930	63.610	7949.050	
city	180.440	1381.930	50.280	12.560	364.770	22.170	16.290	0.920		2029.360	9978.410
TOTAL	32,369.48	51,902.16	1,354.99	478.48	24,148.28	13,440.80	2,132.67	628.24	692.20	127,147.30	127,147.30
County tons	30,016.73	40,054.60	719.31	462.10	19,836.74	13,280.60	1,618.89	553.05	678.29	107,220.31	
City Tons	2,352.75	11,847.56	635.68	16.38	4,311.54	160.20	513.78	75.19	13.91	19,926.99	
% County	92.7%	77.2%	53.1%	96.6%	82.1%	98.8%	75.9%	88.0%	98.0%	84.3%	
% City	7.3%	22.8%	46.9%	3.4%	17.9%	1.2%	24.1%	12.0%	2.0%	15.7%	
VDL								private	17574.240	10123.54	2267.67296
										30051.530	Total MSW

APPENDIX 5
WASTE PROJECTIONS

TABLE 5A
CITY OF HARRISONBURG
TONNAGE PROJECTIONS - CITY TONNAGE ONLY
2020 - 2040

NOTES:

1. Annual population increase based on Weldon Cooper - See Appendix 3
2. **CITY** tonnage for 2012 through 2018 based on Rockingham County LF records.
3. Pounds/person/day for 2012 to 2018 calculated.
4. Pounds/person/day for 2019 - 2040 based on EPA published value for 2015 of 4.5 pounds per person per day.

YEAR	POPULATION - City of Harrisonburg	TONNAGE	POUNDS PER PERSON PER DAY
2010 (Census)	48,914		
2011	49,891		
2012	50,868	38,090	4.1
2013	51,845	35,593	3.8
2014	52,822	37,824	3.9
2015	53,799	39,415	4.0
2016	54,776	25,496	2.6
2017	55,753	19,926	2.0
2018	56,730	38,030	3.7
2019	57,707	47,392	4.5
2020 (Est.)	58,687	48,197	4.5
2021	59,534	48,892	4.5
2022	60,381	49,588	4.5
2023	61,228	50,283	4.5
2024	62,075	50,979	4.5
2025	62,922	51,675	4.5
2026	63,769	52,370	4.5
2027	64,616	53,066	4.5
2028	65,463	53,761	4.5
2029	66,310	54,457	4.5
2030 (Est.)	67,154	55,150	4.5
2031	67,891	55,755	4.5
2032	68,628	56,361	4.5
2033	69,365	56,966	4.5
2034	70,102	57,571	4.5
2035	70,839	58,177	4.5
2036	71,576	58,782	4.5
2037	72,313	59,387	4.5
2038	73,050	59,992	4.5
2039	73,787	60,598	4.5
2040 (Est.)	74,521	61,200	4.5

TABLE 5B
CITY OF HARRISONBURG
TONNAGE PROJECTIONS by category - CITY TONNAGE ONLY
2018 through 2040

Notes:

1. CITY tonnage for 2018 based on Rockingham County LF records. Percentages calculated.
2. Total tonnage for 2019 - 2040 taken from Table 5A.
3. Tonnage by category calculated using 2018 % and total CITY tonnage projections

Year	Municipal Solid Waste	Van der linde	Commercial Refuse	Concrete	Non-chargeable on report	Construction/Demolition/ Debris	Industrial Waste	Vegetative/ Yard Waste (commercial brush, reroute brush, xmas trees	Unsorted Rubbish	Sludge	Estimated Total City Tonnage (From Table 5A)
2018	10,708	0	21,672	12	433	3,911	334	785	59	117	38,031
% Total	28.2%	0.0%	57.0%	0.0%	1.1%	10.3%	0.9%	2.1%	0.2%	0.3%	100.0%
2019	13,344	0	27,006	15	540	4,874	416	978	74	146	47,392
2020	13,570	0	27,465	15	549	4,956	423	995	75	148	48,197
2021	13,766	0	27,861	15	557	5,028	429	1,009	76	150	48,892
2022	13,962	0	28,258	16	565	5,099	435	1,024	77	153	49,588
2023	14,158	0	28,654	16	573	5,171	442	1,038	78	155	50,283
2024	14,354	0	29,050	16	580	5,243	448	1,052	79	157	50,979
2025	14,550	0	29,447	16	588	5,314	454	1,067	80	159	51,675
2026	14,745	0	29,843	17	596	5,386	460	1,081	81	161	52,370
2027	14,941	0	30,240	17	604	5,457	466	1,095	82	163	53,066
2028	15,137	0	30,636	17	612	5,529	472	1,110	83	165	53,761
2029	15,333	0	31,032	17	620	5,600	478	1,124	84	168	54,457
2030	15,528	0	31,427	17	628	5,671	484	1,138	86	170	55,150
2031	15,699	0	31,772	18	635	5,734	490	1,151	86	172	55,755
2032	15,869	0	32,117	18	642	5,796	495	1,163	87	173	56,361
2033	16,039	0	32,462	18	649	5,858	500	1,176	88	175	56,966
2034	16,210	0	32,807	18	655	5,920	506	1,188	89	177	57,571
2035	16,380	0	33,152	18	662	5,983	511	1,201	90	179	58,177
2036	16,551	0	33,497	19	669	6,045	516	1,213	91	181	58,782
2037	16,721	0	33,842	19	676	6,107	522	1,226	92	183	59,387
2038	16,891	0	34,187	19	683	6,169	527	1,238	93	185	59,992
2039	17,062	0	34,532	19	690	6,232	532	1,251	94	186	60,598
2040	17,232	0	34,875	19	697	6,294	537	1,263	95	188	61,200

APPENDIX 6
DISPOSAL



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY VALLEY REGIONAL OFFICE

Molly Joseph Ward
Secretary of Natural Resources

P.O. Box 3000, Harrisonburg, Virginia 22801
(540) 574-7800 Fax (540) 574-7878

Located at 4411 Early Road, Harrisonburg, VA
www.deq.virginia.gov

David K. Paylor
Director

Amy Thatcher Owens
Regional Director

February 1, 2017

Mr. Barry Hertzler
Director of Public Works
Rockingham County Administration Center
20 East Gay Street
Harrisonburg, VA 22802

RE: Rockingham County Sanitary Landfill
Modification No. 8 of Permit No. 062
Rockingham County, Virginia

Dear Mr. Hertzler:

Enclosed is Permit No. 062 for the Rockingham County Sanitary Landfill. The public participation period ended on December 22, 2016. No comments were received during the public participation period; therefore, only incidental editing of the draft permit occurred.

This modification is the 8th to Permit No. 062 that was last issued on May 5, 2016. This modification permits an increase of daily disposal limit from 600 tons/day to 900 tons/day and a 49.7-acre new disposal area, designated as Phases 5A through 5C, that consists of a lateral expansion area (39.0 acres) and a piggyback area on the south slope of the Old Fill Part 2 (10.7 acres). As a result of the expansion, the total disposal area footprint (Old Fills and Phases 1 through 5C) in the facility is 104.6 acres (excluding piggyback acreage). The modification increases landfill capacity from 6,716,000 cubic yards to 15,275,000 cubic yards.

As provided by Rule 2A:2 of the Supreme Court of Virginia, you have 30 days from the date of service of this decision to initiate an appeal of this decision, by filing notice with:

David K. Paylor, Director

Mr. Barry Hertzler
Rockingham County Sanitary Landfill
Permit Modification No. 8 for Permit No. 062
February 1, 2017; Page 2 of 2

Virginia Department of Environmental Quality
ATTN: Division of Land Protection & Revitalization
P.O. Box 1105
Richmond, Virginia 23218

In the event that this decision is served to you by mail, three days are added to that period. Please refer to Part Two of the rules of the Supreme Court of Virginia, which describes the required content of the Notice of Appeal, including specification of the Circuit Court to which an appeal is taken, and additional requirements governing appeals from decisions of administrative agencies.

Please note that it is the responsibility of applicant to obtain any other permits or authorizations that may be necessary. If there are any questions, please contact JengHwa Lyang, Solid Waste Permit Writer, at (540) 574-7826 or jenghwa.lyang@deq.virginia.gov.

Sincerely,



B. Keith Fowler
Deputy Regional Director

Enclosures: Permit Introduction and Modules I through III and X through XIV

cc: Graham H. Simmerman, Jr., P.G., Regional Land Protection Program Manager
Geoff Christe, DEQ CO
Kathryn J. Perszyk, DEQ CO
Laura Stuart, P.G., DEQ VRO
JengHwa Lyang, Ph.D., P.E., DEQ VRO
Denise Wessels, P.E., SCS Engineers
Ken Armentrout, P.E., SCS Engineers



COMMONWEALTH of VIRGINIA

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David K. Paylor
Director

Amy Thatcher Owens
Regional Director

SOLID WASTE FACILITY PERMIT PERMIT NUMBER 062

Facility Name: Rockingham County Landfill

Facility Type: Sanitary Landfill

Latitude: N 38° 38' 04"

Site Location: Rockingham County, Virginia

Longitude: W 77° 25' 41"

Location Description: The facility is located at 2400 Grassy Creek Road, approximately 0.4 miles south of the intersection of State Route 710 and State Route 711 in Rockingham County, Virginia.

Background: The facility is a publicly owned and operated sanitary landfill that serves Rockingham County, the City of Harrisonburg, and the surrounding areas. The wastes accepted include those wastes identified in Module II, which is based on the information provided on DEQ Form SW PTB dated November 7, 2014 and special wastes indicated in Part B Attachment XIII.

The facility boundary is 236.20 acres, which is located within a property boundary of 313.49 acres. The disposal areas of the facility consist of: an unlined Old Fill Part 1, located in the southeastern side of the property, that was closed before 1988 (12.5 acres); an unlined Old Fill Part 2 that was closed in 2002 (32.8 acres); Phases 1 and 2 (11.4 acres and 7.8 acres, respectively) that have a liner and leachate collection system; and Phases 3 and 4 (8.1 acres and 6.2 acres, respectively) that are piggybacked over the north slope of Old Fill Part 2. A 1.1-acre virgin strip of land between the Old Fill Part 2 and Phase 2 is included in the 8.1-acre Phase 3 area. The proposed new disposal units, located at south side of the Old Fill Part 2, are designated as Phases 5A through 5C (25.8 acres, 7.0 acres, and 16.9 acres, respectively). A portion of Phase 5A and the entire Phase 5B are piggybacked on the south slope of the Old Fill Part 2. Excluding the piggyback areas, the total disposal area in the facility is 104.6 acres.

The total and remaining capacities of the facility, as provided in the Design Report, Part B Attachment III, are summarized below based on an October 25, 2013 aerial survey. According

to the Design Report, the landfill life is based on the average waste acceptance of 600 tons/day, operating 312 days/year, with an estimated in-place waste density of 1,300 pounds/cubic yard.

Phase	Acreage	Total Capacity, cubic yard	Remaining Capacity, cubic yards	Remaining Cell Life, years
Old Fill Part 1	12.5	420,000	Closed	Closed
Old Fill Part 2	32.8	3,052,000	Closed	Closed
Phase 1	11.4	745,000	1,289,000	4.5
Phase 2	7.8	835,000		
Phase 3	8.1 ¹	1,210,000		
Phase 4	6.2 ²	454,000		
Phase 5A	25.8 ³	1,644,000	1,644,000	5.7
Phase 5B	7.0 ⁴	2,689,000	2,689,000	9.3
Phase 5C	16.9	4,226,000	4,226,000	14.7
Total		15,275,000	9,848,000	34.2

- 1: 8.1 acres of Phase 3 includes 7.0-acre piggybacked area on the north slope of the Old Fill Part 2.
- 2: Entire Phase 4 is on the north slope of the Old Fill Part 2.
- 3: 25.8 acres of Phase 5A includes 3.7-acre piggybacked area on the south slope of the Old Fill Part 2.
- 4: Entire Phase 5B is on the south slope of the Old Fill Part 2

Permit Modification: This modification permits an increase of daily disposal limit from 600 tons/day to 900 tons/day and a 49.7-acre new disposal area, designated as Phases 5A through 5C, that consists of a lateral expansion area (39.0 acres) and a piggyback area on the south slope of the Old Fill Part 2 (10.7 acres). As a result of the expansion, the total disposal area footprint (Old Fills and Phases 1 through 5C) for the facility is 104.6 acres (excluding piggyback acreage). The modification increases landfill capacity from 6,716,000 cubic yards to 15,275,000 cubic yards.

All previous permit modifications are outlined in detail in Module I, Section I.G.

THIS IS TO CERTIFY THAT:

County of Rockingham
20 East Gay Street
Harrisonburg, Virginia 22802

is hereby granted a permit to construct, operate, and maintain the facility as described in the attached Permit Modules I, II, III, X, XI, XII, XIII and XIV and Permit Documents incorporated by reference. These Permit Modules and Permit Documents are as referenced hereinafter and are incorporated into and become a part of this permit.

The herein described activity is to be established, modified, constructed, installed, operated, used, maintained, and closed in accordance with the terms and conditions of this permit and the plans, specifications, and reports submitted and cited in the permit. The facility shall comply with all regulations of the Virginia Waste Management Board. In accordance with Chapter 14, § 10.1 - 1408.1(D) of the Code of Virginia, prior to issuing this permit, any comments by the local government and general public have been investigated and evaluated. The permit contains such conditions and requirements as are deemed necessary to comply with the requirements of the Virginia Code, the regulations of the Board, and to prevent substantial present or potential danger to human health or the environment.

Failure to comply with the terms and conditions of this permit shall constitute grounds for the revocation or suspension of this permit and for the initiation of necessary enforcement actions.

The permit is issued in accordance with the provisions of 10.1-1408.1.A, Chapter 14, Title 10.1, Code of Virginia (1950) as amended. Variances that have been approved for this facility are included in Permit Attachment I-1.

Issued:	May 23, 1972
Modification No. 1:	August 1, 2000
Modification No. 2:	June 9, 2005
Temporary Authorization No. 1:	August 18, 2006
Reissuance of Temporary Authorization #1:	February 13, 2007
Modification No. 3:	August 17, 2007
Modification No. 4:	September 19, 2008
Modification No. 5:	September 17, 2009
Modification No. 6:	August 10, 2012
Modification No. 7:	May 5, 2016

APPROVED:



B. Keith Fowler
Deputy Regional Director

DATE:

2/1/17
Modification 8

PERMIT MODULES REFERENCE LIST

PERMIT MODULE I – GENERAL PERMIT CONDITIONS

PERMIT ATTACHMENT I-1, PREVIOUS PERMIT APPROVAL LETTERS

PERMIT MODULE II – CONDITIONS OF OPERATION

PERMIT MODULE III – SANITARY LANDFILL DESIGN

PERMIT MODULE X – DETECTION GROUNDWATER MONITORING

PERMIT MODULE XI – ASSESSMENT GROUNDWATER MONITORING

PERMIT MODULE XII – CLOSURE

PERMIT MODULE XIII – POST CLOSURE CARE

PERMIT MODULE XIV – CORRECTIVE ACTION REQUIREMENTS

PERMIT MODULE II CONDITIONS OF OPERATION

II.A. HOURS OF OPERATION

II.A.1. The normal operating hours are:

- Monday through Saturday: 6:30 a.m. to 5:00 p.m.
- Sundays and Holidays: Closed.

Operational hours may be altered by the facility upon notification to the Department.

II.A.2. Emergency conditions or unusual circumstances that require accepting waste outside of the normal operating hours shall be reported to the DEQ Valley Regional Office within 24 hours followed by a formal written submission within 5 days.

II.B. WASTES ACCEPTED

The Rockingham County Landfill may receive the following wastes, as defined by 9VAC20-81-10, or described below:

II.B.1 Agricultural waste.

II.B.2. Animal carcasses. Small carcasses (e.g. dogs and cats) may be handled with incoming waste. Large animals and small volumes of animal carcasses (<20 cubic yards) may be received by the facility, but must be placed in a separate area within the disposal unit and provided with a cover of compacted soil or other suitable material. Disposal of large volumes of animal carcasses must be approved by the Department prior to disposal.

II.B.3. Asbestos, non-friable. Waste materials containing asbestos shall be disposed according to the requirements of 40 CFR 61, Subpart M, as amended, and incorporated under 9 VAC 20-81-620.

II.B.4. Ashes and air pollution control residues that are not classified as hazardous waste. Incinerator and air pollution and control residues should be incorporated into the working face and covered at such intervals as necessary to keep them from becoming airborne.

II.B.5. Commercial Waste.

II.B.6. Construction, demolition and debris waste.

II.B.7. Contaminated Soil

- II.B.7.a. Total petroleum hydrocarbons (TPH) and BTEX concentrations shall not exceed 1,000 mg/kg and 10 mg/kg, respectively.
- II.B.7.b. Total organic halides (TOX) concentrations shall not exceed 100 mg/kg.
- II.B.8. Industrial Waste
- II.B.9. Institutional Waste
- II.B.10. Municipal solid wastes, including garbage, household waste, refuse, residential waste, rubbish and trash.
- II.B.11. Non-regulated hazardous wastes and treated wastes rendered nonhazardous, upon approval from the Department.
- II.B.12. Scrap metal.
- II.B.13. Sludge, industrial and POTW. Municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, and air pollution control facility sludges that have been dewatered.

Sludges shall be disposed of by mixing with other solid wastes, placed, and compacted at the working face in a manner to prevent localized pockets of sludge or conditions which might result in future instability of the waste mass.
- II.B.14. Vegetative and yard waste, including stumps that are less than 12 inches in diameter.
- II.B.15. Waste Tires. Tires shall be stored at the waste tire storage area in an appropriate manner in accordance with 9 VAC 20-81-640. Tires may also be split, cut, or shredded and then beneficially used or dispersed in the workface with other solid wastes for disposal.
- II.B.16. White goods, provided that all appliances are free of chlorofluorocarbons, hydrochlorofluorocarbons, and PCBs prior to placement on the working face. White goods may be accumulated at the facility in accordance with 9VAC20-81-650.

UNAUTHORIZED WASTE – The Rockingham County Landfill may not receive any unauthorized wastes identified in 9 VAC 20-81-140.B.4. or any of the following: waste oil that has not been adequately absorbed through site cleanup; radioactive wastes; lead acid batteries; pressurized tanks or pressurized containers; automobile gas tanks; friable asbestos-containing waste materials as defined by 9VAC20-81-620; regulated medical waste; explosives or other dangerous materials; and junked automobiles.

II.C. PERMIT LIMITS

The facility has a disposal limit of 900 tons per day.

II.D. COMPACTION & COVER

II.D.1. Daily cover consisting of six inches of compacted soil or other approved material shall be placed upon and maintained on all exposed solid waste prior to the end of each operating day, or at more frequent intervals if necessary, to control disease vectors, fires, odors, blowing litter, and scavenging. Approved alternate daily cover (ADC) materials include:

II.D.1.a. Posi-Shell Cover System

II.D.1.b. Synthetic tarp

II.D.1.c. Fly ash from UVA with mulch mixture

II.D.1.d. Other alternate materials that have been approved by the Director for use at this facility.

II.D.1.e. The use of an ADC material shall cease if the material is not effective at achieving the purposes of daily cover set forth in 9 VAC 20-81-140.B.1.c., if the use results in nuisances, or if the material is erodible and results in waste being exposed.

II.D.2. Intermediate cover shall be applied when another lift of waste will not be placed for more than 30 days or to areas which exhibit erosion, cracking, or settlement.

II.D.3. Before placement of new waste in areas with low permeability daily cover soil or alternate daily covers, or in areas with intermediate cover, cover materials shall be removed or penetrated such that leachate can flow downward unimpeded to the leachate collection system.

II.D.4. Final cover construction as outlined in Permit Module XII shall be initiated when the requirements of 9 VAC 20-81-140.B.1.e. are met.

II.E. HOUSEKEEPING

II.E.1. The facility shall control odors in accordance with 9VAC20-81-200.D. and/or as necessary to protect human health and the environment.

II.E.2 The facility shall use fencing or other suitable control means to control litter migration. All litter blown from the operations shall be collected on a weekly basis.

II.E.3 Fugitive dust and mud deposits on main offsite roads and access roads shall be limited at all time to limit nuisances. Dust shall be controlled to meet the requirements of 9VAC20-81-140.A.12.

II.E.4. Salvaging may only be performed in areas of the facility designated for salvaging or recycling. Salvaging operations must not interfere with the operations of the landfill or create hazards or nuisances.

II.E.5. Open burning at active landfills shall comply with the requirements of 9VAC20-81-140.A.4. Open burning is prohibited at areas where waste has been disposed or is being used for active disposal.

II.F. SAFETY PROGRAM

Safety hazards to operating personnel shall be controlled through an active safety program consistent with the requirements of 29 CFR Part 1910. Safety training shall be performed annually, at a minimum.

II.G. SELF-INSPECTION PROGRAM

The landfill shall implement an inspection routine including a schedule for inspecting all applicable major aspects of facility operations necessary to ensure compliance with the requirements of Part III of the VSWMR (9 VAC 20-81-100 through 9 VAC 20-81-260).. Records of these inspections must be maintained in the operating record and available for review. At a minimum, the following aspects of the facility shall be inspected on a monthly basis: erosion and sediment controls, storm water conveyance system, leachate collection system, safety and emergency equipment, internal roads, and operating equipment.

II.H. OPERATIONS MANUAL REQUIREMENTS

II.H.1. The facility shall be operated in accordance with 9 VAC 20-81-140, Module II, and an operations manual which has been certified by a responsible official and placed in the facility's operating record.

II.H.2. The operations manual shall include the following items as required by 9 VAC 20-81-485:

- A certification page;
- Operations Plan;
- Inspection Plan;
- Health and Safety Plan;
- Unauthorized Waste Control Plan;
- Emergency Contingency Plan; and
- Landscaping Plan.

II.H.3. The operations manual shall be reviewed and recertified annually to ensure consistency with the current operations and regulatory requirements.

II.I. LEACHATE MANAGEMENT

Leachate shall be managed in accordance with 9 VAC 20-81-210, Module III, and the facility's Leachate Management Plan. If a leachate seep(s) occurs, the owner or operator shall repair the seep(s) and follow the procedures outlined in 9 VAC20-81-210.F.

II.J. LANDFILL GAS MANAGEMENT

Landfill gas shall be monitored in accordance with 9VAC20-81-200, Module III, and the facility's Landfill Gas Management Plan. The gas management system shall be inspected at a rate consistent with the system's monitoring frequency.

II.K. GROUNDWATER MONITORING

Groundwater shall be monitored in accordance with 9VAC20-81-250 and 9 VAC 20-81-260; Modules X, XI, and XIV; and the respective groundwater permit documents, as applicable. The groundwater monitoring system shall be inspected at a rate consistent with the system's monitoring frequency.

PERMIT MODULE III SANITARY LANDFILL DESIGN

III.A. LINER DESIGN

Phase 5 of the landfill shall be underlain by the composite liner system described below:

- an 18-inch cushion soil layer overlying a leachate collection geocomposite drainage net;
- a 60-mil HDPE textured geomembrane;
- a geosynthetic clay liner (GCL); and
- a 12-inch controlled subgrade.

Phases 1 and 2 were constructed with the following composite liner system:

- an 18-inch leachate collection aggregate on the side slopes and a 6-inch operational soil cover with a separation geotextile overlying a 12-inch leachate collection aggregate on the landfill floor;
- a cushion geotextile;
- a 60-mil HDPE textured geomembrane;
- a GCL; and
- a 12-inch compacted soil layer with a maximum hydraulic conductivity of 1×10^{-5} cm/sec.

Phases 3 and 4 were constructed with the following composite liner system:

- an 18-inch protective soil cover;
- a geocomposite drainage net;
- a 60-mil HDPE textured geomembrane;
- a geocomposite drainage net;
- a 60-mil HDPE geomembrane; and
- a 12-inch compacted soil layer with a maximum hydraulic conductivity of 1×10^{-5} cm/sec.

III.B. LINER CONSTRUCTION & CERTIFICATION

The landfill base liner for Phase 5 shall be constructed in accordance with the approved Design Plans, Technical Specifications, and Construction Quality Assurance Plan.

Prior to expansion into each new Phase, the permittee shall submit all required certification documents as indicated in Permit Module I Section I.D.1 – 3 as required by 9 VAC 20-81-490.A. Once this documentation has been submitted and approved by the Department, and a site inspection of the new Phase has been conducted, a Certificate to Operate (CTO) must be issued by the Regional Office prior to the facility accepting waste in the newly constructed Phase.

III.C. LANDFILL GAS MANAGEMENT SYSTEM

III.C.1. The facility shall implement and maintain a gas management plan in accordance with 9 VAC 20-81-200 to provide for the protection of public health, safety, and the environment during the periods of operation, closure, and post-closure care, in accordance with the following requirements:

III.C.1.a. The concentration of methane gas generated by the facility shall not exceed 25 percent of the lower explosive limit for methane (1.25% methane) in facility structures (excluding gas control or recovery system components); and

III.C.1.b. The concentration of methane gas shall not exceed the lower explosive limit for methane (5.0% methane) at the facility boundary.

III.C.2. The facility shall perform quarterly landfill gas monitoring of the perimeter gas monitoring wells and occupied structures in accordance with 9 VAC 20-81-200.B.4.

III.C.3. Perimeter Gas Monitoring Network

III.C.3.a. The facility currently has a gas monitoring network surrounding the existing and future disposal units as shown in Drawing No. 1 of 1 in Appendix B of the Landfill Gas Management Plan. The current perimeter gas monitoring network consists of a series of 57 landfill gas monitoring probes: LG-1 through LG-8, LG-9R, LG-10 through LG-12, LG-13R through LG-16R, LG-17 to LG-27, LG-29 to LG34, and GP-1 through GP-23. During the development of Phase 5, GP-18 through 27 will be abandoned.

III.C.3.b. If the perimeter gas monitoring network is expanded with the installation of new or replacement gas monitoring wells, the facility shall submit copies of the well boring logs for inclusion in Appendix D of the Landfill Gas Management Plan within 30 days following construction completion.

III.C.4. Active Landfill Gas Management

The existing and planned gas management system at the landfill consists of the following main elements:

III.C.4.a. A series of vertical gas extraction wells installed no more than 75% of the waste depth with a minimum of 15 feet of separation from the bottom of the landfill, spaced at approximately 150-foot to 300-foot intervals.

- III.C.4.b. A series of horizontal collectors installed on the landfill spaced at 100 feet to 200 feet laterally and 30 feet to 60 feet vertically. The horizontal collectors are generally installed at a minimum of 10 feet above the bottom liner, and typically 10 feet or more below final grade to prevent air infiltration.
- III.C.4.c. A network of header and lateral piping installed to connect the vertical extraction wells and horizontal collectors, and to direct the collected gas to a candlestick flare station and a gas treatment and compressor station; and
- III.C.4.d. A condensate management system consisting of condensate traps, which direct condensate to the leachate collection system or back into waste, and condensate storage tanks/manholes, from which it is directed to the leachate collection or may be periodically pumped by vacuum trucks and properly disposed.
- III.C.4.e. A gas treatment and compressor station and a candlestick flare station to manage the treated (compressed, cooled, and filtered) gas collected via the active gas collection system. These components are subject to the conditions of the facility's Title V Operating Permit.

III.C.5. Landfill Gas Remediation

- III.C.5.a. Should the results of landfill gas monitoring indicate concentrations of methane in excess of the methane action level (4% methane or 80% of the lower explosive limit (LEL) at the facility boundary or 1.25% methane or 25% LEL in facility structures), the Operator shall take immediate steps to protect public health and safety and provide written notification to DEQ within 5 working days and include what they plan to do to resolve the issue. This 5-day written notification is required for every occurrence where the LEL exceeds an action level but is below the compliance level.
- III.C.5.b. Should the results of landfill gas monitoring indicate concentrations of methane in excess of the methane compliance level (5% methane or 100% of the LEL at the facility boundary or 1.25% methane or 25% LEL in facility structures), the Operator shall take steps to protect public health and safety and provide oral notification within 24 hours and written notification within 5 working days for every occurrence when they exceed the compliance level. Additionally, the facility shall implement a remediation plan within 60 days and submit the plan to DEQ for approval.

III.C.5.c. The facility shall implement weekly gas monitoring at the noncompliant well(s) and/or occupied structures and those wells/structures immediately adjacent. Weekly monitoring shall continue until 3 consecutive weekly readings yield methane concentrations below 80% LEL at the facility boundary or 25% LEL in facility structures. The facility shall then implement monthly monitoring of the well subset until three consecutive monthly readings yield methane concentrations below 80% LEL at the facility boundary or 25% LEL in facility structures. At that time, the facility can return to quarterly monitoring.

III.D. LEACHATE MANAGEMENT

III.D.1. Leachate Storage

All leachate collected in the leachate collection system shall be pumped through force mains and discharged to the existing sanitary sewer.

III.D.2. Leachate Disposal

Collected leachate will be direct discharged to the Harrisonburg Rockingham Regional Sewer Authority.

Leachate may be recirculated to the newly placed wastes in Phases 5 at a rate not to exceed 7,690 gallons per acre per month in accordance with the procedure described in the facility's Leachate Management Plan.

PERMIT MODULE XII CLOSURE

XII.A. CLOSURE PLAN MODIFICATION

XII.A.1. The closure plan shall be amended any time changes in operating plans or landfill design affect the closure plan.

XII.A.2. Amended closure plans shall be submitted to the Department at least 180 days before the date the facility expects to begin construction activities related to closure.

XII.B. TIME ALLOWED FOR CLOSURE

The facility shall close each unit and install a final cover system in accordance with the timeframes specified in 9 VAC 20-81-140.B.1.e. and 9 VAC 20-81-160.

XII.C. FINAL COVER SYSTEM

The landfill final cover design profile for Phases 1 through 5, from top to bottom, is as follows:

- a 6-inch vegetative support/topsoil layer;
- an 18-inch protective soil layer;
- a geocomposite drainage net;
- a 40-mil LLDPE textured geomembrane; and
- an 18-inch infiltration layer with a maximum hydraulic conductivity of 1×10^{-5} cm/sec.

The Old Fill Part 2 area was capped with the following cover system:

- a 6-inch vegetative support/topsoil layer;
- an 12-inch protective soil layer; and
- an 18-inch infiltration layer with a maximum hydraulic conductivity of 1×10^{-5} cm/sec.

XII.D. CLOSURE CERTIFICATION

XII.D.1. Following construction of the final cover system for each unit, certification, signed by a registered professional engineer, shall be submitted verifying that closure has been completed in accordance with the permit, approved plans, and specifications. A certification will be required for each capped landfill phase and shall include the results of the Construction Quality Assurance/Quality Control (CQA/QC) requirements under 9VAC20-81-130.Q.1.b.(6).

XII.D.2. Following the closure of all units, certification, signed by a registered professional engineer, shall be submitted verifying that closure has been completed in accordance with the requirements of 9VAC20-81-160.D.5.a. through 5.c., which require posting a sign at the facility entrance and erecting suitable barriers to prevent access; submitting a survey plat to the local land reporting authority; and recording a notation on the deed to the facility property.

PERMIT MODULE XIII POST-CLOSURE CARE

XIII.A. POST-CLOSURE CARE REQUIREMENTS

XIII.A.1. The facility shall conduct post-closure care of the landfill in accordance with its approved Post-closure Care Plan.

XIII.A.1.a. Leachate shall be managed in accordance with 9 VAC 20-81-210 and the facility's Leachate Management Plan. If a leachate seep(s) occurs, the owner or operator shall repair the seep(s) and follow the procedures outlined in 9 VAC20-81-210.F.

XIII.A.1.b. Landfill gas shall be monitored in accordance with 9VAC20-81-200 and the facility's Landfill Gas Management Plan. The gas management system shall be inspected at a rate consistent with the system's monitoring frequency.

XIII.A.1.c. Groundwater shall be monitored in accordance with 9VAC20-81-250, Module X, and Module XI and the respective groundwater permit documents as applicable. The groundwater monitoring system shall be inspected at a rate consistent with the system's monitoring frequency.

XIII.A.2. Amended Post-closure Care Plans shall be submitted to the Department for review and approval by the Director.

XIII.B. POST-CLOSURE PERIOD

XIII.B.1. Post-closure care shall be conducted for 30 years.

XIII.B.2. The length of the post-closure care period may be decreased by the Director if the owner or operator demonstrates that the reduced period is equally protective of human health and the environment and the demonstration is approved by the Director. This demonstration shall contain:

XIII.B.2.a. Certification, signed by the owner or operator and a professional engineer licensed in the Commonwealth, verifying that decreasing the post-closure care period will be equally protective of human health and the environment; and

XIII.B.2.b. An evaluation prepared by a professional engineer or professional geologist licensed in the Commonwealth, which assesses and evaluates the landfill's potential for harm to human health and the environment in the event that post-closure monitoring and maintenance are discontinued.

XIII.B.3. The facility shall continue post-closure care and monitoring until such time that the Department approves termination or the post-closure care and/or monitoring activity.

XIII.C. CERTIFICATION OF COMPLETION OF POST-CLOSURE CARE

Not less than 180 days prior to the completion of the post-closure monitoring and maintenance period as prescribed by the Board's regulations or by the Director, the owner or operator shall submit to the Director:

XIII.C.1. Certification, signed by the owner or operator and a professional engineer licensed in the Commonwealth, verifying that post-closure monitoring and maintenance have been completed in accordance with the facility's Post-closure Care Plan; and

XIII.C.2. An evaluation prepared by a professional engineer or professional geologist licensed in the Commonwealth, which assesses and evaluates the landfill's potential for harm to human health and the environment in the event that post-closure monitoring and maintenance are discontinued.

If the Director determines that continued post-closure monitoring or maintenance is necessary to prevent harm to human health or the environment, he shall extend the post-closure period for such additional time as the Director deems necessary to protect human health and the environment and shall direct the owner or operator to submit a revised post-closure plan and to continue post-closure monitoring and maintenance in accordance therewith. Requirements for financial assurance shall apply throughout such extended post-closure period.

APPENDIX 7
RECYCLING



City of Harrisonburg
Public Works Department
320 East Mosby Road
Harrisonburg, VA 22801
Telephone 540/434-5928 Fax 540/434-2695
www.harrisonburgva.gov

Reporting Period January 1 - December 31, _____ (insert year)

Company Name _____ Contact _____

Address _____ Telephone No. _____

_____ Fax No. _____

Total quantity recycled _____ Tons/Cubic Yards

Total quantity or volume of refuse _____ Tons/Cubic Yards

Material recycled

Glass	<input type="text"/>	Plastic	<input type="text"/>
Aluminum	<input type="text"/>	Tin/Steel Cans	<input type="text"/>
Newspaper	<input type="text"/>	Office Paper	<input type="text"/>
Cardboard	<input type="text"/>	Motor Oil	<input type="text"/>
Dry Cell Batteries	<input type="text"/>	White Goods	<input type="text"/>
Misc. Metal	<input type="text"/>	Leaves	<input type="text"/>
Trees	<input type="text"/>	Other (specify) _____	<input type="text"/>
Commingled	<input type="text"/>	_____	

Note: If actual volume or weight cannot be accurately determined, the volume or weight may be reported using carefully estimated data. Any such report shall include a description of the basis for the reported data. Copy of hauler's statement of annual solid waste weights of refuse and recycling must be included with report.

Solid Waste Management Plan

The purpose of this Solid Waste Management Plan (SWMP) is the furtherance of solid waste management and the recycling of solid waste as provided for in Code of Virginia, section 10.1-1411 as authorized by section 15.1-11.5:2.

All nonresidential solid waste generators and companies that manage solid waste or recycle materials generated within the city shall submit a SWMP and an Annual Report. The SWMP must be submitted for approval to the City of Harrisonburg, Department of Public Works no later than July 1, 2008. Any alterations to or deviations from the SWMP must be reported concurrently. The Annual Report must be submitted no later than February 1 of each calendar year.

Any person contracted for the collection and removal of refuse/recycling must have a valid license for this purpose (collection and removal of refuse/recycling). All refuse/recycling vehicles must also have a permit which will be issued by the Department of Public Works.

Company Name _____ Contact _____

Name of Complex _____ Number of Units _____

Address _____ Telephone No. _____

_____ Fax No. _____

Company contracted to collect refuse _____

Contact _____ Telephone No. _____

Frequency of Collection _____ Type of Collection _____

Number and Size of Containers _____

Company contracted to collect recycling _____

Contact _____ Telephone No. _____

Frequency of Collection _____ Type of Collection _____

Number and Size of Containers _____

Material to be recycled

Glass	<input type="checkbox"/>	Plastic	<input type="checkbox"/>	Aluminum	<input type="checkbox"/>
Tin/Steel Cans	<input type="checkbox"/>	Newspaper	<input type="checkbox"/>	Cardboard	<input type="checkbox"/>
Office Paper	<input type="checkbox"/>	Motor Oil	<input type="checkbox"/>	White Goods	<input type="checkbox"/>
Dry Cell Batteries	<input type="checkbox"/>	Misc. Metal	<input type="checkbox"/>	Leaves	<input type="checkbox"/>
Trees	<input type="checkbox"/>	Commingled	<input type="checkbox"/>	Other (specify)	<input type="checkbox"/>

This Solid Waste Management Plan constitutes an agreement between _____

_____ (hereinafter known as Company) and the City of Harrisonburg (hereinafter known City). The City agrees to waive the monthly solid waste management charge of \$10.00 for each residence/business as long as Company continues to use a private hauler for recycling collection. If Company violates agreement, City will initiate Solid Waste Management charges which will be reinstated upon declaration that agreement is void.

Company Agent

Date

This Solid Waste Management Plan is accepted and approved by:

Signed for City of Harrisonburg

Date



City of Harrisonburg, Virginia

OFFICE OF THE PUBLIC WORKS DEPARTMENT
320 EAST MOSBY ROAD
HARRISONBURG, VIRGINIA 22801
(540) 434-5928

STREET MAINTENANCE
TRAFFIC ENGINEERING
TRANSPORTATION PLANNING
CONSTRUCTION MANAGEMENT
REFUSE/ RECYCLING
CENTRAL STORES
STORMWATER MANAGEMENT

TO: Eric D. Campbell, City Manager
FROM: Thomas Hartman, PE, LEED AP, Director of Public Works
DATE: April 9, 2019
RE: Solid Waste and Recycling Update Report

Summary: The Department of Public Works will provide an update on the operations of the Solid Waste and Recycling Program. The update will include past and current operations, partnerships, challenges, and opportunities moving forward with the program

Background: Prior to July 2014 the City operated the solid waste program in 2 distinct areas. The collected municipal solid waste (MSW) was taken to the Resource Recovery Facility (RRF) and was incinerated to create steam for use by JMU. Recycling was collected comingled at the curb side and taken to a city operated material recovery facility (MRF), where the recyclables were sorted and marketed by the City to recycling vendors. The average annual recycling rate for the City during this period was just over 25%.

In July 2014 the City made the decision to cease operations at the RRF due to the volume of waste being delivered to the facility dropping and the decrease in the cost of natural gas. Following the ceasing of operations, the City disposed of the MSW at the Rockingham County landfill, however, the MRF was still in operation and recyclables were collected at the curb side. The average annual recycling rate for the City during this transitional period was just over 25%.

In August of 2015 the City procured a contract with Van Der Lynde Recycling (VDL) in Troy Virginia. VDL was a MRF that processed both comingled recyclables as well as MSW, and because of their operations the City was able to stop the traditional curb side recycling program. At this time the City introduced its 'All in One' program, in which residents were instructed to combine their MSW and recyclables and place out on their scheduled collection day. This material was transferred at a City facility and hauled to VDL for processing. This process increased the City's annual average recycling rate to around 50%.

In January of 2018 a significant policy change occurred where China instituted the "National Sword" policy which both restricted the acceptance of many recyclable material, as well as drastically decreasing the acceptable contamination rate of the recyclable goods from 10% to 0.5%. This policy had a significant impact on the global recycling economy as many nations had become accustomed to China accepting nearly all recyclables and with a rather large contamination factor. Following this change many marketable opportunities for MRF facilities went away due to either the increased cost of sorting the material to the higher standard, or that material was simply not marketable any more.

Due to this policy, in February of 2018, the City was notified by VDL that it had been sold and that the new owner would not be continuing the MRF operations at the scale previously used by VDL. Due to this change the City stopped hauling its waste to VDL and began to dispose of the City's combined waste and recyclable material at the Rockingham County landfill for the time being. Also, due to this change the City had no means of recycling as the previously utilized City MRF had been removed from operation. In April of 2018 the City opened a Recycling Convenience Center (RCC), which would allow Citizens to bring their recyclables to the RCC and self-sort the material into specific bins. The RCC accepts #1, #2, #3-#7 plastics, tin, aluminum, cardboard, and paper.

The Public Works Department has been operating the RCC for approximately one year and has collected 512 tons of recyclable material. In September of 2018 Public Works began providing a mobile recycling unit at the Tuesday and Saturday Farmers Market. This has been very well received, with most every Saturday filling the containers within the first hour and a half. In addition to recyclable material being brought and disposed of at the RCC we have seen an increase in citizens bringing their bulk and yard debris items directly to the RCC as well.

With the recycling program we are currently utilizing, the City has been able to establish local partnerships with recycling vendors for the disposal of the collected materials. We work with Dave's Recycling, Valley Paper, and Recycle Management, and because of these local vendors the City is able to dispose of this material at little to no cost. In addition to the City being able to provide a local business with clean recyclable materials for the operations. We also partner with Gift and Thrift for the ability to have our citizens place gently used items in the supplied donation box instead of placing those items in the waste stream.

Even with the revised Solid Waste and Recycling program there are still many challenges and uncertainties that we are facing not only as a City, but as a State and Nation. The main challenge is the continued impact of the China National Sword policy and the continuing ripple effects our vendors are experiencing. As a result, on April 1st of this year the City stopped accepting #3-#7 plastics at our RCC and mobile unit, due to the vendor, Sonoco Recycling, no longer accepting these materials. The Public Works Department worked with Rockingham County and James Madison University in searching for a vendor that would accept this material, however all of the vendors we spoke with were stopping their acceptance of #3-#7 plastics similar to Sonoco.

Finally, Public Works is currently in the process of procuring an improved mobile recycling unit and with this new unit we will be able to stage it in different areas of the City throughout the week. The locations would be City owned parks or facilities, and the schedule will follow the current quadrant-based collection schedule. For example, when we are collecting solid waste in the northeast quadrant of the City, we would stage the mobile unit at the Lucy Simms Center. We feel that by offering a more community centered location for disposal of recycling we will give citizens more opportunity to recycle.

Key Issues: Solid Waste and Recycling.

The City With The Planned Future

Environmental Impact: Various.

Fiscal Impact: Minimal cost impacts as we are currently operating this program within currently approved budgets.

Prior Actions: None.

Alternatives: None.

Community Engagement: None.

Recommendation: None.

Attachments: Mobile Unit Deployment Map, and Council Presentation.

Review:

The initiating Department Director will place in Legistar, in sequence of transmittal, the names of each department that must initial their review in order for this item to be placed on the City Council agenda. The completion of review only addresses the readiness of the issue for Council consideration. This does not address the recommendation for approval or denial of the issue.

###

APPENDIX 8
NOT USED

APPENDIX 9
PERMIT AMENDMENT DOCUMENTATION



2206 South Main Street
Blacksburg, Virginia 24060
540.552.0444
www.daa.com

August 4, 2020

Letter sent electronically to: prina.chudasama@deq.virginia.gov
(A hard copy will not be sent unless requested.)

Ms. Prina Chudasama
Litter and Recycling Program Coordinator
Virginia Department of Environmental Quality
1111 East Main Street, Suite 1400
Richmond VA 23219

**RE: City of Harrisonburg – Solid Waste Management Plan
Major Amendment and response to DEQ 6/11/20 comments on August 2019 Plan
Draper Aden Associates Project No. 6154-285**

Dear Ms. Chudasama:

This letter is being written on behalf of the City of Harrisonburg who is the lead entity for the City of Harrisonburg solid waste planning region (Region). The Region is requesting approval of a major amendment to their solid waste management plan (SWMP) as discussed below and is responding to comments provided by DEQ on June 11, 2020 to the August 2019 revisions to the plan.

MAJOR AMENDMENT

Under 9 VAC 20-130-175.B.1 major amendments to regional solid waste management plans are defined as follows:

B. Major amendments.

1. Major amendments shall include:

- a. Any addition, deletion, or cessation of operation of any solid waste disposal facility;*
- b. Any increase in landfill capacity;*
- c. Any change that moves toward implementation of a waste management strategy that is lower in the waste management hierarchy;*
- d. Action plans, including an action plan to address a planning unit's recycling rate that has fallen below the statutory minimum; or*

e. Any change to membership in the approved area. Director approval of changes to planning unit boundaries, as described in [9VAC20-130-100](#), shall occur prior to submission of solid waste plan amendments to revise plan membership.

2. Major amendments shall require the same public participation as detailed in [9VAC20-130-130 B](#) before being submitted, by mail or electronic mail, to the department for approval prior to implementation.

The City's solid waste management plan is undergoing an update and now addresses a major change to their solid waste management program that DEQ has determined constitutes a major amendment to the plan. (Reference our discussion on Friday, June 18, 2020) This major amendment is based on Item 1.c of the regulations quoted above. The change in operations and hence hierarchy was represented by the City discontinuing their use of Van der Linde Recycling (since it was sold and no longer operating as a material recovery facility) and the return to the usage of the Rockingham County Landfill (SWP 062). Moving from use of a material recover facility to landfilling represents a move from a higher strategy to a lower strategy in the hierarchy.

A revised solid waste management plan (see below) now addresses the changes in operations which have made this major amendment necessary. Note that a letter addressing minor amendments to the Plan, that are now incorporated into the Plan, was submitted to DEQ on July 15, 2020.

The required public participation has not yet been initiated as the City (after so many rounds of comments with DEQ) wants to use a document for public comment and City County approval that is acceptable to DEQ. If the revised document dated August 4, 2020 as attached, meets your standards, the City will move forward with the appropriate public documentation and City County action. All required documentation will then be inserted into Appendix 10 and the Plan (considered final at that time) submitted to DEQ for formal approval.

Based on 9VAC20-130-175.B.3, we understand that the DEQ will review this major amendment no later than 90 days from the date this major amendment is received.

RESPONSE TO DEQ JUNE 11, 2020 COMMENTS ON AUGUST 2019 DRAFT PLAN

In an email dated June 11, 2020, DEQ provided an extensive set of comments on the August 2019 draft plan justified because the updated Plan was required a major amendment. This letter, in addition to providing documentation relative to a major amendment, is responding to these comments. Attached you will find the following documents for your review:

- Clean version of the plan, dated August 4, 2020. This plan supersedes all previous plans and is clearly identified as a major amendment.
- Redlined version of the August 2019 plan indicating all August 4, 2020 changes to the plan (excluding formatting). Extensive changes were required given the level of review and comment by DEQ.
- DEQ EXCEL spreadsheet, with specific and extensive responses to each comment.

Ms. Prina Chudasama
August 4, 2020
Page 3 of 3

We trust that the level of detail in regards to the response to the DEQ comments meets approval by DEQ such that the City of Harrisonburg can feel comfortable proceeding with the public participation and City County approval as required by the regulations.

If you have any questions, please do not hesitate to contact me.

Sincerely,
Draper Aden Associates



Lynn P. Klappich
Program Manager

cc: Mr. Harsit Patel, Director of Public Works, City of Harrisonburg

ATTACHMENTS

- Clean version - Draft 2 - August 4, 2020 - Harrisonburg Solid Waste Management Plan - Major Amendment - with appendices
- Redline version - Draft 2 - August 4, 2020 - Harrisonburg Solid Waste Management Plan - Major Amendment - without appendices
- Summary - August 4, 2020 - DAA response to DEQ comments



2206 South Main Street
Blacksburg, Virginia 24060
540.552.0444
www.daa.com

July 15, 2020

Letter sent electronically to: prina.chudasama@deq.virginia.gov

(A hard copy will not be sent unless requested.)

Ms. Prina Chudasama
Litter and Recycling Program Coordinator
Virginia Department of Environmental Quality
1111 East Main Street, Suite 1400
Richmond VA 23219

**RE: City of Harrisonburg – Solid Waste Management Plan
Minor Amendment – Changes in operations
Draper Aden Associates Project No. 6154-285**

Dear Ms. Chudasama:

This letter is being written on behalf of the City of Harrisonburg who is the lead entity for the City of Harrisonburg solid waste planning region (Region). The Region is requesting approval of a minor amendment to their solid waste management plan (SWMP) as discussed below.

Under 9 VAC 20-130-175.C.1 minor amendments to regional solid waste management plans are defined as follows:

- C. *Minor amendments.*
 - 1. *Minor amendments shall include:*
 - a. *Any addition, deletion, or cessation of operation of any facility that is not a solid waste disposal facility;*
 - b. *Any change that moves toward implementation of a waste management strategy that is higher in the waste management hierarchy; or*
 - c. *Any non-substantive administrative change such as a change in name.*
 - 2. *Minor amendments shall be submitted, by mail or electronic mail, directly to the department for notation. The planning units are the repository for the minor amendments to the plans.*

The City's solid waste management plan is undergoing an update and now addresses several changes to their solid waste management program that constitute minor amendments to the plan as previously discussed with DEQ, including the following:

Ms. Prina Chudasama

July 15, 2020

Page 2 of 2

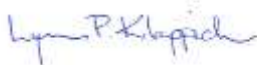
- The Resource Recovery Facility (RRF) has been fully decommissioned and closure of the site completed.
- Transfer station PBR 513, has been revoked. (Transfer station at RRF)
- City permitted (permit by rule) and constructed a transfer station at Beery Road (PBR 628). The facility was operated for several years but has now been converted to a recycling convenience drop off center. (DEQ permit documents included as Attachment 1.)

This letters serves as notice that the City is incorporating this information as a minor amendment to their SWMP as the activities above meet the requirements of 9VAC20-130-175.C.1.a.

If you have any questions, please do not hesitate to contact me.

Sincerely,

Draper Aden Associates



Lynn P. Klappich
Program Manager

cc: Mr. Harsit Patel, Director of Public Works, City of Harrisonburg

Attachment 1 - PBR 628 - DEQ permit documents



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

VALLEY REGIONAL OFFICE

P.O. Box 3000, Harrisonburg, Virginia 22801

(540) 574-7800 Fax (540) 574-7878

Located at 4411 Early Road, Harrisonburg, VA

www.deq.virginia.gov

Molly Joseph Ward
Secretary of Natural Resources

David K. Paylor
Director

Amy Thatcher Owens
Regional Director

December 19, 2017

Mr. Joseph Painter
Sanitation Manager
City of Harrisonburg
320 Mosby Road
Harrisonburg, Virginia 22801

RE: City of Harrisonburg Solid Waste Management Facility
Beery Road Transfer Station
Permit-by-Rule (PBR628)
Harrisonburg, Virginia

Dear Mr. Painter:

The Department has received the notice of intent and application to operate a transfer station located at 2055 Beery Drive, Harrisonburg, VA 22801.

Attached to this letter are two documents, which must not be separated from this letter for compliance purposes. The two documents are:

ATTACHMENT I: CONDITIONS OF THE PERMIT-BY-RULE STATUS

ATTACHMENT II: FACILITY DESCRIPTION

The purpose of this letter is to acknowledge receipt of the documentation submitted in accordance with the requirements of 9 VAC 20-81-410.A.2. for Permit-by-Rule facilities. In accordance with 9 VAC 20-81-410.A.4. this facility is deemed to have permit-by-rule status. The reference number for this facility is Permit-By-Rule Number 628. Please note, however, that in accordance with 9 VAC 20-81-410.A.5., and the attached "Conditions of the Permit-by-Rule Status," the Director may require changes in the documents designed to assure compliance with the standards of the VSWMR. Should such changes not be accomplished by the facility owner or operator, the Director may require the owner or operator to submit the full application and to obtain a regular solid waste management facility permit.

In addition, with the acknowledgement of this permit the facility is required to comply with the following requirements:

1. The facility shall maintain records of self-inspections, facility monitoring, and receipt of unauthorized waste in accordance with 9 VAC 20-81-350.
2. The facility is required to follow the reporting requirements of 9 VAC 20-81-530.C., which includes written notification of any planned physical alterations (C.1) and notification, orally within 24 hours and written within 5 days, of any noncompliance or unusual condition which may endanger health or the environment (such as receipt of hazardous waste, facility fires, etc) (C.3).
3. In accordance with 9VAC20-81-80, the facility shall submit the Solid Waste Information and Assessment (SWIA) 50-25 Form in accordance with 9 VAC 20-81-80 by March 31st of each year. This form can be found online at <https://node.deq.virginia.gov/SWIAWebApp/login.jsp>.
4. The facility is responsible for paying an annual fee to the Department of Environmental Quality by October 1st of each year. The fee amount is determined based upon the procedures outlined in 9 VAC 20-90-115.
5. The facility shall review and certify its Operations Manual is consistent with current facility operations and regulatory requirements annually, by December 31st of each calendar year. These certifications shall be maintained in the facility's operating record.
6. The facility is required to adjust the estimated closure cost amount annually for inflation 60 days prior to the anniversary date of the establishment of the financial mechanism in accordance with 9 VAC 20-70-10, *et seq.*

Please note that it is the responsibility of the facility to obtain any other permits or authorizations that may be necessary. If you have any questions regarding this matter, please contact JengHwa Lyang, Solid Waste Permit Writer, at (540) 574-7826 or jenghwa.lyang@deq.virginia.gov.

Respectfully,



Graham H. Simmerman, Jr., P.G.
Regional Land Protection Program Manager

Attachments

cc: Jim Baker, Director of Public Works, City of Harrisonburg
Kathryn J. Perszyk – DEQ CO
Suzanne D. Taylor – DEQ CO
Gregory W. Adamson,, DEQ VRO
JengHwa Lyang, Ph.D., P.E., DEQ VRO
William G. Hase, P.E., Draper Aden Associates

ATTACHMENT I CONDITIONS OF THE PERMIT-BY-RULE STATUS

I. CHANGE OF OWNERSHIP

A permit-by-rule may not be transferred by the permittee to a new owner or operator. However, when the property transfer takes place without proper closure, the new owner shall notify the Department of the sale and fulfill all the requirements contained in 9 VAC 20-81-410.A.2.a. through 9 VAC 20-81-410.A.2.k. of the Virginia Solid Waste Management Regulations (VSWMR, 9 VAC 20-81-10, *et seq.*). Upon presentation of the financial assurance proof required by the Financial Assurance Regulations for Solid Waste Facilities (9 VAC 20-70-10, *et seq.*) by the owner, the Department will release the old owner from his closure and financial responsibilities and acknowledge the new permit-by-rule in the name of the new owner.

II. FACILITY MODIFICATIONS

The owner or operator of a facility operating under a permit-by-rule may modify its design and operation by furnishing the Department a new design and construction certificate prepared by the professional engineer and an operations manual certificate. Whenever modifications in the design or operation of the facility affect the provisions of the approved closure plan, the owner or operator shall also submit an amended closure plan certificate signed by a professional engineer.

III. LOSS OF PERMIT-BY-RULE STATUS

In the event that a facility operating under a permit-by-rule violates any applicable siting, design and construction, or closure provisions of 9 VAC 20-81-320, 9 VAC 20-81-330, or 9 VAC 20-81-360, respectively, the owner or operator of the facility will be considered to be operating an unpermitted facility as provided for in 9 VAC 20-81-45 of the VSWMR and shall be required to either obtain a new permit as required by Part V [9 VAC 20-81-400, *et seq.*] or close under Part III [9 VAC 20-81-100, *et seq.*] or IV [9 VAC 20-81-300, *et seq.*] of these regulations, as applicable.

IV. TERMINATION

The Director shall terminate permit-by-rule and shall require closure of the facility whenever he finds that:

- a. As a result of changes in key personnel, the requirements necessary for a permit-by-rule are no longer satisfied;
- b. The applicant has knowingly or willfully misrepresented or failed to disclose a material fact in his disclosure statement, or any other report or certification required under this regulation, or has knowingly or willfully failed to notify the Director of any material change to the information in the disclosure statement;
- c. Any key personnel have been convicted of any of the crimes listed in § 10.1-1409 of the Code of Virginia, punishable as felonies under the laws of the Commonwealth or the equivalent of them under the laws of any other jurisdiction; or have been adjudged by an administrative

agency or a court of competent jurisdiction to have violated the environmental protection laws of the United States, the Commonwealth or any other state and the Director determines that such conviction or adjudication is sufficiently probative of the permittee's inability or unwillingness to operate the facility in a lawful manner.

- d. The operation of the facility is inconsistent with the facility's operations manual and/or the operational requirements of the regulations.

V. CERTIFIED OPERATOR

In accordance with the Virginia Waste Management Act (Title 10.1, Chapter 14 of the Code of Virginia), § 10.1-1408.2, this facility must employ a facility operator licensed by the Board of Waste Management Facility Operators (Licensing Regulations, 18 VAC 155-20-10 *et seq.*).

VI. RIGHT OF APPEAL

As provided by Rule 2A:2 of the Supreme Court of Virginia, you have 30 days from the date of the service of this decision to initiate an appeal of this decision, by filing notice with:

David K. Paylor, Director
Virginia Department of Environmental Quality
ATTN: Office of Waste Permitting & Compliance
Post Office Box 1105
Richmond, Virginia 23218

In the event this decision is served to you by mail, three days will be added to that period. Please refer to Part Two of the rules of the Supreme Court of Virginia, which describes the required content of the Notice of Appeal, including specification of the Circuit Court to which the appeal is taken, and additional requirements governing appeals from decisions of administrative agencies.

ATTACHMENT II FACILITY DESCRIPTION

**COMMONWEALTH OF VIRGINIA
DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF LAND PROTECTION & REVITALIZATION
OFFICE OF WASTE PERMITTING & COMPLIANCE
Permit-By-Rule 628**

Facility Name: City of Harrisonburg Solid Waste Management Facility Beery Road Transfer Station

Facility Type: Transfer Station **Latitude:** 38° 25' 01" North

Site Location: City of Harrisonburg **Longitude:** 78° 53 '20" West

Location Description: The facility is located at 2055 Beery Drive, Harrisonburg, VA 22801 in the City of Harrisonburg. Access is provided by a paved road.

Background: The facility is owned and operated by City of Harrisonburg. The facility consists of a building and paved road situated at approximately 2.6 acres of land inside a 36-acre property owned by the City. Normal operating procedures will entail waste to be dumped on the tipping floor and loaded into open top roll-off container inside the building. Roll-off trucks will then load the container to disposal facilities. The building has been constructed also to allow waste loading into a transfer trailer outside the west side of the building. Leachate and wash water will be collected in the trench drains and directed to the City's sewer system.

This facility has a process rate of 120 tons per day of non-friable asbestos, municipal solid waste (MSW), construction and demolition debris (CDD) waste, industrial waste, and vegetative waste. The hours of operation for the facility are 7 am to 7 pm Monday through Friday.

Submission Highlights: The Department is in receipt of DEQ Form PBR signed by Mr. Ande Banks, Acting City Manager on November 15, 2017. The following documents comprise the Permit-by-Rule submittal:

- A. A notice of intent dated October 17, 2017 with area and site location maps. A disclosure statement dated October 3, 2017. A local government certification dated October 12, 2017, and signed by Mr. Ande Banks, Deputy City Manager for the City of Harrisonburg. These documents are in accordance with 9 VAC 20-81-450.B., and are required submissions under 9 VAC 20-81-410.A.2.a. and 9 VAC 20-81-410.A.2.c.
- B. A document signed by Mr. Ande Banks dated November 15, 2017 certifying that the facility conforms to the siting standards of 9 VAC 20-81-320. This is a required submission in accordance with 9 VAC 20-81-410.A.2.b.

- C. A document signed by Mr. Ande Banks dated November 15, 2017 certifying that the facility has an operations manual that conforms to the standards of 9 VAC 20-81-340. This is a required submission in accordance with 9 VAC 20-81-410.A.2.d.
- D. A document signed by Mr. William G. Hase, a professional engineer, dated November 15, 2017 certifying that the facility has been designed and constructed in accordance with the standards of 9 VAC 20-81-330. This is a required submission in accordance with 9 VAC 20-81-410.A.2.e.(1).
- E. A document signed by Mr. William G. Hase, a professional engineer, dated November 15, 2017 certifying that the facility has a closure plan that conforms to the standards of 9 VAC 20-81-360. This is a required submission in accordance with 9 VAC 20-81-410.A.2.e.(2).
- F. A copy of deed demonstrating the City of Harrisonburg has legal control over the site. This is a required submission under 9 VAC 20-81-410.A.2.f.
- G. The cost estimate for facility closure is \$ \$69,827, which covers 120 tons of process rate and 445 cubic yards of storage capacity. Financial Assurance in the amount of \$5,660,713 has been provided in the form of a financial test and was approved by the Office of Financial Assurance in a compliance letter dated November 13, 2017. This is a required submission in accordance with 9 VAC 20-81-410.A.2.h.
- H. Public participation documents which resulted from the public participation effort, in accordance with 9 VAC 20-81-410.A.3. The advertisement of the public meeting was published in Daily News Record newspaper on March 24, 2016. The public meeting was held on April 6, 2016. The public comment period was 30 days. No comments were received during the comment period. This is a required submission in accordance with 9 VAC 20-81-410.A.2.i.
- I. Payment of the permit application fee in accordance with 9 VAC 20-81-410.A.2.k.

APPENDIX 10
PUBLIC PARTICIPATION DOCUMENTATION

SUBJECT:

**CITY COUNCIL APPROVES SOLID WASTE
MANAGEMENT PLAN.**

**EXTRACT TAKEN FROM MINUTES OF
CITY COUNCIL MEETING HELD ON:**

**REGULAR MEETING
JUNE 25, 2002**

Public Works Director Baker presented a brief overview of a proposed Solid Waste Management Plan. He explained that the Department of Environmental Quality requires that the City update the plan every five years. He reviewed the basic plan, which sets the parameter and goals for the future to protect the health, safety, and welfare of the citizens of Harrisonburg. He also reviewed the City's recycling process and the importance of resource recovery.

At 7:42 p.m., Mayor Frank closed the regular session temporarily and the evening's public hearing to order. The following notice appeared in the Daily News-Record on Friday, June 14, 2002.

**NOTICE OF PUBLIC HEARING
City Council Chambers
Tuesday, June 25, 2002
7:30 p.m.**

The Harrisonburg City Council will hold a public hearing on Tuesday, June 25, 2002, at 7:30 p.m., in the City Council Chambers, Municipal Building, 345 South Main Street, Harrisonburg, Virginia, to receive public comments on the following:

A Solid Waste Management Plan prepared for and submitted to the Virginia Department of Environmental Quality. A copy of said plan is available for public review at the office of the City Manager, 345 South Main Street, Harrisonburg, VA. Information is also available at the Public Works office located at 320 East Mosby Road, Harrisonburg, VA – Telephone 540-434-5928.

**CITY OF HARRISONBURG
Roger D. Baker
City Manager**

Mayor Frank called on anyone desiring to speak for or against this proposed Solid Waste Management Plan. There being no one desiring to be heard, the public hearing was declared closed at 7:43 p.m., and the regular session reconvened. Vice-Mayor Peterson offered a motion to approve this Solid Waste Management Plan as presented. The motion was approved with a unanimous vote of Council.

Public Works Director Baker briefly reviewed the City Solid Waste Management Plan. He explained that three-fourths of the solid waste management plan is recommendations from the

state which the City can consider as guidelines. Some of the recommendations include tax exemption, reduced tax incentives, and recycling programs. The adopted plan will be filed in the City Manager's office and with DEQ. Mr. Baker also said that several years ago the City closed its landfill and entered into a joint venture with Rockingham County to share a landfill. Rockingham County owns the land, manages the landfill, and takes care of the administrative work. It is more cost effective to work as a community in the landfill operation instead of operating two landfills within a mile of each other. Landfill operations are very expensive. Also, the City has continued to support and plans to upgrade the resource recovery plant. This program reduces the amount of trash going into the landfill and provides a revenue source by selling the steam as an energy source to James Madison University. The City does not make a profit in this venture. He also said that burying trash does not make it to go away because one of the biggest problems with landfills is the potential of ground water contamination or methane gas being generated.

I, Yvonne Ryan, CMC/MMCA, Clerk of the Harrisonburg City Council, do hereby certify that the foregoing is a true copy of an excerpt taken from the draft minutes of a regular meeting held on Tuesday, June 25, 2002.

Given under my hand this 27th day of June, 2002.


CITY CLERK

OFFICE OF CITY CLERK OF COUNCIL
HARRISONBURG, VA 22801

Notice of Public Hearing

City Council Chambers

Tuesday, September 9, 1997

7:30 P.M.

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City of Harrisonburg
Steve Stewart
City Manager

To be advertised one (1) time:
Friday , August 29, 1991

SUBJECT: COUNCIL APPROVES SOLID WASTE MANAGEMENT PLAN.

EXTRACT TAKEN FROM MINUTES OF CITY COUNCIL MEETING HELD ON: REGULAR MEETING
SEPTEMBER 9, 1997

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CITY OF HARRISONBURG
Steven E. Stewart
City Manager

Public Works Director Baker presented a proposed Solid Waste Management Plan for Council's approval. He said that Draper Aden, Consulting Engineer's, developed this plan five years ago and it is updated every five years to determine how the City is handling the collected solid waste. He reviewed the basic plan which sets the parameter and goals for the future while emphasizing the most environmental friendly way of dealing with solid waste. He also reviewed the City's recycling process and the importance of resource recovery. He recognized the staff of the Sanitation Department for updating this plan. There being no one desiring to be heard, the public hearing was declared closed at 7:39 p.m., and the regular session reconvened. Council Member Green offered a motion to approve this Solid Waste Management Plan as presented. The motion was seconded by Council Member Rogers, and approved with a unanimous recorded vote of Council.

I, Yvonne Ryan, Clerk of the Harrisonburg City Council, do hereby certify that the foregoing is a true copy of an excerpt taken from the draft minutes of a regular meeting held on Tuesday, September 9, 1997.

Given under my hand this 19th day of September, 1997.



CLERK

OFFICE OF CITY CLERK OF COUNCIL
HARRISONBURG, VA 22801

REGULAR MEETING
JULY 23, 1991

At a regular meeting of Council held this evening in the Council Chambers at 7:30 p.m., there were present: Mayor Walter F. Green, 3rd; City Manager Marvin B. Milam; City Attorney Earl Q. Thumma, Jr.; Vice-Mayor Elon W. Rhodes; Council Members Emily R. Dingledine, Curtis F. Kite and C. Robert Heath; City Clerk Judy M. Gray; Captain Duane Fairweather and City Auditor Peterman.

Minutes of the regular meeting held on July 9, 1991, approved as corrected.

The City Manager's monthly progress report was presented and ordered filed.

✓ City Manager Milam presented for Council's consideration of approval the Solid Waste Management Plan which was prepared by Draper Aden Associates for submittal to the State. Council Member Heath offered a motion that the Solid Waste Management Plan be approved. The motion was seconded by Vice-Mayor Rhodes, and approved with a unanimous vote of Council.

✓ City Manager Milam presented for Council's consideration of approval for a second and final reading an ordinance enacting Title 6, Chapter 2, Article C of the City Code - Solid Waste Recycling. Council Member Kite offered a motion that the ordinance be approved for a second and final reading. The motion was seconded by Council Member Dingledine and approved with a unanimous recorded vote of Council.

✓ City Manager Milam presented for Council's consideration of approval an amendment to the sick leave policy which would grant credit for all unused sick leave toward payment of medical insurance. Following discussion Council Member Heath offered a motion that the amendment be referred back to a committee for further study and that one Council member serve on the committee. The motion was seconded by Vice-Mayor Rhodes and approved with a unanimous vote of Council.

✓ City Manager Milam reviewed the proposed schedule regarding a \$20,000,000 Bond Issue by the Harrisonburg Redevelopment and Housing Authority for the Regional Jail and Lower Court Complex. Manager Milam reviewed several items that have to take place this summer if the bond issue is sold on or before Sept. 8, 1991. Manager Milan noted that this is a very critical date because it is the date that the supreme court will issue a new opinion concerning the Fairfax County case which has put a hold on this project. Manager Milam noted that the jail committee has been meeting frequently and noted that a notice has appeared in the newspaper concerning the validation of the project, with the validation hearing scheduled in Circuit Court on August 6, 1991. Mr. Milam noted an official statement should be circulated by the end of this week with pricing around the 27th of August, and the agreements being signed on August 28th by the City, the County and the Housing Authority. Mr. Milam noted that they hope to close the project on September 5, 1991. Manager Milam noted that he is requesting Council to approve the following resolution which actually approves the drafts of certain documents:

✓ RESOLUTION OF THE CITY COUNCIL OF THE CITY OF HARRISONBURG VIRGINIA,
REGARDING THE REGIONAL JAIL AND LOWER COURTS COMPLEX FINANCING

WHEREAS, on June 25, 1991, the Council of the City of Harrisonburg, Virginia (the "City Council"), adopted a resolution approving a plan for the issuance, offering and sale by the Harrisonburg Redevelopment and Housing Authority (the "Authority") of its public facility lease revenue bonds in an amount estimated to be approximately \$20,000,000 (the "Bonds") to finance the acquisition, construction and equipping of a regional jail and lower courts complex (together with the underlying real property, the "Project") to be leased by the Authority to Rockingham County Virginia (the "County") and the City of Harrisonburg, Virginia (the "City"); and

WHEREAS, there have been presented to this meeting drafts of the following documents (the "Documents") in connection with the transactions described above, copies of which shall be filed with the records of the City Council:

(a) Ground Lease between the Board of Supervisors of Rockingham County, Virginia (the "Board of Supervisors"), the City and the Authority conveying to the Authority interests in certain real property constituting part of the Project (the "Ground Lease");

(b) Lease Agreement between the Authority, the Board of Supervisors and the City conveying to the County and the City a

REGULAR MEETING
JULY 9, 1991

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Minutes of the regular meeting held on June 25, 1991, approved as corrected.

The following monthly reports were presented and ordered filed:

From the City Treasurer - A trial balance report for the month of June, 1991.

From the Police Department - A report of fines and costs collected- \$1,636.00; cash collected from street parking meters - \$6,280.07; total cash collected and paid on accounts and turned over to the City Treasurer - \$7,916.07.

From the City Auditor - A report of cash discounts saved in the payment of vendors invoices for the month of June, 1991, in the amount of \$1,101.77.

From the Utility Billing Department - A report of water, sewer and refuse accounts, meters read; installations; cut delinquents; complaints; rereads, etc. for the month of June, 1991.

✓ At 7:32 Mayor Green closed the regular session temporarily and called the evening's public hearing to order. City Manager Milam read the following notice of hearing as it appeared in the Daily News Record on Friday, June 28, 1991:

The Harrisonburg City Council will hold a Public Hearing on Tuesday, July 9, 1991, at 7:30 p.m., in the City Council Chambers, Municipal Building, 345 South Main Street, Harrisonburg, Virginia, to receive public comments on the following:

A Solid Waste Management Plan prepared for submittal to the Virginia Department of Solid Waste Management. A copy of said plan is available for public review at the Office of the City Manager, 345 South Main Street, Harrisonburg, VA. Information is also available at the Office of the Superintendent for Solid Waste located at 2055 Berry Road, Harrisonburg, VA - telephone 433-6800.

CITY OF HARRISONBURG
Marvin B. Milam
City Manager

Mr. John Holsten, Sanitation Superintendent, explained that the State is requiring that all municipalities prepare a five year plan to speak to what the municipality plans to do for solid waste disposal. Mr. Holsten stated that the proposed Solid Waste Management Plan for the City of Harrisonburg was prepared by Draper Aden Associates in accordance with the state regulations. Mr. Holsten then called on Mr. Fred T. Pribble and Steve Herzog, from Draper Aden for comments. Mr. Fred Pribble stated that the Solid Waste Management Plan was developed with a cooperative effort between the City Staff and Draper Aden Associates. Mr. Pribble reviewed the Board's purpose for requiring solid waste management plans and noted that the plan will have to be re-evaluated every five years. Mr. Steve Herzog, of Draper Aden Associates, reviewed the waste management hierarchy that all solid waste management plans must consider, and stated that the rate mandates are a 10% reduction by Dec. 31, 1991; a 15% reduction by Dec. 1993 and a 25% reduction by Dec. 1995. Mr. Herzog noted that the City of Harrisonburg is fortunate that its private sector is currently recycling at a rate of 29% which already exceed the 25% rate mandated by December 1995. Mr. Herzog also reviewed the specific actions contained in the plan, which include: increase recycling activities; categorize the waste accepted at the landfill and steam plan; adopt reporting legislation; require that specific material be separate from other solid waste; preference for purchase of paper made from recycled material; expand public education; close the existing landfill; develop a new landfill and create a archive agency. Mr. Herzog did note that the City is well prepared to meet the mandates, but presently has two critical needs which are securing new landfill capacity by January 1994 and developing a program for collecting additional information on its solid waste stream. Council Member Heath expressed concern over the reporting burden that might be imposed on small businesses, and Vice-Mayor Rhodes stated that he did not feel it was fair to have to close down the existing landfill. Following further discussion, Mayor Green thanked the City administration and Draper Aden for a job well done. There being no others desiring to be heard, the public hearing was declared closed at 8:15 p.m. and the regular session reconvened.

1st Reading of Resolution No. 1991-10 on Solid Waste Management

A ... ITEM
3 7-9-91

NOTICE OF PUBLIC HEARING

City Council Chambers

Tuesday, July 9, 1991

7:30 P. M.

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CITY OF HARRISONBURG
Marvin B. Milam
City Manager

To be advertised one (1) time:

Friday, June 28, 1991

COPY TO:
City Council
City Attorney
City Clerk
✓

NOTICE OF PUBLIC HEARING

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Tuesday, July 9, 1991

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CITY OF HARRISONBURG
Marvin B. Milam
City Manager

SUBJECT: CITY COUNCIL APPROVES THE SOLID WASTE MANAGEMENT PLAN

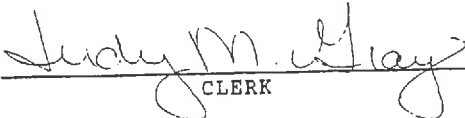
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City Manager Milam presented for Council's consideration of approval the Solid Waste Management Plan which was prepared by Draper Aden Associates for submittal to the State. Council Member Heath offered a motion that the Solid Waste Management Plan be approved. The motion was seconded by Vice-Mayor Rhodes, and approved with a unanimous vote of Council.

RECEIVED
JUL 31 1991

I, Judy M. Gray, Clerk of the Harrisonburg City Council, do hereby certify that the foregoing is a true copy of an excerpt taken from the minutes of a regular meeting held on Tuesday, July 23, 1991.

Given under my hand this 24th day of July, 1991


CLERK

OFFICE OF CITY CLERK OF COUNCIL
HARRISONBURG, VA

FORM 005 (10-1987)



COMMONWEALTH of VIRGINIA

L. Preston Bryant, Jr.
Secretary of Natural Resources

DEPARTMENT OF ENVIRONMENTAL QUALITY
Street address: 629 East Main Street, Richmond, Virginia 23219
Mailing address: P.O. Box 1105, Richmond, Virginia 23218
Fax (804) 698-4500 TDD (804) 698-4021
www.deq.virginia.gov

David K. Paylor
Director

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

October 24, 2006

Mr. James D. Baker, Director
Department of Public Works
City of Harrisonburg
320 East Mosby Road
Harrisonburg, VA 22801

**Subject: Approval of the Solid Waste Management Plan for the
City of Harrisonburg**

Dear Mr. Baker:

I am pleased to inform you that the Solid Waste Management Plan for the City of Harrisonburg, received in this office on June 29, 2004, and revised with corrections per your letters of February 16, 2005 and June 28, 2006, is hereby approved.

Thank you again for your efforts and cooperation in this matter. If you have any questions about this letter, please contact Daniel S. Gwinner at (804) 698-4218.

Sincerely,

A handwritten signature in cursive script that reads "Leslie A. Romanchik".

Leslie A. Romanchik
Director, Office of Waste Permitting

cc: Graham Simmerman-VADEQ
Mohammed Karim-VADEQ
Sanjay Thirunagari-VADEQ
Daniel S. Gwinner-VADEQ



COMMONWEALTH of VIRGINIA

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

Douglas W. Domenech
Secretary of Natural Resources

David K. Paylor
Director

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

July 13, 2012

Mr. James D. Baker
Department of Public Works
City of Harrisonburg
320 East Mosby Road
Harrisonburg, Virginia 22801

Subject: The City of Harrisonburg's Solid Waste Management Plan Five-Year Update

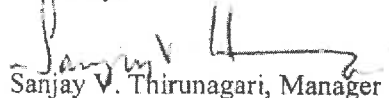
Dear Mr. Baker:

The City of Harrisonburg's Solid Waste Management Plan (SWMP) 5-year Update received by the Department on May 21, 2012 per § 9 VAC 20-130-175.F is hereby accepted.

This update should be considered as part of the City's approved plan. All Solid Waste Planning Units are required to maintain plans current, including any updates submitted to the Department.

Thank you again for your efforts and cooperation in this matter. If you have any questions about this letter, please contact Steve Coe at (804) 698-4029 or steve.coe@deq.virginia.gov.

Sincerely,


Sanjay V. Thirunagari, Manager
Division of Land Protection & Revitalization

cc: Graham Simmerman – VADEQ VRO
Harsit Patel, Solid Waste Superintendent, City of Harrisonburg

APPENDIX F

RECORD OF PUBLIC HEARING

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**CITY COUNCIL APPROVES SOLID WASTE
MANAGEMENT PLAN.**

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CITY COUNCIL MEETING HELD ON:**

**REGULAR MEETING
JUNE 25, 2002**

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CITY OF HARRISONBURG

Roger D. Baker

City Manager

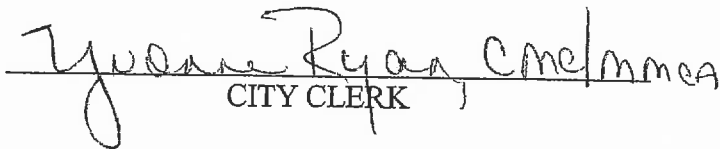
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I, Yvonne Ryan, CMC/MMCA, Clerk of the Harrisonburg City Council, do hereby certify that the foregoing is a true copy of an excerpt taken from the draft minutes of a regular meeting held on Tuesday, June 25, 2002.

Given under my hand this 27th day of June, 2002.


CITY CLERK

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City of Harrisonburg
Steve Stewart
City Manager

To be advertised one (1) time:
Friday , August 29, 1991

SUBJECT: COUNCIL APPROVES SOLID WASTE MANAGEMENT PLAN.

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SEPTEMBER 9, 1997

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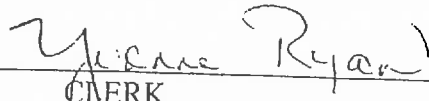
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CITY OF HARRISONBURG
Steven E. Stewart
City Manager

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CLERK

OFFICE OF CITY CLERK OF COUNCIL
HARRISONBURG, VA 22801

REGULAR MEETING
JULY 23, 1991

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Minutes of the regular meeting held on July 9, 1991, approved as corrected.

The City Manager's monthly progress report was presented and ordered filed.

City Manager Hilam presented for Council's consideration of approval the Solid Waste Management Plan which was prepared by Draper Aden Associates for submittal to the State. Council Member Heath offered a motion that the Solid Waste Management Plan be approved. The motion was seconded by Vice-Mayor Rhodes, and approved with a unanimous vote of Council.

City Manager Hilam presented for Council's consideration of approval for a second and final reading an ordinance enacting Title 6, Chapter 2, Article C of the City Code - Solid Waste Recycling. Council Member Kite offered a motion that the ordinance be approved for a second and final reading. The motion was seconded by Council Member Dingleline and approved with a unanimous vote of Council.

City Manager Hilam presented for Council's consideration of approval an amendment to the sick leave policy which would grant credit for all unused sick leave toward payment of medical insurance. Following discussion Council Member Heath offered a motion that the amendment be referred back to a committee for further study and that one Council member serve on the committee. The motion was seconded by Vice-Mayor Rhodes and approved with a unanimous vote of Council.

City Manager Hilam reviewed the proposed schedule regarding a \$20,000,000 Bond Issue by the Harrisonburg Redevelopment and Housing Authority for the Regional Jail and Lower Court Complex. Manager Hilam reviewed several items that have to take place this summer if the bond issue is sold on or before Sept. 8, 1991. Manager Hilam noted that this is a very critical date because it is the date that the supreme court will issue a new opinion concerning the Fairfax jail committee which has put a hold on this project. Manager Hilam noted that in the newspaper concerning the validation of the project, with the validation hearing scheduled in Circuit Court on August 6, 1991. Mr. Hilam noted that the official statement should be circulated by the end of this week with pricing around the 27th of August, and the agreements being signed on August 28th by the City, the County and the Housing Authority. Mr. Hilam noted that they hope to close the project on September 5, 1991. Manager Hilam noted that he is requesting Council to approve the following resolution which actually approves the drafts of certain documents:

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF HARRISONBURG VIRGINIA,
REGARDING THE REGIONAL JAIL AND LOWER COURTS COMPLEX FINANCING

WHEREAS, on June 25, 1991, the Council of the City of Harrisonburg, Virginia (the "City Council"), adopted a resolution approving a plan for the issuance, offering and sale by the Harrisonburg Redevelopment and Housing Authority (the "Authority") of its public facility lease revenue bonds in an amount estimated to be approximately \$20,000,000 (the "Bonds") to finance the acquisition, construction and equipping of a regional jail and lower courts complex (together with the underlying real property, the "project") to be leased by the Authority to Rockingham County, Virginia (the "County") and the City of Harrisonburg, Virginia (the "City"); and

WHEREAS, there have been presented to this meeting drafts of the following documents (the "Documents") in connection with the transactions described above, copies of which shall be filed with the records of the City Council:

(a) Ground Lease Between the Board of Supervisors of Rockingham County, Virginia (the "Board of Supervisors"), the City and the Authority conveying to the Authority interests in certain real property constituting part of the Project (the "Ground Lease");

(b) Lease Agreement between the Authority, the Board of Supervisors and the City conveying to the County and the City a

NOTICE OF PUBLIC HEARING

City Council Chambers

Tuesday, July 9, 1991

7:30 P. M.

The Harrisonburg City Council will hold a Public Hearing on Tuesday, July 9, 1991, at 7:30 p.m., in the City Council Chambers, Municipal Building, 345 South Main Street, Harrisonburg, Virginia, to receive public comments on the following:

A Solid Waste Management Plan prepared for submittal to the Virginia Department of Solid Waste Management. A copy of said plan is available for public review at the Office of the City Manager, 345 South Main Street, Harrisonburg, VA. Information is also available at the Office of the Superintendent for Solid Waste located at 2055 Beery Road, Harrisonburg, VA - telephone 433-6800.

CITY OF HARRISONBURG
Marvin B. Milam
City Manager

To be advertised one (1) time:

Friday, June 28, 1991

NOTICE OF PUBLIC HEARING

City Council Chambers

Tuesday, July 9, 1991

7:30 P.M.

The Harrisonburg City Council will hold a Public Hearing on Tuesday, July 9, 1991, at 7:30 p.m., in the City Council Chambers, Municipal Building, 345 South Main Street, Harrisonburg, Virginia, to receive public comments on the following:

A Solid Waste Management Plan prepared for submittal to the Virginia Department of Solid Waste Management. A copy of said plan is available for public review at the Office of the City Manager, 345 South Main Street, Harrisonburg, VA. Information is also available at the Office of the Superintendent for Solid Waste located at 2055 Beery Road, Harrisonburg, VA - Telephone 433-6800.

CITY OF HARRISONBURG
Marvin B. Milam
City Manager

COPY TO:

- City Council
- City Attorney
- City Clerk



REGULAR MEETING
JULY 9, 1991

At a regular meeting of Council held in the Council Chamber this evening at 7:30 p.m., there were present: Mayor Walter F. Green, 3rd; City Manager Marvin B. Milam; City Attorney Earl Q. Thumma, Jr.; Vice-Mayor Elon W. Rhodes; Council Members Emily R. Dingleline, Curtis F. Kite and C. Robert Heath; City Clerk Judy M. Gray; Captain Duane Fairweather and City Auditor Peterman.

Minutes of the regular meeting held on June 25, 1991, approved as corrected.

The following monthly reports were presented and ordered filed:

From the City Treasurer - A trial balance report for the month of June, 1991.

From the Police Department - A report of fines and costs collected - \$1,636.00; cash collected from street parking meters - \$6,280.07; total cash collected and paid on accounts and turned over to the City Treasurer - \$7,916.07.

From the City Auditor - A report of cash discounts saved in the payment of vendors invoices for the month of June, 1991, in the amount of \$1,101.77.

From the Utility Billing Department - A report of water, sewer and refuse accounts, meters read; installations; cut delinquents; complaints; rereads, etc. for the month of June, 1991.

✓ At 7:32 Mayor Green closed the regular session temporarily and called the evening's public hearing to order. City Manager Milam read the following notice of hearing as it appeared in the Daily News Record on Friday, June 28, 1991:

The Harrisonburg City Council will hold a Public Hearing on Tuesday, July 9, 1991, at 7:30 p.m., in the City Council Chambers, Municipal Building, 345 South Main Street, Harrisonburg, Virginia, to receive public comments on the following:

A Solid Waste Management Plan prepared for submittal to the Virginia Department of Solid Waste Management. A copy of said plan is available for public review at the Office of the City Manager, 345 South Main Street, Harrisonburg, VA. Information is also available at the Office of the Superintendent for Solid Waste located at 2055 Berry Road, Harrisonburg, VA - telephone 433-6800.

CITY OF HARRISONBURG
Marvin B. Milam
City Manager

Mr. John Holsten, Sanitation Superintendent, explained that the State is requiring that all municipalities prepare a five year plan to speak to what the municipality plans to do for solid waste disposal. Mr. Holsten stated that the proposed Solid Waste Management Plan for the City of Harrisonburg was prepared by Draper Aden Associates in accordance with the state regulations. Mr. Holsten then called on Mr. Fred T. Pribble and Steve Herzog, from Draper Aden for comments. Mr. Fred Pribble stated that the Solid Waste Management Plan was developed with a cooperative effort between the City Staff and Draper Aden Associates. Mr. Pribble reviewed the Board's purpose for requiring solid waste management plans and noted that the plan will have to be re-evaluated every five years. Mr. Steve Herzog, of Draper Aden Associates, reviewed the waste management hierarchy that all solid waste management plans must consider, and stated that the rate mandates are a 10% reduction by Dec. 31, 1991; a 15% reduction by Dec. 1993 and a 25% reduction by Dec. 1995. Mr. Herzog noted that the City of Harrisonburg is fortunate that its private sector is currently recycling at a rate of 29% which already exceed the 25% rate mandated by December 1995. Mr. Herzog also reviewed the specific actions contained in the plan, which include: increase recycling activities; categorize the waste accepted at the landfill and steam plan; adopt reporting legislation; require that specific material be separate from other solid waste; preference for purchase of paper made from recycled material; expand public education; close the existing landfill; develop a new landfill and create a archive agency. Mr. Herzog did note that the City is well prepared to meet the mandates, but presently has two critical needs which are securing new landfill capacity by January 1994 and developing a program for collecting additional information on its solid waste stream. Council Member Heath expressed concern over the reporting burden that might be imposed on small businesses, and Vice-Mayor Rhodes stated that he did not feel it was fair to have to close down the existing landfill. Following further discussion, Mayor Green thanked the City administration and Draper Aden for a job well done. There being no others desiring to be heard, the public hearing was declared closed at 8:15 p.m. and the regular session reconvened.

1st Reading of City Manager's Report on Solid Waste Management

APPENDIX G

ADOPTING RESOLUTION

SUBJECT: CITY COUNCIL APPROVES THE SOLID WASTE MANAGEMENT PLAN

EXTRACT TAKEN FROM MINUTES OF REGULAR MEETING
CITY COUNCIL MEETING HELD ON: JULY 23, 1991

City Manager Milam presented for Council's consideration of approval the Solid Waste Management Plan which was prepared by Draper Aden Associates for submittal to the State. Council Member Heath offered a motion that the Solid Waste Management Plan be approved. The motion was seconded by Vice-Mayor Rhodes, and approved with a unanimous vote of Council.

RECEIVED
JUL 31 1991

I, Judy M. Gray, Clerk of the Harrisonburg City Council, do hereby certify that the foregoing is a true copy of an excerpt taken from the minutes of a regular meeting held on Tuesday, July 23, 1991.

Given under my hand this 24th day of July, 1991


CLERK

OFFICE OF CITY CLERK OF COUNCIL
HARRISONBURG, VA

Form 100-45 (1-88)

SUBJECT:

**COUNCIL APPROVES SOLID WASTE
MANAGEMENT PLAN.**

**EXTRACT TAKEN FROM MINUTES OF
CITY COUNCIL MEETING HELD ON:**

**REGULAR MEETING
JUNE 22, 2004**

Public Works Director Baker presented a brief overview of a proposed Solid Waste Management Plan. He said that the Department of Environmental Quality requires that the City update the plan every five years. He reviewed the basic plan, which sets forth solid waste management goals and objectives, and describes the planning for the future to protect the health, safety and welfare of the citizens of Harrisonburg. The plan includes all aspects of solid waste recycling, landfill and collection, and resource recovery at the steam plant. Mr. Baker recognized Meki Shifflett, Recycling Supervisor, for her remarkable job in putting the program together and saving the City the expense of hiring an outside consultant.

At 7:40 p.m., Mayor Fitzgerald closed the regular session temporarily and the evening's first public hearing to order. The following notice appeared in the Daily News-Record on Friday, June 11, 2004.

**NOTICE OF PUBLIC HEARING
City Council Chambers
Tuesday, June 22, 2004
7:30 p.m.**

The Harrisonburg City Council will hold a public hearing on Tuesday, June 22, 2004, at 7:30 p.m., in the City Council Chambers, Municipal Building, 345 South Main Street, Harrisonburg, Virginia, to receive public comments on the following:

A Solid Waste Management Plan prepared for and submitted to the Virginia Department of Environmental Quality. A copy of said plan is available for public review at the office of the City Manager, 345 South Main Street, Harrisonburg, VA. Information is also available at the Public Works office located at 320 East Mosby Road, Harrisonburg, VA – Telephone 540-434-5928.

**CITY OF HARRISONBURG
Roger D. Baker
City Manager**

Mayor Fitzgerald called on anyone desiring to speak for or against this proposed Solid Waste Management Plan. There being no one desiring to be heard, the public hearing was declared closed at 7:41 p.m., and the regular session reconvened. Council Member Peterson offered a motion to approve this Solid Waste Management Plan as presented. The recorded roll call vote was taken as follows:

Vote: Yes - Council Member Peterson
Council Member Frank
Council Member Lantz
Vice-Mayor Rogers
Mayor Fitzgerald

Absent – None

I, Yvonne Ryan, CMC/MMCA, Clerk of the Harrisonburg City Council, do hereby certify that the foregoing is a true copy of an excerpt taken from the draft minutes of a regular meeting held on Tuesday, June 22, 2004.

Given under my hand this 25th day of June 2004.


CITY CLERK

OFFICE OF CITY CLERK OF COUNCIL
HARRISONBURG, VA 22801



July 11, 2017

Mr. Sanjay Thirunagari, Manager
Division of Land Protection and Revitalization
Virginia Department of Environmental Quality
629 E. Main Street
Richmond, Virginia 23219

**RE: City of Harrisonburg
Solid Waste Management Plan (SWMP) 5-Year update (2017)**

Dear Mr. Thirunagari:

The purpose of this letter is to certify that the key elements of the City of Harrisonburg Solid Waste Management Plan are current in accordance with the Virginia Department of Environmental Quality (DEQ) Solid Waste Planning and Recycling Regulations, Amendment 2 (the Regulations). Section 9 VAC 20-130-175.F of the regulations requires that each planning unit submit a plan update certification letter on or before the five-year anniversary of the Department's plan-approval date. The letter of certification will be used in the DEQ's assessment of whether any plan amendments are necessary and to ensure compliance with 9 VAC 20-130-110.E. The City's five year anniversary date is July 13, 2017 based on its original approval date.

Under Guidance 04 2009, DEQ has outlined the information to be provided in the certification letter. Listed below are the items that must be addressed for the update as outlined in the regulations and in the guidance document:

1. **Waste generation estimates:** The waste generation estimate must be current, both in quantities generated and composition.
2. **Planning milestones:** The scheduled 20-year planning milestones and increments must be discussed and indication provided on how the goals have been met or will be met in the future.
3. **Capacity:** The projected 20-year waste management capacity must be verified indicating that the required capacity remains available or that the projects designed to meet the required capacity are on schedule.

Per the guidance document other items from Section 9 VAC 20-130-120.C that should be taken in consideration in determining the status of the above items are:

- Population information and projections for 20 years of population growth and development patterns;
- Estimates of solid waste generation from residential, commercial, institutional, industrial, construction, demolition, debris and other types of sources, including the amounts reused, recycled, recovered as a resource, incinerated and landfilled.
- Existing and planned solid waste collection, storage, treatment, transportation, disposal and other management facilities, their projected capacities, expected life and systems for their use;
- All milestones in the implementation of the solid waste management plan over the 20-year projection and the parties responsible for each milestone;
- The assessment of all current and predicted needs for solid waste management for a period of 20 years and a description of the action to be taken to meet those needs.

The following letter addresses the information as requested.

1. POPULATION ESTIMATES

Population estimates were based on information from the Virginia Employment Commission (VEC), Community Profile, Labor Market Information. This information may be accessed at the following link:

http://virginialmi.com/report_center/community_profiles/5104000660.pdf

The following table summarizes the VEC projections:

VEC POPULATION PROJECTIONS 2010 - 2040

YEAR	POPULATION	% CHANGE
2000	40,453	
2010	48,914	20.92%
2020	57,114	16.76%
2030	65,768	15.15%
2040	75,015	14.06%

This information was used to project the population of Harrisonburg over the next 20 year planning cycle (2017 through 2037). See Table 1 attached. The information is generally in accordance with the information provided in the previous plan but projected on an annual basis for the specific planning period.

The City With The Planned Future

2. WASTE GENERATION ESTIMATES

Waste tonnage generated within the City of Harrisonburg (and not recycled) has historically been either burned in a resource recovery facility (RRF) or disposed of in the Rockingham County landfill. The last year waste was burned in the RRF was 2014. Beginning in 2015, waste generated in the City was either disposed of in the Rockingham County landfill or hauled via the City's temporary transfer station at the decommissioned RRF to the Van der Linde Recycling Facility at Zion Crossroads. The City is currently constructing a new transfer station anticipated to go on-line in in the last quarter of calendar year 2017. With the contract with Van der Linde Recycling, the City has implemented a single stream collection program for all entities currently collected by the City. Apartment complexes and businesses utilizing the services of private trash haulers are not included in this program and the deposition of the waste materials collected by the private trash haulers is up to the private hauler.

Records for City tonnage are a combination of the Rockingham County landfill data and the City's data. For the purpose of this update and projections, the year 2015 was considered a baseline year and considered representative of historical tonnage generated in the City. Using data collected by Rockingham County on tonnage for 2012 through 2016 and the projected population, the pounds per person per day was calculated. The average for 2012 through 2015 was 3.98. The year 2016 seems to be an anomaly given the reduced tonnage so was considered an outlier. The United States Environmental Protection Agency (EPA) in their latest report (2014) indicated that nationally waste is generated at a rate of 4.44 pounds per person per day. For future projections, the City has used the published EPA rate which is just slightly higher than calculated for the City.

Table 1, attached, illustrates the calculated waste projections for the City. From 2017 to 2037, the potential waste generation increase based on the assumptions made is from 44,525 tons per year to 58,763 tons per year (approximately 32%) which is a direct function of population increase.

Table 2, attached, illustrates the calculated waste projections for the City by waste type using the reported values and percentages from the 2015 baseline year.

3. RECYCLING RATES

The City of Harrisonburg has a mandated recycling rate of 25%. Because its population is below 100,000 it is only required to report every 4 years after CY 2012. The table below summarizes the recycling rates for the City from 2006 through 2016.

SUMMARY OF RECYCLING RATES 2006 - 2016

YEAR	RECYCLING RATE (%)	TONS REPORTED (*)
2006	25.4%	30,303
2007	30.5%	20,085
2008	28.3%	20,432
2009	25.9%	19,558
2010	28.1%	21,361
2011	31.1%	25,284
2012	32.3%	16,145
2013	NR	NR
2014	NR	NR
2015	39.0%	17,799
2016	49.2%	NA

(*) Tons reported includes PRM/SRM/Credits

Based on the information in the table, the City is consistently meeting their mandatory recycling rate of 25%. Previously a key aspect of the City's recycling program was their material recovery facility which sorted source-separated recyclables. Beginning in 2015, the City began diverting part of their waste tonnage to Van der Linde Recycling located in Zion Crossroads, Virginia. This facility operates as a mixed waste processing facility and is accepting the City's waste stream and sorting recyclables out of the waste prior to disposal of the residues. Annually, Van der Linde Recycling provides a detailed recycling report to the City.

4. PLANNING MILESTONES

The City of Harrisonburg is in the process of revamping their solid waste program as they adjust to the loss of the RRF facility and reduce their use of the Rockingham County landfill. They are in the process of construction of a new transfer station for their collection operations. A robust

The City With The Planned Future

private sector operates in the region supporting collection of wastes from apartment complexes, and the commercial and industrial sectors. In the next 6 – 12 months, the City will be providing VDEQ with an updated Solid Waste Management Plan which will capture the changes occurring through the transition.

The City submitted an update to their solid waste plan in June 2015 (submitted to Steve Coe and JengHwa Lyang). A summary of proposed specific actions by the City is provided below as stated in the City's revised 2015 plan developed by the Public Works Department:

1. Continue and increase participation in City and privately sponsored recycling programs.
2. Categorize incoming waste in more detail to gain a better understanding of the waste stream. This will allow better decisions to be made on how to spend limited funds to meet both local and State goals and objectives.
3. Implement source reduction, reuse, and recycling programs.
4. Implement legislation requiring businesses and residences operated for profit to sort specified materials in their solid waste and make them available for collection to increase recycling (i.e. hazardous waste, compostable items, etc.).
5. Implement legislation giving preference to the purchase of paper made from recycled materials by the City.
6. Continue public education programs.
7. Monitor the existing landfill in accordance with State regulations.
8. Maintain agreement with approved MSW Recycling/Disposal facilities
9. Document all known solid waste disposal facilities within Harrisonburg. The Department of Public Works – Sanitation Division will act as the archiving agency.

This work is on-going and the Public Works Department is tasked with annually reporting progress to City Council during budget planning activities.

5. DISPOSAL CAPACITY

With the closing of the RRF and its current relationship with Rockingham County, the City has had to consider alternative options for disposal of their waste. Currently they are in the process of construction of a new transfer station which will handle waste materials collected by the City. With their contract with Van der Linde Recycling, they have implemented a single stream collection program for their collection services. Apartment complexes and businesses utilizing the services of private trash haulers are not included in this program and the deposition of the waste materials collected by the private trash haulers is up to the private hauler.

Disposal options available to the City include the following:

- A. Utilization of the Rockingham County Landfill
- B. Hauling waste materials to Van der Linde Recycling
- C. Hauling waste materials to other public or private sector landfills

The Rockingham County Landfill in 2016 reported a remaining life of 34 years. The City will continue to collaborate with the County on solid waste opportunities while operating their transfer station taking waste materials to Van der Linde Recycling. Private haulers in the City are utilizing the landfill for solid waste disposal.

The City's contract with Van der Linde Recycling runs on an annual basis. Theoretically, if the facility maintains its operations, it can handle the City's waste for the next 20 years.

Alternative public landfills might include Rockbridge County (61 years of reported permitted life) or Page County (73 years of reported permitted life). The closest private landfill is located in Richmond (Shoosmith) and has 32 years of reported permitted life.

Therefore there are multiple alternatives and sufficient disposal capacity to support the City of Harrisonburg's solid waste program over the next 20 years.

6. OTHER ITEMS

The following items (not previously addressed above) should be noted since the 2015 update:

- The resource recovery facility was decommissioned. Ownership of the structure, which once housed the facility and the property, has been transferred to James Madison University.
- After a multi-faceted evaluation of potential locations for a new transfer station, a site was chosen and a new transfer station is being constructed at Beery Road and will be operated under a new permit by rule. Construction is anticipated to be completed during the last quarter of calendar year 2017.
- A contract with Van der Linde Recycling was initiated for the receipt of waste materials collected by the City. The waste materials are sorted at the facility and recyclables removed. Because of this program, the City has discontinued operations of their former material recovery facility.
- The closed Harrisonburg landfill was partially recapped and two ballfields reconstructed in 2014.

7. SUMMARY

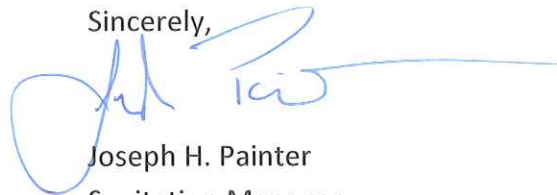
In summary, Harrisonburg has a comprehensive and integrated waste management program. Through past planning efforts, Harrisonburg finds itself prepared to meet its solid waste needs over the next 20 years with some flexibility.

The City has instituted programs and legislation to aid in the collection of statistical information about its solid waste stream. With this information, Harrisonburg is able to accurately determine the level of recycling occurring. Actual rates of recycling within the City are currently at or above the State mandated levels. Reporting legislation has allowed Harrisonburg to determine how best to direct its efforts and limited funds to meet State mandated recycling levels. Additional categorization of the waste stream will aid Harrisonburg in determining household waste and principal recyclable materials quantities which are used in determining recycling rates.

As indicated above, the City plans to submit an amendment to its solid waste management plan in the next 6 – 12 months to capture the various modifications to its system through the current transition.

Should you have any questions relative to this 5-year update, please do not hesitate to contact me.

Sincerely,



Joseph H. Painter
Sanitation Manager

ATTACHMENTS:

Table 1 – Population and Tonnage projections

Table 2 – Tonnage projections by category

cc: Ms. Prina Chudasama, VDEQ, Program Coordinator
Graham Simmerman, VDEQ-VRO, Land Protection & Pollution Response Manager

ATTACHMENTS

TABLE 1
CITY OF HARRISONBURG
POPULATION AND TONNAGE PROJECTIONS
2010 through 2040

NOTES:

Annual population increase based on VEC published values.
 Tonnage for 2012 through 2016 based on Rockingham County information.
 Pounds/person/day for 2012 to 2015 calculated.
 Pounds/person/day for 2017 - 2037 based on EPA published value
 for 2014 of 4.44 pounds per person per day.

YEAR	ANNUAL INCREASE	POPULATION	TONNAGE	POUNDS PER PERSON PER DAY
2010		48,914		
2011	1.01676	49,734		
2012	1.01676	50,567	38,090	4.13
2013	1.01676	51,415	35,593	3.79
2014	1.01676	52,277	37,824	3.96
2015	1.01676	53,153	39,415	4.06
2016	1.01676	54,044	25,496	2.59
2017	1.01676	54,949	44,525	4.44
2018	1.01676	55,870	45,272	4.44
2019	1.01676	56,807	46,030	4.44
2020	1.01676	57,114	46,279	4.44
2021	1.01515	57,979	46,981	4.44
2022	1.01515	58,858	47,692	4.44
2023	1.01515	59,749	48,415	4.44
2024	1.01515	60,655	49,148	4.44
2025	1.01515	61,573	49,893	4.44
2026	1.01515	62,506	50,649	4.44
2027	1.01515	63,453	51,416	4.44
2028	1.01515	64,415	52,195	4.44
2029	1.01515	65,390	52,986	4.44
2030	1.01515	65,768	53,292	4.44
2031	1.01406	66,693	54,041	4.44
2032	1.01406	67,630	54,801	4.44
2033	1.01406	68,581	55,571	4.44
2034	1.01406	69,546	56,353	4.44
2035	1.01406	70,523	57,145	4.44
2036	1.01406	71,515	57,949	4.44
2037	1.01406	72,520	58,763	4.44
2038	1.01406	73,540	59,589	4.44
2039	1.01406	74,574	60,427	4.44
2040	1.01406	75,015	60,785	4.44

TABLE 2
CITY OF HARRISONBURG
TONNAGE PROJECTIONS by category
2010 through 2040

Notes:

Data for 2015 taken from Rockingham County records. Percentages calculated.
 Tonnage for 2016 calculated using the 4.44 pounds per person per day (EPA).
 Tonnage by category for other years calculated using tonnage projections from Table 1 and percentages from 2015.

Year	Municipal Solid Waste	Van der linde	Commercial Refuse	Dirt/Rock	Non-chargeable on report	Construction/Demolition/ Debris	Industrial Waste	Vegetative/ Yard Waste (commercial brush, reroute brush, xmas trees	Unsorted Rubbish	Sludge	Estimated Total City Tonnage (From Table 1)
2015	6,916	3,460	19,898	147	408	5,519	2,357	480	219	12	42,875
% Total	16.1%	8.1%	46.4%	0.3%	1.0%	12.9%	5.5%	1.1%	0.5%	0.0%	100.0%
2016	7,064	3,534	20,323	150	417	5,637	2,408	490	224	12	43,791
2017	7,182	3,593	20,664	152	423	5,732	2,448	498	227	12	44,525
2018	7,303	3,653	21,010	155	431	5,828	2,489	507	231	13	45,272
2019	7,425	3,714	21,362	157	438	5,925	2,531	515	235	13	46,030
2020	7,465	3,735	21,478	158	440	5,957	2,545	518	236	13	46,279
2021	7,579	3,791	21,803	161	447	6,048	2,583	526	240	13	46,981
2022	7,693	3,849	22,133	163	454	6,139	2,622	534	244	13	47,692
2023	7,810	3,907	22,469	165	460	6,232	2,662	542	247	14	48,415
2024	7,928	3,966	22,809	168	467	6,327	2,702	550	251	14	49,148
2025	8,048	4,026	23,155	170	475	6,422	2,743	559	255	14	49,893
2026	8,170	4,087	23,506	173	482	6,520	2,785	567	259	14	50,649
2027	8,294	4,149	23,862	176	489	6,619	2,827	576	263	14	51,416
2028	8,420	4,212	24,223	178	496	6,719	2,870	584	267	15	52,195
2029	8,547	4,276	24,590	181	504	6,821	2,913	593	271	15	52,986
2030	8,597	4,300	24,732	182	507	6,860	2,930	597	272	15	53,292
2031	8,717	4,361	25,080	185	514	6,956	2,971	605	276	15	54,041
2032	8,840	4,422	25,432	187	521	7,054	3,013	614	280	15	54,801
2033	8,964	4,484	25,790	190	529	7,153	3,055	622	284	16	55,571
2034	9,090	4,547	26,153	193	536	7,254	3,098	631	288	16	56,353
2035	9,218	4,611	26,520	195	544	7,356	3,142	640	292	16	57,145
2036	9,348	4,676	26,893	198	551	7,459	3,186	649	296	16	57,949
2037	9,479	4,742	27,271	201	559	7,564	3,231	658	300	16	58,763

APPENDIX 11
ACTIVE - INACTIVE - CLOSED FACILITIES

**CITY OF HARRISONBURG
ACTIVE - INACTIVE - CLOSED SW FACILITIES
FROM DEQ DATA BASE**

Active and Inactive/Closed Solid Waste Facilities in Harrisonburg, Virginia										
ACTIVE										
Facility Name	FIPS City / County	Permit ID	Permit Status	Operating Status	Operating Status Date	Permit Issued Date	Unit Name	Unit Type	Unit Status	Unit Status Effective Date
Rockingham County Landfill	Harrisonburg City	SWP062	Permitted	Active	5/23/1972	5/23/1972	Rockingham Co Lined Sanitary Landfill	Sanitary Landfill	Active	5/23/1972
City of Harrisonburg SW Mgmt Facility - Berry Road	Harrisonburg City	PBR628	Permitted	Active	12/19/2017	12/19/2017	Berry Road Transfer Station	Transfer Station	Active	12/19/2017
INACTIVE/CLOSED										
Facility Name	FIPS City / County	Permit ID	Permit Status	Operating Status	Operating Status Date	Permit Issued Date	Unit Name	Unit Type	Unit Status	Unit Status Effective Date
City of Harrisonburg - SW Management Facility	Harrisonburg City	PBR513	Revoked	Closed	5/11/2018	8/31/2004	City of Harrisonburg Resource Recovery Facility	Waste to Energy Fac	Closed	3/10/2017
City of Harrisonburg - SW Management Facility	Harrisonburg City	PBR513	Revoked	Closed	5/11/2018	8/31/2004	City of Harrisonburg Transfer Station	Transfer Station	Closed	5/11/2018
City of Harrisonburg - SW Management Facility	Harrisonburg City	SWP390	Revoked	Clean Closed	7/21/2004	10/29/1982	Harrisonburg Res Rec Fac	Waste to Energy Fac	Clean Closed	7/21/2004
Harrisonburg City of - Sanitary Landfill	Harrisonburg City	SWP059	Permitted	Post Closure	7/9/1999	5/1/1972	City of Harrisonburg Sanitary Landfill	Sanitary Landfill	Post-Closure	7/9/1999
Harrisonburg City of - Sanitary Landfill	Harrisonburg City	SWP059	Permitted	Post Closure	7/9/1999	5/1/1972	City of Harrisonburg Slf Pre 1988 Cell 1	Sanitary Landfill	Closed	7/9/1999
Harrisonburg City of - Sanitary Landfill	Harrisonburg City	SWP059	Permitted	Post Closure	7/9/1999	5/1/1972	City of Harrisonburg Slf Pre 1988 Cell 2	Sanitary Landfill	Closed	7/9/1999
Rockingham County Landfill	Harrisonburg City	SWP062	Permitted	Active	5/23/1972	5/23/1972	Rockingham Co Slf 1205 Disposal Area	Sanitary Landfill	Post-Closure	6/24/2005
Rockingham County Landfill	Harrisonburg City	SWP062	Permitted	Active	5/23/1972	5/23/1972	Rockingham Co Slf Pre 1988 Cell	Sanitary Landfill	Closed	10/25/2007

APPENDIX 12
EXCERPTS - US EPA 2017 FACTS AND FIGURE

EXCERPTS FROM REPORT



Advancing Sustainable Materials Management: 2017 Fact Sheet

Assessing Trends in Material Generation, Recycling,
Composting, Combustion with Energy Recovery and
Landfilling in the United States

November 2019

Introduction

The U.S. Environmental Protection Agency (EPA) has collected and reported data on the generation and disposition of municipal solid waste (MSW) in the United States for more than 30 years. This information is used to measure the success of materials management programs across the country and to characterize the national waste stream. These facts and figures are based on the most recent information, which is from calendar year 2017.

In 2017, in the United States, approximately 268 million tons (U.S. short tons unless specified) of MSW were generated (See Figure 1). Of the MSW generated, approximately 67 million tons of MSW were recycled and 27 million tons of MSW were composted. Together, more than 94 million tons of MSW were recycled and composted, equivalent to a 35.2 percent recycling and composting rate (See Figure 2). In addition, more than 34 million tons of MSW (12.7 percent) were combusted with energy recovery. Finally, more than 139 million tons of MSW (52.1 percent) were landfilled (See Figure 3 and Table 1).

Information about waste generation and disposal is an important foundation for managing materials. Sustainably managing materials requires focusing on the life cycle of a product, from the time it is produced, used, reused and ultimately recycled or discarded. This is known as Sustainable Materials Management (SMM). SMM refers to the use and reuse of materials in the most productive and sustainable way across their entire life cycle. SMM conserves resources, reduces waste and minimizes the adverse environmental impacts of material use.

This report analyzes MSW trends in generation and management, materials and products, and economic indicators affecting MSW. It also includes a section on the generation of construction and demolition (C&D) debris, which is not a part of MSW, but comprises a significant portion of the non-hazardous solid waste stream.

Figure 1. MSW Generation Rates, 1960 to 2017

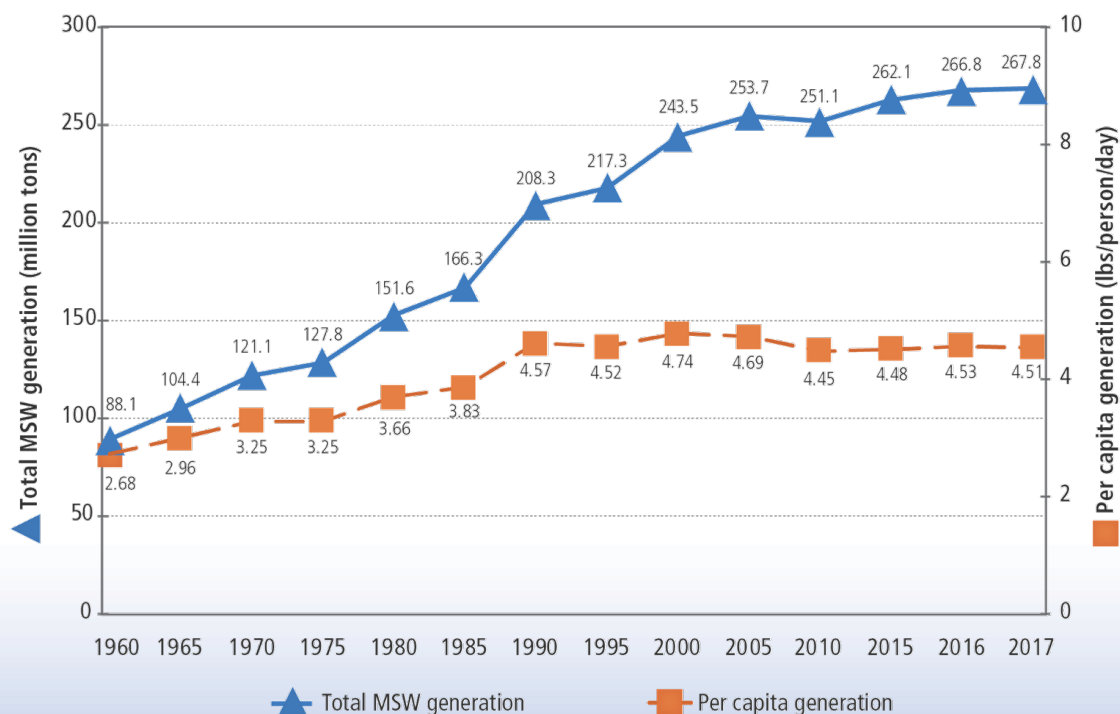


Figure 2. MSW Recycling and Composting Rates, 1960 to 2017

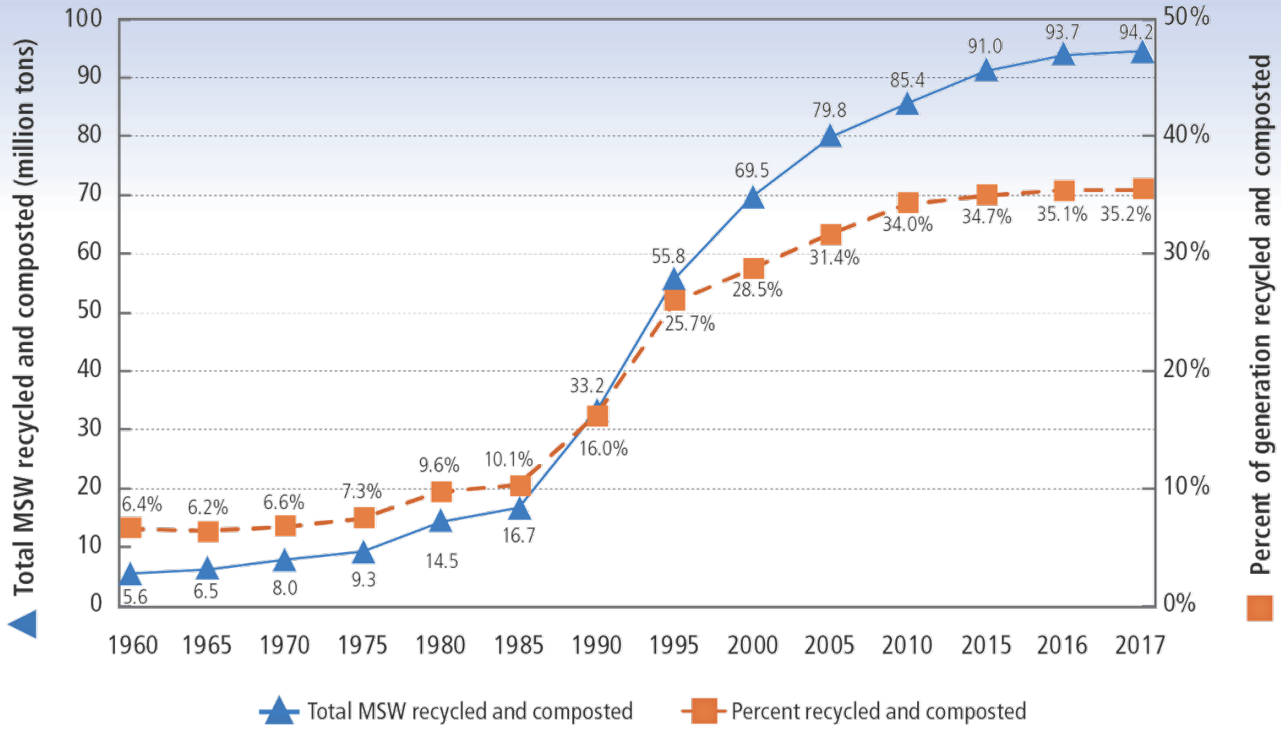
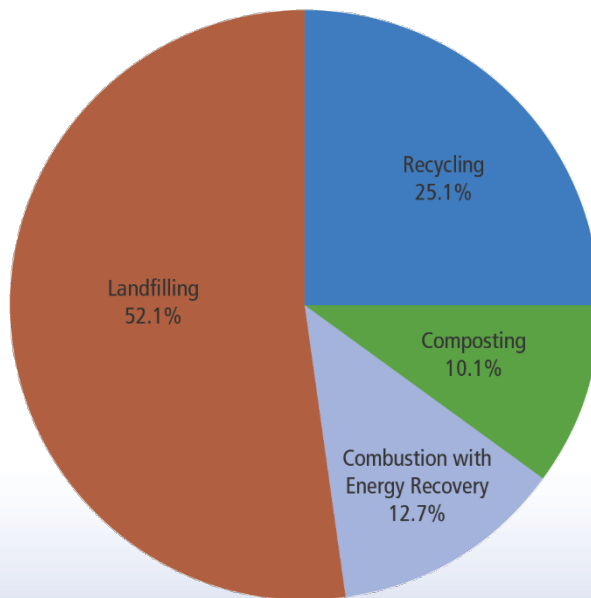


Figure 3. Management of MSW in the United States, 2017



Trends in Municipal Solid Waste

Our MSW, or trash, is comprised of various items consumers throw away. These items include packaging, food, yard trimmings, furniture, electronics, tires and appliances. MSW does not include industrial, hazardous or C&D waste. Sources of MSW include residential waste, including waste from multi-family housing, as well as waste from commercial and institutional locations, such as businesses, schools and hospitals.

Over the last few decades, the generation, recycling, composting, combustion with energy recovery and landfilling of MSW has changed substantially. Solid waste generation peaked at 4.74 pounds per person per day in 2000. The rate of 4.51 pounds per person per day in 2017 is slightly lower than the 2016 rate, which was 4.53 pounds per person per day (See Figure 1).

The combined recycling and composting rate increased from less than 10 percent of generated MSW in 1980 to 35.2 percent in 2017 (See Figure 2). Without including composting, recycling alone rose from 14.5 million tons (9.6 percent of MSW) in 1980 to 67.2 million tons (25.1 percent) in 2017. Composting was negligible in 1980, but it rose to 27.0 million tons in 2017 (10.1 percent; See Figure 3 and Table 2 for details).

Combustion with energy recovery was less than 2 percent of generation in 1980 at 2.8 million tons. In 2017, more than 34.0 million tons (12.7 percent of MSW generated) were combusted with energy recovery (See Table 2).

Since 1990, the total amount of MSW going to landfills has dropped by 5.7 million tons, from 145.3 million tons in 1990 to 139.6 million tons in 2017 (See Table 2). The net per capita 2017 landfilling rate was 2.3 pounds per day, which was lower than the 3.2 per capita rate in 1990 (See Table 3).

Food

Nationally, the composting of food rose from 2.15 million tons in 2016 (5.3 percent of food generated) to 2.57 million tons in 2017 (6.3 percent).

Table 2. Generation, Recycling, Composting, Combustion with Energy Recovery and Landfilling of MSW, 1960 to 2017 (in millions of tons)

Activity	1960	1970	1980	1990	2000	2005	2010	2015	2016	2017
Generation	88.1	121.1	151.6	208.3	243.5	253.7	251.1	262.1	266.8	267.8
Recycling	5.6	8.0	14.5	29.0	53.0	59.2	65.3	67.6	68.6	67.2
Composting*	neg.	neg.	neg.	4.2	16.5	20.6	20.2	23.4	25.1	27.0
Combustion with energy recovery†	0.0	0.5	2.8	29.8	33.7	31.7	29.3	33.5	33.9	34.0
Landfilling and other disposal‡	82.5	112.6	134.3	145.3	140.3	142.2	136.3	137.6	139.2	139.6

* Composting of yard trimmings, food and other MSW organic material. Does not include backyard composting.

† Includes combustion of MSW in mass burn or refuse-derived fuel form, and combustion with energy recovery of source separated materials in MSW (e.g., wood pallets, tire-derived fuel).

‡ Landfilling after recycling, composting and combustion with energy recovery. Includes combustion without energy recovery.

Details might not add to totals due to rounding. neg. (negligible) = less than 5,000 tons.

Table 3. Generation, Recycling, Composting, Combustion with Energy Recovery and Landfilling of MSW, 1960 to 2017 (in pounds per person per day)

Activity	1960	1970	1980	1990	2000	2005	2010	2015	2016	2017
Generation	2.7	3.3	3.7	4.6	4.7	4.7	4.4	4.5	4.5	4.5
Recycling	0.2	0.2	0.4	0.6	1.0	1.1	1.1	1.2	1.2	1.1
Composting*	neg.	neg.	neg.	0.1	0.3	0.4	0.4	0.4	0.4	0.5
Combustion with energy recovery†	0.0	neg.	0.1	0.7	0.7	0.6	0.5	0.6	0.6	0.6
Landfilling and other disposal‡	2.5	3.1	3.2	3.2	2.7	2.6	2.4	2.3	2.3	2.3
Population (In millions)	180.0	204.0	227.3	249.9	281.4	296.4	309.1	320.9	323.1	325.1

* Composting of yard trimmings, food, and other MSW organic material. Does not include backyard composting.

† Includes combustion of MSW in mass burn or refuse-derived fuel form, and combustion with energy recovery of source separated materials in MSW (e.g., wood pallets, tire-derived fuel).

‡ Landfilling after recycling, composting, and combustion with energy recovery. Includes combustion without energy recovery. Details might not add to totals due to rounding. neg. (negligible) = less than 5,000 tons.

Analyzing MSW

EPA analyzes MSW by breaking down the data in two ways: by material or by product. Materials are made into products, which are ultimately reprocessed through recycling or composting, or managed by combustion with energy recovery facilities or landfills. Examples of materials that EPA tracks include paper and paperboard, plastics, metals, glass, rubber, leather, textiles, wood, food and yard trimmings. For a full list of materials, see Table 1.

Products are what people buy and handle, and they are manufactured out of the types of materials listed above. Product categories include containers and packaging, nondurable goods, durable goods, food and yard trimmings. Containers and packaging, such as milk cartons and plastic wrap, are assumed to be in use for a year or less; nondurable goods like newspaper and clothing are assumed to be in use for less than three years; and durable goods, such as furniture, are assumed to be in use for three or more years. Some products, such as appliances, may be made of more than one material. Information about products shows how consumers are using and discarding materials and offers strategies on ways to maximize the source reduction, recycling and composting of materials.

Materials in MSW

Table 1 and the following figures provide specific information about materials in MSW. Table 1 shows generation, recycling, composting, combustion with energy recovery and landfilling by material, weight and percent of generation.

Figure 4 below provides the breakdown of MSW generation by material. Paper and paperboard, along with food, continued to be the largest components of MSW generated. Paper and paperboard accounted for 25 percent, while food accounted for about 15 percent. Yard trimmings and plastics comprised about 13 percent each. The remaining amount of MSW generated consisted of rubber, leather and textiles; metals; wood; glass; and other materials.

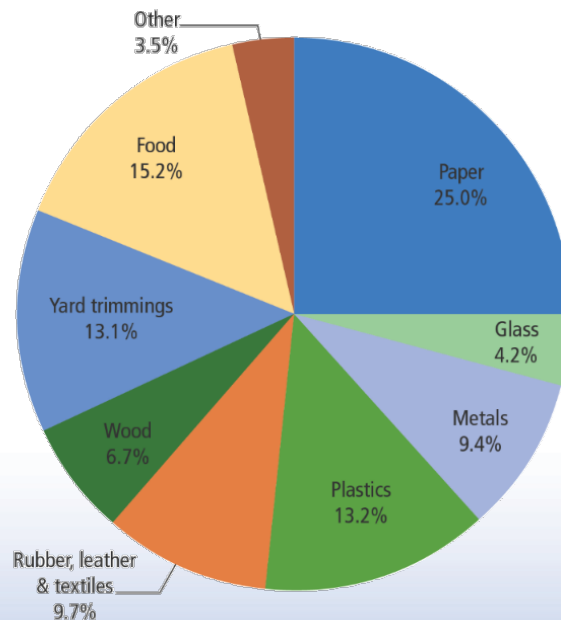
Figure 5 provides the breakdown of MSW recycling by material in 2017. Paper and paperboard composed the largest component of MSW recycling, representing nearly 66 percent. Metals made up over 12 percent of MSW recycled. The remaining amount of MSW recycled consisted of rubber, leather and textiles; plastics; glass; wood; and other materials.

Figure 6 provides the breakdown of MSW composting by material, Figure 7 provides the breakdown of MSW combustion with energy recovery, and Figure 8 provides the breakdown of MSW landfilling.

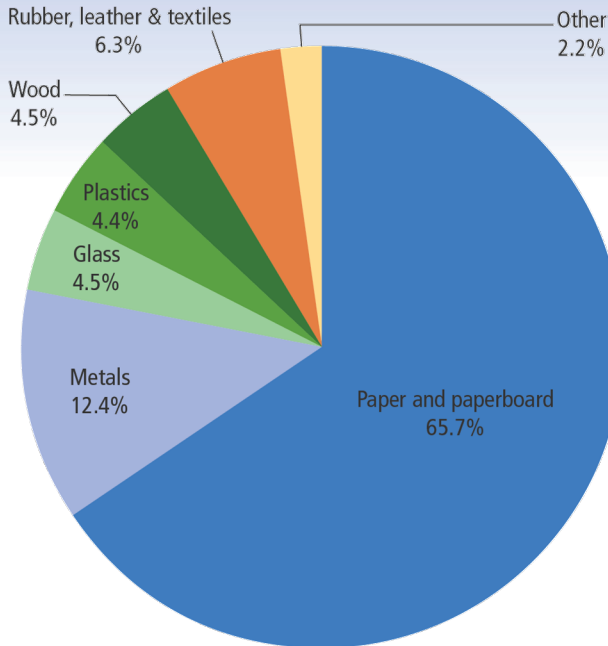
Composting Collection Programs ^{1,2}

- About 3,860 community composting programs were documented in 2017—an increase from 3,227 in 2002.
- Food composting curbside collection programs served 6.1 million households in 2017. About 6.7 million households had access to drop-off food collection programs that year.

Figure 4. Total MSW Generation (by material), 2017
267.8 Million Tons



**Figure 5. Total MSW Recycling (by material), 2017
67.2 Million Tons**



**Figure 6. Total MSW Composting (by material), 2017
27.0 Million Tons**

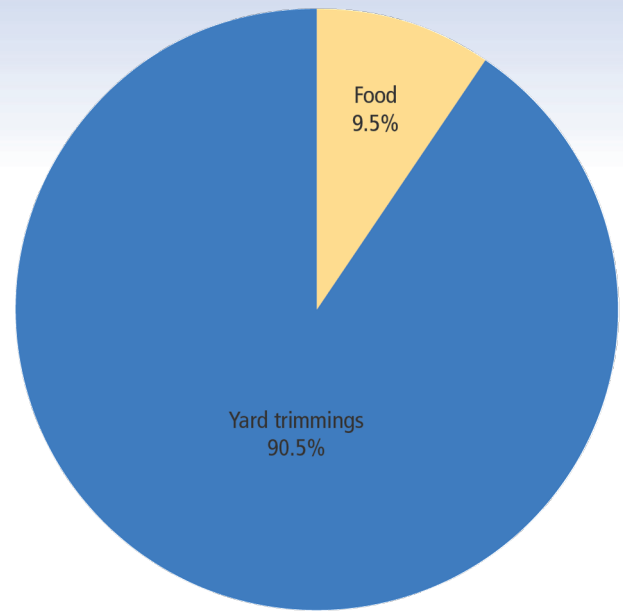
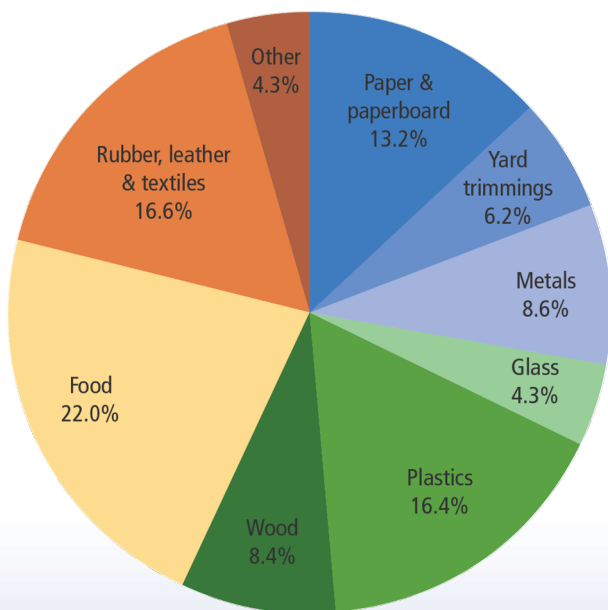
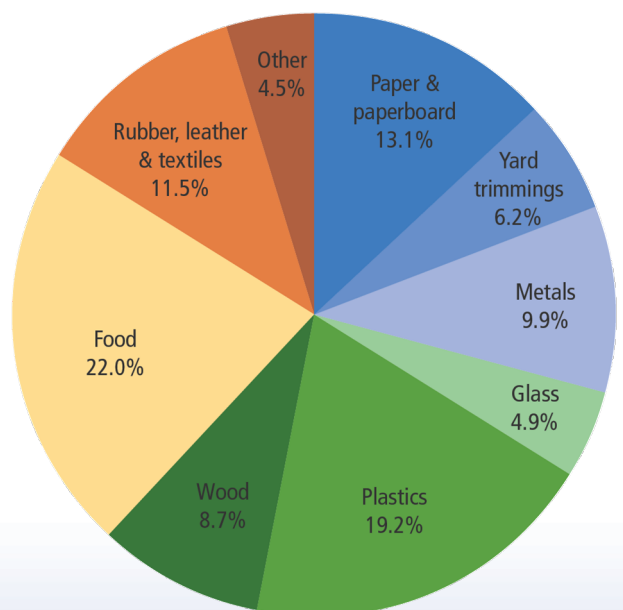


Figure 7. Total MSW Combusted with Energy Recovery (by material), 2017 34.0 Million Tons



**Figure 8. Total MSW Landfilled (by material), 2017
139.6 Million Tons**



Resources

The 2017 data tables and the summary of the MSW characterization methodology are available on the EPA website, along with information about waste reduction, recycling and sustainable materials management.

Please visit:

<https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling>

<https://www.epa.gov/recycle>

<https://www.epa.gov/smm>

<https://www.epa.gov/warm>

Endnotes

1. Source for 2002 community composting program data: "The State of Garbage In America." Simmons, Phil, Scott M. Kaufman, and Nickolas J. Themelis. *BioCycle* 47, no. 4, p. 26 (2006). Source for 2017 data: Goldstein, N. 2017, "The State of Organics." *BioCycle*, October, p. 5, Table 2. Facilities composting yard trimmings, yard trimmings and food, and mixed organics. Excludes 740 facilities composting manure, biosolids, mixed MSW or not defined.
2. Sources for food composting collection programs: Streeter, V.; Platt B. 2017. Residential Food Waste Collection Access in the U.S. *BioCycle* December.
3. US EPA. 2016. "Recycling Economic Information Report" (2016). <https://www.epa.gov/smm/recycling-economic-information-rei-report>. The 2016 REI Report used an updated analytical framework and a new Waste Input-Output methodology, which focused on the life cycle of materials. These refinements offered significant improvements over the original 2001 REI Study by providing a better definition of recycling and addressing double counting. This new methodology assists decision makers and researchers in more accurately estimating the economic benefits of recycling, and it creates a foundation upon which additional studies can be built.
4. Recycled Commodity Values. Soft mixed paper consists of a clean, sorted mixture of various qualities of paper not limited as to type of fiber content. Prohibitive Materials may not exceed 1 percent. There are specific limits on the percent of contaminants allowed in soft mixed paper. Data were not available for ONP, metals, plastics and glass in 1997 and 1998. For plastics, glass and metals, there was a transition in data sources between 1996 and 1999 and between 2004 and 2005, so some of the change between years could be due to the methodology of the data source for capturing data.
Additional sources include Secondary Materials Pricing and Secondary Fiber Pricing, 2003-2017. Released December 2017. Available at <http://www.recyclingmarkets.net/>. 1970 to 2004 historical data tabulated from weekly or monthly industry publications and averaged annually during the time periods shown. Publications included Waste Age Recycling Times, Waste News, Paper Recycler, Miller Freeman, Inc.
5. Solid Waste Environmental Excellence Protocol. "No End in Sight to US Landfill Cost Increases — Pacific Region to Experience Highest Growth". June 13, 2018. <https://nrra.net/sweep/no-end-in-sight-to-us-landfill-cost-increases-pacific-region-to-experience-highest-growth/>
6. MSW Generation: US EPA. 2019. Solid Waste in the United States: 2016 and 2017 Facts and Figures working papers. Population: U.S. Census Bureau. Population Division. Annual Estimates of the Resident Population. PCE: Bureau of Economic Analysis (BEA). 2019. Tables 2.3.4 and 2.3.5.
7. Wood consumption in buildings also includes some lumber consumed for the construction of other structures. Data were not available to allocate lumber consumption for non-residential and unspecified uses between buildings and other structures except for railroad ties. Since non-residential buildings such as barns, warehouses and small commercial buildings are assumed to consume a greater amount of lumber than other structures, the amount of lumber for construction remaining after the amount for railroad ties is split out is included in the buildings source category.
8. Steel consumption in buildings also includes steel consumed for the construction of roads and bridges. Data were not available to allocate steel consumption across different sources, but buildings are assumed to consume the largest portion of steel for construction.



United States Environmental Protection Agency
Office of Land and Emergency Management (5306P)
Washington, DC 20460

Official Business
Penalty for Private Use \$300

EPA 530-F-19-007

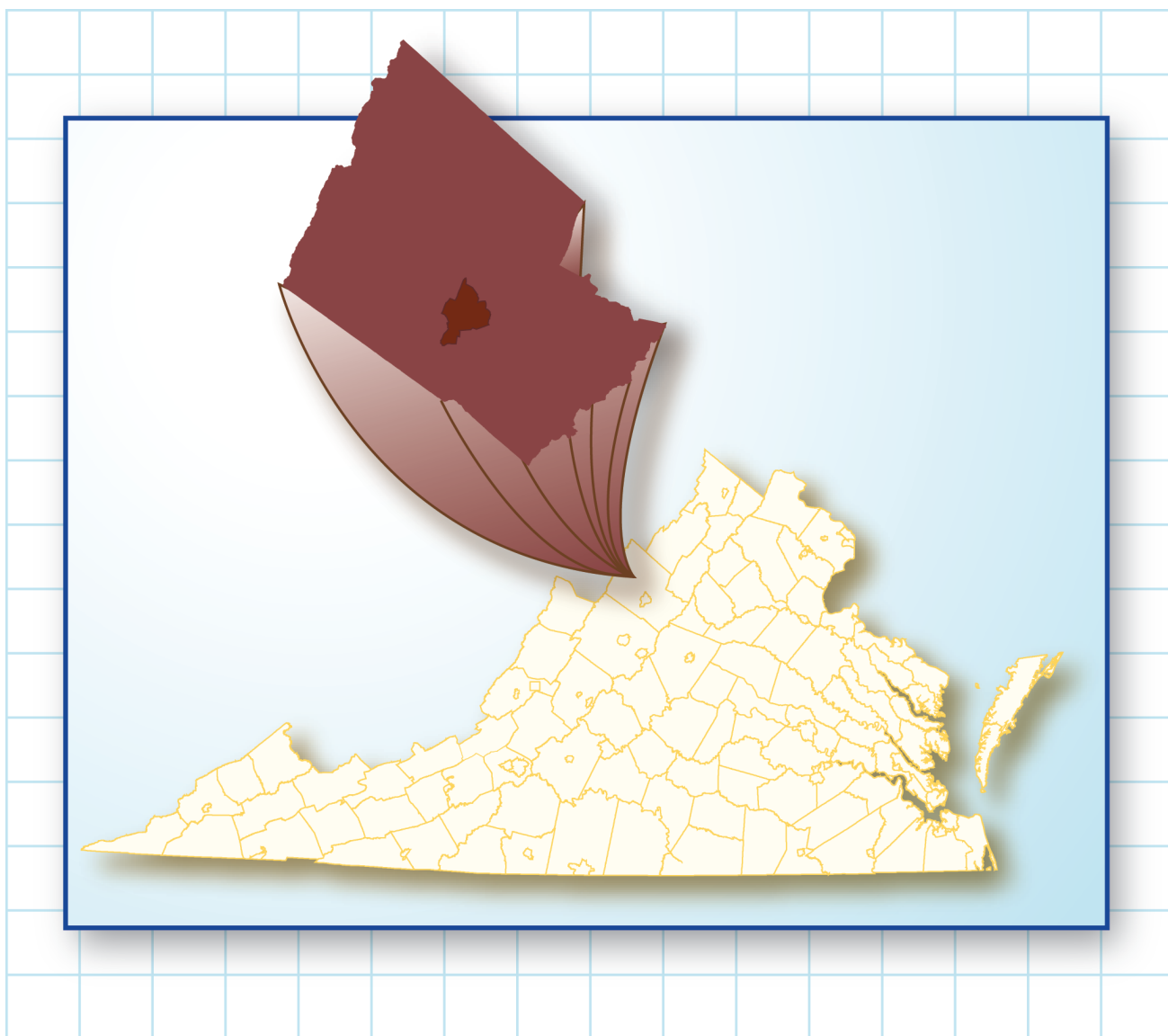
November 2019

APPENDIX 13
EXCERPTS - COMMUNITY PROFILE

Virginia

COMMUNITY PROFILE

Harrisonburg city

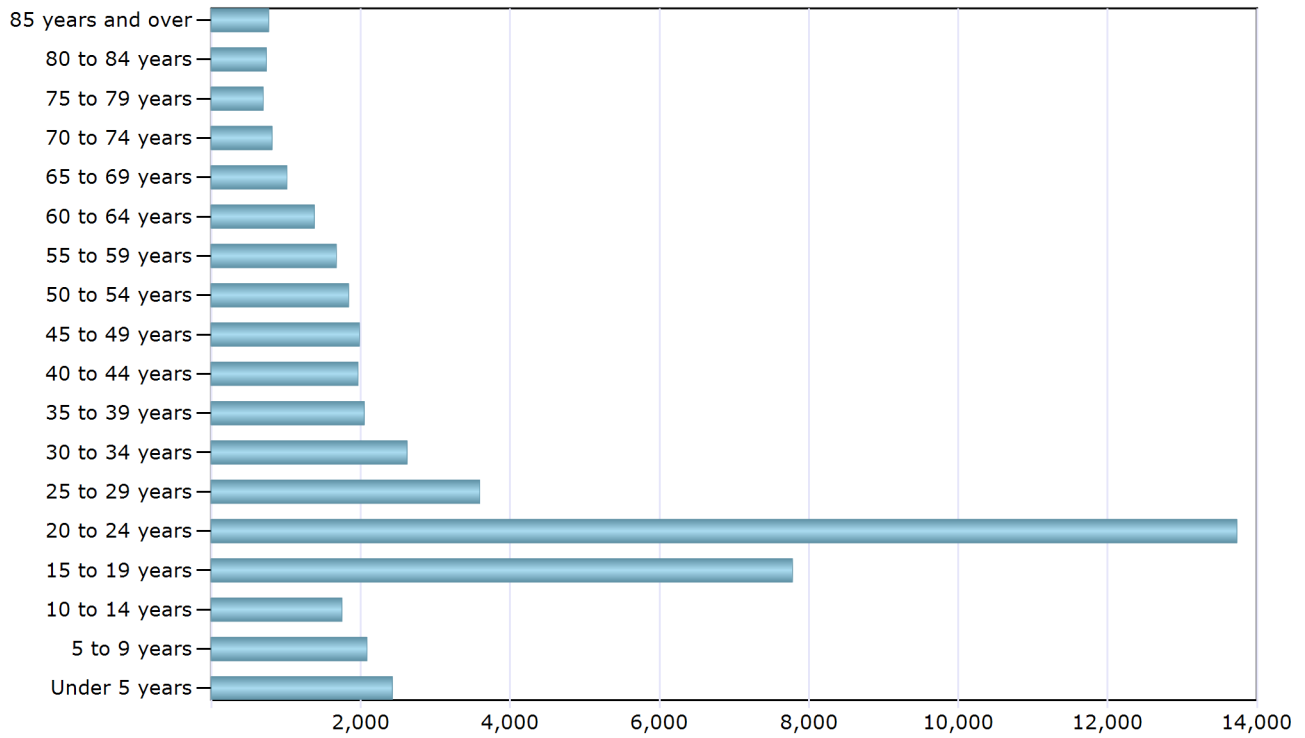


Virginia Employment Commission

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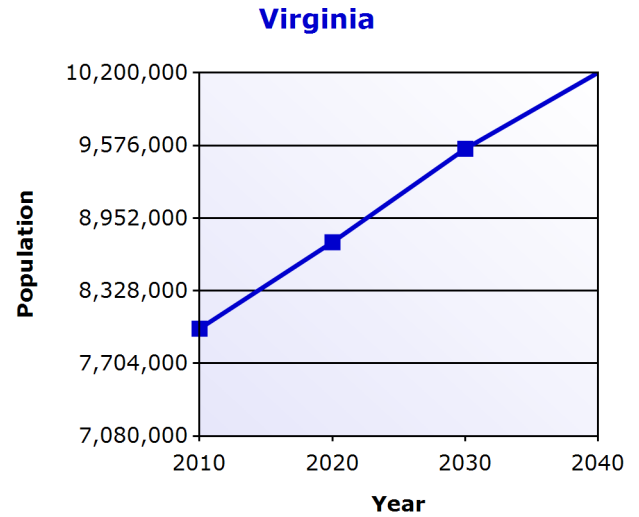
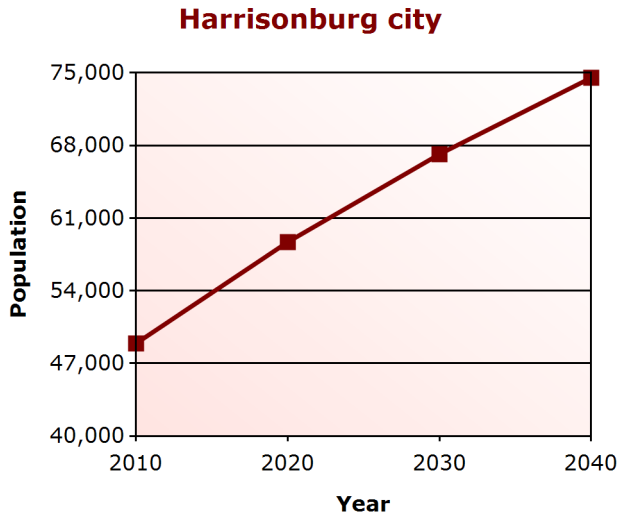
Population by Age



	Harrisonburg city	Virginia	United States
Under 5 years	2,425	509,625	20,201,362
5 to 9 years	2,085	511,849	20,348,657
10 to 14 years	1,750	511,246	20,677,194
15 to 19 years	7,780	550,965	22,040,343
20 to 24 years	13,730	572,091	21,585,999
25 to 29 years	3,595	564,342	21,101,849
30 to 34 years	2,622	526,077	19,962,099
35 to 39 years	2,049	540,063	20,179,642
40 to 44 years	1,965	568,865	20,890,964
45 to 49 years	1,984	621,155	22,708,591
50 to 54 years	1,839	592,845	22,298,125
55 to 59 years	1,676	512,595	19,664,805
60 to 64 years	1,381	442,369	16,817,924
65 to 69 years	1,014	320,302	12,435,263
70 to 74 years	815	229,502	9,278,166
75 to 79 years	696	173,929	7,317,795
80 to 84 years	739	130,801	5,743,327
85 years and over	769	122,403	5,493,433
	48,914	8,001,024	308,745,538

Source: 2010 Census.

Population Change



	Harrisonburg city	(% change)	Number Change	Virginia	(% change)
2000	40,453			7,079,030	
2010	48,914	20.92 %		8,001,024	13.02 %
2020	58,687	19.98 %		8,744,273	9.29 %
2030	67,154	14.43 %		9,546,958	9.18 %
2040	74,521	10.97 %		10,201,530	6.86 %

Source: U.S. Census Bureau, Weldon Cooper Center for Public Service.

Did you know...

you can log on to our website today and see population counts from each Decennial Census all the way back to 1900? Looking for annual population estimates? We have those too, all the way back to the 1970s!

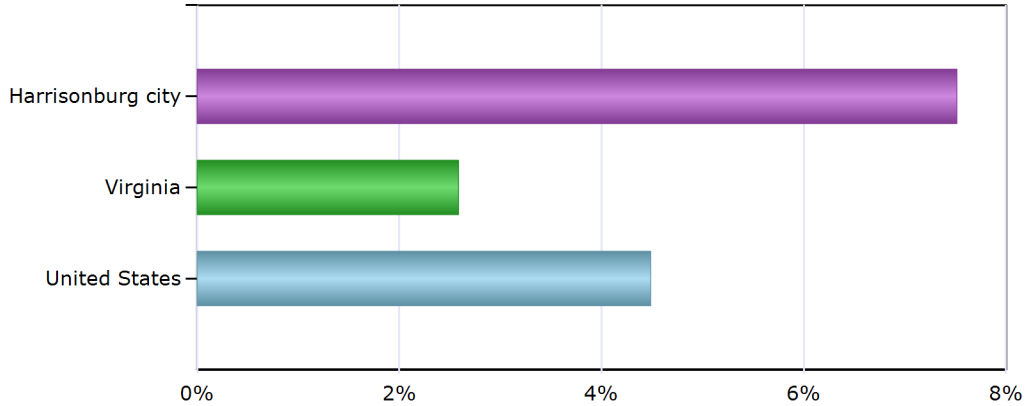
For this data and more, visit us on the web at:

www.VirginiaLMI.com



English Language Skills

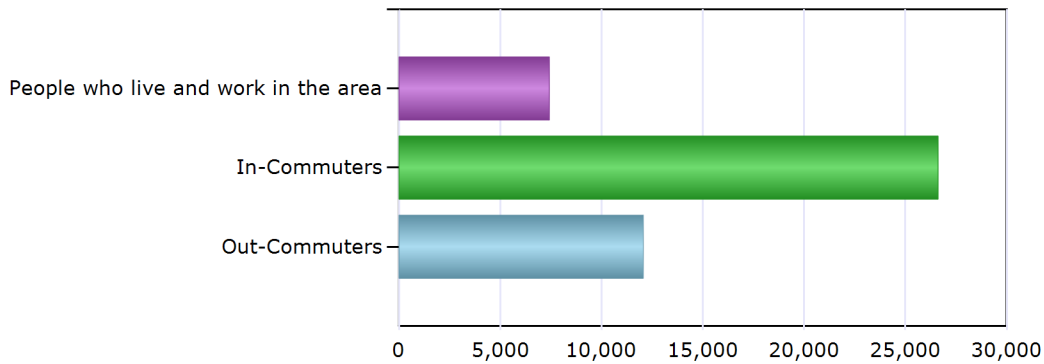
(Age 5 and over that speak English less than well)



	Total	Speak English less than well	Percent
Harrisonburg city	49,434	3,715	7.52%
Virginia	7,800,044	201,628	2.58%
United States	298,691,202	13,400,003	4.49%

Source: U.S. Census Bureau
American Community Survey, 2012-2016.

Commuting Patterns



Commuting Patterns	
People who live and work in the area	7,416
In-Commuters	26,606
Out-Commuters	12,059
Net In-Commuters (In-Commuters minus Out-Commuters)	14,547

Source: U.S. Census Bureau,
OnTheMap Application and LEHD Origin-Destination Employment Statistics, 2014.

Top 10 Places Residents are Commuting To

Area	Workers
Rockingham County, VA	4,504
Fairfax County, VA	614
Henrico County, VA	538
Augusta County, VA	529
Shenandoah County, VA	400
Richmond city, VA	314
Staunton city, VA	311
Prince William County, VA	243
Chesterfield County, VA	236
Albemarle County, VA	228

Top 10 Places Workers are Commuting From

Area	Workers
Rockingham County, VA	13,019
Augusta County, VA	2,438
Page County, VA	882
Staunton city, VA	701
Albemarle County, VA	548
Frederick County, VA	531
Fairfax County, VA	490
Waynesboro city, VA	326
Loudoun County, VA	297
Prince William County, VA	296

Source: U.S. Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics, 2014.

Please Note: Commuting patterns data is no longer produced from the Decennial Census. As an alternative, we are providing commuting data from the U.S. Census Bureau's OnTheMap application and LEHD Origin-Destination Employment Statistics program. Since this data is produced from an entirely different data set, it is not advisable to compare the new data with previously released commuting patterns. For more information about the OnTheMap application or the LEHD program, please visit the following website:

<http://lehd.ces.census.gov>

50 Largest Employers

- | | |
|--|--|
| 1. James Madison University | 26. Cox Automotive Corporate |
| 2. Harrisonburg City Public Schools | 27. Red Lobster & The Olive Garden |
| 3. Aramark Campus LLC | 28. Owens Brockway Plastic Products |
| 4. City of Harrisonburg | 29. Truck Enterprises, Inc. |
| 5. Driv Automotive, Inc. | 30. Special Fleet Service |
| 6. George's Foods | 31. Chick-fil-A at Harrisonburg |
| 7. Sentara Healthcare | 32. Cracker Barrel Old Country Store |
| 8. Eastern Mennonite University | 33. Harrisonburg Community He |
| 9. Shenandoah Valley Organic LLC | 34. LSC Communications MM, LLC |
| 10. Virginia Mennonite Retirement | 35. Nielsen Builders, Inc. |
| 11. Wal Mart | 36. The Home Depot |
| 12. Fairfield and Sons, LTD | 37. Texas Roadhouse |
| 13. Tenneco Packaging | 38. Blauch Brothers, Inc. |
| 14. Food Lion | 39. Comsonics Inc. |
| 15. Rockingham County Community Services Board | 40. Harrisonburg Honda |
| 16. Gretna Health Care Center | 41. Jal Chemical Co. |
| 17. Costco | 42. Kawneer Company |
| 18. Target Corp | 43. Western Sizzlins Wood Grill Bu |
| 19. LSC Communications US, LLC | 44. LD&B Insurance and Financial Services |
| 20. Lowes' Home Centers, Inc. | 45. Rockingham Mutual Ins. Corp. |
| 21. Martin's Food Market | 46. Buffalo Wild Wings Grill & Bar |
| 22. McDonalds | 47. Pleasant View Home for the Handicapped |
| 23. DPM Hotels LLC | 48. OS Restaurant Services, Inc. |
| 24. Cargill Turkey Production | 49. Postal Service |
| 25. Montebello Packaging Inc | 50. Steven Toyota |

Source: Virginia Employment Commission, *Economic Information & Analytics, Quarterly Census of Employment and Wages (QCEW), 4th Quarter (October, November, December) 2019.*

Did you know...

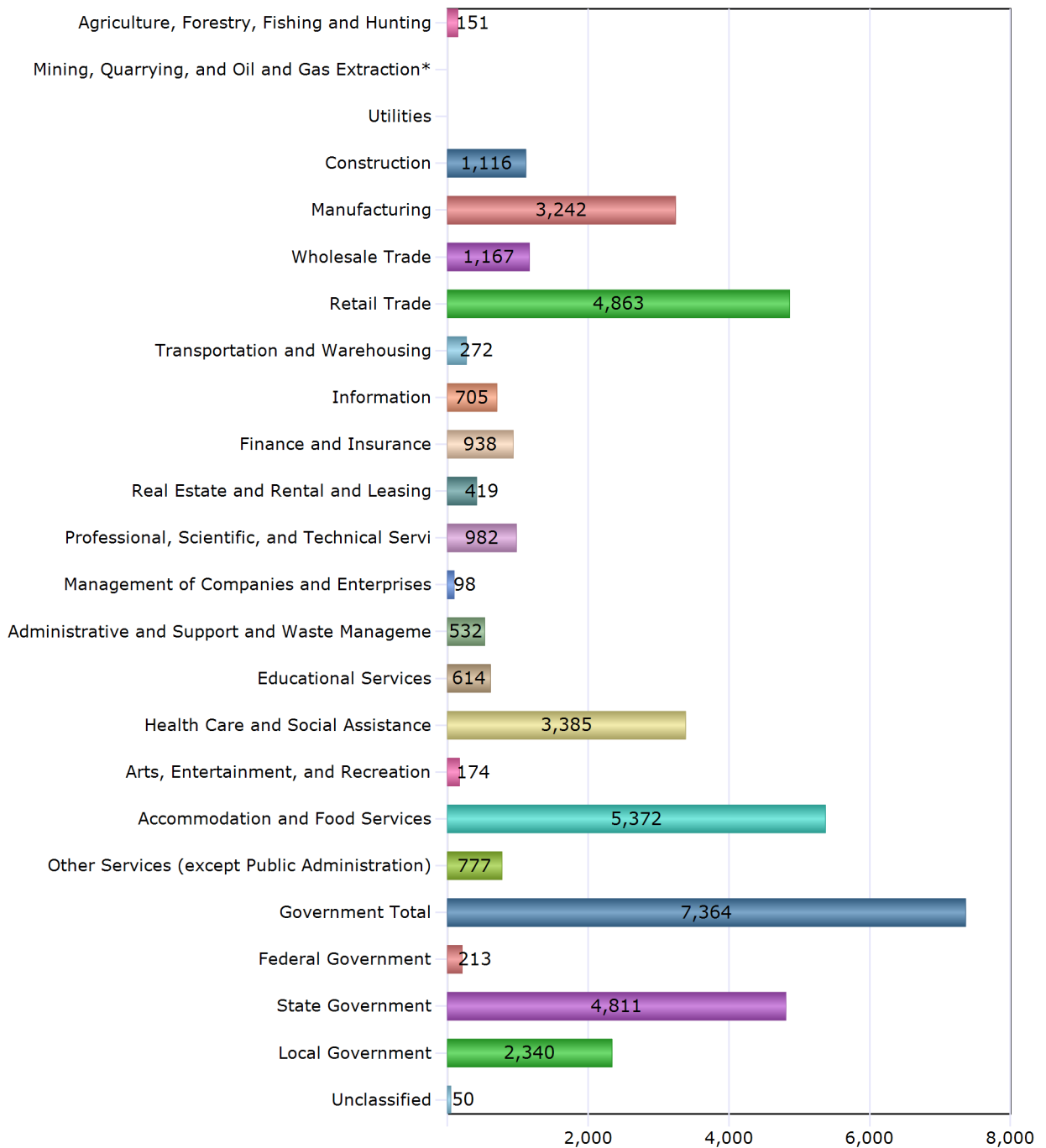
you can search over 300,000 employer listings on our website provided by Infogroup? This easy-to-use feature lets you search for employers by keyword, industry, sales volume, size range, and more!



For this data and more, visit us on the web at:

www.VirginiaLMI.com

Employment by Industry



Total: 32,254

Note: Asterisk (*) indicates non-disclosable data.

Source: Virginia Employment Commission, Economic Information & Analytics, Quarterly Census of Employment and Wages (QCEW), 4th Quarter (October, November, December) 2019.

APPENDIX 14
EXCERPTS - PHASE 1 ENVIRONMENTAL ACTION PLAN



Environmental Action Plan

Phase I

Created by Harrisonburg City Staff and the Environmental Performance Standards Advisory Committee

Adopted by City Council on January 14, 2020

Acknowledgements

The City of Harrisonburg expresses appreciation to all the individuals who contributed to the preparation of this document.

City Council

Deanna Reed, Mayor
Sal Romero, Vice Mayor
Richard Baugh
Christopher Jones
George Hirschmann

Environmental Performance Standards Advisory Committee

Deirdre Longacher Smeltzer, Chair
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Deb Fitzgerald, School Board Representative
Tom Benevento
Daniel Downey
Jeffrey Heie
Leons Kabongo
Benjamin Meredith
Emani Morse
Mikaela Schmitt-Harsh
Bradley Striebig
Johann Zimmerman

Focus Area 5 - Waste Reduction and Recycling

The City of Harrisonburg seeks to determine a sustainable, long-term, and fiscally responsible refuse and recycling program that consistently supports and promotes the reduction of solid waste, the reuse of usable items, and the recycling of materials. Four goals are included in this focus area.

Co-Benefits

A sound waste management program results in cleaner streets, water quality, air quality, energy conservation, reduced habitat destruction from material extraction, and reduced greenhouse gas emissions. Food waste recovery can also increase food availability to vulnerable populations, provide local livestock feed, and increase local soil fertility through composting programs. Incentivizing reduced solid waste generated means savings in the cost of trash disposal fees for property owners and reduced operational costs and tipping fees for the City. These resources are then freed up for more productive uses.

Goal 1 - Support and Promote the Reduction of Refuse in Landfills

Landfills have limited space and have significant environmental impacts. The City of Harrisonburg will work on the following strategies to support and promote the reduction of refuse in landfills, specifically the local Rockingham County Landfill.

Where Are We Now?

The City of Harrisonburg's only program to support and promote the reduction of refuse in landfills is the recycling program. The City also offers a webpage, "Alternatives for Unwanted Items," as a resource to the community.⁴⁷ The webpage helps to connect residents and businesses with other businesses and groups that can use items.

Strategy 1.1 - Establish a Pay-As-You-Throw System

Linking waste reduction to a fee structure is a powerful tool to reduce refuse generated. A Pay-As-You-Throw (PAYT) system is a usage-pricing model. Users are charged a rate based on the amount of waste they put out for collection. Implementing a curbside collection program utilizing this system would promote awareness of the volume of waste generated and parallel other metered utilities in the City.

Task	Responsible Party
Develop and implement a PAYT system. City Council would be responsible for approving a PAYT system. PAYT system would include ordinance changes made as described in Strategy 1.3.	Public Works, City Council

⁴⁷ <https://www.harrisonburgva.gov/unwanted-items-alternatives>

Strategy 1.2 - Create a Program that Recognizes or Incentivizes Businesses that Substantially Reduces Waste

Create a program that incentivizes businesses – including restaurants, hotels, events, and offices to reduce the usage of single-use products, paper, etc. This program may link to an existing program (ex: Virginia Green Travel) or may constitute development of a new program.

Task	Responsible Party
Identify entity to take on program development.	Private Businesses, Community Organizations
Develop and promote program.	Private Businesses, Community Organizations

Strategy 1.3 – Review City Solid Waste Ordinance

Ordinance changes could be made to limit the number of refuse containers allowed to be picked up. Currently, customers are able to have 5 containers or 5 bags - bags and containers cannot be over 75-lbs. and must have 35-gallon capacity each. Changes in the amount of refuse allowable for collection will promote lessening of waste generated. Changes in the bulk and yard debris program could also be evaluated.

Task	Responsible Party
Review the Solid Waste Ordinance and consider amending and implementing changes.	City Council, Public Works
If ordinance changes are made, educate the public about the changes.	Public Works

Strategy 1.4 – Consider Creating a Policy for Eco-friendly Purchases and Paperless Transactions

City operations should set an example to area businesses by limiting the purchase of single-use items. Standardization of purchasing procedures should be considered across city offices which will warrant the development of a citywide policy.

Task	Responsible Party
Consider developing, adopting and implementing an internal City policy.	City Manager’s Office, Public Works, Purchasing

Goal 2 - Encourage and Promote Zero Waste and the Reuse of Usable Items

“Zero waste” is a set of principles focused on waste prevention that encourages the redesign of resource life cycles so that all products are reused. The goal is for no trash to be sent to landfills, incinerators, or other places for disposal.

Solid waste in Harrisonburg is disposed of at the Rockingham County landfill. Diverting material from the landfill through reuse lessens the tipping fee the City pays at the landfill and further reduces the environmental impacts of developing new products.

Where Are We Now?

Initiative	Summary	Status
Existing Reuse Programs	The City is able to consider reuse as a maximum of 2% of the 25% recycling requirement according to DEQ specifications. The City of Harrisonburg reuses milling material from pavement operations, leaves from curbside leaf pick-up, urban wood (where possible), yard debris, and glass. Many of these items are used as cover material at the Rockingham County Landfill and are not considered part of the regular waste stream entering the landfill.	Ongoing
Alternative for Unwanted Items webpage resource ⁴⁸	The City also offers a webpage, “Alternatives for Unwanted Items,” as a resource to the community. The webpage helps to connect residents and businesses with other businesses and groups that can use items.	Ongoing
Support of Community Composting ⁴⁹	The City supports a local non-profit composting initiative by allowing containers to be placed on city owned property for users to drop-off their compostable material.	Ongoing

⁴⁸ <https://www.harrisonburgva.gov/unwanted-items-alternatives>

⁴⁹ <https://climateactionallianceofthevalley.org/composting/>

Strategy 2.1 – Encourage, Educate, and Promote Zero Waste Principles

Encourage and educate community members about zero waste principles.

Task	Responsible Party
Continue to develop the city webpage to aggregate reuse resources by identifying businesses, non-profits, artist groups, etc. that take once-used or leftover materials and advertise where and when the materials can be collected. ⁵⁰	Public Works
Develop “Zero Waste” lesson plans and presentations for different audiences. Examples might include lesson plans for Harrisonburg City Schools or presentations for professional or community organizations.	Community Organizations

Strategy 2.2 - Continue Thrift Store Sponsorship at Recycling Convenience Center

Stage donation bins at the Recycling Convenience Center for lightly used clothing, games, electronics, furniture, and building supplies. The sponsoring thrift store would pick-up donations on an as-needed basis. All profits would remain with the thrift store.

Task	Responsible Party
Continue to develop partnerships with local businesses to locate at the Recycling Convenience Center and develop an advertising program to educate citizens of these disposal options.	Private Business, Community Organization, Public Works

Strategy 2.3 - Lobby State to Subsidize Companies That Process Recyclable Material

Establishing a local and consistent market for recycling vendors to source recyclables is a crucial component of sustaining a recycling market. Without this avenue, the cost of shipping recyclable material becomes cost-prohibitive. It is important to encourage businesses that can use recyclables as raw material come to the area and for the state government to recognize this regional need.

Task	Responsible Party
Consider identifying feasible partnerships/siting of new businesses.	Economic Development
Partner with local government advocacy organizations (Virginia Municipal League, Virginia First Cities) to lobby the General Assembly for increased subsidies, grants, etc. for new equipment and local connections.	Private Businesses, Community Organizations, Individuals

⁵⁰ <https://www.harrisonburgva.gov/recycling>

Strategy 2.4 - Promote Composting Programs

Composting is a known method for removing reusable waste material from the waste stream. Many homeowners and restaurants already undergo composting efforts.

Task	Responsible Party
Continue cross-promoting, enhancing, and educating the public about composting efforts.	Public Works, Community Organizations, Private Businesses
Consider offering pre-fabricated urban composting containers for free or at a reduced cost to encourage residential backyard composting.	Community Organizations

Goal 3 - Support and Promote Recycling

The City of Harrisonburg is required by the Commonwealth of Virginia to meet a 25% recycling rate and submit annual reports to the Virginia Department of Environmental Quality outlining the means to reach this recycling rate.

Where Are We Now?

Initiative	Summary	Status
Recycling Convenience Center ⁵¹	In March 2018, the City opened a Recycling Convenience Center at 2055 Beery Road in Harrisonburg, where citizens can drop off recyclables. These pre-sorted recyclables are uncontaminated or less contaminated, making them easier to market to local vendors/recycling organizations.	Ongoing
Recycling Mobile Unit ⁵²	Starting October 2018, a recycling mobile unit was placed at the Farmers Market during Farmers Market hours and is attended by a staff member to answer related questions and assist in properly sorting recyclables. Starting August 2018, a recycling mobile unit was placed at city sponsored events for use by event vendors and participants. Beginning in the Spring of 2019, a recycling mobile unit was placed a throughout the City on a rotating schedule.	Ongoing
Cardboard Pick-Up	Only businesses with a significant amount of cardboard are eligible for cardboard recycling pick-up. There is a truck dedicated for this purpose. Some areas are picked up regularly, and others are picked up once Public Works has been notified.	Ongoing

⁵¹ <https://www.harrisonburgva.gov/recycling>

⁵² <https://www.harrisonburgva.gov/recycling>

Strategy 3.1 - Continue to Monitor Opportunities for Providing Expanded Recycling Options

The Recycling Convenience Center currently only offers recycling options when local vendors have been identified. Expanded options would allow for the public to bring more items to the Recycling Convenience Center to be properly diverted from the landfill.

Task	Responsible Party
Identify and consider partnering with existing recycling programs within city limits.	Public Works
Identify larger recycling program not within city limits and consider partnership opportunities.	Public Works

Strategy 3.2 - Continue to Evaluate Ways to Enhance and Promote Local Recycling Initiatives

The Recycling Convenience Center and the mobile center available on Saturdays when the Farmers Market is operating do not address all areas where local recycling could take place. Identifying and capturing recycling that is going into the landfill will increase the City's recycling rate and landfill tipping fees.

Task	Responsible Party
Partner with local business that use recyclable materials.	Private Businesses, Community Organizations
Consider providing mobile recycling units for special events outside of city sponsored events	Public Works
Consider developing a grant or business loan program to encourage "Low to No Waste" business start-ups and growth.	Community Organizations, Economic Development
Consider adding evening hours to the Recycling Convenience Center.	Public Works

Goal 4 - Support and Promote Healthy and Safe Solid Waste Disposal

The ability to dispose of all solid waste materials in a healthy and safe manner is a key component to a sustainable solid waste system. Various waste items are not able to be disposed in the municipal waste stream and alternative collection options help reduce illicit disposal of those materials. In addition, the downtown areas, due to the building density, presents challenges related to waste storage prior to collection. This goal provides strategies that will work to expand these areas with new opportunities.

Where Are We Now?

Initiative	Summary	Status
Ordinance Violation Oversight	The City provides oversight and enforcement of ordinance violations and responds to citizen and personnel concerns.	Ongoing
Household Hazardous Waste Day ⁵³	In order to limit illicit material in the trash that could come into contact with staff, Rockingham County and the City host a household hazardous waste disposal day and regular prescription medication disposal at the public safety building.	Ongoing
Prescription Medication Disposal	A prescription medication disposal box is located in the Public Safety building. This is a location where the public can drop off their unused medications for safe and environmentally friendly disposal.	Ongoing

Strategy 4.1 - Continue to Expand the Education Program

Develop an expanded program to educate property owners about safe and sanitary curbside waste disposal, to Recycling Convenience Center users about non-contamination practices, and to students about life cycle analysis, the seven Rs (Rethink, Reuse, Refuse, Reduce, Repurpose, Recycle, Recruit) and plastic reduction.

Task	Responsible Party
Continue to educate the public to remove fluids from waste and recyclables.	Public Works
Continue to educate the public to remove sharp items/hazardous material from the waste stream, and separate cardboard from recyclables.	Public Works
Work with City Schools to integrate waste management into curriculums.	Community Organizations
Continue to educate the business community on reduction, reuse, and recycling programs and initiatives.	Community Organizations

⁵³ <https://www.harrisonburgva.gov/hazardous-waste-collection>

Strategy 4.2 - Seek Partnerships for Downtown Centralized Disposal Units

There is limited storage space downtown which makes the temporary storage of trash and recycling a challenge. Therefore, businesses have difficulty holding trash until the designated pick-up times and the city picks up trash twice daily throughout the work week. There are additional concerns with residential customers placing trash out at the incorrect times. This proposed solution would allow businesses and residents to centrally collect their refuse and recyclables for regular pick-up by city staff, eliminating trash accumulation on the curb, reducing emissions from trucks, and improving overall downtown curb-appeal.

Task	Responsible Party
Identify central locations and consider outfitting locations with bins/hoppers/secure access/etc.	Public Works
If centralized disposal units are implemented, educate businesses, property owners, downtown residents, property management companies about the change in service and expectations moving forward.	Public Works

Strategy 4.3 - Improve the Household Hazardous Waste Collection Program

Household hazardous wastes (HHW) are defined as leftover household products that contain corrosive, toxic, ignitable, or reactive ingredients. Improper disposal of HHW can pollute the environment and pose a threat to human health. HHW collection is offered on a semi-annual basis alongside Rockingham County. An expanded program would make drop-off of hazardous waste materials more accessible to the public.

Task	Responsible Party
Consider increasing the frequency of HHW Collection Days.	Public Works, Rockingham County
Study the potential to allow for HHW storage at the Recycling Convenience Center year-round.	Public Works, Rockingham County

Strategy 4.4 – Improve the Safety Prescription Medication Disposal

Prescription medication disposal is available at limited locations throughout and surrounding the City (i.e. Harrisonburg Police Department, Rockingham County Sheriff’s Office, Sentara RMH). Expanding the drop off locations for regular pick-up by a hazardous waste vendor allows additional accessibility to customers, making it easier for customers to properly dispose of medications. Improper disposal, such as flushing medications down the toilet, introduces the medication into the environment.

Task	Responsible Party
Encourage pharmacies to host a ‘Drug Take Back’ program.	Community Organizations, Individuals
Encourage other relevant local businesses to host a ‘Drug Take Back’ program.	Community Organizations, Individuals